ACT Health

ACT Chief Health Officer's Report

2000-2002

Dr Paul Dugdale
Liza Kelsall

Acknowledgements

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Foreword

The Chief Health Officer's Report provides an excellent basis upon which to evaluate the health of the people of the ACT and our health systems.

The Report is tabled in the Legislative Assembly every two years in accordance with the requirements of the *Public Health Act 1997*.

The Chief Health Officer and his team in the Population Health Research Centre play an important role in profiling the health status and health needs of the ACT population. This data is critical to guiding the long term, sustainable planning of health services in the ACT.

This Report, which covers the two-year period to June 2002, details trends in health status; lifestyle and health; health priority areas, including cardiovascular disease; cancer and mental health; maternal and infant health; notifiable conditions; health services; and health and the environment. It also details recent developments in policy, programs and health promotion.

The impact of the tragic 2003 bushfires on our health and wellbeing will be profiled in the next Chief Health Officer's Report.

The Chief Health Officer's Report is not simply a valuable resource – it also underpins the *2002 Health Action Plan* by profiling the health of our people and the health of our systems.

Of particular interest in this third Chief Health Officer's Report is the profile of children's health. This section paints a favourable picture of the social context of children's lives in the ACT. I am, however, concerned to learn that less than one quarter of ACT children consume the recommended daily minimum quantity of vegetables required for a healthy diet. This is the type of information that will help guide health promotion policy and planning so that we can optimise our investment in our children's health.

I am very pleased that, overall, the ACT population continues to experience a more favourable level of health status than the rest of Australia. That said, recent declines in the amount of physical activity undertaken, poor nutrition and a related increase in obesity in the Territory tells us that this is not a time for complacency.

The Government will use The Chief Health Officer's Report as a map to guide future health care provision and policy in the ACT. I would encourage everyone with an interest in health – which is really all of us - to read and to use the information in this report.

Simon Corbell MLA
Minister for Health

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Abbreviations

ABS	Australian Bureau of Statistics
AIDS	Acquired Immune Deficiency Syndrome
AIMS	Accident Incident Monitoring System
ACIR	Australian Childhood Immunisation Register
ACSM	American College of Sports Medicine
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ASVS	Australian Standard Vaccination Schedule
BMI	Body mass index
CABG	Coronary artery bypass graft
CATI	Computer-Assisted Telephone Interview
CDNA	Communicable Disease Network Australia
CHD	Coronary heart disease
CHIP	Clinical Practice Health Improvement Program
CHQ	Child Health Questionnaire
CHS	2001 ACT Child Health Survey
CVD	Cardiovascular disease
DHAC	Department of Health and Aged Care
DHFS	Department of Health and Family Services
DRG	Diagnostic Related Group
EPC	Enhanced Primary Care
ERP	Estimated resident population
ETS	Environmental tobacco smoke
FWE	Fulltime workforce equivalents
GP	General practitioner
HSC	Higher School Certificate
Hib	Haemophilus influenzae type b
HIV	Human immunodeficiency virus
HPS	Health Protection Service
HPV	Human papilloma virus
ICD-9-CM	International Classification of Diseases, 9th Revision, Clinical Modification
ICD-10-AM	International Classification of Diseases, 10th Revision, Australian Modification
IHD	Ischaemic heart disease
K10	Kessler 10 scale
MBS	Medicare Benefit Schedule
MMR	Measles, mumps and rubella
NAPSS	Newborn and Parent Support Services
NDSHS	National Drug Strategy Household Survey

NGO	Non-Government Organization
NHMRC	National Health and Medical Research Council
NHPA	National Health Priority Area
NHS 2001	National Health Survey 2001
NMDS	National Minimum Data Set
NPAS	2000 National Physical Activity Survey
NSP	Needle Syringe Program
NSW	New South Wales
NTS	National Tobacco Strategy
PPIRS	Postnatal Parenting Information and Referral Service
PSA	Prostate specific antigen
PSS	Pharmaceutical Services Section
PTCA	Percutaneous transluminal coronary angioplasty
QEII	Queen Elizabeth II Family Centre
RSE	Relative standard error
SF-36	Short Form 36
SIDS	Sudden infant death syndrome
STI	Sexually transmitted infection
TCH	The Canberra Hospital
TFR	Total fertility rate
UVR	Ultra-violet radiation
WHO	World Health Organisation
YLL	Years of life lost
95%CI	95% Confidence Interval

Executive Summary

ACT profile

The demographic profile of the population and projected demographic shifts have implications for service planning and delivery in the ACT. The estimated resident population of the ACT was 319,300 people at 30 June 2001. Population projections suggest there will be around 347,200 people living in the ACT by 2011.

Over time, the population is expected to age, with the greatest increase in population over the next ten years in the 60-69 years age group. The proportion of young people less than 20 years of age in the population is expected to decrease over time, from about 28.2 per cent in 2001 to about 24.2 per cent of the population in 2011.

The number of households in the ACT is expected to increase by 17 per cent between 2001 and 2011, while the average household size is expected to decrease from 2.6 persons in 2001 to 2.4 by 2011.

There were an estimated 3,900 Aboriginal and Torres Strait Islander people living in the ACT in mid-2001, representing approximately 1.2 per cent of the ACT population. The majority of ACT residents were born in Australia (74%). Approximately one in four residents was born overseas, with about 5.5 per cent born in the United Kingdom alone.

Social factors that influence health

The majority of social indicators that have been reviewed in the report yield more favourable results for the ACT compared to Australia. Income and education levels in the ACT are high in comparison to Australian income and education levels. For example, 26 per cent of people in the ACT at the time of Census in 2001 had a tertiary level education, compared to 13 per cent nationally. The average full-time weekly earnings for individuals living in the ACT in mid-2001 was $778 compared to $655 nationally. In addition, five per cent of adults (15 years or more) in the ACT were unemployed at the time of Census in 2001, compared to six per cent nationally, and 14 per cent were receiving income support (excluding family support) in 2000, compared to 23 per cent of the Australian population.

ACT housing stock is in good condition and more recently built, on average, than housing stock nationally. Survey data suggests that in 1999 a greater proportion of ACT households were rented (28%) compared to Australian households (26%), and that a greater proportion of ACT (8.6%) housing stock was State/Territory Housing Authority (public) dwellings, compared to Australian stocks (4.5%).

Lifestyle and health

The 2000 National Physical Activity Survey results suggest that the ACT has a similar proportion of obese people in the population as Australia. Approximately 30.7 per cent of the ACT population was overweight and 11.5 per cent were obese in 2000. Survey results also suggest that although ACT physical activity levels are higher than activity levels nationally, there has been a decline in the intensity of physical activity in recent years.

The 2001 National Health Survey (NHS) results indicate that there are worrying levels of sub-optimal dietary behaviours among adults (12 years or more) in the ACT. Survey results suggest that about one in five (20.9%) adult ACT residents did not consume the recommended minimum daily quantities of vegetables, almost a half (46.8%) did not consume the recommended minimum daily quantities of fruit and almost a half (46.5%) identified 'whole milk' as the 'usual type' of milk consumed in 2001. These rates were similar to those observed nationally.

Youth smoking is an important health issue in the ACT. Survey results suggest a higher percentage of teenagers in the ACT smoke regularly, compared to teenagers nationally. The risk of harm from excess alcohol consumption is also an important health issue for youth in the ACT. The NDSHS results suggest teenagers in the ACT who had higher levels of alcohol consumption were less likely to perceive excessive consumption of alcohol as a problem and were more likely to approve of excessive drinking of alcohol by an adult, than their national counterparts.

The 2001 National Drug Strategy Household Survey (NDSHS) results suggest there was a very strong level of support in the ACT for smoke-free legislation.

The prevalence of illicit drug use in the 12 months preceding the NDSHS, for the ACT, was generally similar to that reported nationally, with 14 per cent of ACT adults (14 years or more) having used cannabis in the last 12 months, compared to 13 per cent of the Australian population. Approximately 3.1 per cent of the ACT population had used any illicit drug other than cannabis in the 12 months preceding the survey (Australia 3.5%).

Health and the environment

The period covered by this report precedes the January 2003 bushfires. Canberrans enjoy high-quality drinking water and a pleasant physical environment, lacking many of the sources of pollution found elsewhere. The water quality in Canberra's lakes varies with the season, rainfall intensity and run-off. Occasionally, lakes are closed for recreation because of unsafe levels of faecal coliforms.

The air quality during the July 2000 to June 2002 period was generally very good, with the exception of occasional high concentrations of fine particles (PM10) in winter, mainly from household open wood-burning fires, which can accumulate under certain meteorological conditions.

Food safety continues to be monitored, and all notified incidences of food poisoning are investigated. By far the most common causes of ill health from food were infections due to campylobacter and salmonella. Occupational radiation exposure is regularly monitored and there has been a high-level of compliance with safety directives. Finally, chemical parameters in public swimming pools and spas are also routinely monitored.

Health services and their use

The ACT has a lower number of General Practice (GP) full-time workforce equivalents per capita compared to Australia, which has implications for equitable access to primary care services in the ACT. For some community groups, this situation is compounded by a reduced number of GP practices offering bulk-billed services in the ACT.

Approximately 75 per cent of ACT residents requiring hospital care in the ACT in 2001/02 were hospitalised in a public facility and 25 per cent were hospitalised in a private facility. The leading causes of hospitalisation for ACT residents in 2001/02 were for digestive disorders, pregnancy and childbirth, and neoplasms.

Cardiovascular disease

Although the mortality rate from cardiovascular disease (CVD), or circulatory disease, has declined over recent decades, CVD was the leading cause of mortality in the ACT in 2001, accounting for approximately 36 per cent of all ACT resident's deaths. The prevalence of risk factors for cardiovascular disease, such as low levels of intense physical activity and high levels of overweight and obesity, are increasing in the ACT. These trends, combined with projected demographic changes in the age structure of the ACT population, are likely to result in significant increases in future demand for acute care services for cardiovascular disease.

There is overwhelming evidence that the most effective care for stroke patients can be provided in a geographically defined hospital ward area by a specialised, experienced stroke team. The evidence indicates that the establishment of well-organised stroke care in the ACT will prevent death, or dependency, for about 30 patients each year.

Cancer

Cancer is the second leading cause of death in the ACT, after cardiovascular disease, accounting for 30 per cent of all ACT resident's deaths in 2000. Between 1996 and 2000, there were 2,163 cancer deaths recorded for ACT residents. The major causes of cancer death were cancers of the trachea, bronchus and lung, colorectal cancer, prostate cancer in males, and breast cancer in females.

Changes in the structure of the ACT population over time are expected to have an impact on future demand for cancer services in the ACT. ACT Health continues to work towards the provision of a comprehensive cancer management service, with a number of new service and management initiatives established over the period covered by this report.

Mental health

The results of the 1997 Mental Health Survey suggested that one in five (21.1%) of the ACT population had experienced a mental health disorder during the previous 12 months, compared with 17.7 per cent nationally. The higher prevalence in the ACT was primarily due to a higher level of mental health disorder reported for ACT males. The 2001 National Health Survey indicated a higher prevalence of medication and vitamin use for mental wellbeing by women in the ACT, compared to males. There were 46 suicide deaths among ACT residents, accounting for 3.2 per cent of all ACT residents' deaths in 2001, and although there were a greater number of suicides among males than females, more females were hospitalised for self-inflicted harm than males.

ACT Health has recently brought all ACT public mental health services together into a single service or cross-Territory stream known as "Mental Health ACT". This will enable a unified approach to mental health policy, planning, service development and delivery in the ACT.

Injury prevention

There were 109 injury-related deaths among ACT residents in 2001, accounting for 8.4 per cent of all ACT resident deaths. ACT injury-related mortality rates are generally below the national rates and most deaths from injury in the ACT occur in people aged 15-44 years (mostly males).

In 2001/02, 12,591 ACT residents presented to The Canberra Hospital Emergency Department (ED) with an injury or poisoning. This included 3,722 children (0-14 years) and 1,001 older residents (65 years or more). At Calvary Hospital ED, 13,484 ACT residents presented with an injury or poisoning, including 821 ACT residents aged 65 years or more and 3,737 child (0-14 years) presentations.

Falls accounted for almost three-quarters of all injury-related hospitalisations among residents aged 65 years or more in 2001/02. Falls prevention is a high priority in national and ACT injury prevention initiatives. It is estimated that by 2051 the total health cost attributable to fall-related injury will have increased almost threefold nationally. As the age structure of the ACT population changes over time, the number of falls and their associated costs can be expected to increase. It is thought that a 66 per cent reduction in the age-specific incidence of fall-related injury will be required to keep costs at their current level.

Diabetes mellitus

It is estimated that for every person diagnosed with diabetes, there is another person with undiagnosed diabetes in Australia. In 2001, 3.1 per cent of the adult population (18 years or more) in the ACT reported having been diagnosed with diabetes for six months or more (Australia 2.9%). Survey results suggest the prevalence of diagnosed diabetes in ACT males has increased since 1995. There were 3,098 ACT resident separations from ACT hospitals with a principal or associated diagnosis of diabetes in 2001/02, accounting for almost five per cent of all ACT residents' separations.

Asthma

Australia has one of the highest known rates for asthma in the world. The prevalence of the disease in the ACT has increased in recent years, although mortality rates and hospital separation rates have declined over time. There were 324 separations for ACT residents, with a principal diagnosis of asthma, from ACT hospitals in 2001/02. Seven hundred and twenty-two children (0-14 years) and 834 adults (15 years or more) presented to Emergency Departments (EDs) in the ACT with asthma in 2001/02. Current estimates suggest that about 16.5 per cent of kindergarten children in the ACT have 'current' asthma and about 22.4 per cent have had asthma at some stage. About 23 per cent of kindergarten children with current asthma have an asthma management plan.

Arthritis and musculoskeletal disease

The burden of disease from arthritis and musculoskeletal disorder is significant, and primarily due to the reduced quality of life associated with chronic pain and disability. The results of the 2001 National Health Survey suggest the ACT had slightly lower prevalence rates of arthritis and rheumatism and slightly higher rates of back pain, osteoporosis and other diseases of the musculoskeletal system, compared to Australia. In 2001/02, there were 3,087 ACT resident separations from ACT hospitals with a principal diagnosis of arthritis or musculoskeletal disorder.

Communicable disease

ACT immunisation coverage levels in children have increased since the mid-1990s and were generally similar to Australian coverage levels at one and two years of age in 2001. Vaccine-preventable disease notifications remain low, with the highest number of notifications reported for whooping cough (52 notifications in 2002).

Campylobacter (illness with diarrhoea, fever and vomiting as common symptoms) infection remains the most commonly notified disease in the ACT with a rate of 114 notifications per 100,000 population in 2002. The second most commonly reported disease during the 2000 to 2002 period was *Chlamydia*, followed by hepatitis C. An outbreak of Norwalk-like virus (NLV) gastroenteritis occurred in three ACT health care facilities in June 2002, affecting 281 people.

Rates of genital *Chlamydia* infection have risen steadily in recent years, from 26 cases per 100,000 population in 1996 to 147 per 100,000 population in 2002. This increase has also been observed nationally and is due, in part, to increased testing attributable to promotion and education campaigns and the introduction of a less invasive testing technique for the disease.

Rates of HIV infection continue to remain low in the ACT, with ten new notifications of the disease in 2000.

Maternal and infant health

Maternal and infant health are important indicators for the overall health and wellbeing of a community. Maternal death is very rare and infant and perinatal death rates are low in the ACT.

Sixty-one per cent of ACT mothers interviewed in the 2001 ACT Child Health Survey reported that they had altered their diet to increase their folate intake in the month prior to and/or during the first three months of pregnancy. Sixty-one per cent of respondents to the survey reported that they placed their infants on their back to sleep to reduce the risk factors for Sudden Infant Death Syndrome (SIDS). The remaining respondents reported placing their infants on their side. Ninety-four per cent of mothers indicated that their child had been breastfed.

Fertility trends over time suggest that women in the ACT are continuing to delay childbirth. There has been an ongoing reduction in age-specific fertility rates in age groups less than thirty years and a gradual increase in fertility rates in age groups over thirty years. The ACT teenage birth rate (births to mothers aged 15-19 years) was lower than the rate for Australia in 2000 (10.9 and 17.4 births per 1,000 respectively).

There were 4,135 live births to ACT residents in the ACT in 2000, with the ACT live birth rate stable between 1996 and 2000. Approximately 1.4 per cent of births to ACT residents in the ACT were multiple births in 2000. The caesarean section rate for ACT residents (20.4%) was lower than the national rate (23.3%) in 2000.

Child health

Child health was a special focus area for this report. Children comprise about 14 per cent of the ACT population and there are high concentrations of children living in the new suburbs of Canberra. One in ten ACT children live in poverty. The analysis in this chapter indicates that children (1-12 years) in the ACT are generally in good health.

The results of the 2001 ACT Child Health Survey present a favourable picture of the social context of children's lives in the ACT in terms of family functioning, social support and social capital. However, the results from the survey suggest that some health-risk behaviours are of concern for the ACT. For instance, less than one quarter (23.9%) of ACT children consume the recommended daily minimum quantity of vegetables required to maintain a healthy diet.

The leading cause of ACT resident child (1-12 years) hospitalisation in 2001/02 was respiratory disease (19.6%), followed by injury, poisoning and other external causes (14.9%), diseases of the digestive system (10.9%) and infections and parasitic diseases (10.8%). The leading causes of injury-related child hospitalisations were falls (45%), accidental poisoning (11%) and motor vehicle traffic accidents (2%). ACT children between 1-4 years had the highest hospitalisation rates for communicable diseases such as enteritis and other diarrhoeal diseases and otitis media in 2001/02.

There were less than ten ACT resident child (1-12 years) deaths each year for the period 1998 to 2000. Cancer was the leading cause of death for the period, followed by external causes (accidents) and sudden, unexplained death.

Estimates suggest that about one in four (26.8%) ACT children between 2-12 years have been diagnosed with asthma, which is similar to the rate for children nationally and for the period 1991 to 1998, the oral health of children in the ACT was consistently similar, or slightly better than reported nationally.

1 Introduction

I am pleased to present you with this comprehensive profile of the health and well being of the ACT population, as required under Section 10 of the *Public Health Act 1997*. The Act requires that I report biennially on the following:

- health risk behaviours;
- morbidity and mortality;
- notifiable conditions;
- potential public health risks;
- health promotion activities;
- harm minimisation activities;
- access and equity indicators relevant to health;
- social indicators relevant to health;
- health service performance against minimum standards of care; and
- intersectoral activities relevant to health.

This is the third ACT Chief Health Officer's Report, covering the two-year period from 1 July 2000 to 30 June 2002. The information presented has been derived from various sources, including mortality and hospitalisation statistics, notifiable disease registers, health survey results, published statistical reports and journal articles. Much of the data comes from national data collections, to which the ACT contributes, allowing us to understand our health status in relation to the rest of Australia. Where the required information for this period is not yet available, is not considered reliable, or was not collected, the most recent and reliable information available is presented.

Most of the information provided in this report is focussed on the ACT resident population, however there are specific sections of the report that include information relevant to the wider Australian Capital Region. This is clearly noted in each instance. Hospital utilisation statistics represent services provided by ACT hospitals only. While there are only a small number of hospital admissions for ACT residents outside of the ACT, this may affect some statistics presented in this report. It is expected that all hospital service use by ACT residents will be available for the next report.

This report covers services provided by the private sector in the ACT. This reflects the good links between private and public health services in the ACT. In addition to the direct provision of patient care, private health services, including general practitioners and private hospitals, are participating in a range of public health quality and safety activities, and play an integral part in the ACT's response to disasters.

It is important to consider the population of interest, geographical area, time period and relevant diagnostic definitions when making comparisons of the information presented in this report and analyses contained in other reports of a similar nature.

Information provided on health service initiatives includes initiatives specific to the period of interest. However, the report also discusses important service developments that have occurred post June 2002.

The report does not specifically cover public health action taken since July 2002. Public health responses to events such as the firestorm of January 2003 and the global SARS epidemic of January to May 2003 are reported elsewhere (eg in the ACT Health Annual Report).

Unfortunately, there is a lack of reliable information on the health status of the Aboriginal community in the ACT. In part, this is due to the small size of the community, but also reflects the need for a well-developed system for assessing and monitoring Aboriginal health in the ACT. The Population Health Division is working with Aboriginal Health Services to address this issue. I hope that a detailed and accurate profile of Aboriginal health will be available for future ACT Chief Health Officer Reports.

The report is divided into 16 chapters, beginning with a demographic overview of the ACT; a profile of social factors influencing health; lifestyle and health; and a profile of the general health status of the ACT population. The report also profiles environmental health, health service use, the national health priority areas, communicable diseases and maternal and infant health. I am particularly pleased to present you with a special profile of the health of children in the ACT. The special focus on the health of children in the ACT should provide an important baseline profile of child health against which to evaluate the future progress of the ACT Children's Strategy, currently in development.

The information presented in this report indicates that overall, the ACT population enjoys excellent health compared to other jurisdictions in Australia. For instance, the mortality rates from chronic diseases such as cancer, diabetes and asthma are lower in the ACT compared to the rest of the country.

There are however, areas of concern. For instance, although the ACT rates favourably across the majority of health related behaviours profiled in the report, the consumption of tobacco and alcohol by young people in the Territory was slightly higher in this period when compared to young people nationally. Further, there is evidence that levels of obesity are increasing in the ACT, levels of physical activity are in decline and there are significant opportunities for improvement in our diet.

The report also profiles recent innovative health policy, program and promotion initiatives in the ACT and outlines strategies for the future, aimed at improving the health of the population. Many of the staff that work in these programs have assisted in producing this report, either directly or by recording information about what they do. I would like to thank everyone who has assisted in this way as well as the policy and planning analytical staff who have contributed to this document. In particular, I would like to thank my co-author Liza Kelsall for her drive and scholarly excellence.

Finally, a special welcome to the health students that have read this far. Whatever field you work in, it is important to keep the public health perspective in mind. A community-wide view of health gives rigour to the care we provide for our individual patients. It also helps us to remember that patients live their lives in the community and are not just collections of biological systems.

Canberra is currently undergoing a rapid expansion of training in health. I hope this report makes the public health perspective accessible to all who are involved in this.

Dr Paul Dugdale
ACT Chief Health Officer

2 ACT Profile

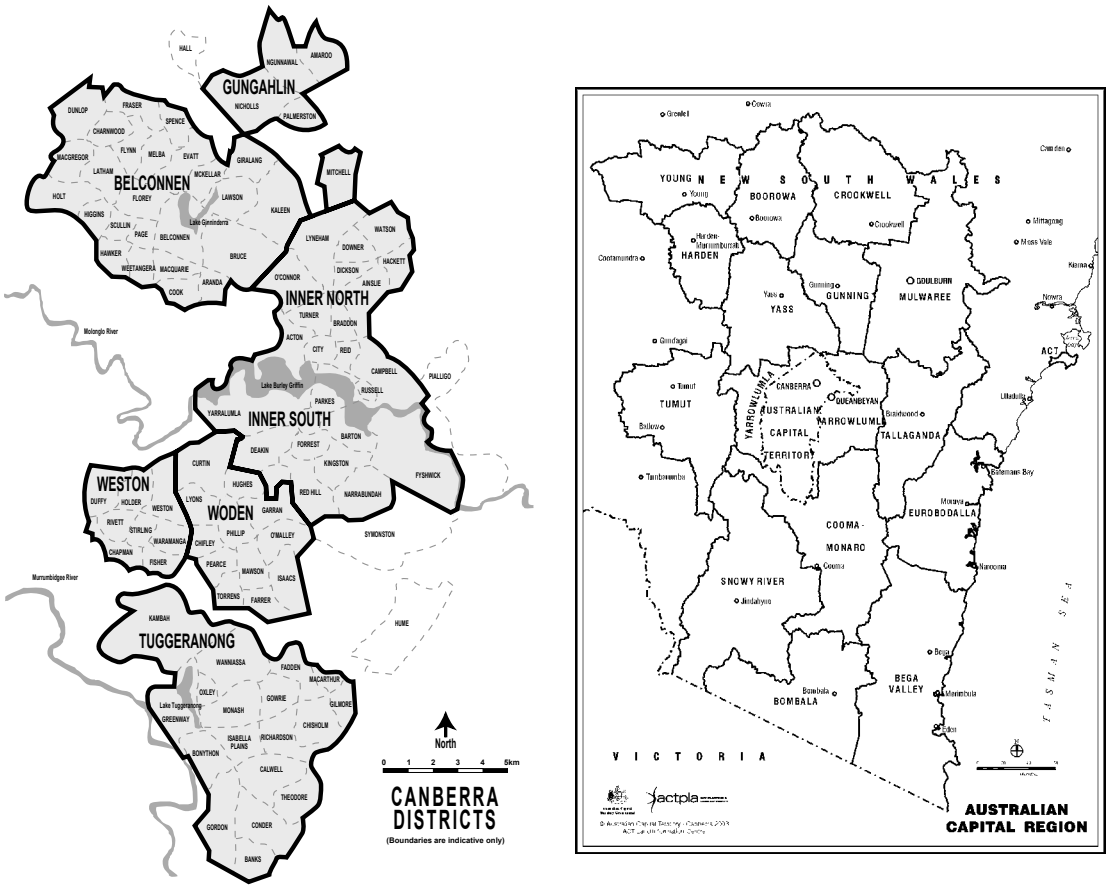
The demographic profile that follows highlights the major population features of relevance to health and community care services in the ACT. In particular, the profile focuses on variables such as age, sex, indigenous status and country of birth, all of which are major determinants of the need for health and community services. The distribution of these variables, and changes in their distribution over time impacts on both the configuration of health and community care services and the way in which people utilise these services.

The information presented in this section has been derived from a number of sources, including the 2001 Census results and a series of Australian Bureau of Statistics and ACT Government demographic and social reports.

2.1 Local boundaries

The Australian Capital Territory (ACT) covers approximately 2,400 sq km in area. Approximately two-thirds of the total area is uninhabited and reserved for nature conservation, with most of the ACT population residing within one of seven districts in the city of Canberra, an area of approximately 806 sq km.[1] Figure 2.1 outlines relevant ACT boundaries, including Canberra and its districts, and the neighbouring South Eastern NSW region and its larger, rural townships. Canberra is the major service centre for this region.

Figure 2.1: Maps of the ACT including Canberra districts and surrounding NSW



Map Sources: ACT Planning and Land Authority, 2003.

2.2 The ACT population in 2001

The estimated resident population (ERP) of the ACT was about 319,300 people at 30 June 2001, an increase of about 4,100 people (1.3%) over a 12-month period. The ACT ERP growth rate in recent years has been lower than the ERP growth rate nationally. For instance, the ACT ERP increased by approximately 3.5 per cent between 1997/98 and 2000/01, compared to 5.9 per cent for Australia over the same period. At 30 June 2001, the ACT comprised approximately 1.6 per cent of the national ERP.[2]

The population that resides in the NSW hinterland surrounding Canberra sometimes access ACT Health services, which has important implications for demand planning and policy in the ACT. However, it is difficult to determine the size of the NSW population serviced by ACT Health, as there is no set NSW geographical catchment area and the interstate access rate to ACT Health services varies between services. The ERP for the South Eastern NSW region (including Tumut) was about 206,000 at 30 June 2001.[3] This includes ERPs of about 43,000 for Queanbeyan and the surrounding Yarrowlumla Pt A area; 66,800 for the Southern Tablelands (excluding Queanbeyan and Yarrowlumla Pt A) statistical subdivision; 64,900 for the Lower South Coast statistical subdivision; 19,700 for the Snowy statistical subdivision; and 11,600 for the Tumut statistical local area (Figure 2.1).

2.3 The future ACT population

Changes to the size and composition of the ACT population over time will have implications for future health service planning and policy direction. The rate of population growth in the ACT has slowed over the past 40 years, from an average of nine per cent in the 1960s to around 0.4 per cent in the 1990s. During the 2000s, the annual rate of growth is expected to increase slightly to around 0.9 per cent per annum, before declining gradually over subsequent decades to zero growth by the 2040s.[4]

Population growth is influenced by the natural increase (births and deaths) in population and net migration. In the ACT, death rates and fertility rates have been declining for the past 20 years and are expected to continue to decline during the 2000s. Net migration is an important driver of population growth in the ACT, but is more difficult to predict than future fertility and death rate patterns. In the past, migration patterns have proved sensitive to changes in the local economy and labour market. Periods of rapid expansion and downsizing of the Federal public service workforce, for example, have been associated with both positive and negative net migration levels in the ACT. Therefore, population projections for the ACT are particularly sensitive to assumptions about migration patterns over time.[4]

Population projections for the period 2001 to 2011 suggest that there will be about 347,200 people residing in the ACT by 2011.[4] This represents an increase in population of about 27,900 persons between 2001 and 2011, or an average of 2,790 extra persons per annum.

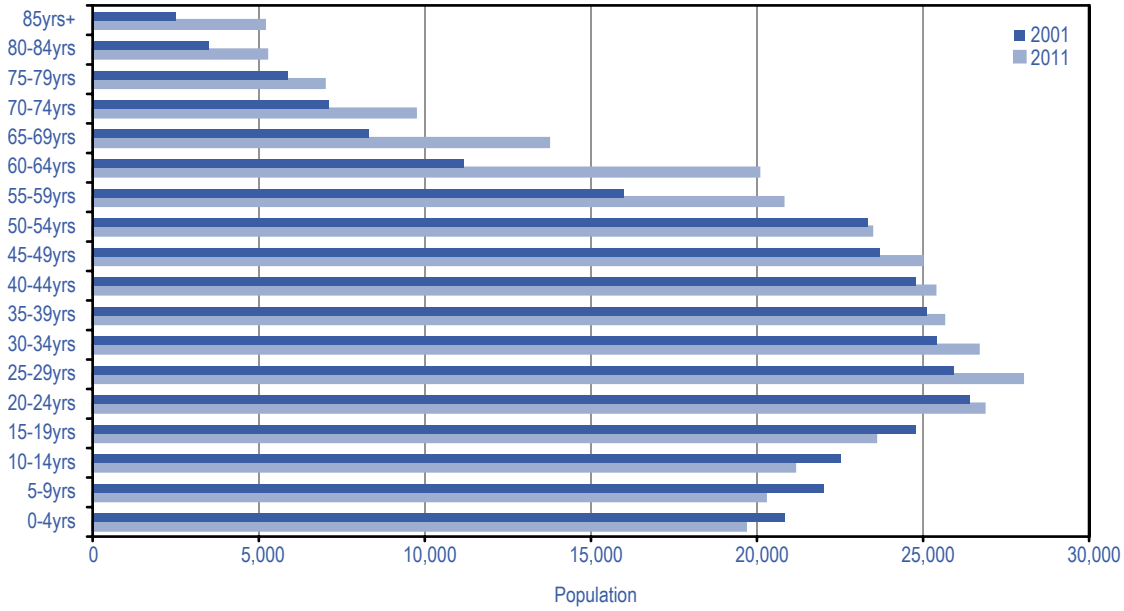
ACT Government population projections suggest that the West Belconnen district is the fastest growing district in the ACT at present. It is expected to increase in population by about 23.7 per cent each year, from 1,900 persons in 2000 to around 6,400 by 2010. The Gungahlin-Hall district is experiencing the highest growth in absolute terms at present, and is expected to increase in population from around 19,750 in 2000 to about 37,000 by 2010, representing an annual increase of about 8.8 per cent over this ten-year period. The annual rate of growth for other districts within Canberra is expected to be less than two percent a year over the 2000 to 2010 period.[5]

The South Eastern NSW region that surrounds the ACT has grown at a faster rate than either the ACT or other parts of NSW in recent years. Australian Bureau of Statistics (ABS) population projections suggest that this trend will continue with Queanbeyan and Yarrowlumla expected to grow by about 1.1 per cent per year over the next 20 years. [4]

2.4 The changing age structure of the ACT population

The ACT population is expected to continue ageing during the 2000s, with an increase in the percentage of the population aged 65 years or more, from 8.6 per cent in 2001 to 11.8 per cent in 2011. Over this period, the greatest increase in the percentage of population will occur in the 85 years or more age range, with a projected increase in population of 106 per cent, from 2,500 persons in 2001 to 5,200 by 2011. In absolute terms, the greatest increase in population numbers is expected to occur in the 60-69 years age range, from about 19,500 persons in 2001 to 33,800 by 2011, an increase of about 73.3 per cent. In contrast, the proportion of the ACT population aged less than 20 years is expected to decrease between 2001 and 2011, from about 28.2 per cent of the population in 2001 to 24.4 per cent by 2011.

Figure 2.2: ACT population estimates by age group, 2001 & 2011



Data Sources: ACT Government, Chief Ministers Department. 2003. *Australian Capital Territory Population Projections 2002-2032 and Beyond*. www.cmd.act.gov.au/demography. Viewed 16/06/03; Australian Bureau of Statistics. 2003. *Population by Age and Sex: Australian States and Territories 2001 Census Edition - Final.* Cat. No. 3201.0. Canberra, Australian Bureau of Statistics.

2.5 Households in the ACT

The number of private dwellings, in Canberra is expected to increase at a greater rate than the increase in population over time. The number of private dwellings in the ACT is expected to increase by 17 per cent between 2001 and 2011. A large increase in dwellings is expected over time because of ongoing decreases in the average household size. Average household size in Canberra is projected to decline from 2.6 persons per household in 2001 to 2.4 by 2011.[4]

There are a range of factors likely to affect an ongoing decrease in household size over time. Strong growth is expected in the older age groups, where household size is small. Fertility rates in the ACT are expected to continue to decline and the number of couple households without children in private dwellings is expected to increase. Single parent households are also projected to continue to increase.

2.6 The Aboriginal and Torres Strait Islander population

There were an estimated 3,900 Aboriginal and Torres Strait Islanders residing in the ACT as at 30 June 2001,[2] representing approximately 1.2 per cent of the ACT population. At the time of Census in 2001, there were about 177 Torres Strait Islanders residing in the ACT, representing less than 0.05 per cent of the total ACT population and about 4.5 per cent of the Aboriginal population usually resident in the ACT. A further 121 residents identified as being of both Aboriginal and Torres Strait Islander ancestry at the time of Census in 2001.

The Aboriginal population has experienced a high rate of population growth in recent years, increasing by approximately 28 per cent over the five years to 30 June 2001. Although a part of this increase can be explained by high levels of population mobility (migration) and the higher fertility rates among Aboriginal peoples, the high population growth rate is also explained by an increasing tendency for people in the ACT to identify themselves as either 'Aboriginal' and/or 'Torres Strait Islander'.

Estimates for the future population indicate that there are likely to be between 4,150 (low series) and 7,770 (high series) Aboriginal people residing within the ACT by 2006, depending upon whether the current trend towards Indigenous self-identification continues to grow.[6]

The demographic structure and related social characteristics of the Aboriginal population vary considerably from those of the non-Aboriginal ACT population. In particular, the Aboriginal population has a younger age structure and lower socio-economic status, as measured by a range of indices. These differences have important implications for health as the association between age and health service utilisation is well documented, as is the association between social factors and health status.[7]

Table 2.1: Selected summary statistics for the ACT Aboriginal and non-Aboriginal population, 2001

	Aboriginal	Non-Aboriginal
Median age	20	33
% Labour Force (15 years or more) Unemployed	13.6	5.1
% Pop (15 years or more) No Qualification [(a)]	69.4	52.3
% Pop (15 years or more) Tertiary Education [(b)]	14.3	26.7
Median weekly individual income	$300 - $399	$500 - $599
Median weekly family income	$1,000 - $1,199	$1,200 - $1,499
Median weekly household income	$800 - $999	$1,000 - $1,199
Mean household size	3.1	2.6

Data source: Australian Bureau of Statistics. 2002. *2001 Census Indigenous Profile 8 Australian Capital Territory*, www.abs.gov.au.

(a) Includes those that did not have a qualification, did not state a qualification or stated a qualification outside of the scope of the standard ABS classification.

(b) Includes those with a bachelor's degree or higher-level post-graduate degree.

There are a number of issues affecting the quality and quantity of data available to profile Aboriginal people's health in the ACT. In particular, there is an under-reporting of Aboriginal peoples in both health data and population counts, which limits the reliability of quantitative population health indices. In addition, the relatively small size of the Aboriginal population in the ACT limits the scope of quantitative analysis. However, the qualitative research that has been undertaken has revealed a number of health inequities, with major gaps between Aboriginal and non-Aboriginal ACT peoples in the following areas:

- injury;
- alcohol;
- diabetes mellitus;
- cardiovascular and circulatory diseases;
- mental and spiritual health;
- trauma and poisoning.

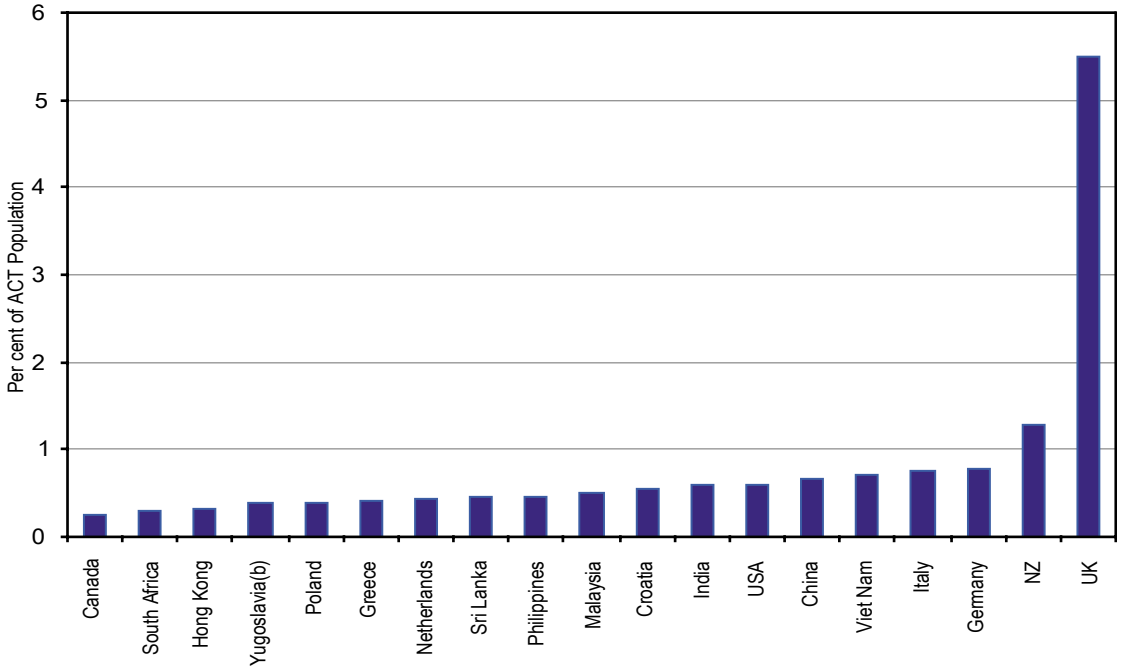
In addition, inequities in Aboriginal health have been identified in women and children's health; violence and risk taking behaviour causing injury; preventable diseases, including sexual health, HIV, pneumonia, influenza and diseases prevented by childhood immunisation. Hepatitis C and illicit drug use are emerging issues for Aboriginal peoples in the ACT.[8]

2.7 The ACT population by country of birth

The 2001 Census information available on 'country of birth' suggests that the ACT is relatively homogenous. Approximately one in four (66,732) people in the ACT on Census night was born overseas (74 per cent were born in Australia) and approximately one in five indicated that they spoke a language other than English at home.[9] Although the actual number of overseas-born persons in the ACT was modest on Census night, they represent a diverse range of ethnic groups, with the most common countries of birth being the United Kingdom, New Zealand and Germany.

The relationship between 'country of birth' and health status is complex. The majority of overseas-born groups have higher levels of health status compared to their Australian-born counterparts, mainly because of the socio-economic and health selection criteria for immigration. However, there are some 'country of birth' groups with a high prevalence of specific diseases, health risk factors and poor health status. These differences in health status likely reflect differences in social, economic, environmental, cultural and genetic factors between 'country of birth' groups.[10]

Figure 2.3: ACT population by country of birth: most common countries excluding Australia, 2001[(a)]



Data Source: Australian Bureau of Statistics. 2002. 2001 *Census Basic Community Profile and Snapshot: 8 Australian Capital Territory.* www.abs.gov.au Viewed 16/06/03.

(a) Includes overseas visitors.

(b) Federal Republic of Yugoslavia.

2.8 Social factors that influence health

Social factors are well recognised as having an important impact on both population and individual health status. Indicators of material disadvantage, for instance, have been linked to poor health status and lower levels of service utilisation and service access in the ACT.[11]

The factors that explain the interrelationships between the social environment and health are not always clear, and social factors are often outside the traditional realm of the health care system. However, they are an important consideration in population health status assessment for health policy and planning purposes as they are of crucial importance to improving population health outcomes.

The health portfolio currently engages in cross-sectoral approaches to better understand and respond to social factors that influence health in the ACT. Improved health outcomes are sought through developing and maintaining cross-sectoral partnerships, particularly with agencies responsible for services such as housing, education, justice, family services, disability, environmental management and planning. These partnerships take the form of taskforces, working committees and planning groups, targeting specific areas of need in the population.

The ACT Council of Social Services (ACTCOSS) Poverty Project is an example of a collaborative project that involved representatives from a wide range of social agencies in the ACT, including Health. The main objective of the project was to collate information on poverty in the ACT and provide recommendations to ACT Government on how best to respond to poverty in the ACT. A report with recommendations to government was produced in December 2000.[12] In addition, Healthpact, has recently funded a project officer to undertake research into the social determinants of health.

Social indicators in the ACT are largely positive, with almost all of the indicators profiled for the ACT yielding favourable results, compared to the results for Australia and other jurisdictions over the 2000/01 to 2001/02 period (a number of social factors are also profiled in Chapter 16: Child Health).

2.8.1 Income levels

Income levels are an important indicator of material status in society, which again, has implications for health planning. Lower income levels have been associated with lower health status and high levels of health need at the population level.[11]

The indicators that are available suggest that income levels are high in the ACT, compared to other jurisdictions. For instance, the average weekly earnings of full-time workers in the ACT was $778, as at June 2001 (19% higher than the comparable figure for Australia).[6] In part, this reflects differences with other jurisdictions in labour force participation rates, professional employment levels in the public sector and the age distribution of the population.[6]

2.8.2 Education levels

Education levels are associated with income levels and are another important indicator of material status in society. Education levels in the ACT were considerably higher than the levels for the Australian population in 2001. At the time of the 2001 Census, approximately 26 per cent of persons in the ACT had a tertiary level education, compared to 13 per cent nationally and 54 per cent of the ACT had no formal qualifications, compared to 65 per cent nationally.[9]

The ACT also has favourable high school retention rates compared to other jurisdictions. For instance, approximately 89.3 per cent of full-time Year 7 students in the ACT in 1997 remained at school to become full-time students in Year 12, in 2001. This compares to 73.4 per cent of students nationally in 2001and 68.2 per cent of students in New South Wales.[13]

2.8.3 Unemployment levels

Unemployment levels in the ACT are low compared to other jurisdictions, and average annual unemployment rates in the ACT have been declining in recent years. At the time of the 2001 Census, five per cent of adults (15 years or more) in the ACT indicated they were unemployed or jobless and actively seeking employment, compared to seven per cent nationally.[6]

Although there is no research-based evidence available, the low level of unemployment in the ACT is thought to be due, in part, to the migration of unemployed persons in the ACT to other jurisdictions for work.

2.8.4 Income support levels

Income support levels are another indicator of material status in society. The Department of Family and Community Services provides income support for people according to a series of set eligibility criteria. Recipients of support payments include the retired, the unemployed, widows, single parents, students, families with children and the infirm.

Income support levels in the ACT were low in 2000, compared to Australia. Approximately 14 per cent of the adult ACT population was receiving income support (excludes those receiving family support) as at June 2000, compared to 23 per cent nationally. Whilst the ACT population comprised approximately two per cent of the national population, ACT recipients of income support accounted for only one per cent of all recipients across Australia.[6]

Table 2.2: Centrelink clients, 4 June 2000

	ACT		Australia	
	No.	% of the pop.	No.	% of the pop.
Age pension	14,747	5	1,727,194	9
Disability support pension	5,948	2	601,561	3
Sickness allowance	157	0.1	14,076	0.1
Austudy	1,004	0.3	43,602	0.2
Youth allowance (students)	5,683	2	318,769	2
Youth allowance (non-students)	931	0.3	88,422	0.5
Family allowance	24,028	8	1,747,963	9
Other pension/allowance	15,928	4.3	1,576,900	8.2
Total	**68,426**	**22**	**6,118,487**	**32**

Data Source: Australian Bureau of Statistics. 2002. *Australian Capital Territory in Focus 2001.* Cat. No. 1307.8. Canberra, Australian Bureau of Statistics.

2.8.5 Transport

The ability to access safe, reliable and affordable transportation, and having access to alternatives such as safe walking and cycle paths, is an important social factor influencing health. Although there is public transportation in Canberra to access health care services, buses do not run 24 hours, buses service specific routes, cost is a barrier to accessing both bus and local taxi services and in emergency situations, waiting times for public transportation may be an issue.

Having direct access to motor vehicle transportation assists individuals in accessing health care when it is required. Approximately 94 per cent of households in the ACT had access to a motor vehicle in 2001.[9]

2.8.6 Housing

Having access to appropriate, safe and affordable shelter, or housing, is also a key social factor influencing health. Home ownership is indicative of material advantage in society, while living in overcrowded housing conditions and substandard housing conditions is indicative of material disadvantage. Poor quality housing, in particular, has been linked to a range of specific health concerns including, respiratory disease, the communication of infectious disease, injury and psychological stress.

Information on the quality, or standard of housing in the ACT, from the 1999 Australian Housing Survey, indicates that ACT housing stock is generally in good condition. Indicators suggest ACT housing stock is younger than Australian housing stock and in 1999, approximately 84 per cent of ACT households reported no major structural problems, although a greater proportion of ACT private dwellings (49%) were in need of external repairs, compared to national stock (45%).[14]

Levels of home ownership in Canberra, where almost all of the ACT population resides, is slightly lower than for other capital cities in Australia. Results from the Australian Housing Survey indicate that approximately 31 per cent of housing stock in the ACT was fully owned in 1999, compared to 37 per cent in capital cities across Australia.6 The 2001 Census results indicate that 28 per cent of ACT dwellings were rented and 8.6 per cent of dwellings in the ACT were State/Territory Housing Authority dwellings.9 Nationally, 26 per cent of Australian dwellings were rented and 4.5 per cent were State/Territory Housing Authority dwellings.[15]

Table 2.3: Social factors influencing health, ACT and Australia

	ACT	Australia
Gross Household Disposable Income per capita [a]	$31,405	$23,698
Average Weekly Earnings [b]	$778	$655
% Pop (15 years or more) Tertiary Education [c]	26	13
% Pop (15 years or more) No Qualification [d]	54	65
% Labour Force (15 years or more) Unemployed	5	7
% Pop (15 years or more) Receiving Income Support [e]	22	32
% Households with Access to a Vehicle	94	90
% Private Dwellings Fully Owned [f]	31	37
% of Housing Stock Aged 20 years or more [g]	50	58
% of Housing Stock Reporting no Structural Problems [h]	84	80
Mean Household Size	2.6	2.6

Data Sources: Census 2001; Australian Bureau of Statistics. 2001. *Australian Capital Territory in Focus 2001.* Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 2002. *Australian Capital Territory in Focus 2002.* Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 2000. *1999 Australian Housing Survey: Australian Capital Territory--Data Report.* Cat. No. 4182.8.40.001. Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 2002. *2001 Census Basic Community Profile and Snapshot: 8 Australian Capital Territory.* www.abs.gov.au.

(a) Gross household disposable income per capita for period 2000 to 2001.

(b) average weekly income for individuals in full-time work, June 2001.

(c) Includes those with a bachelor's degree or higher-level post-graduate degree.

(d) Includes those that did not have a qualification, did not state a qualification or stated a qualification outside of the scope of the standard ABS classification.

(e) Figures here based upon Centrelink client records, as at June 2000 and include Family Support.

(f),(g),(h) Figures are based upon the results of the 1999 Australian Housing Survey.

Emerging Issues

- Demographic changes in the population will have important implications for the future development of health policy and planning in the ACT;
- There is a need for more detailed information on the health status and health needs of Aboriginal people in the ACT. ACT Health is currently working with Aboriginal health services to address this issue.

3 General Health Status

At a Glance

- The all-cause mortality rate for the ACT has declined markedly over the last two decades for both males and females;
- Infant mortality decreased by more than 50 per cent between 1991 and 2001;
- Life expectancy has increased over the last three decades (largely due to advances in medicine, leading to a reduction in infant mortality and deaths of persons less than 75 years of age from cancer and heart disease);
- One in four deaths among ACT residents was theoretically 'avoidable' in 2000;
- Cardiovascular disease and cancer were the leading causes of death in the ACT in 2000.

This section of the report provides a brief snapshot of the health status of ACT residents. Because of the complex nature of measuring health, a range of indicators have been presented to provide insights into the overall health status of the community. The summary outcome measures presented include widely accepted mortality-based population health indicators, information on morbidity derived from ACT hospitalisation data, and self-reported health status derived from survey data. Mortality data is currently only available to 2001.

3.1 Mortality

Table 3.1 presents a series of mortality indices for the ACT resident population between 1991 and 2001. These indices suggest that the health of the ACT population has improved over this period. For instance, although the absolute number of deaths in the ACT has increased in line with the growing population, the standardised death rate and infant mortality rate declined considerably between 1991 and 2001. There has also been an increase in the median age at death.

Table 3.1 also presents figures for presenescent mortality (defined here as death before the age of 75 years), which declined slightly for males and females between 1996 and 2001.

Table 3.1: Selected mortality indicators for the ACT, 1991-2001

Year	1991	1996	1997	1998	1999	2000	2001
Number of deaths							
Persons	1,096	1,300	1,334	1,272	1,331	1,300	1,419
Males	605	698	663	646	682	642	729
Females	491	602	671	626	649	658	690
Standardised death rate per 1,000 population							
Males	8.1	7.8	7.1	6.6	6.5	6.0	6.2
Females	5.0	4.9	5.1	4.6	4.5	4.4	4.1
Persons	6.3	6.1	6.0	5.4	5.4	5.1	5.1
Crude death rate per 1,000 population							
Males	4.2	4.6	4.3	4.2	4.4	4.1	4.6
Females	3.4	3.9	4.3	4.0	4.2	4.2	4.2
Persons	3.8	4.2	4.3	4.1	4.3	4.2	4.4
Median age at death							
Males	67.3	71.4	72.5	72.7	72.3	73.5	72.1
Females	74.7	77.5	78.8	78.8	79.5	79.9	81.3
Infant mortality rate per 1,000 live births							
Males	9.9	5.4	2.3	4.5	6.1	4.8	4.5
Females	5.2	6.0	5.3	7.6	5.2	3.5	1.5
Persons	7.6	5.7	3.8	6.0	5.6	4.2	3.0
Presenescent deaths (< 75 years)							
Males	n.a	421	393	363	397	354	404
Females	n.a	259	270	258	258	240	237
Persons	n.a	680	663	621	655	594	641
Presenescent mortality rate per 1,000 population (< 75 years)							
Males	n.a	2.8	2.6	2.4	2.6	2.3	2.6
Females	n.a	1.8	1.8	1.7	1.7	1.6	1.5
Persons	n.a	2.3	2.2	2.1	2.2	2.0	2.1

Data Source: Australian Bureau of Statistics. 2001. *Demography ACT 2000*. Cat. No. 3311.8. Canberra, Australian Bureau of Statistics ; Australian Bureau of Statistics. 2002. *Demography ACT 2001*. Cat. No. 3311.8. Canberra, Australian Bureau of Statistics.

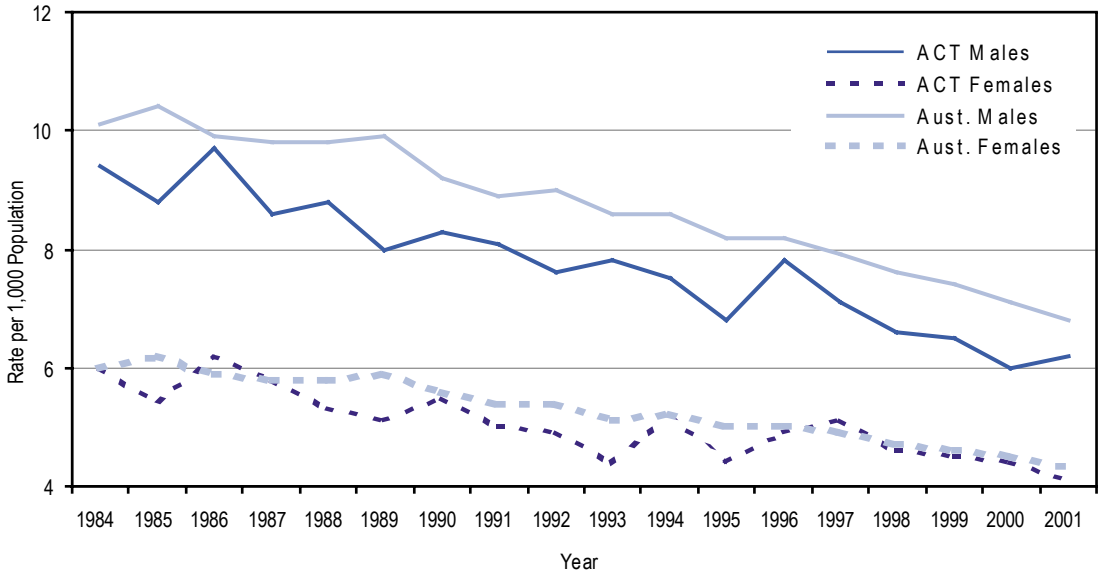
na not available

The mortality-based population health indices presented in Table 3.1 are explored further in the graphs and tables that follow. The fluctuations in the annual rates for the ACT reflect the impact of random variation from year to year.

3.1.1 All-cause mortality

Mortality from all causes has declined over time in the ACT and Australia (Figure 3.1), with a consistently higher mortality rate observed among males compared to females.

Figure 3.1: Standardised death (all-cause mortality) rate, by sex, ACT and Australia, 1984-2001



Data Source: Australian Bureau of Statistics. 2002. *Demography ACT 2001.* Cat. No. 3311.8. Canberra, Australian Bureau of Statistics.

The decline in mortality rates has occurred for both the ACT and Australia, with a marked reduction in male mortality rates in the ACT since the mid-1980s. To an extent these reductions reflect advances in healthcare technologies, therapies and disease-prevention measures over the last two decades. In particular, there have been significant advances in treatment for conditions where male mortality rates have traditionally far exceeded female rates, such as cardiovascular disease and cancer (both leading causes of mortality).[16,17]

3.1.2 Leading causes of mortality

The leading causes of mortality for ACT residents in 2000 were cardiovascular disease and cancer. Together, they accounted for approximately 70 per cent of all deaths among ACT residents. They also account for the majority of deaths in Australia each year.

Table 3.2: Leading causes of mortality (all ages), ACT and Australia, 2000 (% of all deaths)

Cause of death and ICD-10-AM code	ACT % of all deaths	Australia % of all deaths
Cardiovascular disease (I00-I99)	39.2	38.7
Cancer (C00-C97)	30.1	27.8
External causes of mortality (incl. accidents & suicide) (V01-Y98)	7.3	6.3
Respiratory disease (J00-J99)	6.8	8.5
Other causes	16.6	18.7

Data Source: Australian Bureau of Statistics. 2001. *Causes of Death Australia, 2000*. Cat. No. 3303.0. Canberra, Australian Bureau of Statistics

Table 3.3 Leading causes of mortality by ICD-10-AM categories, ACT, 2000

Cause of death and ICD-10-AM code	Number of deaths	% Of all deaths
Certain infectious and parasitic diseases (A00-B99)	13	1.0
Neoplasms (C00-D48)		
Melanoma (C43)	10	0.8
Breast cancer (C50)	44	3.4
Colorectal cancer (C18-C21)	49	3.8
Stomach cancer (C16)	12	0.9
Prostate cancer (C61)	24	1.9
Other neoplasms	200	15.4
Diseases of blood/blood-forming organs etc (D50-D89)	na	na
Endocrine, nutritional and metabolic diseases (E00-E90)		
Diabetes Mellitus (E10-E14)	21	1.6
Other endocrine, nutritional and metabolic diseases	7	0.5
Mental, behavioural disorders (F00-F99)	29	2.2
Diseases of the nervous system (G00-G99)	36	2.8
Diseases of the eye and adnexa (H00-H59)	0	0.0
Diseases of the ear and mastoid process (H60-H95)	0	0.0
Diseases of the circulatory system (I00-I99)		
Ischaemic heart disease (excl myocardial infarction) (I20, I22-I25)	116	9.0
Acute myocardial infarction (I21)	140	10.8
Cerebrovascular diseases (I60-I69)	127	9.8
Other diseases of the circulatory system	126	9.7
Diseases of the respiratory system (J00-J99)		
Influenza and pneumonia (J10-J18)	22	1.7
Chronic lower respiratory diseases (incl. Asthma, COPD, emphysema etc) (J40-J47)	45	3.5
Other diseases of the respiratory system	22	1.7
Diseases of the digestive system (K00-K93)		
Diseases of the liver (K70-K77)	12	0.9
Other diseases of the digestive system	18	1.4
Diseases of the skin and subcutaneous tissue (L00-L99)	na	na
Diseases of the musculoskeletal system and connective tissue (M00-M99)	11	0.8

Diseases of the genitourinary system (N00-N99)	18	1.4
Pregnancy, childbirth and the puerperium (O00-O99)	na	na
Certain conditions originating in the perinatal period (P00-P96)	11	0.8
Congenital malformations/deformations etc (Q00-Q99)	10	0.8
Symptoms/signs/abnormal clinical and laboratory findings (R00-R99)	14	1.1
Injury/poisoning/other consequences of external causes (V01-Y98)		
Transport accidents (V01-V99)	23	1.8
Falls (W00-W19)	7	0.5
Intentional self-harm (X60-X84)	29	2.2
Accidental poisoning (X40-X49)	12	0.9
Other injury/poisoning/other consequences of external causes	24	1.9

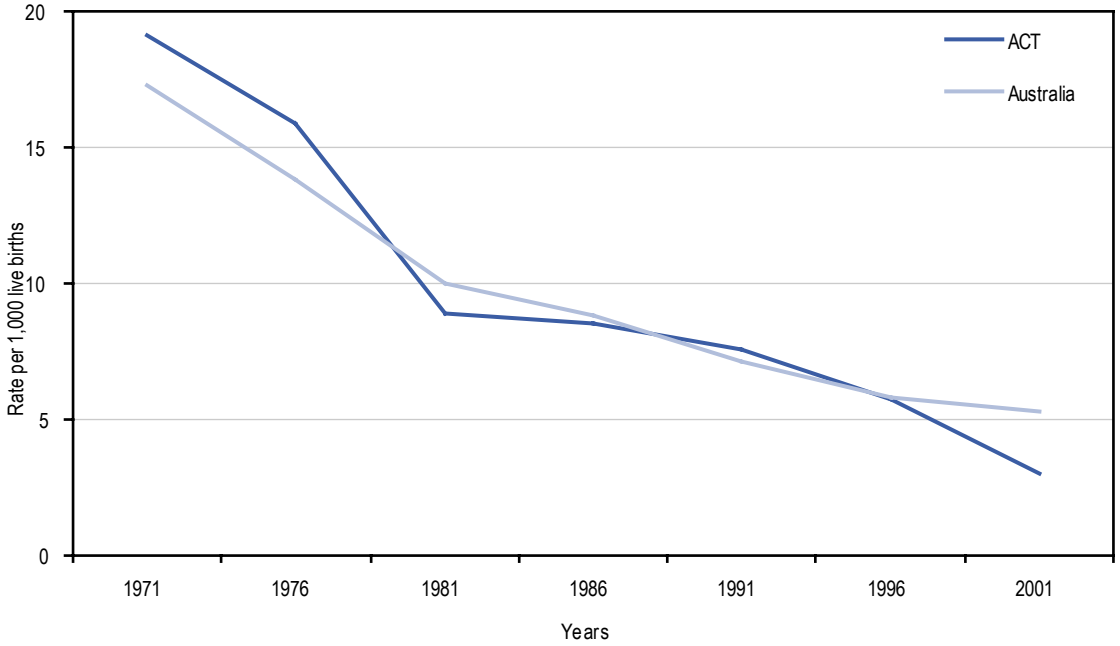
Data Source: Australian Bureau of Statistics deaths data, 2000. Confidential unit file.
na not available.

3.1.3 Infant mortality

Mortality rates in infancy are commonly used as indicators of health in a population. Their popularity as a summary measure of health is based upon the assumption that they are particularly sensitive to differences in social conditions and health care interventions.

The infant mortality rate is a measure that is based upon the number of deaths among children in the first year of life, commonly expressed as a rate per 1,000 live births. Infant mortality rates have decreased markedly over the last 30 years, with significant advances in neonatal care leading to higher survival rates among premature, low birth weight and seriously ill infants, as well as a greater understanding of disease aetiology and a greater emphasis on health promotion, education and disease prevention activities.[18,19]

Figure 3.2: Infant mortality rate for the ACT and Australia, 1971-2001



Data Source: Australian Bureau of Statistics. 2002. *Demography ACT 2001*. Cat. No. 3311.8. Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 2002. *Deaths Australia, 2001*. Cat. No. 3302.0. Canberra, Australian Bureau of Statistics.

Although the actual number of ACT infant deaths each year is relatively low (12 deaths in 2001) and the mortality rate can vary considerably on an annual basis, the rates have been decreasing steadily over time, for both the ACT and Australia. In the 1970s, the ACT infant mortality rates were higher than Australian rates, but by 2001 they were below the national rate. Indeed, the number of infant deaths in the ACT has reduced by 67 per cent since 1991, and in 2001, the ACT had the lowest infant mortality rate of all jurisdictions in Australia.[20] Perinatal deaths in the ACT are discussed in Chapter 15 of this report.

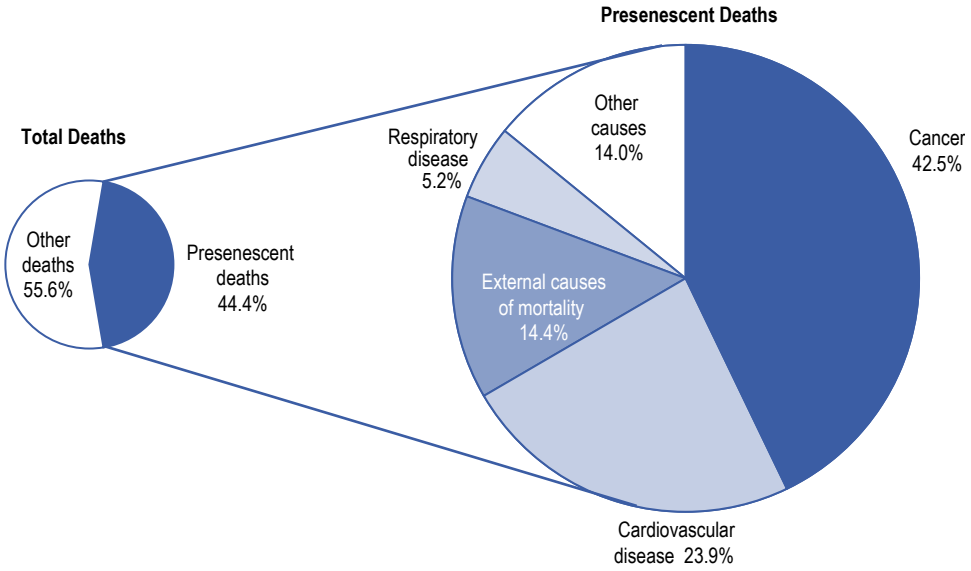
3.2 Premature death

This section reviews ACT resident deaths in 2000, where the age at death was less than 75 years. It includes a brief review of presenescent death (death before the age of 75 years) among ACT residents and the years of life lost in the ACT as a result of these deaths. This section also explores potentially avoidable deaths among ACT residents in 2000.

3.2.1 Presenescent mortality

Presenescent deaths are defined as deaths occurring among ACT residents aged less than 75 years. More than 40 per cent of all ACT deaths in 2000 were presenescent deaths. Cancer was the leading cause of presenescent death, followed by cardiovascular disease, external causes and respiratory disease (excluding lung cancer). Although the leading causes of presenescent death were very similar to the leading causes of mortality (all ages) in Table 3.2, there were a greater proportion of presenescent deaths due to external causes and cancer in 2000.

Figure 3.3: Leading causes of presenescent death (less than 75 years of age) for ACT residents, 2000



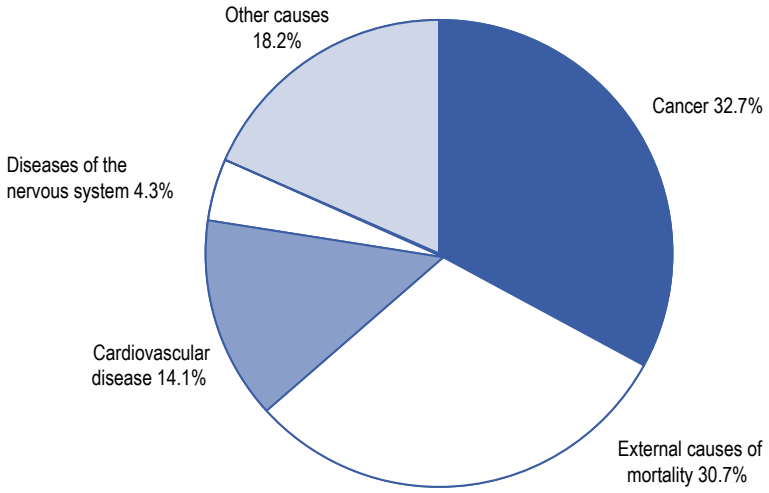
Data Source: Australian Bureau of Statistics deaths dataset, confidential unit record file, 2000.

3.2.2 Years of life lost

The potential years of life lost (YLL) provide an indication of the impact of presenescent mortality in a population. The YLL estimates presented in this report are based on the sum of all of the years of life that could potentially have been lived had an individual not died before a specified age (75 years is the age specified in this report). The total number of years of life lost is calculated by assuming that an individual that died at 60 years of age would otherwise have lived to the age of 75 years. Therefore, in this instance, the YLL_{75} would be 15 years (75 – 60 = 15).

Figure 3.4 presents the leading causes of potential years of life lost for ACT residents aged less than 75 years (YLL_{75}), in 2000. Although the leading causes of YLL_{75} were cancer and cardiovascular disease, they contributed less to the total YLL_{75} than external causes. This reflects the high rate of death for young ACT adults aged 15-44 years from transport accidents and suicide.[21]

Figure 3.4: Leading causes of years of life lost (YLL_{75}) for the ACT, 2000

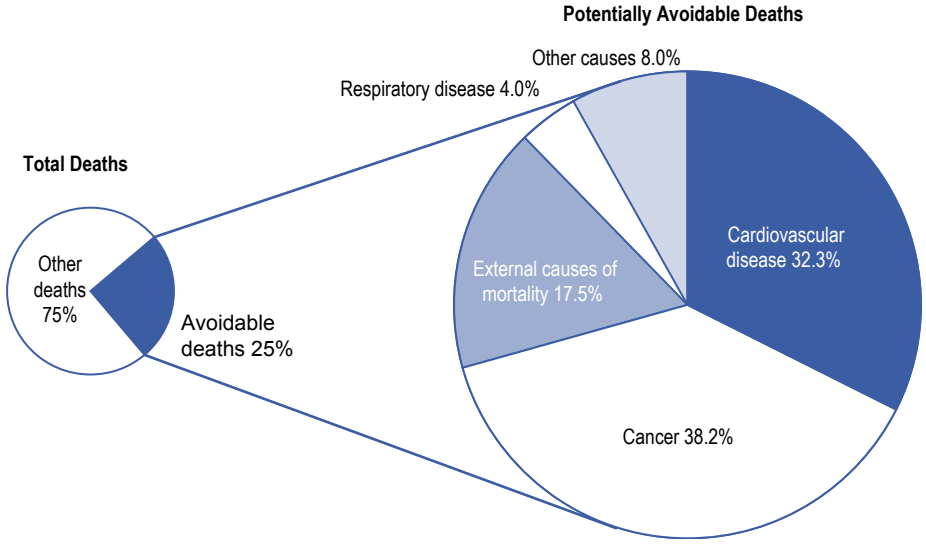


Data Source: Australian Bureau of Statistics deaths dataset, confidential unit record file, 2000.

3.2.3 Potentially avoidable mortality

The level of potentially avoidable mortality indicates the theoretical scope for further health gain through health promotion, disease prevention and treatment in the ACT. A potentially avoidable death is usually defined as a death that could have been avoided given current understanding of causation and currently available disease prevention and healthcare technologies. This includes death from conditions preventable through individual lifestyle modification or population level intervention, and intervention at the primary or secondary health care level.[22,10] (See Appendix 2 for the ICD-10-AM classification codes included in this analysis).

Figure 3.5: Leading causes[(a)] of potentially avoidable mortality for ACT residents, 2000



Data Source: Australian Bureau of Statistics deaths data, confidential unit record file, 2000.
(a) See Appendix 3 for leading cause data definitions.

The method used to calculate potential avoidable mortality produces an estimate at the upper end of possibility. Although it is not possible to prevent all avoidable deaths, such as breast cancer or suicide deaths for example, this indicator draws attention to the causes of death with some potential for prevention. Approximately one in four deaths among ACT residents was theoretically 'avoidable' in 2000. The leading causes of avoidable mortality were cancer, cardiovascular disease, external causes of mortality and respiratory disease (excluding lung cancer).

The leading causes of 'avoidable' cancer deaths in 2000 were lung cancer (15.1%) and breast cancer (8.6%). Ischaemic heart disease and stroke were the leading avoidable causes of cardiovascular death, accounting for 26.2 per cent and 4.9 per cent of all avoidable deaths in 2000, respectively.

3.3 Life expectancy

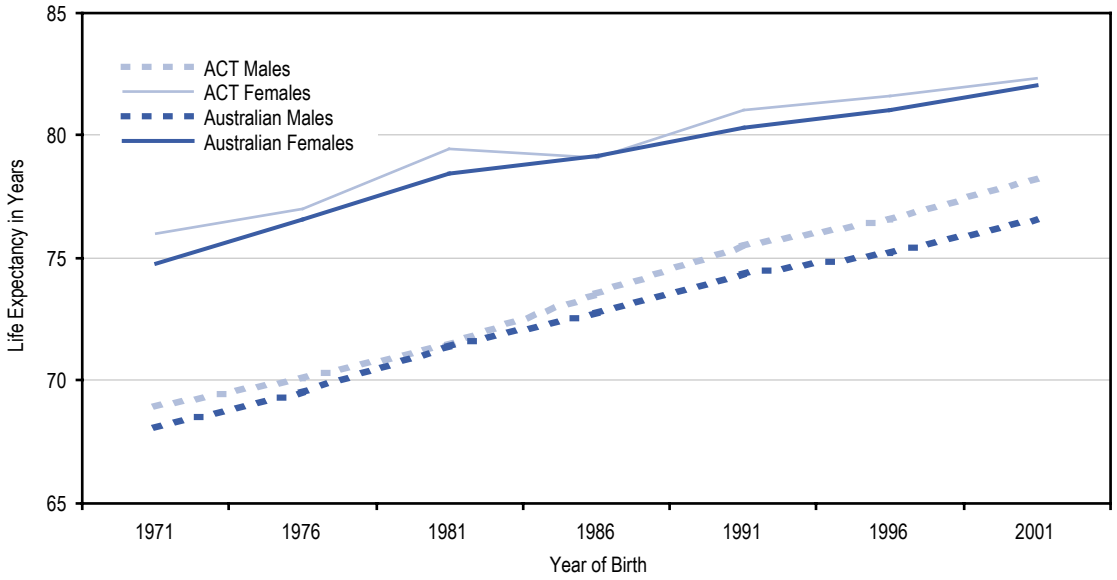
Life expectancy is a key summary measure of population health. Although individual life expectancy is an unknown quantity, it is possible to estimate an average for an age cohort within a population. The estimate is defined as the average number of years an individual of a given age could be expected to live, if current mortality rates were to continue.

3.3.1 Life expectancy at birth

Life expectancy at birth has been steadily increasing for Australians since the early 1900s and is now among the highest in the world. Life expectancy estimates for the ACT and Australia for the period 1971 to 2001 are presented in Figure 3.6. The estimates for the ACT were consistently higher than those for Australia and the estimates for females were higher than those for males, however, ACT males have experienced the greatest gains in life expectancy over this 30-year period.

Decreases in infant mortality and all-cause mortality at younger ages explain a large portion of these increases in life expectancy between 1971 and 2001. This is largely the result of advances in healthcare technologies, therapies and disease-prevention measures. In addition, advances in the treatment of conditions such as cancer and cardiovascular disease, where male mortality rates have traditionally exceeded female rates, partially explain the greater increase in life expectancy for males. A reduction in road transport deaths (where young males are over-represented) over this period has also contributed to the increase in life expectancy for males.

Figure 3.6: Life expectancy at birth, by sex, for the ACT and Australia, 1971-2001

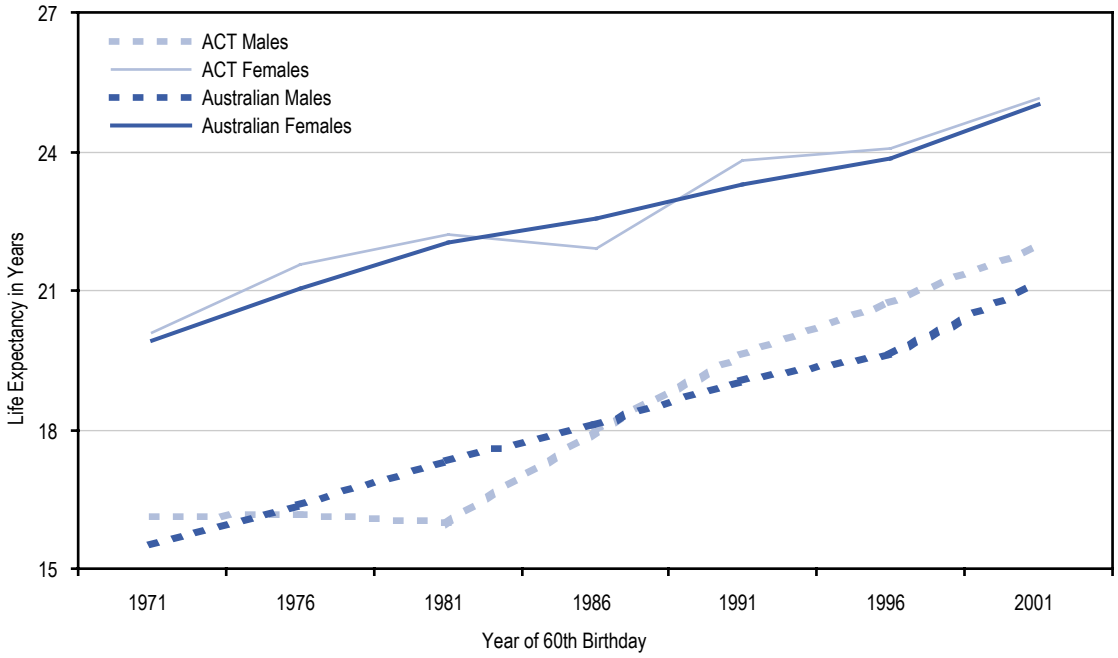


Data Source: Australian Bureau of Statistics. 2002. *Demography ACT 2001*. Cat. No. 3311.8. Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 2002. *Deaths Australia, 2001*. Cat. No. 3302.0. Canberra, Australian Bureau of Statistics.

3.3.2 Life expectancy at 60 years

Figure 3.7 presents life expectancy estimates for males and females at age 60 years, between 1971 and 2001. Although, females can expect to live more years on average than males at age 60, males have experienced the greatest gains in life expectancy over this period. In particular, ACT males aged 60 years have experienced an average increase in life expectancy over this period of almost six years. These gains are largely explained by reductions in mortality among older people, especially males, from heart disease and stroke.[23]

Figure 3.7: Life expectancy at 60 years, by sex, for the ACT and Australia, 1971-2001



Data Source: Australian Bureau of Statistics. 2002. *Demography ACT 2001*. Cat. No. 3311.8. Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 2002. *Deaths Australia, 2001*. Cat. No. 3302.0. Canberra, Australian Bureau of Statistics.

3.4 Morbidity

Table 3.4 presents the proportion of the ACT and Australian population that reported having a long-term condition (six months or more) in the 2001 National Health Survey. The results of the survey show that ACT respondents reported similar levels of long term conditions as respondents nationally, with the exception of respiratory disease, where there was a higher prevalence of hay fever and allergic rhinitis in the ACT. This result was statistically significant at the 5% level, indicating that it was unlikely to be the result of sampling variability.

Table 3.4: Estimates of the proportion (%) of the population with a long-term condition [(a), (b),] by condition type, ACT and Australia, 2001

	ACT	Australia
Certain infectious & parasitic diseases	np	0.9
Neoplasms	*1.8	1.6
Diseases of the blood & blood forming organs	*2.4	1.5
Endocrine, nutritional & metabolic diseases		
Diabetes mellitus	3.1	2.9
High sugar levels in blood/urine	np	0.3
High cholesterol	5.9	6.0
Other endocrine, nutritional & metabolic disorders		0.5
Mental & behavioural problems	8.7	9.6
Diseases of nervous system		
Epilepsy	np	0.6
Migraine	7.7	6.2
Other diseases of the nervous system	* 0.8	0.9
Diseases of eye & adnexa		
Short sightedness	23.5	20.8
Long sightedness	21.7	22.2
Other diseases of the eye & adnexa	24.2	21.1
Diseases of ear & mastoid		
Deafness (complete/partial)	10.6	10.6
Other diseases of the ear & mastoid	3.5	3.8
Diseases of circulatory system		
Hypertensive disease	10.5	10.1
Ischaemic & other heart disease	*2.2	1.9
Haemorrhoids	1.7	1.1
Varicose veins	2.8	2.3
Other diseases of the circulatory system	7.6	8.3
Diseases of respiratory system		
Bronchitis/emphysema	4.4	3.5
Asthma	12.3	11.6
Hayfever & allergic rhinitis	25.3	15.5

Chronic sinusitis	11.3	10.7
Other diseases of the respiratory system	np	0.8
Diseases of the digestive system	6.7	6.8
Diseases of the skin & subcutaneous tissue	3.7	3.4
Diseases of musculoskeletal system & connective tissue		
Arthritis	11.8	13.6
Rheumatism	*1.4	1.3
Back pain/problems neck/disc disorders	22.8	20.8
Osteoporosis	*1.7	1.6
Other diseases of the musculoskeletal system	5.3	5.0
Diseases of genito-urinary system	3.3	3.1
Congenital malformations, deformations & chromosomal abnormalities	np	0.9
Symptoms, signs & conditions		
Allergy (unspecified)	7.7	5.5
Other symptoms, signs & conditions	6.8	6.8
% population with a long-term condition	**82.1**	**77.9**

Data Source: Australian Bureau of Statistics. 2002. *2001 National Health Survey: Summary of Results.* Cat. No. 4364.0. Canberra, Australian Bureau of Statistics.

* estimate has a relative standard error of between 25% and 50% and should be used with caution.

np = not presented as the estimate has a relative standard error greater than 50%.

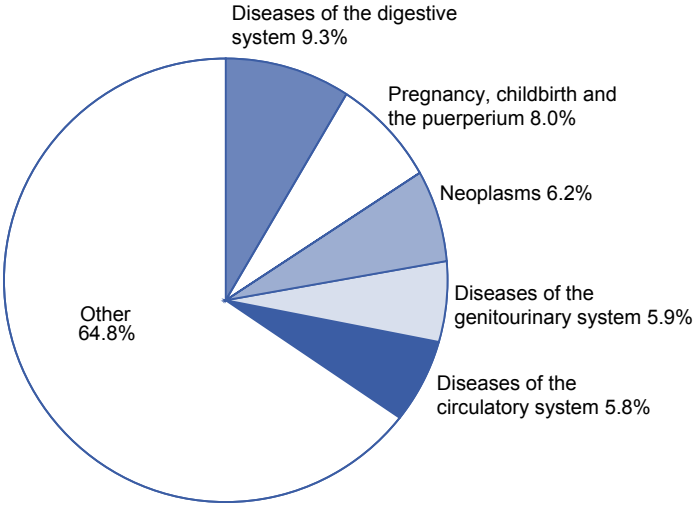
(a) Conditions that have lasted or are expected to last for 6 months or more.

(b) Percentages are age and sex standardised.

3.4.1 Leading causes of hospitalisation

The leading causes of hospitalisation in the ACT, for ACT residents in 2001/02, were 'diseases of the digestive system' (including appendicitis, hernias, diseases of the gall bladder, gastritis etc); 'pregnancy, childbirth and the puerperium'; neoplasms; cardiovascular disease and diseases of the genitourinary system.

Figure 3.8: Leading causes of hospitalisation (%) for ACT residents from ACT hospitals, 2001/02

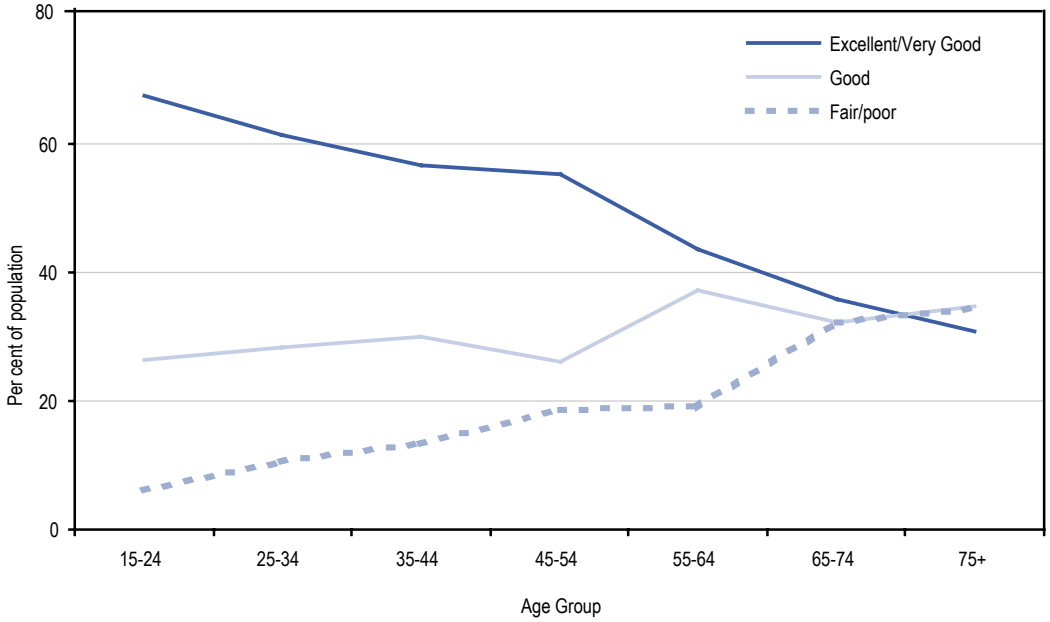


Data Source: ACT Admitted Patient Care Collection, 2001/02. Confidential unit record file.

3.5 Self-reported health status

People's perception of their own health status has been shown to be a powerful, independent predictor of their future health care use and survival,[24,25] complementing more objective measures of health.

Figure 3.9: Adult (15 years or more) self-reported health status, by age group, for the ACT, 2001



Data Source: Australian Bureau of Statistics. 2002. *National Health Survey 2001*. Cat. No. 4364.0. Canberra, Australian Bureau of Statistics.

There is a strong relationship between age and self-reported health status in the ACT (Figure 3.9). The proportion of the adult (15 years or more) ACT population reporting 'excellent' or 'very good' health status declined with age and the proportion of the population reporting 'fair or 'poor' health increased with age in 2001.

These patterns are similar to those observed nationally in 2001, although a slightly higher proportion of the ACT reported having 'excellent' or 'very good' health status in each age group. Over all, 51.7 per cent of the national population (15 years or more) reported having 'excellent' or 'very good' health status, compared to 54.1 per cent in the ACT.[26]

At a Glance

- The leading causes of avoidable mortality were cancer, cardiovascular disease, external causes of mortality (accidents) and respiratory disease in 2000.

4 Lifestyle and Health

At a Glance

- Survey results suggest that the level of excess weight in the adult ACT population has increased in recent years. The ACT has a similar proportion of overweight and obese people in the adult population to that observed nationally;
- Survey results suggest that physical activity levels in the ACT are slightly higher than activity levels nationally. Survey results also suggest that there has been a decline in recent years in levels of high intensity physical activity, required to confer a health benefit;
- There were significant sub-optimal dietary behaviours among adults (12 years or more) in the ACT in 2001, with a fifth (20.9%) of ACT adults not consuming the recommended minimum daily quantities of vegetables, almost a half (46.8%) not consuming the recommended minimum daily quantities of fruit and almost a half (46.5%) identifying 'whole milk' as the 'usual type' of milk consumed;
- Youth smoking is a concern in the ACT. Survey results suggest a higher percentage of teenagers in the ACT are smokers, compared to teenagers nationally;
- Survey results suggest teenagers in the ACT engaging in risky levels of drinking were less likely to perceive excessive consumption of alcohol as a problem and were more likely to approve excessive drinking of alcohol by an adult, than their national counterparts in 2001;
- The prevalence of drug use in the ACT is similar to that in the Australian population. Approximately 3.1 per cent of the adult (14 years or more) ACT population had used any illicit drug other than cannabis in the 12 months preceding the 2001 National Drug Strategy Household Survey (NDSHS), compared to 3.5 per cent nationally, and 14 per cent of the ACT had used cannabis, compared with 13 per cent nationally;
- Condoms and oral contraceptives were the most popular forms of contraception for women (18-49 years) in the ACT in 2001.

Lifestyle factors influence the health status and health-risk profile of individuals. Tobacco smoking, for example, increases the risk of a range of morbidities including cardiovascular disease and certain types of cancer. Such factors contribute significantly to the burden of disease in Australia,[27] yet they are largely modifiable, providing considerable scope for health gain.

Measuring and reporting on lifestyle factors in a population is important for planning and evaluating public health initiatives.

This section of the report presents a series of indicators profiling the prevalence of a variety of lifestyle factors, well documented as having an impact on health. The data presented in this chapter have largely been derived from population health surveys. Relevant data sources are noted below tables and charts. Questions about lifestyle and health-risk behaviours are commonly included in population health surveys. For the purposes of this report, the most reliable information available for the ACT has been presented. Comparable results for Australia have been presented where information is available, and wherever possible, the data presented are specific to the period covered by the report (1 July 2000 to 30 June 2002).

4.1 Physical activity

Estimates suggest that physical inactivity accounts for approximately 6.7 per cent of the burden of disease and injury in Australia.[27] Participation in physical activity can have significant benefits for the health and wellbeing of individuals in the community. In particular, physical activity can reduce the risk of cardiovascular disease, Type 2 diabetes mellitus, breast and colon cancers, injury, osteoporosis and obesity. It has also been shown to have a beneficial effect on mental health, reducing the symptoms of depression, anxiety and stress.[28] However, it is only relatively recently that physical activity has been recognised as an important public health issue.[29]

In order to maintain health, the *National Physical Activity Guidelines for Australians*[30] recommend at least 30 minutes of moderate intensity activity on most, preferably all, days. Moderate intensity activity includes brisk walking, swimming, cycling and dancing.

4.1.1 Statistics and trends in physical activity

The most recent, comprehensive survey data available suggests that although a growing number of Australians recognise the health benefits of physical activity, the percentage of those participating in physical activity for a sufficient time and frequency to confer a health benefit has declined in recent years.[28,31] Survey results indicate ACT physical activity levels are slightly higher than activity levels nationally,[26,32] although there have been decreases in high-level physical activity in recent years. The results of the 1995[33] and 2001[34] National Health Surveys suggest there was an increase in moderate levels of physical activity between 1995 (20.5%) and 2001 (30.2%), but the prevalence of high-level physical activity declined in the ACT between 1995 (18.6%) and 2001 (8.1%).

Table 4.1: Estimates of the proportion of the adult (18-75 years) population engaging in leisure-time physical activity, by activity level, age group, sex & education level, for the ACT and Australia, 2000[a]

	ACT			Australia		
Activity Level	**Sedentary % Pop**	**'Insufficient' % Pop**	**'Sufficient' % Pop**	**Sedentary % Pop**	**'Insufficient' % Pop**	**'Sufficient' % Pop**
Sex						
Males	14.3	34.6	51.2	17.5	35.7	46.8
Females	11.8	35.3	52.9	13.2	41.3	45.5
Total	13.0	34.9	52.1	15.3	38.5	46.1
Age group						
18–29 years	8.7	27.8	63.6	10.2	32.0	57.8
30–44 years	13.7	39.3	47.1	15.6	42.4	42.0
45–59 years	13.9	39.7	46.4	18.2	40.5	41.3
60–75 years	21.0	29.9	49.1	18.4	38.0	43.6
Education						
< 12 years	17.8	31.4	50.8	20.2	40.9	38.9
HSC [b] or equivalent	16.7	36.8	46.5	13.9	37.6	48.5
Tertiary	6.9	35.2	57.9	10.8	36.8	52.5

Data Source: Population Health Research Centre, ACT Health. 2002. *Physical Activity Patterns of Adults in the ACT, 2000*. Health Series No. 29. Canberra, ACT Health.

(a) 'Sufficient' activity and sessions is defined as a minimum of 150 minutes (using the sum of walking, moderate activity and vigorous activity (weighted by two)) and at least five sessions of activity per week.

(b) HSC = Higher School Certificate

The 2000 National Physical Activity Survey (NPAS) collected information about adult (18-75 years) leisure time physical activity levels across Australia. The estimates derived from the survey suggest that more than half (52.1%, 95%CI 47.1 – 57.1) of the adult ACT population participated in a level of physical activity that was 'sufficient' in terms of the time and sessions required to confer a health benefit. 'Sufficient' activity to confer a health benefit was defined in the survey as 150 minutes of moderate-intensity activity accrued over at least five sessions per week. The comparable estimate of the population participating for 'sufficient' time and sessions at the national level (46.1%) was slightly lower than the estimate for the ACT.

There was only a slight difference in the prevalence of 'sufficient' time and sessions engaged in physical activity between males and females. The prevalence of 'sufficient' activity was high among young people (18-29 years), compared to people from older age groups. Adults with tertiary qualifications had the highest prevalence of 'sufficient' time and sessions engaged in physical activity.

The results of the NPAS suggest approximately 13.0 per cent (95%CI 9.7 – 16.3) of the ACT adult (18-75 years) population were sedentary in 2000. A slightly higher proportion of the national adult population were estimated to be sedentary (15.3%, 95%CI 13.9 – 16.7).

The survey also collected information about future adult (18-75 years) intentions to become more physically active. The intention to become more active is an intermediate outcome; a precursor to a change in individual behaviour and an actual increase in physical activity levels.

Table 4.2: Estimates of the proportion of the adult (18-75 years) population intending to become more physically active, by age group, sex & education level, ACT and Australia, 2000

	ACT			Australia		
Intention to become more physically active	**Do not Intend % Pop**	**Intend next month % Pop**	**Intend next 6 months % Pop**	**Do not intend % Pop**	**Intend next month % Pop**	**Intend next 6 months % Pop**
Sex						
Males	34.2	43.9	21.9	39.8	37.5	22.8
Females	30.6	44.5	24.9	34.8	36.4	28.8
Total	32.4	44.2	23.4	37.3	36.9	25.8
Age group						
18–29	20.1	50.7	29.3	28.1	43.0	28.9
30–44	34.2	43.7	22.2	31.4	37.3	28.6
45–59	34.9	45.3	19.8	36.0	38.2	25.8
60–75	55.5	25.3	19.1	59.8	24.9	15.4
Education						
< 12 years	41.8	35.9	22.3	43.5	34.0	22.4
HSC[(a)] or equivalent	28.4	48.9	22.7	32.9	38.1	29.0
Tertiary	30.6	44.8	24.6	34.9	39.4	25.7

Data Source: Population Health Research Centre, ACT Health. 2002. *Physical Activity Patterns of Adults in the ACT, 2000*. Health Series No. 29. Canberra, ACT Health.

(a) HSC = Higher School Certificate.

The results of the survey suggest that more ACT adults (18-75 years) intended to become more physically active in the month following the survey in 2000 (44.2%, 95%CI 39.1 – 49.2) compared to the national population (36.9%, 95%CI 35.0 – 38.8). The estimate derived for the ACT was statistically significant at the 5% level of significance, indicating that it was unlikely to be the result of sampling variability.

Almost one-quarter (23.4%, 95%CI 19.0 – 27.7) of the adult (18-75 years) ACT population indicated an intention to become more physically active over the six months following the survey, compared to 25.8 per cent (95%CI 24.0 – 27.5) nationally. In addition, almost one-third (32.4%, 95%CI 27.8 – 36.9) of the adult ACT population did not intend to become more physically active in 2000.This estimate was slightly lower than the estimate for Australia (37.3%, 95%CI 35.3 – 39.1).

4.1.2 Physical activity services and initiatives

In 1999, the Strategic Inter-Government forum on Physical Activity and Health (SIGPAH) was established under the auspices of the National Public Health Partnership, as the collaborative body to coordinate a national approach in supporting health-promoting physical activity in Australia. SIGPAH provides national leadership for government action in physical activity and health issues across Australia. It comprises representation from all State and Territory health departments, the Commonwealth Department of Health and Ageing, the Australian Sports Commission and the Australian Institute of Health and Welfare.

At a local level, ACT Health representatives chair meetings and provide secretariat support to the ACT Supportive Environment for Physical Activity Committee. The Committee is a cross-sectoral group of government representatives from various departments and local non-government organisations (NGOs) working collaboratively to support physical activity in the ACT.

Healthpact, the operating arm of the ACT Health Promotion Board, promotes physical activity programs for high-risk groups and sponsors community and sporting organisations promoting activity in the ACT. In 2001/02, Healthpact invested in a range of physical activity projects supporting people with disabilities, women, children and young people, and projects that targeted people in the workplace. It also provided resources to projects aimed at creating supportive environments for physical activity.

Physical activity is included in the *ACT Health Action Plan* [35] as a strategic area of focus. The goals, specific to physical activity in the Plan, are as follows:

- in consultation with other agencies, ACT Health will work to better understand and reverse the decline in physical activity;
- ACT Health will actively promote physical activity across the community, with an emphasis on children and older people; and
- the approach to increasing physical activity will also take into account the need to minimise sporting and recreational injuries.

4.2 Nutrition

A healthy diet is essential for good health and wellbeing. Whilst good nutrition may have a protective effect against diseases such as osteoporosis, poor nutrition is an important risk factor for diseases such as obesity, coronary heart disease, stroke, cancer and diabetes mellitus.

The current Australian dietary guidelines and recommendations for a healthy diet are contained within a number of different documents. The *Draft Dietary Guidelines for Children and Adolescents and Infant Feeding Guidelines*[36] and the *Dietary Guidelines for Older Australians*[37,] provide detailed age and sex-specific nutritional recommendations. Dietary Guidelines for Australians[38], which is currently under review, provides general guidelines for a healthy diet and the *Australian Guide to Healthy Eating*[39] is a national nutrition education and information tool that recommends eating a variety of foods to ensure a healthy diet. This guide was produced to assist the public in developing the skills and knowledge necessary to choose a healthy diet and is based upon information from existing food guides and recommended dietary intakes.

4.2.1 Statistics and trends in dietary behaviours

This section explores the prevalence of selected dietary behaviours among adults. Information concerning dietary behaviours in children is included in Chapter 16: Child Health.

In Australia, there are growing concerns about the level of consumption of energy-dense, inferior nutritional quality, processed foods.[40, 41] The results of the 1995 National Nutrition Survey suggest that, on average, more snack foods such as potato crisps, foods with a high sugar content and confectionery are consumed by ACT residents than nationally.[42] Coupled with concerns over increases in the average portion size,[43] the energy intake from processed foods is increasing. This is likely to have important implications for the obesity epidemic and may have implications for activity levels. Preliminary results from research underway at the Menzies Institute in Darwin suggests that a diet rich in fresh fruit and vegetables, olive oil and fish results in people feeling more energetic and being more active than people consuming the same amount of energy in lower quality forms (more processed carbohydrates, saturated fats etc).[41]

Table 4.3: Prevalence of modifiable dietary behaviours in the population (12 years or more), ACT and Australia, 2001

	ACT % Pop	Australia % Pop
Doesn't eat vegetables/1 serve or less per day [(a)]	20.9	22.5
Doesn't eat fruit/1 serve or less per day [(b)]	46.8	47.3
Usual type of milk = whole milk [(c)]	46.5	48.7
Sometimes/usually add salt to food after cooking	36.1	45.0

Data Source: Australian Bureau of Statistics. 2002. *2001 National Health Survey Summary Tables for the ACT*. www.abs.gov.au.

(a) This is below NHMRC minimum daily requirements.

(b) This is below NHMRC minimum daily requirements.

(c) The NHMRC recommend low/reduced fat milk for adults.

The results of the 2001 National Health Survey (NHS) suggest there was a high prevalence of sub-optimal, modifiable, eating behaviours among ACT residents aged 12 years or more in 2001. The results for the ACT were slightly more favourable than the results for Australia. For instance, approximately 20.9 per cent (95%CI 19.6 – 22.2) of ACT respondents indicated that they did not consume recommended daily levels vegetables. The comparable estimate for Australia was 22.5 per cent (95%CI 22.1 – 22.9). Approximately 46.8 per cent (95%CI 45.3 – 48.3) of ACT respondents indicated that they did not consume recommended daily levels fruit. The comparable estimate for Australia was 47.3 per cent (95%CI 46.8 – 47.8).

A large proportion of ACT respondents (46.5%, 95%CI 45.0 – 48.0) also reported a preference for whole milk, which has a high fat content compared to the low fat varieties recommended for adults. In comparison, 48.7 per cent (95%CI 48.2 – 49.2) of respondents reported a preference for whole milk at the national level. In addition, a considerable proportion of ACT respondents were inclined to add salt to food after cooking (36.1%, 95%CI 34.7 – 37.5). The comparable result for Australia was 45 per cent (95%CI 44.5 – 45.5). The estimate derived for the ACT was statistically significant at the 5% level of significance, indicating that it was unlikely to be the result of sampling variability.

The *Australian Guide to Healthy Eating* promotes high levels of fruit and vegetable consumption across the age spectrum. The results of the 2001 National Health Survey suggest that young people (12-24 years) in the ACT were more likely to consume levels of fruit and vegetables below the recommended National Health and Medical Research Council (NHMRC) guidelines, compared to other age groups.

A preference for whole milk, as the usual type of milk consumed, decreased with age. The strongest preference for whole milk was expressed by people from the youngest age group in the survey, which included adolescents. Although milk and other dairy products are an excellent source of calcium, which is important for attaining peak bone mass in adolescence, low fat varieties of milk, yoghurt and cheese are recommended for most people over the age of five years.[39]

The addition of salt to food after cooking was a practice most commonly reported among people from older age groups in the population. The *Australian Guide to Healthy Eating* recommends reducing levels of sodium intake.[39] Increasing age and high levels of sodium intake are risk factors for conditions such as coronary heart disease and stroke, leading causes of mortality and morbidity in the ACT.[21]

Table 4.4: Prevalence of modifiable dietary behaviours (12 years or more), by age group, ACT, 2001

	12-24 years % Pop	25-44 years % Pop	45-64 years % Pop	65 years+ % Pop
Doesn't eat vegetables 1 serve or less per day [(a)]	24.4	23.5	17.4	12.4
Doesn't eat fruit/1 serve or less per day [(b)]	53.7	50.5	41.8	31.0
Usual type of milk = whole milk [(c)]	68.8	56.0	45.1	39.3
Sometimes/usually add salt to food after cooking	28.6	36.0	41.8	38.8

Data Source: Australian Bureau of Statistics. 2002. *2001 National Health Survey Summary Tables for the ACT*. www.abs.gov.au.

(a) This is below NHMRC minimum daily requirements.

(b) This is below NHMRC minimum daily requirements.

(c) The NHMRC recommend low/reduced fat milk for adults.

4.2.2 Nutrition services and initiatives

The Strategic Inter-Governmental Nutrition Alliance (SIGNAL) is a national partnership of government health authorities formed to coordinate action to improve the nutritional health of Australians. SIGNAL provides strategic direction and coordination of national nutrition priorities and plays a major role in coordinating the implementation of the national nutrition strategy, Eat Well Australia. SIGNAL takes a national approach to public health nutrition to ensure greater consistency and better coordination of government policy and strategy development across Australia.

The ACT Nutrition Advisory Group informs ACT representation at SIGNAL meetings and disseminates information from SIGNAL to stakeholders in the ACT. Membership of the Advisory Group includes nutritionists, health promotion officers and other stakeholders.

In the ACT, a variety of individual and group nutrition education sessions are conducted to reduce the risk, or improve the management, of chronic diseases. Health promotion and skills based activities to improve nutrition are conducted by ACT Health. In addition, a range of clinical nutrition services are provided at the tertiary level including co-ordination of special dietary needs, infant formulas and enteral feeding programs.

Healthpact, the operating arm of the ACT Health Promotion Board, adopted a settings-based approach to nutrition in 2001/02 to help make healthy food choices easy. Healthpact also invested in projects targeting specific population groups, such as the 'ACT School Canteen Project', supporting school-aged children and young people in the ACT.

The health gain goals specific to nutrition contained in the *ACT Health Action Plan* [35] mirror the national nutrition strategy *Eat Well Australia.*[44] The goals outlined in the Plan include:

- the prevention of overweight and obesity in children and the prevention of further weight gain in adults;
- increasing the consumption of vegetables, legumes and fruit;
- promoting optimal nutrition for women, infants and children;
- improving nutrition amongst vulnerable groups; and
- in partnership with other agencies and the food industry, ACT Health will also work to improve the nutritional value of the food served through schools, restaurants and take-away food venues, with an emphasis on ensuring low or no cholesterol fats are used in food preparation.

4.3 Obesity

Excess weight is an important issue from a public health perspective. Overweight and obesity have established links with lower levels of health status. Obesity, in particular, is a modifiable risk factor for premature death and a range of morbidities, including coronary heart disease, ischaemic stroke, Type 2 diabetes mellitus and breast cancer. Relationships have also been identified between increasing body mass and increased blood pressure, increased cholesterol levels, gallstones, obstructive sleep apnoea, osteoarthritis and some female reproductive disorders.[45]

The prevalence of excess weight is on the increase, both in the ACT and nationally. Diet and physical activity play a key role in the development of overweight and obesity. Weight gain occurs when energy consumed through diet exceeds the energy expended through physical activity. The health benefits to be achieved through a combination of regular physical activity and good nutrition are considerable.

4.3.1 Statistics and trends in obesity

The body mass index (BMI) is used as an indicator of 'healthy' and 'unhealthy' weight in individuals. The BMI measures an individual's weight in relation to their height and is calculated as weight in kilograms, divided by height in metres squared. Threshold BMI measures have been divided into four categories for adults to provide a theoretical indication of 'healthy'/'unhealthy' weight in this chapter:

- underweight: BMI less than 18.5
- healthy weight: BMI from 18.5 to less than 25
- overweight: BMI from 25 to less than 30
- obese: BMI greater than or equal to 30.

There appears to have been a marked increase in the prevalence of overweight and obesity in the adult (18 years or more) ACT population in recent years. Estimates from the 1995 National Health Survey suggest that 25 per cent of the ACT population were overweight and seven per cent were obese in 1995.[1] The results of the 2001 National Health Survey suggest excess weight estimates in the adult ACT population had increased to 30.2 per cent overweight and 11.8 per cent obese by 2001.[34]

Estimates obtained from the 2000 National Physical Activity Survey (NPAS) suggest that levels of obesity were very similar between adults (18-75 years) in the ACT and the national population in 2000. The levels of obesity in the ACT and Australia were similar for adult males and females; the prevalence of obesity increased with age to 60 years and over; and, obesity decreased with increasing levels of education.

Table 4.5: BMI categories by age (18-75years), sex & education level, ACT and Australia, 2000

BMI Categories	Underweight % Pop		Healthy weigh % Pop		Overweight % Pop		Obese %Pop	
	ACT	Aust.	ACT	Aust.	ACT	Aust.	ACT	Aust.
Sex								
Males	2.6	1.3	44.8	42.1	40.6	43.7	12.0	13.0
Females	4.7	5.6	63.5	61.0	20.8	22.4	11.0	11.0
Persons	3.7	3.4	54.2	51.4	30.7	33.2	11.5	12.0
Age group (years)								
18–29	7.1	7.2	68.3	62.5	19.1	24.2	5.5	6.1
30–44	2.2	2.4	48.6	53.4	36.0	32.3	13.1	11.9
45–59	3.1	1.5	50.6	43.1	30.0	39.2	16.4	16.2
60–75	0.0	2.5	39.8	43.0	48.2	39.6	12.0	14.9
Education level								
Less than 12 years	3.0	2.9	44.8	46.5	38.0	34.2	14.3	16.5
HSC[a] or equivalent	5.6	3.7	56.5	50.6	25.9	35.3	12.1	10.4
Tertiary	2.4	3.8	57.4	59.3	30.7	28.7	9.5	8.2

Data Source: Population Health Research Centre, ACT Health. 2002. *Physical Activity Patterns of Adults in the ACT, 2000*. Health Series No. 29. Canberra, ACT Health.

(a) HSC = Higher School Certificate.

The 2000 National Physical Activity Survey suggests that 42.2 per cent (95%CI 37.2 – 47.1) of the adult (18-75 years) ACT population were above a healthy weight (30.7% overweight and 11.5% obese) in 2000. In comparison, 45.2 per cent (95%CI 43.1 – 47.1) of Australians were overweight (33.2%) or obese (12.0%) in 2000. Fifty-four per cent of people in the ACT were within the healthy weight range, and four per cent of the population was underweight.

It is worth noting, however, that the BMIs derived from the NPAS are based upon self-reported heights and weights and survey respondents commonly overestimate their height and underestimate their weight when self-reporting these measures.[1]

At present, there is limited reliable data available on the prevalence of obesity in children and young people less than 18 years of age residing within the ACT. The information currently available on obesity levels in ACT children has been presented in Chapter 16: Child Health.

4.3.2 Obesity services and initiatives

In addition to health promotion and education activities and the nutrition and physical activity strategies outlined in the *ACT Health Action Plan*,[35] an obesity seminar was held in the ACT in October 2002. The seminar brought together a range of key stakeholders from the community interested in collaborative efforts to address the issue of obesity in the ACT. The seminar included a series of presentations outlining the size and scope of the issue and included some of the innovative projects and programs underway to promote healthier eating and physical activity in the ACT. The seminar was successful in raising greater awareness of overweight and obesity in the ACT, communicating relevant local issues and providing representatives from local organisations an opportunity to establish cross-sectoral relationships for networking.

The Health Promotion Unit of ACT Health has adopted a Vitality Approach to promote healthy weight and wellbeing in the community. The Vitality Approach was originally developed by Health Canada in the 1990s. It is a flexible, lifestyle-focussed campaign that encourages individuals to make healthy choices and promotes environments that support healthy choices. The Approach can be applied across age groups and settings such as schools, workplaces, social organisations, youth and community centres etc.

The slogan for the campaign incorporates multiple messages – "*Eat Well, Be Active, Feel Good About Yourself – That's Vitality!*". The 'Eat Well' element provides a means of addressing good nutrition, dental health and food security issues. The 'Be Active' element applies to physical activity and includes injury prevention messages for those who are physically active; social activity initiatives to underscore the value and importance of being socially connected, reducing social isolation; and, being responsibly active, which incorporates harm minimisation and peer-pressure resistance. The 'Feel Good About Yourself' element applies to general wellbeing, mental health, dental health, resilience and body image messages.

At the national level, the Terms of Reference and membership for a National Obesity Taskforce were established in February 2003. The National Obesity Taskforce has been set-up to develop a National Action Plan, by November 2003, to address the issue of overweight and obesity in the Australian population. The Taskforce will develop and agree on roles and responsibilities for implementing a range of initiatives and lead communication within sectors and jurisdictions on implementation of the national plan.

The Taskforce has established a Consultative Forum, consisting of representatives from a variety of sectors including industry, non-government organisations and professional groups, to provide a cross sectoral perspective and to build collaboration with other sectors that have a role to play in addressing the issue of obesity. The Taskforce has also established a Scientific Reference Group to provide scientific advice.

4.4 Alcohol, tobacco and other drugs

The problematic use of drugs, including both licit and illicit drugs, has a broad and sometimes tragic impact on the community. The problematic use of alcohol, tobacco and other drugs is associated with a wide range of problems, including poor health, crime, child maltreatment, reduced productivity, violence and accidental injury or death.

The ACT Government is aiming to minimise the harm associated with problematic alcohol, tobacco and other drug use through a range of evidence-based treatment services and innovative and effective strategies. The ACT Health Action Plan sets out the key priorities for action which include:

- establishing an alcohol, tobacco and other drug taskforce to make recommendations to Government on policy priorities and to develop an ACT drug strategy;
- enhancing alcohol, tobacco and other drug education and prevention strategies;
- continuing the development and expansion of services for people with substance use and mental health problems;
- continuing the monitoring of treatment, detoxification and rehabilitation programs and new research;
- promoting the development and trials of new pharmacotherapies;
- lobbying the Commonwealth to support an Australian heroin trial, which would involve trialing the use of prescribed heroin in treatment programs for people who have not found other treatments to be of value;
- considering a supervised injecting place trial in the ACT;
- maintaining and monitoring diversion programs to enable people to be diverted into treatment and away from the criminal justice system, where appropriate;
- targeting the over use of alcohol in the ACT, especially in young people and addressing the issues associated with excessive consumption, such as violence, accidents and ill health; and
- developing a youth smoking prevention initiative and considering the phase-out of exemptions from smoke-free legislation. Work will also be undertaken to address smoking during pregnancy, smoking around children and smoking in the workplace.

There is a range of services available that aim to minimise the harm caused by alcohol, tobacco and other drugs in the ACT. Overall, the alcohol, tobacco and other drug services that are provided in the ACT are rational, compassionate and innovative. There is a high degree of co-operation between these services. ACT services that aim to minimise the harm caused by alcohol, tobacco and other drugs include:

Counselling
Problematic substance use is strongly correlated with a range of emotional and mental health issues. Frequently, assistance as simple as counselling can help to resolve a substance use issue. All ACT Government-funded alcohol and other drug service agencies provide counselling.

Detoxification
The concept of substance dependency focuses on the physiological and psychological adaptations that tend to occur following a sustained period of substance use. Detoxification programs help people to manage and overcome the physical, psychological and emotional stresses (known as withdrawal) that occur when attempting to resolve a substance dependency issue.

The techniques used range from counselling, through mild clinical interventions such as massage, to the use of medications to lower the severity of the most uncomfortable physical and psychological symptoms of withdrawal.

Rehabilitation
People recovering from substance dependency often have difficulty in readjusting their lifestyles and behaviours away from a focus on substance use. Rehabilitation programs assist in re-establishing social and personal skills to enable the individual to participate fully in the community.

Maintenance
Maintenance programs help individuals with substance use problems to manage their dependency and to engage with health care professionals. Maintenance therapies minimise the harms associated with direct substance use and the lifestyles that are often associated with dependent use. Something as simple as a patch for managing nicotine dependency can be classified as a maintenance therapy.

Needle and Syringe Program
The Needle and Syringe Program (NSP) in the ACT is managed by Assisting Drug Dependents Incorporated (ADDInc), a Non-Government Organisation. Needles and syringes are distributed from a number of outlets across Canberra, including a number of pharmacies. Approximately 600,000 needles and syringes are distributed in the ACT each year.

The Department of Urban Services provides and maintains needle disposal bins in all public toilets (around 300 sites) and depots located across Canberra for the bulk disposal of injecting equipment. They also fund the "City Rangers" who are responsible for collecting inappropriately discarded sharps on public land.

The following sub-sections profile the prevalence of alcohol, tobacco and other drugs, attitudes and behaviours towards alcohol, tobacco and other drugs, and specific initiatives aimed at minimising the harm caused by alcohol, tobacco and other drugs in the ACT.

4.4.1 Tobacco use

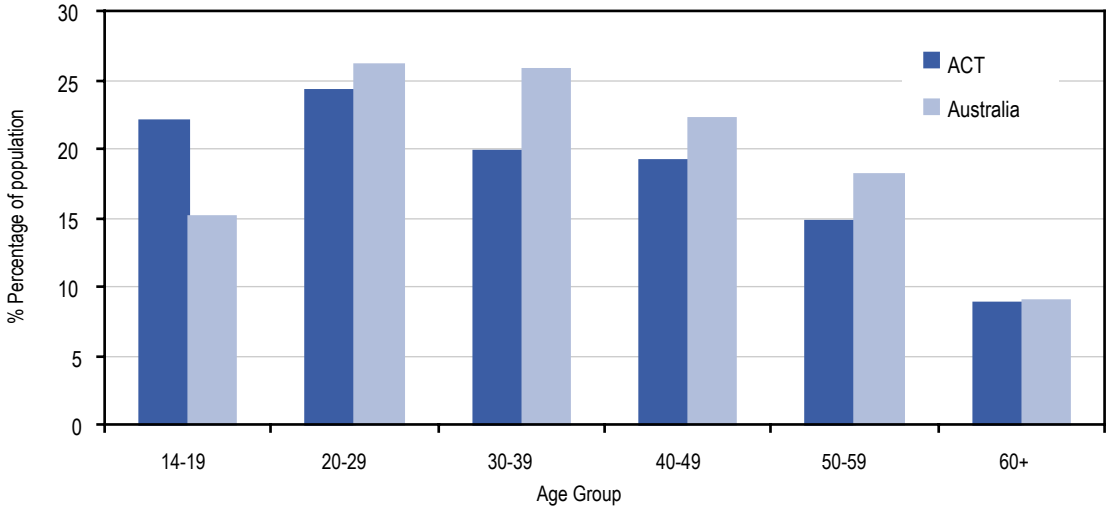
Tobacco smoking is the single largest preventable cause of premature death and disease in Australia, and estimates suggest that of all modifiable risk factors, tobacco places the greatest burden of disease on the national population.[27] Causal relationships have been found between tobacco smoking and more than 30 medical conditions, including several types of cancer, atherosclerosis, ischaemic heart disease, heart failure, stroke, pneumonia, chronic obstructive pulmonary disease, peptic ulcer, Crohn's disease, back pain, eye diseases, spontaneous abortion, complications of pregnancy and labour and low birth weight.[46] There is also strong evidence that environmental tobacco smoke (ETS), or passive smoking, can lead to detrimental health consequences for non-smokers, including sudden infant death syndrome (SIDS), otitis media, bronchitis, pneumonia and other chest illnesses in children.[47] Exposure to ETS can also increase the risk of cardiovascular disease, lung cancer and other respiratory diseases. In addition to the more serious health effects, ETS exposure can produce irritant effects on the eyes, nose, throat and airways.

Statistics and trends in tobacco use

The results of the 1998 and 2001 National Drug Strategy Household Surveys (NDSHS) suggest that the proportion of people that smoke in both the ACT and Australian populations remained relatively stable between 1998 and 2001. The proportion of people that smoke in the ACT remained relatively constant at 24 per cent (95%CI 21.5 – 26.5) in 1998 and 22.5 per cent (95%CI 20.4 – 24.6) in 2001. The proportion of people that smoke nationally also remained relatively constant at 24 per cent (95%CI 23.2 – 24.8) in 1998 and 23.1 per cent (95%CI 22.6 – 23.6) in 2001.

The results of the 2001 NDSHS suggest the proportion of 'daily' smokers in the ACT (18.4%, 95%CI 16.5 – 20.3) was slightly lower than the proportion of 'daily' smokers in the Australian population (19.5%, 95%CI 19.0 – 20.0) in 2001, although this was not statistically significant. The prevalence of daily smoking was highest in the 20-29 years age group in the ACT and the proportion of the population that smoke daily decreased most noticeably with age after about 35-45 years of age.

Figure 4.1: The proportion of daily smokers[a] in the population, aged 14 years and over, by age group, ACT and Australia, 2001[b]



Data Source: Australian Institute of Health & Welfare. 2002. *2001 National Drug Strategy Household Survey: State and Territory Results*. Cat. No. PHE 37. Canberra, Australian Institute of Health & Welfare.

(a) A daily smoker has been defined as a respondent identifying as a daily smoker at the time of the survey.

(b) Note that the survey excluded the 'homeless' and penal institutions.

Although a higher proportion (22.1%, 95%CI 14.6 – 29.6) of ACT teenagers (14-19 years) identified as 'daily' smokers in 2001, compared to teenagers nationally (15.1%, 95%CI 13.6 – 16.6), this result was not statistically significant and should be interpreted with caution as the ACT estimate is based upon a relatively small sample of teens. However, the results from other surveys undertaken in recent years are consistent, suggesting that smoking rates among teenagers in the ACT are high compared to the rates for Australia.[48]

National studies have shown that the majority of Australians that smoke began smoking before they reached the age of 20 years.[49] In the ACT, the most common age to begin smoking is 15-16 years of age. International research has shown that a young person who starts smoking at age 14 or younger is five times more likely to die from lung cancer than a person who starts smoking at age 24 years or more, and is 15 times more likely to die of lung cancer than someone who has never smoked.[50] The symptoms of nicotine addiction have been shown to develop rapidly in some young people, after only a few cigarettes, while for others the progression from 'occasional' to 'daily' smoking has been shown to take several months.[51] There is also evidence to suggest that regular tobacco use is a strong predictor of future use of alcohol and other drugs.[52]

Analysis of the 2001 National Drug Strategy Household Survey provides further insights into tobacco use and attitudes towards tobacco in the ACT. The data from the survey suggests 'approval' of the use of tobacco declined with age in 2001. In the ACT, the highest level for 'approval' of tobacco use was observed in the 14 to 24 years age group (52.6%, 95%CI 43.3 – 61.9).

Table 4.6: Estimates of the proportion of the population (14 years or more) expressing personal approval of tobacco use by an adult, by age group, ACT and Australia, 2001[(a)]

	ACT %Pop	Australia %Pop
14-24	52.6	48.7
25-39	43.1	49.2
40+	29.2	31.1
All ages	38.6	39.7

Data Source: 2001 National Drug Strategy Household Survey, summary tables for the ACT. Confidential unit file.

(a) Note that the survey excluded the 'homeless' and penal institutions.

The results of the 2001 National Drug Strategy Household Survey also included estimates of the percentage of the population that had an 'opportunity' to use tobacco in the previous 12 months. The 'opportunity' to use tobacco declined with increasing age in the ACT, with the highest rates observed among young people, between 14 and 24 years of age (82.4%, 95%CI 75.4 – 89.4).

Tobacco is a 'convenience' product in the ACT, available from a variety of outlets, including supermarkets, service stations and local shopping centres etc. However, the number of licensed outlets has declined slightly in the ACT, from 400 outlets in 2000/01 to 387 in 2001/02.[53]

Table 4.7: Opportunity to use tobacco in the past 12 months, percentage of the population (14 years and over), by age, ACT and Australia, 2001[(a)]

	ACT %Pop	Australia %Pop
14-24	82.4	74.4
25-39	72.6	69.4
40+	52.7	44.2
All ages	65.1	57.2

Data Source: 2001 National Drug Strategy Household Survey, summary tables for the ACT. Confidential unit file.

(a) Note that the survey excluded the 'homeless' and penal institutions.

ACT Health is also keen to reduce the harm caused by smoking around children and smoking during pregnancy. Children are particularly vulnerable to the adverse health effects of passive smoking. Estimates from the ACT Child Health Survey 2001 indicate that approximately 28.4 per cent (95%CI 24.5 – 32.3) of households with children (0-12 years) in the ACT had a smoker present in the household in 2001 and approximately one in twenty (5.2%, 95%CI 3.3 – 7.1) households with children in the ACT had a smoker who smoked either 'sometimes', 'usually' or 'always' inside the home. The survey was run by the NSW Department of Health and included NSW. The results for NSW were similar to results for the ACT, with 34.3 per cent of households with children having a smoker present in the household and 10.2 per cent of households with children having a smoker who smoked either 'sometimes', 'usually' or 'always' inside the home (see Chapter 16: Child Health for further information).[54]

Smoking during pregnancy is one of the most important risk factors associated with adverse perinatal outcomes. Estimates from the ACT Child Health Survey 2001 suggest that most mothers of babies (0-11 months) that were smokers either quit smoking prior to pregnancy, reduced smoking during pregnancy or smoked less than 100 cigarettes during their pregnancy. Although the sample obtained for the ACT was small, one in seven (14.0%, 95%CI 0.0 – 32.7) ACT mothers of infants less than 12 months of age reported any smoking during their pregnancy, which was similar to the result for NSW (14.2%). Approximately 28.3 per cent (95%CI 9.2 – 47.3) of ACT mothers that smoked, quit smoking prior to pregnancy. The comparable result for NSW was 20.5 per cent.[54]

Deaths data provides insights into the extent of ill health caused by tobacco use. During the period 1998 to 2000, an estimated 543 ACT resident deaths were attributed to tobacco use, representing approximately 14.9 per cent of all deaths for this period, with an average of 181 deaths per year. Lung cancer (29.2%) and other cancers (10.7%) were the cause of nearly 40 per cent of all tobacco-related deaths in the ACT.

Tobacco services and initiatives

A number of important amendments to the *Tobacco Act 1927* were enacted or implemented during 2000 and 2001. They included:

- introducing a tobacco licensing system for wholesalers and retailers;
- introducing a proof of age requirement for tobacco sales;
- limiting cigarette vending machines to designated bar rooms of licensed premises;
- limiting the number of tobacco points of sale within retail outlets;
- placing a number of restrictions on how tobacco products are displayed;
- requiring the display of a point-of-sale health warning notice; and
- prohibiting the distribution of free tobacco products and of certain types of promotional items or competitions.

In addition, the *Tobacco Act 1927* and the *Smoke-free Areas (Enclosed Public Places) Act 1994* were amended so that restrictions applying to tobacco products also applied to herbal cigarettes and similar non-tobacco products.

Tobacco policies generally receive strong support from the community. The 2001 NDSHS included a series of questions about support for tobacco legislation. In the ACT, the strongest level of support in 2001 was received for 'stricter enforcement of the law against selling to minors' (89.3%, 95%CI 87.7 – 90.9). A very strong level of support was also received in the ACT for banning smoking in public areas, such as the workplace (83.4%, 95%CI 81.5 – 85.3), shopping centres (88.3%, 95%CI 86.7 – 89.9) and restaurants (85.5%, 95%CI 83.7 – 87.3). A slightly lower level of support was received for the 'banning of smoking in pubs/clubs' (63.2%, 95%CI 60.8 – 65.6), although this was the highest level of support expressed for any Australian State or Territory, except Victoria.[55]

Table 4.8: Proportion of the ACT population, aged 14 years and over, supporting tobacco measures, 2001[(a)]

	ACT %Pop	Australia %Pop
Stricter enforcement of law against supplying minors	89.3	91.2
Immediate ban of tobacco advertising at sporting events	67.2	66.3
Banning smoking in the workplace	83.4	81.1
Banning smoking in shopping centres	88.3	85.3
Banning smoking in restaurants	85.5	83.9
Banning smoking in pubs/clubs	63.2	60.8
Increasing tax on tobacco products to pay for health education	66.0	64.3
Increasing tax on tobacco products to contribute to treatment costs	69.6	67.0
Increasing tax on tobacco products to discourage smoking	59.5	61.1
Making it harder to buy tobacco in shops	57.2	60.0

Data Source: 2001 National Drug Strategy Household Survey, summary tables for the ACT. Confidential unit file.

(a) Note that the survey excluded the 'homeless' and penal institutions.

The ACT Health Protection Service (HPS) monitors compliance with the *Smokefree Areas (Enclosed Public Places) Act 1994*. The Act prohibits smoking in a wide range of public places, however, some public places, such as restaurants and licensed premises, are eligible for exemptions to permit smoking in limited areas. In June 2003, the ACT Government initiated a review of the smoke-free exemption system.

The ACT Health Protection Service has reported a high level of compliance with the Act in most enclosed public places. However, the HPS tends to concentrate its monitoring and enforcement activities on enclosed public places where there is a greater risk of non-compliance, or in response to complaints. Compliance figures tend to reflect this focus and should be interpreted accordingly. In 2000/01, 61 per cent of public places that were inspected were compliant with the ACT's smoke-free legislation. This figure had increased to 66 per cent in 2001/02. There were no prosecutions under the Act, with enforcement action normally taking the form of warning letters and discussions with proprietors.

The ACT Government has included a youth smoking prevention initiative in the *ACT Health Action Plan*[35] in response to concerns about youth smoking. Pre-planning, discussion and some of the crucial development work for the initiative was undertaken during the 2000/01 to 2001/02 period. An ACT Children and Youth Tobacco Coalition was formed during this period by the National Heart Foundation to establish and expand partnerships between government and non-government agencies concerned about youth tobacco smoking. The formation of the Coalition preceded the development of a comprehensive scoping paper by the ACT Government, outlining the need for the youth smoking prevention initiative.

The Ministerial Council on Drug Strategy adopted a National Tobacco Strategy (NTS) in 1999, which outlines a practical agenda to address the issue of tobacco smoking in Australia. The NTS includes the following six priority areas:

- strengthening community action;
- promoting smoking cessation;
- reducing tobacco availability and supply;

- reducing tobacco promotion;
- regulating tobacco; and
- reducing exposure to ETS.

The *ACT Health Action Plan* includes a set of key priorities, relevant to the NTS, which are aimed at minimising the harm caused by tobacco use in the community. The priorities for action focus on reducing the demand for tobacco products, controlling the supply and reducing exposure to ETS. The specific strategies mentioned in the Plan include:

- implementing a youth smoking prevention initiative;
- considering a possible phase out of exemptions to the *Smoke-Free Areas (Enclosed Public Places) Act 1994*;
- reviewing the use of vending machines for the sale of tobacco;
- undertaking work to address smoking during pregnancy, smoking around children and smoking in the workplace; and
- considering strategies to reduce the uptake of smoking in the indigenous population and encouraging smoking cessation.

Tobacco-related health promotion activities are undertaken by both Healthpact and ACT Health's Health Promotion Unit. Healthpact promotes the 'be smoke-free' message primarily through sponsorship for sporting and cultural events. Prior to the establishment of Healthpact, many of these activities received tobacco sponsorship. The Health Promotion Unit of ACT Health is responsible for overseeing the development and implementation of the Youth Smoking Prevention Initiative.

In terms of smoking cessation services, the Cancer Council ACT manage and provide the QUIT program, a formal smoking cessation service for local residents. Other providers, such as Smokenders, also provide formal smoking cessation programs. Advice and assistance about smoking cessation is also provided on a less formal basis from medical practitioners and from pharmacists (particularly in relation to the use of nicotine replacement therapy such as gum and patches) in the ACT.

Other ACT Government agencies involved in tobacco control include the Department of Education, Youth and Family Services, in relation to school-based health education and school drug policies, and ACT WorkCover, which has been closely involved in tobacco-related workplace issues and is responsible the *Code of Practice for Smoke-free Workplaces* under the *Occupational Health and Safety Act.*

There are also a number of non-government agencies in the ACT involved in tobacco control, including The Heart Foundation, Cancer Council ACT, the Public Health Association, medical and pharmaceutical associations and advocacy groups such as Canberra ASH Inc.

In addition, there are a number of national anti-tobacco initiatives that benefit the ACT. Specific initiatives include the National Tobacco Campaign, a national anti-smoking mass media campaign, and the Quitline Program, which is a national smoking cessation initiative.

4.4.2 Alcohol consumption

Alcohol consumption is associated with considerable morbidity and mortality in the Australian community. It has been estimated that the harm caused by alcohol consumption accounts for approximately 4.9 per cent of the total burden of disease and injury in Australia.[27] Hazardous, or harmful alcohol consumption increases the risk of liver and brain damage, pancreatitis, diabetes, depression, violence, suicide and some cancers. It is also an important factor in motor vehicle and other accidents causing injury or death.[23] The impact of hazardous or harmful alcohol consumption can be far reaching, affecting not only the individual, but family, friends and the wider community. In particular, hazardous or harmful alcohol consumption has been associated with a range of social issues, including violence and crime, and psychological deterioration.[56]

Conversely, low to moderate levels of alcohol consumption can have a protective effect on the health of individuals (exceptions include those with Hepatitis C, young people and unborn children), reducing the risk of ischaemic heart disease, stroke and gallstones.[23] Estimates suggest that the net level of harm associated with alcohol consumption, after these benefits have been taken into account, is approximately 2.2 per cent of the total burden of disease and injury in Australia.[27]

Statistics and trends in alcohol consumption

The results of the 2001 National Drug Strategy Household Survey suggest that more than half of the ACT population (55.0%, 95%CI 52.5 – 57.5), aged 14 years or more, consume alcohol at least once a week. The results of the survey also suggest that a greater proportion of ACT males and females consume alcohol more frequently than their Australian counterparts. These patterns of alcohol consumption for the ACT are very similar to the results from the 1998 National Drug Strategy Household Survey.[48]

Table 4.9: Estimates of alcohol drinking status in the ACT & Australian populations (14 years or more), 2001[(a)]

	ACT			Australia		
	Male	Female	Persons	Male	Female	Persons
Daily	11.9	7.5	9.6	11.1	5.6	8.3
Weekly	49.0	41.9	45.4	46.0	33.2	39.5
<Weekly	31.1	37.7	34.5	28.8	40.3	34.6
Ex-drinker[(b)]	4.5	5.9	5.2	6.8	9.2	8.0
Never consumed a full serve of alcohol	3.6	7.0	5.4	7.4	11.7	9.6

Data Source: AIHW. 2002. *2001 National Drug Strategy Household Survey: State & Territory Supplement.* Canberra, AIHW.

(a) Note that the survey excluded the 'homeless' and penal institutions.

(b) Have consumed a full serve of alcohol, but not in the previous 12 months.

There were very high levels of hazardous, or harmful alcohol consumption identified in ACT females in 1998.[57] The results of the 1998 National Drug Strategy Household Survey suggest that ACT females in the 14-19 years age group and the 30-39 years age group had higher levels of hazardous, or harmful alcohol consumption than their female counterparts in the national population. The 2001 National Health Survey results for the ACT also tend to support this pattern of risk for teenage females and females in their thirties.[58]

The 2001 National Health Survey results suggest that 'risky' and 'high-risk' drinkers in the ACT, at long-term risk of alcohol-related harm, consume similar types of alcohol to their Australian counterparts. However, both ACT and Australian females with 'risky' and 'high-risk' drinking patterns tend to consume alcoholic beverages with a high alcohol content across the age spectrum, which contributes to their short and long-term risk of harm.

The results of the 2001 NDSHS suggest that although 'regular strength beer' was the preferred alcoholic beverage among Australian males with 'risky' and 'high-risk' drinking patterns, this was not the case for ACT males. In the ACT, 'risky' and 'high-risk' males preferred beverages with a higher alcohol content in their teens and after 40 years of age.

Table 4.10: Type of alcohol consumed by 'risky' & 'high-risk' drinkers (14 years or more), at long-term risk[a] of alcohol-related harm, ACT and Australia, 2001[b]

	ACT	Australia
Males		
14-19	Bottled spirits & liqueurs	Regular strength beer
20-29	Regular strength beer	Regular strength beer
30-39	Regular strength beer	Regular strength beer
40+	Bottled wine	Regular strength beer
Females		
14-19	Bottled spirits & liqueurs	Bottled spirits & liqueurs
20-29	Bottled spirits & liqueurs	Bottled spirits & liqueurs
30-39	Bottled wine	Bottled wine
40+	Bottled wine	Bottled wine

Data Source: 2001 National Drug Strategy Household Survey results, confidential unit file.

(a) Short-term risk of harm is associated with levels of drinking on a single occasion, leading to problems of intoxication such as falls, accidents and violence. Long-term risk is associated with consistent high-level consumption over months and years and leads to health problems such as liver disease.

(b) Note that the survey excluded the 'homeless' and penal institutions.

The ACT has a history of relaxed licensing laws and to an extent, alcohol has become a 'convenience' product in the community. It is widely available in the ACT and can be purchased from a number of outlets based at supermarkets, service stations and local shopping centres. Alcohol is a generally accepted part of the social and cultural experience in the ACT, as it is in most of Australia. Table 4.11 provides an indication of the level of access to alcohol in the ACT, compared to Australia. The table presents estimates of the proportion of the population that had the 'opportunity to use' alcohol in the 12 months preceding the 2001 NDSHS. A higher proportion of the ACT population (14 years or more) reported having had an 'opportunity to use' alcohol, compared to Australia. This result was statistically significant at the 5% level, indicating that it was unlikely to be the result of sampling variability.

Table 4.11: Estimates of the proportion of the population (14 years or more) with an opportunity to use alcohol in the past 12 months, by age, ACT and Australia, 2001[a]

	ACT % Pop	Australia % Pop
Age Group		
14-24	95.2	91.9
25-39	96.5	94.0
40+	93.5	87.9
All Ages	94.8	90.4

Data Source: 2001 National Drug Strategy Household Survey results, confidential unit file.

(a) Note that the survey excluded the 'homeless' and penal institutions.

Results from the 2001 National Drug Strategy Household Survey suggest that the ACT has a slightly more relaxed attitude towards alcohol than the Australian population. A higher proportion of the ACT population (14 years or more) approved of excessive drinking of alcohol by adults, compared to Australia. This result was statistically significant at the 5% level, indicating that it was unlikely to be the result of sampling variability.

Table 4.12: Estimates of the proportion of the population (14 years or more) expressing personal approval of excessive drinking of alcohol by an adult, by age, ACT and Australia, 2001[(a)]

	ACT % Pop	Australia % Pop
Age Group		
14-24	82.1	79.6
25-39	82.2	79.6
40+	77.6	70.2
All Ages	80.0	74.7

Data Source: 2001 National Drug Strategy Household Survey results, confidential unit file.

(a) Note that the survey excluded the 'homeless' and penal institutions.

Young people in the ACT were less likely to think excessive drinking of alcohol was the drug of most concern in the community, compared to other age groups in the ACT (Table 4.13).

Table 4.13: Estimates of the proportion of the population (14 years or more) that thought excessive drinking of alcohol was the drug of most concern, by age, ACT and Australia, 2001[(a)]

	ACT % Pop	Australia % Pop
Age Group		
14-24	13.9	17.1
25-39	23.5	22.3
40+	24.5	24.2
All Ages	21.9	22.3

Data Source: 2001 National Drug Strategy Household Survey results, confidential unit file.

(a) Note that the survey excluded the 'homeless' and penal institutions.

When asked about alcohol policy measures to reduce the problems associated with excessive alcohol use, ACT respondents to the 2001 National Drug Strategy Household Survey indicated a preference for 'limiting TV advertising until after 9:30pm' and 'banning alcohol sponsorship of sporting events'. The least favourable options to curb alcohol-related problems were 'price increases' and 'reducing the availability of alcohol in the community'. In comparison, there was strong support for 'harsher drink-driving penalties' and 'stricter enforcement of laws against serving intoxicated customers' at the national level.

4.4.3 Illicit drug use

Illicit drug use is estimated to account for approximately two per cent of the total burden of disease and injury in Australia.[27] Illicit drug use increases the risk of HIV/AIDs, Hepatitis B, Hepatitis C, low birth weight, inflammatory heart disease, poisoning and suicide. Similar to alcohol use, illicit drug use is associated with social and psychological deterioration and impacts not only on the individual, but also families, friends and the wider community.

The major issue for health agencies is the addictive nature of illicit drugs and the concomitant problems that arise as a result of dependency. ACT Health focuses on minimizing the harm caused by these drugs in the community. There is a strong emphasis on prevention, with health promotion, education and legislation. Treatment services are also available to assist those with an illicit drug use problem and maintenance and rehabilitation services are provided.

Statistics and trends in illicit drug use

The results of the 2001 National Drug Strategy Household Survey suggest that the prevalence of illicit drug use in the ACT was similar to that reported nationally,[55] and that young people (14-24 years) were more likely than those in other age groups to have used an illicit drug in the 12 months preceding the survey (39.3%, 95%CI 33.0 – 45.6).

Table 4.14: Use of any illicit drug, percentage of the population aged 14 years and over, by age group, ACT, 2001[(a)]

	14-24	25-39	40+	All Ages
	% Pop	% Pop	% Pop	% Pop
In lifetime	58.2	63.1	29.2	37.7
In the last 12 months	39.3	23.6	5.3	16.9

Data Source: 2001 National Drug Strategy Household Survey results, confidential unit file.

(a) Note that the survey excluded the 'homeless' and penal institutions.

Cannabis was the most popular illicit drug used in the ACT (14.4% for the ACT; 12.9% for Australia) in 2001. Only a small proportion (3.1%, 95%CI 2.2 – 4.0)[55] of the ACT population had used other illicit drugs like hallucinogens or heroin in the 12 months prior to the survey (Australia 3.5%). In general, illicit drug use in the ACT was similar to that observed nationally, however, the ACT had a higher use of ecstasy/designer drugs (4.8%, 95%CI 3.3 – 6.3) and amphetamines (4.5%, 95%CI 3.0 – 6.0) in 2001.[55]

Table 4.15: Recent[a] illicit drug use summary: percentage of the population aged 14 years and over, ACT and Australia, 1998 & 2001[b]

	ACT		Australia	
	1998 % Pop	2001 % Pop	1998 % Pop	2001 % Pop
Marijuana/cannabis	20.3	14.4	17.9	12.9
Amphetamines[c]	3.1	4.5	3.7	3.4
Pain-killers/analgesics[c]	5.0	3.3	5.2	3.1
Ecstasy/designer drugs	2.8	4.8	2.4	2.9
Cocaine	1.2	1.5	1.4	1.3
Tranquillisers/sleeping pills[c]	2.5	1.4	3.0	1.1
Hallucinogens	2.8	1.8	3.0	1.1
Injected drugs	np	np	0.8	0.6
Inhalants	0.9	0.5	0.9	0.4
Other opiates[c]	np	0.6	np	0.3
Heroin	np	np	0.8	0.2
Barbituates[c]	np	np	0.3	0.2
Steroids[c]	np	np	0.2	0.2
Methadone(d)	np	np	0.2	0.1
Use of any illicit drugs	**24.7**	**18.1**	**22.8**	**16.9**

Data Source: Fitzsimmons G & Cooper-Stanbury M. 2000. *1998 National Drug Strategy Household Survey: State and Territory Results*. Cat. No. PHE 26. Canberra, Australian Institute of Health & Welfare; 2001 National Drug Strategy Household Survey results, confidential unit file.

(a) Used in past 12 months.

(b) Note that the survey excluded the 'homeless' and penal institutions.

(c) for non-medical purposes.

(d) for non-maintenance purposes.

np: estimate not presented as estimate has an RSE greater than 50%.

Approximately 3.3 percent of the adult ACT population used pain-killers/analgesics, 1.4 per cent used tranquillisers/sleeping pills and 0.6 per cent used other opiates for non-medical purposes in the 12 months prior to the survey in 2001. These rates were similar to those observed nationally.

In general, the use of illicit drugs in the ACT in 2001 was similar to that reported in 1998 except that a smaller proportion of people used cannabis in the 12 months prior to the 2001 survey (14.4%, 95%CI 11.9 – 16.9), compared to 20.3 per cent in 1998 (95%CI 18.0 – 22.6).

There is little information available at present on the utilisation of new and mixed illicit drugs in the community. However, these drugs are of concern as they pose a significant health-risk to illicit drug users. They can cause a range of adverse health effects including poisoning and death. There are no quality controls in the production or marketing of illicit drugs and they often contain high concentrations of potentially hazardous additives. There are no guarantees on their 'safety' and because of their illicit nature, they often circulate undetected in the community until the adverse health affects of new and mixed illicit drugs come to the attention of health authorities and/or law enforcement agencies.

The availability of illicit drugs and access to drugs in the community is another issue of concern. The 2001 NDSHS included questions about opportunities to use illicit drugs and perceptions of ease in obtaining drugs. The responses to these questions provide insights into drug availability and access in the community. The results indicate that ACT residents were more likely to have had the opportunity to use marijuana and ecstasy in the 12 months prior to the survey, compared to Australia. Young people (14-24 years) in the ACT were more likely to have had the opportunity to use marijuana (66.0%, 95%CI 57.2 – 74.8), hallucinogens (21.6%, 95% CI 17.5-25.7) or ecstasy (36.4%, 95% CI 17.5-25.7) in the previous 12 months, compared to any other age group in the ACT.

Table 4.16: Opportunity to use selected drugs in the past 12 months, percentage of the population aged 14 years and over, by age, ACT and Australia, 2001[(a)]

	14-24	25-39	40+	All Ages
	% Pop	% Pop	% Pop	% Pop
ACT				
Marijuana/cannabis	66.0	36.9	7.9	29.3
Prescribed drugs[(b)]	53.0	48.8	43.4	47.1
Inhalants	10.7	5.4	2.5	5.1
Heroin	5.1	1.8	na	1.7
Amphetamines/speed	30.4	9.1	na	9.5
Cocaine	14.2	5.9	na	4.9
Hallucinogens	21.6	4.6	na	6.3
Ecstasy/designers drugs	36.4	11.7	na	11.5
Australia				
Marijuana/cannabis	51.7	33.6	8.7	24.2
Prescribed drugs[(b)]	43.8	49.3	45.5	46.2
Inhalants	6.9	3.6	1.7	3.2
Heroin	3.7	1.8	0.5	1.5
Amphetamines/speed	20.8	10.1	1.3	7.6
Cocaine	8.1	5.4	0.7	3.4
Hallucinogens	13.0	5.1	0.6	4.3
Ecstasy/designers drugs	**22.3**	**10.4**	**1.1**	**7.8**

Data Source: 2001 National Drug Strategy Household Survey results, confidential unit file.

(a) Note that the survey excluded the 'homeless' and penal institutions.

(b) Includes prescription drugs such as pain killers/analgesics, tranquillisers/sleeping pills, steroids and barbiturates, used for non-medical purposes.

na: not available

The 2001 NDSHS also suggests that cannabis, ecstasy/designer drugs and amphetamines were more likely to be perceived as 'fairly easy' and 'very easy' to obtain in the ACT than other drugs. This is not unexpected as these were the drugs most likely to have been used in the 12 months preceding the survey. Although perceptions of the ease in obtaining drugs declined with age, cannabis, ecstasy/designer drugs and amphetamines were perceived as being 'fairly easy' and 'very easy' to obtain, across age groups.

Table 4.17: Perceptions of the ease of obtaining selected illicit drugs, percentage of population aged 14 years and over, by age group, ACT, 2001[a]

	14-24 % Pop	25-39 % Pop	40+ % Pop	All Ages % Pop
Marijuana/cannabis				
Easy[b]	86.1	64.6	32.5	53.6
Don't know	4.9	20.0	41.3	27.1
Heroin				
Easy[b]	28.8	22.9	14.4	20.1
Don't know	18.7	34.0	47.1	37.0
Amphetamines				
Easy[b]	51.1	32.8	14.9	28.1
Don't know	14.5	29.9	48.4	35.6
Hallucinogens				
Easy[b]	32.5	23.5	10.8	19.3
Don't know	20.1	35.0	50.4	39.3
Cocaine				
Easy[b]	27.2	20.7	11.1	17.4
Don't know	15.4	34.4	49.5	37.6
Ecstasy/designer drugs				
Easy[b]	62.7	36.0	15.1	31.6
Don't know	9.6	30.8	48.2	34.7

Data Source: 2001 National Drug Strategy Household Survey results, confidential unit file.

(a) Note that the survey excluded the 'homeless' and penal institutions.

(b) Responses of 'fairly easy' and 'very easy' were grouped to form 'easy'.

Note: Respondents could select only one of 'probably impossible', 'very difficult', 'fairly difficult', 'fairly easy', 'very easy' and 'don't know'.

In addition to promotion and education activities, legislation can help prevent or deter the use of illicit drugs in the community. The results of the 2001 NDSHS indicate strong support for increased penalties for the sale or supply of illicit drugs in the ACT, with such support increasing with age for various drug types. However, cannabis had the lowest level of support across all age groups in the ACT.

Table 4.18: Support for increased penalties for the sale or supply of illicit drugs, percentage of the population aged 14 years and over, by age group, ACT, 2001

	14-24 % Pop	25-39 % Pop	40+ % Pop	All ages % Pop
Marijuana/cannabis	35.9	49.5	62.9	53.1
Heroin	78.2	84.2	88.0	84.7
Amphetamines	70.4	82.0	88.4	82.6
Cocaine	76.4	83.0	88.4	84.2

Data Source: 2001 National Drug Strategy Household Survey results, confidential unit file.

Note: The base is those who had an opinion.

The Alcohol, Tobacco and Other Drug Taskforce

The ACT Government established the Alcohol, Tobacco and Other Drug Taskforce in August 2002, to make recommendations about minimising the harms associated with substance misuse, and to develop the next Alcohol, Tobacco and Other Drug Strategy for the ACT. The Taskforce comprises experts and leaders in alcohol, tobacco and other drugs and associated fields, and community representatives with an interest in addressing drug-related issues in our community. The Taskforce has 20 members, and includes people who provide the perspectives of Aboriginal and Torres Strait Islander communities, consumers, carers, service providers, law enforcement, corrections and education sectors, and researchers.

The Taskforce has indicated that robust community involvement is essential to ensure that the new Strategy is able to provide decision makers with informed choices about drug and alcohol issues. To encourage this involvement, the Taskforce held a Community Consultation Forum and an Indigenous Community Consultation Forum in August 2003. The aim of the consultation forums was to enable the community to be informed about and consider a draft of the Strategy.

4.5 Sun Protection

Australia has one of the highest rates of skin cancer in the world and skin cancer is the most common cancer in Australia.[23] Unprotected exposure to solar ultra-violet radiation (UVR) is a modifiable risk factor for skin cancer, cataracts and other eye disorders. Childhood exposure to solar UVR, in particular, has been shown to be an important cause of skin cancer.[59] Therefore, it is important that young people are protected from excess exposure to solar radiation. This is especially important in the ACT as it is exposed to a considerable degree of solar UVR with its long hours of sunshine, high altitude and relatively clean air.

Exposure to solar UVR can be minimised by combining a range of sun protective behaviours including wearing a hat, applying sunscreen, wearing protective clothing and avoiding the sun by staying indoors, or in the shade.

Survey data provides an indication of the uptake of sun protection measures by parents and carers of children and young people in the ACT. In general, the estimates available suggest that a high proportion of parents and carers in the ACT adopt a range of measures to protect their children from the sun (see Chapter 16: Child Health for details).

4.5.1 Sun protection initiatives

Sun protection initiatives include the Cancer Council ACT's SunSmart promotion and education activities, including skin-cancer awareness campaigns encouraging individuals to have unusual spots and moles examined and removed. Healthpact also encourages local organisations to develop, implement and maintain SunSmart practices and policies in the ACT.

4.6 Sexual Health

Sexual health is influenced by attitudes towards sexuality and sexual behaviours, which have changed considerably over the last 40 years. These changes were initially fuelled by the development of improved forms of contraception and changing social and economic conditions in society. More recently, the rising prevalence of sexually transmissible infections, associated health promotion and education responses, along with advances in fertility research and medical technology, have influenced changing attitudes towards sexuality and sexual behaviours in society.

The World Health Organisation (WHO) defines sexual health as follows:

- A capacity to enjoy and control sexual and reproductive behaviour in accordance with a social and personal ethic;
- Freedom from fear, shame, guilt, false beliefs and other psychological factors inhibiting sexual response and impairing sexual relationships; and
- Freedom from organic disorders, diseases and deficiencies that interfere with sexual and reproductive functions.

This section of the report explores sexual behaviours and related health risks in the ACT. Sexual health outcomes, such as pregnancy and the incidence of sexually transmitted infections, are discussed elsewhere in the report. The health risks associated with sexual activity arise with 'unsafe' sexual behaviours, or practices, where precautions are not taken against the transmission of infection, or unintended pregnancy. Although 'safe sex' does not guarantee absolute protection against the transmission of infection or unintended pregnancy, it significantly reduces risk.

4.6.1 Statistics and trends in sexual health

Contraception

Contraceptive use is a preventive health measure, providing protection against unintended pregnancy. Condom and oral contraceptive use are the most popular forms of contraception in the ACT, but Table 4.19 indicates that they decline in popularity with age. The estimates in Table 4.19, derived from the 2001 National Health Survey, suggest that sterilisation rates in the ACT increase with age.

Table 4.19: Selected methods of contraceptive use by ACT females (per cent), by age group (18-49 years), 2001

	18-29 years	30-39 years	40-49 years
Use condoms[a]	37.8	18.1	13.8
Use oral contraceptives	48.0	23.4	12.5
Use a diaphragm	na	na	* 3
Use Natural, Rhythm or Billings method	* 2.7	na	* 6.8
Use withdrawal method	9.8	* 4.6	* 2.7
Had a contraceptive injection	* 6.3	[b] * 5.5	na
Take the morning after pill	* 5.6	na	na
Had a tubal ligation/tubes tied	na	[c] * 6.9	17.9
Partner has been sterilised	na	[c] 20.1	28.0
Had a hysterectomy	na	na	11.9

Data Source: National Health Survey, 2001

na not available.

* estimate has a relative standard error of between 25% and 50% and should be interpreted with caution.

(a) Used for protection or contraception purposes.

(b) This cell includes the small number of females aged 40-49 years for this contraceptive practice.

(c) This cell includes the small number of females aged 18-29 years for this contraceptive practice.

Some forms of contraception, notably the condom, also provide protection against sexually transmissible infection; however, conclusions about 'safe sex' practices in the population cannot be drawn solely from information on condom use for contraceptive purposes.

Infertility

The causes of infertility in couples are multifarious and the extent of infertility in the ACT is unknown, although in the Australian population it has been estimated that about 15 per cent of couples will not achieve a pregnancy within 12 months of making a decision to have a baby.[60] The assisted conception rate provides insights into the level of infertility in a population, access, and the success of infertility treatment services. Medical assistance in the form of in-vitro fertilisation (IVF) and gamete intrafallopian transfer (GIFT) have made it possible for people with fertility problems to have children. In 2000, there were 794 treatment cycles per 100,000 women aged 25 to 44 years in the ACT. This compares to 867 treatment cycles per 100,000 women aged 25 to 44 years for Australia (a treatment cycle refers to the ovarian stimulation and oocyte (egg) collection process).[61]

Cervical screening

Clinical studies have established that certain types of human papilloma virus (HPV) can cause cervical cancer. However, cervical cancer can be prevented through regular cervical screening and treatment of abnormal cell changes on the cervix. There are about 70 types of HPV and 30 of these are sexually transmitted. Genital HPV is normally harmless and often asymptomatic, although some forms of the virus can cause genital warts. The virus is spread through skin-to-skin contact, not through an exchange of bodily fluid and cannot be entirely prevented by condom use. Only certain types of HPV are linked to the development of cervical cancer.[62]

Cervical cancer is the eighth most common cancer effecting women in Australia.[63] The early detection of this disease improves the chance of recovery and the evidence suggests that cervical screening every two years can prevent up to 90 per cent of squamous cervical cancers, the most common form of cervical cancer in Australia.[63]

The ACT cervical screening program actively targets women in the 20-69 years age group. The recommended screening interval in the target age group is two years. The age-standardised participation rates in the program for 1999/00 were 65.1 (95%CI 64.6 – 65.7) per 100 eligible ACT female population and 62.6 per 100 eligible Australian female population.[64] Seventy-one per cent of ACT women who had a negative Pap smear result in the index month had no additional screenings during the following 21 months. This compares to 68 per cent nationally.

For both the ACT and Australia, the ratio of low-to-high-grade abnormalities remained constant between 1999 and 2000. The ratios were 1.2 for the ACT and 1.4 for Australia. The age-standardised rates for high-grade abnormalities per 1,000 women screened were 6.8 for the ACT and 7.5 for Australia.

The ACT is currently considering recommending that doctors add *Chlamydia* screening by cervical swab to cervical screens for women between 20 and 35 years of age. This has the potential to significantly reduce the rate of *Chlamydia* in the ACT population.

Information about sexually transmitted infections in the ACT is presented in Chapter 14: Communicable Disease.

4.6.2 Sexual health services and initiatives in the ACT

There are a wide range of sexual and reproductive health services in the ACT, some of which are described below.

The Canberra Sexual Health Centre is situated in the grounds of The Canberra Hospital and provides a range of free sexual health services to ACT residents including sexually transmitted infection and reproductive health clinical services, counselling, medical registrar and other health worker training as well as sexual health promotion and education in schools, colleges and other community settings. The Canberra Sexual Health Centre is the major provider of HIV medical care in the ACT.

The AIDS Action Council of the ACT was established in 1985 and provides a range of services to people with, and affected by HIV/AIDS in the ACT. The services provided by the Council include health promotion, community development and education, counselling, care and support of people with HIV/AIDS, treatment information and emergency financial assistance and advocacy. The Council also acts as a secondary needle and syringe exchange outlet. The Council provides these services to people living with HIV/AIDS, gay men, other men who have sex with men, injecting drug users, workers in sex employment, health care workers and other members of the community.

Sexual health services are also provided by Sexual Health and Family Planning ACT (SHFPACT), who provide both sexual and reproductive clinical health services, GP and professional education and community education in the ACT. SHFPACT also provide an Indigenous Peer Education Program with a sexual health focus.

The ACT Division of General Practice co-ordinates the care and support of people with HIV/AIDS and their carers. The Division also provides education and support to general practitioners treating people with HIV/AIDS.

An independent review of ACT Sexual and Reproductive Health Services was undertaken in 2000/01. A series of service-specific recommendations were put forward, including a recommendation that ACT Health work with the Ministerial Advisory Council on Sexual Health, HIV/AIDS, Hepatitis C and Related Diseases (SHAHRD) to develop an annual workplan and identify resources to provide leadership, coordination and sector capacity building in the area of sexual and reproductive health in the ACT.

ACT Health has been working with SHAHRD and has progressed a SHAHRD recommendation for further communication within the sexual health and blood borne virus sectors. Stakeholders will be placed on a mailing list for updates on SHAHRD activities. ACT Health has also followed up SHAHRD's recommendation to hold a Sexual Health and Blood Borne Virus Stakeholder Forum. This was held in June 2003 to enable stakeholders to share information about services that are available in the ACT.

Emerging Issues

- Dietary behaviours in the ACT are sub-optimal and require attention;
- Although physical activity levels in the ACT compare favourably to levels nationally, there has been a decline in levels of activity that benefit health in recent years;
- The prevalence of overweight and obesity in the ACT is increasing;
- Young people in the ACT have a higher prevalence of smoking than their national counter parts;
- Alcohol consumption among ACT women and young people continues at risky levels, with young people in the ACT more likely to have higher levels of high-risk drinking than people from other age groups in the ACT.

5 Health and The Environment

At a Glance

- The ACT enjoys a high-quality supply of drinking water and a pleasant physical environment lacking many of the sources of pollution found elsewhere;
- For the period covered in this report air quality was generally very good, with the exception of occasional high concentrations of fine particles, mainly from open wood fires in winter, that can accumulate under certain meteorological conditions;
- Water quality in Canberra's lakes varies with the season, rainfall intensity and run-off. Occasionally, lakes are closed for recreation because of unsafe faecal coliform levels;
- Food safety continues to be monitored, and all notified incidences of food poisoning are investigated. By far the most common causes of ill health from food are infections due to campylobacter and salmonella;
- Occupational radiation exposure is regularly monitored and there has been a high-level of compliance with safety directives;
- Chemical parameters in public swimming pools and spas are also routinely monitored.

We experience the environment in which we live as a range of physical, spiritual, social, cultural and economic conditions that vary according to local geography, infrastructure, season, time of day and activity undertaken. Hazardous substances, organisms and urban development all threaten the quality of our air, water and land, posing a risk to human health.

Threats to public health from environmental hazards are continually emerging, ranging from small scale, localised exposures to widespread exposures affecting whole populations. It is now clear that ecosystem degradation is a major global health threat.[65] Human pressures on the environment arising from population growth, economic globalisation, industrialisation and consumerism are increasing and global changes such as the depletion of stratospheric ozone, the build up of heat-trapping greenhouse gases in the lower atmosphere and the dispersal of persistent organic pollutants are evident.[66]

There is considerable variation between individuals in their response to environmental hazards and there may be considerable time lags between exposure to a potential hazard and subsequent health effects. Therefore, the effects of the environment on our health and wellbeing are often complex, indirect, and difficult to quantify and attribute cause.

The difficulty with many environmental hazards is that individuals may often be unaware of the risks of exposure, or they may be unable to control exposure to a specific hazard. For example, food contaminated with bacterial toxins may be hazardous to health, but may not appear, or taste spoiled to the individual. Similarly, exposure to carcinogenic agents can be painless and go unnoticed by the individual, but the health effects may be extreme.

In the ACT, the Health Protection Service (HPS) within ACT Health is responsible for monitoring environmental health and protecting those aspects of public health affected by environmental factors. Protection is achieved through a range of measures including law enforcement, regulation, education, licensing, immunisation, communicable disease surveillance, environmental testing and community complaint investigations.

The *ACT Health Action Plan* contains the following specific health protection goals:

- prevention of the spread of food-borne, vaccine preventable and infectious diseases;
- improving the quality of air and water; and
- promoting the safe use of medicines in the community.

The January-February 2003 bushfires presented a significant public health challenge in the ACT. Four people died and many were injured as a result of the fires. Approximately 156,000 hectares of land area was burnt in the ACT, including national parks and reserves, forests, and privately owned rural and urban properties. More than 530 homes were destroyed, many more were damaged.[67] The impact of the bushfires on public health, including air and water quality was significant and will be reviewed in the next Chief Health Officer's Report covering the two-year period 1 July 2002 to 30 June 2004.

5.1 Water quality

The quality and control of water in our environment has an impact on our health. For instance, water that has high levels of micro-organisms or heavy metals can be hazardous to our health. This section of the report reviews the monitoring of drinking water and recreational water quality in the ACT.

5.1.1 Drinking water

Drinking water quality is monitored in the ACT by HPS. The provision of safe drinking water in the ACT is the responsibility of ActewAGL Corporation. 'Raw' water taken from reservoirs is treated by chlorination to kill or inactivate most disease-causing organisms. Additional treatment may also be required to enhance water clarity or remove contaminants, but this depends on the state of the water catchment area. The Cotter catchment, which supplies the bulk of the ACT's water, produces water that needs little treatment other than chlorination, whereas water from the Googong Dam, which is in a less pristine environment, requires filtration and flocculation before being supplied.

The ACT's drinking water is regularly tested for bacteriological contamination. In 2000/01 and 2001/02 the targets for faecal coliforms were consistently met. Public health authorities in Australia use the presence of coliform bacteria (a natural component of faeces) as an indicator of faecal contamination of drinking water. Tests for aluminium, copper, manganese and lead in the ACT water supply are routinely conducted and testing for trihalomethanes, pesticides and trace metals may also take place, if considered necessary.

Table 5.1: Summary of ACTEWAGL drinking water monitoring results, 2001/02

Parameter	Target	No. of Samples	% Meeting Target
PH	None	954	na
Alkalinity	None	240	na
Hardness	<200	240	100.0
Turbidity	<5	976	99.6
Colour	<15	954	99.9
Chlorine	<5	978	100.0
Fluoride	<1.2	238	100.0
THM's	<250	233	100.0
Aluminium	<0.2	240	97.5
Iron	<0.3	541	99.3
Manganese	<0.1	954	99.9
Copper	<2	954	100.0
Lead	<0.01	954	99.9
Total Coliforms	0	978	99.1
Thermotolerant Coliforms	0	956	99.9

Data Source: ACTEWAGL, 2003.

na not available.

The impact of the 2003 bushfires on water quality in the Cotter catchment area is currently being examined and will be reported on in the next Chief Health Officer's Report.

5.1.2 Recreational water

There are numerous recreational water sites in the ACT including natural waterways such as lakes and rivers and man-made sites such as public and private swimming pools and spas. The HPS monitors 'public' recreational water for a range of potential contaminants.

Natural waterways

The HPS monitors faecal coliform levels at sites in Canberra's main water bodies, including Lakes Tuggeranong and Ginninderra and the Murrumbidgee and Molonglo Rivers. The lakes are occasionally 'closed' for recreation when guideline values are exceeded, mainly during dry summer periods.

Swimming and spa pools

All public swimming and spa pools are a potential source of infection, if not adequately maintained. Public pools are more likely to be exposed to a greater diversity of disease-causing (pathogenic) organisms than domestic swimming pools because they are open to community contamination. Disease-causing organisms may be introduced from many sources but are mainly associated with bathers. These organisms may be brought into a pool on the bathers' skin or in their saliva, urine or faeces. The organisms may also be introduced from dust, birds' droppings and soil carried on bathers' feet. Some of these disease-causing organisms live and may even grow in pool water unless the pool water is properly and continuously disinfected. Disease-causing organisms must be quickly killed to prevent disease transmission. The swimming pool or spa pool needs to be designed and operated so as to enhance the action of the disinfectant. All treated water in public swimming pools and public spa pools should be equipped with an effective water circulation system and filter.

The HPS routinely tests all public swimming and spa pools to ensure that disinfectant levels are being properly maintained (the HPS tested 71 pools in the ACT in 2001/02 and 53 pools in 2001/02). If any public pool does not have the required level of disinfectant, then a Public Health Officer may order remedial action or close the pool until the disinfectant level is at the required concentration.

5.2 Air quality

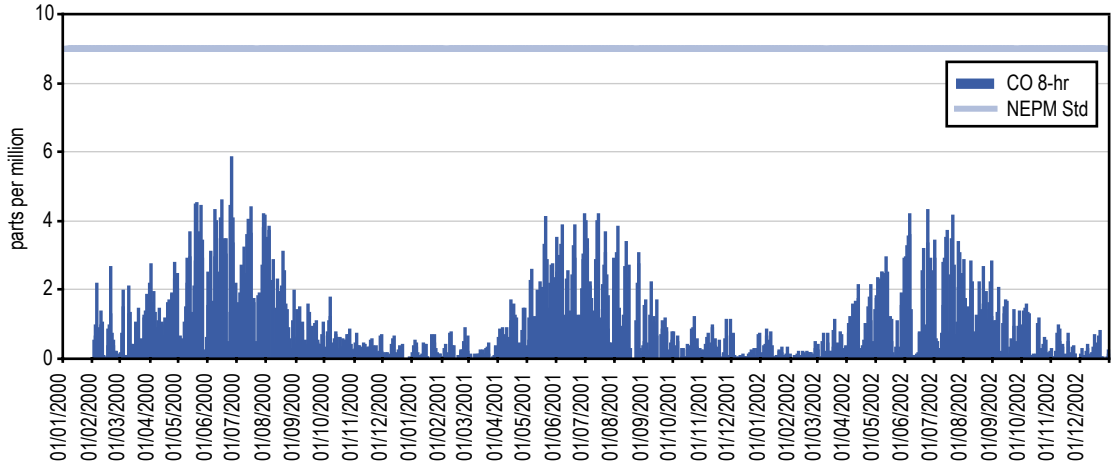
Air quality can be degraded by the presence of pollutants, which have the potential to cause adverse health effects on exposed populations. For instance, exposure to high ambient levels of carbon monoxide has been demonstrated to increase the signs and symptoms of cardiovascular disease and to increase hospital admissions and mortality. Elevated levels of nitrogen dioxide have been shown to exacerbate respiratory symptoms for those with respiratory disease and increase the incidence of acute respiratory illness in children. Particulate matter increases the incidence of respiratory symptoms, asthma attacks and decreased lung function. In addition, volatile organic compounds include a range of compounds with varying effects. Benzene, for example, is known to be carcinogenic and other compounds can cause chromosomal aberrations and depress the production of blood cells. Certain populations may be more susceptible than others to the effects of air pollutants. For instance, asthmatics and people suffering chronic obstructive pulmonary disease are more susceptible to the adverse effects resulting from exposure to particulates and nitrogen dioxide.

5.2.1 Ambient air quality

Compared with most Australian cities, the ambient air quality in Canberra is generally good. The ACT Government Analytical Laboratory (ACTGAL) is responsible for regularly monitoring air quality. ACTGAL uses test sites (at Monash and Civic) to collect data on concentrations of carbon monoxide, nitrogen dioxide, ozone, lead, total suspended particles and particulate matter less than 10 microns in diameter.

Measured levels of these pollutants are almost always within the standards (called National Environment Protection Measures or NEPM) recommended by the National Environment Protection Council (NEPC). The NEPC also recommends monitoring sulphur dioxide (SO_2) levels, but this is unlikely to be an issue for Canberra because high concentrations of atmospheric SO_2 are usually associated with heavy industrial areas (Canberra has limited heavy industry). Thus, no routine monitoring of SO_2 levels is undertaken in Canberra. However, particulate matter and carbon monoxide can be a cause for concern in Canberra. There are occasional breaches of the nine parts per million standard for carbon monoxide (CO) in Civic – and this is most likely to occur during winter evenings near rush-hour, as a result of CO emitted from vehicle exhausts. However, there have been no breaches of the NEPM standard at the Monash site in the last three years (Figure 5.1). Note the peaks in CO levels recorded during the winter months - these are largely the result of CO emissions from open wood-burning fires in residents' homes.

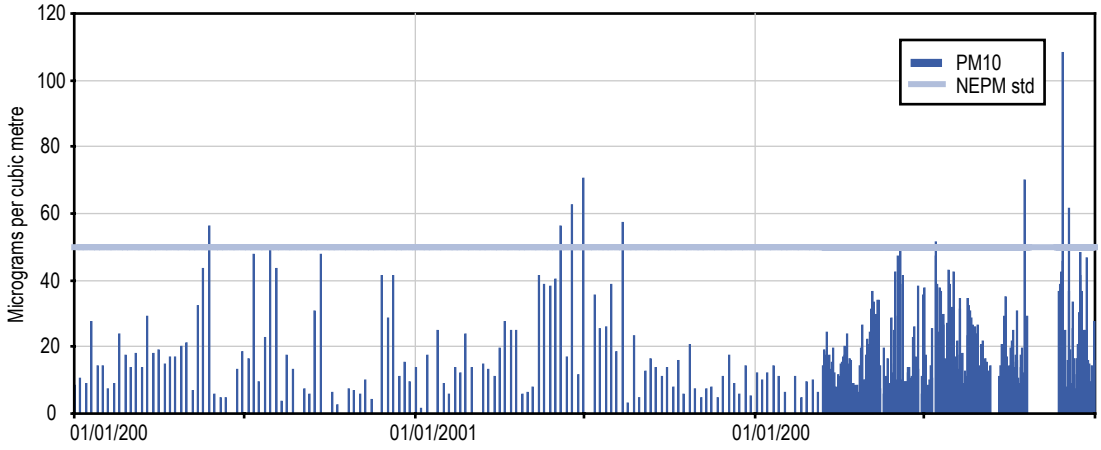
Figure 5.1: ACT[a] carbon monoxide (CO) levels[b] (parts per million), 2000-2002



Data Source: Environment ACT, 2003.
(a) Levels recorded at Monash site.
(b) Carbon Monoxide (CO) levels presented on graph are based on an eight-hour average.

In Canberra, high concentrations of airborne particulates, with a diameter of less than 10 microns (known as PM10), are a concern for respiratory health. In winter, open fires used to heat homes release particles into the atmosphere that can remain trapped on still nights in valley areas. The ACT Government regulates firewood merchants in the ACT, ensuring timber is seasoned, and brochures outlining best wood-burning practices are made available to the public in an attempt to curb winter CO and other emissions associated with open fires. The ACT Government has also implemented a wood heater subsidy scheme for 2003/04. The particulate matter that is released when there are bushfires in and around the ACT can also be a cause for concern during the summer months.

Figure 5.2: ACT[a] PM10 levels[b] (micrograms per cubic metre), 2000-2002



Data Source: Environment ACT, 2003.
(a) Levels recorded at Monash site.
(b) Prior to 14 March 2002, levels recorded once every six days. Continuous monitoring of PM10 levels commenced after this date (clustered bars on the graph).

The NEPM target for 2008 is five or less PM10 breaches of the standard each year. There was one breach of the PM10 standard in the ACT in the first six months of 2002 (Figure 5.2), due to a concentration of airborne particulates associated with the use of wood fires for heating. Information relating to high concentrations of air particles due to the January 2003 bushfires will be reported in the next Chief Health Officer's Report.

An emerging issue for respiratory health is very fine particulates with a diameter less than 2.5 microns (known as PM2.5). These particles can be drawn into the furthest reaches of the lungs, where they may remain. A guideline value or standard for PM2.5 (PM2.5 is included within PM10 monitoring at present) is being developed by NEPC for this particle.

The level of toxic substances in the air, including compounds like benzene and manganese, is another monitoring issue currently being considered by NEPC. However, this is unlikely to be a major air quality issue for Canberra as high concentrations of toxic substances in urban areas are usually associated with heavy industry.

5.2.2 Indoor air quality

The quality of indoor air (including that found inside offices and vehicles) is not routinely monitored – even though Australians are estimated to spend 90 per cent of their time indoors. Small-scale studies have shown that indoor air quality can differ significantly from ambient air quality. The rate at which a building's air is replaced is a major factor affecting pollutant build-up. In more modern buildings, designed for greater energy efficiency, air replacement rates are lower than in the past.

Indoor air can contain a range of potentially toxic chemicals emitted from fittings and building materials, as well as dust mites, allergens in furnishings, and bacteria and fungal spores from air conditioning systems. Tobacco smoke can be a major source of indoor air pollution, but legislation has reduced this threat in most public indoor areas. Offices and other places of employment may also have a range of specific pollutants emitted from machinery or industrial and chemical processes. Some of these may be governed by occupational health and safety guidelines.

Incorrectly flued gas heaters and cookers can release nitrogen oxides in sufficient concentration to be considered a health threat.

The presence of asbestos fibres in air is particularly dangerous. Inhaled asbestos fibres remain in the lung and may cause mesothelioma some decades later. There were 20 deaths among ACT residents from mesothelioma between 1997 and 2001. The ACT Government has taken extensive action to remove asbestos insulation from Territory housing and this is no longer considered a significant health threat in the ACT. However, it is still an issue for some homeowners planning home renovations.

5.3 Food safety

The quality of the food we eat is central to maintaining health and wellbeing. In order to protect food quality in Canberra the HPS regularly inspects food businesses, as well as testing manufactured and sold food, to ensure compliance with the Australian Food Standards Code. The HPS is also responsible for the co-ordination of recalling food that does not meet the requirements of the Food Standards Code, or is otherwise defective. As part of the national food recall network, the HPS participates in food recalls initiated by health officials in other jurisdictions, as well as ACT-initiated recalls. In 2001/02, HPS conducted 1,213 food premises inspections.

The investigation of food poisoning is another HPS responsibility. The most common cause of food poisoning and food-borne illness is poor food handling practices, including improper temperature control, mixing raw and cooked food together and lack of hand washing before preparing food.

The most common type of food poisoning notified in the ACT is campylobacteriosis (infection with the bacterium *Campylobacter*), the symptoms of which are diarrhoea, abdominal pain, malaise, fever and vomiting. Campylobacteriosis is usually caused by the consumption of under-cooked chicken or pork, or by cooked food being contaminated by raw food on which the bacteria are present. A recent study of chicken samples bought from ACT retailers showed that about half were infected with campylobacter - this underlines the importance of thorough cooking and hygienic handling of chicken. The second most common type of food poisoning notified is *Salmonella* infection, also a bacterial disease, the symptoms of which are sudden onset of headache, abdominal pain, diarrhoea, nausea and sometimes vomiting. Consuming food contaminated with infected faeces is the usual cause of salmonellosis. See Chapter 14: Communicable Disease for details on notification rates relating to food-borne diseases.

5.4 Infection control

Infection control refers to the regulation of businesses that perform activities involving penetration of living human tissue in order to prevent the spread of infectious diseases between clients and practitioners, during the course of such activities. Businesses that conduct skin penetration procedures are required to hold a Public Health Risk Activity (Infection Control) Business Licence. They include dentists, doctors, podiatrists, beauticians, tattooists, acupuncturists and body piercers.

In addition to being licensed, businesses are audited for compliance against relevant nationally recognised infection control standards. Between July 2000 and June 2002, 414 licensed premises were audited. There were no recorded cases of blood borne disease transmission in the ACT attributed to poor infection control practices at licensed premises.

Some emerging practices that may pose an infection risk include:

- branding/scarification of the skin for decorative purposes;
- micro-pigmentation, which is similar to tattooing but not permanent;
- the use of closed ear piercing guns on areas other than the lobe of the ear;
- colonic irrigation; and
- the reuse of waxing roll-on applicators in beauty therapy.

ACT Health is proposing to introduce a new code of practice that will ensure these and other practices involving skin penetration are carried out in a manner that will further minimise the risk of disease transmission to the general public.

5.5 Radiation safety

Activities involving the use of X-ray apparatus and radioactive materials have been conducted safely with no reported incidents of danger to radiation workers, the general public or the environment between 2000 and 2002. The occupational exposures received by the vast majority of radiation workers in the ACT were less than one-tenth of the limit prescribed in the *Radiation Act 1983*.

Premises and equipment are inspected regularly by officers from the Radiation Safety Section of the Health Protection Service to ensure that the standards set by the Radiation Council are maintained.

5.6 Pharmaceutical services

Pharmacies are inspected by the Pharmaceutical Services Section (PSS) of the HPS to ensure the safe sale of pharmacist medicines (Schedule 3) and to audit the inherent controls on these transactions and Schedule 8 substances (drugs of dependence) transactions. PSS also inspects pharmacies regarding specific pharmacist, or pharmacy-related matters and collects any out-of-date drugs of dependence from pharmacies, dentists, vets etc if requested. In a separate but related national scheme, members of the public are encouraged to return unwanted medicines to their pharmacist or pharmacy. These actions help to minimise the risk of harm by limiting the unwanted or out-of-date drugs in circulation and the potential for inadvertent or intentional poisoning.

During 2000/01 and 2001/02, PSS worked with local doctors, pharmacists, hospitals and the police on a number of issues, including investigations into a murder, pharmacy robberies and the inappropriate purchasing of pseudoephedrine (a legitimate medicine that can be used in the illicit manufacture of amphetamines). There were approximately ten reports of prescription pads or forms having being stolen (from doctors, their surgeries or hospitals in the ACT) and 35 'prescriptions' reported as forgeries. In each case, the matter was followed up and further notification was provided as appropriate.

PSS worked with local GPs and pharmacists to maintain the ACT's benzodiazepine voluntary undertaking program, which assists doctors and pharmacists to support their patients in controlling their use of benzodiazepines. Approximately 200 patients were enrolled on the program at any one time.

PSS also provided expert advice to a number of reviews such as the National Competition Review of Drugs, Poisons and Controlled Substance Legislation; the National Competition Policy Review of Pharmacy; the Uniform Recall Procedure for Therapeutic Goods and the Crisis Management Guidelines for the Management of Actual, Potential or Threatened Tampering of Medicines, Complementary Healthcare Products and Medical Devices. PSS also provided expert advice on various committees including the Methadone Advisory Committee and the Sharps Working Party.

5.7 Transport

The transport environment can have an impact on health. For instance, having ready access to reliable personal or public transport is important in achieving timely access to medical services. The major health threats from the transport environment include:

- injury and death from transport accidents;
- ill health arising from the transport-related degradation of air, land and water quality; and
- ill health arising from transport-related noise pollution.

Although there is little quantitative information available at present to measure the impact of transport-related pollution on health in the ACT, there is information available on injury death from transport-related accidents. Twenty-one ACT residents died as the result of a transport-related accident in 2001 (not all of these people died on ACT roads). There were 23 deaths in 2000 and 20 deaths in 1999. Males comprised more than two-thirds of these deaths.

The transport-related death rate for the ACT has been consistently lower than the rate for Australia over time.[68] Table 5.2 shows that transport-related death rates declined for both the ACT and Australia between 1991 and 2001. Transport safety initiatives, which include the identification and amelioration of ‘’black spots’ on ACT roads and local road safety promotion, have contributed to the decline in the ACT.

Table 5.2 Transport-related death rates[(a)] (per 100,000 population), ACT and Australia, 1991 & 2001.

	ACT	Australia
1991	13.8	14.6
2001	6.7	10.4

Data Source: Australian Bureau of Statistics. 2002. *2001 Causes of Death Australia.* Cat. No. 3303.0. Canberra, Australian Bureau of Statistics.

(a) Standardised to the 1991 mid-year Australian population.

Transport-related hospitalisation rates for ACT residents have also been consistently lower than the rates for Australia over time.[68] In 2001/02, 261 ACT residents were admitted to ACT hospitals as the result of a transport-related accident. Males aged between 15 and 29 years accounted for a third of the hospitalisations in 2001/02.

The ACT transport environment is largely managed by the ACT Department of Urban Services. It plans and manages the development and upgrading of roads in the ACT and the ACT’s public transport infrastructure, which includes local taxi and bus services, public parking, and road safety.

6 Health Services and Their Use

At a Glance

- The ACT continued to have a low number of full-time workforce equivalent (FWE) general practitioners (GPs) per capita (65.5 per 100,000 population) compared to the average for Australia (84.9) in 2001/02;
- Enhanced Primary Care (EPC) Medicare Benefit Schedule (MBS) item number uptake by GPs has increased annually in the ACT since the introduction of items in 1999, however the ACT has consistently had a lower rate of uptake per GP FWE than the average for Australia;
- Approximately 75 per cent of ACT residents requiring hospital care in the ACT in 2001/02 were hospitalised in a public facility and 25 per cent were hospitalised in a private facility;
- The leading causes of hospitalisation for ACT residents in 2001/02 were 'digestive disorders', 'pregnancy and childbirth', and 'neoplasms';
- Results from the National Health and Child Health Surveys suggest that oral health service utilisation rates were higher for the ACT than Australia in 2001.

Health service use in the ACT is influenced by a range of factors, including the demographics and health status of the population, efficiency and practice trends, economic, physical and social factors affecting access to services, and the availability of service information. ACT Health plans, manages and provides services to approximately 322,600 ACT residents and also provides services to a large number of residents in the surrounding NSW region. These services range from primary and community health services to highly specialised, tertiary level services.

Generalist primary medical care and aged residential care is funded by the Commonwealth Government. Co-ordinating and integrating health service provision across the Territory and Commonwealth funding boundaries continues to present challenges in the provision of a fully integrated health service.

This chapter provides an overview of the use of health services provided by ACT Health to residents of the ACT. The service-related information is presented in three sections under the headings 'primary services', 'hospital services' and 'residential services'. The service utilisation information that has been presented in this chapter has been selected for presentation because of its availability and reliability. Information has been derived from ACT hospitalisation records, Medicare Benefit Schedule (MBS) claims, surveys and ACT Health and Commonwealth reports.

The hospital utilisation information does not include hospital services used by ACT residents outside of the ACT. Interstate hospital use by ACT residents is not significant, but may affect some statistics. It is expected that this information will be available for the next Chief Health Officer's Report.

6.1 Primary services

Primary health care is a core component of the ACT health sector, provided mainly by general practitioners (GPs). The information contained within this section has been obtained from a variety of sources and has been used to present an over view of primary health service utilisation in the ACT.

To a large extent, the information presented here is about the provision of GP services. Nurses, community pharmacists, allied health practitioners and alternative health practitioners also provide primary health services to the community in the sense that these are 'first-level' or 'first-point-of-contact' services. However, there is limited information available to ACT Health on the utilisation of these services.

6.1.1 General practitioner services

General Practice is an integral part of the ACT health system and is a key interface between all sections of the health system. General practitioners are a central focus of community and individual primary health care and are major providers of primary health care services that include:

- one to one consultations with patients, and referrals to medical specialists, allied health professionals and community health, hospital admissions, pathology and imaging;
- the planning and coordination of patient care with other health professionals requiring extensive knowledge of the local community and the range of services and forms of assistance that are available; and
- they make a contribution to many aspects of the health system not traditionally seen as 'general practice' (ie. academic work, policy development, outpatient services, emergency departments, transitional care, community education etc).

In addition, GPs in the ACT make a significant contribution to local initiatives such as the provision of drug and alcohol services and the community methadone program.

ACT Health and the ACT Division of General Practice Representative Group developed and signed a Memorandum of Understanding (MoU), which provides a basis for developing system-wide collaboration between ACT Health and general practice in the three years 1 July 2002 to 30 June 2005.

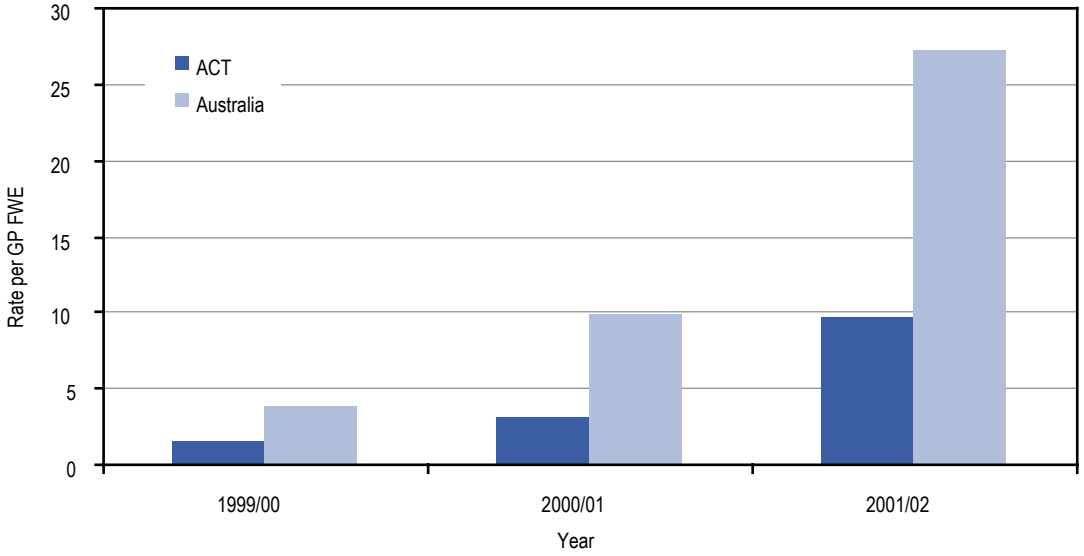
The ACT had a lower rate of GP full-time work force equivalents (FWE) per 100,000 population compared to all other jurisdictions in 2001/02, with the exception of the Northern Territory. The ACT had 65.5 GP FWE per 100,000 population compared to an average of 84.9 for Australia in 2001/02. The ACT has consistently had a low rate of GP FWE per capita compared to other jurisdictions and the rate has declined over time, down from 74.9 GP FWE per 100,000 population in 1997/98 to 65.5 in 2001/02. [69]

In 1999, the Commonwealth introduced a range of Medicare Benefits Schedule (MBS) items intended to provide more preventive care for older people and to improve care co-ordination between general practitioners and other health professionals providing care to people of any age with chronic conditions and complex care needs. The Enhanced Primary Care (EPC) Medicare items provide remuneration via MBS for GPs participating in a multidisciplinary approach to health care.

There are 28 EPC items on the MBS, covering:

- health assessments for people aged 75 years or more, or indigenous people aged 55 years or more (in recognition of their specific health needs);
- multidisciplinary care planning;
- multidisciplinary case conferencing; and
- multidisciplinary discharge care planning and case conferencing.[70]

Figure 6.1: MBS Enhanced Primary Care item uptake per GP FWE, ACT and Australia, 1999/00 - 2001/02



Data Sources: Health Insurance Commission <www.hic.gov.au/statistics> . Viewed 04/08/03;
Steering Committee for the Review of Commonwealth/State Service Provision. 2003. *Report on Government Services 2003.* Vol 2. Canberra, Productivity Commission.

Since its introduction in 1999, the uptake of EPC items has increased annually in the ACT. However, the ACT uptake of EPC items has been consistently lower than the average for Australia. The relatively low uptake of EPC arrangements in the ACT has resulted from the interaction of complex factors including a GP FWE shortage and difficulties with collaboration between health professionals. There is considerable scope for an increased use of EPC item numbers and the integration of general practice with other parts of the health system.

During 2002, ACT Health, the ACT Division of General Practice and the Commonwealth Government developed a project proposal to investigate ways to increase collaboration between GPs and ACT public hospitals in the area of discharge planning for people over 75 years of age (55 years for Aboriginal and Torres Straight Islander people). The EPC Demonstration Site Project will be conducted between June 2003 and May 2004 and will provide a greater understanding of local integration issues and problems with the implementation of the Commonwealth EPC initiative in the ACT.

In addition, ACT Health is working to improve hospital, community service and GP integration with the employment of GP liaison officers in ACT public hospitals (The Canberra Hospital and Calvary Hospital). GP advisers have also been appointed to both hospitals and are working with the GP liaison officers to improve GP/hospital integration in areas such as outpatient referrals and discharge planning.

General practitioners are important providers of primary health and medical care services to children in the ACT. Estimates derived from the 2001 ACT Child Health Survey suggest that 82.9 per cent (95%CI 79.4 – 86.4) of ACT children (0-12 years) had seen a GP or family doctor in the 12 months preceding the survey. Parents and carers of children (0-12 years) were asked whom they normally consult about their children's general health problems and whether their children usually see the same doctor, or different doctors, at the same or different medical centres.

More than 97.2 per cent (95%CI 95.7 – 98.7) of parents or carers reported that their children usually consulted a GP or family doctor, or a doctor in a medical centre for general health problems. This was similar to the result for New South Wales (97.9%). Most ACT children were reported to consult the same doctor or the same practice (97.6%; 95%CI 96.2 – 99.0) when usually seeing a doctor, similar to the percentage for New South Wales (96.0%).

6.1.2 Oral health services

There are a range of public and private oral (or dental) health services available in the ACT. ACT Health offers adult oral health services for residents who hold a Centrelink issued Pension Concession or Healthcare card. These services include general restorative services, emergency services and a range of denture services. ACT Health also provides oral health services for under school age, primary school children, and young people under the Child and Youth Dental Membership Scheme. These services include:

- dental check-ups;
- cleaning;
- preventative care
- fillings;
- extractions;
- emergency treatment;
- dental education; and
- X-rays.

ACT Health also offers the 'First Smiles Program' as part of the Child and Youth Dental Membership Scheme. This program provides a free examination for under school age children, available at any of the Program's Child and Youth Dental Clinics. The aim is to encourage parents who are assisting their children to establish good oral health habits.

The oral health service utilisation information that follows has been derived from population health surveys undertaken in 2001. It suggests that ACT residents have either similar, or slightly higher, levels of oral health service utilisation compared to New South Wales and Australia.

The results of the 2001 National Health Survey suggest that 7.2 per cent (95%CI 6.1 – 8.3) of the ACT population had seen a dentist in the two weeks prior to survey. This compares to six per cent nationally. Within the ACT, females (7.8%) were more likely to have visited a dentist in the two weeks preceding the survey than males (6.7%) and children (0-14 years) had the highest consultation rates (7.5%) of any age group in the survey.

Estimates derived from the 2001 ACT Child Health Survey suggest that over two-thirds (67.0%; 95%CI 62.2 – 71.9) of ACT children aged one to 12 years have 'ever visited' a dental professional. This was slightly higher than the result for New South Wales (61.6%). Approximately a half (50.6%; 95%CI 44.3 – 54.6) of the ACT children, aged one to 12 years, that were included in the survey were reported to have visited a dental professional during the past 12 months, which was also slightly higher than the result for New South Wales (43.1%). See Chapter 16: Child Health for further information.

6.2 Hospital services

The majority of inpatient hospital services in the ACT are provided by The Canberra Hospital and Calvary Public Hospital. Together, they provide the public hospital inpatient services to the ACT. In 2001/02, they provided 75 per cent of all ACT resident hospital inpatient services in the ACT. A quarter (25%) of all ACT resident inpatient services in the ACT were provided by the Calvary Private Hospital, John James Memorial Hospital and National Capital Private Hospital.

Table 6.1: Hospital separations by principal diagnosis[(a)], by public and private ACT hospitals, for ACT residents, 2001/02

	Public hospitals		Private hospitals		Total	
	No.	%	No.	%	No.	%
Certain infectious and parasitic diseases	866	1.7	45	0.3	911	1.4
Neoplasms	2,501	5.0	1,614	9.8	4,115	6.2
Diseases of blood/blood-forming organs etc	718	1.4	52	0.3	770	1.2
Endocrine, nutritional and metabolic diseases	1,349	2.7	207	1.3	1,556	2.4
Mental, behavioural disorders	1,356	2.7	241	1.5	1,597	2.4
Diseases of the nervous system	639	1.3	261	1.6	900	1.4
Diseases of the eye and adnexa	568	1.1	816	5.0	1,384	2.1
Diseases of the ear and mastoid process	290	0.6	252	1.5	542	0.8
Diseases of the circulatory system	3,335	6.7	517	3.2	3,852	5.8
Diseases of the respiratory system	2,237	4.5	704	4.3	2,941	4.4
Diseases of the digestive system	4,192	8.4	1,960	12.0	6,152	9.3
Diseases of the skin and subcutaneous tissue	584	1.2	265	1.6	849	1.3
Diseases of the musculoskeletal system and connective tissue	1,385	2.8	1,703	10.4	3,088	4.7
Diseases of the genitourinary system	1,914	3.8	2,020	12.3	3,934	5.9
Pregnancy, childbirth and the puerperium	3,480	7.0	1,814	11.1	5,294	8.0
Certain conditions originating in the perinatal period	1,010	2.0	738	4.5	1,748	2.6
Congenital malformations/deformations etc	375	0.8	230	1.4	605	0.9
Symptoms/signs/abnormal clinical and laboratory findings	2,220	4.5	326	2.0	2,546	3.8
Injury/poisoning/other consequences of external causes	3,368	6.8	429	2.6	3,797	5.7
Factors influencing health status etc	17,354	34.9	2,192	13.4	19,546	29.6
Not classified	0	0.0	12	0.1	12	0.0
Total	**49,741**	**100.0**	**16,398**	**100.0**	**66,139**	**100.0**

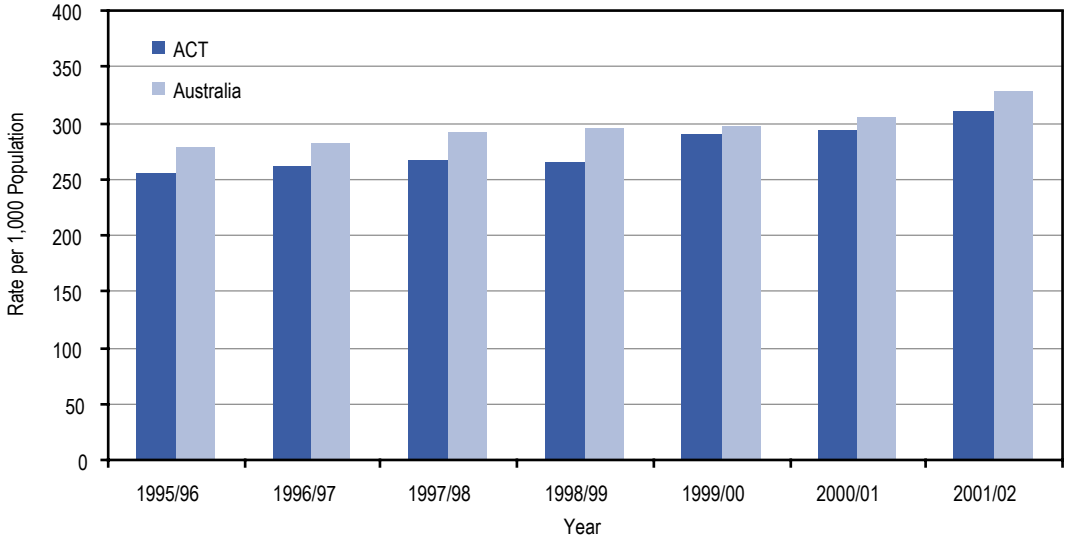
Data Source: ACT Admitted Patient Care collection, 2001/02. Confidential unit record file.

(a) ICD-10-AM diagnostic category – see Appendix 3 for diagnoses codes

Note: Data in this table excludes separations for non-ACT residents and ACT residents hospitalised interstate and overseas.

There were 66,139 ACT resident separations from ACT hospitals in 2001/02. The leading diagnostic categories for ACT resident hospitalisations were ‘diseases of the digestive system’, ‘pregnancy, childbirth and the puerperium’ and ‘neoplasms’, accounting for 23.5 per cent of all separations. About a third of all hospitalisations for ‘diseases of the digestive system’ involved an endoscopic procedure; nine per cent involved a cholecystectomy, eight percent involved hernias and six percent involved an appendicectomy procedure.

Figure 6.2: Age-standardised separation[a] rates[b] (per 1,000 population) for the ACT and Australia, 1995/96 - 2001/02



Data sources: Australian Institute of Health and Welfare. 1997. *Australian Hospital Statistics 1995-96*. Cat. No. HSE 3. Canberra, Australian Institute of Health and Welfare; Australian Institute of Health and Welfare. 1998. *Australian Hospital Statistics 1996-97*. Cat. No. HSE 5. Canberra, Australian Institute of Health and Welfare; Australian Institute of Health and Welfare. 1999. *Australian Hospital Statistics 1997-98*. Cat. No. HSE 6. Canberra, Australian Institute of Health and Welfare; Australian Institute of Health and Welfare. 2000. *Australian Hospital Statistics 1998-99*. Cat. No. HSE 11. Canberra, Australian Institute of Health and Welfare; Australian Institute of Health and Welfare. 2001. *Australian Hospital Statistics 1999-00*. Cat. No. HSE 14. Canberra, Australian Institute of Health and Welfare; Australian Institute of Health and Welfare. 2002. *Australian Hospital Statistics 2000-01*. Cat. No. HSE 20. Canberra, Australian Institute of Health and Welfare; Australian Institute of Health and Welfare. 2003. *Australian Hospital Statistics 2001-02*. Cat. No. HSE 25. Canberra, Australian Institute of Health and Welfare.

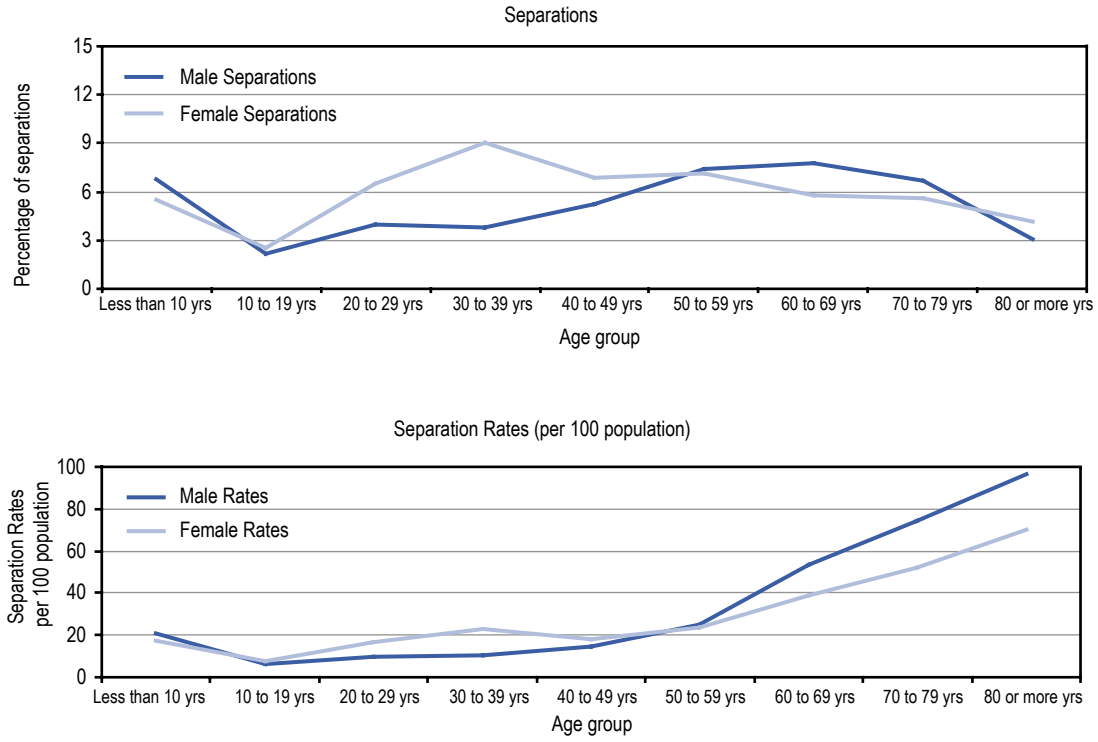
(a) Separations by patient's State of usual residence.

(b) Separation rates 1995/96 - 2000/01 have been standardised to the 1991 Australian mid-year population, 2001/02 rates have been standardised to the 2001 Australian mid-year population.

ACT hospital separation rates for ACT residents have been consistently lower than Australian rates since 1995/96 (Figure 6.2). ACT hospital separations increased by 21.4 per cent between 1996/97 and 2001/02. Separation rates for ACT residents increased by 19 per cent, or by 4.3 per cent a year, on average, over this five-year period. This trend is likely to be affected by changes in hospital service delivery relating to renal dialysis and chemotherapy.

In general, hospital service use increases with age. Although the number of separations for males and females aged 65 years or more are generally low, due to the small number of people in these age groups, separation rates (per 100 population) increase markedly with advancing age. This point is illustrated in Figure 6.3.

Figure 6.3: ACT residents' separations by age group (%) and age-specific separation rates (per 100 population), by sex, 2001/02



Data Source: ACT Admitted Patient Care collection 2001/02. Confidential unit record file.

ACT females had higher separation rates than ACT males between 20-49 years of age (child-bearing years), but after 50 years, separation rates for males exceeded female separation rates in 2001/02.

6.3 Residential services

The provision of Residential Aged Care Services is primarily the responsibility of the Commonwealth Department of Health and Ageing (DOHA). Aged care places are allocated to aged care providers through an annual Aged Care Approvals Round (ACAR). Each State and Territory has an Aged Care Planning Advisory Committee (ACPAC) run by the State or Territory DOHA office.

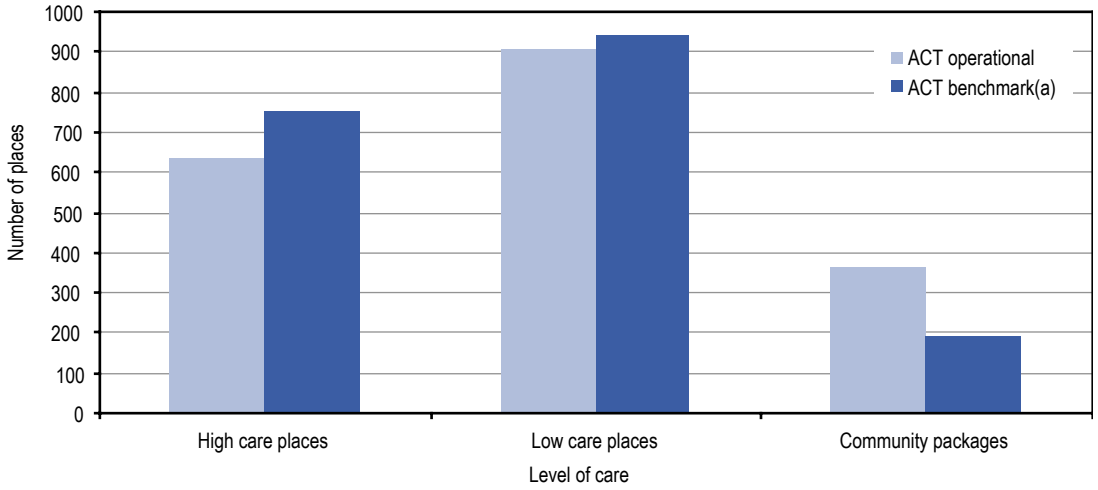
The ACT ACPAC provides advice and recommendations to DOHA for ACAR. This advice focuses on the distribution of residential and community care places across the ACT. ACPAC meetings are held twice yearly, and include representatives from ACT Health, the Council on the Ageing, the Department of Veterans Affairs, the Department of Urban Services and other relevant community groups.

When places are allocated through the ACAR, they are known as "provisional allocations", which means they have been allocated to a provider but are not yet operational. Providers have two years to bring provisional places on line. The places then become known as "operational places".

The DOHA benchmark for allocations is 40 high care places per 1,000 people aged 70 years and over, 50 low care places per 1,000 people aged 70 years and over, and 10 community aged care packages per 1,000 people aged 70 years and over. In terms of number of places, the benchmark equates to 753 high care places, 941 low care places, and 188 community aged care packages, in total 1,882 places for the ACT.

The ACT has 635 operational high care places, 910 operational low care places, and 362 operational community aged care packages (a total of 1,907 operational places). The ACT is over the DOHA benchmark in terms of community aged care packages, but under the benchmark in operational high and low care places (Figure 6.4).

Figure 6.4: ACT Residential aged care places, operational and benchmark[(a)], 2002.



Data Source: ACT Health, 2002.
(a) Benchmark places are based on DOHA benchmarks applied to the ACT population.

The total number of provisional aged care places in the ACT is 181 allocations, comprising 122 high care and 59 low care allocations. The ACT Government works closely with DOHA and providers to assist in bringing places on line. The ACT Government has also funded a Residential Aged Care Liaison Nurse as part of a two-year project to streamline the process for accessing residential aged care beds.

Under the 2003 National Aged Care Approvals Round, DOHA will release an additional 90 residential places and 14 community aged care packages for the ACT. Approved providers will apply for allocations of these aged care places from the DOHA.

The *Report on Government Services 2003*[69] showed that the ACT continues to have the lowest percentage of operational high care residential places per 1,000 aged 70 years and over (41.6%), and the highest percentage of low care places (58.4%) in comparison to any other jurisdiction. Approximately 61.5 per cent of ACT residents in nursing homes are high care, with the remaining 38.5 per cent classified as low care. The disparity between the greater proportion of high care residents, and the higher percentage of low care operational places is due to 'ageing in place' (this occurs when older people remain in the same residential low care services as their care needs increase from low level to high level).

6.4 Quality and safety in health care

ACT Health has developed a quality and safety plan - "*Quality First – A Commitment to Quality and Safety in ACT Health Care Services*", which encourages partnerships with consumers and a supportive working environment for the development of quality and safety in healthcare. The plan identifies key areas for development and strategies aimed at improving quality and safety across health services. Important achievements to date include the establishment of a portfolio wide adverse health event monitoring and response system and the development and implementation of the Clinical Health Improvement Program (CHIP).

Adverse health events are an important cause of morbidity and mortality in health care. A mechanism was required for the routine monitoring of adverse health events, or iatrogenic harm, in the ACT. During 2001, a single incident monitoring system was developed and then implemented at The Canberra Hospital, Calvary Hospital and across ACT Health's community care services. The monitoring system – *Accident Incident Monitoring System (AIMS+)*, designed by the Australian Patient Safety Foundation, captures the details of clinical incidents and other adverse health events. AIMS+ will play an important role in increasing knowledge and understanding of the circumstances in which clinical incidents occur and will inform the development of strategies for reducing incidents, and minimising harm, across health services.

The Clinical Health Improvement Program has been funded by the Australian Health Care Agreement Quality Enhancement Allocation for three years and will be run at both The Canberra Hospital and Calvary Hospital. The Program includes a range of projects aimed at supporting clinicians to improve the quality and safety of services provided across the ACT. A series of clinical, service and cost outcome measures will be taken to assess the effectiveness of each individual project.

Other ACT Health quality program initiatives include:

- the Consumer Participation Project at Calvary Health Care ACT, involving a consumer participation call back survey;
- the Thinprep 2000 system at ACT Pathology. The introduction of the system has resulted in a significant increase in the accuracy of readings in cytology samples;
- the Blood Stream Infections Project at The Canberra Hospital which has involved a) the surveillance of the incidence, causes and outcomes of blood stream infection in the ACT and b) changes to practices and systems to reduce the incidence of blood stream infection;
- the Falls Prevention Program which aims to reduce fall related injury by implementing protocols for multi-disciplinary risk assessment and treatment of older people at risk of falling;
- the Consumer Feedback Project, which is a collaborative project between ACT Health, the ACT Healthcare Consumers Association, the Community and Health Services Complaints Commission, The Canberra Hospital, Calvary Health Care ACT and Community Care. The project recognises that the perspectives of both consumers and providers are important in adequately defining and achieving quality in health care;
- the ACT Community Care Health Outcomes Framework, which investigated the relationship between clinical health service processes and outcomes using case studies.

Emerging Issues

- The low number of GP FWE (general practitioner full-time workload equivalents) per 100,000 population continues to be an issue of concern in the ACT;
- Strategies to cope with increasing demand for hospital services will need to be developed and existing strategies further refined as the demographic structure of the ACT population changes over time;
- ACT Health will continue to work with the Commonwealth Department of Health and Ageing to ensure that ACT residents have access to appropriate levels of aged care services.

7 Cardiovascular Disease

At a Glance

- Cardiovascular disease is the leading cause of death for the ACT, accounting for 36 per cent (507 deaths) of all deaths among ACT residents in 2001. Fifty per cent of these deaths were due to myocardial infarction (heart attack) and almost a quarter (23.5%) were due to stroke;
- The ACT had the second highest percentage of premature deaths due to cardiovascular disease in Australia between 1997 and 2000, resulting in almost 2,000 years of life lost, on average, each year;
- Cardiovascular disease was listed as a principal or associated diagnosis for almost 9,000 ACT hospital separations for ACT residents in 2001/02.

Cardiovascular disease (CVD) is the leading cause of mortality and a significant cause of morbidity and disability in Australia and the ACT, accounting for an estimated 21.9 per cent of the total burden of disease and injury in Australia in 1996.[27]

Cardiovascular disease includes heart, stroke and blood vessel disease. Risk factors for developing cardiovascular disease include smoking, physical inactivity, poor nutrition, excessive alcohol consumption, high blood pressure, a high concentration of certain fats in the blood, overweight or obesity, and diabetes.

Ischaemic heart disease and stroke cause the greatest number of cardiovascular deaths and ill health. Ischaemic heart disease consists primarily of heart attacks and angina. A heart attack occurs when a vessel supplying blood to the heart becomes blocked. Angina is temporary pain or discomfort in the chest caused by a reduction in blood supply to the heart. Ischaemic heart disease accounts for more than a half of all cardiovascular disease deaths in the ACT, and is more common in men and older women.

Strokes interrupt blood flow to an area of the brain. The majority of strokes involve a blockage of a blood vessel or artery in the brain (an ischaemic stroke), while about 15 per cent of strokes are caused by bleeding (a haemorrhagic stroke). Of those who suffer a stroke, around one third will die within 12 months, one third will remain disabled and require care, and one third will make a complete recovery.

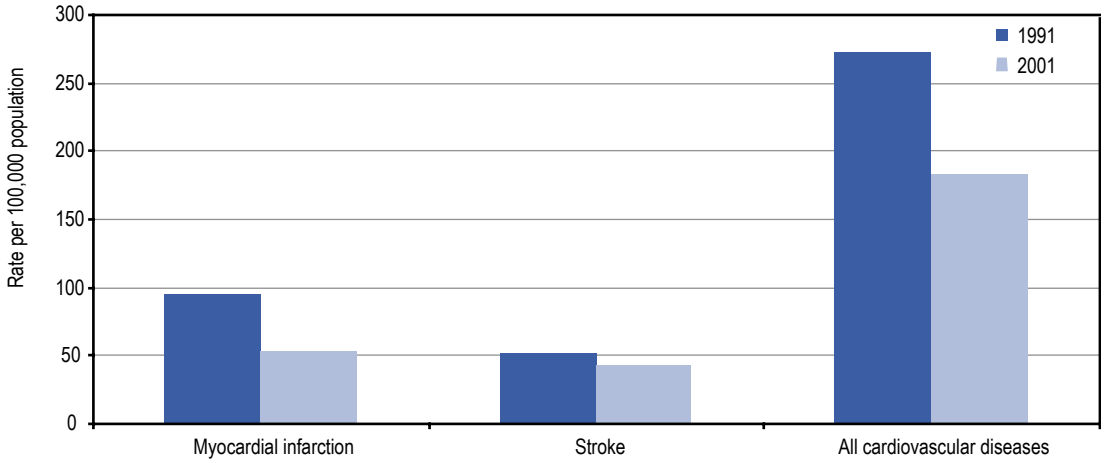
7.1 Statistics and trends in cardiovascular disease

The mortality rate for CVD in the ACT declined markedly between 1991 and 2001 (Figure 7.1). A similar decline occurred at the national level over the same period. The reduction in the mortality rate was seen primarily in ischaemic heart disease, and has been attributed to a reduction in the incidence of heart attacks and improved survival following heart attack, with recent advances in medical treatment and follow-up care.[71] The much smaller reduction in mortality due to stroke reflects a decline in the incidence of stroke, rather than improvement in survival following stroke.

The declines in the incidence of ischaemic heart disease and stroke can be partly attributed to reductions in tobacco smoking, high blood pressure and saturated fat dietary levels, although levels of physical inactivity and the proportion of overweight and obese Australians have increased over the same period.

Despite the observed decline in mortality, it is estimated that between 1997 and 2000, 34 per cent of ACT deaths due to cardiovascular disease were premature, resulting in almost 2,000 years of life lost in the ACT each year.[72]

Figure 7.1: Age-standardised mortality rates[(a)] for myocardial infarction, stroke and all CVDs, ACT, 1991 & 2001



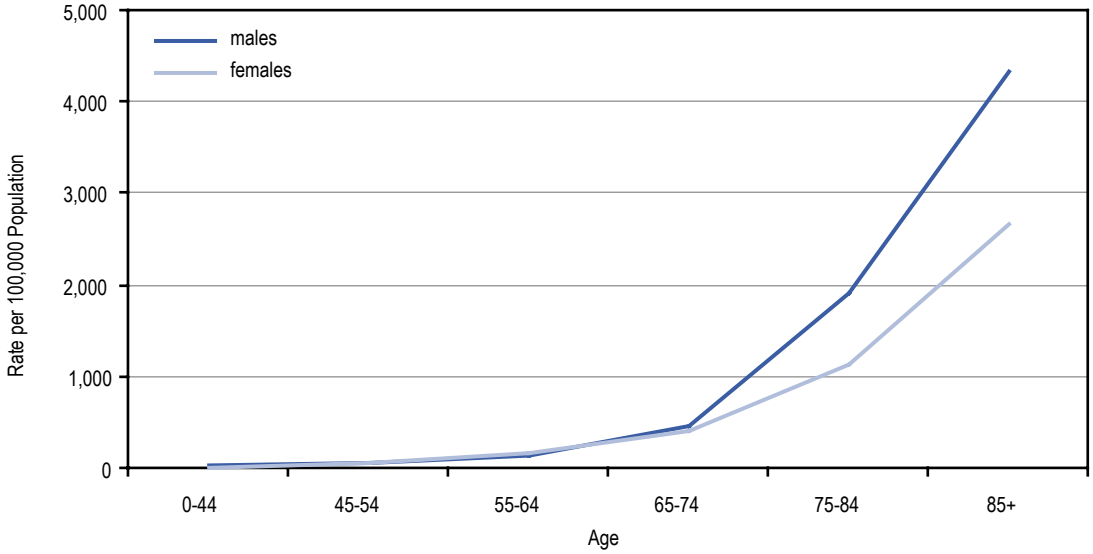
Data Source: Australian Institute of Health and Welfare. 2002. *Chronic Diseases and Associated Risk Factors in Australia 2001*. Cat No. PHE 33. Canberra, Australian Institute of Health and Welfare.

(a) Data standardised to the 1991 Australian population.

In 2001 there were 507 deaths in the ACT due to CVD, representing approximately 36 per cent of all ACT deaths. One hundred and forty-six deaths were due to myocardial infarction, accounting for 28.8 per cent of all CVD deaths and 119 deaths were due to stroke, accounting for 23.5 per cent of all CVD deaths.[73]

There were 378 hospital separations for ACT residents with a principal diagnosis of stroke in 2001/02. Seventy-five per cent of these separations were for ischaemic strokes, involving a blockage of a blood vessel or artery in the brain. Despite the higher rate of hospitalisations in males (Figure 7.2), the overall number of strokes in males and females was similar due to the increased life expectancy of women.

Figure 7.2: Stroke hospitalisation rate per 100,000 population for males and females resident in the ACT, 2001/02



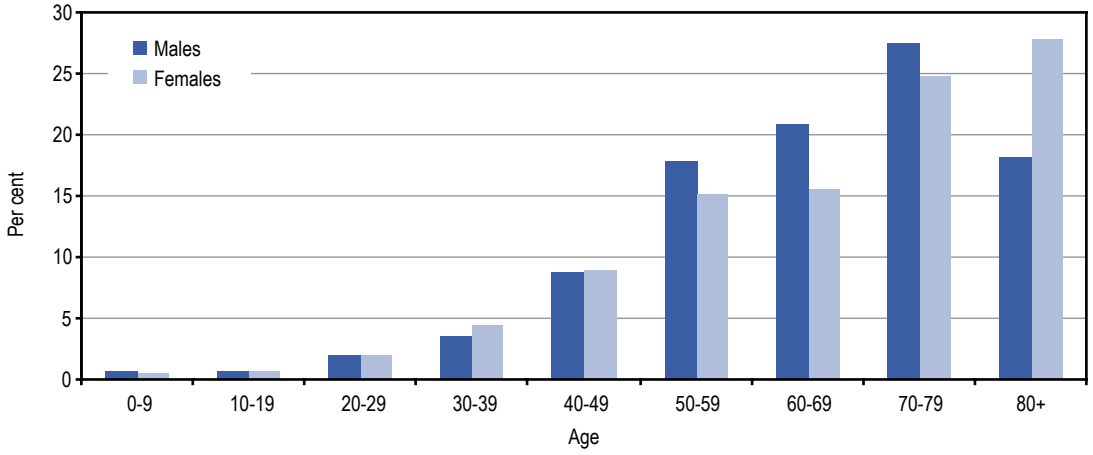
Data Source: ACT Admitted Patient Care collection, 2001/02

7.2 Services and their use

The increased risk of stroke with older age is an important consideration for health service planners. Given the expected demographic changes in the ACT and surrounding NSW populations over time, it is anticipated that there will be a notable increase in the total number of strokes.

Cardiovascular disease was listed as a principal or associated diagnosis for almost 9,000 ACT hospital separations in 2001/02. Almost 50 per cent of CVD hospitalisations were for ACT residents aged 70 years or more. More males were hospitalised then females in nearly all age groups, with the notable exception of those aged 80 years or more, reflecting the longer life expectancy of females.

Figure 7.3: Percent of CVD hospitalisations by age and sex, ACT residents, 2001/02



Data Source: ACT Admitted Patient Care collection, 2001-02

Sixty-seven per cent of ACT residents with stroke and 90 per cent of NSW residents admitted to an ACT hospital with stroke were admitted to The Canberra Hospital.

Ischaemic heart disease and revascularisation procedures

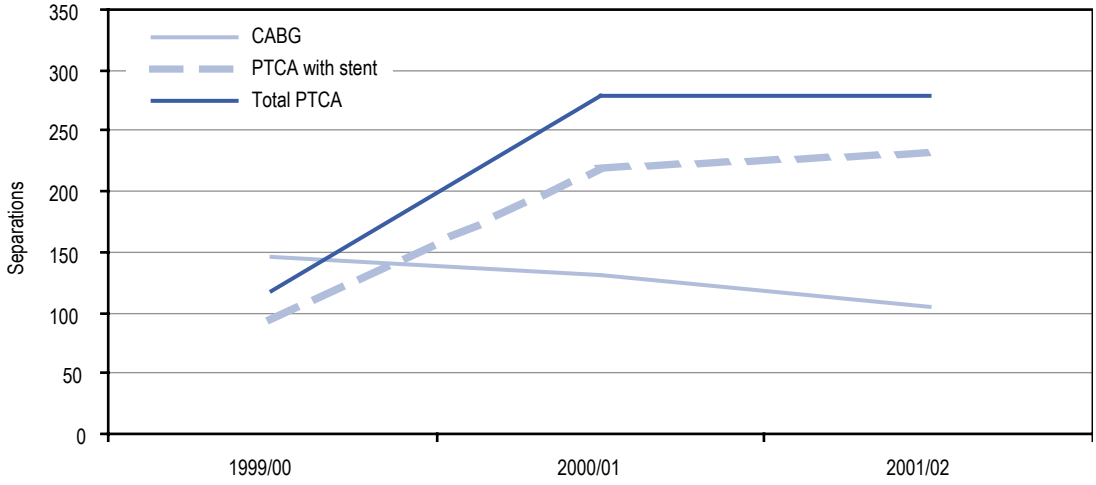
Significant advances in the quality and range of interventions for ischaemic heart disease have contributed to decreasing mortality observed over the past decade. The revascularisation techniques, coronary artery bypass graft (CABG) surgery and coronary angioplasty, have been shown to be of great symptomatic benefit to many people.

CABG surgery involves constructing new passages for blood flow between the aorta and segments of the coronary arteries, beyond stenosing or obstructing lesions. This restores blood flow to the myocardium. The operation requires about 7 to 10 days of hospitalisation and six to eight weeks before return to a normal life.[74]

The number of CABG operations being performed on ACT residents in the ACT has decreased over recent years with developments in the less invasive percutaneous transluminal coronary angioplasty (PTCA). PTCA is an extension of cardiac catheterisation, and involves the crossing and dilatation of coronary artery lesions by a balloon attached near the tip of a catheter. The procedure generally requires only a few days hospitalisation.

The increasing use of PTCA procedures is evident in Figure 7.4, with 90 per cent of angioplasty procedures performed on ACT residents during 2001/02 including the insertion of a stent.

Figure 7.4: ACT hospital separations for coronary artery bypass grafts and percutaneous transluminal coronary angioplasty with and without stent insertion, ACT residents (2 yearly moving averages), 1999 - 2002



Data Source: ACT Admitted Patient Care collection, 1998/99; 1999/00; 2000/01; 2001/02.

7.3 Cardiovascular disease initiatives

Cardiovascular health was established as one of the four major health areas for action under a refined National Health Goals and Targets program in 1994. In 1996, the current National Health Priority Areas initiative was established, with cardiovascular health as one of the original priority areas due to its widespread nature and the potential for prevention, or delaying the onset of disease.

The National Strategy for the Cardiovascular Health National Health Priority Initiative, currently in draft for consultation, identifies key areas for national action. These include heart, stroke and vascular disease in Aboriginal and Torres Strait Islander people; the prevention of heart, stroke and vascular disease; stroke emergency treatment and acute care; and rehabilitation after an acute heart, stroke or vascular event.

There is overwhelming evidence that the most effective care for stroke patients is provided in a geographically defined hospital ward area, by a specialised, experienced stroke team. The structure of stroke unit care varies between facilities but all provide care according to protocols. They have regular team meetings and access to ongoing education.[75]

The National Stroke Unit Program, supported through the Heart, Stroke and Vascular Disease Strategies Group in the National Health Priority Area Program, aims to improve access and equity to organised stroke services in order to reduce the social burden of stroke. Although organised stroke services have been shown to significantly reduce death and disability following stroke; nationally, only 15 per cent of persons who suffer a stroke have access to an acute stroke care unit. National guidelines for acute stroke management are currently in development.

It is estimated that the establishment of a stroke unit in the ACT would prevent death or dependency in close to 30 patients each year. It would also ensure the safe delivery of new thrombolytic therapies that require close monitoring.

More broadly, the *ACT Health Action Plan* sets out a number of priorities aimed at reducing the prevalence of modifiable risk factors for CVD. These priority actions include the prevention and cessation of smoking, the phasing out of smoke-free exemption legislation, prevention of overweight and obesity, improving nutrition and increasing physical activity levels in the ACT.

Finally, the Thrombolysis – Improving Door to Needle Time – Project, an initiative set up by the Clinical Health Improvement Program and run at Calvary Hospital, was a winner in the 'Appropriateness' category of ACT Health's Quality First Awards for 2002. The project increased compliance for thrombolytic therapy administration within one hour of presentation to the Emergency Department at Calvary Hospital, following a myocardial infarction (heart attack). Compliance improved from an initial rate of 47.8 per cent to 93 per cent.

Emerging Issues

- The prevalence of risk factors for cardiovascular disease such as physical inactivity and overweight and obesity are increasing in the ACT. These trends, combined with changes in the demographic structure of the population over time, are likely to result in a significant increase in future demand for acute care services for cardiovascular disease.

8 Cancer

At a Glance

- The lifetime risk associated with developing cancer for people in the ACT was one in three for males and one in four for women for the period 1996 to 2000;
- Between 1996 and 2000, there were 2,163 cancer deaths recorded for ACT residents, accounting for 32 per cent of all ACT resident's deaths over this period;
- The major causes of cancer death were cancers of the trachea, bronchus and lung, colorectal cancer, prostate cancer in males, and breast cancer in females;
- There is a higher rate of participation in breast and cervical cancer screening programs in the ACT than observed nationally.

The term cancer refers to a group of neoplastic diseases in which there is a transformation of normal body cells into malignant cells. Cells have a specific function in the body and under normal conditions they grow and multiply in an orderly manner. However, they may multiply uncontrollably and form tumours or neoplasms. If the neoplasms are malignant (cancerous) they have the ability to grow and invade other parts of the body.

The prognosis for a cancer depends on the type of cancer, whether it is slow or fast growing, the stage at diagnosis and the availability of timely and appropriate treatment. Treatment may involve surgery, chemotherapy and radiotherapy depending on the type of cancer and stage of the cancer at diagnosis. Prevention usually involves avoiding the risks associated with cancer, such as certain types of diet and exposure to carcinogens such as radiation, some chemicals, tobacco and alcohol. Early detection is essential for a favourable prognosis with certain cancers.

In 1996, cancer was declared a National Health Priority Area. There are eight cancer groups – lung cancer, breast cancer, cervical cancer, colorectal cancer, melanoma, prostate cancer, non-Hodgkin's lymphoma and non-melanocytic skin cancer – identified as priorities, with potential for significant health gain. Organisations like the Cancer Council of Australia and the National Breast Cancer Centre are funded to provide policy advice and implement key cancer initiatives.

At the local level, the *ACT Health Action Plan* includes a number of key priorities for the future aimed at reducing the prevalence of risk factors associated with various cancers in the ACT. Priorities for action include the prevention and cessation of smoking, prevention of overweight and obesity, improving nutrition and increasing levels of physical activity. The Plan also supports participation in cancer screening programs for the early detection of cancer.

As is in other State and Territories, all cancers, apart from non-melanocytic skin cancer, are notifiable diseases in the ACT. Since 1994, there has been a legal requirement that all public and private hospitals, general practitioners, nursing homes and pathology laboratories notify all newly diagnosed cancers to the ACT Cancer Registry. The Registry collates cancer information and produces regular reports on the incidence of new cases and cancer deaths in the ACT.

8.1 Statistics and trends in cancer

This section presents ACT-specific statistics and trends for all cancers, excluding non-melanocytic skin cancer, and seven of the eight National Health Priority Area cancers. The available data for non-melanocytic skin cancer is poor, reflecting its non-notifiable status. Therefore, specific rates of non-melanocytic skin cancer have not been included in this section.

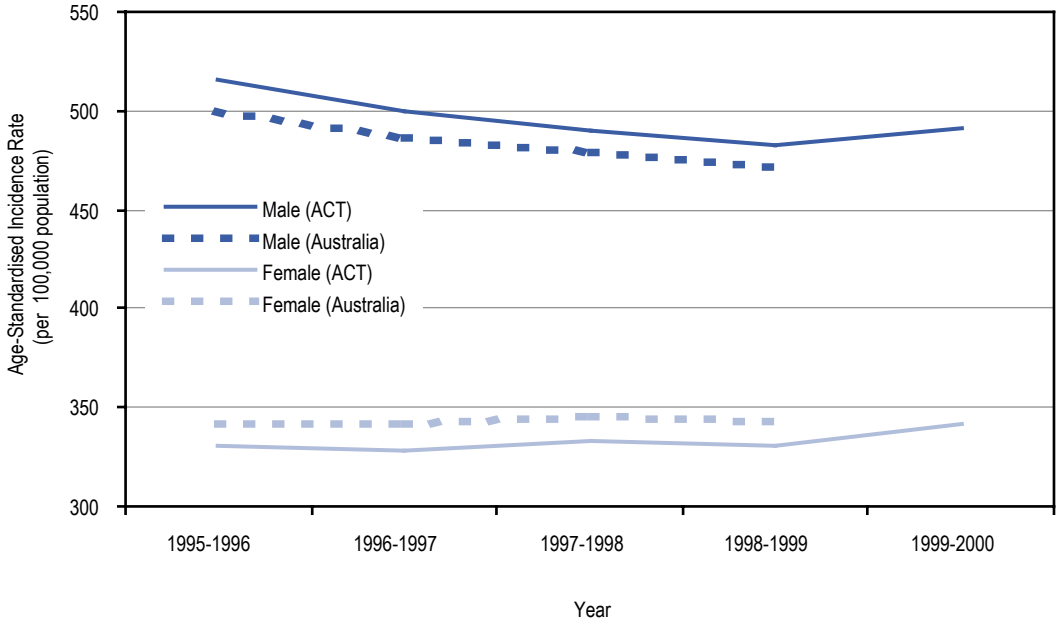
Cancer incidence data for the ACT include new cancer cases diagnosed in people resident in the ACT. Mortality data for the ACT includes people resident in the ACT when diagnosed with cancer. The rates presented have been standardised to the 1991 Australian population and, unless stated otherwise, are presented as rates per 100,000 population.

8.1.1 All cancers

Cancer is a significant cause of morbidity and mortality in Australia. During the 1996 to 2000 period, there were 5,246 new cancer cases reported in the ACT. Fifty-four per cent of these new cases were reported in males and 46 per cent of the cancers reported were in females. During this period, ACT males had a greater risk of developing cancer than ACT females. The age-standardised cancer incidence rate for males was 494 per 100,000 population whilst the rate for females was 336 per 100,000 population.

Recent trends in cancer incidence are presented as two-year averages in Figure 8.1 to minimise the variation in annual rates generated by small numbers for the ACT. Whilst ACT male cancer incidence rates declined slightly between 1996 and 2000, the rates for ACT females remained relatively stable. A similar pattern is observed for both the ACT and Australia over time.

Figure 8.1: Age-standardised incidence rates[(a)] for all cancers[(b)], by sex, ACT and Australia[(c)], 1995-2000



Data Source: ACT Cancer Registry.
(a) Rates are standardised to the 1991 Australian population
(b) Excludes non-melanocytic skin cancers.
(c) At the time of publication, 2000 data for Australia were not available.

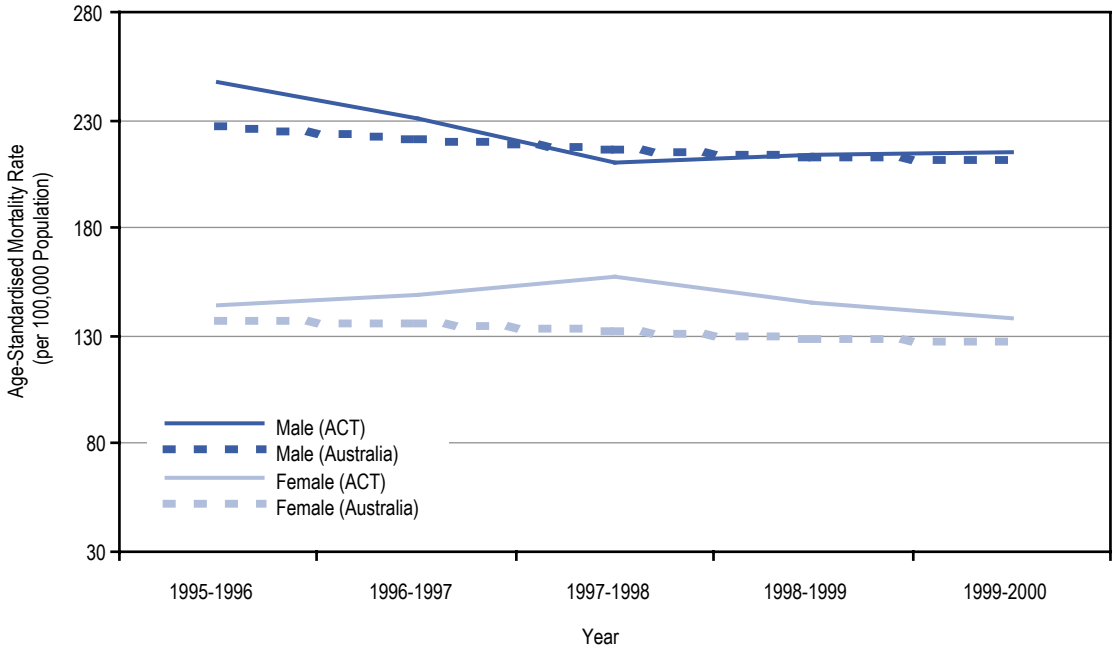
The risk of cancer is low in childhood and increases with age. Approximately one per cent of all new cancer cases reported in the 1996 to 2000 period were diagnosed in individuals less than 15 years of age. The most common cancers for this age group were leukaemias, cancers of the brain and central nervous central system and lymphomas.

Fifty-eight per cent of all new cancers reported over the same period were diagnosed in individuals aged 60 years or more. The most commonly reported cancers for this age group were prostate cancers, colorectal cancers, breast cancers and trachea, bronchus and lung cancers. The average age at which ACT residents were diagnosed with cancer was 63 years for males and 60 years for females during the 1996 to 2000 period.

Cancer is the second leading cause of death in the ACT after cardiovascular disease, accounting for 30 per cent of all ACT resident's deaths in 2000. There were 2,163 cancer deaths during the 1996-2000 period. Fifty-three per cent of cancer deaths occurred in males and 47 per cent occurred in females. Males had a higher risk of death due to cancer over this period compared to females. The age-standardised cancer death rate for males was 228 per 100,000 population while the rate for females was 148 per 100,000 population.

Overall, the age-standardised mortality rate for all cancers declined slightly over the 1996 to 2000 period for males and females, both in the Australian and ACT populations. As with incidence, recent trends are presented as two-year averages to minimise the variation in annual rates generated by small numbers for the ACT.

Figure 8.2: Age-standardised mortality rates[(a)] for all cancers[(b)], by sex, ACT and Australia, 1995-2000



Data Source: ACT Cancer Registry.
(a) Rates are standardised to the 1991 Australian population
(b) Excludes non-melanocytic skin cancers.

8.1.2 Female breast cancer

Breast cancer is the most common cancer (apart from non-melanocytic skin cancer) in Australian women. Some of the risk factors for the disease include having a family history of the disease, nulliparity, early onset of menstruation, later menopause, mutations in the BRCA1 and BRCA2 genes, use of oral contraceptives, hormone replacement therapy, obesity and consumption of alcohol. The risk of disease increases with age in women.[76] Males can also develop the disease, although it is very rare.

Between 1996 and 2000, there were 794 new breast cancer diagnoses. It was the most commonly diagnosed cancer between the ages of 45 and 64 years, accounting for 22 per cent of all cancers in females within this age group.

Between 1996 and 2000, breast cancer was the leading cause of cancer death in females (29 deaths per 100,000 population), accounting for 21 per cent of all cancer deaths in ACT females. Although the ACT female breast cancer mortality rate is generally higher than the Australian rate, it has declined in recent years. Breast cancer in the ACT is discussed in further detail in a recent publication, which is available from the Population Health Research Centre, ACT Health.

Early detection of breast cancer, through participation in screening programs may improve survival. BreastScreen Australia recommends a mammogram every two years and aims to recruit 70 per cent of women aged 50 to 69 years. In 1997, 33 per cent of all breast cancers were diagnosed by the BreastScreen program.

8.1.3 Lung cancer

Cancer that starts in the lung is known as primary lung cancer. Tobacco smoking is the major risk factor for lung cancer and estimates suggest that approximately 92 per cent of all lung cancers in Australia are attributable to smoking.[27] Exposure to asbestos, uranium, chromium, nickel and radon are also risk factors for lung cancer. As with other cancers, the risk for developing lung cancer increases with age. Males have a higher risk of developing the disease than females, which is largely a reflection of the historically higher smoking rates among men.[23]

During the 1996 to 2000 period, the risk of developing lung cancer by the age of 75 was one in 29 for males, compared to one in 46 for females. There were 219 new cases of lung cancer diagnosed in ACT men and 159 new cases in ACT women between 1996 and 2000. During this period, lung cancer was the fourth leading cancer site for ACT males and females, with 1.4 times more males than females diagnosed with the disease. Although the ACT male lung cancer incidence rate for this period was well below the Australian rate, the female lung cancer incidence rate was similar to the rate for Australia.

Lung cancer was the most common cause of cancer death during the 1996 to 2000 period, accounting for 15 per cent (327 deaths) of all cancer deaths. It has been the leading cause of cancer death for males since 1983 and was the second leading cause of cancer death for females during the 1996 to 2000 period. Lung cancer places a high burden of disease on the population, accounting for an estimated 2,485 years of life lost in the ACT between 1996 and 2000.

8.1.4 Colorectal cancer

Colorectal cancer develops from polyps, or growths, on the internal lining of the bowel. The predisposing risk factors for the disease include polyps, diabetes, family history of colorectal cancer, having had inflammatory bowel disease and increasing age. The modifiable risk factors for colorectal cancer include poor diet, physical inactivity, alcohol consumption, smoking and excessive weight.[76]

The prognosis for people diagnosed with the disease is largely dependent on the extent of the cancer at diagnosis. In its early stages, colorectal cancer is largely manageable and treatable.

Colorectal cancer was the second most common cancer for both males and females during the 1996 to 2000 period. Relevant age-standardised rates were 67 and 45 per 100,000 male and female populations, respectively. While Australian rates decreased slightly, ACT colorectal cancer notifications for males increased over the 1996 to 2000 period. It was also the second most common cause of cancer death in men and the third most common cause of cancer death in women. During the 1996 to 2000 period, the mortality rate for ACT males was 29 deaths per 100,000 population compared to 19 deaths per 100,000 population for ACT females.

8.1.5 Prostate cancer

The growth of cancer cells in the prostate, like that of normal prostate cells, is stimulated by male hormones especially testosterone. Compared with other types of cancer, prostate cancer is relatively slow growing and men with prostate cancer may live for many years without ever having the cancer diagnosed.

As is the case with other cancers, the cause of prostate cancer is unknown. Studies have found that age, family history, ethnicity, environmental pollutants and diet are potential risk factors for prostate cancer. Being over 60, having a father, uncle/s or brother/s with prostate cancer, having African-American, Afro-Caribbean or Latino ancestry, long term consumption of inorganic arsenic (through drinking water) and a diet high in animal fat appears to increase the risk of developing the disease. Diets high in fruit and vegetables may decrease the risk.

Prostate cancer in men rose from being the fourth leading cancer reported prior to 1987 to the most common cancer in 2000. A total of 796 new cases of prostate cancer were diagnosed between 1996 and 2000. The rise in prostate cancer diagnoses in the ACT was largely due to an increase in public awareness of the disease, together with the use of Prostate Specific Antigen (PSA) testing. ACT prostate cancer incidence trends over time show a substantial time lag behind Australia, which reflects a delayed uptake of PSA testing in the ACT, compared to Australia.

Prostate cancer was the third leading cause of cancer death in males during the 1996 to 2000 period. Compared to other cancers, prostate cancer had a relatively high incidence rate (103 new cases per 100,000 population) compared to the death rate (16 deaths per 100,000 population). Prostate cancer mortality rates for the 1996 to 2000 period, like most ACT cancer mortality rates, fluctuated annually due to the relatively small number of deaths each year, but otherwise followed the national trend, with a general decrease in mortality.

The Cancer Council of Australia has stated that, there is insufficient evidence to determine whether or not routine PSA testing prevents death from prostate cancer at this point in time. Because most prostate cancers are slow growing and occur in older men, many men who have prostate cancer but are not treated for it will never suffer from the effects of their cancer. However, some men that are treated do suffer serious side effects from treatment, such as impotence and incontinence.[77] The Cancer Council Australia does not advocate routine screening for prostate cancer.

8.1.6 Cervical cancer

Cervical cancer is a malignant disease in the neck of the womb, which is located at the top of the vagina. Risk factors for the disease include having had genital warts, caused by infection with specific strains of the human papilloma virus (HPV). Because HPV infection is a sexually transmitted infection and a risk factor for cervical cancer, any risk factors for developing sexually transmitted diseases are also risk factors for developing cervical cancer. Women who have had multiple male sexual partners, began having sexual intercourse at an early age, or have had male sexual partners who are considered high risk (meaning that they have had many sexual partners and/or began having sexual intercourse at an early age), are at a higher risk for developing cervical cancer. Also, contracting any other sexually transmitted disease (like Herpes, Gonorrheae, Syphilis, or Chlamydia) increases a woman's risk of developing cervical cancer.[78]

Smoking is another important risk factor for the development of cervical cancer. The evidence suggests that smokers are at least twice as likely as non-smokers to develop cervical tumours.[79] There is also evidence to suggest that use of oral contraceptives increases the risk of developing cervical cancer.[80]

Cervical screening is a method of preventing cancer through detecting abnormalities that could lead to cancer of the cervix. A smear test is the first stage in the screening process. The evidence suggests that the majority of cervical cancers can be prevented with regular Pap smears and it is recommended that women have Pap smears every two years. [81]

The ACT Cervical Cytology Register plays a vital role in successful implementation of the Pap smear screening program in the ACT. The Registry keeps Pap smear results and reminds women if they are overdue for a routine Pap smear. The Registry also follows women up if there is an abnormality in results that has not yet been addressed. By keeping the results of Pap smears for ACT women, the Registry is able to monitor the performance of the various laboratories involved in reading results against a set of agreed standards.

There are similar rates of participation in Pap smear screening between the ACT and the national eligible female population. The age-standardised participation rates for 1999 to 2000 were 62.6 per 100 eligible ACT female population and 65.1 per 100 eligible Australian female population.[82] Seventy-one per cent of ACT women that had a negative Pap smear result in the index month had no additional screenings during the next 21 months. This compares to 68 per cent nationally. Compared to previous years, rates were lower than expected in younger age groups (25-29 years) in the 1999 to 2000 period, however, they had increased in the 65-69 and 55-59 year age groups.

In the ACT, during the 1996 to 2000 period, there were 53 women diagnosed with cervical cancer. The lifetime risk of developing cervical cancer was one in 181. During the same period, 18 women died because of cervical cancer and there were an estimated 385 years of life lost due to this disease.

8.1.7 Melanoma

Melanoma is a type of skin cancer that forms in melanocytes, the pigment-producing cells of the skin. Melanoma usually presents as a pre-existing mole that has changed colour or shape, or a newly developed, irregular mole. Australia has one of the highest prevalence rates for melanoma in the world. The incidence of melanoma has increased over the last few decades, although incidence rates for the ACT are generally lower than the rates for Australia. During the 1996 to 2000 period, for both males and females, melanoma was the third most common site for new cancers, accounting for 11 per cent of all male and nine per cent of all female cancers in the ACT. There were 33 ACT male melanoma deaths and 17 ACT female deaths during the 1996 to 2000 period.

The major risk factors for melanoma include having a fair complexion, having multiple dark moles, older age and a personal or family history of melanoma.[83,78] Many studies also link increased melanoma risk to a history of sun exposure and sunburn, especially in early life.[83] (Chapter 4: Lifestyle Behaviours and Chapter 16: Child Health include sub-sections with further information about sun protective behaviours in the ACT).

8.1.8 Non-Hodgkins lymphoma

Non-Hodgkin's lymphoma is a malignant growth of B or T cells in the lymph system. The lymphatic system is important for fighting infection as it filters bacteria and cancer cells and carries fluid from the limbs and internal organs. As is the case with other cancer types, the cause of most non-Hodgkin's lymphomas is unknown. Lymphomas are more likely to develop in people who have taken drugs to prevent rejection following an organ transplant or whose immunity has been reduced as a result of a health condition.

Although some types of non-Hodgkin's lymphoma are among the most common childhood cancers, over 95 per cent of non-Hodgkin's lymphoma cases occur in adults. The risk of developing non-Hodgkin's lymphoma increases with age.[78]

Treatment options for non-Hodgkins lymphoma include surgery, chemotherapy, radiotherapy and biological therapies. Stem cell transplantation is another treatment option, but is usually only used for those in remission or those who have a relapse following treatment.[78]

8.1.9 Non-melanocytic skin cancer

Basal cell cancer and squamous cell cancer are non-melanocytic skin cancers. They are called non-melanocytic because this group of cancers includes all skin cancers except "malignant" melanoma. Non-melanocytic skin cancer is the most common cancer of the skin.

Most tumours of the skin are not cancerous, or malignant, and rarely if ever turn into cancers. These benign tumours include most types of moles, seborrheic keratoses (tan, brown, or black raised spots with a waxy texture, or rough surface), hemangiomas (benign blood vessel growths often called strawberry spots or port wine stains), lipomas (soft growths of benign fat cells), and warts (rough-surfaced growths caused by a virus).[78]

The risk factors for developing non-melanocytic skin cancer includes a family history of the disease, a history of sun exposure, being a male, older age, being a smoker, being Caucasian, having an outdoor occupation, having had a long-term or severe skin inflammation or injury, exposure to ionising radiation and industrial carcinogens (arsenic, tars, oils), exposure to arsenic in drinking water, having a genetic condition such as Xeroderma Pigmentosum (a very rare inherited condition that reduces the skin's ability to repair damage to DNA caused by sun exposure), albinism and previous infection with strains of the human papilloma virus causing genital warts.[83,78]

8.2 ACT cancer services and cancer management initiatives

ACT Health continues to work towards the provision of a comprehensive cancer management service for the population of the ACT and surrounding area of South Eastern NSW. The impetus for this concerted and Territory wide approach was a review of cancer services undertaken in November 1998.

As a direct result of this review, a workshop of all cancer service stakeholders was conducted in 1999 and recommended the formation of a multidisciplinary committee to oversee the planning and development of ACT cancer services.

The ACT Cancer Services Advisory Group

The ACT Cancer Services Advisory Group was established in April 2000 with the broad charter of assisting the provision of an integrated, evidence based service able to best meet the needs of health consumers. It provides strategic advice to ACT Health on current and emerging issues and engages all elements of care from education and prevention to the treatment and continuing management of those diagnosed with cancer. The Group membership represents stakeholders involved in the provision and receipt of care.

The Gastro-Intestinal Tumour Group
The general prevalence of colorectal cancer led directly to the formation of a specialist advisory group to focus on conditions within this category. The Gastro-Intestinal Tumour Group has accepted the philosophy and responsibility of the parent group but restricts its review and advisory processes to that particular disease category. This Group has proposed a Colorectal Cancer Data Collection Project in order to create a database of treatment protocols and enhance best practice management guidelines in the ACT.

The Breast Cancer Treatment Group
This group of clinicians and consumers is interested in breast cancer treatment and support and has met regularly for six years. The group collects data on the treatment of women with newly diagnosed breast cancer in the ACT and surrounding NSW and monitors treatment patterns, making comparisons with best practice guidelines.[84]

Strengthening support for women with breast cancer
ACT Health is participating in a four-year project to create and trial a specialist breast nurse as a component of care provided to women. This project is funded by the Commonwealth Department of Health and Ageing and has enabled the establishment of a breast care nurse to assist the coordination of management, treatment and support to women undergoing mastectomy, lumpectomy or breast reconstruction procedures. An important outcome of this initiative has been the establishment of a multidisciplinary group to examine and provide a multidisciplinary approach to the delivery of care.

The project is to be formally evaluated in 2003/04, however, early indications of benefit gained since the commencement of the trial have resulted in the funding of an additional breast care nurse to commence employment in 2003.

Psychosocial care provision
Community Health (ACT Community Care) now provides a psychosocial support service for individuals and families effected by cancer. This service, which commenced in 2003, has established a psychologist and social worker with primary responsibility for the psychosocial care of patients in the community.

Priorities for action in cancer control 2001-2003
A blue print for ACT action and direction in cancer management has been provided by the publication prepared by the Cancer Strategies Group under the auspices of the National Health Priorities Action Council. ACT Health is examining the priority areas contained in the primary document. It has confirmed where appropriate mechanisms are in place and identified where additional work is required.

Emerging Issues

- Demographic changes over time are likely to lead to an increase in the number of people with cancer, which will impact on future demand for health services in the ACT;
- The Australian Cancer Council does not advocate routine PSA testing for prostate cancer. There is insufficient evidence to determine whether or not routine PSA testing prevents death from prostate cancer, at this point in time;
- Currently, there is no national screening program for colorectal cancer. However, a pilot program is being trialled across sites in Queensland, Victoria and South Australia to establish the feasibility of implementing a national program.

9 Mental Health

At a Glance

- Females in the ACT reported greater levels of psychological distress than males in 2001;
- There were 46 suicide deaths among ACT residents, accounting for 3.2 per cent of all ACT resident's deaths in 2001;
- Although there were a greater number of suicides among males compared to females in 2001, more females were hospitalised for self-inflicted harm than males;
- In 2001/02 there were 1,596 separations in ACT hospitals, for ACT residents with a principal diagnosis of mental disorder, accounting for approximately 2.4 per cent of ACT resident's hospitalisations.

Mental health disorder is the third leading burden of disease for the Australian population, after cardiovascular disease and cancer. The burden of mental health disorder is dominated by years lost due to disability rather than years lost due to mortality. This reflects the fact that mental illness is not a major direct cause of death but a major cause of chronic disability.[27]

Mental ill health can vary in severity, from mild forms of depression and anxiety to more serious disabling disorders, such as schizophrenia and other psychoses. Mental ill health can affect anyone at any stage in the life course, however, evidence suggests there may be differences in individual susceptibility to some psychiatric conditions. In particular, age, gender, ethnicity, family history of disease, occupation and socio-economic circumstance may impact on susceptibility to mental ill health.[85]

Depression is the most common mental disorder reported in Australia, accounting for about 3.7 per cent of the total burden of disease and injury in Australia in 1996. If the attributable burden of suicide and self-inflicted injury is included, then depression accounts for an overall five per cent of the burden of disease. Depression has been identified as the first national mental health priority area for action, followed by suicide, and prevention and early detection of mental ill health.

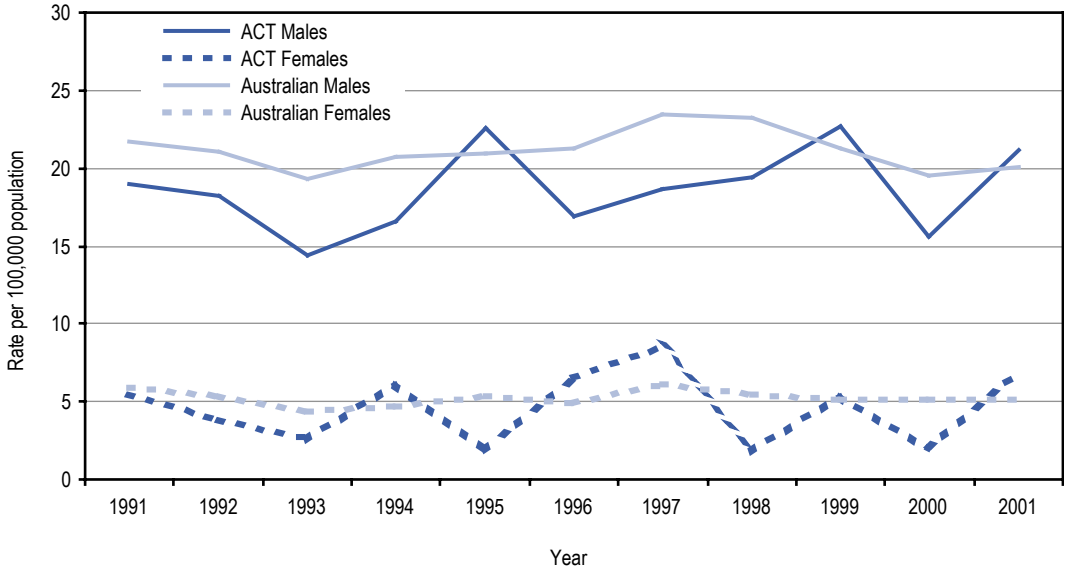
The stigma of mental illness and the discrimination that people often experience is one of the major barriers to recovery from mental ill health. The stigma of mental illness can contribute to loneliness, distress and feelings of hopelessness in individuals. People can be reluctant to seek help when required, they may be less likely to cooperate with treatment and slower to recover self-esteem and self-confidence as a result. Reducing the stigma associated with mental ill health is a key priority for action in the *ACT Health Action Plan.*

9.1 Mental health statistics and trends

Suicide rates in the Australian and ACT populations are very similar, with an annual fluctuation in rates for the ACT reflecting the effect of variation in the small number of deaths each year in the ACT. The rates for males are consistently higher than the rates for females (Figure 9.1), but females are far more likely to be hospitalised for self-inflicted harm. In 2001/02 for instance, there were 329 ACT resident separations from ACT hospitals with a diagnosis of 'self-inflicted harm'. More than two-thirds (67.8%) of these separations were for females. Residents between the ages of 15 and 29 years accounted for 43.7 per cent of separations with a diagnosis of 'self-inflicted harm'.

The number of ACT resident female (57.1%) separations for all mental health disorders also exceeded the number of male separations (42.9%) for mental disorder in 2001/02. The most common causes of hospitalisation for mental health disorder in the ACT, for ACT residents, were 'mood disorders', accounting for 38.5 per cent of all separations with a principal diagnosis of mental disorder, followed by 'schizophrenia, schizotypal and delusional disorders', accounting for 23.4 per cent of separations.

Figure 9.1: Age-standardised suicide mortality rates[(a)], by sex, for the ACT and Australia, 1991-2001



Data Source: Australian Bureau of Statistics. 2003. *Information Paper: Suicides 2001.* Cat. No. 3309.055.001. Canberra, Australian Bureau of Statistics.
(a) Rates per 100,000 population, standardised to the Australian 1991 population.

It should be noted that hospital separation data vastly underestimates the burden of mental ill health in the population, as it only provides an insight into the level of illness at the more severe end of the spectrum, requiring inpatient care. Self-reported mental ill health complements service utilisation information, providing a more detailed picture of the level of mental ill health in the ACT.

The results of the 1997 Mental Health Survey, which was conducted as a diagnostic interview using the computer assisted version of the Composite International Diagnostic Interview (CIDI), showed that one in five (21.1%) of the ACT population had experienced mental ill health in the past 12 months. This was higher than the prevalence of mental ill health reported nationally (17.7%), primarily reflecting a higher prevalence of mental ill health in ACT males (Table 9.1).

ACT adult respondents to the 1997 Mental Health Survey reported similar rates of substance use disorder (10%, Australia 8%), depression (8%, Australia 5%), and generalised anxiety disorders (6%, Australia 3%), as their national counterparts.

Table 9.1: Estimates of the proportion of the population with a mental disorder in the ACT and Australia, 1997

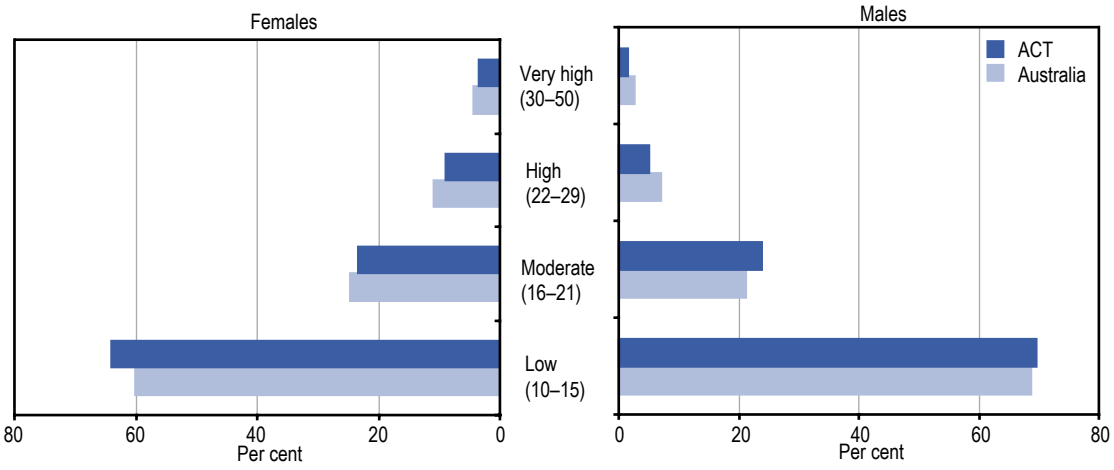
	ACT	Australia
Male	24.9	17.4
Female	17.5	18.0
Persons	21.1	17.1

Data Source: Australian Bureau of Statistics. 1998. *1997 Mental Health and Wellbeing: Profile of Adults*. Cat. No. 4326.0. Canberra, Australian Bureau of Statistics.

Approximately 8.7 per cent (95%CI 7.7 – 9.7) of ACT respondents to the 2001 National Health Survey reported a long-term (lasting six months or more) mental health or behavioural problem (8.0% ACT males; 9.7% ACT females).[34] In comparison, 10 per cent of the Australian population reported a long-term mental health or behavioural problem.[26]

The National Health Survey also included the Kessler 10 measure (K10) to estimate levels of psychological distress. The K10 is a ten-item questionnaire intended to yield a measure of 'psychological distress' in the previous four weeks, based on questions about anxiety levels and depressive symptoms experienced by individuals.

Figure 9.2: Psychological distress: K10[(a)] scores for the ACT and Australian populations, 18 years or more, by sex, 2001



Data Source: Australian Bureau of Statistics. 2002. *2001 National Health Survey Summary Tables for the ACT*. Canberra, Australian Bureau of Statistics.
(a) as measured by the Kessler 10 scale.

Figure 9.2 indicates that the overall level of psychological distress in the ACT population (18 years or more) was similar to the level reported nationally in 2001. The graph also suggests that a greater proportion of ACT and Australian females experienced 'high' or 'very high' levels of psychological stress, compared to their male counterparts. Note that the 'low' category of the K10 includes those that report 'no psychological distress'.

The 2001 National Health Survey also collected information on the use of medications by adults (18 years or more) for mental wellbeing. The results (Table 9.2) show that females in the ACT consistently reported using more medication for mental wellbeing than males, particularly sleeping tablets and antidepressants. Vitamins, minerals, herbal and natural medications were the most common medications used by both males and females. The utilisation rates of vitamins, minerals, herbal and natural medications reported for the ACT were similar to the rates reported nationally (ACT 10%; Australia 8%).

Table 9.2: Estimates of the proportion of the population using medication[a], [b] for mental wellbeing, by sex, 18 years or more, for the ACT, 2001

Pharmaceutical medications	Males	Females
Sleeping tablets or capsules	2.4	5.6
Antidepressants/tablets or capsules for anxiety or nerves	3.5	7.8
Other medications for mental health[c]	* 1.4	2.2
Vitamin or mineral supplements	7.8	13.0
Herbal or natural medications	4.5	7.8

Data Source: Australian Bureau of Statistics. 2002. *2001 National Health Survey Summary Tables for the ACT*. Canberra, Australian Bureau of Statistics.

* estimate has a relative standard error of between 25% and 50% and should be used with caution.

(a) Total medications as reported by respondents. Persons may have reported more than one type of medication.

(b) Used medication for mental wellbeing in the two weeks prior to interview. Type of medication is as reported by respondents.

(c) This category includes tranquillisers, mood stabilisers etc.

The mental health of children in the ACT is discussed in Chapter 16: Child Health.

9.2 Mental health initiatives

The National Mental Health Strategy was launched in 1992 in response to growing evidence of the increasing magnitude of mental illness and resulting burden of disease in Australia. Mental health was designated a National Health Priority Area in 1996.

Improving mental health has been identified as a strategic area for focus in the ACT Health Action Plan for ACT Health.[35] ACT Health has made a commitment to develop a strategy and action plan for mental health policy and services for the next five years. A project plan has been developed and includes objectives to: [86]

- conduct a review of key stakeholder expectations, epidemiological data and the evidence base for service provision structures;
- review the implementation of previous plans and reviews;
- apply a population health approach; and
- set the direction for future planning and service development across the spectrum of mental health services.

Applying a population health approach is consistent with the Second National Mental Health Plan, which emphasises the importance of health promotion, community education, prevention of mental health disorder and early intervention.

In recent developments, following the ACT Government's acceptance of the recommendations of the Reid Report for organisational changes in the Health Portfolio, ACT Health has brought all ACT public mental health services together into a single service, or cross-Territory stream, known as "Mental Health ACT". This stand-alone service is responsible for the ACT mental health service budget, including the funding of non-government services. The establishment of Mental Health ACT will enable a unified approach to policy, planning, service development and delivery in the ACT, and will assist in reducing duplication and competition between services. This should result in enhanced service access and better health outcomes for consumers.

The mental health service stream for the ACT includes:

- mental health policy and planning;
- the Crisis Assessment and Treatment Team (CATT);
- regional community adult mental health service teams;
- the Child and Adolescent Mental Health Service;
- the Older Persons Mental Health Service;
- the public psychiatric wards at Calvary Health Care and The Canberra Hospital;
- The Brian Hennessy Rehabilitation Centre;
- Territory-wide services such as
    - Eating Disorders Program,
    - Dual Disability,
    - Forensic Mental Health,
    - Rehabilitation Services,
    - Dual Diagnosis;
- the funding of non-government community services;
- mental health sector development, education and health promotion; and
- research and teaching in psychological medicine.

The "Mental Health Service, Referral Management, A Consumer Focussed Approach Project" was a winner in the 'Efficiency' category of ACT Health's Quality First Awards for 2002. The project was initiated to make improvements to the Tuggeranong Mental Health Service. Service improvements resulted in a reduction in the number of clinicians a patient had contact with, improved service access and service efficiencies.

The "Mental Health Physical Examination within 48 Hours of Admission Project" was a finalist in the 'Appropriateness' category of ACT Health's Quality First Awards for 2002. The project promoted the physical examination of patients admitted for more than 48 hours to the acute psychiatric ward at The Canberra Hospital. A range of strategies were used to increase the number of examinations undertaken, including the development and introduction of a template that specifically relates to physical examination of psychiatric patients. As a result of the initiative, the number of physical examinations doubled – up from 44 per cent, to 88 per cent of eligible patients.

Emerging Issues

- The World Health Organisation has predicted that by the year 2020, depression will be the second largest burden of disease in the world. ACT Health is working with GPs and other health providers to address this issue in the ACT;
- Many people with mental illness also have problems with substance abuse. ACT Health will continue to develop and expand services for this group of people;
- Early intervention and prevention is a key focus for the National Mental Health Priority area. ACT Health is exploring ways to improve early intervention, illness prevention and resilience-building services in the ACT.

10 Injury Prevention

At a Glance

- There were 109 injury-related deaths among ACT residents in 2001, accounting for 8.4 per cent of all deaths among ACT residents;
- Male death rates due to injury were between two and three times higher than female rates;
- Most deaths from injury in the ACT occurred among people aged 15-44 years (mostly males);
- Falls accounted for almost 75 per cent of all injury-related hospitalisations for ACT residents aged 65 years or more;
- 12,591 ACT residents presented to The Canberra Hospital Emergency Department (ED) with an injury or poisoning in 2001/02. Of these injury presentations, 1,001 were older (65 years or more) residents; 3,722 were children (0-14 years), with 530 of these children admitted to hospital;
- 13,484 ACT residents presented to the Calvary Hospital ED in 2001/02 with an injury or poisoning, including 821 ACT residents aged 65 years or more and 3,737 children.

Injury prevention was endorsed by Health Ministers as a National Health Priority Area in 1996. However, it remains a leading cause of mortality, morbidity and disability in Australia, accounting for an estimated 8.4 per cent of the total burden of disease.[27] Injury is the principal cause of premature, preventable death in Australia and accounts for almost 50 per cent of all deaths among people under 45 years of age.[87] At the national level, suicide and transport-related accidents are the major causes of death within the injury category, while falls are the major cause of hospitalisation. Injury also results in a range of physical, cognitive and psychological disabilities that seriously affect the longer-term quality of life of injured people and their families. Significant health costs are attributable to injury, which account for an estimated eight per cent of direct health system costs.[27]

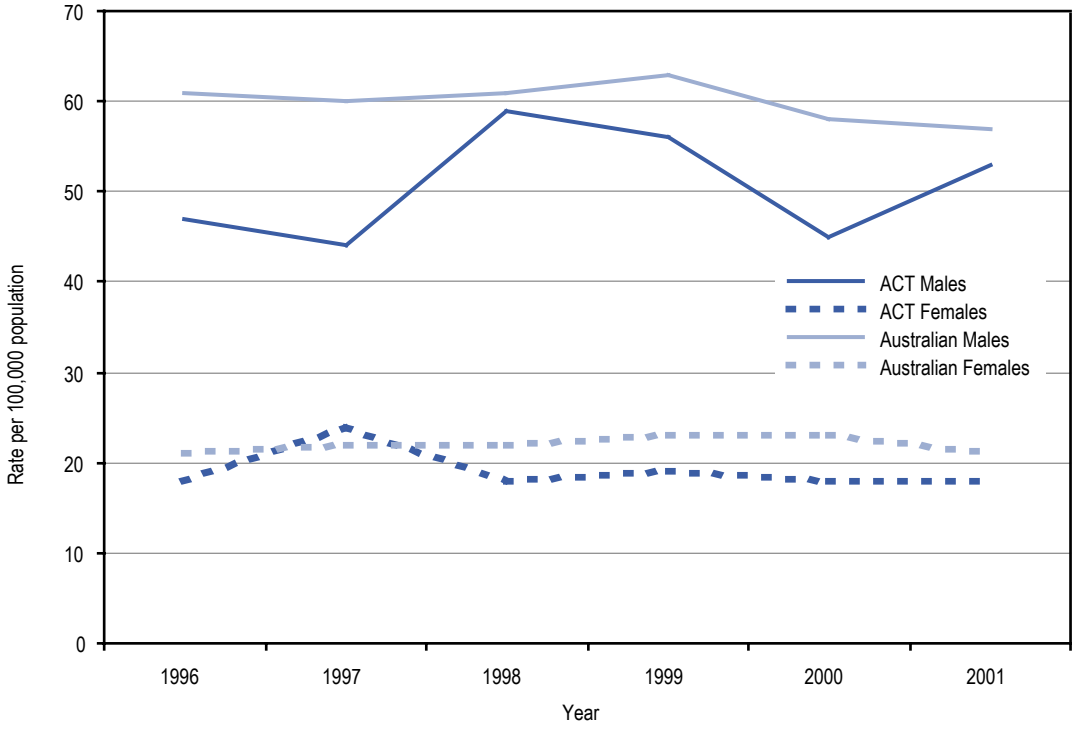
Over the last few decades there has been a gradual reduction in deaths due to injury in Australia. In particular, there have been significant reductions in road injury deaths – partly because of highly organised and effective road safety programs, vehicle design modifications and advancements in trauma medicine. However, there is scope for further reductions in road fatalities, the incidence of road injury and other categories of injury.

The *National Injury Prevention Plan: Priorities for 2001-2003* provides a broad framework for achieving future reductions in the incidence of injury in Australia. The Plan includes a set of key priorities for immediate action. These priorities include falls in older people, childhood injuries, in particular, falls in children, drowning and near drowning, and poisoning in children. The ACT *Health Action Plan* incorporates these priorities, with falls prevention in older people identified as a strategic area of focus and a commitment to the development of a comprehensive, inter-sectoral, child health plan for the ACT.

10.1 Injury-related statistics and trends

A total of 109 ACT residents died in 2001 as the result of an external cause of injury, accounting for 8.4 per cent of all ACT resident's deaths. The majority of these deaths occurred among males, and were concentrated in the 15-44 years age group. The rate of injury in ACT males is lower than the rate observed for males nationally. Male rates of death from injury are consistently higher than female rates, both nationally and in the ACT. Because death due to external causes of injury is most prevalent in younger age groups, it accounts for many person-years of life lost. Chapter 3 of this report shows that death due to external causes of injury accounted for 30.7 per cent of years of life lost in 2000.

Figure 10.1: Age-standardised all-injury[(a)] mortality rates[(b)], by sex, for ACT residents & Australia, 1996-2001



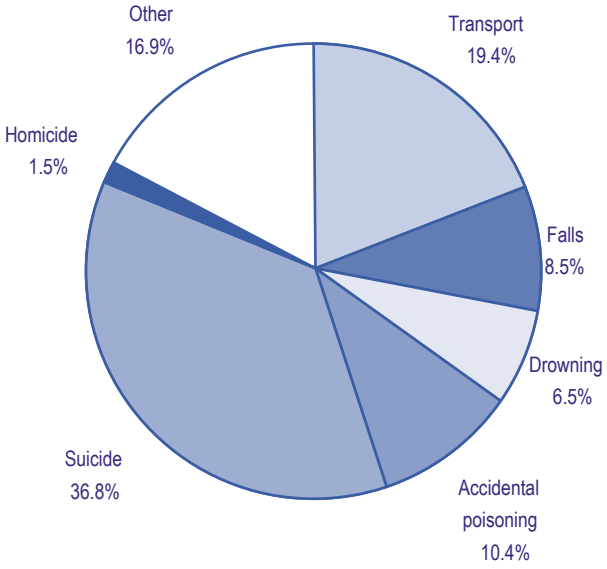
Data Sources: Australian Bureau of Statistics. 2002. *Demography ACT 2001*. Catalogue No. 3311.8 Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 2002. *Deaths Australia 2001*. Catalogue No. 3302.0. Canberra Australian Bureau of Statistics; Australian Bureau of Statistics. 2001. *Deaths Australia 2000*. Catalogue No. 3302.0. Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 2000. *Deaths Australia 1999*. Catalogue No. 3302.0. Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 1998. *Deaths Australia 1997*. Catalogue No. 3302.0. Canberra, Australian Bureau of Statistics.

(a) Where cause of death includes an external cause of injury code – see Appendix 3 for diagnostic codes.

(b) Standardised to the 1991 Australian population.

Figure 10.2 shows the leading causes of injury death among ACT residents. The percentages in the graph are based on the average number of deaths, by injury type, for the period 1999 to 2000. Suicide was the leading cause of injury-related death among ACT residents, accounting for 36.8 per cent of all injury deaths. Death as the result of a transport injury (excluding non-road transport) was the second leading cause of injury death, accounting for 19.4 per cent of injury-related deaths. The *National Injury Prevention Plan* priority areas, which include falls, drowning and poisoning, accounted for a quarter of all injury-related deaths in the 1999 to 2000 period.

Figure 10.2: Leading causes[(a)] of injury death for ACT residents, 1999-2000[(b)]



Data Source: ABS deaths data. Confidential unit record file 1999-2000.
(a) Where the cause of death includes an external cause of injury ICD-10-AM code – see Appendix 3 for ICD-10-AM codes.
(b) Cause of injury death proportions (%) are based upon the average number of deaths for the period 1999-2000.

Falls among persons aged 65 years or more were the leading cause of injury-related hospitalisation for older ACT residents in 2001/02, accounting for almost three-quarters of all injury-related hospitalisations in this age group. Motor vehicle traffic accidents were the second leading cause of injury-related hospitalisation, accounting for a further five per cent of injury-related hospitalisations in this age group.

Although hospital separation data provide an indication of the level of injury in the population, hospital records underestimate the magnitude of the total burden of injury, as the majority of injuries sustained by individuals in the population do not result in hospitalisation. During 2001/02, for instance, 12,591 ACT residents presented to The Canberra Hospital Emergency Department (ED) with an injury or poisoning, but only 1,998 (15.8%) were admitted to hospital.[88] (Presentations to The Canberra Hospital and Calvary Hospital Emergency Departments are discussed separately in this report to accommodate differences in the recording of this information by each hospital. It is expected that presentations for both EDs will be combined in the next Chief Health Officer's Report).

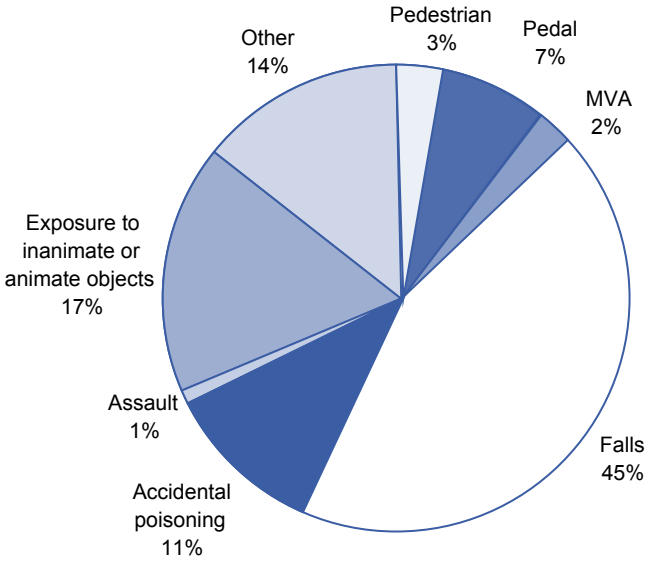
During 2001/02, 1,001 older (65 years or more) ACT residents presented to The Canberra Hospital (TCH) ED with an injury or poisoning (representing 18.1% of all older residents that presented to TCH ED). Four hundred and thirty-five of these people (43.4%) were admitted to hospital. Nearly one-half of all older residents (n=201, 46.2%) admitted through TCH ED had hip or thigh injuries.[88]

There were 3,722 child presentations (0 –14 years) to TCH ED for injury or poisoning. Five hundred and thirty (14.2%) of these children were admitted to hospital.[88] Overall, there were 714 ACT child resident separations from ACT hospitals with an 'external cause of injury' diagnosis code in 2001/02.

During 2001/02, 13,484 ACT residents presented to the Calvary Hospital ED with an injury or poisoning (33.5% of all presentations at the ED). Of these presentations, 402 (3%) were admitted to hospital. Eight hundred and twenty-one older ACT residents (65 years or more) presented to the Calvary Hospital ED with an injury or poisoning (16.8% of all older residents that presented to the Calvary Hospital ED). Of these presentations, 107 (13%) were admitted to hospital. Nearly one-quarter of older people (n=22, 20.6%) that were admitted through the Calvary Hospital ED had a fractured neck or trunk and 12 per cent (n=13) had a fractured lower limb.

There were 3,737 child presentations to the Calvary Hospital ED for injury or poisoning in 2001/02 (representing 43% of all child presentations to the Calvary Hospital ED). Eleven (0.3%) of these children were admitted to Calvary Hospital. However, Calvary Hospital transferred a significant number of these children to the Paediatric Unit at TCH.

Figure 10.3: Leading causes[(a)] of injury-related separations for ACT children (1-12 years), hospitalised in the ACT, 2001/02



Data Source: ACT Admitted Patient Care collection 2001/02. Confidential unit record file.
(a) Where there is any ICD-10-AM diagnosis code with an external cause of injury – see Appendix 3 for ICD-10-AM codes.

The leading causes of injury-related hospitalisation for ACT children in 2001/02 were falls (45%), exposure to inanimate or animate objects eg. dog bites, sporting injuries (17%) and accidental poisoning (11%). Falls, drowning and poisoning are the priority areas for this age group in the *National Injury Prevention Plan.* There were no ACT child presentations to The Canberra Hospital ED or hospitalisations for near drowning in 2001/02.

10.2 Injury-related service use

In 2001/02 there were 6,019 ACT resident separations from ACT hospitals for external causes of injury and poisoning, accounting for 9.3 per cent of all ACT residents' separations. Hospital separation data tend to underestimate service utilisation as many minor injuries are treated by a general practitioner or other primary care provider, or in an emergency department without admission to hospital.

The Canberra Hospital (TCH) is a Major Trauma Centre, providing tertiary referral and retrieval services to hospitals in the ACT and South East NSW. The service involves a multidisciplinary approach, coordinated between the Emergency Department, the Shock Trauma Service in the

Department of Surgery, Intensive Care Unit, Radiology, Pathology, Anaesthetics and Operating Theatres within the hospital. Trauma is a time-critical issue, particularly in the first (or "Golden") hour, and coordination between the disciplines ensures that serious trauma in the region is cared for in an efficient and expeditious manner. The Canberra Hospital has approximately 4,000 to 5,000 trauma-related hospital admissions each year, although the majority of the Emergency Department's workload involves acute medical and surgical, child and adult presentations.[89]

Almost one-third (29.2%) of all presentations to The Canberra Hospital Emergency Department were injury-related in 2001/02. Seven hundred and thirty seven injured or poisoned individuals were triaged as requiring resuscitation within seconds of arrival to the ED (nearly 2% of all presentations). Another 4,520 injured or poisoned individuals (10.5% of all presentations) were triaged as requiring urgent or semi-urgent treatment.[88]

10.3 ACT injury prevention initiatives

It is estimated that by 2051 the total health cost attributable to fall-related injury will have increased almost threefold, and that nationally an additional 886,000 hospital bed days and 3,320 additional nursing home places will be required each year to deal with fall related injury. In the ACT, the costs associated with fall-related injury are projected to double between 2001 and 2021.[90]

Jurisdictions such as South Australia and Tasmania are already experiencing significant cost increases for fall-related injury, which reflect their older populations. However, due to the relatively young current age structure of the ACT, the number of falls in the population is relatively low. As the age structure of the ACT population changes over time, the number of falls and their associated costs are expected to increase. It is thought that a 66 per cent reduction in the age-specific incidence of fall- related injury will be required to keep costs at their current level.[90]

The ACT Falls Prevention Project, funded by the ACT Quality and Safety Forum, aims to reduce fall- related injury in older people by developing and implementing protocols for the multi-disciplinary risk assessment and treatment of older people at risk of falling.

The project commenced in April 2001, and has been implemented in two phases. The first phase, which is ongoing, has focussed on the safety of older people in hospital. A Falls and Balance Clinic was set-up at The Canberra Hospital for older people with complex assessment and treatment requirements. The first phase of the project involved the successful trial and implementation of a falls risk assessment tool for use in inpatient settings.

Phase 2 of the project focuses on ensuring continuity of care between primary, secondary and tertiary level health service providers undertaking fall risk assessments and interventions. An ACT Falls Collaborative Group has been established to oversee and steer the development and implementation of multi-disciplinary best practice risk assessment and intervention protocols for use in primary care settings.

Emerging Issues

- Significant reductions in road injury rates since 1970 can be partially attributed to highly organised and effective road safety programs, from which lessons can be learned for other forms of injury prevention;
- As the age structure of the ACT population changes over time, falls in older people are likely to become an increasingly significant health issue.

11 Diabetes Mellitus

At a Glance

- Estimates from the 2001 National Health Survey suggest 3.1 per cent of the adult (18 years or more) population had been diagnosed with diabetes for six months or more in 2001. This is likely to be an underestimate of the true prevalence of diabetes in the ACT;
- There were 3,098 ACT resident separations from ACT hospitals for diabetes in 2001/02, accounting for almost five per cent of all ACT resident's separations;
- Cardiovascular disease, digestive disorders and cancer were the most common principal diagnoses with an associated diagnosis of diabetes for ACT residents hospitalised in the ACT in 2001/02;
- Approximately 3.3 per cent of ACT women that gave birth in an ACT facility in 2000 had a diagnosis of gestational diabetes.

Diabetes contributes to significant illness, disability and premature mortality in Australia. Estimates suggest that diabetes is linked to eight per cent of all deaths in Australia[91] and contributes to approximately three per cent of the total burden of disease in Australia.[27] The prevalence of the disease in the Australian population has doubled over the last two decades and estimates suggest that one in four Australians have either diabetes mellitus, or impaired glucose metabolism, which is strongly associated with an increased risk of future development of diabetes.[92]

Careful management of diabetes is required to minimise the risk of complications. Poor management of the condition can result in damage to blood vessels. This can, in turn, lead to a range of potential complications including blindness, kidney failure, cardiovascular disease, amputation of limbs and erectile dysfunction. Indeed, estimates suggest that people with diabetes are between 2-4 times more likely to develop cardiovascular disease than the general population.[91]

There are three types of diabetes considered in this section of the report: Type 1 diabetes, Type 2 diabetes and gestational diabetes.

Type 1 diabetes, or insulin dependent diabetes, is a life-long disorder that accounts for about 10-15 per cent of all people with diabetes in Australia.[91] Type 1 diabetes occurs when the body's autoimmune system attacks and destroys insulin-producing cells in the pancreas. Due to a lack of insulin, the body is unable to convert blood glucose into an effective energy source for cells. Other destructive metabolic pathways are utilised and blood glucose rises. With Type 1 diabetes, the onset of symptoms are often abrupt and if untreated, they can be life threatening. Successful management of the condition involves multiple daily injections and lifelong intensive treatment and monitoring is required. There is a genetic link to the development of Type 1 diabetes, as close relatives of people with diabetes have an increased chance of developing the disease. Environmental factors such as viruses, diet or chemicals may also trigger the disease in those with a genetic predisposition to diabetes. To date, no modifiable risk factors have been clearly linked to the development of Type 1 diabetes.

The current Australian diabetes epidemic is being fuelled by an increase in the prevalence of Type 2 diabetes, which is potentially preventable. Type 2 diabetes is characterised by insulin resistance and a relative deficit in insulin secretion. Symptoms may develop insidiously and blood glucose levels may be abnormally high for some time prior to diagnosis. The disease most commonly occurs in people over the age of 40 years and is responsible for approximately 85-90 per cent of all diabetes in Australia.[91] The lifestyle factors linked to the disease include being overweight or obese, physical inactivity and poor diet (estimates for the prevalence of obesity, physical inactivity and dietary indicators are provided in Chapter 4: Lifestyle and Health and Chapter 16: Child Health). Other 'non-modifiable' risk factors for Type 2 diabetes include age, ethnicity and family history.[91]

Gestational diabetes occurs during pregnancy in about five per cent of Australian women with no prior diagnosis of diabetes.[93] The disease is a health risk for both the mother and developing baby during pregnancy, but following birth, the disease usually abates. However, the mother remains at an increased risk of developing Type 2 diabetes later in life. The non-modifiable risk factors for gestational diabetes include having a family history of diabetes, a history of glucose intolerance or previous gestational diabetes and maternal age. In addition, there is an increased risk of developing gestational diabetes among population groups with high diabetes prevalence rates. These include Aboriginal and Torres Strait Islander, Asian-born and European-born peoples. Being overweight or obese is a modifiable risk factor for the disease.

11.1 Diabetes statistics and trends

The prevalence of diabetes mellitus (Type 1 & 2) in the Australian population has risen markedly over the last 20 years, from an estimated 3.4 per cent in 1980,[94] to 7.4 per cent in 2000.[92] Self-reported estimates of disease prevalence in the ACT, which underestimate the actual level of prevalence, indicate that the crude rate of diabetes in the ACT doubled between 1995 and 2001, from 1.3 per cent of the population in 1995 to 3.1 per cent (95%CI 2.4 – 3.8) in 2001.34 The increase in diabetes in the ACT over this period is larger than the increase observed nationally, and is primarily due to an increasing rate of diabetes diagnosed in ACT males. [34]

The crude rate of diabetes in ACT males has more than doubled since 1995 (1.4% to 3.1%) and ACT males are now 'on a par' with Australian males (3%). In contrast, females in the ACT maintained a lower prevalence of diagnosed diabetes (2.3%) than observed nationally (2.9%) in 2001. Comparisons of the age-standardised rates of diagnosed diabetes in States and Territories show that overall, the ACT and Victoria had the highest prevalence of all jurisdictions, whereas Tasmania had the lowest prevalence (2.1%) in 2001.[34]

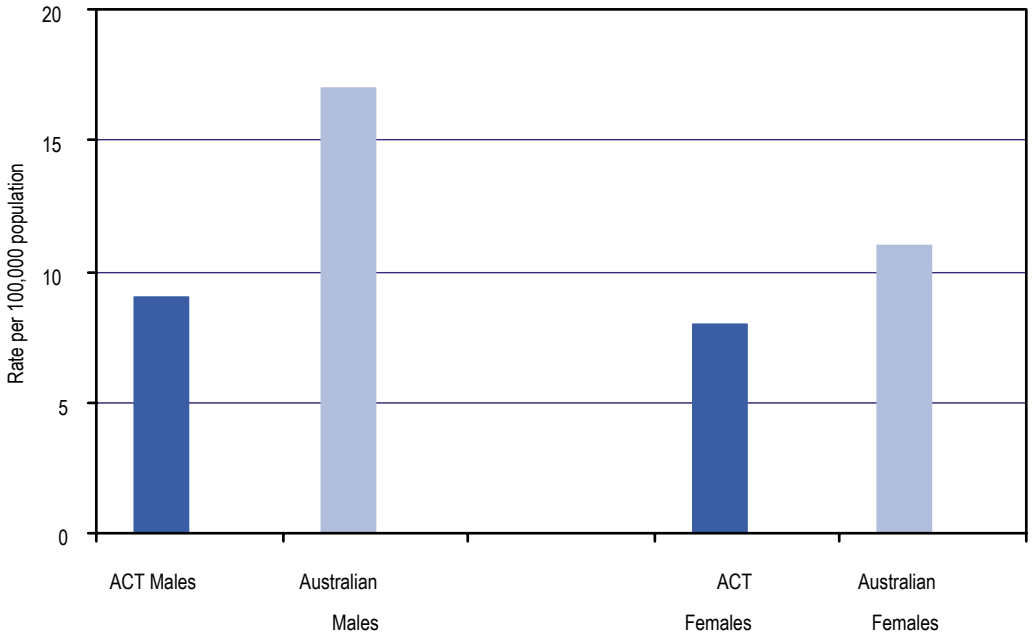
However, these estimates have been derived from the 2001 National Health Survey and are based upon the number of people in the population that have had diabetes for six months or more and have been diagnosed with the condition by a health professional. Estimates from the AusDiab Study suggest that 7.2 per cent of Australians over 25 years of age have diabetes and for every person diagnosed with diabetes in Australia there is another person with undiagnosed diabetes.[92] Estimates from the AusDiab Study also suggest that 16.4 per cent of the national population had impaired glucose metabolism in 2000, and were therefore at high risk of developing diabetes in the future. Therefore, although the results from the 2001 National Health Survey suggest that 3.1 per cent of the adult ACT population have been diagnosed with diabetes for six months or more (Australia 2.9%), the true prevalence of diabetes in the ACT is likely to be well in excess of this figure.

The prevalence of Type 2 diabetes in the national population is likely to continue to increase over time, given the increasing prevalence of overweight and obesity, declining physical activity levels and poor nutrition behaviours (see Chapter 4: Lifestyle Behaviours and Chapter 16: Child Health).

The incidence of Type 1 diabetes is also increasing nationally. Findings from the National Diabetes Register show that there were 743 new cases of insulin treated diabetes among children less than 15 years in 2000 (19 cases per 100,000 population). People of this age predominantly have Type 1 diabetes. This rate is much higher than previous estimates of disease prevalence, however it is in line with other studies reporting a rising incidence of diabetes in Australia. [95]

The number of deaths attributed to diabetes in the ACT varies from 20 to 40 deaths each year. However, this is an underestimate of the true number of diabetes-related deaths, as diabetes is a contributing factor in a number of deaths, particularly where the underlying cause of death is reported as cardiovascular or renal disease. The ACT mortality rates for males diagnosed with diabetes were lower than observed nationally in 2000.

Figure 11.1: Age-standardised mortality rate[(a)] (per 100,000 population) for diabetes[(b)], by sex, ACT and Australia, 2000



Data Source: Australian Bureau of Statistics. 2002. *ACT in Focus 2002*.Cat. No. 1307.8. Canberra, Australian Bureau of Statistics.
(a) Standardised to the 1991 Australian population.
(b) Rates include deaths from diabetes (ICD-10-AM = E10-E14), where diabetes is identified as the underlying cause of death. Data excludes deaths where diabetes is identified as a contributing cause of death.

In 2001/02, diabetes was the principal diagnosis for 487 ACT resident separations from ACT hospitals. However, diabetes is often recorded as an 'associated' diagnosis, especially where there is a principal diagnosis of cardiovascular disease or a digestive disorder. When both the principal and associated diagnoses for diabetes are combined, the total number of ACT resident's diabetes separations from ACT hospitals, in 2001/02, rises to 3,098, or 4.7 per cent of all ACT resident separations. The most recently published comparable figures for Australia suggest that between 5.4 to 5.7 per cent of all Australian hospital separations have either a principal or associated diagnosis of diabetes.[23]

Table 11.1: ACT resident's separations from ACT hospitals with an associated diagnosis of diabetes[a],[b], by principal diagnosis (ICD-10-AM chapter), 2001/02

ICD-10-AM	*Principal Diagnosis*	Separations with an associated diagnosis of diabetes	Per cent
A00-B99	Certain infectious & parasitic diseases	42	1.5
C00-D48	Neoplasms	243	9.0
D50-D89	Blood & blood-forming organs & immune mechanism disorders	63	2.3
E00-E99	Endocrine, nutritional & metabolic	154	5.7
F00-F99	Mental & behavioural disorders	62	2.3
G00-G99	Nervous system	50	1.8
H00-H59	Eye & adnexa	12	0.4
H60-H95	Ear & mastoid process	13	0.5
I00-I99	Circulatory system	541	19.9
J00-J99	Respiratory system	197	7.3
K00-K93	Digestive system	326	12.0
L00-L99	Skin & subcutaneous tissue	57	2.1
M00-M99	Musculoskeletal system & connective tissue	170	6.3
N00-N99	Genitourinary system	181	6.7
O00-O99	Pregnancy, childbirth & the puerperium	11	0.4
P00-P96	Originating in the perinatal period	0	0.0
Q00-Q99	Congenital malformations, deformations & chromosomal abnorm.	7	0.3
R00-R99	Symptoms, signs & abnormal clinical & lab. findings	187	6.9
S00-T98	Injury, poisoning etc. of external causes	165	6.1
V01-Y98	External causes of morbidity & mortality	0	0.0
Z00-Z99	Health status & contact with health services	232	8.6
Total		**2,713**	**100.0**

Data source: ACT Admitted Patient Care Collection 2001/02. Confidential unit record file.

(a) Associated diagnosis of diabetes = ICD-10-AM E10-E14.

(b) Note that this table includes all associated diagnoses – including separations with a primary diagnosis of 'diabetes'.

Approximately 3.3 per cent of ACT women that gave birth in ACT facilities had a diagnosis of gestational diabetes in 2000**.**

11.2 Diabetes services and initiatives

Diabetes mellitus was endorsed as a National Health Priority Area in 1996 in recognition of its impact on the Australian community and the potential for improved health outcomes.
The *National Diabetes Strategy and Implementation Plan Report,*[96] published in 1998, describes national goals and priorities, and details implementation plans for diabetes prevention and care founded on principles of information, best practice and co-ordination. *The National Diabetes Strategy 2002-2004*,[97] builds on the foundations of the earlier report, endorsing goals and implementation principles for a national effort to reduce the burden of diabetes.

The *ACT Health Action Plan*[35] includes strategies linked to the National Diabetes Strategy goals, aimed at addressing the burden of diabetes in the Canberra region, including:

- development of a Strategic Plan for the ACT Diabetes Services Advisory Council to better meet the needs of the ACT community, with special emphasis on Aboriginal and Torres Strait Islander people;
- a commitment to work towards increasing physical activity levels in the ACT; and
- strategies aimed at improving nutrition in the ACT, especially in vulnerable groups.

Diabetes services in the ACT are co-ordinated and delivered in an integrated service environment. The ACT Diabetes Services Advisory Council, which includes representatives from local consumer groups, Non-Government Organisations (NGOs), the ACT Division of General Practice and ACT Health, meets regularly to advise on service issues and strategies.

The integrated service comprises a multidisciplinary team situated across six sites in the ACT, providing community and hospital based ambulatory care services and care to inpatients. The health professionals involved span the primary to tertiary service spectrum and include diabetes nurse educators, dieticians, podiatrists, a part-time social worker and a part-time psychologist. People in the community with Type 2 diabetes, impaired glucose tolerance and impaired fasting glycaemia are first identified and then managed in the primary care setting. Children and adults with complex care needs such as Type 1 and Type 2 diabetes requiring insulin, and women with gestational diabetes, are managed in the secondary-tertiary care setting. A monthly multidisciplinary clinical assessment, care and education service is conducted for Aboriginal and Torres Strait Islander people at risk of, or with diabetes at Winnunga Nimmityjah Aboriginal Health Service. The collaborative approach between health professionals in the ACT optimises the promotion, prevention, detection and clinical management of diabetes in the ambulatory setting.

The ACT Diabetes service's health promotion program includes diabetes awareness and early detection education activities for Diabetes Week and World Diabetes Day, participation in health promotion activities with ACT Non-Government Organisations and involvement in a number of diabetes-related data collection and monitoring projects.

Emerging Issues

- The prevalence of undiagnosed diabetes in the ACT is an issue for future service planning and service demand;
- The increasing prevalence of modifiable risk factors for Type 2 diabetes (increasing levels of excess weight, decreasing levels of physical activity and poor diet) has implications for the future incidence of diabetes.

12 Asthma

At a Glance

- Australia has one of the highest known rates for asthma in the world. The prevalence of the disease in the ACT has increased in recent years, although mortality rates and hospital separation rates have declined over time;
- There were 324 separations for ACT residents with a principal diagnosis of asthma from ACT hospitals during 2001/02;
- During 2001/02, 722 children (0-14 years) and 834 adults presented to hospital emergency departments (EDs) in the ACT with asthma.

Asthma is an important cause of morbidity and mortality in Australia. Nationally, it is a major cause of school and work absenteeism, child emergency department attendance and admission to hospital. In addition, there are more than 700 asthma deaths each year in Australia and estimates suggest approximately 60 per cent of these deaths are associated with avoidable risk factors.[98] Opportunities for prevention are focussed on education about asthma, taking medications as directed, avoiding asthma triggers (eg. dust mites, pollens and viral infections), and developing a personal action plan.[99]

Asthma occurs when the immune system over-reacts to allergens in the environment. The airways narrow and mucous accumulates, making it difficult for the individual to breathe. Symptoms of the disease include wheezing, shortness of breath, chest tightness and coughing. Asthma is a dynamic condition, especially in children who often become asymptomatic as they grow older. In addition, the severity and frequency of symptoms vary between individuals, ranging from mild, sporadic symptoms in some individuals to a disabling and life-threatening disorder in others. Whilst some individuals may experience episodic asthma, having an occasional mild episode, other individuals experience chronic asthma, with regular bouts of coughing or wheezing, and severe attacks following exposure to allergens.

The major risk factors for asthma include having a family history of the disease, and having allergies to various irritants in the environment. Common environmental factors that can trigger an ‘attack’ include tobacco smoke, certain drugs and chemicals, certain foods, viral infections, exercise and experiencing strong emotions.[71]

In recognition of the significant burden that asthma places on the community, the disease was announced as the sixth National Health Priority Area (NHPA) in 1999. Since then the National Asthma Action Plan 1999-2002 has been developed and a number of initiatives implemented. In 2001 for instance, the ‘Asthma Friendly Schools Programme’ was announced as a national initiative to assist school communities in providing an asthma friendly environment for students and staff.

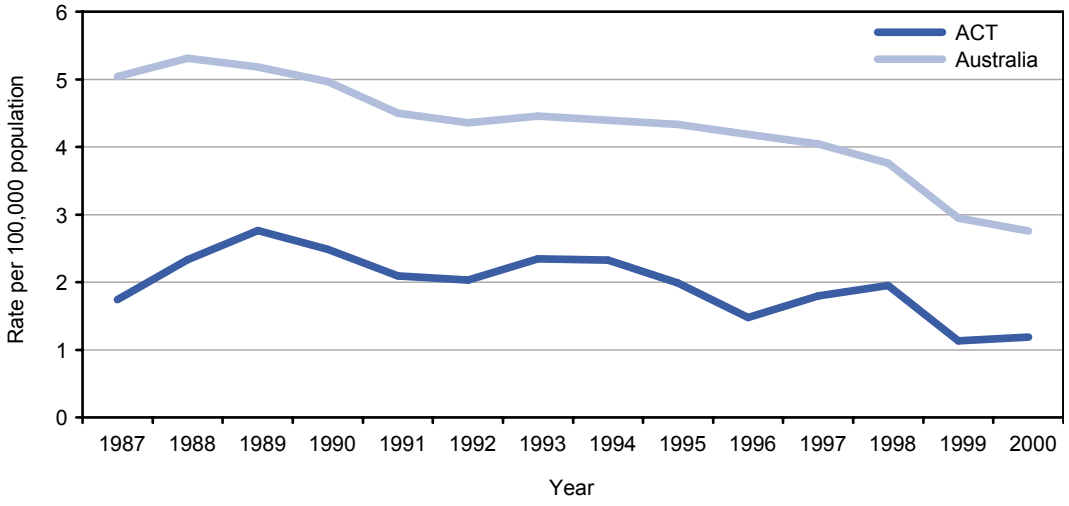
12.1 Asthma statistics and trends

There has been an increase in the prevalence of diagnosed asthma in Australia from 7.8 per cent in 1989/90 to 11.6 per cent of the population in 2001.[26] There has also been a slight increase in the diagnosed prevalence of asthma observed in the ACT, with estimates increasing from 11.6 per cent of the population in 1995[100] to 12.3 per cent (95%CI 11.2 – 13.4) in 2001.[34] The reason for the increase in prevalence over time is unknown, however, in part, it may be the result of heightened awareness of asthma and/or improved diagnosis and treatment of the condition. Other possible explanations for the rapid increase in prevalence include an increase in housing stocks that allow house dust mites or certain moulds to proliferate, the use of gas heating and cooking, and dietary changes.

Estimates from the 2001 National Health Survey suggest the prevalence of diagnosed asthma was slightly higher in adult (18 years or more) ACT females (13.4%) than ACT males (11.4%). Estimates from the survey also suggest the prevalence of diagnosed asthma among ACT children and young people between 0-17 years (13%) was slightly higher than the estimates for ACT adults (18 years or more, 12.5%).

Although Australia has one of the highest asthma death rates in the world, there has been a continuing decline in the number of asthma deaths each year since 1990. The crude asthma death rate for the ACT has been consistently lower than the Australian rate (Figure 12.1).

Figure 12.1: Asthma mortality rates [(a)] for the ACT& Australia, 1987-2000[(b)]



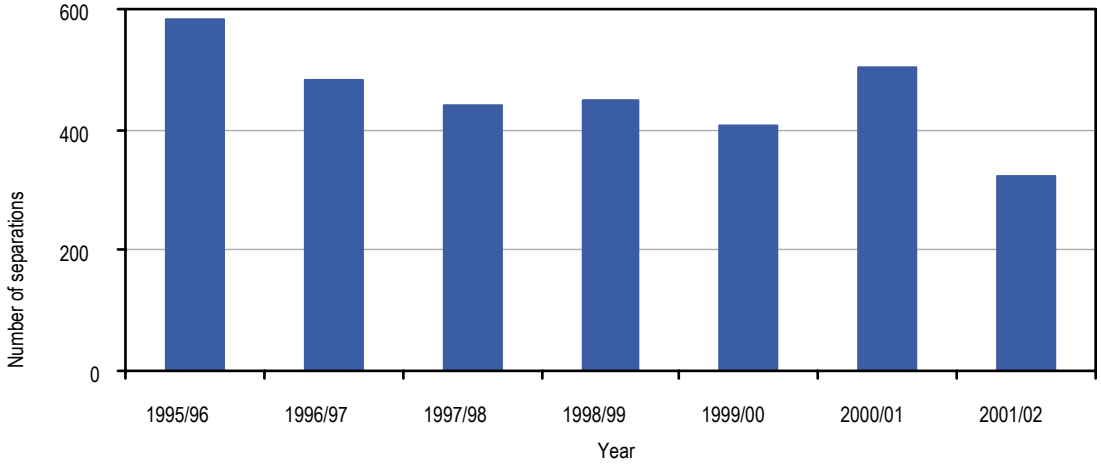
Data Source: Australian Bureau of Statistics. 2001. *Deaths Australia 2000*. Cat. No. 3302.0 Canberra, Australian Bureau of Statistics; Australian Bureau of Statistics. 2002. 2001 *Causes of Death* Cat No.3303.0. Canberra, Australian Bureau of Statistics.

(a) Crude mortality rates are presented.

(b) Three-year moving averages are presented.

The annual number of hospital separations, where asthma is the principal diagnosis, has also declined over time (Figure 12.2). In 2001/02, there were 324 ACT hospital separations for ACT residents with a principal diagnosis of asthma (165 were male and 159 were female), accounting for approximately 0.5 per cent of all ACT resident separations from ACT hospitals. In comparison, there were 583 asthma separations, accounting for one per cent of all ACT resident separations, from ACT hospitals in 1995/96. This represents a decrease in the crude hospitalisation rate for asthma from 191 per 100,000 population in 1995/96 to 101 in 2001/02.

Figure 12.2: Hospital separations for ACT residents from ACT hospitals with a principal diagnosis of asthma, by year, 1995/96-2001/02.

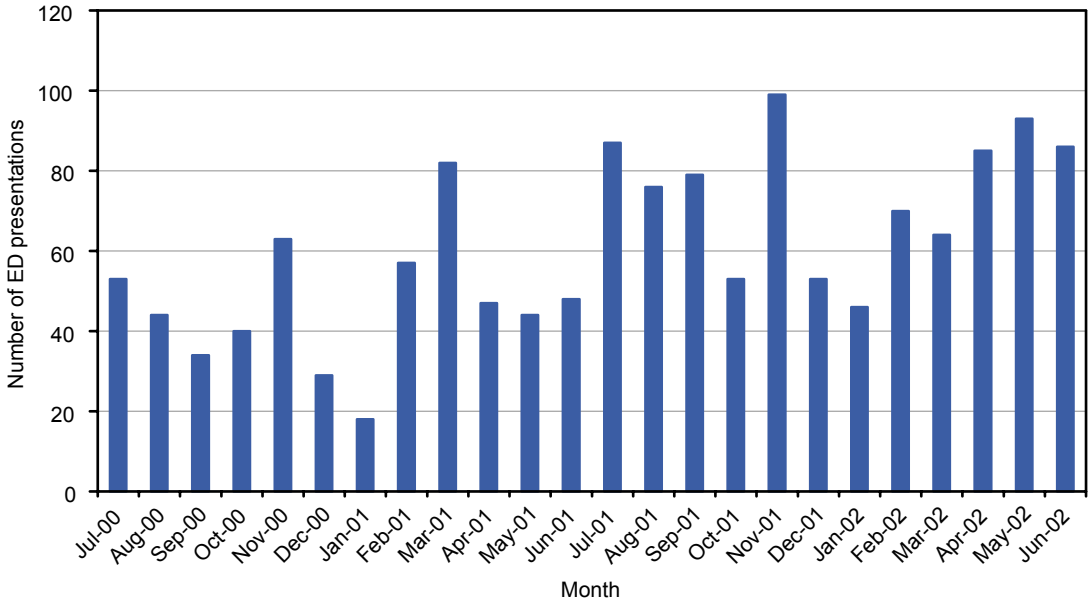


Data Source: ACT Hospital Admitted Patient Care Data Collection 1995-2002

So, although the prevalence of asthma in the ACT has increased over time, the mortality and hospitalisation rates have declined. The reasons for these decreases in asthma mortality and hospitalisation are unknown. However, changes in environmental factors, such as improved air quality, improved asthma management in the ambulatory setting, new asthma preventative medications and dose-delivery devices (spacers) may partially explain these trends.

Figure 12.3 shows ACT resident asthma presentations to The Canberra Hospital Emergency Department (TCH ED), by month, for 2000/01 and 2001/02. Strong seasonal fluctuations in asthma hospitalisations have been observed in other States and Territories.[101] Seasonal patterns in TCH ED presentations are evident for the ACT over this period.

Figure 12.3: ACT resident presentations to TCH Emergency Department, with a principal diagnosis of asthma, by month, 2000/01-2001/02



Data Source: ACT Hospital Admitted Patient Care Data Collection EDIS 2000/01-2001/02.

During 2001/02, 722 ACT children (0-14 years) presented to The Canberra Hospital (TCH) and Calvary Hospital Emergency Departments (ED) with asthma (representing 0.08% of all ACT hospital ED presentations) and there were 834 ACT adult (15 years or more) presentations to TCH and Calvary Hospital ED with asthma (representing 0.1% of all ED presentations).[88, 102]

12.2 Asthma initiatives

In 2001/02, the Commonwealth committed $48.4 million over four years to help improve moderate to severe asthma management. Planned approaches to asthma care and management in the ambulatory setting are expected to further reduce asthma mortality and hospitalisation over time and improve the quality of life for asthma sufferers. In the ACT, the national Asthma 3+ Visit Plan initiative allows asthma management to be discussed and planned between a GP and a patient over at least three consultations.

The Academic Unit of General Practice is leading the ACT Childhood Respiratory Symptom Surveillance Project, which involves the integration of asthma care for children across the continuum of health, welfare and education services in the ACT. Current estimates from the project suggest that about 16.5 per cent of kindergarten-aged children currently have asthma and 22.4 per cent have had asthma at some stage.[103] About 23 per cent of the ACT kindergarten children currently with asthma have a written asthma plan. Ideally, all children with frequent episodic or persistent asthma should have an asthma management plan.

Emerging Issues

- Planned approaches to asthma care in the ACT, including the Asthma 3+ Visit Plan, are expected to yield further reductions in asthma deaths and hospitalisations over time and improve the quality of life for asthma sufferers in the ACT.

13 Arthritis and Musculoskeletal Disorders

At a Glance

- Arthritis and musculoskeletal disorders were announced as a National Health Priority Area in July 2002;
- The burden of disease attributable to arthritis and musculoskeletal disorder is significant, and primarily due to the reduced quality of life associated with chronic pain and disability;
- In 2001/02, there were 3,087 ACT resident separations from ACT hospitals with a principal diagnosis of arthritis or musculoskeletal disorder;
- The results of the 2001 National Health Survey suggest the ACT had a slightly lower prevalence of diagnosed arthritis and slightly higher rates of diagnosed osteoporosis, back pain and other diseases of the musculoskeletal system, compared to Australia.

In July 2002, Australian Health Ministers endorsed arthritis and musculoskeletal disorder as a National Health Priority Area, because of the health and economic burden these diseases place on the population. Although they became a health priority after the period covered by this report, these disorders are covered in this report in order to produce baseline measures for future reference.

More than three million Australians suffer from arthritis and musculoskeletal disorders, and estimates from the Australian Institute of Health and Welfare indicate that nearly 75,000 years of healthy life are lost to arthritis every year. Most of the disease burden is attributable to disability, although an estimated 3,000 years of life are lost each year due to premature death.

Arthritis is a term used to describe a disorder of one or more joints. Arthritis is a part of a broader group of disorders of the muscles and bones called musculoskeletal disorders. Three of the most commonly occurring musculoskeletal conditions are osteoarthritis, rheumatoid arthritis and osteoporosis.[104]

Osteoarthritis is one of the most common types of arthritis, affecting the cartilage in the joints, and is most commonly found in the knees, neck, lower back, hip and fingers. Osteoarthritis most commonly develops between the ages of 45 to 90 years, however, many of us develop features of the disease with increasing age. Men and women are affected equally. A history of joint trauma is also a strong risk factor for development of the disease.[104]

Rheumatoid arthritis is the most common form of inflammatory arthritis, being characterised by joint swelling and destruction. The immune system attacks the tissues lining the joints, leading to inflammation, causing pain, heat and swelling. The disease can also cause inflammation of connective tissue, blood vessels and organs. Rheumatoid arthritis most commonly develops between the ages of 25 and 50, but can begin at any age. The disease affects more women than men and there is also a form of the disease that affects children.[104]

Osteoporosis is not a form of arthritis but is another type of musculoskeletal disorder. Osteoporosis means “porous bones” and is a disease where bone density and structural quality deteriorate, leading to an increased risk of fracture. The most common sites of fracture are the bones of the spine, the hip and the wrist. Lifestyle, exercise, hormonal activity and nutrition all affect bone strength. Peak bone mass development occurs during childhood and adolescence, so building stronger bones at this time will afford greater protection against fractures in later life.[104]

The emphasis of this priority area is on the prevention and treatment of disease. Undertaking regular moderate exercise can aid in the prevention of musculoskeletal conditions and it offers a range of health benefits to people suffering arthritis. A healthy diet can also assist in preventing the onset of disease. In particular, an adequate intake of calcium in adolescence, by females, can help attain peak bone mass to protect against the onset of osteoporosis later in life.

Early diagnosis and appropriate treatment is essential to delay the progression of musculoskeletal conditions, reduce pain, disability and loss of independence. Treatment options include using medications aimed at reducing pain, increasing mobility and slowing the progression of inflammation, physiotherapy, exercise and orthopaedic surgery.

In terms of improving an individual's quality of life, mechanical aids and modifications to houses can enhance mobility. In addition, self-help programs allow individuals to better manage their conditions and maintain independence in the community.[104]

13.1 Statistics and trends in arthritis and musculoskeletal disorder

Table 13.1 compares the reported disease prevalence estimates for the ACT and Australia in 2001, derived from the 2001 National Health Survey. It shows that although the rates of disorder between the two populations were very similar, the ACT had a slightly lower rate of arthritis (11.8%, 95%CI 10.7 – 12.9), and higher rate of back pain (22.8%, 95%CI 21.5 – 24.1) than reported nationally. [26,34]

Table 13.1: Estimates of the proportion (%) of the population with Arthritis and musculoskeletal disorders[(a)], by condition type, ACT and Australia, 2001

	ACT	Australia
	% Pop.	% Pop.
Arthritis	11.8	13.6
Rheumatism	*1.4	1.3
Back pain/problems neck/disc disorders	22.8	20.8
Osteoporosis	*1.7	1.6
Other diseases of the musculoskeletal system	5.3	5.0
Total arthritis and diseases of the musculoskeletal system	32.2	32.0

Data Source: Australian Bureau of Statistics. 2002. 2001 National Health Survey: Summary of Results. Cat. No. 4364.0. Canberra, Australian Bureau of Statistics.

(a) Percentages are age and sex standardised.

* estimate has a relative standard error of between 25% and 50% and should be interpreted with caution.

In 2001/02, there were 3,088 ACT resident separations from ACT hospitals with a principal diagnosis of arthritis or musculoskeletal disorder, accounting for approximately 4.7 per cent of all ACT resident separations from ACT hospitals.

13.2 Arthritis and musculoskeletal disorder initiatives

The Actively Ageing Project, being implemented by Sport and Recreation ACT, aims to increase participation in physical activity by older people (over 55 years of age) in the ACT community. The project steering committee is seeking to establish current levels of participation in physical activity in the 55 years or more age group for future monitoring purposes. In addition they wish to establish the effectiveness and sustainability of current programs and services and identify needs, barriers and issues that impede participation in physical activity.

The Department of Geriatric Medicine at The Canberra Hospital has recently studied the use of anti-osteoporotic treatment for the primary and secondary prevention of hip fracture in older people. The study found that although the establishment of an ortho-geriatric service at The Canberra Hospital dramatically improved the use of anti-osteoporotic treatment, there is still scope for practice improvement.

The Primary Joint Replacement Project, run by the Orthopaedics Unit at The Canberra Hospital, was a finalist in ACT Health's Quality First Awards for 2002. The Project involved developing and introducing a comprehensive patient management model promoting a multidisciplinary integrated approach to clinical care. It included pre-admission assessment, carer education, specific physiotherapy goals and a postoperative pain management plan. The project resulted in a reduction in the average length of stay in hospital for patients, improved waiting times and increased patient satisfaction with the service.

Emerging Issues

- The emphasis of this priority area is on prevention and treatment of disease, which is likely to have implications for future policy and planning in the ACT;
- As the demographic structure of the population changes over time, it is likely that the incidence of these age-related disorders will increase.

14 Communicable Disease

At a Glance

- ACT immunisation coverage levels in children have increased since the mid-1990s and were generally similar to Australian coverage levels at one and two years of age in 2001;
- An outbreak of Norwalk-like virus (NLV) gastroenteritis occurred in three ACT health care facilities in June 2002, affecting 281 people;
- Rates of genital chlamydia infection have risen steadily in recent years, from 26 cases per 100,000 population in 1996 to 147 per 100,000 population in 2002;
- Rates of HIV infection continue to remain low in the ACT, with ten new notifications of the disease in 2000;
- Campylobacter (illness with diarrhoea, fever and vomiting as common symptoms) infection remains the most commonly notified disease in the ACT with a rate of 114 per 100,000 population in 2002;
- The second most commonly reported disease during the 2000 to 2002 period was chlamydia, followed by hepatitis C.

Communicable or infectious diseases are illnesses caused by specific infectious agents or their toxic products. Examples of infectious agents include viruses, which are responsible for diseases like measles and hepatitis, and bacteria, which are responsible for diseases like pertussis (whooping cough) and diphtheria. Fungi are responsible for conditions like tinea, and protozoan parasites can cause diseases like malaria. Bacterial toxins are responsible for conditions like tetanus and some forms of food poisoning.[23]

A mixture of promotion, prevention and treatment initiatives are used to limit the burden of communicable disease in the community. Whilst vaccine-preventable diseases like polio may be prevented through vaccination, and diseases like *Chlamydia* and gonorrhoea may be treated with antibiotics, some communicable diseases cannot be cured or vaccinated against. This group of communicable diseases include common (and relatively mild) viral infections of the upper respiratory tract and HIV infection. These diseases can only be prevented by reducing the risk of infection with the promotion and practice of risk-reducing behaviours.

The burden of communicable disease was considerable in the early part of the 20th century before the advent of population-based vaccination programs, the introduction of antibiotics and improvements in diet, sanitation and hygiene. Death from infectious disease was common, especially in childhood, and it served to keep life expectancy to a level about half of what it is today. Although the burden of communicable disease has declined considerably over time, it remains a significant cause of ill health. In 1996, infectious and parasitic diseases and acute respiratory infections such as pneumonia and influenza, accounted for approximately three per cent of the total burden of disease and injury in Australia.[27] Although the impact of diseases like HIV infection and tuberculosis is significant, the prevalence of these diseases is low – they are relatively uncommon in the community. The bulk of the burden of communicable disease is due to relatively minor infections such as colds and influenza, which affect the vast majority in the community.

14.1 Surveillance, investigation and control

Communicable disease surveillance is the responsibility of States and Territories and is governed by local public health legislation. There are minor variations between jurisdictions but most diseases on the Communicable Diseases Network list of notifiable diseases are notifiable in all states. Communicable disease notifications play a key role in local surveillance efforts. Under the *Public Health Act 1997*, laboratories and hospitals are required to notify the ACT Communicable Disease Control (CDC) Section of certain diseases. General practitioners are required to notify on suspicion of certain diseases. These 'notifiable' diseases include vaccine-preventable conditions, sexually transmitted infections, food and water-borne diseases and vector-borne diseases. Schools in the ACT are required to notify cases of vaccine-preventable diseases (like measles and pertussis).

The notification of a disease can result in a range of actions being undertaken by the ACT CDC Section. For certain types of disease notifications, such as meningococcal C, the CDC Section ensures that the individual with the disease receives prompt and effective treatment, and close contacts are identified and offered treatment or prophylactic immunisation, as appropriate. With other diseases, such as legionella, the CDC Section also attempt to identify related cases in the community, and may advise health professionals and hospitals to be on the alert for a specific disease. If an outbreak of an infectious disease occurs, a greater range of control measures may be employed to identify the source of infection and interrupt the transmission of disease. For example, these actions may involve mass vaccination to reduce the transmission of conditions like measles.

In the event of an outbreak of a non-notifiable disease, the Chief Health Officer has the power to temporarily designate a non-notifiable disease as a notifiable condition.

14.2 Statistics and trends

Most of the communicable disease statistical information presented in this section of the report has been derived from ACT CDC disease notification data. In some instances, the annual number of notifications in the ACT for specific diseases is very small, which can result in large notification rate fluctuations between different years. As well, very small numbers of disease notifications can breach the confidentiality rights of individuals. In instances where the annual number of notifications is very small, numbers and rates for each year have not been provided in the text. Instead, general trends are discussed in the text with limited references to statistics or notification rates have been provided for the ACT, based upon three-year averages (1999-2001), for comparison with Australian rates.

Age-sex-specific ACT notification rates are provided where age and/or sex is a factor in the epidemiology of a communicable disease. In other instances, ACT and Australian notification rates are provided over time as crude rates per 100,000 population (note that the crude rates are not adjusted for age and sex differences between the ACT and Australian populations).

The information on immunisation coverage has been obtained from the Australian Childhood Immunisation Register (ACIR). Immunisation coverage for the ACT is presented as the percentage of the eligible population that has been immunised.

Finally, gastroenteritis is discussed in this section of the report as an item of interest (an outbreak of gastroenteritis occurred towards the end of June 2002).

14.2.1 Immunisation coverage and vaccine-preventable diseases

Immunisation coverage

Immunisation is a simple, safe and effective means to protect children and adults against the harmful effects of certain diseases. Immunisation prevents disease by triggering an immune response in an individual who has undergone vaccination for a specific disease. The immune response often takes several weeks to take effect, so protection from infection may not be immediate, and most immunisations need to be administered several times in order to achieve long lasting protection against disease.

When a near universal program of immunisation is in place, most of the at-risk population is protected from infection. As well as providing protection to immunised individuals, a near universal immunisation program reduces the risk of infection in the minority of individuals that are not immunised. The risk of infection is reduced because, as a minority, these individuals are less likely to be exposed to the organism of concern and less likely to pass an infection on to others.

The National Health and Medical Research Council (NHMRC) recommend vaccination in specific population groups. There is a range of vaccines available to protect against a variety of communicable diseases. Some of these vaccines form part of widespread population-based immunisation programs and others are administered on an individual basis to those at greatest risk of exposure to disease. The flu vaccine, for example, is freely available to Aboriginal and Torres Strait Islander people aged 15-49 years, who have a chronic medical condition, Aboriginal and Torres Strait Islander people over 50 years and other Australians aged 65 years or more.

The NHMRC also recommends that all children are vaccinated against the diseases listed on the Australian Standard Vaccination Schedule (ASVS). There are currently nine diseases listed on the schedule:

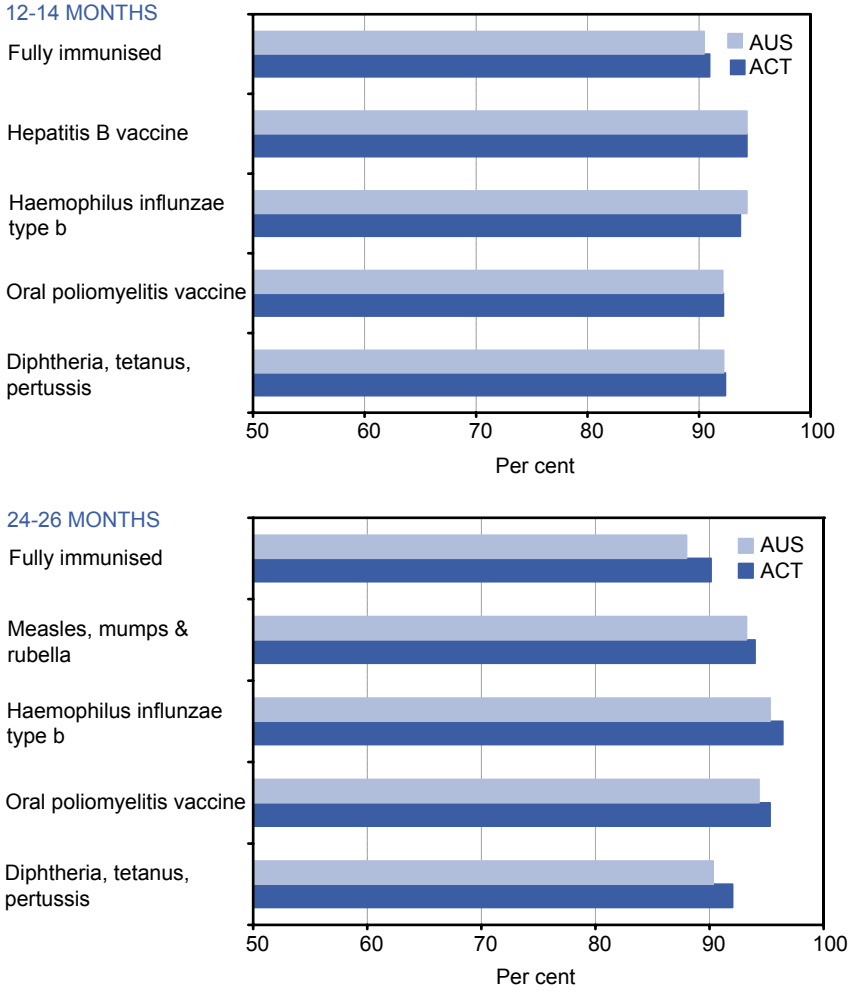
- poliomyelitis;
- measles;
- mumps;
- rubella;
- diphtheria;
- tetanus;
- pertussis (whooping cough);
- *Haemophilus influenzae* type b (Hib);
- hepatitis B.

As of 1 January 2003, meningococcal C was included in this list. Since 2001, Aboriginal and Torres Strait Islander children aged two years and under in the ACT have been eligible to receive the conjugate pneumococcal vaccine.

Figure 14.1 presents the proportion of the ACT and Australian populations immunised at 12-14 months and 24-26 months in December 2001. The data has been provided by the ACIR. The ACT CDC Section transfers immunisation information to the ACIR on a weekly basis. The graphs show that routine childhood immunisation coverage levels in the ACT were slightly higher than the levels for all Australia in December 2001.

Childhood immunisation coverage rates have historically been high in the ACT. This is largely because the ACT has had an immunisation register operating since 1993 and some of the larger jurisdictions have only had a State or Territory-wide immunisation register, or reporting process operating post-1996. When the ACIR commenced operation in 1996 and States and Territories were required to forward local immunisation data to the national register, the ACT had an advantage over some of the larger jurisdictions in that the technical infrastructure for reporting immunisation data was already in place. The ACT already had its own register operating and many of the problems involved in the set-up of a register for reporting purposes had already been resolved. We would expect to see the gap in immunisation coverage levels between the ACT and other jurisdictions narrow over time as outstanding infrastructure and data quality issues with interstate registers and reporting processes are resolved.

Figure 14.1: Percentage of the population immunised at 12-14 months and 24-26 months, for ACT and Australia, Dec 2001



Data Source: ACIR, 2003.

Measles

Measles is a highly contagious viral disease with a cough, fever and characteristic rash. Measles infection is usually self-limiting but can result in occasional serious side effects and, rarely, death. Before universal vaccination, virtually all children in the community became infected with measles. Thus, most people more than 30 years of age are immune because of childhood infection. Nowadays, most children in the ACT are immune because they have been vaccinated against the disease. The group most at risk of infection today are young Australian adults born between January 1970 and December 1983.

There has been a reduction in measles notifications in the ACT since 1997, with less than ten notifications each year since 1998 and no notifications in 2001 and 2002. There are two reasons for the recent decline in notifications. Firstly, measles is becoming rare because the majority of the population has either been immunised or suffered from the disease in the past and has since developed an immunity. In 1998, a mass vaccination campaign was undertaken to vaccinate all primary school children in Australia with a second dose of the measles vaccine. This was to allow for a change in the national immunisation schedule to make the second MMR due at four years of age (it had previously been given to school children). The campaign vaccinated those children in the community that would otherwise have missed out on a second vaccination with the change to the schedule.

The second reason for the recent decline in notifications is the more stringent criterion being applied to confirm a case of 'measles'. A blood test is now used in virtually all suspected cases of the disease, with less than five per cent of such tests now confirming a diagnosis of 'measles'. Other viral infections common in childhood can look clinically similar to measles and have most likely been mistaken for the disease in the past.

In 2000, ACT Health made a conscientious effort to reduce the gap in measles immunity that exists for young adults in the community. A measles campaign was implemented, aimed at young adults in the 18-30 years age group. By such methods, the eradication of measles from Australia may eventually be possible.

Mumps

Mumps is an acute viral illness, which causes fever and swelling of some salivary glands, typically the parotid gland. Serious complications, such as encephalitis are rare but, inflammation of the testicles can occur in adolescent or adult males and inflammation of the breast can occur in adolescent or adult females.

Prior to 1999, the number of mumps notifications varied considerably each year in the ACT and although there were 17 notifications in 2000, there were less than five notifications in 2001 and none in 2002. The decline in notifications that has occurred is partly due to changes in the accuracy of diagnosis, which has improved with laboratory testing for the presence of the virus responsible for the disease or the presence of antibodies to the virus. In addition, the MMR vaccination campaign (see section on measles) in 2000 has likely influenced the low number of mumps notifications recorded in 2001 and 2002.

Rubella

Rubella is a viral disease (usually mild), characterised by a fever, rash and sometimes the swelling of certain lymph glands in the head and neck. Rubella can cause developmental defects in a foetus (Congenital Rubella Syndrome) if women contract the disease during the first trimester of pregnancy. To eradicate the risk of disease, it is therefore important for women of childbearing age to ensure that they are immune to the disease. Immunity can be achieved by vaccination and immune status can be checked with a simple blood test.

The number of rubella notifications has declined in the ACT in recent years. Prior to 2000, the number of rubella notifications varied considerably each year in the ACT. Although there were 17 notifications in 1999, there were less than five notifications each year between 2000 and 2002. The decline in notifications that has occurred over time is largely due to the use of laboratory testing in recent years to confirm diagnoses. Some of the cases notified prior to 1999/00 may not have been rubella, which can be very difficult to diagnose on clinical grounds alone, because the symptoms closely match those of other common viral illnesses. Again, the MMR vaccination campaign (see section on measles) in 2000 has also likely influenced the low number of notifications recorded between 2000 and 2002.

Poliomyelitis

Widespread immunisation has eliminated the disease from Australia, and no cases of polio have been recorded here for many years. The World Health Organisation (WHO) has declared the western Pacific, including Australia, officially polio-free. The vaccine remains on the ASVS because children remain at risk of imported disease until polio is eradicated from the world. The WHO is aiming to certify that global eradication of polio has occurred by the year 2005.

Diphtheria

Diphtheria is a serious bacterial disease resulting from the effects of a toxin released from *Corynebacterium diphtheriae*. It was a cause of much illness and death in the pre-vaccination era but is now rare in vaccinated communities. There were no cases of diphtheria reported in the ACT between 1991and 2002.

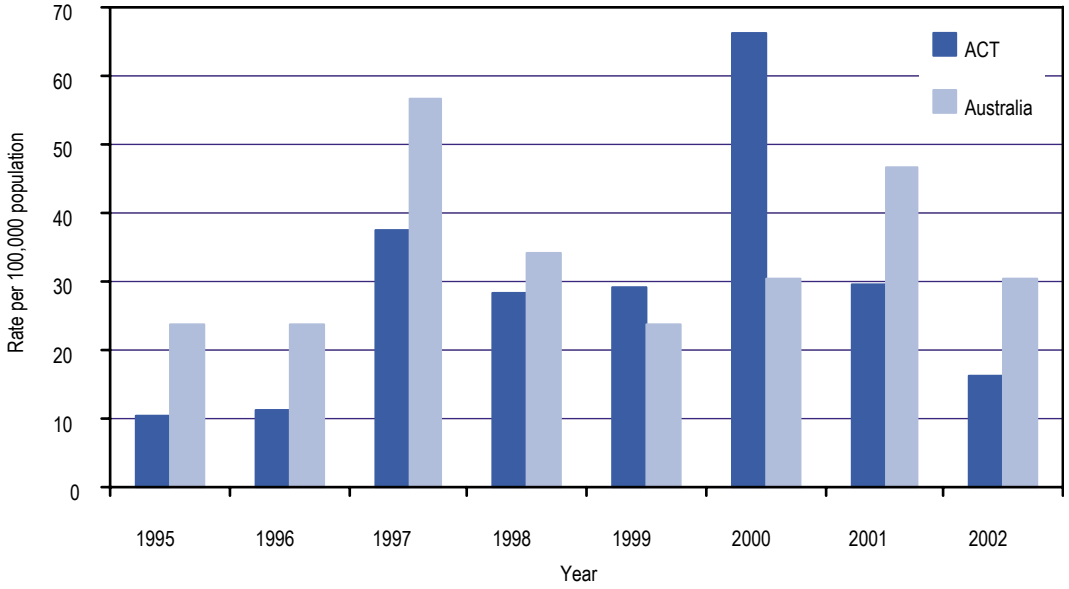
Tetanus

Tetanus is a life-threatening condition caused by a toxin released after infection with *Clostridium tetani*, which is a common bacterium found in animal faeces and soil. Despite the prevalence of the bacterium, tetanus has been an uncommon disease for many years because an effective vaccine has been available since the first half of the 20th century. However, several cases of tetanus are reported throughout Australia each year, often in elderly women who have not been vaccinated. There were no notifications of tetanus in the ACT between 1991and 2002.

Pertussis (whooping cough)

Pertussis (whooping cough) is a bacterial disease caused by *Bordetella pertussis*. Pertussis spreads easily between people in close contact who are not immune and is particularly serious in babies as it can cause serious complications and death. Severe epidemics were common in the pre-vaccination era, with many deaths resulting from infection. Minor outbreaks of pertussis still occur in the ACT because the immunity induced by vaccination, or from being infected and suffering the disease, is not life-long. Immunity weakens over time and an individual becomes susceptible to infection again. Figure 14.3 illustrates this point as some of the highest age-specific rates for the disease in 2001/02 were observed among people between 40-59 years of age. Although there is a vaccine available for adolescents and adults, it is not on the ASVS current list of recommended vaccines. The ASVS currently recommend the pertussis vaccine for children up to eight years of age.

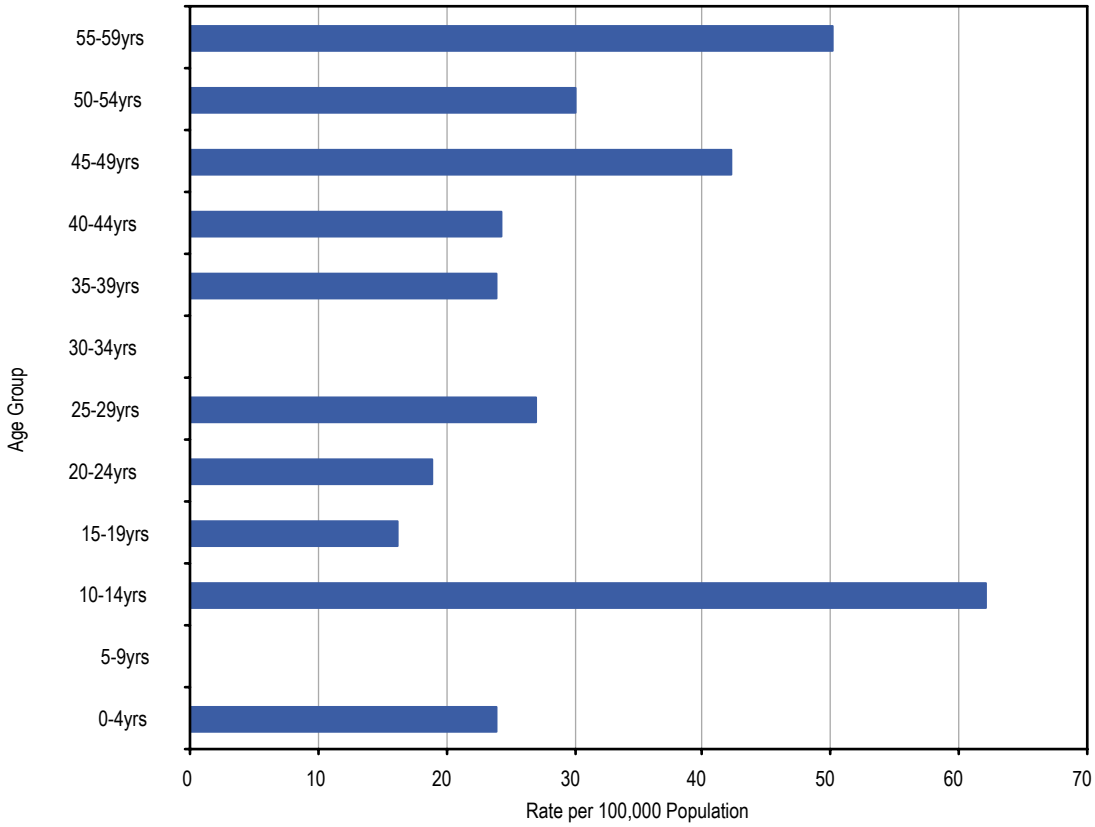
Figure 14.2: Pertussis notification rates per 100,000 population, ACT and Australia, 1995-2002[(a)]



Data Source: Communicable Diseases Australia - National Notifiable Diseases Surveillance System (www.cda.gov.au/nndss/nndss2.htm).
(a) Data for 2002 is preliminary.

In 2001, there were 95 pertussis notifications and in 2002, 52 notifications. During 2000, there were 206 pertussis infections notified in the ACT, which was very high compared to previous years. Pertussis notification rates for the ACT in 2000 were significantly higher than the rates for Australia (66.3%, 95%CI 66.1-66.4), but were significantly lower for the ACT in 2001 (29.6%, 95%CI 29.6-30.0) and 2002 (16.2%, 95%CI 16.1-16.3). Pertussis cases were concentrated over the winter period of July to September 2000, with a peak of 53 notifications between August and September 2000. Media campaigns in 2000 reminded the community of the severity of the illness and encouraged vaccination.

Figure 14.3: Age-specific (< 60 years) notification rates for pertussis, ACT, 2001/02[(a)]



Data Source: ACT Notifiable Disease Database, ACT Health Protection Service.

(a) Notification rates for those aged 60 years or more are not shown as there were less than five notifications for this age group.

Haemophilus influenzae type b

Haemophilus influenzae type b (Hib) is a bacterium that can cause serious illness, mainly in young children. The bacteria can infect the meninges (the membranes surrounding the brain and spinal cord), causing meningitis. They can also cause inflamed throats, pneumonia, and septic arthritis. Before a vaccine was available, Hib was one of the commonest causes of bacterial meningitis in children under five years of age in Australia. The introduction of the Hib vaccine has brought about a dramatic reduction in the rate of invasive Hib infection throughout Australia. The national notification rate for this disease in children under five years has dropped from 33.6 per 100,000 population in 1992 to 0.2 per 100,000 in 2002. There were no cases of Hib infection notified between 2000 and 2002 in the ACT.

14.2.2 Viral hepatitis and human immunodeficiency virus

There are three types of viral hepatitis referred to in this section: hepatitis A, hepatitis B and hepatitis C. There are important differences between each virus, including the mode of transmission and the disease that is caused.

Symptoms of hepatitis typically include anorexia, malaise, dark urine and jaundice (characterised by yellowing of the skin and the whites of the eyes). The severity of disease may vary, and in many cases, the illness can be completely without symptoms.

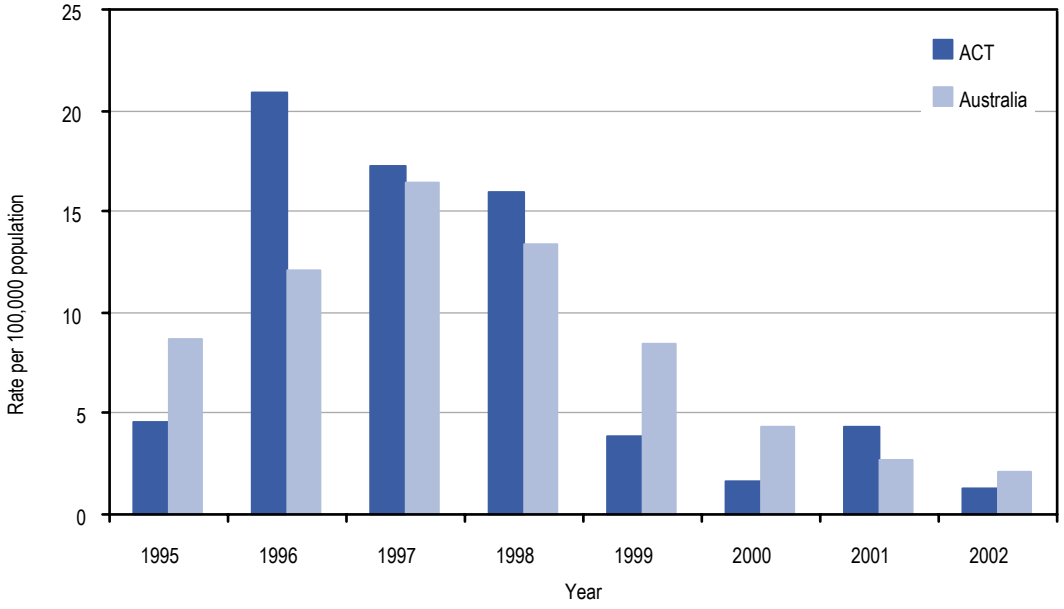
Hepatitis A

Hepatitis A virus (HAV) is present in the faeces of infected people, and can be spread from person to person, often through contaminated food or through 'unsafe' sexual practices. Outbreaks of hepatitis A have also been associated with injecting drug users.

Between 2000 and 2002, there were 23 notifications of hepatitis A in the ACT. The rate for this three-year period (2000-2002), based on the average number of notifications each year, was 2.4 hepatitis A notifications per 100,000 population. In comparison, the Australian rate in 2001 (midpoint for this period) was 2.7 notifications per 100,000 population.

A hepatitis A vaccine is available and is recommended for people travelling to countries where the disease is endemic, as well as to certain groups at risk because of occupation or lifestyle.

Figure 14.4: Hepatitis A notification rates per 100,000 population, ACT and Australia, 1995-2002[(a)]



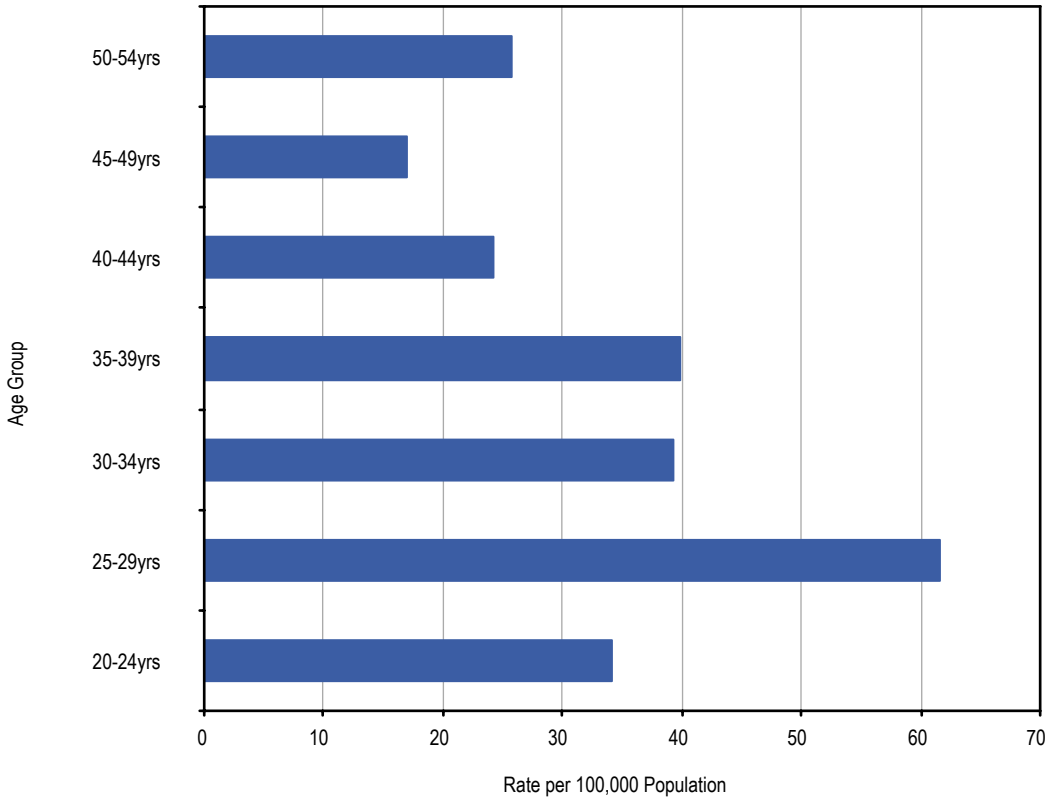
Data Source: Communicable Diseases Australia - National Notifiable Diseases Surveillance System (www.cda.gov.au/nndss/nndss2.htm)
(a) Data for 2002 is preliminary.

Hepatitis B

Hepatitis B virus is transmitted mainly through the skin or mucous membranes by contact with an infected person's blood, saliva, semen or vaginal fluids. This can occur through sexual contact, by penetrating the skin with an infected needle or other blood-to-blood contact. Infected mothers can also transmit the disease to their babies. Infection with hepatitis B may occur without symptoms and can lead either to immunity or to a chronic carrier state. Young children and infants who are infected are much more likely to become chronic carriers than are adults who are infected. The fact that infection can occur without symptoms means that many notifications are for people who were infected in the past and continue to harbour the virus. These cases are classified as 'Hepatitis B, unspecified'. When the notification is known to be the result of a recent infection it is classified as 'Hepatitis B, incident'. Most cases are unspecified, with usually less than ten cases per year being classified as incident.

There were 51, 56 and 82 notifications in the ACT for hepatitis B (incident + unspecified cases) in 2000, 2001 and 2002, respectively. The notification rates over this period for the ACT were 16.4, 17.5 and 25.5 notifications per 100,000 population.

Figure 14.5: Age-specific (20-54 years) notification rates for hepatitis B (incident & unspecified[a]), ACT, 2001/02[b]



Data Source: ACT Notifiable Disease Database, ACT Health Protection Service.

(a) incident = new case of Hep B infection; unspecified = time period for infection with Hep B unknown, or old Hep B infection.

(b) Notification rates for those aged 0-19 years and 55 years or more are not shown as there were less than five notifications for these age groups.

The highest notification rate for the disease in 2001/02 occurred in the 25-29 years age group. A safe and effective vaccine is available to prevent hepatitis B infection. It is provided free to primary school children in Year 6 and has been part of the standard infant schedule since May 2000.

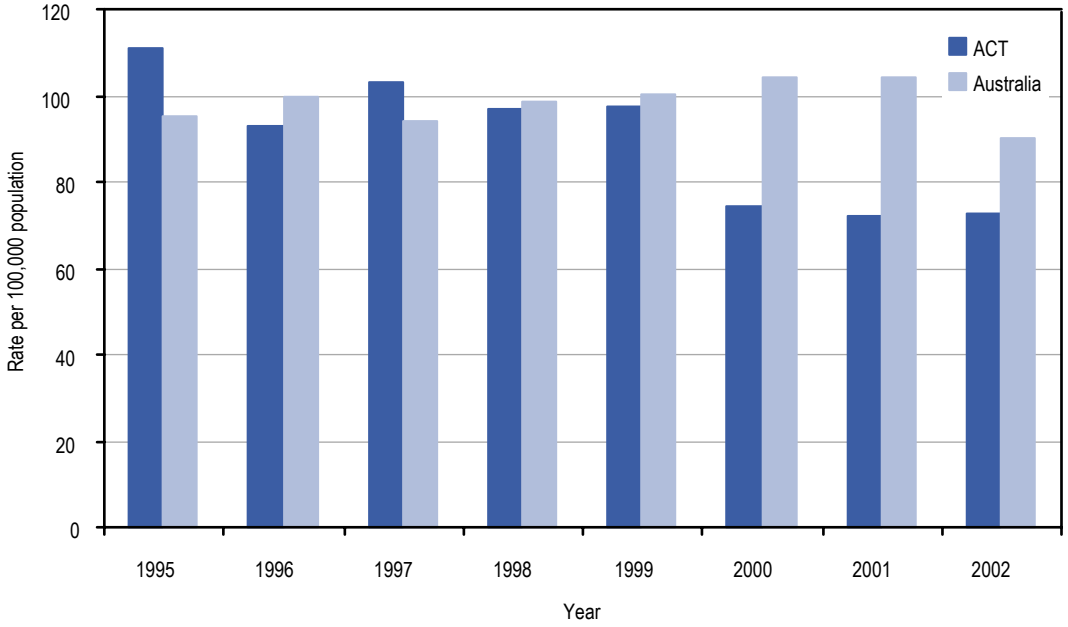
Hepatitis C

The hepatitis C virus was only characterised in 1989, but this virus has rapidly become an important public health issue in Australia. Hepatitis C is now the most common viral form of hepatitis in Australia. It is spread by contact with an infected person's blood, which most often occurs through the use of contaminated needles, syringes and injecting equipment. Other activities can also spread the disease if not carried out safely. The transmission of hepatitis C through the transfusion of infected blood or its components, and the transplantation of Hepatitis C-infected tissues or organs, has been all but eliminated since hepatitis C screening was introduced in 1990.

Most people usually have no symptoms when first infected, which makes it easier for the disease to be unknowingly spread. However, about 80 per cent of those infected will have long-term illness – in particular, long-lasting inflammation of the liver, which can lead on to cirrhosis and liver cancer.

As with many diseases, it is known that the number of reports of incident hepatitis C underestimates the prevalence of the disease because not all cases are identified.

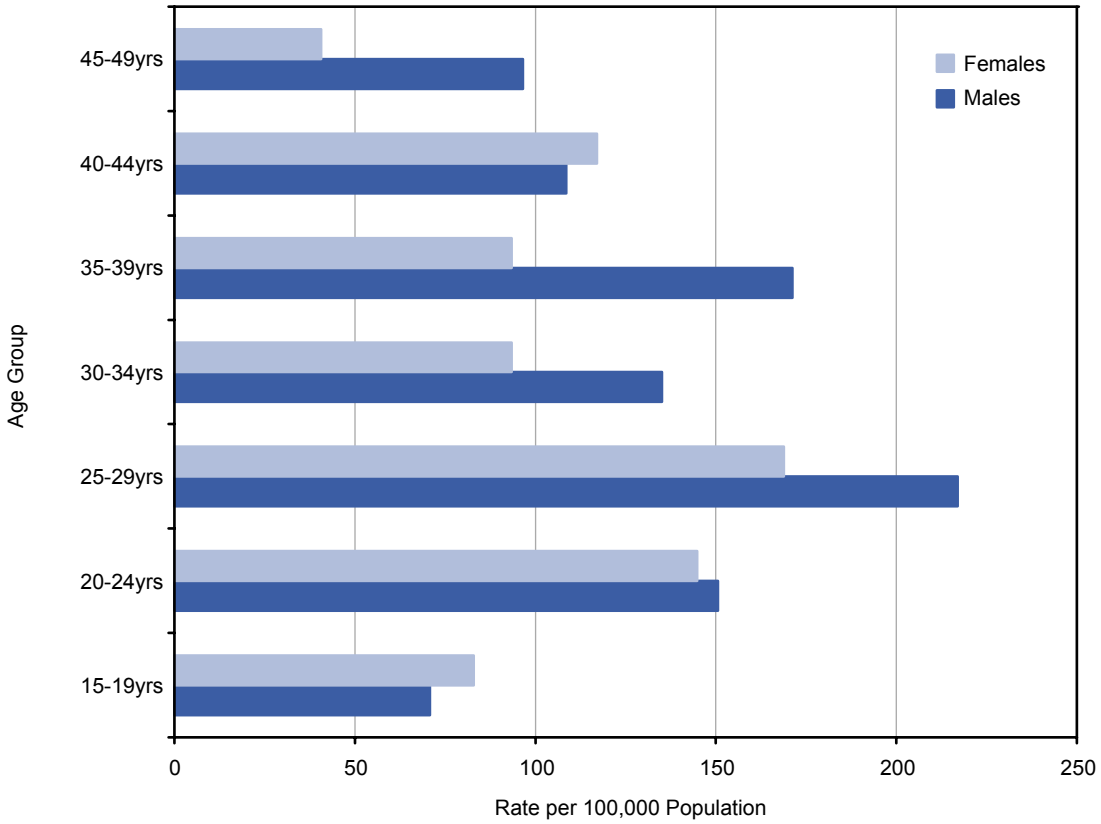
Figure 14.6: Hepatitis C (unspecified & incident) notification rates per 100,000 population, ACT and Australia, 1995-2002[(a)]



Data Source: Communicable Diseases Australia - National Notifiable Diseases Surveillance System (www.cda.gov.au/nndss/nndss2.htm)
(a) Data for 2002 is preliminary

During 2000, 2001 and 2002, there were 232, 231 and 233 notifications of hepatitis C infection in the ACT, respectively. These notifications represent overall rates of 75, 73 and 73 per 100,000 population. The Australian rates for hepatitis C, in 2000, 2001 and 2002 were 104, 104, and 90 per 100,000 population (Figure 14.6). The ACT notification rate was highest in the 25-29 years age group during 2001/02 (Figure 14.7).

Figure 14.7: Age-specific (15-49 years) notification rates for hepatitis C (incident & unspecified[a]), by sex[b], ACT, 2001/02[c]



Data Source: ACT Notifiable Disease Database, ACT Health Protection Service.

(a) incident = new case of Hep C infection; unspecified = time period for infection with Hep C unknown, or old Hep C infection.

(b) The were two notifications where the sex of an individual was not recorded. "Sex" has been randomly assigned for these cases.

(c) Notification rates for 0-14 years and 50 years+ are not shown as there were less than five notifications for these age groups.

There is no vaccine available for hepatitis C at present. Disease prevention efforts are focussed on reducing the transmission of hepatitis C, which occurs through the use of contaminated needles and syringes and other contact with infected blood. Disease transmission is prevented by ensuring safe infection control practices are used whenever skin is pierced. The strategy to address this issue includes educating injecting drug users, and through the Needle and Syringe Program, providing sterile new needles and clean injecting equipment as well as providing for the safe disposal of used needles and syringes. Information from the ACT Communicable Disease Control (CDC) Section indicates that injecting drug use is a major risk factor for young adults in relation to hepatitis C.[105]

Human immunodeficiency virus (HIV) infection

The human immunodeficiency virus (HIV) can be transmitted from person-to-person through sexual contact, the sharing of HIV-contaminated needles and syringes, transfusion of infected blood or its components, and the transplantation of HIV-infected tissues or organs. However, the screening of blood and tissue donors since the mid-1980s has all but eliminated transmission of the disease via transfusion in Australia. Transmission of HIV in Australia continues to occur primarily through sexual contact between men. Infection with the virus progresses, in most cases, to Acquired Immune Deficiency Syndrome (AIDS), which is a manifestation of the loss of effective immune system function.

In Australia the incidence of HIV infection is low, with 746 diagnoses of HIV nationally in 2000, including ten notifications of new cases in the ACT.

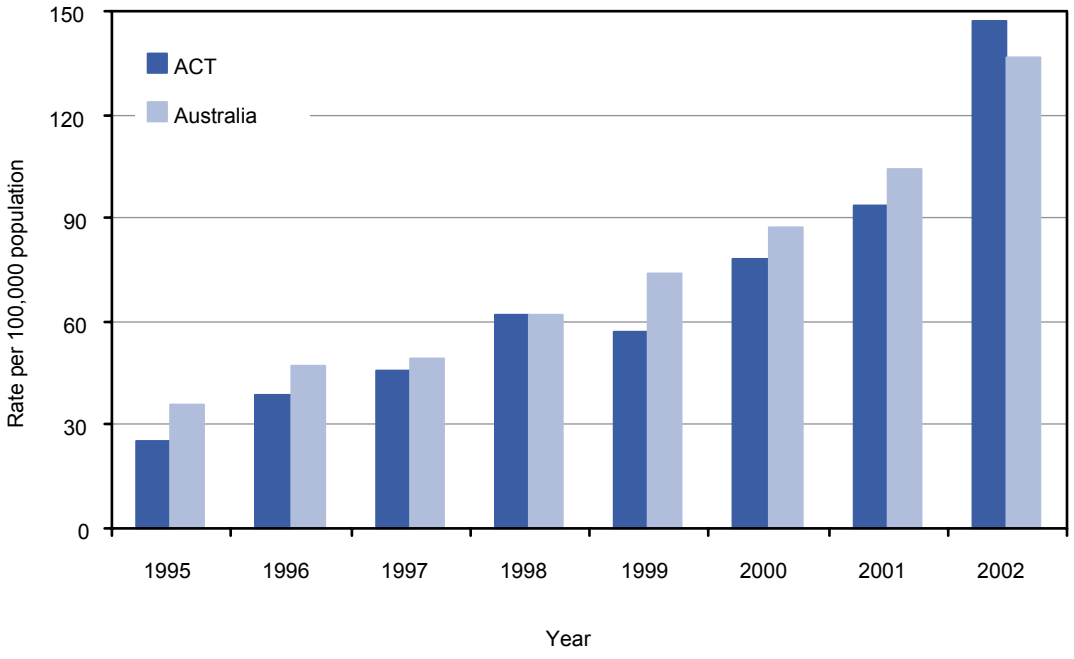
14.2.3 Sexually transmissible infections

In the ACT, notifiable diseases in this category include chlamydia trachomatis genital infection, gonorrhoea, syphilis, donovanosis, chancroid and lymphogranuloma venereum. The latter two infections are not usually found in Australia. Although both HIV and hepatitis B are also sexually transmitted, they are not included in this category but are instead considered above. Other sexually transmitted diseases, such as genital herpes, human papilloma virus (causing genital warts) and parasitic infections, are not subject to national or local surveillance.

Chlamydia trachomatis genital infection

Chlamydia is a small bacterium that lives within cells. Genital infection with *Chlamydia* does not always result in obvious symptoms. However, an untreated infection can lead to infertility, particularly in women. The ACT (and national) rate for genital chlamydial infection is increasing. The increase in notifications partly reflects advances in diagnostic testing for chlamydiae. The testing has become much simpler and less invasive in recent years, requiring a urine sample, or low vaginal swab rather than cervical and urethral swabs, as were previously required. As testing has become less invasive, more people have been tested and the number of tests performed has increased. More infections are being detected and notification rates are rising, both in the ACT and nationally. In addition, health campaigns and promotion activities have increased public awareness of the disease, its symptoms and links to infertility, contributing to the increase in the number of diagnostic tests performed. Regardless of the reasons for the increase in notifications, the number of infections detected each year in the ACT is a cause for concern, although more cases are being treated.

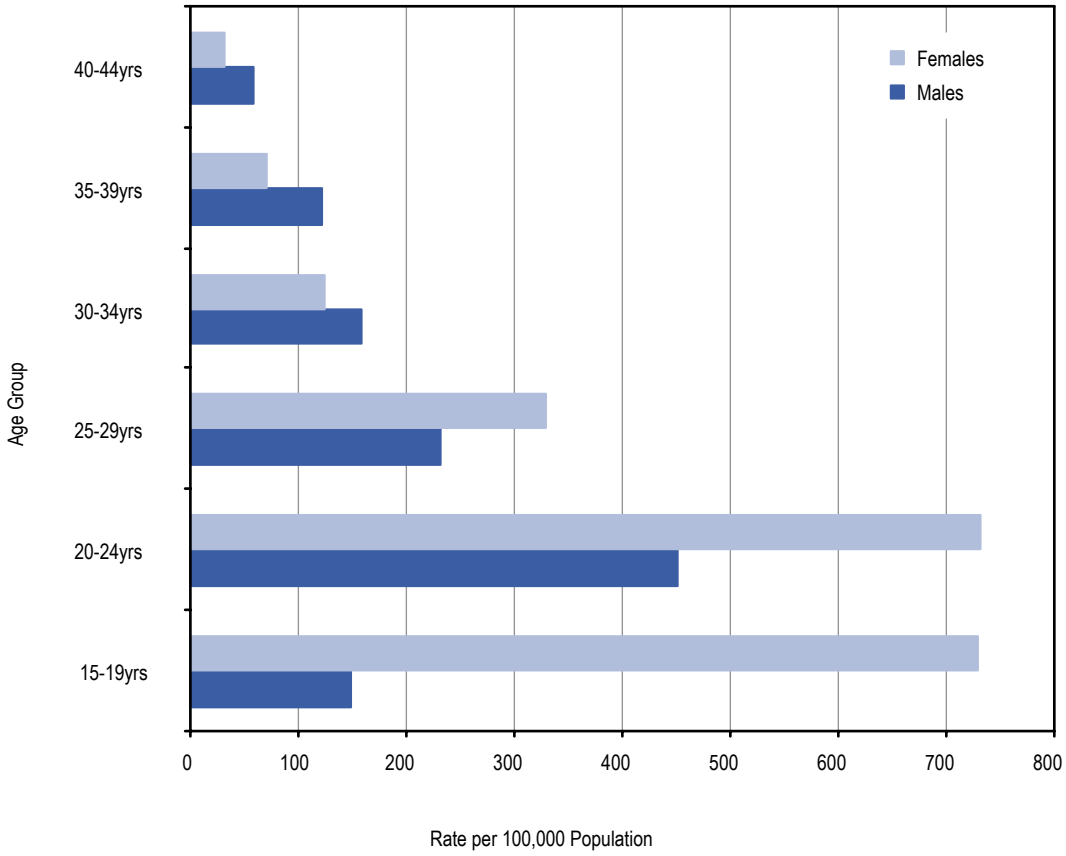
Figure 14.8: *Chlamydia* notification rates per 100,000 population, ACT and Australia, 1995-2002[(a)]



Data Source: Communicable Diseases Australia - National Notifiable Diseases Surveillance System (www.cda.gov.au/nndss/nndss2.htm)

(a) Data for 2002 is preliminary.

Figure 14.9: Age-specific (15-44 years) notification rates for *Chlamydia*, by sex, ACT, 2001/02[(a)]



Data Source: ACT Notifiable Disease Database, ACT Health Protection Service.
(a) Notification rates for 0-14 years and 45 years+ are not shown as there were less than five notifications for these age groups.

In the years 2000 to 2002 there were 243, 298 and 474 notifications of chlamydial infection, respectively, in the ACT. The corresponding rates were 78.2, 93.3 and 147.3 per 100,000 population. In 1995, in contrast, the ACT rate was only 25.6 per 100,000 population. The notification rates for Australia have been generally similar to the ACT at 104 and 137 per 100,000 population for 2001 and 2002 respectively (Figure 14.8).

The disease is identified more frequently among females in the younger age groups (Figure 14.9), however, over 30 years of age, the male notifications predominate. In 2001/02, the peak incidence for females occurred in the 15-19 and 20-24 year age groups, with 730 and 732 notifications per 100,000 population, respectively. For males, the peak incidence age group was 20-24 years, with 452 notifications per 100,000 population.

Gonococcal infection (gonorrhoea)

Infection with the bacterium *Neisseria gonorrhoeae* (commonly called gonococcus) can occur in many areas of the body, including the genital tract, urinary tract, anus and/or eyes. Gonococcal infection is mainly the result of unsafe sexual activity.

Notifications of gonococcal infection are relatively low in the ACT with 15, 20 and 15 cases being reported in the years 2000, 2001 and 2002, respectively. These represent rates of 4.8, 6.3 and 4.7 per 100,000 population. Although notifications have risen slightly since the early 1990s, they are considerably lower than the Australian rates for the years 2000 to 2002 at 29.8, 32.1 and 34.6 per 100,000 population, respectively.

Syphilis

Syphilis is an acute or chronic sexually transmitted infection with the bacterium *Treponema pallidum.* It continues to be a fairly rare disease in the ACT, with 15 cases notified in 2000, 12 in 2001 and 13 in 2002. Most of the cases in the ACT are latent syphilis and therefore are unlikely to result in new cases. Syphilis is easily curable with penicillin, however, blood tests for syphilis usually remain positive for life, regardless of treatment.

14.2.4 Gastrointestinal, food-related and water-related diseases

Gastrointestinal (or enteric) diseases continue to account for a large proportion of all disease notifications in the ACT. The majority of notifications for this group of diseases come from laboratories.

Infection with strains of the bacterium *Escherichia coli* that produce Shiga-like toxins has recently become nationally notifiable, as has haemolytic uraemic syndrome (HUS). HUS is a potential complication of infection with a type of toxin-producing *E. coli*, acquired through food. It is a serious condition, with renal failure and death as possible outcomes.

The incidence of enteric diseases can be reduced by maintaining vigilance in the area of food hygiene – in the home as much as in the food industry.

Cryptosporidiosis

Cryptosporidiosis is a parasitic infection of the human gut caused by the protozoan *Cryptosporidium parvum.* To cause infection, the parasite has to be ingested with contaminated food or water. The main symptoms resulting from infection are diarrhoea and abdominal cramps. Most people are free of symptoms within 30 days. However, the disease may either be prolonged or more aggressive in people who are immunodeficient, including AIDS patients.

Cryptosporidiosis tends to occur in the warmer months. In Canberra, outbreaks occurred in the late summer/early autumn in both 1995 and 1998. The outbreak in 1998 was associated with Canberra swimming pools and affected about 400 people.

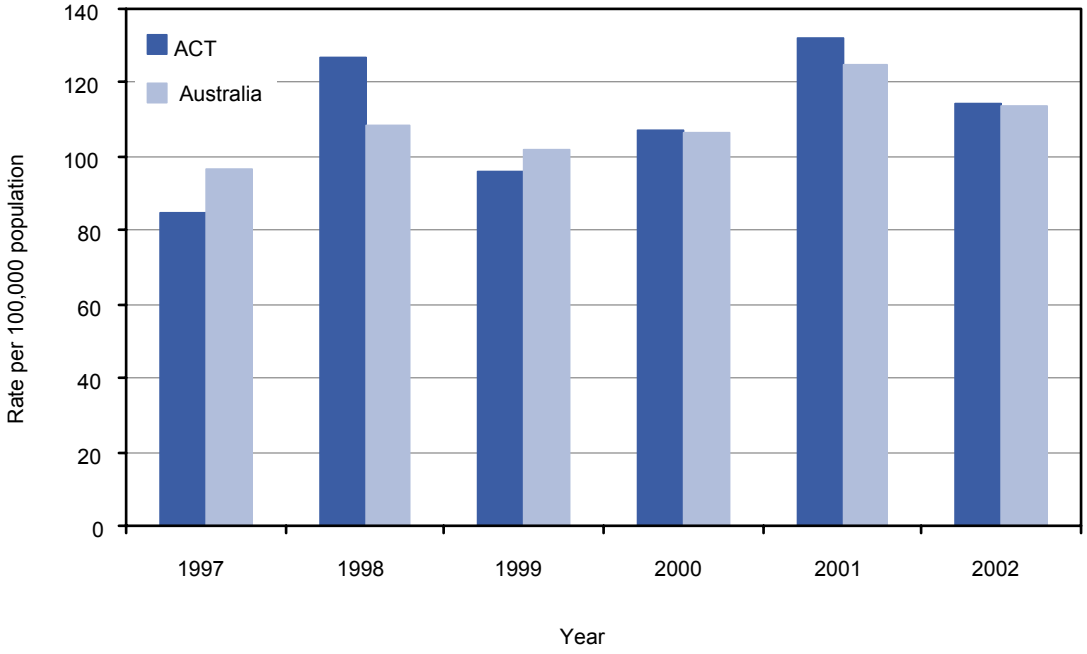
Cryptosporidiosis notifications have only been reported nationally since 2001. Although the number of notifications in the ACT each year is relatively low, the numbers can fluctuate considerably between years. For instance, there were 11 ACT notifications in 2001 and 36 in 2002. The affect on annual notification rates is dramatic with 3.4 notifications per 100,000 population in 2001 and 11.2 in 2002.

Campylobacteriosis

Campylobacteriosis is caused by infection with one of the *Campylobacter* species of bacteria, commonly *C. jejuni*. Infection produces an illness of variable severity with diarrhoea, fever and vomiting as common symptoms. Campylobacteriosis accounts for more than half of all notifications of gastrointestinal disease in Australia. Infection occurs through ingestion of contaminated food or water, or as a result of contact with infected animals. Poor kitchen hygiene when handling raw chicken meat at home is an important source of infection. There is a seasonal pattern of infection, with more notifications being made in the warmer months. Notifications of campylobacteriosis are usually the result of sporadic infection; large outbreaks are relatively uncommon.

There were 334 notifications of campylobacteriosis in the ACT in 2000, 422 in 2001 and 367 in 2002, giving rates of 107.5, 132.2 and 114.0 per 100,000 population, respectively. These are similar to the rates reported for Australia over this period, which were 106.8, 124.9 and 113.4 per 100,000, respectively (Figure 14.10). The rising incidence of campylobacter is an international trend, as yet not fully explained.

Figure 14.10: Campylobacter notification rates per 100,000 population, ACT and Australia[a], 1997-2002[b]



Data Source: Communicable Diseases Australia - National Notifiable Diseases Surveillance System (www.cda.gov.au/nndss/nndss2.htm)

(a) Australian rates and population base do not include NSW.

(b) Data for 2002 is preliminary.

Gastroenteritis

Gastroenteritis is not normally a notifiable condition in the ACT, however, 'clusters' of cases, or outbreaks of the disease are required to be reported to the ACT CDC Section, in accord with legislation on reporting requirements for public health hazards. Gastroenteritis is included in this section of the report because an outbreak of the disease occurred in the ACT in June 2002.

The outbreak occurred in three ACT institutions (one hospital and two aged-care facilities). Norwalk-like virus (NLV) genotype II was detected in samples from staff and residents in these institutions. NLV outbreaks typically include an incubation period of 24-48 hours, the illness lasts between 12-60 hours and more than 50 per cent of cases report vomiting. Other symptoms of NLV gastro enteritis include nausea, abdominal pain and diarrhoea. The infection can be transmitted person-to-person or it may be food or water-borne. Air-borne transmission of NLV has also been documented. Aged-care facilities and hospitals are common settings for outbreaks of NLV gastro enteritis, because of the closed nature of these institutions and the infectious nature of NLV.

A case series investigation was conducted in staff and residents from the three institutions. It is likely that the outbreaks in the three institutions were linked, due to resident transfers early in the outbreak. A total of 281 cases were identified during the outbreak, which lasted 32 days. Attack rates in the three institutions were 46.3 per cent, 52.7 per cent and 55.2 per cent. Person-to-person spread and/or airborne transmission were the postulated modes of transmission in the institutions concerned.[106]

Salmonellosis

Salmonellosis is a bacterial disease, which is commonly manifested by acute inflammation of the intestine, with sudden onset of headache, fever, abdominal pain, diarrhoea and occasionally vomiting. It results from infection with one of the *Salmonella* species of bacteria, which can be further classified into different serotypes. Although grouped under the general heading of salmonellosis, the various serotypes produce different clinical manifestations of the disease. A wide range of domestic and wild animals host *Salmonella* bacteria. Infection usually follows ingestion of food derived from infected animals or contaminated faeces from an infected animal or person. In Australia, incidence of the disease tends to be seasonal, generally peaking in the summer months.

There were 104 notifications of salmonellosis in the ACT in 2000, 77 in 2001 and 97 in 2002. These represent rates of 33.5, 24.1 and 30.1 per 100,000 population, respectively. The Australian rates for this period were 31.9, 36.5 and 40.6 per 100,000 population.

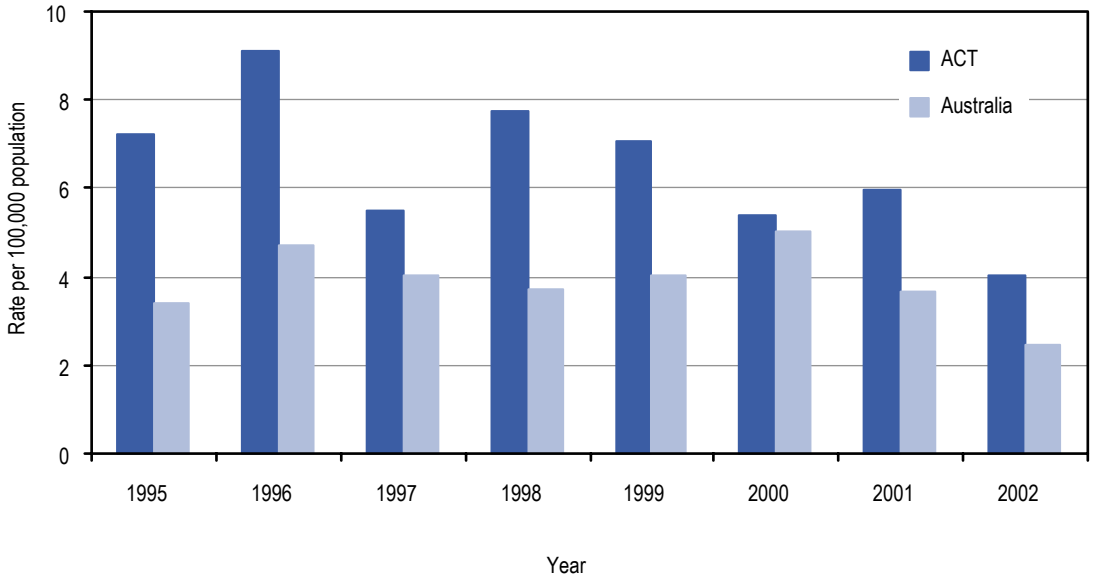
An outbreak of *S. typhimurium* phage type 9 occurred, involving 29 people in January 2000. This contributed to the high number of notifications for that year in the ACT.

14.2.5 Other diseases

Malaria

Malaria is caused by a parasite transmitted by the bite of certain species of mosquito that live in warm tropical or sub-tropical regions. Australia has been certified free of domestic transmission since 1981, however cases continue to be imported. In the years 2000, 2001 and 2002, the ACT had 17, 19 and 13 cases, respectively. The respective rates for the ACT were 5.4, 6.0 and 4.0 per 100,000 population and the Australian rates were 5.0, 3.7, and 2.5 per 100,000 population. The relatively high ACT rate may be a reflection of the large number of diplomatic and student visitors to the Territory (Figure 14.11).

Figure 14.11: Malaria notification rates per 100,000 population, ACT and Australia, 1995-2002[(a)]



Data Source: Communicable Diseases Australia - National Notifiable Diseases Surveillance System (www.cda.gov.au/nndss/nndss2.htm)

(a) Data for 2002 is preliminary.

Legionellosis

Legionellosis is an acute bacterial disease resulting from infection with one of the *Legionella* species of bacteria. The most common notified variant is known as Legionnaires' Disease. Those most at risk include the elderly, especially smokers, those with a chronic illness and the immuno-compromised. Males are infected more often than females. Symptoms typically include fever, headache, malaise and may include pneumonia. The illness can be serious or even fatal.

Infection results either from exposure to *Legionella pneumophila,* that have grown in air conditioning systems, hot water systems or spas and are released into the air, or from *L. longbeachae*, which is often found in potting mixes. ACT Health actively monitors air conditioning cooling towers for contamination, thereby assisting the prevention of infection from this source.

The Health Protection Service administers and enforces the *ACT Cooling Tower and Warm Water Storage Systems Code of Practice 2000*. Since September 2000 all non-Commonwealth cooling towers operating in the ACT have been required to be registered under the *Public Health Act* 1997. The Code prescribes the minimum testing and maintenance requirements for the operation and management of cooling towers and warm water systems. The Code also requires quarterly reporting of sampling and maintenance data, with any test result outside the prescribed range required to be reported to the Health Protection Service.

The ACT had ten notifications of legionellosis between 2000 and 2002.

Meningococcal disease

Now that Hib infection is rare (following widespread use of the Hib vaccine) meningococcal disease is one of the commonest causes of meningitis (inflammation of the membranes surrounding the brain and spinal cord). Meningococcal disease results from infection with the bacterium *Neisseria meningitidis* (commonly known as meningococcus). These bacteria are found in the nose and throat of many individuals in good health. Most individuals will not suffer any ill effects; only a small minority progress to invasive disease. In addition to meningitis, invasive meningococcal disease can result in severe, life-threatening septicaemia (blood poisoning) and other invasive conditions. Invasive meningococcal disease can cause people to deteriorate rapidly, so prompt medical attention, including treatment with antibiotics, is necessary.

Several serogroups of meningococcus can cause invasive disease; the commonest are Groups A, B, C, W135 and Y. A polysaccharide vaccine is available in Australia to provide protection against Groups A, C, W135 and Y; no vaccine is available in Australia yet to protect against Group B. A new conjugated vaccine has recently become available in Australia for Group C, and is now being used in a universal campaign for infant and adolescent vaccination in the United Kingdom.

From 1 January 2003, the NHMRC has recommended vaccination for children aged 12 months of age. A large-scale catch up campaign will be conducted nationally over four years to provide a catch-up dose of meningococcal C vaccine for children and adolescents.

Following notification of a case of meningococcal disease, rapid public health action is required to identify close contacts of the case and offer them prophylactic antibiotics. Therefore, medical practitioners are requested to advise the ACT CDC Section immediately upon suspicion of invasive meningococcal disease.

Meningococcal disease demonstrates marked seasonality, with peaks occurring in the winter months and into early spring.

Between 2000 and 2002 there were 17 notifications of invasive meningococcal infection in the ACT. The rate for this three-year period (2000-2002), based on the average number of notifications each year, was 1.8 notifications per 100,000 population. In comparison, the rate for Australia in 2001 (midpoint between 2000 and 2002) was 3.5 notifications per 100,000 population.

During 2000, ACT Health conducted a "Don't Share Spit" campaign aimed at reducing infectious risk in teenagers. Meningococcal disease and several viral illnesses are spread through close contact eg. sharing drink bottles. The campaign highlighted these risks and attempted to raise awareness about safe behaviours.

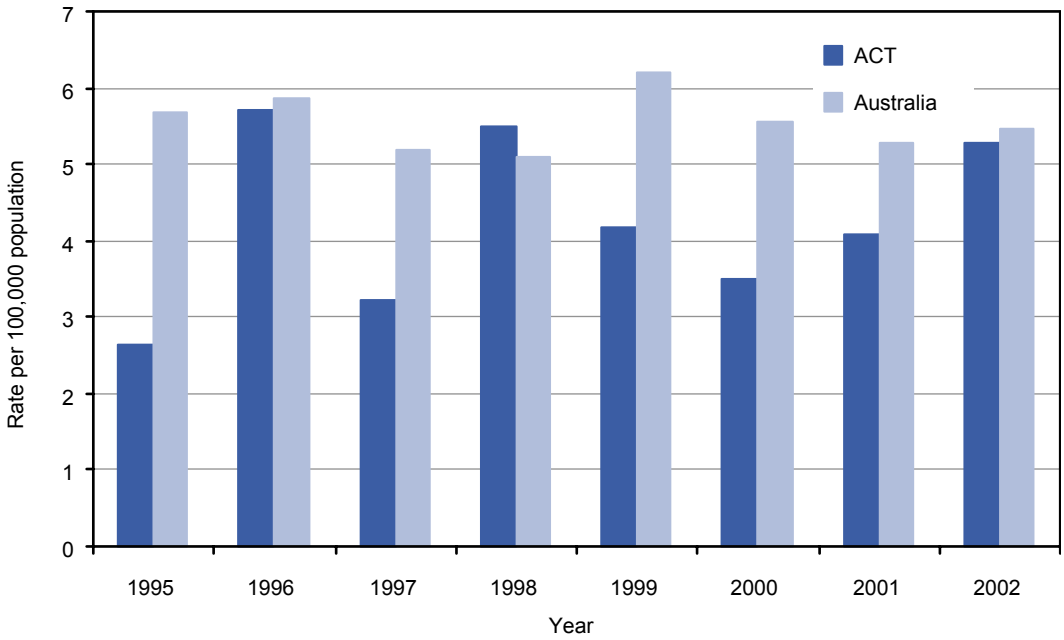
Tuberculosis

Tuberculosis, commonly known as TB, is a chronic bacterial infection caused by *Mycobacterium tuberculosis*. It generally affects the lungs (pulmonary TB) but can occur throughout the body. It is usually transmitted from person-to-person by airborne droplets expelled when people with pulmonary TB cough or sneeze. Australia has one of the lowest rates of the disease in the world, and transmission rates in the ACT community remain very low. Nationally, overseas-born people constitute 75 per cent of all cases of TB and this trend holds true in the ACT. People infected with HIV are particularly at risk of TB.

In 2000, 2001 and 2002, there were 11, 13 and 17 notifications of TB in the ACT, respectively. The rates were 3.5, 4.1 and 5.3 per 100,000 population. This compares to 5.5, 5.3 and 5.5 per 100,000 population for Australia for the years 2000, 2001 and 2002 (Figure 14.12).

A partially protective vaccine is available and is recommended for children less than five years of age going to live in a country where the disease is endemic.

Figure 14.12: Tuberculosis notification rates per 100,000 population, ACT and Australia, 1995-2002[(a)]



Data Source: Communicable Diseases Australia - National Notifiable Diseases Surveillance System (www.cda.gov.au/nndss/nndss2.htm)

(a) Data for 2002 is preliminary.

Emerging Issues

- A less invasive testing technique for chlamydia (coupled with promotion and education campaigns and activities) has contributed to the increase in notification rates in the ACT;
- The increase in the number of bacterial strains that are resistant to several different antibiotics continues to be a public health issue in Australia. It is related to the widespread use of antibiotics both in human medicines and in farm animals. Of particular concern are the vancomycin-resistant enterococci (VRE) and infections with multiple-resistant Staphylococcus aureus;
- The availability of new vaccines and changing disease patterns are resulting in revisions in vaccination policy. These vaccines include Meningococcal Group C conjugated vaccine, pneumococcal conjugated vaccine and varicella vaccine.

15 Maternal and Infant Health

At a Glance

- There were 4,135 live births to ACT residents in the ACT in 2000. The ACT live birth rate remained stable between 1996 and 2000;
- Women in the ACT are continuing to delay childbirth, with an ongoing reduction in age-specific fertility rates in women aged less than 30 years and an increase in fertility rates in women aged 30 years and over;
- The ACT perinatal death rate (8.3 per 1,000 births) was the same as reported nationally in 2000;
- The ACT has a high rate of immunisation coverage and low rates of vaccine-preventable disease, with 90.9 per cent of 12-14 month old ACT children, and 90.1 per cent of ACT children aged 24-26 months fully immunised in December 2001;
- Sixty-one per cent of ACT mothers of infants surveyed in the 2001 ACT Child Health Survey (CHS) reported consuming adequate folate or had altered their diet to increase their folate intake in the month prior to and/or during the first three months of pregnancy;
- Sixty-one per cent of mothers surveyed in the CHS reported that they placed their infants on their back to sleep to reduce the risk of Sudden Infant Death Syndrome. The remainder placed their infants on their side to sleep;
- Ninety-four per cent of mothers surveyed in the CHS indicated that their child had been breastfed.

Maternal and infant health are important indicators of the overall health and wellbeing of a community. The health of mothers and babies in the ACT is very good compared to the health of mothers and babies in many other parts of the world. Maternal mortality is very rare and infant and perinatal mortality rates are low (Table 15.3).

This chapter provides an overview of maternal and infant (0-12 months) health in the ACT. It includes information on behaviours influencing infant health, such as infant sleeping positions and breastfeeding rates; pregnancy outcomes, including live birth rates; and infant health, including low birth weight and behavioural problems. Most of the data presented in this chapter has been derived from the 2001 ACT Child Health Survey, the ACT Maternal Perinatal Data Collection and Australian Bureau of Statistics demographic publications.

15.1 Behaviours influencing infant health

The health of infants is influenced by a range of biological, environmental and behavioural factors. The behaviours outlined below are well documented as either posing a health risk to infants, or providing a protective effect on the health of infants.

15.1.1 Smoking during pregnancy

Smoking during pregnancy is an important risk factor for adverse perinatal outcomes. Mothers of babies aged less than 12 months were asked about their smoking behaviour during pregnancy in the 2001 ACT Child Health Survey (CHS). Almost half of the mothers of babies aged less than 12 months reported that they were non-smokers and did not smoke during their pregnancy (48.5%, 95%CI 26.1 – 70.4). A further 28.3 per cent (95%CI 9.2 – 47.3) reported that they had been smokers, but quit smoking prior to pregnancy and a further 14 per cent (95%CI 0.0 – 32.7) of mothers reported that they reduced their smoking during pregnancy. The information about smoking during pregnancy, derived from the CHS, is based upon a very small sample of women from the ACT (n=26), so the results should be interpreted with caution.

Information about smoking during pregnancy, derived from the ACT Maternal Perinatal Data Collection 2000, yields similar results to the CHS. Approximately 80.5 per cent of ACT mothers that gave birth in the ACT in 2000 indicated, at the time their baby was born, that they did not smoke during pregnancy. Approximately 14.7 per cent indicated that they had smoked during pregnancy. Smoking during pregnancy was not stated on approximately 4.8 per cent of ACT mother's records in 2000.

15.1.2 Folate intake

Adequate intake of folate (a B group vitamin) around the time of conception has been found to reduce up to 70 per cent of neural tube defects, including spina bifida and encephalocele, both major causes of disability in children and adults. Major dietary sources of folate include fruit, green vegetables, yeast extract and fortified breakfast cereals.

Parents and carers of infants aged less than 12 months were asked a series of questions in the CHS to assess their knowledge about folate and to determine their use of folate supplements before and during pregnancy.

Fifty-five per cent (95%CI 33.1 – 77.4) of respondents were aware that the reason for taking folate prior to and during pregnancy was to reduce the risk of spina bifida or neural tube defects. A further 31.6 per cent (95%CI 9.6 – 53.7) were aware that folate intake reduced the risk of birth defects in general.

Sixty-one per cent of mothers of infants aged less than 12 months indicated that they were consuming adequate folate or that they had altered their diet to increase their folate intake in the month prior to and/or during the first three months of pregnancy. Thirty-four per cent of mothers (95% CI 13.6-54.7) indicated that they were aware of the benefits of folate, however they did not change their diet.

Parents and carers of infants were also asked about sources of folate. Sixty-nine per cent (95%CI 48.9 – 89.8) identified vegetables as a food source that contains folate and a further 49.3 per cent (95%CI 27.0 – 71.5) identified breakfast cereals. Almost a quarter of respondents (24.7%, 95%CI 5.2 – 44.3) could not identify any foods containing folate. It should be noted that some respondents identified more than one food source and therefore percentages do not total 100 per cent.

Fifty-three per cent (95%CI 30.6 – 75.0) of mothers reported taking folate supplements one month prior to and during the first three months of pregnancy. A further 26 per cent (95%CI 7.2 – 44.8) reported taking folate supplements during the first three months of pregnancy and 19 per cent reported not taking folate supplements.

Campaigns to raise the awareness of the benefits of folate need to be ongoing and should include increasing awareness among health professionals.

15.1.3 Infant sleeping position

Research into Sudden Infant Death Syndrome (SIDS) has identified infant sleeping position as an important risk factor. Infants placed on their stomach (prone) to sleep have a much higher risk of SIDS, than those placed on their back. Those placed on their side have also been shown to have an increased risk of SIDS. Consequently, health education campaigns have recommended that placing an infant on their back is the preferred infant sleeping position.

Parents or carers of infants aged 0-12 months were asked in the CHS about the sleeping position in which they placed their infant. Sixty-nine per cent (95%CI 50.4 – 87.3) of respondents reported that they placed their infants on their back to sleep and 31.1 per cent (95%CI 12.7 – 49.6) reported placing infants on their side. No respondents placed their infant on their stomach to sleep.

15.1.4 Breastfeeding

The benefits of breastfeeding for infants and mothers are well established. The NHMRC recommends exclusive breastfeeding for the first six months of life, at least. Breast milk is most appropriate nutritionally, as it is hygienic and provides immunoglobulins that help protect the infant against infection and disease. It is also convenient, inexpensive and has no environmental cost.

The NHMRC has suggested a goal of a 90 per cent initiation rate, with 80 per cent of infants being breast fed at six months of age. Breast feeding outcomes are improved if promoted and supported by family members including the father, community health, hospitals and workplaces.[107]

Mothers of children aged less than two years were asked a series of questions about breast-feeding in the CHS. Ninety-four per cent (95%CI 88.8 - 99.5) of the mothers that were surveyed indicated that their child had been breastfed (NSW 89.8%), but the duration of breastfeeding was not mentioned.

15.1.5 Infant feeding and behaviour problems

Parents and carers of children aged 0-12 months were surveyed about infant feeding and behavioural problems in the CHS. For each feeding or behavioural problem the parent or carer of an infant was asked what the most serious problem was, how serious the problem was, how difficult the problem was to manage, where they sought help, whether they still had a problem and whether they required help to manage the problem.

Approximately 34.6 per cent (95%CI 17.2 – 52.1) of infants were reported to have a feeding problem and 44.9 per cent (95%CI 26.2 - 63.6) were reported to have a behaviour problem. Breastfeeding problems were by far the most frequently reported ‘feeding problem’ (30.2%) and ‘settling difficulties’ were most frequently reported as the most serious ‘behaviour problem’ (22.3%). These proportions were slightly higher than those reported for NSW (28.0% had a feeding problem, of which 63% reported breastfeeding problems; 35.1% had a behavioural problem, of which 41.8% reported ‘settling difficulties’),[108] however they were not statistically significant, at the 5% level of significance.

15.1.6 Immunisation

Immunisation protects infants against a range of infectious diseases. The ACT has a high rate of immunisation coverage and low rates of vaccine-preventable disease. In December 2001, 90.9 per cent of ACT children aged 12-14 months and 90.1 per cent of ACT children aged 24-26 months were fully immunised, compared to 90.4 per cent of Australian children 12-14 months of age and 88.0 per cent of Australian children aged 24-26 months (see Chapter 14: Communicable Disease for ACT immunisation coverage and vaccine-preventable disease rates).

15.2 Fertility

The total fertility rate (TFR), which represents the average number of babies a woman could expect to bear during her lifetime based on current age-specific fertility rates, was 1.61 for the ACT in 2000. This was slightly lower than the national TFR (1.75), and was the lowest TFR of all jurisdictions in Australia in 2000.

Fertility trends over time (Table 15.1) suggest that women in the ACT are continuing to delay childbirth. There has been an ongoing reduction in age-specific fertility rates in age groups less than 30 years and a gradual increase in fertility rates in age groups over 30 years. Since 1997, the 30-34 year age group has had the highest fertility rate in the ACT, similar to the national population. In addition, the median age of a woman giving birth has increased over time, from 27.7 years in 1980 to 30.2 years in 2000.[109]

The ACT teenage fertility rate (births to mothers aged 15-19 years) was lower than the rate for Australia in 2000. There were 120 births to teenage mothers in the ACT in 2000, equivalent to a rate of 10.9 births per 1,000 females aged 15-19 years. This compares to a national rate of 17.4 teenage births in 2000.[109]

Table 15.1: ACT registered births and fertility rates, 1996-2000

	1996	1997	1998	1999	2000
Births					
Registered births to ACT residents in the ACT	4,295	4,116	3,887	4,173	3,974
Registered births to ACT residents outside the ACT[a]	101	92	95	80	91
Total registered births to ACT residents[b]	4,396	4,208	3,982	4,253	4,065
Registered births to non-ACT residents in the ACT	551	656	596	580	574
Crude birth rate per 1,000 population[c]	14.3	13.7	12.9	13.7	13.1
Median age of mother	29.6	29.8	29.9	30.2	30.3
Age-specific fertility rates					
15-19 years	13.9	13.6	11.9	11.9	10.9
20-24 years	48.6	43.8	40.4	46.9	38.5
25-29 years	112.7	105.2	100.5	98.2	100.4
30-34 years	103.5	110.3	103	114.4	111.5
35-39 years	46.9	44	47	55.7	53.0
40-44 years	8.3	6.9	8.6	9.4	8.2
45-49 years	0.2	0.3	0.2	0.2	0.3
Total fertility rate	**1.670**	**1.621**	**1.558**	**1.683**	**1.614**

Data Sources: Australian Bureau of Statistics. 2001. *Australian Capital Territory Demography, 2000*. Cat. No. 3311.8, Canberra, Australian Bureau of Statistics. Australian Bureau of Statistics. 2001. *Births Australian, 2000*. Cat. No. 3301.0, Canberra, Australian Bureau of Statistics.

(a) The majority of these births were registered in NSW.

(b) Includes registered births to ACT residents in the ACT and in other jurisdictions of Australia. Excludes overseas births to ACT residents.

(c) ACT female population 15-49 years.

Approximately 97.8 per cent of births to ACT residents occurred within the ACT. The non-ACT residents (574) that gave birth within the ACT in 2000 accounted for 12.6 per cent of all the women that gave birth in the ACT.

The ACT crude birth rate in 2000 was 13.1 per 1,000 population. Between the years 1996 and 2000, the ACT crude birth rate fluctuated between 12.9 and 14.3 per 1,000 population.

15.3 Birth outcomes

This section provides information on birth outcomes for ACT residents that gave birth in the ACT in 2000. The statistics presented have been obtained from the ACT Maternal Perinatal Data Collection.

There were 4,135 live births to ACT residents in the ACT in 2000. The ACT live birth rate remained stable between 1996 and 2000 at 993 live births per 1,000 ACT women.

The percentage of multiple births to ACT resident women declined between 1999 and 2000, from 1.5 per cent in 1999 to 1.4 per cent in 2000. The percentage of multiple births for the national population in 2000 was 1.6 per cent. The majority (67.1%) of ACT resident women giving birth in the ACT in 2000 had a spontaneous onset of labour, 21.9 per cent were induced and 11 per cent had an elective caesarean section. The total caesarean section rate for ACT residents (20.4%, 95% CI 19.2 – 21.6) was lower than the national rate (23.3%, 95% CI 23.2 – 23.5) in 2000.

Thirty-eight per cent of the ACT resident women giving birth in the ACT in 2000 had an intact perineum (ie. no stitches) following a vaginal birth, 16 per cent had an episiotomy and the remainder had a perineal laceration of varying degree. Approximately one per cent experienced a third degree laceration.

15.3.1 Birth defects

Birth defects, or congenital abnormalities, are the leading cause of death in infants.
Less than five per cent of all babies born in the ACT are reported to have a birth defect each year. In 2000, there were 157 babies born to ACT residents in the ACT with reported birth defects. The majority of defects reported in 2000 were musculoskeletal deformities and defects of the genitourinary system. The majority of defects reported are non-fatal and can be treated, such as undescended testes or cleft palate with or without cleft lip. However, each year, a small number of babies are born with more serious defects, such as heart defects or syndromes like Patau's syndrome or Edwards' syndrome.

The causes of various birth defects are largely unknown, however, there are a number of risk factors and teratogens associated with the development of specific defects. For example, inadequate maternal folate levels are associated with an increased risk of neural tube defects, consumption of alcohol can have a teratogenic effect on a developing fetus, increasing the risk of fetal alcohol syndrome, and smoking during pregnancy can increase the risk of low birth weight.

15.3.2 Low birth weight

A baby's birth weight is a key indicator of health status, as babies with a low birth weight have an increased risk of ill health and premature death. A baby is defined as having a low birth weight if it weighs less than 2,500 grams at birth. Within this category, those babies with a birth weight less than 1,500 grams are defined as having a very low birth weight and those with a birth weight less than 1,000 grams are defined as having an extremely low birth weight.

In 2000, six per cent of all babies born to ACT residents in the ACT had a low birth weight (Australia 6.8%), 1.4 per cent had a very low birth weight (Australia: 1 .5%) and 0.8 per cent had an extremely low birth weight (Australia: 0.8%). There was a large increase in the number of babies born to ACT residents in the ACT that had an extremely low birth weight between 1997 and 1998 and a corresponding increase in the number of perinatal deaths in 1998.

Table 15.2: Birth weight of babies born to ACT residents, in the ACT, 1996-2000

	1996		1997		1998		1999		2000	
	No.	%	No.	%	No.	%	No.	%	No.	%
Less than 1,000 grams	30	0.7	23	0.6	42	1.0	31	0.8	33	0.8
1,000 to 1,499 grams	23	0.5	29	0.7	20	0.5	27	0.7	23	0.6
1,500 to 2,499 grams	204	4.8	193	4.6	204	5.0	167	4.0	194	4.6
2,500 grams or more [a]	4,003	94.0	3,909	94.1	3,849	93.5	3,884	94.5	3,913	94.0
Total[b]	4,260	100.0	4,154	100.0	4,115	100.0	4,109	100.0	4,163	100.0

Data Source: ACT Maternal and Perinatal Data Collection, 1996-2000

(a) Thirty-six records, over the five-years, where birth weight was 'not stated' were added to the '2,500 grams or more' category.

(b) Data includes total births to ACT residents in the ACT 1996-2000.

15.4 Perinatal and infant deaths

Table 15.3 presents fetal, perinatal and infant death rates for the ACT between 1996 and 2000.[109] The ACT perinatal and infant death rates are subject to considerable fluctuation due to the relatively small number of deaths recorded each year. The ACT fetal death rate for 2000 was 5.4 per 1,000 births, similar to the national rate of 5.2 per 1,000 births. The ACT perinatal death rate of 8.3 per 1,000 births was the same as the rate for Australia in 2000.

The infant death rates are based upon the number of registered deaths, where a death occurred in the first 12 months of life, for a given year, per 1,000 ACT residents' registered live births. The ACT infant death rate in 2000 was 4.2, compared with a national rate of 5.2 per 1,000 live births.

Table 15.3: ACT fetal, perinatal and infant death rates (per 1,000 appropriate births), 1996-2000

	1996	1997	1998	1999	2000
Fetal death rate [a]	5.7	4.5	7.7	7.2	5.4
Perinatal death rate [b]	8.8	6.6	12.2	11.7	8.3
Infant death rate [c]	5.7	3.8	6	5.6	4.2

Data Sources: Australian Institute of Health and Welfare. 2003. *Australia's Mothers and Babies 2000* Cat. No. PER 21. Canberra, Australian Institute of Health and Welfare.
Australian Bureau of Statistics. 2001. *Causes of Death Australia, 2000.* Cat. No. 3303.0. Canberra, Australian Bureau of Statistics.

(a) Fetal death refers to death prior to the birth of a baby of at least 20 weeks gestation or 400 grams or more in birth weight.
(b) Perinatal death refers to a fetal or neonatal death. Neonatal death is the death of a live born infant within 28 days of birth.
(c) Infant death is the death of a live born baby within one year of birth.

15.5 Maternal and infant services in the ACT

There are two private and two public hospitals providing maternity services in the ACT. The maternity services provided include: antenatal clinics; parenting classes, which include refresher days; antenatal and postnatal physiotherapy classes; antenatal and postnatal beds in both the private and public hospitals; an intensive and special care nursery, with access to Newborn and Parent Support Services (NAPSS); and Midcall.

In 2000, 73.6 per cent of ACT residents giving birth in the ACT gave birth in an ACT public hospital and a quarter (25.6%) chose to give birth in an ACT private hospital. Less than one per cent (0.7%) gave birth either at home (0.5%) or gave birth before arrival at a hospital (0.2%). Seven per cent (6.7%) of ACT residents giving birth in an ACT public hospital gave birth at the Birth Centre in The Canberra Hospital.

Table 15.4: 'Place of birth' for births to ACT residents in the ACT, 1996-2000

	1996		1997		1998		1999		2000	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public hospitals in the ACT	3,052	72.8	2,981	72.7	2,982	73.6	3,134	77.5	3,020	73.6
Private hospitals in the ACT	1,113	26.6	1,073	26.2	1,023	25.3	876	21.7	1,051	25.6
Home birth in the ACT	24	0.6	44	1.1	39	1.0	22	0.5	22	0.5
Born before arrival at hospital	<5	0.0	<5	0.1	<5	0.1	14	0.3	10	0.2
Total [(a)]	4,190	100.0	4,101	100.0	4,050	100.0	4,046	100.0	4,103	100.0

Data Source: ACT Maternal Perinatal Data Collection, 1996-2000

(a) Data includes total women that gave birth to ACT residents in the ACT 1996-2000. Records where the type of birth facility was "not stated" have been included in the total.

The Canberra Hospital offers facilities for obstetric and midwifery care for low to high-risk pregnancies, and births in a traditional hospital setting or birth centre. The Canberra Midwifery Program offers midwifery services throughout the antenatal and postnatal period in the community, and a choice of birth settings. The Canberra Hospital also has speciality units, including the Fetal Medicine Unit and the Centre for Newborn Care with tertiary level neonatal intensive care facilities.

The Calvary Hospitals provide public and private maternity services for low to moderate risk pregnancies and births. The Special Care Nursery at Calvary Public Hospital was refurbished in 2001-2002. John James Memorial Hospital provides traditional private maternity services for low to moderate risk pregnancies and births.

The services of the Queen Elizabeth II Family Centre (QEII) are provided from the postnatal, early childhood and family residential facility in Curtin. These services are consistent with the vision of the Canberra Mothercraft Society *'Towards Healthy Families'*. The tertiary service at the QEII Centre is integrated with secondary and primary level services provided by ACT Community Care and other agencies within the ACT and surrounding region of NSW.

The residential program offered by the Canberra Mothercraft Society is for families of young children experiencing complex health and behavioural difficulties in the postnatal and early childhood period. This is part of the comprehensive early childhood and family health services provided by ACT Community Care's Child Youth and Women's Health Program.

The Postnatal Parenting Information and Referral Service (PPIRS) is administered by ACT Community Care. The service offers a single point of reference for information and access to a wide range of antenatal, postnatal and early childhood services. The majority of clients are parents (mainly mothers) and the highest proportion of referrals come from Canberra subdivisions where younger families live.

The Gynaecology Assessment Unit Project, run by the Antenatal and Gynaecological Ward at The Canberra Hospital, was the overall winner of ACT Health's Quality First Awards for 2002. The Project involved the establishment of a facility separate from the Emergency Department to improve the management and continuity of care for women with complications, early pregnancy loss and postnatal complications.

The Effectiveness of Infant Sleep Project, run by QEII, was a 'finalist' in the 'Effectiveness' category of ACT Health's Quality First Awards for 2002.The project involved the analysis of the effectiveness of QEII's sleep program for the management of unsettled and crying babies.

Emerging Issues

- The continuing trend to delay childbirth, characterized by an ongoing increase in fertility rates in age groups over 30 years, is expected to lead to an increase in the need for prenatal screening for maternal medical conditions, an increase in the level of obstetric complications, and an increase in the complexity of obstetric care required over time.

16 Child Health

At a Glance

- Indicators of social factors that influence health, such as family functioning, social support and social capital, present a favourable picture of the social context of children's lives in the ACT;
- Almost three-quarters (71.5%) of ACT children (0-12 years) live in households with no smokers;
- Most parents and carers in the ACT adopt a range of measures to protect their children from the sun. For instance, they apply sunscreen (95.3%), ensure children wear a broad brimmed hat with a back flap (90.4%) and protective clothing (70.1%) when they go out into the sun;
- Less than one quarter (23.9%) of ACT children consume the recommended daily minimum quantity of vegetables to maintain a healthy diet;
- The leading cause of ACT child (1-12 years) hospitalisation in 2001/02 was respiratory disease (19.6%), followed by injury, poisoning and other external causes (14.9%), diseases of the digestive system (10.9%) and infections and parasitic diseases (10.8%);
- Less than ten ACT resident child (1-12 years) deaths occurred each year during the period 1998 to 2000. Cancer was the leading cause of death for the period, followed by external causes (accidents) and sudden, unexplained death;
- For the period 1991 to 1998, the oral health of children in the ACT was consistently similar or slightly better than reported nationally.

Compared to children in many other parts of the world, children in Australia enjoy a high level of health status. National child health indicators such as infant and child mortality rates, which have been shown to be excellent proxies for measuring the overall health of a population,[110] are well below the average for OECD countries.[23] Child health status is an outcome of a complex array of biological and environmental factors, including social circumstance and health care. Although the exact contribution of health care to child health status is difficult to determine, health services, both curative and preventive, are known to be effective in improving health status and there is good evidence for the effectiveness of specific service interventions.

Child health status measures can be used to:

- assess the impact of disease and injury on health;
- identify vulnerable population groups, to allow for the targeting of interventions;
- measure the effectiveness of health care interventions; and
- set targets to improve the quantity and quality of health care provided to children in the community.

This chapter provides an overview of child health in the ACT. A range of health status measures have been reviewed, across various dimensions of health and comparisons made between children in the ACT and other jurisdictions. There is an emphasis on children between 1-12 years of age. The health of infants (0-11 months) is considered in Chapter 15: Maternal and Infant Health. Most of the information in this chapter has been derived from the 2001 ACT Child Health Survey, the 2001 Census, the ACT Admitted Patient Care collection 2001/02 and ABS deaths data 1998-2000.

16.1 Demographic profile of children in the ACT

At the time of Census in 2001, there were approximately 52,394 children living in the ACT who were less than 12 years of age, representing about 14 per cent of the ACT population.

Table 16.1: ACT child population, by age, 2001

	Population
0-11 months	4,231
1 year	4,157
2 years	4,253
3 years	4,152
4 years	4,293
5 years	4,311
6 years	4,468
7 years	4,461
8 years	4,436
9 years	4,479
10 years	4,598
11 years	4,555
Total	52,394

Data Source: Australian Bureau of Statistics. 2002. *Demography: Australian Capital Territory, 2001*.Cat. No. 3311.8. Canberra, Australian Bureau of Statistics.

The greatest concentrations of children in Canberra are found in new suburbs like Banks, Condor and Gordon in Tuggeranong; Amaroo and Nichols in Gungahlin; and Dunlop in Belconnen. Over 20 per cent of the population in these new suburbs is under 12 years of age.

Table 16.2: Children (<12 years) as a proportion of the population in ACT regions, 2001

	% of Population
Belconnen	12
Gungahlin	19
North Canberra	9
South Canberra	10
Woden Valley	11
Weston Creek	11
Tuggeranong	17

Data Source: ACT Government. 2003. *The ACT Children's Plan*. Discussion Paper Canberra, Publishing Services.

The percentage of Aboriginal and Torres Strait Islander children in the population is steadily growing. Approximately 1.2 per cent of the total ACT population identify as Aboriginal or Torres Strait Islander and an estimated 2.1 per cent of all children in the ACT under five years of age identify as Aboriginal and Torres Strait Islander.

The 2001 Census suggests that five per cent of 0-12 year olds were born overseas and one in ten ACT children speak a language other than English at home.

In terms of home and family circumstances, the 2001 Census suggests that 90 per cent of children in the ACT are born into two parent families, but many end up living in one-parent families, generally as a result of divorce.

Studies have shown that children growing up in poverty have an increased chance of poor health outcomes. In the ACT, just over one in ten children (11.5%) live in poverty. Approximately 50 per cent of children in the ACT live in homes where both parents are employed, but 13 per cent of children live in families where neither parent is employed.

In the ACT more children are in childcare than reported nationally. They are in child care for longer hours and they are more likely to be in formal child care, with 30 per cent of children aged 1-4 years in out-of-home care, compared to 25 per cent nationally.

In terms of their educational attainment, ACT children have a high level of achievement. Approximately 95 per cent of Year 3 students achieve the national reading benchmark and almost 96 per cent of Year 3 students achieve the national numeracy benchmark. Most eligible children in the ACT attend a government preschool (84%), and two-thirds (66%) of ACT children of primary school age attend government primary schools.

16.2 Factors influencing the health of children in the ACT

This section reports on factors that influence health, such as social factors relating to the context in which children live their lives, and a range of health-risk behaviours. Most of the information in this section has been derived from the 2001 ACT Child Health Survey (CHS). Survey respondents were asked to report on family functioning, access to social support, social capital, attendance at childcare, preschool or school and other childhood activities, as well as dietary behaviours, physical activity, smoking in the home, water safety and sun protective behaviours.

16.2.1 Family functioning

Family functioning involves many aspects of family life including the acceptance of individuals, degree of consensus and the ability of the family to solve day-to-day problems. Family functioning was measured using the McMaster Family Assessment Device. This tool generates a score between one and four, with one reflecting healthy functioning and four reflecting unhealthy functioning. Healthy functioning relates to family members providing support to each other at times of crisis, being able to discuss concerns or fears within the family, being able to talk about sadness within the family, being able to make decisions and plan family activities, and family members being accepted for what they are.

The McMaster Family Assessment Device has been scored using the method provided by Devilly.[111] The median score for family functioning was 1.66, reflecting high levels of healthy family functioning overall. This result is similar to the findings for families living in NSW (1.65).[108]

16.2.2 Social support

Social support is the extent to which a person believes that they do and can receive support from others. Support is often informal from friends and family and can be related to support with parenting, feeling that there are people with whom to share problems and feeling close to another person.

Respondents were asked six questions about their relationships and support from others. Most parents or carers (96.3%) reported that they had friends and family who made them feel safe, secure and happy, had people with whom they felt comfortable talking about problems (94.7%), had somebody who would help them if something went wrong (96.8%), had somebody they could count on in an emergency (98.5%) or had somebody they trusted to whom they could turn for advice if they were having problems (96.3%). A smaller proportion of parents or carers reported that they had a feeling of closeness with another person (86.1%).

16.2.3 Social capital

Social capital is a relatively new concept and definitions vary. The CHS defines "social capital" as referring to the institutions, relationships and norms that shape social networks, foster trust and facilitate coordination and cooperation for mutual benefit. The notion of interlocking networks of relationships between individuals and groups is a key concept of social capital.[112]

All parents and carers of children aged 0 to 12 years were asked questions related to social reciprocity, neighbourhood connection, safety, trust, and community participation.

Almost two-thirds of respondents (64.2%) indicated that they could get help from a neighbour to care for a child and 64.9 per cent reported that they had visited a neighbour at least once during the last week. Over half (54.5%) indicated that they ran into friends in their neighbourhood nearly all the time or most of the time and 73.2 per cent reported that they would be sad if they left their neighbourhood.

Respondents were also asked about their feelings of trust and safety in their community. Just over two-thirds (67.4%) reported that they felt safe walking in their own street after dark and 77.7 per cent reported that their local area has a reputation for being safe. Sixty-eight per cent reported that they believed that most people could be trusted. These proportions were similar to those reported for NSW.

Participation in the local community was also considered within the social capital section of the CHS. ACT respondents indicated a high level of community participation. Sixty-five per cent indicated that they had helped out a local group or organisation during the three months prior to interview (NSW 40.4%), with 34.3 per cent reporting that they helped out about once a week. Eighty-four per cent reported that they had attended a community event during the previous six months (NSW 68.2%), with 47.9 per cent indicating that they had attended at least three events during that time. Over half (54.3%) reported that they were active in a local organisation, church or club (NSW 40%).

16.2.4 Childhood activities

The activities that children participate in contribute to their social, emotional, physical and educational development. Parents or carers of children aged 4-12 years were asked questions about their child's extracurricular activities, including favourite activities and places for play when not at childcare, preschool or school.

The most commonly reported favourite activities of children included organised sport (17.5%), computer and video games (10.4%), drawing or colouring in (10.0%) and playing outside or in the backyard (7.5%). Playing with toys at home, informal sports, visiting friends and having friends over, watching television and dancing were also reported as favourite activities for smaller proportions of children.

The most frequently reported places children play included their backyard (67.7%), inside the house (59.5%), in the park (34.0%), at the home of a friend or relative (29.5%) and at the home of a neighbour (24.9%). Smaller proportions reported playing in the street or in the school grounds.

16.2.5 Attendance at childcare, preschool or school

Parents or carers of children aged 0 to 5 years were asked about their child's attendance at childcare. "Childcare" was defined as formal (ie. long day care or family day care) or informal (ie. care by relatives, friends, paid babysitters or nannies). "Attending on a regular basis" was defined as attending childcare for at least half-a-day per week.

Sixty-one per cent of children aged 0 to 5 years were reported to have attended regular formal or informal childcare. Nearly half of children (47.8%) were reported to currently attend regular formal or informal childcare. Of those children who had ever used childcare, 47 per cent had commenced childcare by one year of age and 82 per cent had commenced by two years of age.

Parents (or carers) who reported using regular childcare for their children were asked about the types of care used. The types of childcare most frequently used by this group include long day care centres (36.4%), followed by grandparents (23.2%), relatives (other than grandparents) (20.9%), friends (6.3%), and babysitters (1.5%).

Parents or carers of children aged 3-6 years were asked about preschool attendance of their child. "Preschool" was defined as a place being attended between 9.00am and 3.00pm at least once per week before the child starts full-time school. Overall, 50.5 per cent of children aged 3-6 years had attended preschool. Children were most likely to commence preschool between four and five years of age (60.7%) and to attend for 10 to 15 hours per week (71.4%). Children who did not attend preschool also did not attend childcare.

Parents or carers of children aged 4-12 years were asked about their child's school attendance. Ninety-eight per cent of children aged 5-12 years were currently attending school (68.9% per cent were attending public schools, 23.5 per cent were attending catholic schools and 6.8 per cent were attending other private schools).

16.2.6 Exposure to passive smoking

Information regarding smoking in the home was collected to obtain an indication of the exposure of children to passive smoking. All respondents were included in this analysis. Slightly more ACT respondents (71.5%; 95%CI 66.9-76.1) reported that nobody smoked in the home compared to NSW respondents (65.7%). A further 23.2 per cent of ACT respondents indicated that smokers usually or always smoked outside (NSW 24.1%) and 5.2 per cent reported that smokers sometimes, usually or always smoked inside the house (NSW 10.2%).

Table 16.3: Prevalence of smoking in the home, ACT and NSW (CHS, 2001)

	ACT	NSW
No smokers in household	71.5%	65.7%
Usually/always smoke outside the home	23.2%	24.1%
Sometimes/usually/always smoke inside the home	5.2%*	10.2%

Data Source: 2001 ACT Child Health Survey. ACT Analysis; NSW information: Centre for Epidemiology and Research, NSW Dept of Health. *News South Wales Child Health Survey 2001. NSW Public Health Bulletin 2002; 13 S-3, p. 18.*

* This estimate has a relative standard error between 25 and 50% and should be interpreted with caution.

Parents or carers of children aged 8-12 years were asked whether they had ever clearly told their child not to smoke, and 54 per cent reported that they had done so.

16.2.7 Child nutrition

The *Australian Guide to Healthy Eating*[39] recommends that a variety of foods be eaten every day and that food be selected from each of the five food groups: bread, cereals, rice, pasta and noodles; vegetables and legumes; fruit; milk, yoghurt and cheese; lean meat, fish, poultry, eggs, nuts and legumes. The quantities of these foods required to meet nutritional requirements vary depending on age and sex. The guide outlines minimum quantities required for children aged 4-7 years and 8-11 years. In the absence of official guidelines on minimum food serves for 2-3 yr olds, the quantities outlined for 4-7 year olds have been applied to 2-7 year olds in this document and are shown in Table 16.4.

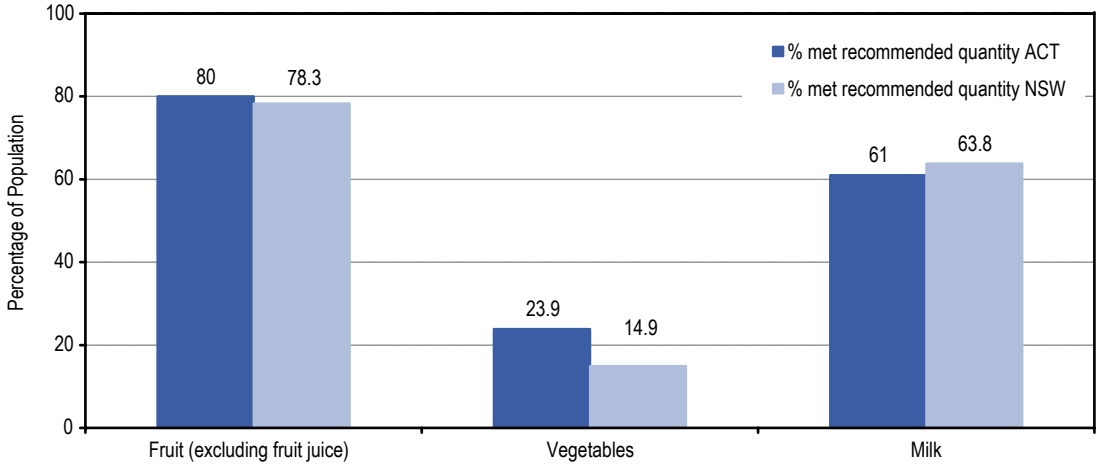
Table 16.4: Minimum recommended daily serves of fruit, vegetables and milk needed to achieve a health diet for children by age group

Age group	Serves of fruit	Serves of vegetables	Serves of milk, yoghurt and cheese
2-7 years	1	2	2
8-11 years	1	3	2

Data Source: National Health and Medical Research Council. 1998. *The Australian Guide to Healthy Eating.* Canberra, AusInfo.

The survey asked about healthy eating habits, such as fruit, vegetable and dairy product consumption, and high risk eating habits, including consumption of hot chips and soft drinks. Eighty per cent of ACT children aged 2-12 years (n=423) consumed the recommended daily minimum quantity of fruit and 63 per cent consumed the recommended minimum amounts of dairy products through milk alone. These proportions were similar to those observed for NSW. Just over one-quarter (27%) of children were reported to drink three or more glasses of milk per day; 34 per cent were reported to drink two glasses; 28.1 per cent one glass and 10.9 per cent less than one glass of milk per day.

Figure 16.1: Percentage of children consuming the recommended quantity of fruit, vegetables and dairy products (through milk alone)

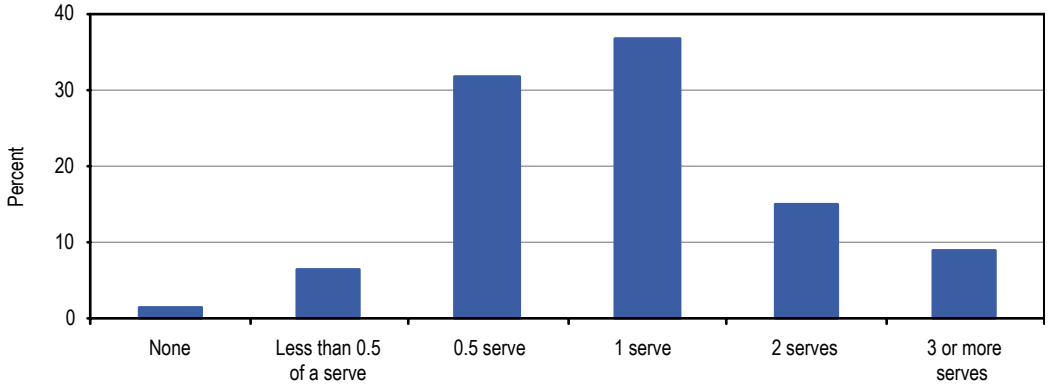


Data Source: 2001 ACT Child Health Survey. Confidential unit file; NSW information: Centre for Epidemiology and Research, NSW Dept of Health. News South Wales Child Health Survey 2001. *NSW Public Health Bulletin 2002; 13 S-3, p. 18.*
Note: Analysis was conducted separately for children aged 2-7 years and 8-11 years and the results combined for this graph.

Less than a quarter of children aged 2-12 years (23.9%) consumed the recommended daily minimum quantity of vegetables, which was slightly higher than the rate reported in NSW (14.9%).

Further examination of vegetable consumption shows that 36.8 per cent of children consumed one serve, 31.6 per cent half a serve and 7.7 per cent less than half a serve of vegetables each day.

Figure 16.2: Number of vegetable serves consumed each day, children aged 2-12 years, ACT, 2001



Data Source: 2001 ACT Child Health Survey. Confidential unit file.

High risk eating habits

The NHMRC recommends children should consume only moderate amounts of sugars and foods containing added sugars. Soft drinks, cordials and sports drinks contain large amounts of sugar, yet minimal nutrients. Consumption of these products can adversely affect nutrition by replacing milk and fruit juices in the diet as well as water, which the NHMRC recommends children choose as a drink. Soft drink consumption has been associated with an increased risk of dental caries and is possibly linked with childhood obesity, and consumption of caffeine-containing soft drinks is associated with an increased risk of bone fractures.[113] One third of children (33.3%) aged 2-12 years were reported to consume more than one cup of soft drink per day. Equal proportions were reported to consume less than one cup of soft drink per day (33.0%) or to consume no soft drinks (33.6%).

The *Dietary Guidelines for Children and Adolescents in Australia*[36] recommend limiting the consumption of saturated fats and consuming moderate levels of total fat. For children aged over five years and adolescents, approximately 30 per cent of energy intake should come from total fats, with no more than ten per cent coming from saturated fats. Saturated fats are found in a variety of foods, such as meat fat and processed meat, full cream dairy foods, fried foods and pastries. The consumption of fried foods such as french fries should be limited to the occasional meal.

Hot chips or french fries are a high-fat food commonly consumed by children. In the CHS, one serve of hot chips or french fries was calculated as half a cup of chips or french fries. Over half (60.9%) of ACT children were reported to eat at least one serving of hot chips per week. A further 30.4 per cent were reported to eat less than one serve per week. Only 8.7 per cent of children were reported to consume no hot chips.

Food security

Food security is considered to exist when an adequate amount of nutritionally appropriate and personally acceptable food is available, and able to be acquired in socially acceptable ways. In the CHS, all parents or carers were asked whether there were any times in the last 12 months that they had run out of food and could not afford to buy more. Those who reported that this had happened were asked a series of questions about how this had affected their ability to feed their children.

Five per cent of respondents reported that they had run out of food and were unable to buy more during the past 12 months. Of these respondents, nearly half (43.7%) reported that, as a result, their child ate the same thing for several days in a row or did not eat balanced meals, which has implications for nutritional status and potentially academic performance. These percentages were similar to those reported for NSW and the results from the 1995 National Nutrition Survey. People on low incomes spend a greater proportion of their income on food. The 1995 National Nutrition Survey found that the consumption of fruit and vegetable products was (10-20 per cent) lower in (the most) disadvantaged groups, with cereal and cereal-based foods also lower in these groups.[114]

16.2.8 Sun protection

In the CHS, all parents or carers were asked to identify actions they could take to reduce their child's risk of getting skin cancer. Parents or carers of children aged 12 months and older were also asked to describe their use of sun protection measures and whether their child had been sunburnt during the previous summer.

Most respondents identified applying sunscreen (95.3%), wearing a broad brimmed hat (90.4%) and wearing protective clothing (70.1%) as steps they could take to reduce their child's risk of getting skin cancer. Smaller proportions mentioned not going outdoors in the middle of the day (27.4%) and staying in the shade (21.3%). Approximately one in ten respondents mentioned wearing sunglasses (9.8%) or minimising the time spent outdoors (12.1%).

Most children aged 1-12 years were reported to usually or always wear a broad brimmed hat or cap with back flap (85.6%), use sunscreen (88%) or wear protective clothing (83.8%) as sun protection measures. These percentages were similar to those reported for NSW.

Nearly three-quarters (73.4%) of children (aged 1-12 years) were reported to have had no episode of sunburn during the previous summer. Nineteen per cent of children were reported to have experienced one episode of sunburn, 5.4 per cent reported two episodes and 1.8 per cent of children reported experiencing three or more episodes of sunburn during the previous summer.

16.2.9 Water safety/drowning

In the CHS, parents or carers were asked whether their child had ever been rescued from drowning in any body of water. Ten per cent of children were reported to have been rescued from drowning. The most common places of rescue were swimming pools (60.2% of rescues), the beach (19.0%) and rivers (9.8%). These results are similar to those reported for NSW.

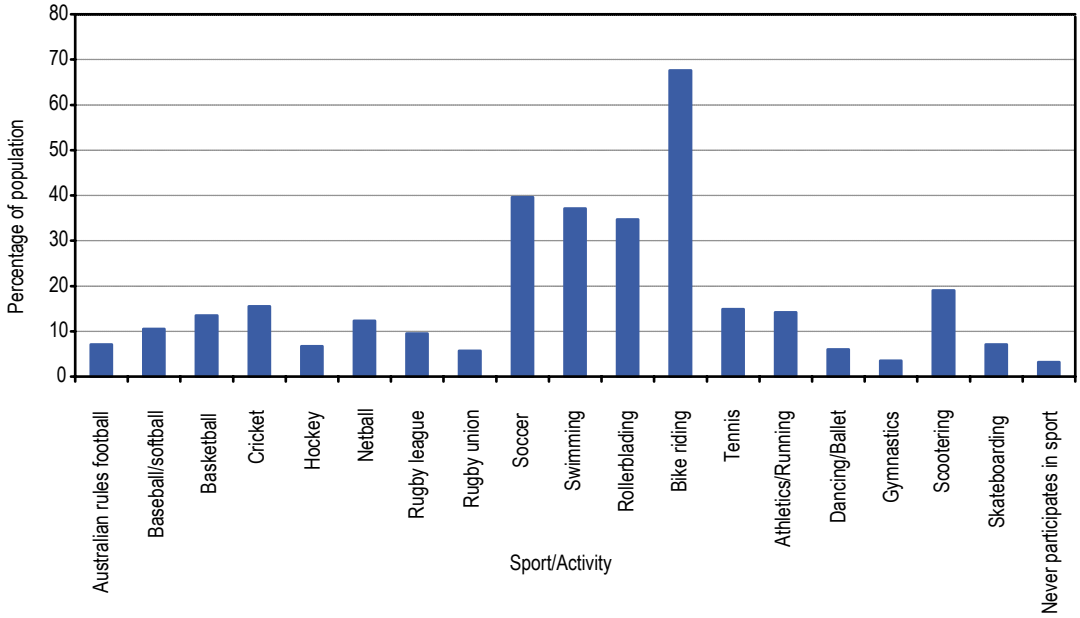
16.2.10 Participation in sports and other activities

It is difficult to accurately measure levels of physical activity among children in an interview, because parents or carers cannot accurately estimate the child's activity levels.[112] Instead, parents and carers were asked about participation in sports and outdoor activities, and in organised physical activities outside school, as markers of activity levels. They were also asked whether they had actively discouraged their child from playing certain sports because of concerns for injury or safety. Parents or carers of children aged 5-12 years were asked about the time their child spent watching television and playing computer games.

Just over two-thirds (68.9%) of ACT children aged 4-12 years were reported to have 'participated in sports with a coach outside school hours' at least once per week in the past 12 months. Only 3.2 per cent of children were reported to never participate in any sport.

The sports and activities that children most frequently participated in were bike riding (67.9%), soccer (39.6%), swimming (37.1%), and rollerblading (34.7%).

Figure 16.3: Sports and activities played in the last twelve months, children aged 5 to 12 years, ACT, 2001



Data Source: 2001 ACT Child Health Survey. Confidential unit file.
Note: Respondents could list more than one sport or activity. Percentages will total more than 100%. Estimates based on 313 respondents.

Almost 70 per cent of parents of children aged 4 to 12 years reported that they had never actively discouraged their child from participating in particular sports due to the risk of injury. Those who had done so most commonly discouraged participation in rugby league (46.2%) and rugby union (34.9%).

Organised sport was most frequently reported as the favourite activity of children aged 4-12 years (17.5%), followed by playing computer and video games (10.4%) and drawing/colouring in (10.0%).

Eighty-three per cent of ACT children aged 5-12 years were reported to watch television every day during the school week. Of the children who watched television on any day, half (50.4%) were reported to spend an average of 1-2 hours watching television and a further 35.1 per cent (95%CI 28.9-41.3) were reported to watch an average of at least 2-4 hours of television, similar to NSW children (39.5%). Fifty-five per cent of children aged 5-12 years were reported to play video or computer games on at least one day during the school week. 91 per cent of those children spent 1-2 hours playing and a further seven per cent were reported to spend 2-3 hours playing computer or video games. Forty-five per cent of children were reported to not have computer or video games or to not play the games during the school week.

16.2.11 Overweight and obesity

Analysis of surveys conducted in 1985 and 1995 demonstrate a disquieting increase towards overweight and obesity in Australian children. Fifteen per cent of boys and 16 per cent of girls aged 2-18 years were overweight in 1995 and a further five per cent of boys and five per cent of girls were obese.[115]

At present, there is only limited population based data available on the level of excess weight in ACT children. Preliminary estimates from the Kindergarten Health Screen, currently being conducted by ACT Health's Youth, Women's and Children's Health Program and the Academic Unit of General Practice and Community Care, suggest that ten per cent of ACT boys aged 5-6 years were overweight and four per cent were obese in 2001. The preliminary estimates for ACT girls aged 5-6 years indicate that 14 per cent were overweight and four per cent were obese in 2001.[116]

16.3 General health status

The general health status of children aged 5 to 12 years was assessed in the 2001 ACT Child Health Survey using the Child Health Questionnaire (CHQ), a multi-dimensional instrument that measures the functional health and wellbeing of children. The 28-item parent-proxy form, CHQ PF28, was administered to parents or carers of children aged 5-15 years. It measures concepts of 'global health', 'physical functioning', 'role-social limitations (emotional-behavioural)', 'role-social limitations (physical)', 'bodily pain-discomfort', 'behaviour', 'global behaviour', 'mental health', 'self-esteem', 'general health perceptions', 'change in health', 'parental impact (emotional)', 'parental impact (time)', 'family cohesion', and 'family activities'. All questions are based on recall of the child's health over the four weeks prior to the survey.[117]

The CHQ has been reported to be a reliable and valid measure of child health and wellbeing for the Australian population, encompassing children who are generally healthy, and children with health problems related to physical and social functioning.[117]

The CHQ rating for each concept is reported by a mean and standard deviation (SD) as contained in Table 16.5. This table also provides NSW population data for comparison.[112]

The results for the ACT and NSW were very similar. The ratings overall were high and indicated perceptions of excellent physical health of children aged 5-12 years. Slightly lower ratings were observed on measures of emotional wellbeing/mental health and behaviour, although the mean scores for these factors were still high on the rating scale (ie. around 80 and above). Similar results were observed in a large-scale survey of school-aged children in Victoria.[117]

Table 16.5: Child health questionnaire concepts and mean rating scores, ACT, 2001

Concept (No. of questions in rating)	ACT Mean (SD)	NSW Mean (SD)	Interpretation – low score (0)	Interpretation – high score (100)
Global health (1 question)	90.8 (0.8)	88.3 (0.2)	Parent believes child's health is poor	Parent believes child's health is excellent.
Physical functioning (3 questions)	96.8 (0.7)	96.0 (0.2)	Child is limited a lot in performing all physical activities including bending, stooping and lifting, due to health problems.	Child performs all types of physical activities, including the most vigorous, without limitations due to health problems.
Role-social limitations (emotional-behavioural) (1 question)	97.2 (0.7)	95.9 (0.3)	Child is limited a lot in schoolwork or activities with friends as a result of emotional or behavioural problems.	Child has no limitations in schoolwork or activities with friends as a result of emotional or behavioural problems.
Role-social limitations (physical) (1 question)	96.3 (0.8)	95.6 (0.3)	Child is limited a lot in schoolwork or activities with friends as a result of physical health.	Child has no limitations in schoolwork or activities with friends as a result of physical health.
Bodily pain-discomfort (1 question)	85.2 (0.9)	84.1 (0.3)	Child has body pain or discomfort every day.	Child has no body pain or discomfort.
Global behaviour (1 question)	80.9 (1.2)	80.3 (0.4)	Child's behaviour is poor compared with other children of the same age.	Child's behaviour is excellent compared with other children of the same age.
Mental health (3 questions)	79.5 (0.7)	79.5 (0.3)	Child feels lonely, nervous, bothered or upset all of the time.	Child feels lonely, nervous, bothered or upset none of the time.
Self esteem (3 questions)	83.9 (0.9)	84.5 (0.3)	Child is very dissatisfied with school abilities, friendships and life overall.	Child is very satisfied with school abilities, friendships and life overall.
Parental impact (emotional) (2 questions)	84.2 (1.0)	81.7 (0.4)	Parent experiences a lot of emotional worry or concern as a result of child's physical health, emotional wellbeing or behaviour.	Parent does not experience emotional worry or concern as a result of child's physical health, emotional wellbeing or behaviour.
Parental impact (time) (2 questions)	94.9 (0.7)	92.7 (0.3)	Parent experiences a lot of limitations in time available for own personal needs as a result of child's physical health, emotional wellbeing or behaviour.	Parent experiences no limitations in time available for own personal needs as a result of child's physical health, emotional wellbeing or behaviour.
Family cohesion (1 question)	78.4 (1.2)	76.9 (0.4)	Family's ability to get along is rated as 'poor'.	Family's ability to get on is rated as 'excellent'.
Family activities (2 questions)	87.0 (1.0)	84.5 (0.4)	The child's health very often limits and interrupts family activities.	The child's health never limits or interrupts family activities.

Data Source: 2001 ACT Child Health Survey. Confidential unit file; NSW information: Centre for Epidemiology and Research, NSW Dept of Health. New South Wales Child Health Survey 2001. *NSW Public Health Bulletin 2002; 13 S-3, p. 18.*

Notes: Comparisons based on 313 respondents for ACT and 5888 respondents for NSW.

SD – standard deviation.

16.4 Morbidity

This section provides an overview of childhood morbidity, or illness. The data that are discussed and presented in this section are derived from a variety of sources including the 2001 ACT Child Health Survey, ACT hospitalisation records and the immunisation register.

16.4.1 Communicable disease

Communicable or infectious diseases are illnesses caused by specific infectious agents or their toxic products. Although the burden of communicable disease has declined considerably since the early part of the 20th century, it remains a significant cause of ill health, especially in children.

Many of the communicable diseases that are vaccine-preventable, such as pertussis and measles, are notified to the ACT Communicable Disease Control Unit upon diagnosis by a health professional. Chapter 14: Communicable Disease includes a review of these 'notifiable' conditions.

The information on the conditions profiled in this sub-section has largely been derived from ACT hospital separation data.

Immunisation and vaccine-preventable disease

Immunisation protects infants against a range of infectious diseases. The ACT has a high rate of immunisation coverage and low rates of vaccine-preventable disease. In December 2001, approximately 90.9 per cent of 12-14 month old ACT children, and 90.1 per cent of ACT children aged 24-26 months were fully immunised, compared to 90.4 per cent of Australian children 12-14 months of age and 88.0 per cent of Australian children aged 24-26 months (see Chapter 14:Communicable Disease for ACT immunisation coverage and vaccine-preventable disease rates).

Non-immunisable communicable disease

Non-immunisable communicable diseases include those illnesses caused by specific infectious agents or their toxic products, which are not currently controlled, or prevented by immunisation and/or a population-wide vaccination program. This section includes a brief overview of enteritis and other diarrhoeal diseases (ICD-10-AM A00-A09), cellulitis (ICD-10-AM L03) and otitis media infections (ICD-10-AM H65-H67).

Enteritis and other diarrhoeal diseases

Enteritis and other diarrhoeal diseases are a major cause of morbidity in young children. This group of infections includes *E.Coli* infections shigellosis, cryptosporidiosis, campylobacteriosis and salmonella. Diarrhoea, dysentery and vomiting are common symptoms of these infections. They can quickly lead to dehydration in young children and necessitate hospitalisation.

There were 266 ACT resident child (1-12 years) separations from ACT hospitals in 2001/02, where the principal diagnosis was intestinal infection. The majority of separations for children occurred in the 1-4 years age group, which had the highest separation rate per 1,000 children in 2001/02.

Cellulitis

Cellulitis is an infection of the skin common in children, especially on the face and lower legs. It begins as a small area of tenderness, swelling, and redness on a child's skin. As this red area begins to spread, the child may begin to feel "sick" and develop a fever, sometimes with chills and sweats. Cellulitis can be caused by many different types of bacteria, but the most common are Group A streptococcus and *Staphylococcus aureus*. It is usually treated at the primary care level with antibiotics, however, in severe cases, children may be hospitalised and treated with intravenous antibiotics.

In 2001/02 there were 22 ACT resident child (1-12 years) separations from ACT hospitals where the principal diagnosis was cellulitis.

Otitis media

Otitis media is an infection of the middle ear, common in early childhood. The majority of children with the infection are treated with antibiotics at the primary care level, however, a minority are hospitalised each year with the condition. In 2001/02, the majority of separations for children occurred in the 1-4 years age group.

Table 16.6: Age-specific ACT hospital separation[(a)] rates (per 1,000 population) for enteritis and other diarrhoeal diseases and otitis media in ACT resident children (1-12 years), 2001/02

	1-4 years	5-9 years	10-12 years
Enteritis and other diarrhoeal diseases[(b)]	13.4	1.6	0.4
Otitis media[(c)]	9.7	5.4	0.8

Data Source: ACT Admitted Patient Care collection, 2001/02. Confidential unit file; Australian Bureau of Statistics. 2003. *Population by Age and Sex: Australian States and Territories. Census 2001 Edition-Final.* Cat. No. 3201.0. Canberra, Australian Bureau of Statistics.

(a) principal diagnosis

(b) ICD-10-AM A00-A09

(c) ICD-10-AM H65-H67

16.4.2 Chronic illness

A chronic illness is a long-term illness. This section provides an overview of some of the chronic illnesses commonly suffered by children including, cancer, asthma, diabetes, epilepsy and cystic fibrosis.

Diabetes

The majority of children with diabetes suffer Type 1 diabetes, which results when the pancreas stops producing insulin. Children with this form of the disease require daily injections of insulin to survive. Type 1 diabetes is a life-long metabolic disorder that can lead to a variety of complications if not managed properly. Good management of the disease in children requires a supportive family environment and a team of professionals, including general practitioners, dieticians and diabetes educators. In the ACT, an integrated service model is used to help manage the condition (see Chapter 11: Diabetes).

Estimates available from the 2001 National Health Survey indicate that 0.16 per cent of children (0-14 years) in Australia had had either Type 1 or Type 2 diabetes for six months or more in 2001.[26] The prevalence of diabetes in children in the ACT is not known.

In 2001/02, less than one per cent of all ACT child (1-12 years) separations from ACT hospitals included either a principal or additional diagnosis of diabetes.

Epilepsy

Epilepsy is a condition where a person has recurring fits or seizures, usually occurring when there is a sudden disruption in the electrical activity in the brain. Although most seizures are mild, a seizure that lasts for an extended period of time can lead to a life-threatening form of the disease, characterised by continuous seizures, loss of consciousness and respiratory distress. Non-convulsive epilepsy can impair physical coordination, vision and other senses.[118]

Although the cause of epilepsy is not known, some epilepsy in children can be caused by a previous brain injury, infection of the brain or problems during pregnancy and birth. Other risk factors known to contribute to epilepsy include family history, congenital malformation, cerebral palsy, mental retardation and central nervous system infection.[118]

At the national level, the prevalence of the disease has been estimated to be between 4-8 per 1,000 children aged 0-14 years.[119] Estimates from the 2001 National Health Survey yield a similar result, as the survey indicates about 0.4 per cent of children (0-14 years) in Australia had had the disease for six months or more in 2001.[26] However, the prevalence of the disease in children in the ACT is not known.

Cancer

Cancer is a leading cause of mortality and morbidity for the ACT population as a whole. The term cancer refers to a group of neoplastic diseases in which there is a transformation of normal body cells into malignant cells.

During the 1996 to 2000 period, acute lymphatic leukaemia was the leading cause of child cancer, accounting for 37 per cent of all child cancers. It is most commonly diagnosed in children between two and five years of age and accounted for 53 per cent of all cancers diagnosed in this age group between 1996 and 2000. Acute lymphatic leukaemia is a progressive disease characterised by a large proportion of immature cells, closely resembling those cells found in bone marrow, circulating blood, the lymph nodes and other body organs.[120]

There were nine cancer deaths among ACT resident children (1-12 years) during 1996 to 2000, accounting for 28 per cent of all child deaths. Approximately 3.4 per cent of all ACT child (1-12 years) separations from ACT hospitals in 2001/02 included a principal or additional diagnosis of cancer.

Asthma

Asthma is Australia's most widespread chronic health problem. It affects over two million people including one in four children, one in seven teenagers and one in ten adults. At present there is no cure for asthma.[121]

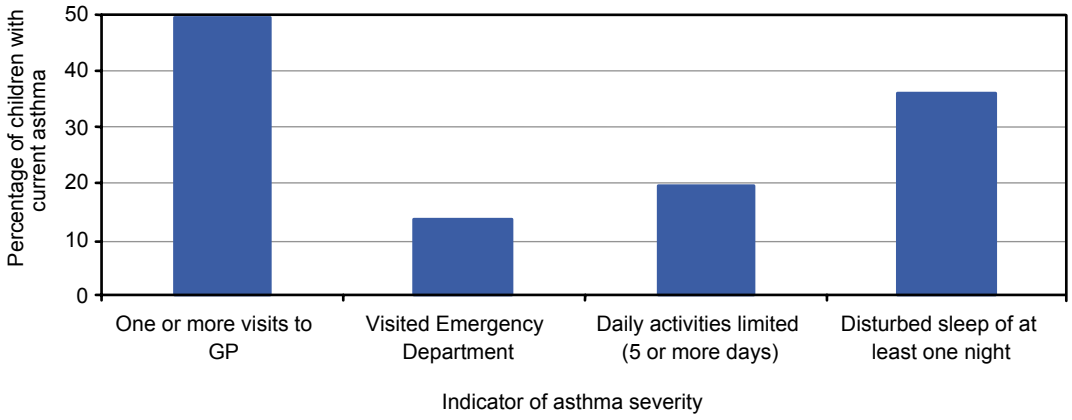
Asthma is a chronic inflammatory disorder of the airways characterised by swelling of the airway lining, over-production of mucus and contraction of the airway muscles in reaction to certain triggers. This reaction causes airway narrowing and obstruction to breathing. The airways become hypersensitive and the inflammatory process can cause permanent changes in the airways in the long term.[121]

The consequences of poorly controlled asthma can include frequent absenteeism from school, tiredness, poor concentration, frequent/prolonged use of reliever medications and reduced participation in sporting activities.[122]

The CHS assessed the prevalence, severity and management of asthma among children aged 2-12 years in the ACT. Overall, 26.8 per cent of parents or carers reported that their child had been diagnosed with asthma, similar to the rate reported in NSW (26.4%). Fourteen per cent of ACT children were reported to have had symptoms of, or treatment for asthma in the 12 months prior to the interview (this has been defined as current asthma). Chapter 12 of this report includes further information on the prevalence of asthma in young children.

Nearly half of the children (49.4%) identified with current asthma in the CHS were reported to have visited a general practitioner at least once for an asthma attack in the 12 months prior to the interview and 13.6 per cent were reported to have visited an emergency department due to an asthma attack.

Figure 16.4: Indicators of asthma severity, percentage of children with current asthma, ACT, 2001



Data Source: 2001 ACT Child Health Survey. Confidential unit file.
Note: Current asthma = symptoms of asthma or medication for treatment or prevention of asthma in the 12 months prior to interview. Percentages based on 59 responses.

Sixty-two per cent of the children with current asthma were not limited in performing their daily activities by the condition. However, one in five children with current asthma had been limited in performing their daily activities for five days or more in the 12 months prior to the interview.

Just over one-third of children with current asthma (35.7%) were reported to have experienced at least one night of disturbed sleep due to asthma and 12 per cent were reported to have had disturbed sleep for more than five nights during the month prior to interview.

Current recommended management strategies for asthma include increased use of preventer medications, reduced use of reliever medications where appropriate, use of structured written asthma management plans, avoidance of triggers (where identified), self-management education and regular review by a general practitioner.[123]

One-third (33.0%; 95%CI 19.5-46.5) of ACT children aged 2-12 years with current asthma possessed an asthma management plan at the time of the survey (NSW 43.6%).

One-third of children with current asthma were reported to use preventer medications (32.4%). Of these children, 27.3 per cent were reported to use preventer medications daily during the previous month and 30.4 per cent on half, or less, of the days during the last month. Preventer medication is only appropriate for children with frequent or persistent asthma, which represents about 25-30 per cent of children identified as having asthma. Thus one-third of children being on preventers may be clinically appropriate.

Ninety per cent of children with current asthma were reported to use reliever medications, however, 46.3 per cent of those children had not used the medication in the previous month.

Cystic fibrosis

Cystic fibrosis is a recessive genetic disorder affecting various organs in the body such as the lungs, pancreas and reproductive system. Children with cystic fibrosis have thick, sticky mucus in their lungs and they suffer a persistent cough. The mucus creates a breeding ground for bacteria, and children with the disease commonly experience lung infections.

The prevalence of the disease in the ACT is currently unknown, however, it is estimated that about one child in every 2,500 in Australia will have the disease.[118]

16.5 Oral health

For the period 1991 to 1998, the oral health of children in the ACT was consistently similar or slightly better than reported nationally. The mean number of decayed, missing and filled primary or permanent teeth in six-year olds in the ACT in 1998 was 1.4, compared to 1.5 nationally. Twelve-year olds in the ACT had an average of 0.7 decayed, and filled primary or permanent teeth, compared to 0.8 nationally.

The CHS included questions on the use of dental health services, including the frequency and place of dental visits and the treatments received. Parents and carers were also asked about any dental injuries suffered by their child during the last 12 months.

Overall, over two-thirds of children aged 1-12 years were reported to have visited a dental professional. Half the children aged 1-12 years were reported to have visited a dental professional during the previous 12 months. Of those children that had visited a dental professional, 50.2 per cent had visited a private dental practice and 48.9 per cent had attended a government or publicly funded dental service, over half doing so at the child's school.

The most frequently reported service received from a dental professional was a check-up (47.1%). The most frequently reported dental procedures were a scale and clean (12.2%), fillings (12.6%) and fluoride treatment (8.4%). Four per cent of children aged 5-12 years were reported to have received dental treatment due to injury.

16.6 Emotional wellbeing

The Child and Adolescent component of the National Survey of Mental Health and Wellbeing 2000[124] was the first national survey to investigate the mental health and wellbeing of children and adolescents. The survey found that 14 per cent of children and adolescents experienced mental health problems within the clinical range (ie. the range typically reported for those attending mental health clinics). The most frequently identified problems for children aged 4 to 12 years were somatic complaints, delinquent behaviour and attention problems for both boys and girls.

Children and adolescents with mental health problems were found to experience lower quality of life than their peers. Parents or carers reported greater concern and worry for their child's health and less time to spend on their personal needs than other parents. The survey found that one in four young persons with mental health problems receives professional assistance, with general practitioners and school counsellors being the professionals most likely to provide these services.

Information relating to the emotional health and behaviour of children in the ACT has been obtained from the 2001 ACT Child Health Survey. This survey asked parents to report on emotional and behaviour problems experienced by their child and about the help needed for these problems.

One third (33.1%) of children aged 4 to 12 years were reported to have experienced emotional or behavioural problems in the six months prior to the interview. While this rate appears higher than that reported in the National Survey, it should be noted that the National Survey only reported on mental health problems falling into a clinical range, whereas the CHS rates include all reported emotional and behavioural problems. The ACT rate of emotional or behavioural problems was similar to NSW results (31.4%).

Children experiencing severe emotional and behavioural problems are more likely to be described as having more problems than their peers, being limited in their activities due to their problems and being distressed and upset because of their problems. Seventeen per cent of ACT children were reported as having had more emotional and behavioural problems than other children their age. One in ten children were prevented from doing 'normal' activities expected of children their age because of their emotional problems. For 18.4 per cent of children the problems were described as being somewhat or very serious in terms of causing distress to the child. For 15.9 per cent of children the problems were described as being somewhat or very serious in terms of disrupting or causing distress to others. These results are more consistent with the national survey results (ie. 14% of children experiencing mental health problems falling in the clinical range).

One quarter of children with reported emotional or behavioural problems received professional assistance. A further 15.8 per cent reported needing professional assistance, but had not received it. Parents and carers who reported not receiving the necessary professional assistance were asked the reason they did not get help. The most commonly cited reasons for not getting help included deciding to handle the problem on their own, not knowing where to get help, help being too expensive and not wanting to attend the service.

16.7 Injury

The *National Injury Prevention Plan* identifies falls, drowning and poisoning as priority injury prevention areas for children (1-12 years). There are a small number of injury-related deaths each year (between 1-2 injury-related deaths) among ACT resident children. There were 714 ACT child resident separations from ACT hospitals in 2001/02, with an injury-related diagnosis code. The leading causes of injury-related hospitalisation for ACT children in 2001/02 were falls (45%), motor vehicle traffic accidents (2%) and accidental poisoning (11%). Drowning accounted for less than two per cent of all separations in 2001/02 (see Chapter 10: Injury Prevention for further information on child injury).

16.8 Disability

The results of the 1998 Survey of Disability, Ageing and Carers suggested that 0.8 per cent of ACT children aged 0-4 years had a disability (3.7% nationally) and that 13 per cent of ACT children aged 5-14 years had a disability in 1998 (9.5% nationally).[125]

There was a higher prevalence of disability in young females in the ACT, with those aged 5-14 years more than twice as likely as the national average to be restricted in a core activity by their disability.

The CHS included questions about visual, hearing and speech impairments. These impairments can have adverse effects on communication skills, educational attainment and quality of life. In the 1998 Survey of Disability, Ageing and Carers, sensory and speech impairments were the second most frequent cause of disability in children at the national level, after intellectual impairments.[123]

Parents and carers of children aged 0-4 years were also asked about ear infections. In otitis media (middle ear infection), fluid accumulates in the middle ear space, leading to conductive hearing loss. This may persist for weeks to months after every episode of acute otitis media.

16.8.1 Visual impairments

Most children aged 2-12 years (91.8%) were reported to have normal vision. A further 7.3 per cent were reported to have no difficulty seeing words when they wore their glasses.

16.8.2 Hearing impairments and ear infections

Nearly all ACT children aged 1-12 years included in the survey were reported to have normal hearing (96.7%). Two per cent of children were reported to have a mild hearing impairment and 0.9 per cent were reported to have a moderate or profound hearing impairment.

Almost half the children aged 0-4 years (47%) that were surveyed were reported to have had an ear infection diagnosed by a doctor. Ten per cent of children in this age group were reported to have had a discharge from their ear (95%CI 4.6-14.6). These rates were similar to those reported for NSW children.

16.8.3 Speech impairments

Most ACT children aged 2-12 years (84.6%) were reported to have no speech difficulties (NSW 83.7%). However, 13.1 per cent of ACT children were reported to have difficulty saying certain sounds, 6.2 per cent were reported to not speak as well as their peers and 1.1 per cent were reported to stammer or stutter. Three per cent were reported to have attended a speech pathologist.

16.9 Hospitalisation

The leading cause of ACT child (1-12 years) ACT hospitalisation in 2001/02 was respiratory disease (19.6%), followed by injury, poisoning and other external causes (14.9%), diseases of the digestive system (10.9%), and infections and parasitic diseases (10.8%).

Table 16.7: ACT resident child (1-12 years) separations from ACT hospitals, by principal diagnosis[a], 2001/02

	Separations	Per cent
Certain infectious and parasitic diseases	415	10.8
Neoplasms	60	1.6
Diseases of blood/blood-forming organs etc	99	2.6
Endocrine, nutritional and metabolic diseases	72	1.9
Mental, behavioural disorders	10	0.3
Diseases of the nervous system	93	2.4
Diseases of the eye and adnexa	56	1.5
Diseases of the ear and mastoid process	339	8.8
Diseases of the circulatory system	24	0.6
Diseases of the respiratory system	754	19.6
Diseases of the digestive system	422	10.9
Diseases of the skin and subcutaneous tissue	76	2.0
Diseases of the musculoskeletal system and connective tissue	69	1.8
Diseases of the genitourinary system	126	3.3
Congenital malformations/deformations etc	167	4.3
Symptoms/signs/abnormal clinical and laboratory findings	211	5.5
Injury/poisoning/other consequences of external causes	576	14.9
Factors influencing health status etc	287	7.4
Total	**3,856**	**100**

Data Source: ACT Admitted Patient Care collection, 2001/02. Confidential unit record file.

(a) See Appendix 3 for diagnoses codes.

16.10 Mortality

There are less than ten deaths registered each year for children (1-12 years) usually resident in the ACT (25 in total between 1998 and 2000, comprising nine in 2000, seven in 1999 and nine in 1998). More than 50 per cent of these deaths over this period occurred in children aged 1-2 years, with the major causes being cancer (including leukaemia), external causes (accidents) and sudden, unexplained death.

Approximately 40 per cent of all ACT child resident deaths for the 1998 to 2000 period were 'avoidable' deaths. An avoidable death is usually defined as a death that theoretically could have been avoided given current understanding of causation and currently available disease prevention and healthcare technologies, including death from conditions preventable through individual lifestyle modification or population level intervention, and intervention at the primary or secondary health care level.[22,10]

16.11 Child health initiatives and services

Nationally, a consultation paper: Toward the Development of a National Agenda for Early Childhood, has been released for discussion. The paper was prepared by the Commonwealth Task Force on Child Development, Health and Wellbeing to start discussion and debate about the development of a National Agenda for Early Childhood. It identifies three broad action areas for national attention: early child and maternal health; early learning and care; and child-friendly communities.

The ACT Government is currently developing a plan for children up to 12 years. The ACT Children's Plan will aim to enhance the status and further improve the lives of children by setting out a shared community vision underpinned by an agreed set of principles. The focus of the Plan will be on prevention, early identification, early intervention and improving collaboration across services for children.

ACT Health provides primary, secondary and tertiary services to children and their families within the ACT. These services are available at many locations across Canberra, through Community Care, The Canberra Hospital and Calvary Hospital.

Community Care provides a range of services for the health needs of children and families including:

- maternal and child health clinics;
- health checks, including information, support, advice and education on - baby and child health, development and growth, breastfeeding, nutrition and feeding issues, sleep issues, keeping babies and children safe, behavioural issues, parenting, adjustment to parenthood, postnatal distress/ depression;
- postnatal parenting information service;
- immunisation;
- residential postnatal services at Queen Elizabeth 11 Family Centre;
- a Community Asthma Support Service;
- a Child and Youth Dental Membership Scheme;
- a Child at Risk Assessment Unit;
- audiometry screening;
- child health medical assessments;
- nutrition, physiotherapy, occupational therapy, social work;
- orthoptist services;
- home visiting;
- school health checks; and
- diabetes education and support.

In addition, general practitioners provide a range of primary care services to children in the ACT. The Canberra Hospital provides paediatric services. The Child and Adolescent Mental Health Service (CAMHS) provide mental health services for children and adolescents from four sites covering the ACT. The Child Health and Development Service (CHADS) is a multi-disciplinary, community health service providing specialised community-based programs for children and young people where there are concerns about their development.

Emerging Issues

- The 2001 ACT Child Health Survey indicated that only one-quarter (23.9%) of children (aged 2-12 years) in the ACT consume the recommended daily quantities of vegetables, more than half (60.9%) eat hot chips/french fries at least once a week, and a third drink more than one cup of soft drink a day;
- Preliminary estimates from the ACT Kindergarten Health Screen indicate that in 2001, 10 per cent of ACT boys aged 5-6 years were overweight, and four per cent were obese; 14 per cent of ACT girls aged 5-6 years were overweight and four per cent were obese. National estimates produced in 1985 and 1995 indicated that the prevalence of excess weight had increased over time in Australian children aged 2-18 years;
- One third of ACT children (aged 4-12 years) were reported by their parents to have experienced an emotional or behavioural problem in the six months prior to the 2001 ACT Children's Health Survey.
- There is a need to profile the health of children in vulnerable groups in the ACT.

Appendices

Appendix 1: Methods

This report includes data from a range of different sources. This section provides a brief description of the major data sources and statistical methods used to produce the information presented in this report. SPSS version 11.5 was used for the analysis of hospital separation data (ACT Admitted Patient Care Collection), deaths data (Australian Bureau of Statistics Deaths Data Collection) and birth-related data (Maternal Perinatal Data collection).

ACT Data Collections

ACT Admitted Patient Care Collection 1992/93 – 2001/02

The data sets in this collection used to produce information for the report contain details of all ACT hospital inpatient records between July 1991 and June 2002. Each data set includes patient records from each of the public and private hospitals in the ACT. The information reported includes patient demographics, diagnoses, procedures, source of referral etc. The data sets include details of admissions to ACT hospitals by non-ACT residents. The data do not include details of ACT residents admitted to hospitals outside of the ACT.

The diagnoses included in the data sets prior to 2000/01 have been coded based on the 10th revision of the International Classification of Diseases, Australian Modification (ICD-10-AM). The data sets prior to this date are coded according to the 9th revision of the International Classification of Diseases, Clinical Modification (ICD-9-CM).

A preliminary version of the 2001/02 data was used in the analyses presented in this report. ICD codes used in the analysis of specific diagnoses are provided in Appendix 2 of this report.

Australian Bureau of Statistics Deaths Data Collection 1993-2001

The data sets in this collection that were used to produce data for this report contain details of all ACT residents' death registrations between January 1993 and December 2000. The collection includes death data for ACT residents registered anywhere in Australia. Each data set includes death data based upon year of death registration and data has been presented based on year of death registration rather than year of actual death. The information reported includes demographics and underlying cause of death.

The underlying cause of death for 1999 and 2000 is coded according to the 10th revision of the International Classification of Diseases, Australian Modification (ICD-10-AM). The deaths data sets prior to this date are coded according to the 9th revision of the International Classification of Diseases, Clinical Modification (ICD-9-CM).

The deaths data obtained from the collection and presented in this report has been accessed using SPSS version 11.5.

Some of the deaths data, including data for 2001, which is presented in this report, has been obtained from various reports produced by the Australian Bureau of Statistics. These reports are referenced accordingly in the text.

ACT Maternal Perinatal Collection 1994-2000

The ACT Maternal Perinatal Data Collection is a population-based collection covering all births in ACT hospitals (public and private) and home births in the ACT, between 1994 and 2000. It does not include interstate births where the mother is usually resident in the ACT. Each data set includes all live births and stillbirths of at least 20 weeks gestation or at least 400 grams birth weight. The data is managed and maintained by the Population Health Research Unit, within ACT Health.

The birth-related data obtained from the collection and presented in this report has been accessed using SPSS version 11.5.

Some of the maternal, infant and birth-related data that is presented in this report has been obtained from various reports produced by the Australian Bureau of Statistics. These reports are referenced accordingly in the text.

ACT Cancer Registry data

The ACT Cancer Registry was established in 1994, when cancer reporting became mandatory in the ACT. Four hospitals, three day surgeries, seven nursing homes and four pathology laboratories notify cancer diagnoses to the registry.

The Cancer registry data presented in this report covers the period 1996 to 2000 and has been accessed using SPSS version 11.5.

ACT Emergency Department Information System

The ACT Emergency Department Information System (EDIS) contains records of patient presentations to The Canberra Hospital and Calvary Hospital Emergency Departments. The EDIS data contains details of patient demographics and diagnoses, triage categories and sources of referral. The EDIS data derived from The Canberra Hospital Emergency Department is based on ICD-10-AM diagnosis codes and the data derived from the Calvary Hospital is based on ICD-9-CM diagnosis codes.

Survey Data Sources

2001 National Health Survey

The 2001 National Health Survey conducted by the Australian Bureau of Statistics collected information on illness and injury, health care use and health-risk factors from respondents of all ages across Australia. The final survey sample from the ACT included 2,219 respondents.

For this report, data were obtained from tabulated summary tables produced by the Australian Bureau of Statistics and from published reports.

ACT Child Health Survey 2001

In 2001 the NSW Department of Health conducted a survey on the health of children in NSW and the ACT, via computer assisted telephone interview. The survey questionnaire covered topics including the use of health services, chronic disease, health-risk behaviours, social support, social capital, family functioning, emotional and behavioural problems. The ACT

sample comprised 505 ACT children aged between 0-12 years.

For this report, data were obtained from tabulated summary tables produced by the NSW Department of Health and from a copy of the data set, accessed using SPSS version 11.5.

2000 National Physical Activity Survey

The survey was undertaken to assess the impact of the 2000 Olympic Games on adult (18 years or more) activity levels and awareness of physical activity campaign messages. It was the third physical activity survey in the Active Australia series. The ACT sample consisted of 512 respondents.

For this report, ACT-specific data were obtained by analysis of a data set containing ACT respondent's records, using SPSS version 11.5. Data for Australia were obtained from published reports.

2001 National Drug Strategy Household Survey

This was the seventh survey in this series. The survey included questions on awareness, attitudes and behaviours relating to substance use, including tobacco, alcohol and illicit drug use. The national sample included 26,744 respondents. The ACT sample included responses from 1,519 adults (14 years or more).

For this report, data were obtained from tabulated summary tables produced by the Australian Institute of Health and Welfare and from published reports.

Other Data Sources

Communicable Disease Network Australia

The Communicable Disease Network Australia (CDNA) was established in 1989 as the Communicable Diseases Control Network, as a joint initiative of the National Health and Medical Research Council and Australian Health Ministers' Advisory Council. The network oversees the co-ordination of national communicable disease surveillance, responds to communicable disease outbreaks of national importance and oversees the field training of communicable disease epidemiologists.

Since 1995, the Network has overseen the implementation and development of the National Communicable Diseases Surveillance Strategy. The strategy aims to develop the infrastructure and systems for effective national surveillance, preparedness and responses to communicable disease risks.

Notifiable communicable diseases in the ACT are recorded by the ACT Communicable Disease Control Section within ACT Health. Disease notification records are regularly forwarded to the CDNA as part of their disease surveillance effort. Annual numbers of disease notifications have been made available by the CDNA on the internet and the communicable disease data that has been presented in this report has been obtained from the CDNA website :< www.cda.gov.au>.

Australian Childhood Immunisation Register

The Australian Childhood Immunisation Register (ACIR) is maintained by the Health Insurance Commission (HIC), which collects immunisation data to provide comprehensive information on the immunisation status of all children less than seven years of age living in Australia. The Immunisation Register commenced operation on 1 January 1996.

The data presented in this report has been supplied by the ACIR.

Demographic data

The population data contained in this report has been derived from a variety of sources. Information on the structure and characteristics of the population have largely been derived from Australian Bureau of Statistics reports, summary tables, or from demographic reports produced by the ACT Government. These reports and tables are based upon analysis of the 2001 Census. The source of the demographic data that is presented has been referenced accordingly throughout the report.

Statistical Methods

Age-standardised rates

The standardised rates presented in this report are based on the direct method of standardization. This method adjusts for effects of differences in the age composition of different populations. The direct age-standardized rates presented are based upon the weighted sum of age-specific (five-year age group) rates in the population. The weights that have been used in the calculation of these rates (the 'standard' population) are population ratios for five-year age groups derived from the mid-year 1991 Australian population.

Avoidable mortality

The method used to calculate avoidable mortality was based on a method developed by the Ministry of Health in New Zealand and modified for Australia, initially by the Department of NSW Health and then the Australian Institute of Health and Welfare. Avoidable deaths are those deaths attributed to conditions theoretically considered preventable or otherwise avoidable through earlier intervention or action.

The original method for calculating avoidable mortality was based upon conditions using ICD-9-CM codes. The Australian Institute of Health and Welfare has modified the methodology and produced ICD-10-AM codes to define 'avoidable' conditions. The ICD-10-AM codes were used to calculate avoidable mortality data for this report.

Confidence intervals (95%CI)

A confidence interval is a computed interval with a given probability (for example, 95%) that a true value of a variable, such as a rate, mean or proportion, is contained within the interval.

Although RSEs (see below) are used in tables in this report to provide an indication of the reliability of an estimate, 95% confidence intervals (95% CI) have been included in text discussions about specific estimates of interest.

Crude rates

Crude death, hospital separation and disease notification rates are provided in various sections of this report. A crude rate is an estimate of a proportion of a population that experiences a specific event over a specified period. It is calculated by dividing the number of events recorded for a given period by the number at risk of the event in the population.

Crude rates have been calculated for this report using ABS deaths data, the ACT Admitted Patient Care Collection, CDNA and ABS population data, derived from demographic reports.

Life expectancy at birth

Life expectancy at birth is an estimate of the average length of time a person can expect to live, assuming that current rates of death for each age group in the population will remain the same for the lifetime of that person.

Life expectancy data have been obtained from Australian Bureau of Statistics reports and referenced accordingly in the text.

Life expectancy at age 65 years

This is an estimate of the average number of additional years a person who has reached the age of 65 would expect to live if current death rates were to continue.

Data for life expectancy at age 65 years have been obtained from Australian Bureau of Statistics reports and referenced accordingly in the text.

Presenescent mortality

This population health indicator is based upon the number of deaths in a population that occur before an arbitrary age limit. For the purposes of this report, presenescent mortality includes deaths before the age of 75 years.

Presenescent mortality data have been derived from the Australian Bureau of Statistics Deaths Data Collection.

Relative standard errors (RSE)

Relative standard errors (RSE) provide an indication of the reliability of an estimate. Estimates with an RSE less than 25% are generally regarded as 'reliable' estimates. All estimates presented in tables in this report have an RSE less than 25%, unless otherwise stated. Estimates presented in tables with an RSE between 25-50% have been identified and a cautionary note has been provided on their interpretation and general use. For the purposes of this report, estimates for the ACT with an RSE over 50% were not considered that reliable and have not been presented.

Years of life lost

The person years of life lost (YLL) provide an indication of the impact of presenescent mortality in a population. It is calculated as the sum of all of the years of life that could potentially have been lived had an individual not died before an arbitrary age limit. In this report, the arbitrary age limit is 75 years. The total number of person years of life lost is calculated by assuming that an individual that died at 60 years of age would have otherwise lived to the age of 75 years. Therefore, in this instance, the YLL_{75} would be 15 years (75 – 60 = 15).

Appendix 2: Avoidable Mortality ICD-10-AM Code Definitions

Potentially Avoidable Condition	ICD-10-AM Classification Code
Enteritis and other diarrhoeal diseases	A00-A09
Tuberculosis	A15-A19, A23, A35-A37, A49.2, B90
Immunisation-preventable diseases	A33, A35-A37, A80, B05-B06, P35.0, A49.2, G00.0
HIV/AIDS	B20-B24
Hepatitis and liver cancer	B15-B19, C22.0, C22.1, C22.9
Sexually transmitted diseases	A50-A64, M02.3, N34.1, N70.0, N70.9, N71.0, N71.1, N72, N73.0-N73.5, N73.8, N75.0, N75.1, N76.0, N76.2, N76.4, N76.6, N76.8, N77.0, N77.1, N77.8, O00, R59.1
Skin cancers	C00, C43-C44
Colorectal cancer	C18-C21
Oral cancers	C02-C06, C09-C10, C12-C14, C32
Lung cancers	C33-C34
Breast cancer	C50
Nutrition	D50-53, E40-E46, E50-E56, E63-E64
Alcohol related conditions	F10, I42.6, K29.2, K70
Chronic obstructive respiratory diseases	J40-J44
Ischaemic heart disease	I20-I22, I24, I25.1-I25.9
Stroke	I61, I62.0, I63.0-I63.5, I63.8-I63.9, I64-I66, I67.8
Neural tube defects	Q00-Q07
Low birth weight babies	P05-P07, P22, P27
Sudden infant death syndrome	R95
Road traffic injury	V01.1, V02.1, V03.1, V04.1, V05.1, V06.1, V09.2, V09.3, V10.4, V10.5, V10.9, V11.4, V11.5, V11.9, V12.4, V12.5, V12.9, V13.4, V13.5, V13.9, V14.4, V14.5, V14.9, V15.4, V15.5, V15.9, V16.4, V16.5, V16.9, V17.4, V17.5, V17.9, V18.4, V18.5, V18.9, V19.4, V19.5, V19.6, V19.9, V20.4, V20.5, V20.9, V21.4, V21.5, V21.9, V22.4, V22.5, V22.9, V23.4, V23.5, V23.9, V24.4, V24.5, V24.9, V25.4, V25.5, V25.9, V26.4, V26.5, V26.9, V27.4, V27.5, V27.9, V28.4, V28.5, V28.9, V29.4, V29.5, V29.6, V29.9, V30.5, V30.6, V30.7, V30.9, V31.5, V31.6, V31.7, V31.9, V32.5, V32.6, V32.7, V32.9, V33.5, V33.6, V33.7, V33.9, V34.5, V34.6, V34.7, V34.9, V35.5, V35.6, V35.7, V35.9, V36.5, V36.6, V36.7, V36.9, V37.5, V37.6, V37.7, V37.9, V38.5, V38.6, V38.7, V38.9, V39.4, V39.5, V39.6, V39.9, V40.5, V40.6, V40.7, V40.9, V41.5, V41.6, V41.7, V41.9, V42.5, V42.6, V42.7, V42.9, V43.5, V43.6, V43.7, V43.9, V44.5, V44.6, V44.7, V44.9, V45.5, V45.6, V45.7, V45.9, V46.5, V46.6, V46.7, V46.9, V47.5, V47.6, V47.7, V47.9, V48.5, V48.6, V48.7, V48.9, V49.4, V49.5, V49.6, V49.9, V50.5, V50.6, V50.7, V50.9, V51.5, V51.6, V51.7, V51.9, V52.5, V52.6, V52.7, V52.9, V53.5, V53.6, V53.7, V53.9, V54.5, V54.6, V54.7, V54.9, V55.5, V55.6, V55.7, V55.9, V56.5, V56.6, V56.7, V56.9, V57.5, V57.6, V57.7, V57.9, V58.5, V58.6, V58.7, V58.9, V59.4, V59.5, V59.6, V59.9, V60.5, V60.6, V60.7, V60.9, V61.5, V61.6, V61.7, V61.9, V62.5, V62.6, V62.7, V62.9, V63.5, V63.6, V63.7, V63.9, V64.5, V64.6, V64.7, V64.9, V65.5, V65.6, V65.7, V65.9, V66.5, V66.6, V66.7, V66.9, V67.5, V67.6, V67.7, V67.9, V68.5, V68.6, V68.7, V68.9, V69.4, V69.5, V69.6, V69.9, V70.5, V70.6, V70.7, V70.9, V71.5, V71.6, V71.7, V71.9, V72.5, V72.6, V72.7, V72.9, V73.5, V73.6, V73.7, V73.9, V74.5, V74.6, V74.7, V74.9, V75.5, V75.6, V75.7, V75.9, V76.5, V76.6, V76.7, V76.9, V77.5, V77.6, V77.7, V77.9, V78.5, V78.6, V78.7, V78.9, V79.4, V79.5, V79.6, V79.9, V80.0, V80.1, V80.2, V80.3, V80.4,
Road traffic injury	V80.5, V80.6, V80.7, V80.8, V80.9, V81.1, V82.1, V82.9, V83.0, V83.1, V83.2, V83.3, V84.0, V84.1, V84.2, V84.3, V85.0, V85.1, V85.2, V85.3, V86.0, V86.1, V86.2, V86.3, V87.0, V87.1, V87.2, V87.3, V87.4, V87.5, V87.6, V87.7, V87.8, V87.9, V89.2, V89.3
Poisoning	X40-X49
Swimming pool injury	W16, W67, W68

Sport injury	W01.30, W02, W03.30, W09, W21, X50
Fire	X00-X09
Drowning	W65, W69, W70, W73, W74, Y21
Suicide	X60-X84, Y87.0, Y10-Y34
Other infections	A23-A26, A28.0, A28.2-A28.9, A30, A31, A32.9, A38, A39, A46, B50-B54, G00, G01, J02.0, P23, P35.1-P35.9, P36-P39
Cervical cancer	C53
Thyroid disease	E03.2, E03.8, E03.9, E04-E05, E89.0
Newborn screening conditions	E03.1, E25, E70.0, E70.1, E74.2
Diabetes	E10-E14
Epilepsy	G40-G41
Ear infections	H65-H70
Rheumatic fever/heart disease	I00-I09
Hypertensive disease	I10-I15, I67.4
Respiratory infections	J00, J01.1-J01.2, J01.8-J01.9, J02-J06, J10, J11.0, J12-J15, J16.8, J17.0-J17.2, J17.8, J18.0, J18.8, J20-J22
Asthma	J45-J46
Peptic ulcer	K25-K28
Pregnancy complications	O01-O08, O10-O99
Musculoskeletal infections	L01-L08, L98.0, M00, M01.1-M01.3, M01.5-M01.8, M02.1, M02.3, M03.2, M35.2, M46.2, M86, M87.1-M87.9, M89.6, M90.0-M90.2
Stomach cancer	C16
Cancer of uterus	C54, C55
Cancer of testis	C62
Eye cancer	C69
Thyroid cancer	C73
Hodgkin's disease	C81
Leukaemia	C91.0-C91.3, C91.7, C91.9
Benign cancers	D10-D36
Appendicitis	K35-K38
Intestinal obstruction and hernia	K40-K46, K56
Gallbladder disease	K80-K83, K91.5
Acute renal failure	N17
Congenital anomalies	Q10-Q23.3, Q23.8-Q23.9, Q24-Q28, Q35-Q84
Birth trauma and asphyxia	P10-P15, P20-P21, P50, P51, P95
Other perinatal conditions	P08, P22, P22.1, P25, P26, P28, P52-P96
Iatrogenic conditions	Y60-Y84

Data Source: Australian Institute of Health and Welfare, March 2003.

Appendix 3: ICD-10-AM Diagnostic and Procedural Codes Used to Produce Data for the Report

ICD-10-AM diagnostic description	ICD-10-AM diagnostic codes
Certain infectious and parasitic diseases	**A00-B99**
Enteritis and other diarrhoeal diseases	A00-A09
Neoplasms	**C00-D48**
Cancer of the trachea, bronchus and lung	C33-C34
Melanoma	C43
Breast cancer	C50
Colorectal cancer	C18-C21
Prostate cancer	C61
Cervical cancer	C53
Diseases of blood/blood-forming organs etc	**D50-D89**
Endocrine, nutritional and metabolic diseases	**E00-E90**
Diabetes Mellitus	E10-E14
Mental, behavioural disorders	**F00-F99**
Diseases of the nervous system	**G00-G99**
Diseases of the eye and adnexa	**H00-H59**
Diseases of the ear and mastoid process	**H60-H95**
Otitis media infections	H65-H67
Diseases of the circulatory system	**I00-I99**
All heart disease	I05-I09, I11, I13, I20-I25, I26, I27, I30-I152
Ischaemic heart disease (excl myocardial infarction)	I20, I22-I25
Myocardial infarction	I21
Cerebrovascular disease	I60-I69
Diseases of the respiratory system	**J00-J99**
Influenza and pneumonia	J10-J18
Chronic lower respiratory diseases (incl. Asthma, COPD, emphysema etc)	J40-J47
Asthma	J45-J46
Diseases of the digestive system	**K00-K93**
Diseases of the liver	K70-K77
Diseases of the skin and subcutaneous tissue	**L00-L99**
Cellulitis	L03
Diseases of the musculoskeletal system and connective tissue	**M00-M99**
Arthritis and musculoskeletal disorders	M00-M99
Diseases of the genitourinary system	**N00-N99**
Pregnancy, childbirth and the puerperium	**O00-O99**

Certain conditions originating in the perinatal period	**P00-P96**
Congenital malformations/deformations etc	**Q00-Q99**
Symptoms/signs/abnormal clinical and laboratory findings	**R00-R99**
Injury/poisoning/other consequences of external causes	**V01-Y98**
Transport accidents	V01-V99
Motor vehicle traffic accident	V30-V79 (.4-.9), V81.1, V82.1, V83-V86 (.0-.3), V20-V28 (.3-.9), V29 (.4-.9), V12-V14 (.3-.9), V19 (.4-.6), V02-V04 (.1-.9), V09.2, V80 (.3-.5), V87 (.0-.8), V89.2.
Falls	W00-W19
Drowning	W65-W74
Accidental poisoning	X40-X49
Intentional self-harm ("suicide")	X60-X84
Homicide	X85-Y09

ICD-10-AM procedural description	ICD-10-AM procedural codes
Coronary artery bypass graft (CABG)	38497, 38500, 38503 & 90201
Percutaneous transluminal coronary angioplasty (PTCA)	35304, 35305
Percutaneous transluminal coronary angioplasty with stenting	35304, 35305 with any mention of 35310

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Glossary

Age-specific rates – the number of events occurring within an age group per 1,000 or 100,000 persons in that same age group.

Age-specific birth rates - the number of births per thousand women of a specific age group in the population (ABS definition).

Body mass index - Based on height and weight as reported by the respondent. Persons have been categorised into four groups according to their body mass index, derived by dividing weight (kg) by the square of height (m^2).

Underweight	Less than 18.5
Healthy weight	18.5 – 25
Overweight	25 – 30
Obese	Greater than 30

Cardiovascular diseases (CVD) can be described as diseases relating to the heart and blood vessels. They are also called circulatory diseases. The main categories are heart attack, heart failure and stroke.

Cerebrovascular disease, also known as stroke, means damage to the brain or associated tissues because of blockage, bursting or malfunction of blood vessels in the head. This condition is usually included under cardiovascular or circulatory diseases.

Crude birth rate is the number of live births per 1,000 population in a given year (ABS definition).

Crude death rate is the number of deaths per 1,000 population (unless otherwise stipulated) in a given year (ABS definition).

Fertility rate refers to the number of children one woman would expect to bear if the age-specific rates of the year shown continued during her child-bearing lifetime (ABS definition).

ICD-10-AM refers to the International Classification of Diseases, tenth revision as developed by the World Health Organisation.

IDU refers to an injecting drug user. Drugs commonly used in this way include amphetamines, heroin, other opiates and steroids.

Incidence refers to the number of instances of illness commencing, or of persons falling ill, during a given period in a specified population.

Ischaemic heart disease is coronary heart disease.

Labour force in employment refers to those persons employed and those unemployed seeking employment.

Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta attached, each product of such a birth is considered live born (WHO definition). The ACT definition for a live birth differs from the WHO definition in that it is not irrespective of the duration of the pregnancy, but on or after 20 completed weeks gestation or 400 grams or greater in birth weight. This is consistent with the definitions for spontaneous or induced abortions.

Mean is the 'average'.

Median is a measure of central tendency. It refers to the point between the upper and lower halves of the set of measurements.

Morbidity is a diseased state or the ratio of sick to well in the community.

Mortality is a fatal outcome or the relative number of deaths (death rate) in a given population at a given time.

NSP (Needle and syringe program) refers to a program designed to distribute information on and equipment for safer injecting practices and safer equipment disposal to the population of injecting drug users.

Neonatal death is the death of a live born infant within 28 days of birth.

Neonatal morbidity refers to any condition or disease of the infant diagnosed within 28 days of birth.

Neoplasia is the process of abnormal cell growth to form a neoplasm.

Neoplasm is a new or abnormal growth or tumour. A neoplasm may be malignant or benign. Neoplasm and neoplasia are often used interchangeably with cancer.

Perinatal death refers to a stillbirth or a neonatal death.

Perinatal refers to the period from 20 weeks gestation to within 28 days after birth.

Post neonatal death refers to the death of an infant aged between 28 and 365 days.

Preterm birth refers to a birth before 37 completed weeks of gestation. Extremely preterm refers to births between 20 and 27 weeks gestation: moderately preterm refers to births between 28 and 31 weeks gestation; and mildly preterm refers to births between 32 and 36 weeks gestation.

Pertussis (whooping cough) is a communicable disease.

Prevalence refers to the number of instances of a given disease or other condition in a given population at a designated time.

Separation (from hospital) refers to when a patient is discharged from hospital, transferred to another hospital or other health care accommodation, or dies in hospital following formal admission (ABS definition).

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