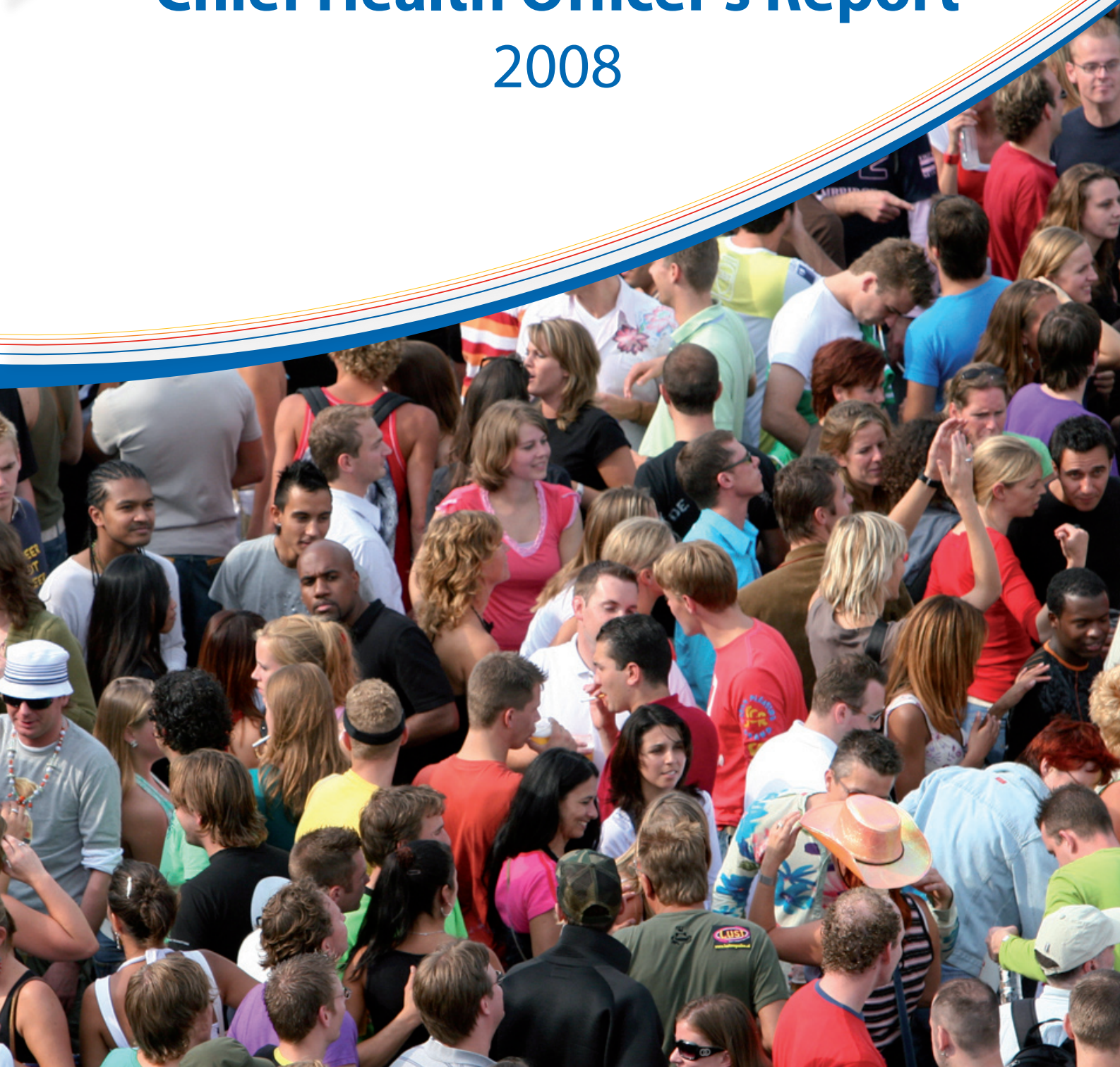
ACT Health

Population Health Division

Australian Capital Territory
Chief Health Officer's Report
2008



Australian Capital Territory

Chief Health Officer's Report

2008

ACKNOWLEDGEMENTS

This publication has been prepared by the Population Health Research Centre (PHRC), ACT Health for the ACT Minister for Health, the ACT Legislative Assembly and the ACT community. During the reporting period (July 2004-June 2006), the Chief Health Officers were Dr Paul Dugdale (July 2004-May 2005; December 2005-June 2006) and Dr Charles Guest (May 2005-December 2005). The Chief Health Officers, together with the staff of the PHRC, wish to thank many contributors from the ACT health portfolio, other government agencies, non-government agencies, community group representatives and individuals who have provided their time and expertise in the preparation of this document.

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Katy Gallagher MLA
Minister for Health
ACT Legislative Assembly
London Circuit
CANBERRA ACT 2601

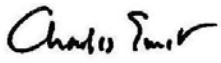
Dear Minister

I am pleased to present you with this report, which provides an account of the health and wellbeing of the ACT population during the period 1 July 2004 to 30 June 2006, as required under Section 10 of the *Public Health Act 1997*. The Act requires that I report biennially on the following:

- trends and indicators in health status;
- 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;
- intersectoral activities relevant to health; and
- any other matter considered appropriate by the Chief Health Officer.

Section 10 of the Act also requires that you present the report to the Legislative Assembly within 6 sitting days of receiving the report.

Yours sincerely



Dr Charles Guest
Chief Health Officer

15 August 2008

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Abbreviations

ABS	Australian Bureau of Statistics
ACIR	Australian Childhood Immunisation Register
ACT	Australian Capital Territory
ACTCOSS	Australian Capital Territory Council of Social Services
ACTEW	ACT Electricity and Water
AIDS	Acquired Immune Deficiency Syndrome
AIMS	Accident Incident Monitoring System
AHMRC	Australian Capital Territory Health and Medical Research Council
AIHW	Australian Institute of Health and Welfare
AMC	Alexander Maconochie Centre
ANSPS	Australian Needle Syringe Program Survey
ANU	Australian National University
APC	Admitted Patient Care collection
ASVS	Australian Standard Vaccination Schedule
ASSAD	Australian Secondary Students Alcohol and Drug Survey
ATSB	Australian Transport Safety Bureau
AWOTE	Average Weekly Ordinary Time Earnings
BMI	Body Mass Index
BOD	Burden of Disease
CATI	Computer-Assisted Telephone Interview
CDNA	Communicable Disease Network Australia
CHD	Coronary Heart Disease
CHIP	Clinical Practice Improvement Program
CMD	Chief Ministers Department
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular Disease
DoHA	Department of Health and Ageing
DoHAC	Department of Health and Aged Care
DRG	Diagnostic Related Group
EDIS	Emergency Department Information System
ERP	Estimated Resident Population
ETS	Environmental Tobacco Smoke
FTE	Fulltime Equivalents
FWE	Fulltime Workforce Equivalents
GINA	Global Initiative for Asthma
GP	General Practitioner
GPII	General Practice Immunisation Incentives Scheme
GSAHS	Greater Southern Area Health Service
GSS	2002 General Social Survey
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 Statistical Classification of Diseases and Related Health Problems, 9th Revision, Clinical Modification.
ICD-10	International Statistical Classification of Diseases and Related Health Problems, 10th Revision.
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification
IHD	Ischaemic Heart Disease
JACS	Department of Justice and Community Safety
K10	Kessler Psychological Distress Scale -10
MBS	Medicare Benefit Schedule
MMR	Measles, Mumps and Rubella
NAC	National Asthma Council Australia Ltd
NAPSS	Newborn and Parent Support Services
NATSISS	National Aboriginal and Torres Strait Islander Social Survey
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
NCHECR	National Centre in HIV Epidemiology and Clinical Research
NCHSR	National Centre of HIV and Social Research
NCSP	National Cervical Screening Program
NDARC	National Drug and Alcohol Research Centre
NDSHS	National Drug Strategy Household Survey

NDSS	National Diabetes Services Scheme
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NGO	Non-government Organization
NHMRC	National Health and Medical Research Council
NHS	National Health Survey
NMDS	National Minimum Data Set
NPC	National Prisoner Census
NPSU	National Perinatal Statistics Unit
NSP	Needle Syringe Program
NSW	New South Wales
NTS	National Tobacco Strategy
PHCI	Primary Health Care Institute, Australian National University
PHIDU	Public Health Information Development Unit
PIP	Practice Incentives Program
PPH	Potentially Preventable Hospitalisation
PPIRS	Postnatal Parenting Information and Referral Service
PSA	Prostate Specific Antigen
QEII	Queen Elizabeth II Family Centre
QTY	Queanbeyan, Tallaganda and Yarrowlumla shires
RSE	Relative Standard Error
RSI	Relative Stay Index
SAAP	Supported Accommodation Assistance Program
SAHS	Southern Area Health Service
SIDS	Sudden Infant Death Syndrome
SLTEC	Shiga-Like Toxin-producing Escherichia Coli
STI	Sexually Transmitted Infection
SNAPS	Smoking, Nutrition, Alcohol and Physical Activity Survey
TAMS	Territory And Municipal Services
TCCA	The Cancer Council Australia
TCH	The Canberra Hospital
TFR	Total Fertility Rate
VPD	Vaccine Preventable Disease
VTEC	VeroToxigenic Escherichia Coli
WHO	World Health Organisation
Winnunga	Winnunga Nimmityjah Aboriginal Health Service
WTP	Water Treatment Plant
YLL	Years of Life Lost
95%CI	95% Confidence Interval

Executive summary

The ACT Chief Health Officer's Report 2008 has been prepared to meet the requirements of the *Public Health Act 1997,* for the reporting period 1 July 2004 to 30 June 2006. The report provides information on the health of the ACT population, information about health policy and planning, health programs and services.

Overall, the report shows that the ACT enjoys a high level of health status; however, it also reveals health issues, with various health inequities in vulnerable population groups.

Chronic diseases will persist as the leading causes of the disease burden, with cardiovascular disease, cancer, diabetes, chronic respiratory and musculoskeletal conditions expected to account for more than half (52%) of the burden by 2023.

ACT PROFILE

The demographic profile of the population and projected demographic shifts have implications for health and planning in the ACT. The usually *resident population* of the ACT was 324,034 on the night of the Census in 2006. The projected ACT population for 2016 is 353,186, an estimated increase of 9% from 2006.

Over this period, most of the growth is expected to continue in older age groups. The percentage of the ACT population aged 65 years or more is projected to increase from 9.7% to 14.3% of the population between 2006 and 2016. At the same time, projections suggest there will be a decrease in the number of people aged 10-24 years in the population.

Many of the *social factors* that influence health, yield favourable results for the ACT compared to Australia. Income and education levels in the ACT are high in comparison to Australian levels and the unemployment rate for the ACT is lower than the rate for Australia. The ACT has high levels of social capital and high levels of interpersonal communication. Residents feel safe in their homes and the level of home ownership in the ACT is slightly higher than that for Australia. There are plans to enhance healthy transport options in the Territory.

HEALTH STATUS

The ACT enjoys a high level of health. Survey estimates suggest that the majority (61.5%) of adults in the ACT rate their health as either 'excellent' or 'very good' and mortality indicators suggest that more people in the ACT are living longer, healthier lives than ever before.

Life expectancy in the ACT is high in comparison to other jurisdictions and expected to increase over the next ten years. By 2015, life expectancy at birth is projected to be 83.1 years for males and 86.5 years for females, up 2.4 years for males from 2006 and 1.8 years for females. However, this increase will be associated with an increase in the number of people in the population living with a chronic disease.

The ACT comprised about 1.1% of the national *burden of disease and injury* in 2003, with an estimated 29,500 DALYs. Chronic diseases dominate the disease burden. By 2023, cardiovascular disease, cancer, diabetes, chronic respiratory and musculoskeletal conditions are expected to account for more than half (52%) of the national disease burden.

In 2005 there was a total of 1,491 *deaths* registered for persons whose usual state of residence was the ACT, (743 males, and 748 females).

The all-cause mortality rate decreased over the period from 1995 to 2005 by an average of 1.4% a year and the median age at death increased, from 73.3 years to 78.5 years.

In 2005, in the *infant mortality rate* for the ACT was 5.5 deaths registered per 1,000 live births. Deaths data for 2006 was unavailable at the time of publishing this report.

LIFESTYLE AND HEALTH

ACT *physical activity* levels are slightly higher than activity levels nationally, but moderate and vigorous levels of activity have declined in recent years. In 2005, 45.7% of adults (aged 18 years or more) and 13.9% of adolescents (aged 12-17 years) in the ACT were engaging in sufficient levels of physical activity to meet national guidelines.

Just over 8% of adults (aged 19 years or more) in the ACT consumed the recommended minimum daily *serves of vegetables* in 2005; less than half (45.7%) consumed the recommended minimum daily *serves of fruit,* as recommended in the national guidelines.

Twenty two percent of secondary students (12-17 years) surveyed in the 2005 ASSAD reported consuming four or more serves of vegetables a day and 41.7% reported consuming three or more serves of fruit each day, in-line with national dietary guidelines for adolescents.

There has been an increase in the proportion of *overweight and obese* adults (18 years or more) in Australia and the ACT in recent years. About one in five adults (18-64 years) in the ACT were obese and a third were overweight in 2005. Among adolescents (12-17 years), 14.0% were in the overweight range and 8.2% in the obese range.

Just over 15% of adults (18 years or more) and 2.9% of adolescents (12-17 years) in the ACT were *daily smokers* in 2005. There has been a decrease in the prevalence of smoking in recent years, especially among adolescents.

Alcohol consumption rates for adults in the ACT are similar to rates nationally. In 2005, a third of adults (18 years or more) in the ACT were at risk of harm from alcohol consumption in the short term and one in twenty were at risk in the long term. However, consumption rates among adolescents (12-17 years) appear to have declined significantly in recent years, with current (drank in the last week) consumption rates declining from 31.2% in 2002 to 26.3% in 2005.

Although rates of *illicit substance use* among adults (18 years or more) have not changed significantly, rates among adolescents have declined significantly in recent years. In 2005, inhalants were the most commonly used illicit substances, with 17.6% of 12-17 year olds having used inhalants at least once in their lifetime, followed by cannabis (16.9%) and tranquillisers (14.7%).

There has been a sustained decline in the uptake of *sun protection* measures by adolescents in recent years.

There is generally a *safe-sex culture* among gay men in the ACT.

HEALTH AND THE ENVIRONMENT

The ACT continues to enjoy a high-quality supply of *drinking water*.

For the period covered by this report *air quality* was generally of a high standard, with the exception of occasional high concentrations of fine particles from open wood fires in winter.

The Health Protection Service (HPS) regularly inspects *food businesses* in Canberra, as well as testing manufactured food and food sold to consumers, to ensure compliance with the Australian Food Standards Code. The HPS conducted 4,110 food premises inspections in 2004-06.

Businesses in the ACT that perform *penetration procedures on living human tissue* are audited by the HPS for compliance with national infection control standards. The HPS conducted 343 audits of licensed premises in 2004-06.

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 2004 and 2006. There were 351 inspections carried out in 2004-06.

During the reporting period, HPS provided advice on a range of legislative issues pertaining to the safe supply of *pharmaceuticals* in the Territory and supported the drafting of new medicines, poisons and therapeutic goods legislation.

The *ACT Health Emergency Sub-plan* has undergone a series of testing and revisions during the reporting period.

HEALTH SERVICES AND THEIR USE

Hospital separation rates for ACT residents at public hospitals were higher in 2005-06 than in previous years and although not the highest in the country, were higher than the national average. Hospital separations in the ACT increased by 9.2% between 2004-05 and 2005-06. Just over two thirds (67.8%) were public hospital separations and about three quarters (75.3%) of these were for ACT residents.

The relative stay index (RSI) is an indicator of hospital efficiency. The RSI for the ACT declined between 2004-05 and 2005-06, and was second equal with Queensland, after Victoria in 2005-06.

The ACT has a very low rate of potentially preventable hospitalisations (PPH) in comparison to other jurisdictions. Although there was an increase in the overall PPH rate for the ACT between 2004-05 and 2005-06, the ACT was 32% lower than the national average.

Elective surgery waiting lists and emergency department triage category timeframes provide an indication of access to public hospital services. Both have been identified as key areas for improvement in the ACT. During 2005-06, a record number of elective surgery procedures were performed and although there was an increase in emergency department presentations between 2004-05 and 2005-06, especially in the complex care area, ACT public hospital emergency departments were able to maintain existing triage category timeframes.

The number of residential aged care places increased slightly in the ACT between 2004-05 and 2005-06, from 1,556 to 1,594 places (AIHW 2006 2007c). However, the rate per 1,000 population aged 70 years or more remained lower than the rate for Australia.

The ACT has a low rate of general practitioner fulltime workload equivalents (FWEs), per 100,000 population compared to other jurisdictions (with the exception of the Northern Territory) and there has been a consistent decrease in the rate over the last five years.

CARDIOVASCULAR DISEASE

In 2005, cardiovascular disease accounted for 480 deaths among ACT residents and is a leading cause of mortality in the ACT. However the mortality rate has declined over time.

The leading cardiovascular diseases contributing to mortality were ischaemic heart disease, (42.9% of all cardiovascular disease deaths in the ACT), and stroke (27.1%).

Cardiovascular disease was listed as a principal diagnosis for 5,143 ACT hospital separations for ACT residents in 2005-06 with the hospitalisation rate for this disease being stable since 1997-98.

Commonly performed procedures at ACT hospitals for cardiovascular disease include coronary angiography, coronary artery bypass grafting and coronary angioplasty.

An estimated 18.9**%** (59,700) of ACT respondents to the National Health Survey had a disease of the circulatory system (including hypertension), which was expected to last, or had lasted six months or more (2004-05). This rate was similar to that reported for the whole of Australia (18%) at that time.

CANCER

Cancer was estimated to account for about a fifth (19%) of the burden of disease and injury in Australia in 2003. Cancer projections suggest that the number of people diagnosed with cancer will increase by about 22% each year in the ACT up to 2011, largely because of population growth and changes in the age structure over time.

Between 2001 and 2005, there were 6,121 new cancers diagnosed in the ACT, with an overall age standardised incidence rate of 517.9 per 100,000 population for males and 390.5 per 100,000 population for females. The risk of developing cancer before the age of 75 years was one in three for males and one in four for females. The most common cancers diagnosed during this period were breast cancer (17% of all cancers diagnosed), prostate cancer (15%), colorectal cancer (13%), melanoma (11%), and lung cancer (7%).

The cancer mortality rate has declined markedly over the last 20 years. Between 1983 and 2005, there was an average annual decrease in mortality rates for males and females of 2.6% and 1.2%, respectively. Between 2001 and 2005, there were 2,068 deaths registered for ACT residents with cancer recorded as the underlying cause of death. The leading causes of cancer mortality in the ACT during this period were lung cancer (15% of all cancer deaths), colorectal cancer (12%), breast cancer (8%), prostate cancer (7%) and non-Hodgkin's lymphoma (5%).

MENTAL HEALTH

Mental health disorders are the third leading burden of disease for Australians and is a major cause of chronic disability.

Survey estimates suggest that about 15.3% of the adult (18 years or more) ACT population had a mental health disorder that had been diagnosed by a doctor in 2005. National estimates suggest that about half of those with a mental health disorder also have a co-morbidity.

Mental health and behavioural disorders accounted for 2.7% of all registered deaths for ACT residents in 2005. This figure excludes death from intentional self-harm or suicide, which accounted for a further 2.3% of registered deaths.

The number of hospitalisations for mental health disorder in the ACT has decreased each year over the last five years. At the same time, there has been an increase in the number of community-based occasions of service provided by Mental Health ACT each year. This trend may continue as more services are provided in the community setting for those with less acute conditions, leaving hospital services for those with more acute care needs.

The *ACT Mental Health Strategy and Action Plan 2003-2008* outlines a series of actions aimed at reducing the mental health disability burden through an increased emphasis on promotion, prevention, an increased capacity for early intervention, access to appropriate, coordinated, quality treatment services and refined service delivery systems in the ACT.

INJURY

Injury has been estimated to account for about 7% of the total burden of disease and about 8% of direct health system costs in Australia each year. Strategies to prevent injury provide an opportunity to reduce the burden due to premature death, chronic disability and associated health system costs.

In 2005-06, an injury was recorded as the principal diagnosis in 6.9% of all ACT resident separations from ACT hospitals. The leading causes of injury-related separations were falls (28.6% of all injury-related separations), complications of care (15.6%), road transport injury (11.7%) and intentional self-harm (7.0%).

Mortality rates from injury have decreased over the past three decades; however, male mortality rates are higher than female rates. In 2005, there were 120 deaths registered (males: 81; females: 39) from injury in the ACT. In 2004, the leading underlying causes of

injury-related mortality in the ACT were intentional self-harm (32.0% of all injury-related mortality), road transport injury (20.3%), accidental poisoning (21.0%) and falls injury (8%).

According to the results of the 2005 ACT General Health Survey, almost a third (31.5%) of respondents aged 65 years or more reported having a fall in the 12 months prior to survey. Generally, older females were more likely to be hospitalised for an injury resulting from a fall than older males, but older males were more likely to die from a fall-related injury. Hospitalisation data shows that nationally, among older people, most fall-related injuries occur in the home and about one in five occur in aged-care facilities.

The road transport injury mortality rate has decreased markedly since the late 1990s. The ACT has a relatively low mortality rate compared to Australia, but in 2005, there was an increase in the rate, largely due to an increase in the number of motorcycle deaths registered for ACT residents.

The ACT has the highest participation rates in ice and snow sports in the country and the highest hospitalisation rates from ice and snow-related injury. In 2002-03, 9.9% of all ice and snow-related injury hospitalisations in Australia were for a head injury, highlighting the importance of wearing helmets in ice and snow sports.

DIABETES MELLITUS

Diabetes is a progressive chronic disease, accounting for 3.5% of the disease burden in the ACT.

The evidence available suggests that the prevalence of diabetes has increased for both the ACT and Australian populations in recent years. However, mortality rates for the ACT and hospital separation rates for ACT residents in the ACT, where the primary diagnosis is diabetes, have not changed significantly over time.

Estimates from the 2004-05 National Health Survey show 3.2% of the ACT population had been diagnosed with diabetes for six months or more, although this is likely to be an underestimate of prevalence in the population.

The prevalence of diabetes in the ACT is expected to increase markedly over the next decade. Estimates indicate that there were between 10-15,000 people in the ACT with diabetes in 2005. Projections indicate that by 2020, there will be between 15-22,000 such people, an increase of about 50% over the period.

In 2005, there were 45 ACT resident deaths where diabetes was reported as the underlying cause of death. The mortality rate for diabetes in the ACT was 17.8 deaths per 100,000 population, similar to the rate in recent years (2004: 17.7 per 100,000 population).

There were 4,324 ACT resident diabetes-related separations from ACT hospitals in 2005-06. Cardiovascular disease, contact with health services and endocrine, nutritional and metabolic disorders were the most common principal diagnoses with an associated diagnosis of diabetes in 2005-06.

ASTHMA

Although there are indications that asthma prevalence has declined nationally in recent years, it remains high by international standards. Estimates from the 2004-05 National Health Survey (NHS) show that about 32,300 people in the ACT had current asthma at the time of interview. This equates to about 10.2% of the ACT population in 2004-05, compared to 12.3% of the population in 2001.

The 2004-05 NHS also shows that one in ten (10.8%) adults (18 years or more) with asthma were also current smokers, two-thirds (67.0%) were sedentary or had low exercise levels and about half (52.4%) were overweight or obese at the time of the survey. Nationally, less than a quarter of respondents with asthma had an asthma management plan and only 14.1% of people with current asthma reported the use of corticosteroids in the previous two weeks. These results present opportunities for action to reduce the asthma burden.

A recent Australian study has shown that people with asthma are more likely to have major chronic conditions such as cancer, cardiovascular disease, diabetes and arthritis than the wider population and they are more likely to experience a reduced quality of life as a result.

Mortality rates and hospital separations for asthma have decreased over time in the ACT. However, hospital separation data show that serious asthma morbidity is more common among young children and older people, providing further direction for targeting efforts to reduce the asthma burden.

NOTIFIABLE COMMUNICABLE DISEASE

Immunisation coverage rates for children in the ACT were amongst the highest in Australia and were consistently above the national average during 2004-2006. In 2006 the coverage rates were 91.4% (12-15 months), 93.4% (24-27 months) and 86.8% (72-75 months).

Between 2004 and 2005, there was a slight decrease (6%) in the number of hospital separations for vaccine preventable diseases (VPD). VPDs comprised a third (29%) of all hospital separations for notifiable communicable diseases in 2005.

The most commonly notified communicable diseases in 2006 were chlamydia (35%), campylobacter (17%), pertussis (12%) and hepatitis C (8%).

Between 2004 and 2006, there were increases in the notification rates for chlamydial infection, salmonellosis, cryptosporidiosis, and influenza, while there were decreases in notification rates for gonococcal infections, pertussis, invasive pneumococcal disease, meningococcal disease, mumps, malaria and hepatitis C (incident).

MATERNAL & CHILD HEALTH

There were 4,995 women who gave birth to 5,088 babies in the ACT during 2005. Non-ACT resident women accounted for 15.5% of these women.

Caesarean section and induction of labour rates were significantly lower in the ACT than nationally.

The percentage of ACT resident women who smoked during pregnancy was significantly lower than for Australian women.

There is a continuing trend for women to be older when giving birth. ACT women 35 years and older who gave birth were more likely to have a caesarean section and less likely to have spontaneous onset of labour. They were also more likely to have a multiple birth and to have a longer stay in hospital. Older women were less likely to smoke during pregnancy.

The perinatal mortality rate for the ACT was 8.7 per 1,000 births for 2001 to 2005, similar to the Australian rate (8.2 per 1,000 births).

Over the ten year period from 1996 to 2006 the population size of children declined by more than 7%.

In 2006, one in four children (25.8%) in Year 6 ACT primary schools were overweight or obese, with this tendency being greater in boys. In the 2004-08 budget initiative, ACT Health established the “Combating Childhood Obesity” initiative to address issues of obesity through interventions that increase good nutrition, levels of physical activity, change environments and provide improved surveillance of trends in the prevalence of obesity in ACT children.

THE HEALTH OF ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE IN THE ACT

There were 3,875 ACT residents who identified as Aboriginal and Torres Strait Islander in the 2006 Census. This was an increase of 9.2% since the last census in 2001.

In 2004-05, it was estimated that nearly four in ten male and half of all female Aboriginal and Torres Strait Islander people were current smokers.

Fifty-seven percent of ACT Aboriginal and Torres Strait Islander people were classed as overweight or obese compared to 47% of ACT non-Aboriginal people.

The average age of Aboriginal and Torres Strait Islander people who had a hospital separation was 33 years, significantly younger than the average age for non-Aboriginal people (44 years).

In 2006, ACT Health provided funds to Winnunga Nimmityjah Aboriginal Health Service for health promotion activities targeting health risk factors including smoking cessation programs such as “No more boondah”. A particular target area for this funding was smoking during pregnancy.

In 2006, a new Aboriginal and Torres Strait Islander Health and Family Wellbeing Plan for the ACT was released, with a focus on family resilience, maternal and child health, social health, chronic and infectious disease, the frail aged and people with disabilities.

THE HEALTH OF THE ACT PRISON POPULATION

The ACT prison population has a demographic profile similar to the profile of the NSW prison population. It is a predominantly male population that is ageing, with a mean age of 33.9 years in 2006. Although their actual numbers are small, Aboriginal and Torres Strait Islander people are over-represented. Eighty percent of all detainees have been sentenced and just over half (52.3%) the ACT prison population was detained in NSW prisons, as at 30 June 2006.

The health status of the ACT prison population is not known, but may be inferred from the 2001 NSW Inmate Health Survey. The survey showed that prisoners were less likely to report their health as ‘excellent’ or ‘very good’ and more likely to report their health as ‘fair’ or ‘poor’, than the non-prison population. They had high rates of substance use and the prevalence of bloodborne viruses was high, especially for hepatitis C. Rates of disability and mental illness were high and intentional injury was common.

More than a quarter of all prisoners surveyed had high levels of serum cholesterol, indicating an increased risk of heart disease. There were also high rates of high blood sugar recorded among prisoners who identified as ‘non-diabetic’. Ninety-five percent of females and 78% of males reported having been diagnosed with at least one chronic health condition.

The Alexander Maconochie Centre is currently under construction, and is due to commence operations in 2008. All persons sentenced by ACT courts, currently in NSW, will be relocated once this facility opens.

ACT Health plan to undertake a health survey of the ACT prison population once the Alexander Maconochie Centre is fully operational. The information obtained from the survey will be used to plan future health services for prisoners in the ACT.

1 INTRODUCTION

This ACT Chief Health Officer's Report covers the two-year period from 1 July 2004 to 30 June 2006. The report provides a comprehensive profile of the health and well-being of the ACT population, as required under Section 10 of the *Public Health Act 1997*.

The information presented in this report shows that the ACT continues to enjoy a high level of health status. Life expectancy remains high in the ACT and is expected to continue to increase over the next ten years. When asked about their health, the majority of people in the ACT rate their own health as being 'very good' or 'excellent'.

Although chronic diseases have emerged as a primary health concern in all developed countries, accounting for a high proportion of deaths, disability and illness, levels of chronic disease in the ACT population appear to be similar to levels nationally.

There are however, areas of concern, including health inequalities between population groups, the effects of social factors that influence health differently for different populations, disease prevention issues and hospital service access issues.

The format of the report is similar to previous reports with one health topic covered in each chapter. 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 overall health status of the ACT population. The report also profiles environmental health, health service use, selected chronic diseases, injury, mental health, communicable diseases, maternal, infant and child health and the health of Aboriginal people in the ACT.

The report also includes a chapter providing an overview of what we know about the health of the ACT prison population. This chapter focuses on the demographic structure of the prison population and makes inferences about health status based on information from the NSW prison population. It is a timely addition to the report, given the development of the new prison, the Alexander Maconochie Centre, which is due to commence operations in 2008.

The information presented in this report has been derived from a range of sources, including mortality records, hospital records, notifiable disease data, screening program and immunisation registers, survey data, published statistical reports and journal articles. A set of references is provided at the end of each chapter. A methods section in the appendices provides details of specific data sources that have been consulted in the preparation of this report.

Where the required information for the reporting period is not yet available, is not considered reliable, or was not collected, the most recent and reliable information available has been presented. In some instances, the information provided is for a calendar year (eg 2005) or for a financial year (eg 2005-06) or for a specific period (eg 2004-05 to 2005-06, which covers two financial years). In other instances, the information provided falls outside of the reporting period and either precedes the reporting period (ie is prior to 1 July 2004) or follows on from the reporting period (ie 1 July 2006 onwards). This is clearly noted in each instance.

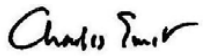
Most of the information provided is focussed on the ACT resident population; however, there are specific sections that include information relevant to the wider Australian Capital Region, or to other jurisdictions. Once again, this is noted in each instance.

The interpretation and comparison of rates is a concern for the ACT. With a small population base, the ACT generates small numbers of health events that result in rates that fluctuate considerably from year to year. The reliability of survey estimates is also a concern for the ACT, again largely due to our small population. These issues can complicate meaningful interpretation of statistics and trends for the ACT. The methods section in the appendices outlines how we have compared results, undertaken significance testing and assessed estimate reliability for data from different sources.

Readers should also note that on occasions, data are reported differently to that reported in national publications and are therefore not always comparable. Methods of calculating rates have been noted to ensure that no misunderstanding occurs.

Finally, I would like to acknowledge the many people who have contributed to this report. I will name only two here: my predecessor, Paul Dugdale, and former PHRC staff member Liza Kelsall.

We trust this report is helpful. In 2008-09, we will be undertaking an evaluation of the Chief Health Officer's Report. I encourage you to provide us with your comments by completing the enclosed evaluation form at the back of the report and sending it to the address provided. Alternatively, comments on any aspect of the report are welcome by email to charles.guest@act.gov.au.



Dr Charles Guest
ACT Chief Health Officer

2 ACT PROFILE

At a Glance

- The Australian Capital Territory is the smallest state or territory in Australia, covering approximately 2,400 sq km in area. Most of the population resides within Canberra, which is the major health referral centre for the population residing in the region.
- The usually resident population of the ACT was 324,034 persons on the night of the Census in 2006. The population is expected to grow by a further 9% over the next ten years to 353,186 by 2016.
- Most of the population increase over this period is expected to occur in older age groups. At the same time, projections suggest there will be a decrease in the number of people aged 10-24 years in the population.
- Many of the social factors that influence health, reviewed in this chapter, yield favourable results for the ACT compared to Australia:
  - Income and education levels in the ACT are high in comparison to Australia.
  - The unemployment rate for the ACT is lower than the rate for Australia.
  - The ACT has high levels of social capital and high levels of interpersonal communication.
  - ACT residents feel safe in their homes.
  - There are plans to enhance healthy transport options in the Territory.
  - The level of home ownership is slightly higher than the level for Australia.

The Australian Capital Territory is the smallest state or territory in Australia, covering approximately 2,400 sq km in area. More than half the ACT is reserved for conservation, 10% is reserved for forestry, a further 10% is rural and about 10% is designated urban (ABS 2005).

The majority of the population resides within Canberra, which covers an area of approximately 806 sq km. The ACT is bounded by the state of New South Wales (NSW) and Canberra is the major health referral centre for the greater Southern region of NSW. The maps on the following page (Figure 2.1) not only outline relevant ACT boundaries, including Canberra and its districts, but also the wider Australian Capital Region. Approximately 460,000 people live in this surrounding region.

Figure 2.1: Maps of the Australian Capital Region including Canberra districts & surrounding NSW.

Data source: ACT Planning and Land Authority 2003.

2.1 The ACT & surrounding NSW population

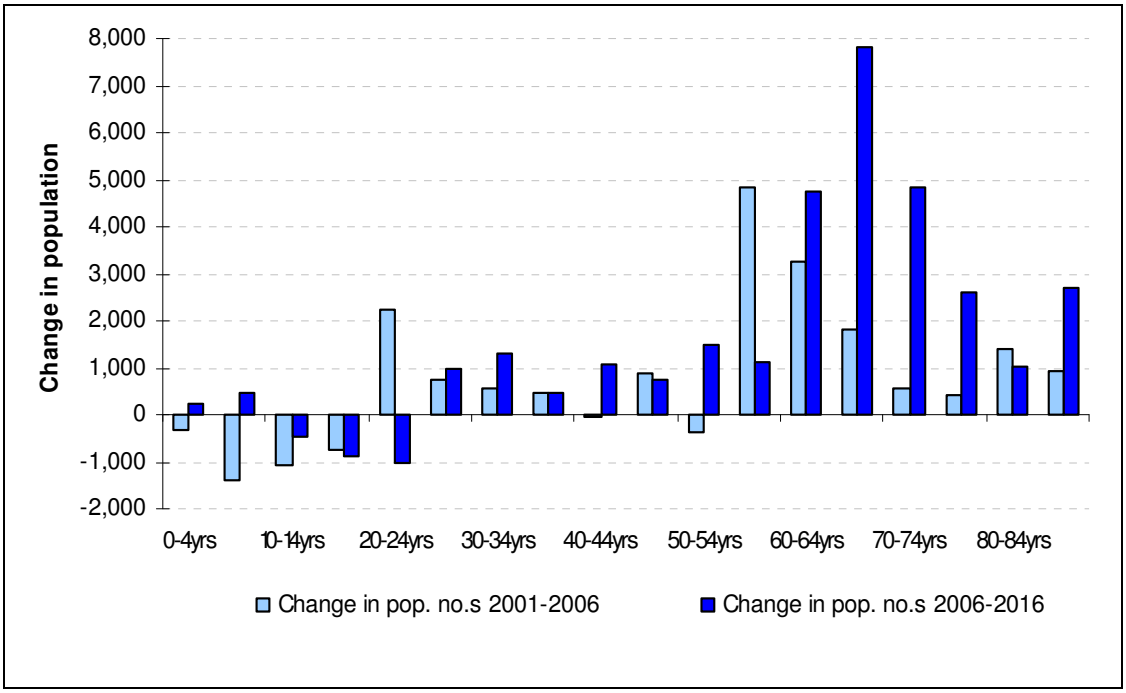
The usually resident population of the ACT was 324,034 persons on the night of the Census in 2006. This represents an increase of 4.5% from the 2001 Census population, or an additional 14,000 persons. Most of the population increase between the 2001 and 2006 Census occurred in older age groups (Figure 2.2).

The ACT population is expected to grow by a further 9% over the next ten years to 353,186 by 2016. Over this period, most of the growth is expected to continue in older age groups (Figure 2.3). The percentage of the ACT population aged 65 years or more is projected to increase from 9.7% to 14.3% of the population between 2006 and 2016. At the same time, projections suggest there will be a decrease in the number of people aged 10-24 years in the population.

The population in the NSW catchment area of the Greater Southern Area Health Service (GSAHS) is projected to grow at about 0.9% per annum, to 481,180 persons by 2011(GSAHS 2005). Patterns of population growth are expected to vary between different geographical areas and about 45% of this growth will occur in what were the Queanbeyan, Tallaganda and Yarrowlumla (QTY) shires. The population aged 65 years or more in the Yarrowlumla (QTY) area is projected to grow by 4.3% per annum to 2011, faster than the projected growth rate for other areas of the ACT surrounding region.

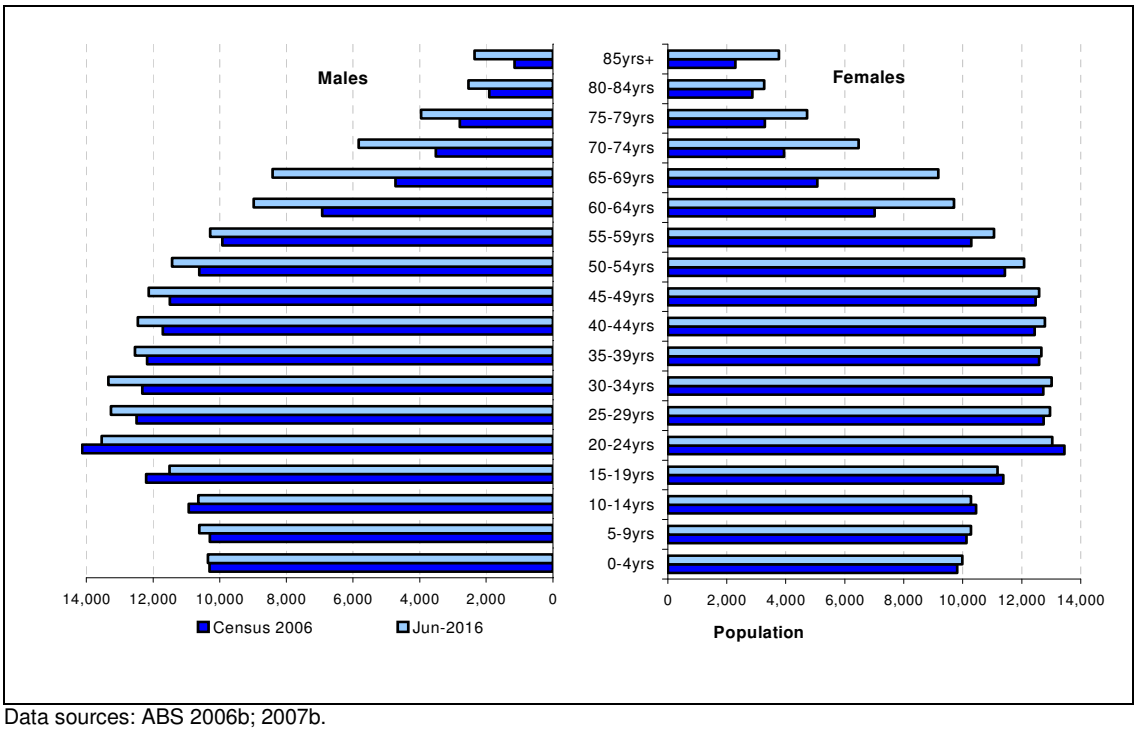
Changes over time to the size and composition of the ACT population and the surrounding NSW catchment area will have implications for future health service planning and policy direction. An important implication of the shift towards an older population is an expected increase in the number of people with age-related chronic disease. In response, ACT Health is strengthening efforts in disease prevention and management and focussing on approaches that promote positive and healthy ageing.

Figure 2.2: Change in population, by age group, ACT, 2001-06 & 2006-16.



Data sources: ABS 2006a; 2006b; 2007b.
Note: Population based on change in the usually resident 2001 & 2006 Census populations and ABS projected ACT population in 2016.

Figure 2.3: The 2006 ACT usually resident Census population & the 2016 ACT projected population, by sex & age group.



Data sources: ABS 2006b; 2007b.
Note: Population based on the ACT usually resident 2006 Census & the ABS projected ACT population in 2016.

2.2 Population mobility

Population growth is influenced by the natural increase (births less deaths) in a population and net migration (immigration less emigration). During 2005-06, the ACT population increased by about 3,000 persons. Most of the increase was due to natural increase, with a gain of about 160 persons through net migration (ABS 2007a).

At present, net migration contributes little to the ageing of the ACT population. There are about 500-600 older people who come into the ACT each year. This is offset by about the same number of people who move away from the ACT each year. In 2005-06, there was a slight loss in population for the age group 65 years or more (- 27 persons), due to net migration. In contrast, the ACT experienced a slight increase in population due to net migration for the age group 75 years or more (+ 55 persons).

2.3 Social factors that influence health

Social and economic factors such as income and education levels impact on the health burden (Turrell et al 2006). Social disadvantage is associated with potentially avoidable poor health outcomes, and in the ACT, indicators of material disadvantage have been linked to poor health status, lower levels of service utilisation and service access (Wilkinson & Marmot 2003, Glover et al 1999). The factors that explain the interrelationships between the social environment and health are not always clear, but are important in population health status assessment for policy and planning purposes.

ACT Health 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 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 community.

2.3.1 Income

The ACT enjoys a high level of economic prosperity, so income levels are generally higher than income levels nationally (Table 2.1). In May 2006, the average weekly ordinary time earnings (AWOTE) for adults in full-time employment in the ACT was 15.4% (or $160 per week) higher than the AWOTE for Australia (ABS 2007f).

In 2006, the mean equivalised gross household income per week for the ACT was $235 (29.1%) a week higher than the mean for Australia (ABS 2007d, 2007e).

2.3.2 Labour force

Labour force participation is an important social factor that can affect an individual's ability and opportunity to make healthy choices. As at 30 June 2006, the ACT had the highest labour force participation rate in Australia, at 73.1% (ABS 2006e). Of those employed in the ACT at 30 June 2006, three quarters (75.2%) were employed full-time (ABS 2007c).

The average annual unemployment rate for the ACT has decreased markedly in recent years and the ACT had the lowest unemployment rate in Australia. As at 30 June 2006, 3.0% of ACT residents were unemployed, compared to 4.8% nationally (ABS 2006e) (Table 2.1).

2.3.3 Income support

The Commonwealth 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, people who are unwell or have a disability, widows, single parents, students and families with children. In December 2005, the most popular Centrelink benefit was the Family Tax benefit, with 6.8% of the ACT population receiving Family Tax benefit (A) and 5.2% receiving Family Tax benefit (B). This was followed by the age pension (5.4%) and the disability pension (2.2%) (ABS 2006d). For each benefit type, the proportion of the ACT population on income support was lower than the proportion for the national population (Table 2.1).

2.3.4 Education

The ACT has high education attainment levels compared to other jurisdictions (Table 2.1). Most of the population completed their secondary school education, with only 19.0% of people aged 15 to 64 years not having completed Year 12 in 2005, compared to 31.2% nationally (ABS 2006c).

The ACT also has a very high school retention rate compared to other jurisdictions, 88.7% compared to 74.7% for Australia in 2006 (ABS 2007g). The retention rate is a measure of full-time students in a designated level of education who continue to a particular level of education.

Many students go on to higher education once they have completed their secondary school education. In the ACT, tertiary qualification rates are high. In 2005, for instance, 39.5% of the ACT population aged 25 to 64 years had a bachelor degree or higher degree, compared to 22.7% of the Australian population (ABS 2007d).

2.3.5 Family structure

Family structure and living arrangements can have an impact on health and wellbeing. Lower levels of family income are more common among single parent families, and family breakdown can have adverse effects on children and their parents (ABS 2004a). According to the results of the 2006 Census, 15.1% of families in the ACT were single parent families, similar to the proportion for Australia (ABS 2007b, 2007h). The Census results also show that more than a quarter (28.0%) of single parent families in the ACT earned less than $650 per week, compared to 3.2% of couples with children (Table 2.1).

2.3.6 Housing

In 2006, there were about 117,000 households in the ACT (ABS 2007b). Projections suggest the ACT will experience a growth in the number of households to between 158,000-167,000 by 2026, a growth of between 31-39% (ABS 2004b). This increase is largely due to a projected increase in one-person households over time. Census results show that in 2006, 23.2% of all occupied private dwellings in the ACT were lone person households, up from 22.2% in 2001 (ABS 2007b).

The 2006 Census results also show that there was an average of 2.6 persons per household in the ACT, the same number as reported in the 2001 Census. This is also the same number reported for Australia in the 2001 and 2006 Census (ABS 2007b) (Table 2.1).

The level of home ownership in the ACT is similar to that for Australia. The Census results show that 68.5% of ACT dwellings were owned with or without a mortgage in 2006, compared to 68.1% nationally (ABS 2007b, 2007h).

The Supported Accommodation Assistance Program (SAAP), supported by the Australian and state and territory governments, aims to assist people who are homeless or at risk of becoming homeless. Statistics from the SAAP provide estimates of homeless persons in the ACT. In 2005-06, there were an estimated 1,900 SAAP clients in the ACT (AIHW 2007). Just under half (47.2%) were female. The mean age of clients was 33.7 years for males and 26.3 years for females.

2.3.7 Social capital

A variety of indicators were used to measure different aspects of social capital. The 2006 Australian General Social Survey asked respondents about social and support networks (ABS 2007d) and the 2005 ACT General Health Survey included questions about neighbourhood safety and trust. Data from the two surveys shows the ACT has a high level of social capital. This is similar to the results for Australia, although in the ACT, people are less likely to have had contact with family (Table 2.1).

2.3.8 Crime and safety

Safety from crime and physical or threatened violence is important to wellbeing. In 2006, adults aged 18 years or more in the ACT were less likely to feel unsafe or very unsafe at home alone after dark than adults nationally (ABS 2007d, 2007e). They were also less likely to be the victim of physical or threatened violence in the previous 12 months, but were more likely to be the victim of an actual or attempted break-in in the previous 12 months (Table 2.1).

2.3.9 Communications

Having access to communications technology, including computers, the internet and fixed or mobile phones, increases social capital by enhancing interpersonal communications and social relationships (Quan-Haase & Wellman 2004). Communications technology also supports health service access and the dissemination of health information.

The ACT has the highest level of internet use in Australia, with 81% of adults aged 15 years or more using the internet in 2005-06, compared to 66% for Australia (ABS 2006f) (Table 2.1). The ACT also has very high rates of internet access in the home. In 2005-06, 68% of households had internet access at home, compared to 57% of households nationally.

Information derived from the 2006 General Social Survey suggests that adults aged 18 years or more in the ACT were more likely to communicate with friends and family via the internet or mobile phone than adults nationally (ABS 2007d, 2007e).

Young adults aged 18-24 years had the highest mobile phone communication rates of all age groups. In the ACT, 98% of respondents in this age group reported contacting family or friends outside the household in the last 3 months by mobile phone/SMS, compared to 81.2% of all ACT adults (ABS 2007d).

2.3.10 Transport

Survey data show that the ACT has a high number of passenger vehicles per capita (ABS 2006c), and most people are able to get to places when required, although this is an issue for a small proportion of the population (ABS 2007d) (Table 2.1).

In 2004, the ACT Government released *The Sustainable Transport Plan for the ACT*, a policy framework to create a more sustainable public transport system for the ACT. Such a system is expected to lower greenhouse gas emissions, air pollution and traffic-related accidents, all of which have potential health impacts.

The Plan sets out a range of priority areas for improvement including busways and buses, the provision of real time information, improving public transport interchanges, TravelSmart programs, integrated land use and improved cycling and walking facilities.

Cycling and walking, in particular, are affordable and healthy alternative forms of transportation, and cycling is currently supported in the Territory by about 3,740 kilometres of cycle paths. Although there are no comprehensive estimates of the number of cyclists on our roads, there is some evidence to suggest that cycling is growing in popularity (ATSB 2006). The national Exercise, Recreation and Sport Survey (ERASS) results show that there was an increase over time in the proportion of ACT adults aged 15 years or more who reported cycling at least once in the previous 12 months, up from 14.8% in 2001 to 17.4% in 2005 (Sport and Recreation Services ACT 2007).

Table 2.1: Selected social factors that influence health, ACT & Australia.

	ACT	Australia
Income		
Mean equivalised gross household income per week (2006)	$1,042	$807
Average weekly ordinary time earnings for adults[(a)] in full-time employment (May 2006)	$1,202	$1,042
Labour force (June 2006)		
Participation in the labour force by persons aged 15 years or more, employed/unemployed	73.1	64.6
Unemployment rate for persons aged 15 years or more in labour force	3.0	4.8
Proportion of population aged 15 years or more employed in full-time work	75.2	70.8
Income support (Centrelink clients in December 2005)		
Family tax benefit (A)	6.8	8.8
Family tax benefit (B)	5.2	6.8
Age pension	5.4	9.3
Disability support pension	2.2	3.5
Austudy	0.1	0.1
Youth allowance	1.5	1.6
Newstart	1.3	2.1
Single parent	1.5	2.1
Education (2005)		
Apparent retention rate for fulltime students in Year 7,8 - Year 12	88.7	74.7
Did not complete year 12 (15-64yrs)	19.0	31.2
Have a bachelor degree or above (25-64 years)	39.5	22.7
Family structure (2006)		
Couple family - no children	36.2	37.2
Couple family - with children	47.0	45.3
Single parent family	15.1	15.8
Other family	1.6	1.7
Housing (2006)		
Average number of persons per household	2.6	2.6
House owner without a mortgage	29.9	34.0
House owner with a mortgage	38.6	34.1
Renter	29.4	28.1
Social capital		
Contact with family or friends living outside the household in last week (2006)	81.6	96.3
Could ask for small favours from persons living outside the household (2006)	95.8	92.1
Persons able to ask for support in time of crisis from persons living outside the household (2006)	95.4	93.3
Feel neighbourhood is safe (2005)	89.7	-
Feel people in the neighbourhood trust one another (2005)	79.1	-
Crime & safety (2006)		
Persons who feel unsafe or very unsafe at home alone after dark	5.1	6.7
Victim of physical or threatened violence in last 12 months	9.9	10.8
Victim of actual or attempted break-in in last 12 months	12.8	9.4
Communications (2006)		
Use of internet at any site, including home, work, internet cafe etc (2005-06)	81.0	66.0
Household access to the internet at home (2005-06)	68.0	57.0
Had contact with family or friends outside household in last 3 months via internet (email/chat rooms) (2006)	64.5	47.1
Had contact with family or friends outside household in last 3 months by mobile phone/SMS (2006)	81.2	77.4
Had contact with family or friends outside household in last 3 months by fixed telephone (2006)	91.9	90.7
Had contact with family or friends outside household in last 3 months by mail (including cards) or fax (2006)	37.3	31.0
Transport		
Can easily get to the places needed (2006)	90.4	84.1
Cannot, or often has difficulty getting to the places needed (2006)	2.2	4.3
Number of passenger vehicles per 1,000 population (2005)	580	536

Data sources: ABS 2006c-f, 2007b-h; 2005 ACT General Health Survey, confidentialised unit record file.

(a) Adults are defined as employees aged 21 years or more, or employees under 21 years of age that are paid the full adult rate for their occupation.

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3 HEALTH STATUS

At a Glance

- The ACT enjoys a high level of health. Survey estimates suggest that the majority (61.5%) of adults in the ACT rate their health as either 'excellent' or 'very good'.
- Life expectancy is high in comparison to other jurisdictions and expected to increase over the next ten years. This increase will be associated with an increase in the number of people in the population living with a chronic disease.
- Survey estimates suggest that the ACT population is more likely to suffer hay fever and allergic rhinitis, mental and behavioural problems and short sightedness compared to the national population.
- The ACT comprised about 1.1% of the national burden of disease and injury in 2003, with an estimated 29,500 DALYs. The burden was distributed similarly between males (50.4%) and females (49.6%) and about half (47.5%) was due to mortality and the other half (52.5%) due to disability.
- Chronic diseases dominate the disease burden. By 2023, cancer, cardiovascular disease, diabetes, chronic respiratory and musculoskeletal conditions alone are expected to account for more than half (52%) of the national disease burden.
- The mortality rate has declined over the last ten years, while the median age at death has increased. In other words, more people in the ACT are living longer lives than ever before.

3.1 Life expectancy

Life expectancy is a key summary measure of population health and 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.

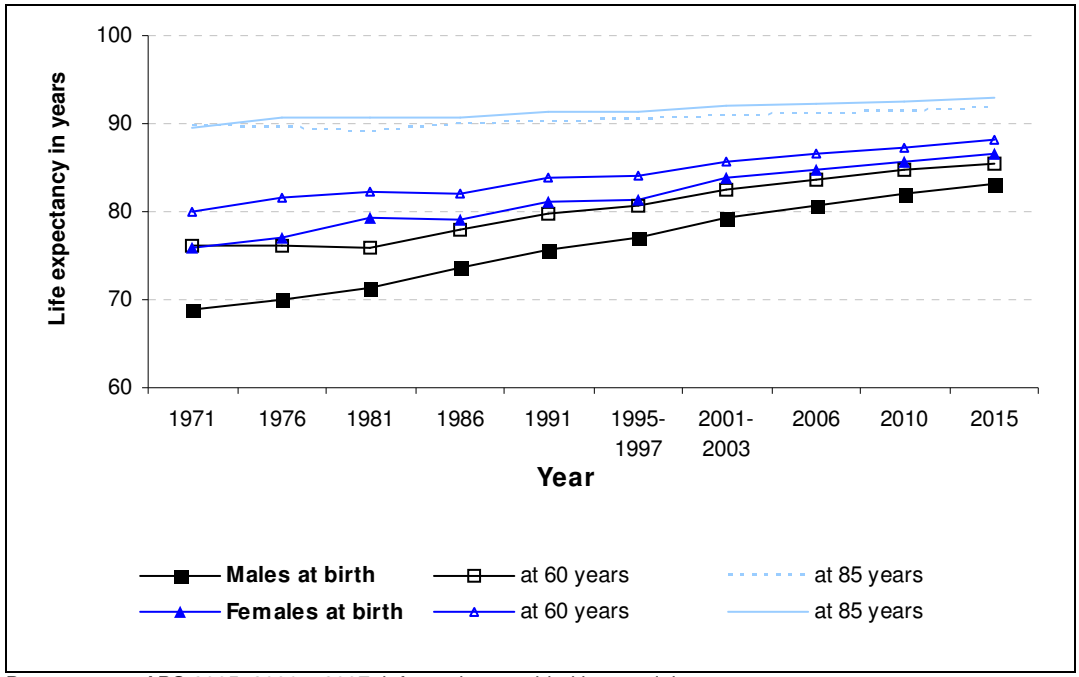
Life expectancy has increased steadily in Australia since the early 1900s and is now amongst the highest in the world (AIHW 2006). Estimates of life expectancy for the ACT are consistently higher than estimates for other jurisdictions. In 2005, the ACT had the highest life expectancy of any jurisdiction in Australia (ABS 2006a).

Projections for the ACT suggest that life expectancy will continue to increase over the next ten years. By 2015, life expectancy at birth is projected to be 83.1 years for males and 86.5 years for females, up 2.4 years for males from 2006 and 1.8 years for females. Males aged 75 years in 2006, who reach 85 years of age in 2015 could expect to live to 91.7 years, while their female counterparts could expect to live to 92.9 years (Figure 3.1).

The estimates for females are higher than those for males; however, males have experienced greater gains in life expectancy than females over the last three decades. These gains are partially explained by reductions in male smoking rates over time, reductions in road transport mortality and advances in the treatment of cancer and cardiovascular disease, where male mortality rates have historically exceeded female rates.

There have also been marked gains in life expectancy for persons reaching the age of 60 years and 85 years. The projected increases in life expectancy for these older age cohorts, establish the need for more proactive approaches to chronic disease prevention and management to ensure the years gained in later life are 'healthy' years.

Figure 3.1: Trends in life expectancy, by sex, ACT 1971-2015.



Data sources: ABS 2005; 2006a; 2007, information provided by special request.

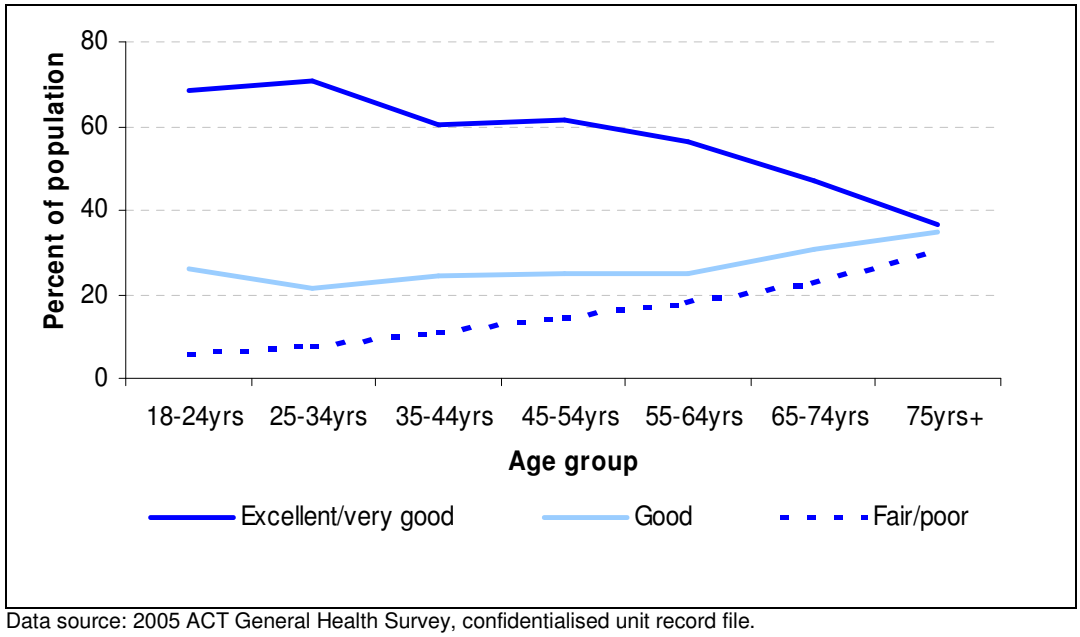
Note: Data for 1971 to 1991 are based on death data for individual years and data for 1995 to 2005 are based on three-year aggregates of death data. Life expectancy between 2006 and 2015 are projections based on current mortality rates and have been provided by the ABS by special request.

3.2 Self reported health status

Self reported health status is a reliable, independent predictor of future health service use and survival, complementing more objective measures of health (Idler & Benyami 1997; Milunpalo et al 1997).

The 2005 ACT General Health Survey asked respondents to rate their general health. Overall, 61.5% of adult (18 years or more) respondents rated their health as 'excellent' or 'very good'. Younger respondents were significantly more likely to rate their health as 'excellent' or 'very good', than older respondents (Figure 3.2).

Figure 3.2: Self-reported health status (adults aged 18 years or more), by age group, ACT, 2005.



Data source: 2005 ACT General Health Survey, confidentialised unit record file.

Note: Estimates are based on self-report by respondents to the 2005 ACT General Health Survey.

3.3 The burden of disease and injury

The disability-adjusted life year (DALY) is a summary measure used to estimate the total burden of disease and injury in a population. The DALY estimates the amount of time that is lost due to disease and injury from both fatal (mortality) and non-fatal (disability) events (AIHW 2007).

The total burden of disease and injury in Australia in 2003 was estimated to be 2.6 million DALYs. Cancer (19%) was the leading cause of the disease burden, followed by cardiovascular disease (18%) and mental health disorder (13%). The ACT comprised about 1.1% of the national burden in 2003, with an estimated 29,500 DALYs. The DALY burden in the ACT was distributed similarly between males (50.4%) and females (49.6%). Around half the burden of disease was due to mortality (47.5%) and the other half (52.5%) due to disability.

The leading causes of the total burden of disease and injury in the ACT were 'anxiety and depression' (9.3% of the total burden), 'ischaemic heart disease' (8.1%), 'stroke' (3.9%), 'type 2 diabetes' (3.5%) and 'asthma' (3.3%). Together, these five conditions accounted for more than a quarter (28.1%) of the burden in the ACT in 2003.

Nationally, the disease burden is expected to increase over the next decade, largely due to the increase in the proportion of the population in older age groups and lifestyle changes. Chronic diseases will persist as the leading causes of the disease burden, with cardiovascular disease, cancer, diabetes, chronic respiratory and musculoskeletal conditions expected to account for more than half (52%) of the burden by 2023.

The Australian Institute of Health and Welfare has identified seven major largely preventable risk factors that impact adversely on the incidence and prevalence of many chronic diseases. About one third of the chronic disease burden can be attributed to these risk factors:

- tobacco smoking;
- risky and high risk alcohol use;
- physical inactivity;
- inadequate or poor nutrition;
- excess weight;
- high blood pressure; and
- high blood lipids.

The ACT Chronic Disease Strategy provides a framework for the ACT's implementation of the National Chronic Disease Strategy, tailored specifically to meet local priorities and address gaps in current local initiatives. The National Chronic Disease Strategy was endorsed by all states and territories and the Australian Government in 2005.

The ACT Chronic Disease Strategy recognises the central importance of a range of health providers in delivering optimal chronic disease prevention, detection and management. ACT Health clinicians, general practice and non-government organisations are all crucial in ensuring that the health of people with a chronic disease is improved. The Strategy also recognises the importance of placing the person at the centre of their own care.

3.4 Mortality

In 2005 there was a total of 1,491 deaths registered for persons whose usual state of residence was the ACT, with similar numbers of deaths registered between males (743) and females (748) (Table 3.1).

Between 1995 and 2005 there was an increase in the number of deaths registered, reflecting the increase in size of the ACT population over time. However, the all-cause mortality *rate* decreased over this period by an average of 1.4% a year and the median age at death increased, from 73.3 years in 1995 to 78.5 years in 2005.

Data on deaths in 2006 were not available at the time of publishing this report.

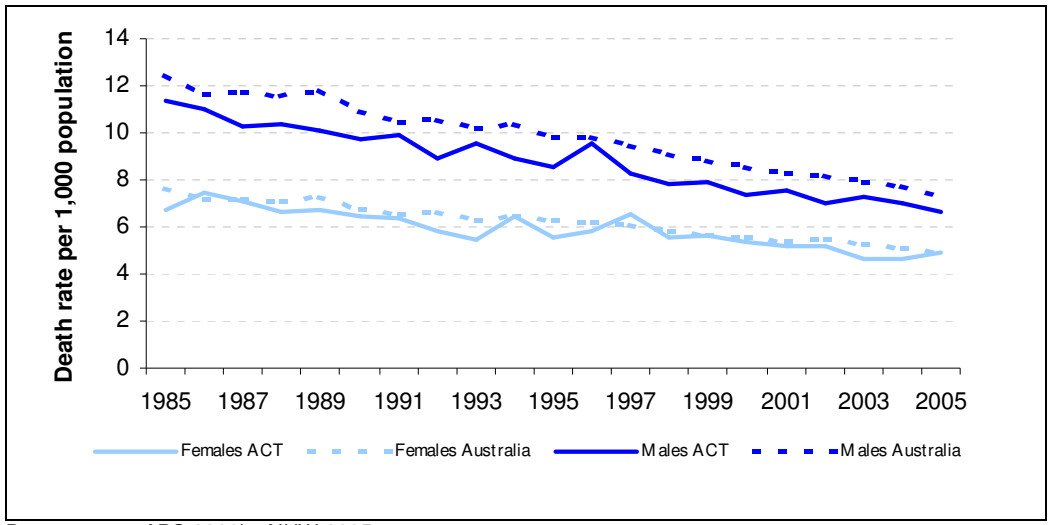
Table 3.1: Selected mortality statistics, ACT, 1995, 2001-05.

	1995	2001	2002	2003	2004	2005
Number of deaths						
Males	593	729	712	751	739	743
Females	521	690	661	663	684	748
Persons	1114	1,419	1,373	1,414	1423	1491
All-cause mortality rate (deaths per 1,000 population)						
Males	8.3	7.6	7.0	7.3	7.0	6.6
Females	5.4	5.3	5.2	4.7	4.6	4.9
Persons	6.5	6.3	5.9	5.8	5.6	5.6
Median age at death (years)						
Males	70.5	67.6	69.3	73.9	75.2	75.3
Females	75.9	74.9	75.2	81.5	80.8	82.0
Persons	73.3	71.7	72.3	78.1	77.6	78.5
Infant mortality rate (deaths at age less than 1 year, per 1,000 live births)						
Males	2.6	4.5	4.3	7.5	6.0	4.7
Females	7.1	1.5	2.5	4.0	7.9	6.3
Persons	4.8	3.0	3.4	5.8	6.9	5.5
Premature mortality rate (deaths per 1,000 population aged less than 80 years)						
Males	2.9	3.2	2.6	3.2	2.3	2.8
Females	2.1	2.0	2.0	1.8	1.5	2.0
Persons	2.5	2.6	2.3	2.5	1.9	2.4
Avoidable mortality rate (deaths per 1,000 population aged less than 80 years)						
Males	*	1.9	1.3	1.8	1.6	1.6
Females	*	1.0	0.9	0.9	1.0	1.0
Persons	*	1.4	1.1	1.3	1.3	1.3

Data sources: ABS deaths data 1995, 2001-2005, confidentialised unit record files; ABS 2006b; AIHW 2005a.
Note: The data in the table relate to ACT residents only. They include all ACT residents who died interstate.
* Avoidable mortality algorithm not available for 1995, as underlying cause of death was recorded in ICD-9. Underlying cause of death in ABS deaths data for the years 2001-2005 is recorded in ICD-10.

The declining mortality rate for the ACT compares favourably against the rate for Australia (Figure 3.3). This decline has been more pronounced among males than females and largely reflects advances in healthcare technologies, therapies and disease prevention measures, especially for conditions where male rates have historically exceeded female rates.

Figure 3.3: Trends in mortality, by sex, ACT & Australia, 1985-2005.

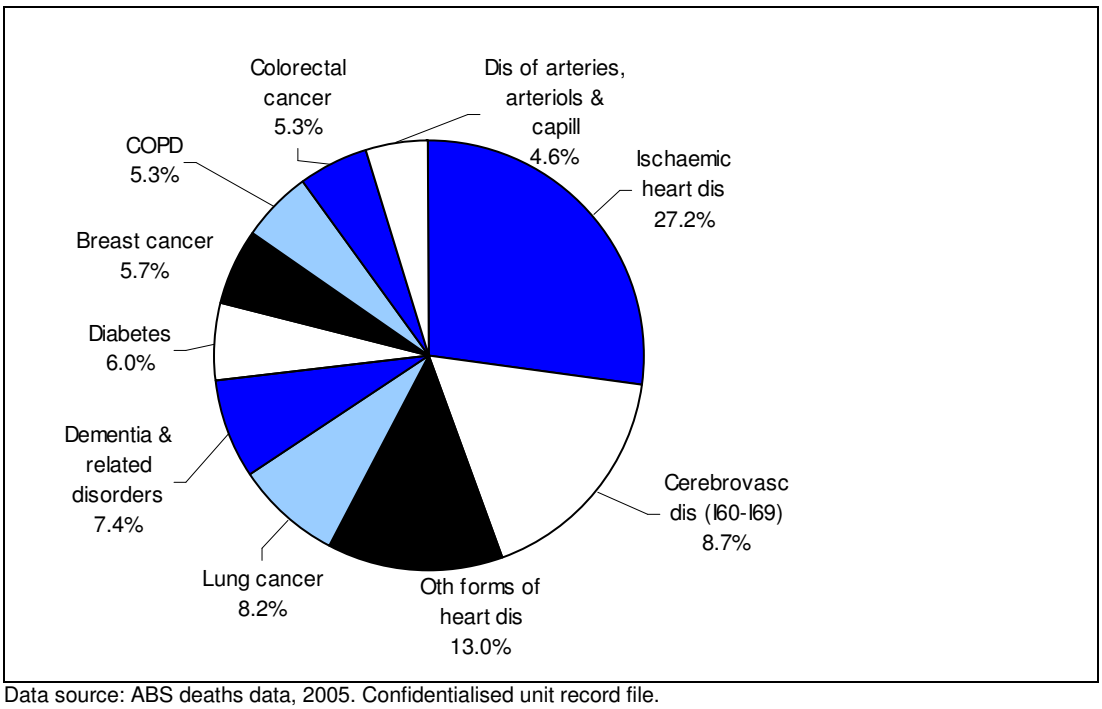


Data sources: ABS 2006b; AIHW 2005a.

3.4.1 Leading causes of mortality

The leading underlying causes of mortality (refer Glossary for definition) for the ACT in 2005 were dominated by chronic diseases, including cardiovascular diseases, cancers, COPD, diabetes and dementia and related disorders (Figure 3.4).

Figure 3.4: Leading causes of mortality, by sex, ACT 2005.



Data source: ABS deaths data, 2005. Confidentialised unit record file.
Note: Causes of mortality defined using ICD-10 codes.

3.4.2 Avoidable mortality

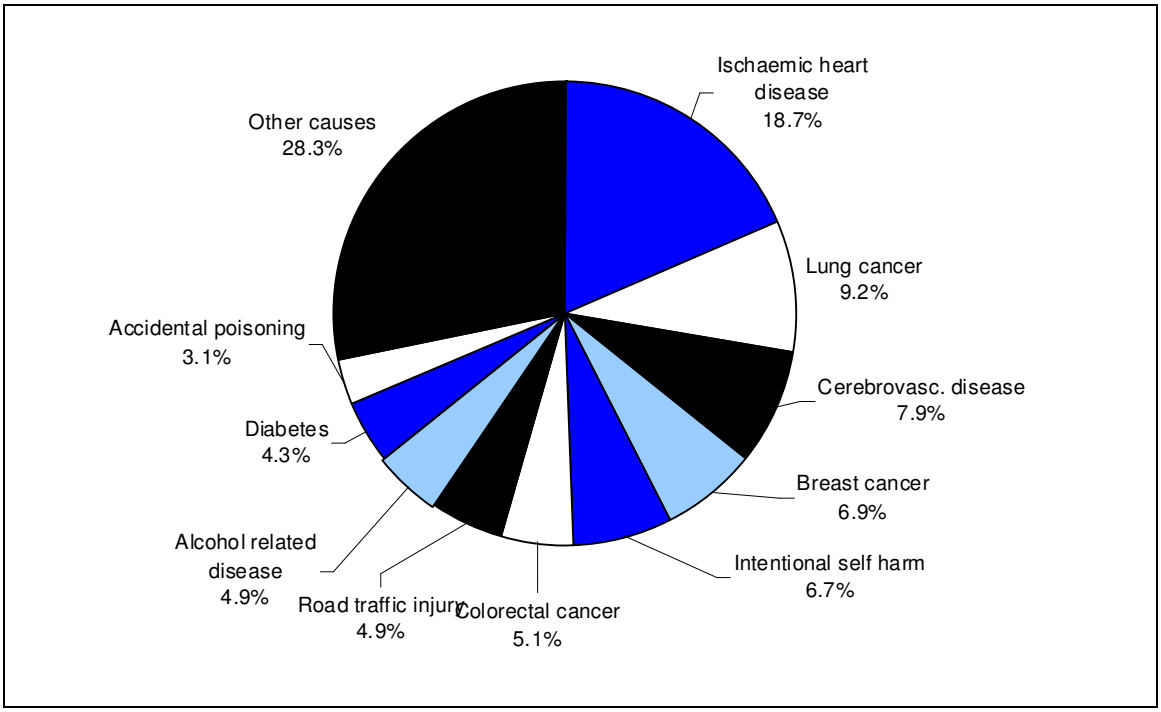
The level of avoidable mortality in a population indicates the theoretical scope for future health gain through disease prevention and management. An avoidable death is defined here as a death at age less than 80 years, that could have been avoided given current understanding of causation, prevention strategies and disease management.

Average life expectancy in the ACT now exceeds 80 years and deaths that occur at less than 80 years of age are defined as 'premature'. In 2005, about half (53.0%, 783 deaths) of all deaths registered for ACT residents were premature, occurring before the age of 80 years.

Premature death accounted for 16,748 potential years of life lost (YLL_{80}) in 2005. Males accounted for 10,321 (62%) and females accounted for 6,427 (38%) YLL_{80}. The greater burden of YLL_{80} experienced by males was mainly due to ischaemic heart disease (12.1% of all male YLL_{80}), intentional self-harm (11.1%) and road transport injury (7.8%).

In 2005, more than a third (34.1%) of all ACT resident deaths were theoretically avoidable (Figure 3.5).

Figure 3.5: Leading causes of avoidable mortality, persons aged <80 years, ACT 2005.



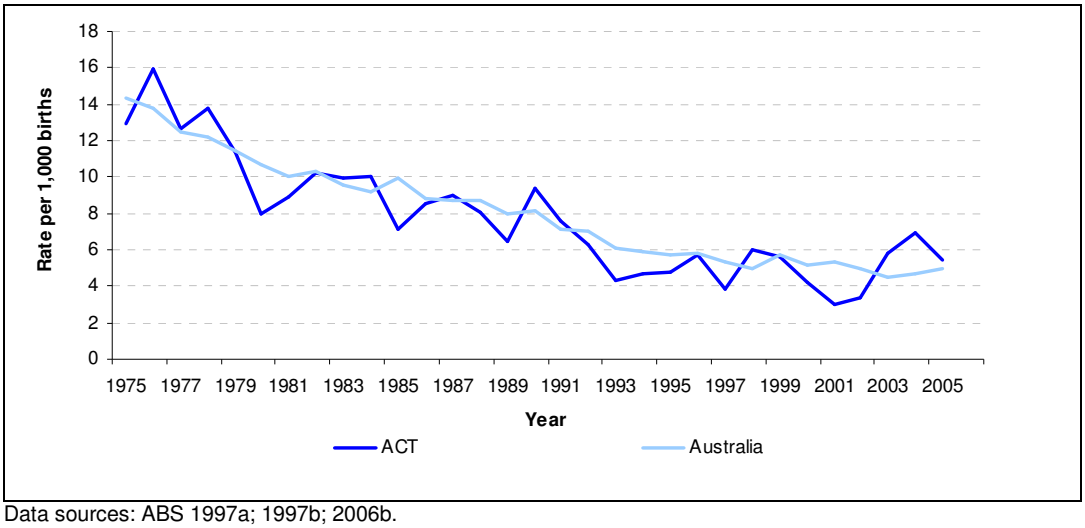
Data source: ABS deaths data, 2005. Confidentialised unit record file; Page et al 2006.
Note: Avoidable mortality has been defined using method in Page et al 2006, but is based on death registrations at age less than 80 years, rather than age <75 years. Causes defined using ICD-10 codes.

3.4.3 Infant mortality

The infant mortality rate is a summary indicator of health in a population that is particularly sensitive to differences in social conditions and health care interventions. Deaths that occur within the first twelve months of life are defined as infant deaths and the mortality rate is based on the number of infant deaths divided by the number of live births in a calendar year.

Infant mortality rates have declined markedly over the last three decades (Figure 3.6), largely due to advances in neonatal care, an improved understanding of disease aetiology and a greater emphasis on health promotion and disease prevention activities. The actual number of infant deaths registered in the ACT each year is relatively low and therefore the mortality rate can vary considerably on an annual basis, as evidenced in Figure 3.6.

Figure 3.6: Infant mortality rate, ACT & Australia, 1975-2005.



Data sources: ABS 1997a; 1997b; 2006b.

Note: Rates are based on the number of infant (age <12 months) deaths registered in a given year, where the infant's mother was an ACT resident at the time of death, per 1,000 live births (registered to ACT residents) in a given year.

3.5 Morbidity

3.5.1 Long term conditions

The level of ill health in the population at any one time is not known, however, survey results provide insights into the level of morbidity associated with long term or chronic conditions in the ACT (Table 3.2). Estimates derived from the 2004-05 National Health Survey show that ACT respondents reported similar levels of long term conditions to respondents nationally. However, significance testing of estimates indicates the ACT population was more likely to suffer hay fever and allergic rhinitis, mental and behavioural problems and short sightedness compared to the national population.

Table 3.2: Estimated percentage of population (all ages) with selected long term conditions, ACT & Australia, 2004-05.

	ACT		Australia	
	%	95% CI	%	95% CI
Arthritis#	13.0	(11.7 - 14.3)	15.3	(14.8 - 15.8)
Asthma	10.2	(8.6 - 11.8)	10.2	(9.7 - 10.7)
Back pain/problems nec/disc disorders	14.2	(12.4 - 16.0)	15.3	(14.8 - 15.8)
Deafness (complete/partial)	8.7	(7.4 - 10.0)	10.2	(9.8 - 10.6)
Diabetes mellitus	3.2	(2.4 - 4.0)	3.6	(3.3 - 3.9)
Hayfever & allergic rhinitis#	21.6	(19.2 - 24.0)	16.1	(15.5 - 16.7)
Heart, stroke & vascular conditions(b)	3.7	(2.7 - 4.7)	3.8	(3.5 - 4.1)
Hypertensive disease	10.2	(9.0 - 11.4)	10.7	(10.3 - 11.1)
Long sightedness	25.0	(23.1 - 26.9)	27.1	(26.5 - 27.7)
Malignant neoplasms	1.7	(1.1 - 2.3)	1.7	(1.5 - 1.9)
Mental & behavioural problems#	13.8	(12.0 - 15.6)	10.7	(10.2 - 11.2)
Osteoporosis	2.9	(2.3 - 3.5)	3.0	(2.8 - 3.2)
Short sightedness#	26.7	(24.4 - 29.0)	22.1	(21.5 - 22.7)

Data source: ABS 2006c.

Note: Estimates are based on self-report by ACT respondents to the National Health Survey 2004-05 and include conditions that have lasted or are expected to last for six months or more.

(b) Includes ischaemic heart disease, cerebrovascular disease, oedema and heart failure, and diseases of the arteries, arterioles and capillaries.

# Denotes statistically significant difference between the ACT and Australia ($p<0.05$).

3.5.2 Hospitalisations

Hospitalisations provide insights into the level of ill-health at the more severe end of the treatment spectrum. They describe single episodes of admitted patient care that may include a total hospital stay (from admission to discharge, transfer or death) or may include a part of a hospital stay beginning or ending in a change in type of care (AIHW 2005b).

A service related group includes a group of hospital inpatient services that have been aggregated to broad service types. The leading service related group for hospital separations by ACT residents was 'renal dialysis' in 2005-06 (Table 3.3). This group accounted for 14.6% of all ACT resident inpatient service contacts. Other major services in 2005-06 included 'orthopaedics', 'obstetrics' and 'general medicine'.

Table 3.3: ACT resident hospital separations by service related group, patient type, 2005-06.

Service-Related Group (SRG) 5.0	TCH public patient	Calvary Public Hospital public patient	Other hospital public patient	TCH private patient	Non-TCH private patient	Total
Cardiology	1,078	1,132	0	225	361	2,796
Interventional Cardiology	682	0	0	198	608	1,488
Cardiothoracic Surgery	137	4	1	74	73	289
Respiratory Medicine	1,040	697	0	285	323	2,345
Gastroenterology	1,084	689	1	138	274	2,186
GIT Endodoscopy	460	1,194	0	132	1,750	3,536
Neurology	1,544	505	2	372	191	2,614
Neurosurgery	344	72	0	87	237	740
Endocrinology	712	175	0	151	128	1,166
Renal Medicine	301	62	0	59	89	511
Renal Dialysis	10,406	0	0	1,635	0	12,041
Haematology	839	193	0	203	538	1,773
ENT	515	128	33	31	1,015	1,722
Ophthamology	125	958	0	6	1,040	2,129
Medical Oncology	237	99	0	83	358	777
Chemotherapy and Radiotherapy	167	5	1	82	3,285	3,540
Rheumatology	400	126	1	114	74	715
Dermatology	159	38	0	17	87	301
Head and Neck Surgery	66	22	2	1	125	216
Dentistry	180	159	0	14	608	961
Upper GIT Surgery	206	140	0	17	416	779
Colorectal Surgery	183	179	0	18	377	757
Orthopaedics	2,450	704	3	347	3,720	7,224
Urology	789	431	3	43	1,321	2,587
Vascular Surgery	362	64	33	46	411	916
General Medicine	2,231	1,184	7	395	902	4,719
General Surgery	1,564	871	2	222	1,012	3,671
Breast Surgery	25	95	0	1	500	621
Plastic and Reconstructive Surgery	368	117	0	34	1,706	2,225
Gynaecology	814	651	0	34	2,672	4,171
Obstetrics	1,909	1,348	0	120	1,848	5,225
Babies	355	319	0	46	108	828
Transplantation	0	0	0	0	0	0
Tracheostomy	50	26	0	17	6	99
Drug & Alcohol	191	118	0	2	14	325
Burns	55	5	0	4	2	66
Psychiatry	618	368	0	9	1,397	2,392
Acute Rehabilitation	0	0	0	0	0	0
Ungroupable	37	5	0	8	12	62
Non-acute	977	433	0	349	125	1,884
Total	**33,660**	**13,316**	**89**	**5,619**	**27,713**	**82,560**

Data source: ACT Health APC 2005-06. Confidentialised unit record file.

Note: Data extracted from ACT Admitted Patient Care (APC) data 2005-06. Excludes all non-ACT residents. Excludes caretypes 90 (posthumous organ procurement), 100 (hospital boarders) and unqualified babies (caretype=70 and qualified/acute days=0). All cost-weighted separations are based on National Public Estimated Round 8 DRG5.0.

Note: Total private hospital separations calculated from APC data 2005-06 (ACT private hospital separations) subtracted from total in Table 6.6 of AIHW's "Australian Hospital Statistics".

Table 3.4:Cost weighted separations by patient type, 2003-06.

Patient Type	2003-04		2004-05		2005-06	
	CWS	***Raw***	***CWS***	***Raw***	***CWS***	***Raw***
TCH public	29584.21	33635	27698.9	27973	32471.25	33660
Calvary Public Hospital public	12542.46	13065	12967.24	12238	14094.55	13316
Other ACT hospital public	0	0	0.65	1	82.18	89
TCH private	4765.31	3086	5856.29	4134	7056.22	5619
Non-TCH private	26675.36	26624	26946.02	26944	27709.34	27713
Interstate private	N/a	1894 [(b)]	N/a	1994 [(b)]	N/a	2163 [(b)]
Total [(b)]	73567.34 [(c)]	78304	73469.1 [(c)]	73284	81413.54 [(c)]	82560

Data source: ACT Health APC 2005-06. Confidentialised unit record file.
Note: CWS refers to cost weighted separations.
Note: Data extracted from ACT Admitted Patient Care (APC) data 2005-06. Excludes all non-ACT residents. Excludes caretypes 90 (posthumous organ procurement), 100 (hospital boarders) and unqualified babies (caretype=70 and qualified/acute days=0). All cost-weighted separations are based on National Public Estimated Round 8 DRG5.0.
Note: Total private hospital separations calculated from APC data 2005-06 (ACT private hospital separations) subtracted from total in Table 6.6 of AIHW's "Australian Hospital Statistics".

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4 LIFESTYLE AND HEALTH

At a Glance

- Survey results show that physical activity levels for the ACT are slightly higher than activity levels nationally, but moderate and vigorous levels of activity have declined in recent years. In 2005, survey results show that 45.7% of adults (aged 18 years or more) and 13.9% of adolescents (aged 12-17 years) in the ACT were engaging in sufficient levels of physical activity to meet national guidelines.
- Survey results suggest that 8.3% of adults (aged 19 years or more) in the ACT consumed the recommended minimum daily serves of vegetables in 2005; less than half (45.7%) consumed the recommended minimum daily serves of fruit and less than half (45.6%) reported a preference for skim or low fat milk, as recommended in the national guidelines.
- Survey estimates reveal similar dietary patterns among adolescents. 22.0% of secondary students (12-17 years) surveyed in the 2005 ASSAD reported consuming four or more serves of vegetables a day; 41.7% consumed three or more serves of fruit each day; and, 18.5% consumed five or more serves of cereals each day, in-line with national dietary guidelines for adolescents.
- Estimates based on self-reported heights and weights, from the NHS survey series show an increase in the proportion of overweight and obese adults (18 years or more) for Australia and the ACT in recent years. About one in five adults (18-64 years) in the ACT were obese and a third were overweight in 2005. Among adolescents (12-17 years), 14.0% reported a BMI in the overweight range and 8.2% reported a BMI in the obese range.
- Survey results show that 15.4% of adults (18 years or more) and 2.9% of adolescents (12-17 years) in the ACT were daily smokers in 2005. Survey estimates also suggest that there has been a decrease in the prevalence of smoking in recent years, especially among adolescents.
- Survey results show that alcohol consumption rates for adults in the ACT are similar to rates nationally. In 2005, three in ten adults (18 years or more) in the ACT were at risk of harm from alcohol consumption in the short term and one in twenty in the long term. On the other hand, consumption rates among adolescents (12-17 years) appear to have declined significantly in recent years, with current (drank in the last week) consumption rates declining from 31.2% in 2002 to 26.3% in 2005.
- Survey results show that although rates of illicit substance use among adults (18 years or more) have not changed significantly, rates among adolescents have declined significantly in recent years. In 2005, inhalants were the most commonly used illicit substance, with 17.6% of 12-17 year olds having used inhalants at least once in their lifetime, followed by cannabis (16.9%) and tranquillisers (14.7%).
- Survey results show a sustained decline in the uptake of sun protection measures by adolescents in recent years. There is scope for health gain by encouraging sun protection practices, as exposure to solar UVR is a modifiable risk factor for skin cancer, one of the most commonly diagnosed cancers in the ACT.

Lifestyle factors contribute significantly to the burden of chronic disease in the ACT, yet they are largely modifiable, providing considerable scope for future health gain. The National Chronic Disease Strategy (NHPAC 2006) has identified the reduction of preventable risk factors as a key action area to prevent the onset and progression of chronic diseases in the population.

4.1 Physical activity

Participation in physical activity can have significant benefits for health and wellbeing reducing the risks associated with a range of diseases. The *National Physical Activity Guidelines for Adults* recommend at least 30 minutes of moderate intensity activity (includes brisk walking, swimming, cycling, dancing etc) on most, preferably all days for adults (DoHAC 1999). Physical inactivity is an important health issue, accounting for 6.6% of the burden of disease and injury in Australia in 2003 (AIHW 2007a). This is an area of concern, providing scope for chronic disease prevention efforts in the ACT.

For information on physical activity in children, refer Chapter 14 Maternal & Child Health.

4.1.1 Statistics on physical activity levels

The information available suggests that although a growing number of Australians recognise the health benefits of physical activity, the proportion of those participating in this activity for a sufficient time and frequency to confer a health benefit has declined in recent years (Armstrong et al 2000, Bauman et al 2001).

Survey results show that physical activity levels for the ACT are slightly higher than activity levels nationally (ABS 2002, 2006). However, they also show a decrease in moderate and vigorous levels of activity over time for the ACT. According to the results of the National Health Survey (NHS), 38.3% of adult (18 years or more) respondents from the ACT reported doing moderate or vigorous levels of physical activity in the two weeks prior to the survey undertaken in 2001. This compares to 36.0% at the time of the 2004-05 NHS.

The 2005 ACT Health General Health Survey (ACTGHS) provides the most recent information available (Table 4.1). Less than half of all respondents to the survey, aged 18 years or more, reported undertaking physical activity for sufficient time and for a sufficient number of sessions in the week before the survey to meet national guidelines (sufficient time and sessions was defined as 150 minutes in total, of moderate activity, or its equivalent, undertaken on at least five occasions in the week before the survey). Although results did not vary significantly by sex, there was a statistically significant decrease in the proportion of respondents reporting sufficient time and sessions of activity with increasing age.

Table 4.1: Proportion of the population, aged 18 years or more, engaging in physical activity, by sufficient time & sessions, sex & age group, ACT 2005.

	Sufficient time		Sufficient time & sessions	
	%	95%CI	%	95%CI
Sex				
Males	57.7	(53.2 - 62.2)	49.3	(44.8 - 53.8)
Females	49.2	(45.1 - 53.3)	42.2	(38.1 - 46.3)
Persons	53.4	(50.4 - 56.4)	45.7	(42.7 - 48.7)
Age group				
18-24 years	65.8	(57.3 - 74.3)	56.1#	(47.2 - 65.0)
25-44 years	53.9	(48.6 - 59.2)	46.4#	(41.1 - 51.7)
45-64 years	52.7	(47.6 - 57.8)	45.9#	(40.9 - 50.9)
65 years+	36.6	(29.9 - 43.3)	27.9#	(21.7 - 34.1)

Data source: 2005 ACT Health General Health Survey, confidentialised unit record file.

Note: Sufficient time - 150 minutes of moderate activity (vigorous activity weighted by a factor of two) per week.
Note: Sufficient time & sessions - 150 minutes of moderate activity (vigorous activity weighted by a factor of two) per week, undertaken over at least five sessions.
# Denotes a statistically significant ($p<0.05$) difference.

The results of the 2005 ACT Secondary Student Alcohol and Drug (ASSAD) survey provide insights into activity levels among adolescents in the ACT. *Australia's Physical Activity Recommendations For 12-18 Year Olds* (DoHA 2004) recommends at least 60 minutes of moderate to vigorous physical activity every day and no more than two hours a day on the internet or watching TV or playing video games. Estimates derived from the 2005 ASSAD show that 13.9% of students (12-17 years) reported doing at least 60 minutes of moderate to

vigorous physical activity each day in the past week. Males and younger students were more likely than females and older students to report this level of activity (ACT Health 2007a).

4.1.2 Physical activity initiatives

In 2005 the Strategic Intergovernmental Forum on Physical Activity and Health (SIGPAH), under the auspices of the National Public Health Partnership (NPHP) released *Be Active Australia: A Framework for Health Sector Action for Physical Activity 2005 -2010* (SIGPAH). ACT Health commenced development of *Be Active ACT*, a framework to articulate the role of ACT Health in promoting the health benefits of physical activity to clients, staff, the ACT community and other stakeholders.

In the ACT Budget 2004-05, ACT Health was allocated $2m over 4 years for Combating Childhood Obesity. As part of this initiative a number of physical activity projects focusing on children and families were commenced. For information on these initiatives refer Chapter 14: Maternal & Child Health.

At the local level, a number of physical activity initiatives over the period 2004-2006 were undertaken. These included:

- Healthpact (now known as ACT Health Promotion Grants) provided a number of grants and sponsorships to community groups, schools, sporting, arts and recreational organisations to implement physical activity related projects, through the Community Funding Rounds, the Health Promoting Schools Funding Rounds, and the Health Promotion Sponsorships Funding Rounds.
- ACT Health printed and distributed the Australian Government's Physical Activity guidelines for children, adolescents and adults.

4.2 Nutrition

A healthy diet is essential for good health and wellbeing and although good nutrition may have a protective effect against a range of diseases, poor nutrition can increase the risk of disease. The NHMRC *Dietary Guidelines for Australian Adults* (2003a) provides the scientific rationale for a healthy diet and the *Australian Guide to Healthy Eating* (DoHAC 1998) is a national education and information tool to assist the public in developing the skills and knowledge to ensure a healthy diet. The food guide provides age and sex specific nutrition recommendations from the core food groups to ensure a healthy diet. The guide recommends consuming a high level of vegetables, fruit, cereals, legumes and nuts, while limiting the consumption of saturated fat in the diet.

For information about nutrition in children, refer Chapter 14: Maternal & Child Health.

4.2.1 Statistics about nutrition

Vegetable consumption

The information available on dietary behaviours in the ACT suggests that a large section of the adult population do not consume sufficient (five serves a day) vegetables to ensure a healthy diet. The results of the 2005 ACTGHS (Table 4.2) show that 8.3% of respondents, aged 19 years or more, reported usually consuming sufficient daily serves of vegetables to meet dietary guidelines. Significance testing of survey estimates shows that females were more likely than males to report adequate daily consumption of vegetables to meet dietary guidelines, however, the differences between age groups were not statistically significant.

Fruit consumption

Estimates derived from the 2005 ACTGHS show that less than half (45.7%) of all adult (aged 19 years or more) respondents reported sufficient (two serves a day) consumption of fruit each day to meet dietary guidelines (Table 4.2). The results varied significantly by both sex and age group. Females and older people were more likely than males and younger people to report adequate daily consumption of fruit to meet dietary guidelines.

Skim/low fat milk consumption

Table 4.2 shows that less than half (45.6%) of all adult respondents to the 2005 ACTGHS reported a preference for skim or low fat milk - as recommended in the guidelines. Although the results did not vary significantly by sex, the proportion of respondents reporting a preference for skim or low fat milk increased significantly with increasing age.

Table 4.2: Proportion of adults (19 years or more) reporting the usual use of low fat milk & recommended daily serves of fruit & vegetables, by sex & age group, ACT 2005.

	At least five serves of vegetables		At least two serves of fruit		Prefers to use skim/low fat milk	
	%	95% CI	%	95% CI	%	95% CI
Sex						
Males	5.0#	(3.0 - 7.0)	39.6#	(35.1 - 44.1)	41.0	(36.6 - 45.4)
Females	11.5#	(8.9 - 14.1)	51.7#	(47.6 - 55.8)	50.1	(46.0 - 54.2)
Persons	8.3	(6.6 - 10.0)	45.7	(42.7 - 48.7)	45.6	(42.6 - 48.6)
Age group						
19-24 years	5.1*	(0.9 - 9.3)	34.6#	(25.5 - 43.7)	31.6#	(25.1 - 38.1)
25-44 years	7.8	(5.0 - 10.6)	41.9#	(36.7 - 47.1)	46.8#	(41.5 - 52.1)
45-64 years	10.5	(7.4 -13.6)	47.5#	(42.5 - 52.5)	46.6#	(41.6 - 51.6)
65 years+	8.9	(5.0 - 12.8)	68.8#	(62.4 - 75.2)	58.6#	(51.8 - 65.4)

Data source: 2005 ACT Health General Health Survey, confidentialised unit record file.

Note: Recommended serves as per NHMRC 2003a, *Dietary guidelines for Australian adults*, NHMRC, Canberra.
*Estimate has a relative standard error between 25% and 50% and should be interpreted with caution.
# Denotes a statistically significant ($p<0.05$) difference.

Survey estimates reveal similar dietary patterns among adolescents. When asked about their diet, 22.0% of secondary students (12-17 years) surveyed in the 2005 ASSAD reported consuming four or more serves of vegetables a day; 41.7% reported consuming three or more serves of fruit each day; and, 18.5% reported consuming five or more serves of cereals each day, in-line with national dietary guidelines for adolescents (NHMRC 2003b; ACT Health 2007a).

Food security

Food security is an issue for people who experience hunger as a result of having insufficient food, or for people with a diet that is nutritionally inadequate. The ACT Council of Social Services (ACTCOSS) has identified food security as an important issue for vulnerable people in the ACT (Lilburn 2005). The results of the 2005 ACTGHS suggest that 8.8% of the population will run out of food at least once over a 12-month period and have no money to buy anymore.

Over-consumption

Over-consumption occurs when the energy consumed through diet exceeds energy needs. This is an important health issue as it contributes to the increasing rate of obesity, which in turn contributes to the development of a range of diseases, including ischaemic heart disease, the leading cause of death in the ACT. Comparisons of food intake in Australian children and adults between 1983 and 1995 suggest there was a significant increase in average daily energy intake (Cook et al 2001). These increases in energy intake were largely attributed to increases in carbohydrate consumption, sweets, non-alcoholic beverages and other high sugar-level foods. In the ACT, eating patterns and changes in energy intake over time have not been studied to this level of detail, however, the following section (4.3) provides insights into the extent of the issue and scope for health gain in the ACT.

4.2.2 Nutrition initiatives

In the ACT Budget 2004-05, ACT Health was allocated $2m over 4 years for *Combating Childhood Obesity*. (For more information refer Chapter 14).

As part of these initiatives a number of nutrition projects targeting adults and families were commenced including:

- *Go for 2&5® fruit and vegetable campaign:* In March 2005 ACT Health launched the campaign to run from 2005-2008. It is aimed at awareness of the need to eat more fruit and vegetables; and knowledge of the daily recommended minimum consumption levels of fruit and vegetables. Key components include television and radio advertising, cooking demonstrations and taste testing at community events and the development and distribution of Go for 2&5® resources.
- *Family Weight Management Program*: Commencing in 2005-06 the development of the Families Eating and Active Together (FEAT) program. This is a six-week parent focused program aimed at supporting families to make lifestyle changes in order to prevent excess weight gain during childhood.

A number of other nutrition activities over the period 2004-2006 included:

- Healthpact (now known as ACT Health Promotion Grants) provided a number of grants and sponsorships to community groups, schools, sporting, arts and recreational organisations to implement nutrition related projects, through the Community Funding Rounds, the Health Promoting Schools Funding Rounds, and the Health Promotion Sponsorships Funding Rounds.
- *Aboriginal and Torres Strait Islander Nutrition Project*: Family Fun at Meals Time program with Young Mothers Group at Gugan Gulwan.
- *Heart Fare*: A program for people with cardiovascular risk factors with a focus on diet and healthy weight.

4.3 Healthy weight

The increasing prevalence of excess weight (overweight and obesity) has emerged in recent years as an important health issue and has been estimated to account for 7.5% of the burden of disease in Australia (AIHW 2007a; WHO 2000). Overweight, and obesity in particular, are modifiable risk factors for premature death and a range of chronic diseases. Diet and physical activity play a key role in the development of overweight and obesity. The health benefits to be achieved through a combination of regular physical activity and good nutrition are considerable.

For information about healthy weight issues in children refer Chapter 14.

4.3.1 Healthy weight statistics

The body mass index (BMI) provides a useful estimate of excess weight in population studies (WHO 2002). The BMI measures an individual's weight in relation to their height. The BMI thresholds for overweight and obesity in adults have been identified according to their association with disease and death, although the risk of disease increases 'progressively from BMI levels of 20-22 kg/m^{2}' (WHO 2002). The following BMI categories and thresholds are based on international standards developed for adults of European descent:

- Underweight: BMI less than 18.5.
- Normal range: BMI 18.5 – 24.9.
- Overweight: BMI 25.0 – 29.9.
- Obese: BMI 30.0 or more.

In the ACT, self-reported weight and height information is collected in adult population health surveys. This data is used to calculate BMIs, which are categorised using the thresholds outlined above, providing an indication of the level of excess weight in the population. It should be noted that studies comparing physical measures versus self-reported measures have shown that people tend to overestimate their height and underestimate their weight, which results in an underestimation of BMI. Therefore, estimates of overweight and obesity

based on self-reported information are likely to underestimate the true prevalence of excess weight in the population (ABS 1998; Flood et al 2000).

Estimates based on self-reported heights and weights, from the NHS survey series show an increase in the proportion of overweight and obese adults (18 years or more) for Australia and the ACT in recent years (ABS 2002, 2006).

The results of the 2005 ACT GHS provide the most recent reliable information on overweight and obesity for the ACT. The results show that about one in five adults (18-64years) in the ACT were obese and a third were overweight (Table 4.3). Although the results did not vary significantly by sex or age for the obese, males were significantly more likely to be overweight than females and overweight increased significantly with increasing age.

Table 4.3: Proportion of the population, aged 18-64 years, overweight or obese, ACT 2005.

	Overweight		Obese	
	%	95%CI	%	95%CI
Sex				
Males	38.2#	(33.2 - 43.2)	16.4	(12.6 - 20.2)
Females	27.1#	(22.9 - 31.3)	20.8	(17.0 - 24.6)
Persons	32.7	(29.4 - 36.0)	18.6	(15.9 - 21.3)
Age group				
18-24 years	18.0#	(10.9 - 25.1)	11.3	(5.4 - 17.2)
25-44 years	31.4#	(26.3 - 36.5)	20.6	(16.2 - 25.0)
45-64 years	42.2#	(37.1 - 47.3)	20.2	(16.0 - 24.4)

Data source: 2005 ACT Health General Health Survey, confidentialised unit record file.

Note: Self-reported heights and weights used to calculate BMIs. WHO & NHMRC category thresholds for body mass index (kg/m^2).
# Denotes a statistically significant ($p<0.05$) difference.

The results of the 2005 ASSAD survey provide insights into the level of overweight and obesity among adolescents in the ACT. When asked about weight and height, 14.0% of secondary students (12-17 years) reported a BMI in the overweight range and 8.2% in the obese range (ACT Health 2007a).

4.3.2 Healthy weight initiatives

In the ACT Budget 2004-05, ACT Health was allocated $2m over 4 years for Combating Childhood Obesity. Projects included:

- Monitoring and surveillance: The ACT Physical Activity and Nutrition Survey was conducted during 2006, throughout 37 ACT public and private primary schools involving 1,300 Year 6 children;
- Family Weight Management Program;
- Expanding the Tuckatalk in Schools Program;
- Healthpact; Health Promoting Schools Vitality Funding Round; and
- Implementation of the National Obesity Action Plan including training for health professionals.

Interdepartmental government coordination of these healthy weight initiatives was undertaken by the *ACT Government Obesity Leadership Group.* For more information on these initiatives see Chapter 14: Maternal &Child Health.

4.4 Tobacco use

Tobacco smoking is the largest single preventable cause of premature death and ill-health in Australia, and estimates suggest that of all modifiable risk factors, tobacco places the greatest burden of disease on the population, accounting for an estimated 7.8% of the burden in 2003 (AIHW 2007a). Lung cancer, COPD and ischaemic heart disease accounted for three quarters of this burden and two thirds of the burden was experienced by males, due to higher smoking rates in the past and the long lag time between smoking and the onset of tobacco-related ill-health.

4.4.1 Statistics on tobacco use

The results of national surveys such as the NHS series and the National Drug Strategy Household Survey (NDSHS) series show that smoking rates in the ACT are comparable to Australian rates and that there have been decreases in these rates in recent years (ABS 2002, 2006; AIHW 2002, 2005a).

The 2005 ACTGHS results show that 15.4% of ACT adult (18 years or more) respondents reported daily smoking in 2005 (Table 4.4). Males were significantly more likely than females to report daily smoking and there were statistically significant differences between age groups, with the highest rates reported by respondents aged 25-44 years. Daily smokers reported smoking an average of 12 cigarettes a day.

One in five respondents reported being current smokers (smoked 'daily' or 'occasionally') in 2005. Males were significantly more likely to report current smoking than females and there were statistically significant differences between age groups, with the highest rates reported by respondents aged 18-24 years.

Table 4.4: Proportion of the population aged 18 years or more reporting daily & current smoking, by sex & age group, ACT 2005.

	Daily smoking		Current smoking	
	%	95%CI	%	95%CI
Sex				
Males	17.8#	(14.3 - 21.3)	23.8#	(20.0 - 27.6)
Females	13.1#	(10.3 - 15.9)	15.4#	(12.4 - 18.4)
Persons	15.4	(13.2 - 17.6)	19.6	(17.2 - 22.0)
Age group				
18-24 years	14.6#	(8.3 - 20.9)	24.8#	(17.0 - 32.6)
25-44 years	21.0#	(16.7 - 25.3)	24.3#	(19.8 - 28.8)
45-64 years	12.5#	(9.2 - 15.8)	15.9#	(12.2 - 19.6)
65 years+	4.5#	(1.6 - 7.4)	5.4#	(2.3 - 8.5)

Note: 'current' refers to smoked 'daily' or 'occasionally'.
# Denotes a statistically significant ($p<0.05$) difference.

Among adolescents in the ACT, there is also good evidence to show that smoking rates have declined over time (ACT Health 2007a). Estimates from the ASSAD survey series show that daily smoking rates and current smoking rates among secondary students in the ACT have declined significantly (Table 4.5).

Table 4.5: ACT secondary school students, smoking prevalence, 1996 - 2005

	1996	1999	2002	2005
Smoked at least once in lifetime^	55.7	53.7	45.9	32#
Smoked at least once in last 12 months	38.7	39.2	31.8	19.2#
Smoked on at least one day in last 7 days (current smokers)^	20.4	20.5	15.3	8.6#
Smoked every day in last 7 days (daily smokers)^	9.3	8.2	6.1	2.9#

Source: 2005 ASSAD, confidential unit record file, ACT Health
# Denotes statistically significant difference over time

Adult (18 years or more) respondents to the 2005 ACTGHS were also asked about exposure to passive smoke. The majority of respondents reported having a smokefree home, but 15.9% reported daily exposure to passive smoking from other sources.

Age of initiation

The results of the 2004 NDSHS suggest that the average age at which people aged 14 years or more in the ACT (and Australia) who had ever smoked, first began smoking, was 16 years of age. (AIHW 2005b, AIHW 2005c).

Smoking cessation

Most people who give up smoking permanently have usually made several serious attempts before achieving their goal (USDHHS 1990; Chapman 2007). Research has shown that about one in ten quit attempts in Australia results in success (Borland 1991). In the course of attempting to stop smoking, smokers may have slip-ups (a brief resumption of smoking behaviour, followed by renewed abstinence) or relapses (a slip-up which initiates complete resumption of smoking behaviour, resulting in an unsuccessful quit attempt). Research has shown that around 80% of slip-ups become relapses and that the earlier the slip-up occurs, the more likely it is that it will result in a complete relapse (Borland 1990).

The earlier an individual decides to give up smoking, the more likely they are to be successful. In the ACT, smoking cessation services are provided by the Cancer Council ACT, who manage and provide the QUIT program, a formal smoking cessation service for residents.

4.4.2 Tobacco initiatives

A number of tobacco control measures were planned and implemented during the reporting period by ACT Health. For instance:

- The *Tobacco (Compliance Testing) Amendment Act 2006* was passed on 10 October 2006. This amendment to the *Tobacco Act 1927* makes provision for the monitoring and prevention of tobacco sales to minors. Trained youth volunteers, under the supervision of adults, will be engaged to test compliance of tobacco retailers in the ACT. This will be undertaken with test purchases made by the volunteers at various outlets across the Territory.
- On 1 September 2006, the ban on tobacco vending machines in public places came into effect. This has successfully removed the ability for young people to access tobacco products without producing identification.
- The *Smoking (Prohibition in Enclosed Public Places) Regulation 2005* was established. The *Regulation* defines an 'enclosed public space' for the purpose of the Act and to provide clearer guidance to businesses and the community on what constitutes an enclosed public place. On 1 December 2006, smoking was prohibited in all enclosed public places in the ACT. During the lead up period, ACT Health advertised the smoke-free message (June 2006 to January 2007) on television, radio and buses. The communications strategy was developed in consultation with industry and health groups. The implementation of the ban has been widely accepted with minimal complaints about non-compliance.
- ACT Health has worked with the Cancer Council ACT to develop a school-based resource package as part of the Youth Smoking Prevention Project.
- Healthpact (now known as ACT Health Promotion Grants) provided funding to support smoking prevention initiatives in the ACT, through the Community Funding Round, and through the Health Promotion Sponsorships Funding Round, which promotes the SmokeFree message.

The Department of Education and Training (DET) is also working to ban smoking in all DET-owned and operated buildings in the ACT from 2008. This will include all high schools and colleges, CIT, and associated administrative buildings.

From 1 Jan 2007, all tobacco-related regulatory services, including licensing and sales to minors, were transferred to the Office of Regulatory Services at the Department of Justice and Community Safety (JACS).

4.5 Alcohol consumption

Alcohol consumption is associated with considerable morbidity and mortality. High levels of alcohol consumption increase the risk of a range of morbidities. However, low levels of alcohol consumption may have a protective effect on the health of individuals in some population groups (exceptions include those with hepatitis C, young people and unborn children), reducing the risk of morbidities such as ischaemic heart disease and stroke. Estimates suggest that the net level of harm associated with alcohol consumption, after these benefits have been taken into account, is approximately 2.3% of the total burden of disease and injury in Australia (AIHW 2007a). Current debate however, is challenging conceptions of protective effects suggesting more research is needed (Fillmore et al, 2006).

Statistics and trends in alcohol consumption

The results of national surveys such as the NHS and the NDSHS series show that alcohol consumption rates for adults in the ACT are comparable to Australian rates and these rates have not changed significantly in recent years.

The most recent information available on risky and high risk levels of alcohol consumption in the ACT is from the 2005 ACTGHS. The results of the survey show that three in ten adults aged 18 years or more were at risk of harm from alcohol consumption in the short term and one in twenty were at risk of harm in the long term (Table 4.6).

Males were more likely than females to be at risk in the short term and there were statistically significant differences in long term risk between age groups, with respondents between 65 years and over with the lowest level of long term risk. There were no statistically significant differences in short term risk of harm from alcohol consumption between the sexes and different age groups.

Table 4.6: Proportion of population aged 18 years or more reporting risk/high risk of harm from alcohol consumption in short & long term, by sex & age group, ACT 2005.

	Risk/high risk of harm from drinking in short term		Risk/high risk of harm from drinking in long term	
	%	95%CI	%	95%CI
Sex				
Males	39.2	(34.8 - 43.6)	7.0	(4.7 - 9.3)
Females	26.2	(22.6 - 29.8)	3.7	(2.1 - 5.3)
Persons	32.6	(29.7 - 35.5)	5.4	(4.0 - 6.8)
Age group				
18-24 years	35.3	(26.7 - 43.9)	8.3*	(3.3 - 13.3)
25-44 years	25.6	(21.0 - 30.2)	3.9*	(1.9 - 5.9)
45-64 years	37.8	(32.9 - 42.7)	7.1	(4.5 - 9.7)
65 years+	39.3	32.5 - 46.1)	2.7*	(0.4 - 5.0)

Data source: 2005 ACT Health General Health Survey, confidentialised unit record file.

Note: Risk/high risk of long term harm are based on the 2001 NHMRC Australian Guidelines which state that women should drink no more than an average of 2 drinks a day and no more than 14 drinks in a week and that men should drink no more than an average of 4 drinks a day and no more than 28 drinks a week. These 2001 guidelines were under review at the time this report was printed.

* This estimate yields a relative standard error of greater than 25% and thus should be interpreted with caution.

When asked about the number of days they usually consume alcohol during a week, 16.7% all adult respondents to the 2005 ACTGHS reported that they did not consume alcohol at all, 25.4% reported usually consuming alcohol less than once a week,14.6% reported usually consuming alcohol 3-4 days a week and 20.0% reported usually consuming alcohol 5-7 days a week. Just over half (52.9%) of all respondents reported usually consuming 1-2 standard drinks when having a drink, one in five (19.9%) reported consuming 3-5 drinks and one in ten (10.3%) reported consuming six or more drinks when having a drink.

Among adolescents in the ACT, there are indications that alcohol consumption levels have declined in recent years (ACT Health 2007a). Estimates from the ASSAD survey series show that current (consumed alcohol at least once in the last week) levels of alcohol consumption among secondary students in the ACT declined significantly between 2002 (31.2%) and 2005 (26.3%). Similarly, harmful (females: consumed five or more drinks; males: consumed seven or more drinks; on at least one day in the last week) levels of alcohol consumption declined significantly between 2002 (8.5%) and 2005 (5.8%).

Age of initiation

The results of the 2004 NDSHS suggest that the average age at which people aged 14 years or more in the ACT, who had ever consumed alcohol in their lifetime, first began drinking, was 17 years of age. This was consistent with the average age reported for all Australians in 2004 (AIHW 2005b, AIHW 2005c). For service-related information about alcohol refer section 4.6.2.

4.6 Illicit substance use

Illicit substance use is estimated to account for about 2.0% of the total burden of disease and injury in Australia in 2003 (AIHW 2007a). Illicit substance use is a risk factor for HIV/AIDs, Hepatitis C, low birth weight, inflammatory heart disease, poisoning, suicide and accidental death by overdose (AIHW 2005a). Similar to alcohol use, illicit substance 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 substances and the concomitant problems that arise as a result of dependency. The potential for health gain in this area for ACT Health lies in minimising the harm caused by these substances in the community with treatment and support services; reducing demand through prevention activities, including health promotion and education; and in reducing supply, by providing advice on legislative change to support restriction on supply in the community.

4.6.1 Statistics and trends in illicit substance use

Survey results show that the prevalence of illicit substance use by adults in the ACT, over a 12-month period, has not changed in recent years. Significance testing of estimates from the NDSHS suggest there was no change in the 12-month prevalence of use of any illicit substance, marijuana/cannabis, or meth amphetamines, by adults (aged 14 years or more) in the ACT, between 2001 and 2004 (AIHW 2005a) (Table 4.6).

The prevalence estimates for other illicit substances are based on a small number of responses, so it is not possible to determine whether there have been changes in the prevalence of use over time. The exception to this is ‘ecstasy’ which, although yielding potentially reliable prevalence rates, (based on a reasonable number of responses) had definitional changes between 2001 and 2004, making it difficult to determine whether there has been a real change in the prevalence of use over time.

Significance testing of estimates from the 2004 NDSHS for the ACT and Australia suggest that there was no difference in the 12-month prevalence of use for illicit substances (Table 4.7) with the exception of ‘ecstasy’. ACT adults were more likely to have used ‘ecstasy’ in the 12 months before the survey than adults nationally (AIHW 2005a).

Table 4.7: Recent use of illicit substances, proportion of population aged 14 years or more, ACT 2001 & 2004.

	2001		2004	
	%	95%CI	%	95%CI
Marijuana/cannabis	14.4	(11.9 -16.9)	14.0	(11.5 - 16.5)
Painkillers/analgesics[(b)]	3.3	(2.0 - 4.6)	2.7*	(1.2 - 4.2)
Tranquillisers/sleeping pills[(b)]	1.4*	(0.6 - 2.2)	**	**
Inhalants	**	**	0.9*	(0.2 - 1.6)
Meth/amphetamines[(b)]	4.5	(3.0 - 6.0)	4.3	(2.8 - 5.8)
Cocaine	1.5*	(0.6 - 2.4)	**	**
Hallucinogens	1.8*	(0.8 - 2.8)	**	**
Ecstasy[(c)]	4.8	(3.3 - 6.3)	6.0	(4.3 - 7.7)
Any illicit drug	18.1	(15.3 - 20.9)	17.6	(10.8 - 24.4)

Data Sources: AIHW 2005a, 2002.
* Estimate has a relative standard error between 25-50% and should be used with caution.
** Estimate has a relative standard error greater than 50% and is considered unreliable for general use.
Note: 'recent' refers to 'used in the last 12 months'.
(b) For non-medical purposes.
(c) In 2001 this included 'designer drugs'.

Injecting drug use is associated with a higher risk of transmission of bloodborne viruses such as HIV and hepatitis C. According to the results of the 2006 Australian Needle Syringe Program Survey (ANSPS) of injecting drug users, 72% of respondents from the ACT tested positive for hepatitis C, but no one tested positive to the HIV antibody. Transmission of HIV and hepatitis C can occur when injecting drug users share needles and syringes or other injecting equipment. In 2006, 21% of injecting drug users surveyed in the ACT reported sharing needles and syringes at least once in the previous month. Heroin (38%) and methamphetamines (40%) were the most common illicit substances to have been injected (NCHECR 2007).

The prevalence of injecting drug use in the ACT is not known, but in 2004, 2.4% of ACT respondents (aged 14 years or more) to the NDSHS reported having injected illicit substances at least once in their lifetime (AIHW 2005c). Because of the small number of respondents, it is not possible to determine, with significance testing, whether the estimate for the ACT is higher or lower than the estimate for Australia (1.9%) (AIHW 2005b).

Crystal methamphetamine, or 'ice' as it is more commonly known, has emerged as an illicit substance of considerable concern in recent years. At present, there is no reliable information about the prevalence of use in the ACT, however, ice is believed to be growing in popularity. The Survey of Regular Ecstasy Users in 2006 found that more than half (55%) of all respondents from the ACT who used ecstasy had also used ice at least once in their lifetime, up from 49% in 2005. The drug may be administered via a number of routes (oral/smoke/intravenous etc). Information from the EDRS suggests that smoking is the most popular route of administration for ice (Campbell & Degenhardt 2007).

The 2007 NDSHS will be the first population health survey to collect reliable information about the level of use in the ACT and results should be available for presentation in the next ACT Chief Health Officer's report.

Among adolescents in the ACT, there is evidence to show that levels of illicit substance use have declined over time. Estimates from the ASSAD survey series show that levels of reported lifetime use of 'any illicit drug', multiple substances, inhalants, cannabis, tranquillisers, hallucinogens, opiates and cocaine by ACT secondary students decreased between 1996 and 2005. In 2005, inhalants were the most commonly used illicit substance, with 17.6% of ACT students reporting having used inhalants at least once in their lifetime, followed by cannabis (16.9%) and tranquillisers (14.7%) (ACT Health 2007a).

Age of initiation

The results of the 2004 NDSHS suggest that the average age at which people 14 years or more in the ACT, who have ever used any illicit substance, first began using was 19 years of

age, which was consistent with the average age reported for all Australians in 2004 (AIHW 2005b, AIHW 2005c).

4.6.2 Alcohol and other substance use initiatives

In the ACT, there is a variety of services aimed at reducing the burden of alcohol and other substance use in the community, including prevention, treatment, rehabilitation and support services.

The ACT Alcohol, Tobacco and Other Drug Strategy Evaluation and Implementation Group meet regularly to oversee the implementation and evaluation of the ACT Alcohol, Tobacco and Other Drug Strategy 2004-2008 (ACT Health 2004). Initiatives implemented during the reporting period include:

- Setting up a 5 bed sobering up facility providing a safe and secure place where men and women 18 years and over, who are affected by drugs or alcohol, can stay to sober up. The facility operates from Ainslie Village Thursday to Sunday between 11:00pm and 11:00am. During their stay clients are offered information and referral to appropriate support agencies. ACT Health has committed to fund the facility to 2010.
- ACT Health provided funding to the National Drug and Alcohol Research Centre to secure ACT participation in their Ecstasy and Related Drugs (ERDs) Research Project. The project aimed to assess the efficacy of peer led intervention programs in imparting health related information to young people in licensed premises and at large festival events in Sydney, Canberra, Adelaide and Amsterdam in the Netherlands. The project examined whether health messages disseminated this way reach ecstasy and related drugs users, how those messages are received by the target group and whether these messages result in behaviour change. The project report is expected in November 2007.
- The piloting and evaluation of the use of vending machines to provide clean injecting equipment to drug users. The ACT has been successful in supplying clean injecting equipment to drug users from a variety of outlets across Canberra (including pharmacies), in order to reduce the transmission of blood borne viruses among drug users. However, a need was identified for after hours access to clean equipment in the ACT. The 12-month syringe vending machine pilot was implemented in 2005, with vending machines installed at four locations across Canberra. The evaluation of the pilot program showed a growing level of vending machine use over the 12 month pilot. The program continues to be funded and ACT Health and the Government are expected to formally respond to the report later this year.

4.7 Sun protection

Australia has one of the highest rates of melanoma in the world and melanoma is one of the most common cancers in both the ACT and Australia (AIHW 2006; ACT Health 2007b). 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 (NHMRC 1996). Therefore, it is important that young people are protected from excess exposure to solar radiation. This is especially important for young people in the ACT, as they may be exposed to a considerable degree of solar UVR, with long hours of sunshine, high altitude and relatively clean air in the Territory.

4.7.1 Statistics on the uptake of sun protective measures

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 estimates provide an indication of the uptake of sun protection measures by adolescents in the ACT. The ASSAD survey series shows a statistically significant decline over time in the proportion of ACT secondary students (12-17 years) reporting ‘usually’ or ‘always’ using sun protective measures when outside on a sunny day (Table 4.8).

Although 71.5% of all students surveyed in the ACT in 2005 recalled having at least part of an education session in class on sun protection during the previous year and more than two thirds (69.2%) responded correctly to questions about the causes of skin cancer, almost three quarters (73.9% reported that they liked to get a suntan and more than three quarters (79.5%) reported getting sunburnt at least once the previous summer (ACT Health 2007a).

Table 4.8: Proportion of secondary students aged 12-17 years reporting 'usually' or 'always' using sun protection measures, ACT 1996, 1999, 2002 & 2005.

	1996	1999	2002	2005
% usually or always wear a hat	53.1	45.8	43.6	40.2
% usually or always clothes cover most of body	27.3	22.4	19.8	22.4
% usually or always delib. wear less/briefer clothing	14.0	18.7	23.2	20.0
% usually or always wear max.protect. sunscreen	67.1	61.6	48.1	40.3
% usually or always wear sunglasses	32.9	34.5	28.3	25.9
% usually or always stay mainly in the shade	28.8	29.0	26.1	22.2
% usually or always most of time inside	17.8	20.6	22.4	20.2

Data Sources: 1996, 1999, 2002 & 2005 ASSAD, ACT Health. Confidentialised unit record files.
Note: Measures when out in the sun on a sunny day between 11am and 3 pm.
Note: There was a significant decline in the % of students reporting all measures between 1996 and 2005 ($p<0.05$).

4.7.2 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. ACT Health also funds local organisations to develop, implement and maintain practices and policies in accord with the Cancer Council ACT's SunSmart promotion program through the Health Promotion & Grant team's community funding rounds.

In 2007, staff from ACT Health and The Cancer Council ACT were involved in supervising a project with a group of Australian National University Medical School students reviewing the recent decline in use of sun protective measures by young people and preparing a discussion paper with recommendations on how best to approach the issue in the Territory. This paper will provide ACT Health with information about possible interventions aimed at a variety of target populations and settings including young people, families, teachers, the supportive environment and general community.

The Cancer Council Australia, the Cancer Society of New Zealand and the Australasian College of Dermatologists issued a joint position statement in September 2004 on the use of solariums, advising that they do not recommend the 'use of UV tanning devices for cosmetic purposes' (TCCA 2004). New guidelines were also released by The Cancer Council Australia in July 2007, advising the amount of sun exposure required to meet vitamin D needs and stay healthy without increasing the risk of skin cancer (TCCA 2007).

4.8 Sexual health

Sexual health is influenced by attitudes towards sexuality and sexual behaviours, both of which have changed considerably over the last 40 years. This section of the report explores sexual behaviours and related health risks in the ACT. 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.

Sexual health outcomes, such as pregnancy and the incidence of sexually transmitted infections, are discussed in Chapter 13: Notifiable Communicable Disease and Chapter 14: Maternal, Infant and Child Health.

4.8.1 Statistics and trends in sexual health

Contraception and Protection

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 Australia (ABS 2002). The condom also provides protection against most sexually transmissible infections, however, conclusions about 'safe sex' practices in the population cannot be drawn solely from information on condom use for contraceptive purposes.

The triennial Canberra Gay Community Periodic Survey was funded by ACT Health and undertaken in 2006 by the National Centre in HIV and Social Research, the National Centre in HIV Epidemiology and Clinical Research, and the AIDS Action Council of the ACT. The Survey studied a range of sexual practices among gay and homosexually active men in Canberra, as well as health seeking behaviour and a range of social and demographic indicators. This was the third time the survey was carried out and data from the survey provide a valuable insight into the safe-sex culture among gay men in the community. The 2006 survey showed that there was no statistically significant difference in the level of unprotected anal intercourse with a casual partner in the last six months in 2006 (24.6%) compared to previous surveys (2003: 22.8%; 2000: 22.2%) and almost three quarters (73.4%) of the men surveyed in 2006 reported having had a sexual health check-up in the previous 12 months (Zablotska et al 2007). There was a statistically significant increase in the proportion of non-HIV positive respondents reporting having had an HIV test in the previous six months in 2006 (43.2%) compared to the result for 2000 (33.6%). Generally, the survey data suggests that there is a sustained safe sex culture amongst gay community attached men in Canberra.

Infertility

The causes of infertility in couples are multifarious and its extent in the ACT is unknown, although in the Australian population it has been estimated that about 15% of couples will not achieve pregnancy within 12 months of making a decision to have a baby (ABS 1993). The assisted conception rate provides insights into the level of infertility in a population as well as access to, 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 2002, there was an average of 8.0 treatment cycles per 1,000 Australian women aged 25 to 44 years. The success of treatment resulting in the birth of a live baby varied by age, with women aged 25-29 years achieving the highest success rates and women 40-44 years achieving the lowest (Bryant et al 2004). In 2001, less than 1% of all births in the ACT were the result of in-vitro fertilisation (Dean & Sullivan 2003).

Cervical screening

Clinical studies have established that certain types of cervical human papilloma virus (HPV) can cause cervical cancer. However, this cancer can be prevented through regular cervical screening and treatment of abnormal cell changes on the cervix. There are about 70 types of HPV, 30 of which are sexually transmitted. Genital HPV is normally harmless and often asymptomatic, although some forms can cause genital warts. The virus is spread through skin-to-skin contact and cannot be entirely prevented by condom use. (NCSP 1998).

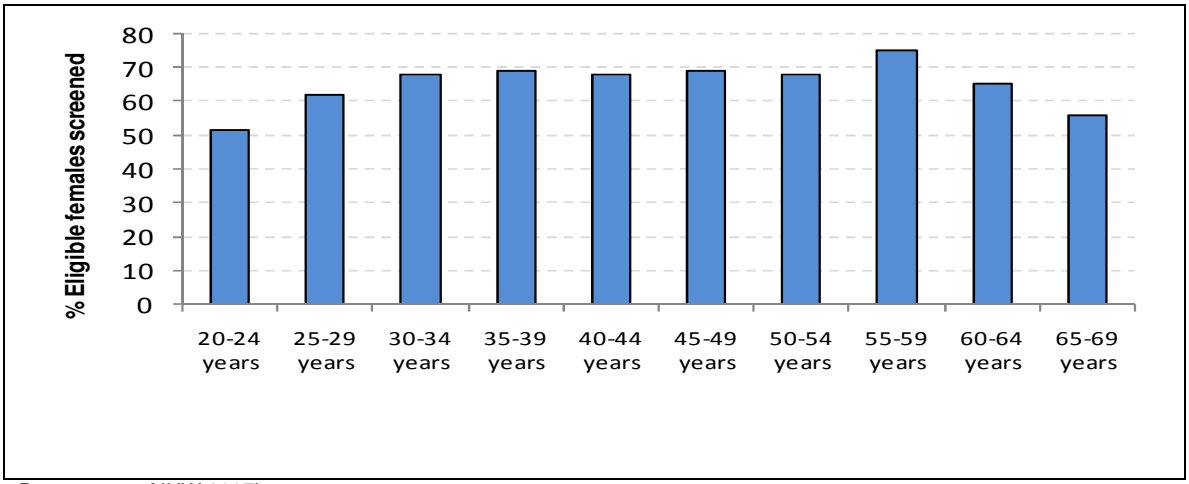
The early detection of this disease improves the chance of recovery and the evidence suggests that cervical screening every two years can prevent up to 90% of squamous cervical cancers, the most common form of cervical cancer in Australia.

The ACT Cervical Screening Program actively targets women in the 20-69 years age group. The participation rate in the program in 2004-2005 was 65.5 (95%CI: 65.0 – 66.0) per 100 eligible ACT female population (Figure 4.1), which was higher than the rate for Australia (61.0, 95%CI: 60.9 – 61.0) (AIHW 2007b). The highest rate of participation for ACT women in the target age group was observed in the 55-59 years age group. Women aged 20-24 years had the lowest participation rate (AIHW 2007b).

The HPV vaccine Gardasil, registered by Therapeutic Goods Administration (TGA) in 2006, has been added to the National Immunisation Program and has been available free to women

aged 12 to 26 via a school-based vaccination program since 2007 and through GPs (from July 2007 to June 2009).

Figure 4.1:Proportion of eligible ACT females screened by the Cervical Screening Program, by age group, 2004-2005.



Data source: AIHW 2007b.

Note: The target population is calculated from the average estimated resident population for 2004 and 2005 and adjusted for the estimated proportion of women in each age group who are thought to have had a hysterectomy.

See Chapter 8: Cancer, for further information on cervical cancer and the HPV vaccination program and Chapter 13: Notifiable Communicable Disease for further information on sexually transmitted infections.

4.8.2 Sexual health services and initiatives in the ACT

The Canberra Sexual Health Centre, situated in the grounds of The Canberra Hospital, 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 Centre is the major provider of HIV medical care in the ACT.

ACT Health funds several non-government organisations to provide services in the areas of sexual health and blood borne viruses. These include the AIDS Action Council of the ACT, which provides a range of services to people living with, and affected by HIV/AIDS in the ACT. The Council provides health promotion, community development and education services, counselling, care and support for people with HIV/AIDS, treatment information and emergency financial assistance and advocacy services. The Council also acts as a secondary needle and syringe exchange outlet. It 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.

ACT Health also funds sexual health services that are provided by Sexual Health and Family Planning ACT (SHFPACT), who provide both sexual and reproductive clinical health services, general practice and professional education and community education in the ACT.

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. The ACT Hepatitis C Council is also funded by ACT Health.

The 'PACT' program (Partnership Approach to Comprehensive Testing) is a partnership between the AIDS Action Council of the ACT, the Canberra Sexual Health Centre, and the ACT Division of General Practice to deliver a range of free sexual health check ups for at-risk

groups including young people, gay men and sex workers. During the reporting period the PACT program continued to provide outreach clinics in various locations to the ACT community.

In 2007, ACT Health released *HIV/AIDS, Hepatitis C, Sexually Transmissible Infections: A Strategic Framework for the ACT 2007-2012*. The Framework aims to improve the wellbeing of the community by working towards reducing the impact of these conditions, and enabling a more coordinated response from ACT Health, policy makers, health care services and the community sector. It also identifies local priorities and actions required, and suggests strategies to achieve change. Improving treatment, care and support outcomes is also an important goal.

During the reporting period, SHFPACT and the Canberra Sexual Health Centre continued to provide the Sexual Health, Lifestyle and Referral Project (SHLiRP) to a number of ACT government colleges. SHLiRP predominantly provides chlamydia testing to students in an age group at high risk of chlamydia infection in addition to health promotion education.

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5 HEALTH AND THE ENVIRONMENT

At a Glance

- Monitoring results indicate that the ACT continues to enjoy a high-quality supply of drinking water. Water quality in Canberra's lakes varies with the season, rainfall intensity and run-off.
- For the period covered by this report air quality was generally of a high standard, with the exception of occasional high concentrations of fine particles from open wood fires in winter.
- The HPS regularly inspects food businesses in Canberra, as well as testing manufactured food and food sold to consumers, to ensure compliance with the Australian Food Standards Code. The HPS conducted 4,110 food premises inspections in 2004-06.
- Businesses in the ACT that perform penetration procedures on living human tissue are required to hold a Public Health Risk Activity (Infection Control) Business Licence. These businesses are audited by the HPS for compliance with national infection control standards. The HPS conducted 343 audits of licensed premises in 2004-06.
- 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 2004 and 2006. There were 351 inspections carried out in 2004-06.
- HPS is also responsible for the safe management of pharmaceuticals in the ACT. During the reporting period, HPS has provided advice on a range of legislative issues pertaining to the safe supply of pharmaceuticals in the Territory and has supported the drafting of new medicines, poisons and therapeutic goods legislation.
- The ACT Health Emergency Sub-plan has undergone a series of tests and revisions since 2003.

Threats to public health from environmental hazards are continually emerging, ranging from small scale, localised exposures to widespread exposures affecting whole populations. It is clear that ecosystem degradation is a major global health threat and human pressures on the environment are increasing (Millennium Ecosystem Assessment 2005).

There is broad variation in people's responses to environmental hazards and there may be considerable delays between exposure to a potential hazard and subsequent health effects. Therefore, the effects of the environment on health and wellbeing are often complex, indirect, and difficult to quantify and attribute cause.

Health protection is 'the avoidance or reduction of potential harm from exposures through organized efforts, including direct action with individuals or communities, regulation, legislation, or other measures'. In recent years, health protection has been a major consideration in public health governance; many health departments have reorganized their functions according to health protection, health promotion, and quality of care assurance. Health protection may include environmental health services, food and water safety, communicable disease control, tobacco control, injury prevention, and other activities that aim to minimize preventable health risks' (Taylor & Guest 2001).

In the ACT, the Health Protection Service (HPS) of ACT Health is responsible for monitoring environmental factors that may impact on human health, and for implementing appropriate interventions to protect those aspects of public health affected by them. Health protection, in regard to environmental risk factors, is achieved through a range of measures including law

enforcement, regulation, education, licensing, monitoring and community complaint investigation.
The HPS priorities related to environmental risk factors for the period 2004-2007 include supporting drinking water quality in the Cotter catchment area, improving information dissemination on recreational water quality, implementing new tobacco control measures and stronger reinforcement of existing measures, implementing food safety programs for high-risk food businesses and developing auditing tools for infection control purposes in the ACT (ACT Health 2004).

5.1 Water quality

5.1.1 Drinking water

There has been a decline of inflows to the ACT dams in recent years. As the drought conditions continue, different options have been explored to provide security of drinking water supply to the ACT and surrounding regions.

In 2004, the ACT Government developed the *Think water, act water* strategy. As part of the strategy, ACTEW identified a number of options for a new long term, reliable water source for the ACT region. The options for detailed assessment included: enlarging the existing Cotter Reservoir; building a new dam on the Gudgenby River (the Tennent Dam); and transferring water from Tantangara Reservoir in NSW to the ACT. ACT Health has provided input into the development of these options regarding public health issues.

In addition, as one of the key contingencies to ensure the security of ACT water supply, ACTEW implemented the *Cotter Googong Bulk Transfer* program in 2006, which included treatment of water from the reservoirs in the Cotter Catchment at the Mt Stromlo Water Treatment Plant (WTP) and its transfer to the Googong reservoir after meeting town demand. This scheme increased the water level at Googong reservoir considerably. ACT Health worked closely with ACTEW and ActewAGL to ensure that water was rigorously treated and its quality consistently met the Australian Drinking Water Guidelines.

The extended *Cotter Googong Bulk Transfer* program was also developed. It includes abstraction of water from the Murrumbidgee River, its treatment at the upgraded Mt Stromlo WTP including the use of ultraviolet radiation to inactivate pathogens (UV treatment), and transfer of surplus treated water to the Googong reservoir.

The Mt Stromlo WTP upgrade will incorporate installation of an UV disinfection treatment facility to achieve sufficient inactivation of pathogens such as *Cryptosporidium* and *Giardia* from the raw water. UV treatment is recognised as the most practical method of treating such water pathogens. It is proposed the upgrade will be finalised in late 2007.

ACT Health worked closely with ACTEW and ActewAGL to review available technical and scientific information concerning drinking water treatment processes and identified UV treatment as the most practical technological process for water disinfection. In addition, ACT Health developed a legislative framework for UV water disinfection treatment. ACT Health continues to monitor developments and provide input in terms of public health advice as part of its regulatory functions relating to drinking water quality.

5.1.2 Drinking Water Code of Practice

The supply of drinking water in the ACT is a licensable public health risk activity. ACT Health has reviewed the *Drinking Water Code of Practice 2000* (Code of Practice), which provides a framework for reporting water quality and management relating of the drinking water supply.

The Code of Practice specifies the technical requirements for the supply, quality, monitoring of, and reporting on, drinking water in the ACT. It documents the notification procedures the Water Utility is required to follow in the event of certain water quality events or incidents.

The review has addressed the proposed UV water disinfection treatment, abstraction of water from different raw water sources, and has aligned the technical requirements with the latest version of the *Australian Drinking Water Guidelines*.

5.2 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 potential contaminants in the ACT.

5.2.1 Natural Waterways

During 2004-06 the Murrumbidgee River, Lake Ginninderra and Lake Tuggeranong were monitored by HPS for compliance with the current National Health and Medical Research Council guidelines. Faecal coliforms are used as an indicator of potential disease producing pathogens in the water. HPS collects water samples from approximately 20 sites around these waterways during the period September to April each year.

Data from this sampling program indicated 86% compliance in 2004-05. In 2005-06, the monitoring indicated an average compliance of approximately 60%. Data from this sampling program has indicated a general lowering of the water quality for swimming purposes over this 2 year period. Reasons for the decrease in water quality have been investigated and no point source pollution was found. It is likely that environmental conditions such as the drought and decreased water flows are the cause of the changed water quality.

Sampling results are provided to the Department of Territory and Municipal Services (TAMS) who have responsibility for the management of these waterways. Where the sampling indicates poor water quality, appropriate public health advice including the need to close areas to swimming are also provided to TAMS.

5.2.2 Swimming and Spa Pools

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. The organisms must be quickly killed to prevent disease transmission and this is achieved through continuous disinfection.

The HPS routinely tests all public swimming and spa pools to ensure that disinfection levels are adequately maintained. During 2004-06 HPS inspected 164 spa and swimming pools in the ACT.

5.3 Air quality

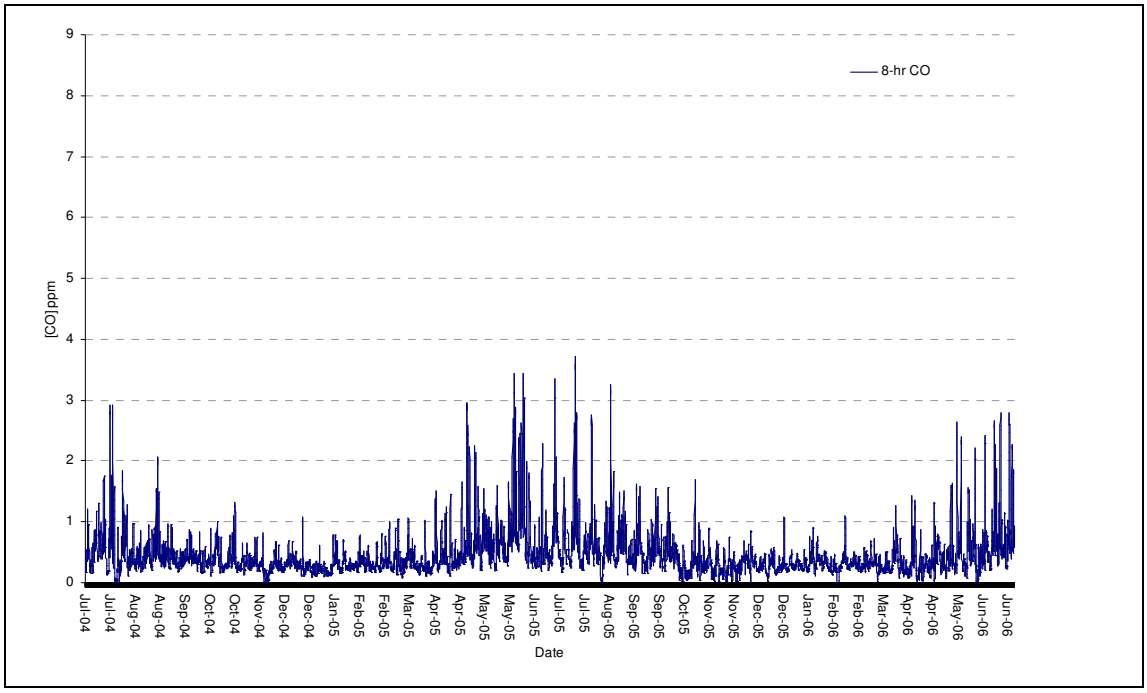
Air quality can be degraded by the presence of pollutants, which have the potential to cause adverse health effects in exposed populations. Some people, such as those with a pre-existing respiratory condition, may be more susceptible than others to the effects of air pollutants. In the ACT, ambient air quality is monitored by the HPS at sites in Tuggeranong, Woden, Civic and Belconnen.

5.3.1 Ambient air quality

Compared with most Australian cities, the ambient air quality in Canberra is generally of a high standard. The HPS collects information on concentrations of carbon monoxide, nitrogen dioxide, ozone and particulate matter less than 10, 2.5 and 1 microns in diameter. Concentration levels of the pollutants mentioned above are generally within the standard set out in the Ambient Air Quality National Environment Protection Measure (NEPM) as recommended by the National Environment Protection Council (NEPC).

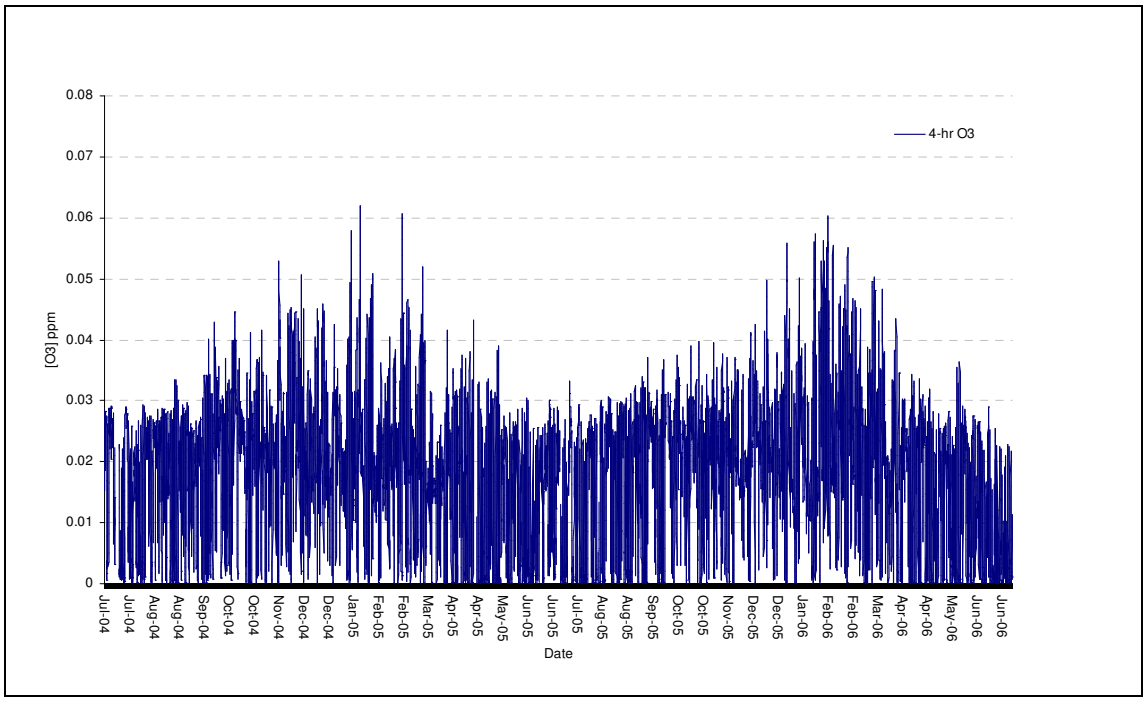
Carbon monoxide (CO) concentrations in Canberra rarely exceed the Ambient Air Quality NEPM. In fact, there have been no breaches of the NEPM standard in the last two years (Figure 5.1). The 2004 to 2006 peaks in CO levels recorded during winter months are the result of CO emissions from open wood-burning fires in residential areas (Environment ACT 2005).

Figure 5.1:Carbon monoxide levels, by month, July 04-June 05, ACT.



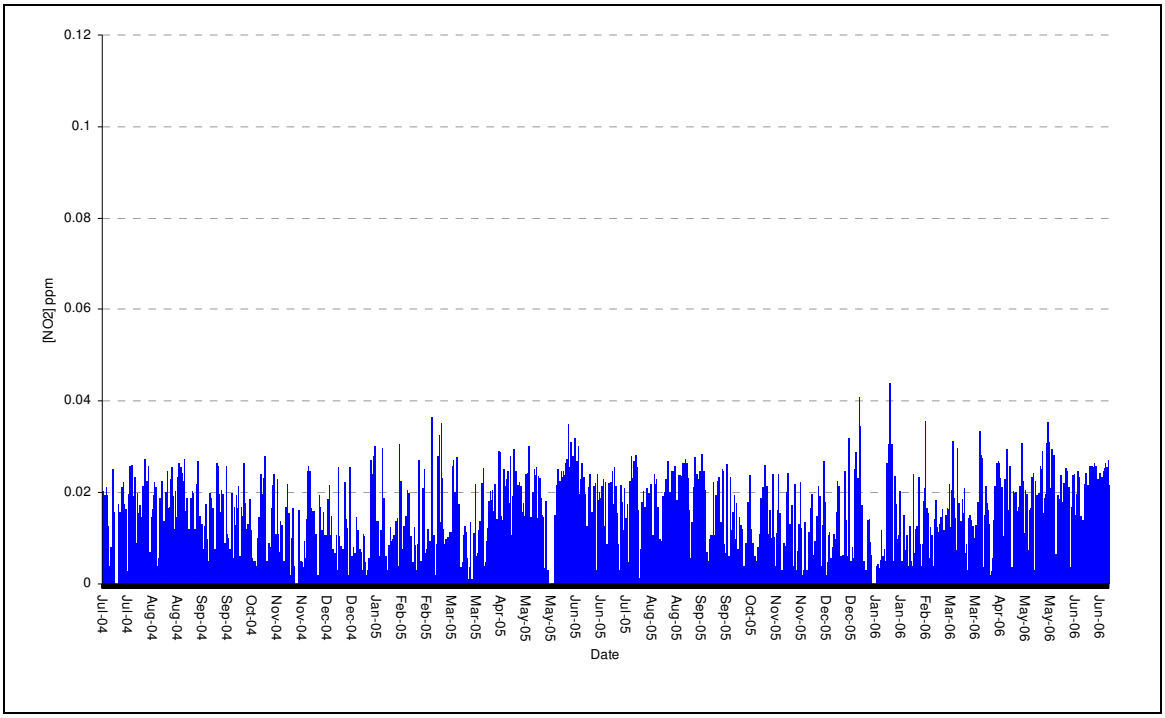
Ozone concentrations peak during the summer months usually in January. There was no breach of the NEPM standard in the last 2 years (Figure 5.2).

Figure 5.2: Ozone concentration levels, by month, July 04-June 05, ACT.



There have been no breaches of the NEPM standard for nitrogen dioxide in the last two years. Ambient air concentrations of nitrogen dioxide peaked in Canberra during January 2006, but remained below the standard Figure 5.3).

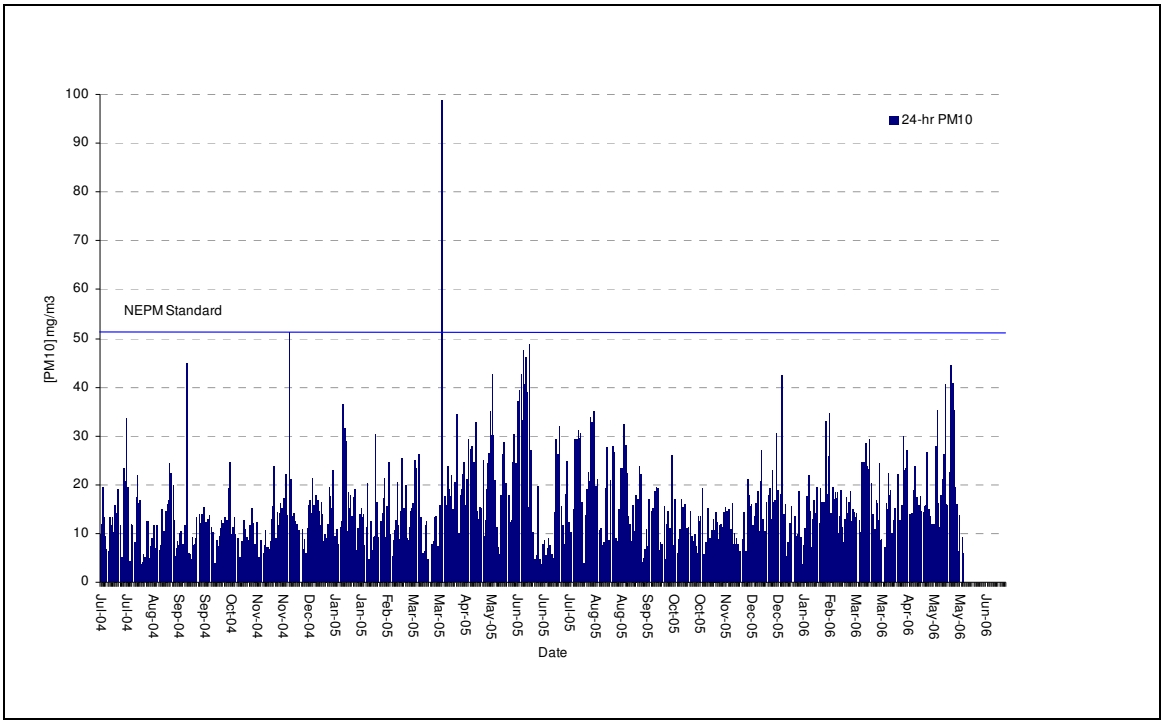
Figure 5.3:Nitrogen dioxide levels, by month, July 04-June 05, ACT.



In Canberra, high concentrations of airborne particulates can be of concern in the winter months when open wood burning fires are used to heat homes.

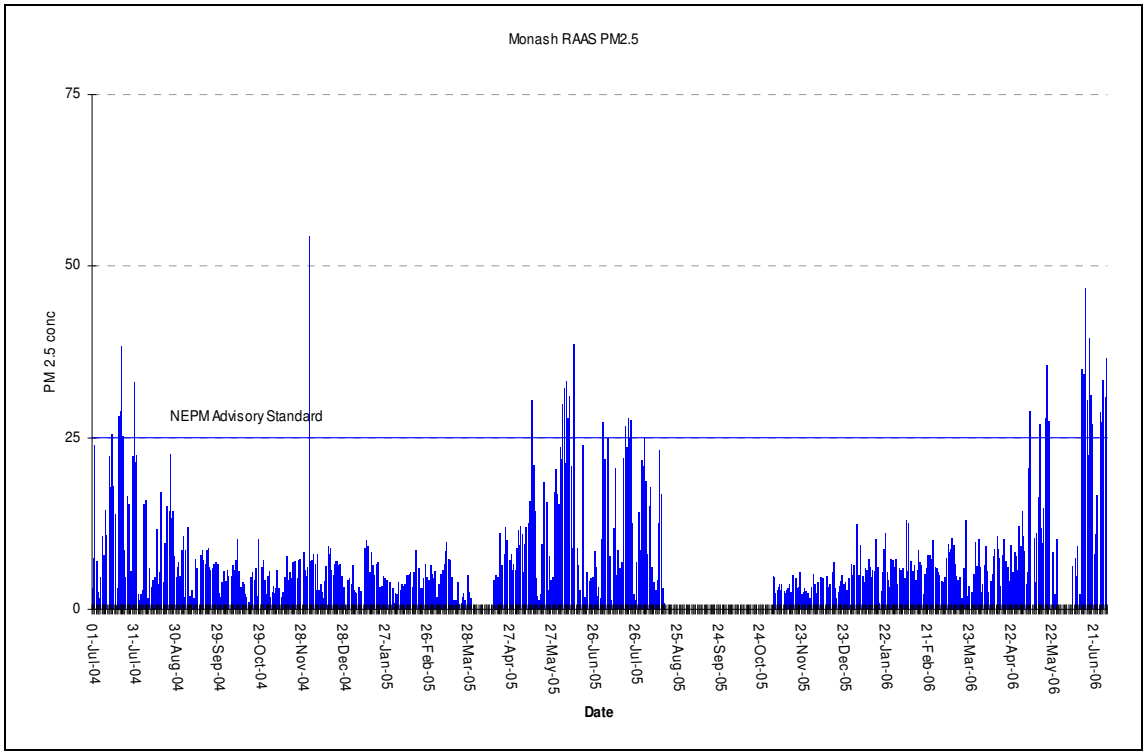
The particulate matter that is released when there are bushfires in and around the ACT can also be a cause for concern during the summer months. Airborne particulate levels (measurements of particulate matter less than 10 microns in diameter - PM10) were high in April 2005 (Figure 5.4). The NEPM allows for 5 exceedances during a year.

Figure 5.4: Airborne particulate levels, Monash, June 04 - June 06, ACT.



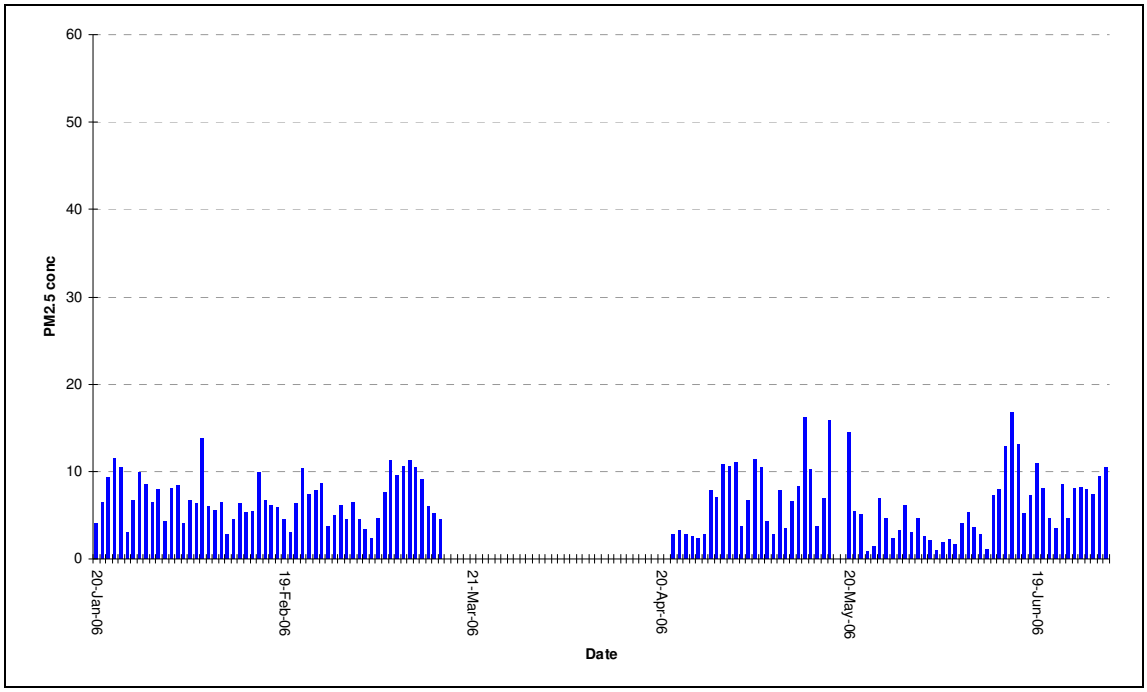
In response to concerns about the potential health effects of air borne particles with a diameter less than 2.5 microns (PM2.5), the NEPC introduced a variation to the Ambient Air Quality NEPM in 2003 which included an advisory reporting standard for the collection of PM2.5 concentration measures (Bascombe et al 1996, Brunekreef & Holgate 2002, NEPC 2003). During the period 2004 to 2006 over 20 exceedances of the advisory standard were recorded.

Figure 5.5: PM2.5 concentration measures, Monash, July 04 - June 06, ACT.



To monitor for wood smoke pollution HPS have set up a network of 3 GRIMM monitors (at Belconnen, Civic and Monash). These monitors provide PM10, PM2.5 and PM1 data (Figure 5.6).

Figure 5.6: Wood smoke pollution level, PM2.5 concentrations, Civic, Jan 06 – June 06, ACT.



The NEPC are also developing an air toxics NEPM. States and territories will monitor local levels of air toxics over the next three years in an effort to identify areas that may require constant monitoring and to gather sufficient data for the NEPC to determine an appropriate standard. Air toxics are unlikely to be a significant issue in Canberra however, as high concentrations of toxic substances in urban areas are usually associated with heavy industry or heavily trafficked or congested roads (NEPC 2004).

5.4 Food safety

The HPS regulates food safety within the ACT. This includes registration of food businesses, inspections, responding to complaints and sampling programs. Food business owners are legally required (under the *Food Act 2001*) to ensure food they sell is suitable and safe for their customers to consume.

The HPS regularly inspects food businesses in the ACT, as well as testing manufactured food and food sold to consumers, to ensure compliance with the Food Standards Code (available from the Food Standards Australia New Zealand website, www.foodstandards.gov.au). The HPS conducted 4110 inspections of food premises between 2004-06.

Food safety programs became mandatory for certain highest risk food businesses in 2007. Food safety programs are management systems to control the risks associated with food production. Processors of oysters and bivalves producers of manufactured and fermented meats, food businesses which provide potentially hazardous food to vulnerable populations, and catering operations serving food to the general public will be required to introduce food safety programs over the next three to four years. The HPS has been developing food safety program templates, fact sheets and information packages for food businesses to facilitate the introduction of food safety programs.

During the 2004-06 period the HPS conducted weekly microbiological sampling of Ready to Eat Foods and specialist surveys of such foods as salads, sushi, pies, quiches, sandwiches, noodles, pasta, meats and desserts. In general the microbiological quality of the ready-to-eat foods sold in the ACT is good.

The results of these surveys are available on the ACT Health web site http://www.health.act.gov.au/c/health?a=da&did=10054021

The activity reports include:

- Ready to Eat Foods 2004 – 2005
- Ready to Eat Foods 2005 – 2006
- Raw Fish Survey
- Cooked Rice Survey
- Retail Packaged Salads Survey
- Incidence of Salmonella Listeria Monocytogenes in cooked chicken

The Retail Packaged Salads Survey was also the ACT's contribution to a national survey instigated by Food Standards Australia and New Zealand.

The annual Ready to Eat Foods (RTE) survey has now been in operation for five years and during 2004-06 the overall improvement in the quality of the RTE foods sampled has continued.

5.5 Infection control

Businesses in the ACT that perform a skin penetration procedure are required to hold an Infection Control Activity Licence and comply with the *Infection Control for Office practices and other community based services Code of Practice 2005* (the Code). The aim is to

minimise the risk of transmission of blood borne and other infections between the practitioner, the appliances used and clients/patients.

To assist businesses achieve the standards contained in the Code they are provided with a copy of ACT Health *Infection Control Guidelines for office practices and other community based services 2006*. The guidelines provide information on standard and additional precautions, the reprocessing of appliances, occupational health and safety, safe disposal of clinical waste, environmental maintenance and premise construction requirements.

Businesses such as dental practices, diagnostic clinics, pharmacies, podiatry clinics, acupuncture clinics, pathology collection centres, beauty therapists, tattoo studios and body piercing studios are monitored to check for compliance with the Code and relevant nationally recognised infection control standards. There were 129 audits of licensed premises in 2004-05 and 214 in 2005-06 with satisfactory results.

5.6 Drug safety

5.6.1 Illicit Drugs

The HPS has provided timely information to police and health workers on potential health hazards relating to illicit drugs, an example being the recent presence of p-Methoxyamphetamine (PMA) in the ACT. (refer Chapter 4 for information on illicit drug use).

Recently, state-of-the-art liquid chromatography/mass spectrometry instrumentation has been commissioned, bringing the capability of HPS in line with other jurisdictions and allowing more complex investigations to be performed while simplifying others.

Collaboration with the University of Canberra and the Centre for Forensic Studies has continued. An honours study program into the application of oral fluid road-side testing devices was supported. This will provide data for the development of the Australian Federal Police/ACT Policing policy in the area of road-side drug testing for the ACT. Additionally, a PhD project on the application of new technologies and methodologies for the analysis of amphetamine type substances was supported and produced a number of publications in peer-reviewed journals.

5.6.2 Licit drugs

Regulatory activities have been conducted and advice provided with respect to the safe supply of pharmaceuticals in the Territory. Surveillance and compliance activities were conducted for the prescribing and dispensing of drugs of dependence. Out-of-date and unwanted drugs of dependence were collected from community pharmacies. Legislation has been or is being amended to bring the Territory into line with national standards.

A proposal was put forward to allow pharmacists to provide 3 days supply of a Prescription Only Medicine without a prescription, in an emergency. This was identified as a problem after the 2003 bushfires and the legislation was changed in August 2004.

The *Optometrists Legislation Amendment Bill 2004* was developed during 2004-2006 and passed by *t*he Legislative Assembly in March 2005. The new legislation allows optometrists in the ACT to prescribe certain medicines.

The drafting of new medicines, poisons and therapeutic goods legislation for the ACT was commenced. This will update the legislation and bring it into line with other Australian jurisdictions, as well as implement the National Competition Review on *Drugs Poisons and Controlled Substances Legislation* that was subsequently endorsed by the Council of Australian Governments.

5.7 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 2004 and 2006. The occupational exposures received by the vast

majority of radiation workers in ACT were less than one-tenth of the limit prescribed in the *Radiation Act 1983*.

The *Act* provides for the safe use, transportation and disposal of radioactive materials and irradiating apparatus, and for related purposes. In the ACT, ionizing radiation and radioactive materials are principally used in medicine, industry and related fields.

Local premises and equipment are routinely inspected by the HPS, ensuring that the radiation safety standards set by the ACT Radiation Council under the *Radiation Act 1983* are maintained.

Altogether, there were 351 inspections undertaken during 2004-2006. Approximately 800 licenses and registrations are active at any one time.

The HPS provides specialist radiation safety advice and secretariat services to the ACT Radiation Council, and participates in the ACT Chemical, Biological, Radiological and Nuclear (CBRN) Working Group currently developing a CBRN Plan for the accidental or deliberate release of agents.

The HPS also develops and implements ACT radiation safety policy and associated legislative initiatives, and contributes - through permanent membership of the Radiation Health Committee of ARPANSA (Australian Radiation Protection and Nuclear Safety Agency) - to the ongoing development of a national policy framework and protocols for radiation protection across Australia. In 2006, the *Radiation Protection Bill 2006*, to replace the Act, was introduced into the Legislative Assembly.

5.8 Emergency planning in the ACT

During the 2004-2006 period, ACT Health continued to strengthen the Territory's preparedness to effectively respond to an emergency or disaster which had health-related implications.

This period saw ACT Health coordinate responses to a variety of health-related emergencies, both locally and internationally, and continue its active involvement in a range of multi-jurisdictional exercises and committees.

Emergency management work focused on pandemic preparedness, natural disasters, and enhancing preparedness through counter-terrorism and protective security arrangements.

In 2004, the *Health Emergency Management Sub-Plan* was reviewed due to changes in overarching and related emergency plans, legislation, and inter-agency policies. The endorsed Sub-Plan has since been tested and utilised on a number of occasions, and is a valuable tool in coordinating response elements, internal and external to the health sector.

ACT Health participated in several major exercises over this period. These exercises focused on command, control and coordination capabilities between agencies, mass casualty coordination, public health response capabilities to a zoonotic animal disease outbreak, and critical infrastructure disablement.

These exercises proved valuable in the effective coordination of the rapid assembly of a joint NSW-ACT twenty-seven member medical team to assist in the treatment of earthquake victims from Indonesia, in May 2006. For the Territory, these exercises have also been essential in formulating responses to several 'white-powder' incidents over the period, and an impending gas shortage in June 2006.

During the latter part of this reporting period, the development of a Public Health Plan to support the *Health Emergency Management Sub-Plan* was commenced, and pandemic influenza planning and preparedness continued to be enhanced.

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6 HEALTH SERVICES AND THEIR USE

At a Glance

- The most recent information available on the medical workforce shows the ACT has a high rate of employed medical practitioner FTEs, but a very low rate of GP FWEs. Nursing rates for the ACT are low in comparison to other jurisdictions, but have increased in recent years.
- Nearly a quarter (24%) of all hospital separations were for non-ACT residents.
- Hospital separation rates for ACT residents at public hospitals were higher in 2005-06 than in previous years and although not the highest in the country, were higher than the national average.
- Hospital separations in the ACT increased by 9.2% between 2004-05 and 2005-06. Just over two thirds (67.8%) were public hospital separations and about three quarters (75.3%) of these were for ACT residents.
- The relative stay index (RSI) is an indicator of hospital efficiency. The RSI for the ACT declined between 2004-05 and 2005-06, and was second equal with Queensland, after Victoria in 2005-06.
- The ACT has a very low rate of potentially preventable hospitalisations (PPH) in comparison to other jurisdictions. Although there was an increase in the overall PPH rate for the ACT between 2004-05 and 2005-06, the ACT was 32% lower than the national average.
- There was a marked increase in the uptake of Medicare EPC items by GPs in the ACT between 2004-05 and 2005-06. This increase is believed to be due to the introduction of the chronic disease management items in July 2005, which increased care planning options for GPs.
- An estimated 28.9% of ACT residents see a dentist over a 12-month period.
- The number of pathology and diagnostic imaging tests ordered per capita in the ACT is lower than for Australia. If the order rates for the ACT were similar to the rates for Australia in 2005-06, and the ACT were paid accordingly, then the ACT would have received an estimated additional $2.57 million for testing.
- The number of residential aged care places increased slightly in the ACT between 2004-05 and 2005-06, from 1,556 to 1,594 places. However, the rate per 1,000 population aged 70 years or more remains lower than the rate for Australia.
- There were 1,491 permanent residents in residential aged care in the ACT, as at 30 June 2006. Almost three quarters (73.2%) were female. At least a quarter (27.2%) were aged 90 years or more and about 3.2% were less than 65 years.

ACT Health plans, manages and delivers public sector health services to both ACT residents and residents in the NSW surrounding region. The total population catchment is estimated to be about 500,000 persons. The range of services provided includes:

- Public hospital services (including admitted patient services, outpatient clinic and emergency department services)
- Dental health services
- Community health services
- Ambulance services
- Pathology and radiology services
- Public health services (such as health promotion programs and disease prevention services)
- Mental health services
- Health policy research, development and management

The private sector and other Government agencies also play an important role in the health system, delivering general practice services, specialist medical and surgical services, community pharmacy and dental services, a range of allied health services (such as optometry and physiotherapy), private hospital services and residential aged care services.

6.1 Private health insurance

Having private medical insurance has an impact on health service access. Private health insurance supplements the public health system and depending on the type of cover purchased, provides cover against all or part of hospital theatre and accommodation costs, in either a public or private hospital, medical costs in hospital and costs associated with a range of services not covered under Medicare, including private dental services, optical, chiropractic, home nursing, ambulance and natural therapies. At 30 June 2006, there were 38 registered health insurers offering private health insurance in Australia (ABS 2006a).

Private medical insurance uptake rates are high in the ACT. In 2004-05, 60.5% of the adult population aged 15 years or more were insured, compared to only half (50.7%) of the national population (ABS 2006a, 2006b).

6.2 Health workforce

In November 2005, ACT Health released the *Workforce Plan 2005-2010: Building a Sustainable Workforce for the People of the ACT*. The Plan sets out the workforce issues for the ACT and the strategies required to build a sustainable health workforce to 2010. It attempts to predict future requirements and acknowledges the need for a more flexible, appropriately qualified workforce in the ACT.

The tables that follow provide an indication of some of the trends for the ACT and how the ACT health workforce compares to other states and territories.

Medical practitioners and nursing staff comprise the majority of the ACT health workforce, with the ACT consistently having the highest rate of employed fulltime equivalent (FTE) medical practitioners in Australia (Table 6.1). However, the rate of general practitioner fulltime workload equivalents (FWEs), per 100,000 population, is consistently lower than all other states, but not the NT (Table 6.2).

Table 6.1: Employed medical practitioners, by state & territory, 2000, 2002 & 2004.

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
2000	283	277	234	245	301	229	357	289	270
2002	279	301	217	233	300	237	370	346	271
2004	312	306	217	230	310	268	383	237	283

Data sources: AIHW 2004; AIHW 2006a.
Note: FTE practitioner rate (per 100,000 population) based on a 45 hour week.

Table 6.2: Full time workload equivalent (FWE) GPs, by state & territory, 2001 - 06.

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
2001-02	88.9	85.3	86.6	74.9	89.1	80.8	66.1	46.2	85.2
2002-03	89.2	84.3	83.7	74.7	88.8	78.8	62.8	48.5	84.4
2003-04	89.5	82.6	84.0	73.1	88.8	77.5	61.0	48.6	83.9
2004-05	91.7	82.8	85.6	72.3	88.5	77.9	61.5	47.2	84.9
2005-06	92.4	84.3	86.3	72.0	90.5	79.1	63.3	46.8	85.8

Data source: SCRGSP 2007.
Note: FWE rates per 100,000 population. FWEs were calculated for each practitioner by dividing the practitioner's Medicare billing by the mean billing of full time practitioners for that reference period. For example, a FWE value of 2 indicates that the practitioner's total billing was twice that of the mean billing of a full time practitioner.
Note: GP numbers were based on doctors' major practice postcodes as at the last quarter of the reference period. The major practice postcode was the location at which a doctor rendered the most services. FWE numbers were based on doctors' practice location postcodes at which services were rendered within the reference period.

Nursing rates for the ACT are lower than the rates for most states and the Northern Territory, but they have increased in recent years and are now higher than the average for Australia (Table 6.3).

Table 6.3: Employed nurses, by state & territory, 1999, 2001, 2003 & 2004.

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
1999	1,009	1,107	960	1,086	1,049	993	1,015	1,504	1,039
2001	992	1,146	968	935	1,095	1,022	1,071	1,058	1,031
2003	1,057	1,235	976	965	1,286	1,240	1,134	1,723	1,106
2004	1,099	1,249	998	1,325	1,374	1,212	1,173	1,262	1,164

Data sources: AIHW 2005a; AIHW 2006b.
Note: FTE nurse rates per 100,000 population, based on a 35 hour week.

6.3 Hospital service use

6.3.1 Hospital separations

The ACT has two public hospitals:

- The Canberra Hospital, which is the major trauma and tertiary care facility providing acute and other specialty care for the people of the ACT and South-East region of New South Wales; and
- Calvary Public Hospital, an acute hospital providing a broad range of acute and specialty care services.

There are also three private hospitals in the ACT:

- Calvary Private Hospital;
- John James Memorial Hospital; and
- National Capital Private Hospital.

Data on hospital separations are an indicator of health service utilisation. A single separation occurs upon the completion of a hospital stay (from admission to discharge, transfer, or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute care to rehabilitation). Many patients are treated as non-admitted patients (outpatients) and this information is not included in hospital separation data.

In 2005-06 there were 110,503 hospital separations from ACT hospitals, 9.2% more than in 2004-05. More than two thirds (67.8%,) were separations from public hospitals in the ACT and three quarters (75.3%) of these were for ACT residents (Table 6.4). More people use public hospitals services in the ACT than they use private hospital care.

The majority of ACT resident separations from ACT public hospitals were for ‘factors influencing health status and contact with health services’, followed by ‘injury, poisoning and certain other consequences of external causes’, ‘diseases of the digestive system’, ‘diseases of the circulatory system’ and ‘pregnancy, childbirth, and the puerperium’.

Table 6.4: Hospital separations by principal diagnosis, by public & private ACT hospitals, for ACT & non-ACT residents, 2005-06.

	Public hospitals		Private hospitals		Total	
	No.	%	No.	%	No.	%
			ACT Residents			
Certain Infectious and Parasitic Diseases	1,028	1.8	50	0.2	1,078	1.3
Neoplasms	2,417	4.3	3,067	10.9	5,484	6.5
Diseases of the Blood and Blood-Forming Organs and Certain Disorders involving the Immune Mechanism	726	1.3	269	1.0	995	1.2
Endocrine, Nutritional, and Metabolic Diseases	1,047	1.9	370	1.3	1,417	1.7
Mental and Behavioural Disorders	1,395	2.5	1,411	5.0	2,806	3.3
Diseases of the Nervous System	1,393	2.5	339	1.2	1,732	2.1
Diseases of the Eye and Adnexa	817	1.4	860	3.1	1,677	2.0
Diseases of the Ear and Mastoid Process	220	0.4	312	1.1	532	0.6
Diseases of the Circulatory System	3,720	6.6	1,423	5.1	5,143	6.1
Diseases of the Respiratory System	2,588	4.6	920	3.3	3,508	4.2
Diseases of the Digestive System	4,330	7.7	2,937	10.5	7,267	8.6
Diseases of the Skin and Subcutaneous Tissue	803	1.4	471	1.7	1,274	1.5
Diseases of the Musculoskeletal System and Connective Tissue	2,276	4.0	3,009	10.7	5,285	6.3
Diseases of the Genitourinary System	2,406	4.3	2,219	7.9	4,625	5.5
Pregnancy, Childbirth, and the Puerperium	3,684	6.5	1,998	7.1	5,682	6.7
Certain Conditions Originating in the Perinatal Period	1,019	1.8	630	2.2	1,649	2.0
Congenital Malformations, Deformations and Chromosomal Abnormalities	304	0.5	148	0.5	452	0.5
Symptoms, Signs and Abnormal Clinical and Laboratory Findings not elsewhere classified	3,344	5.9	777	2.8	4,121	4.9
Injury, Poisoning and Certain Other Consequences of External Causes	4,966	8.8	875	3.1	5,841	6.9
Factors Influencing Health Status and Contact with Health Services	17,887	31.7	5,941	21.2	23,828	28.2
Total	**56,370**		**28,026**		**84,396**	
			Non-ACT Residents			
Certain Infectious and Parasitic Diseases	235	1.3	14	0.2	249	1.0
Neoplasms	1,041	5.6	906	11.9	1,947	7.5
Diseases of the Blood and Blood-Forming Organs and Certain Disorders involving the Immune Mechanism	204	1.1	70	0.9	274	1.0
Endocrine, Nutritional, and Metabolic Diseases	315	1.7	94	1.2	409	1.6
Mental and Behavioural Disorders	173	0.9	394	5.2	567	2.2
Diseases of the Nervous System	284	1.5	111	1.5	395	1.5
Diseases of the Eye and Adnexa	251	1.4	200	2.6	451	1.7
Diseases of the Ear and Mastoid Process	99	0.5	78	1.0	177	0.7
Diseases of the Circulatory System	1,593	8.6	500	6.6	2,093	8.0
Diseases of the Respiratory System	584	3.2	258	3.4	842	3.2
Diseases of the Digestive System	1,094	5.9	754	9.9	1,848	7.1
Diseases of the Skin and Subcutaneous Tissue	187	1.0	90	1.2	277	1.1
Diseases of the Musculoskeletal System and Connective Tissue	833	4.5	1,067	14.1	1,900	7.3
Diseases of the Genitourinary System	654	3.5	631	8.3	1,285	4.9
Pregnancy, Childbirth, and the Puerperium	789	4.3	377	5.0	1,166	4.5
Certain Conditions Originating in the Perinatal Period	318	1.7	108	1.4	426	1.6
Congenital Malformations, Deformations and Chromosomal Abnormalities	160	0.9	39	0.5	199	0.8
Symptoms, Signs and Abnormal Clinical and Laboratory Findings not elsewhere classified	674	3.6	194	2.6	868	3.3
Injury, Poisoning and Certain Other Consequences of External Causes	1,711	9.2	267	3.5	1,978	7.6
Factors Influencing Health Status and Contact with Health Services	7,315	39.5	1,441	19.0	8,756	33.5
Total	**18,514**		**7,593**		**26,107**	
Grand total	**74,884**		**35,619**		**110,503**	

Data source: ACT admitted patient care collections, 2005-06. Confidentialised unit record file.

Note: Principal diagnosis for ICD-10-AM diagnostic categories (see Appendices for coding definitions).
Note: ACT residents excludes separations for ACT residents hospitalised interstate or overseas.

Separation rates for ACT residents at public hospitals were higher in 2005-06 than in previous years and although not the highest in the country, they were higher than the national average (Table 6.5).

Table 6.5: Separation rates from public (non-psychiatric) hospitals 2001-02 to 2005-06.

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
2001-02	186.7	222.4	192.4	189.6	227.9	164.6	216.3	394.3	201.8
2002-03	188.6	231.2	189.3	194.4	229.2	163.9	219.7	422.5	204.8
2003-04	191.1	235.0	189.2	190.2	234.2	162.4	235.6	428.9	206.8
2004-05	191.6	238.2	187.9	194.4	224.0	172.2	214.4	456.2	207.3
2005-06	199.8	243.7	187.9	195.7	228.4	185.8	238.4	483.0	212.8

Data source: AIHW 2007a.

Note: Rates per 1,000 people are directly age standardised to the Australia population as at 30 June 2001.
Note: Rates exclude separations for which the care type was reported as 'newborn with no qualified days' and records for hospital boarders and posthumous organ procurement.

Table 6.6 presents selected procedure rates by residency status. The procedures presented are all indicators of appropriateness and some are indicators of accessibility and performance of non-hospital health services (AIHW 2007a). The table shows ACT residents had the lowest separation rates for caesarean sections in Australia in 2005-06. In contrast, ACT residents had the highest separation rates for coronary angioplasty, revision of hip replacement and knee replacement procedures.

Table 6.6: Separation rates for selected procedures, by state or territory of usual residence, all hospitals, 2005-06.

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust[(e)]
Caesarean section[(f)]	4.00	3.97	4.62	4.68	4.21	4.16	3.69	4.71	4.20
Cholecystectomy	2.20	2.29	2.27	2.08	2.32	2.23	2.00	1.73	2.23
Coronary angioplasty	1.70	1.72	1.27	1.55	1.49	1.49	1.81	1.20	1.59
Coronary artery bypass graft	0.67	0.66	0.76	0.40	0.60	0.62	0.49	0.91	0.65
Hip replacement	1.26	1.38	1.13	1.48	1.35	1.74	1.46	0.82	1.31
Revision of hip replacement	0.16	0.17	0.14	0.17	0.14	0.17	0.21	0.12	0.16
Hysterectomy, females aged 15–69	1.26	1.24	1.36	1.45	1.60	1.58	1.37	1.31	1.33
Knee replacement	1.71	1.27	1.39	1.50	1.47	1.51	1.86	0.87	1.50
Lens insertion	8.26	7.49	9.18	8.09	7.03	6.14	6.40	7.01	8.05
Myringotomy (with insertion of tube)	1.24	1.71	1.36	1.92	2.94	1.23	1.26	0.68	1.56
Tonsillectomy	1.76	1.84	1.76	1.79	2.42	1.09	1.40	0.97	1.80
Prostatectomy	1.31	1.50	1.13	1.22	1.26	1.37	1.19	1.15	1.31

Data source: AIHW 2007a.

Note: Separations for which the care type was reported as Newborn with no qualified days, and records for Hospital boarders and Posthumous organ procurement have been excluded.
Note: Rates are per 1,000 population and were directly age-standardised.
Note: The procedures and diagnoses were defined using ICD-10-AM codes; excludes multiple procedures for the same separation within the same group.
Note: Some hospitals are not included, and in particular about 20% of private hospital separations in Tasmania were not included in the National Hospital Morbidity Database.
Note: (e) Includes other territories and excludes overseas residents and unknown state of residence.
Note: (f) Caesarean section separations divided by separations for which in-hospital birth was reported. This is an approximate measure of the proportion of all births that are by caesarean section, as births out of hospital are not included.

6.3.2 Relative stay index

The relative stay index (RSI) is an indicator of hospital efficiency. It is a case-mix adjusted figure derived by comparing actual length of stay (in days) in hospital against an expected (based on a national average) length of stay in hospital. An RSI greater than '1' indicates a length of stay in hospital is greater than what might be expected and an RSI less than '1' indicates a length of stay in hospital is less than what might be expected (AIHW 2007a).

The RSI for the ACT declined between 2004-05 and 2005-06, and was second equal with Queensland, after Victoria in 2005-06 (Table 6.7). Most of the decline in the ACT was due to a decline in medical separations.

Table 6.7: Relative stay index for states & territories, 2004-05 & 2005-06.

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2004-05	**1.03**	**0.95**	**0.97**	**1.04**	**1.00**	**1.04**	**1.06**	**n.p.**
Medical	1.00	0.91	0.93	1.02	0.98	1.04	1.07	n.p.
Surgical	1.08	1.00	1.02	1.07	1.03	1.03	1.06	n.p.
Other	1.20	0.96	1.07	1.02	1.01	1.17	1.03	n.p.
2005-06	**1.01**	**0.91**	**0.92**	**0.99**	**1.00**	**1.03**	**0.92**	**1.13**
Medical	0.99	0.88	0.90	0.98	0.98	1.02	0.90	1.08
Surgical	1.05	1.00	0.97	1.03	1.04	1.04	0.98	1.31
Other	1.21	0.99	1.07	0.98	1.01	1.11	0.86	1.38

Data sources: AIHW 2006c; AIHW 2007a.

Note: Relative stay index based on AR DRG version 5.0 and includes all public hospitals. The relative stay index has been directly standardised and is comparable between cells.
n.p. Not published.

6.3.3 Potentially preventable hospitalisations

Potentially preventable hospitalisations (PPH) include hospitalisation for a set of conditions resulting from diseases preventable through population based health promotion strategies (eg smokefree legislation) and diseases sensitive to prophylactic or therapeutic intervention in the ambulatory setting. High rates of hospitalisation for these conditions may indicate increased prevalence in the community, poorer functioning in the non-hospital care setting, or an appropriate response by the hospital system to respond to a higher level of need (AIHW 2007a).

The ACT has a very low rate of PPH in comparison to other jurisdictions. Although there was an increase in the overall PPH rate for the ACT between 2004-05 and 2005-06, the ACT was 32% lower than the national average (Table 6.8).

Table 6.8: Selected potentially preventable hospitalisation separation rates, ACT and Australia, 2004-05 & 2005-06.

	2004-05		2005-06	
	ACT	Australia	ACT	Australia
Vaccine preventable conditions[(b)]	0.5	0.7	0.4	0.7
Acute conditions[(c)]	8.8	12.3	10.2	12.9
Chronic conditions[(d)]	10.2	18.7	11.3	18.6
All potentially preventable hospitalisations	19.4	31.5	21.9	32.0

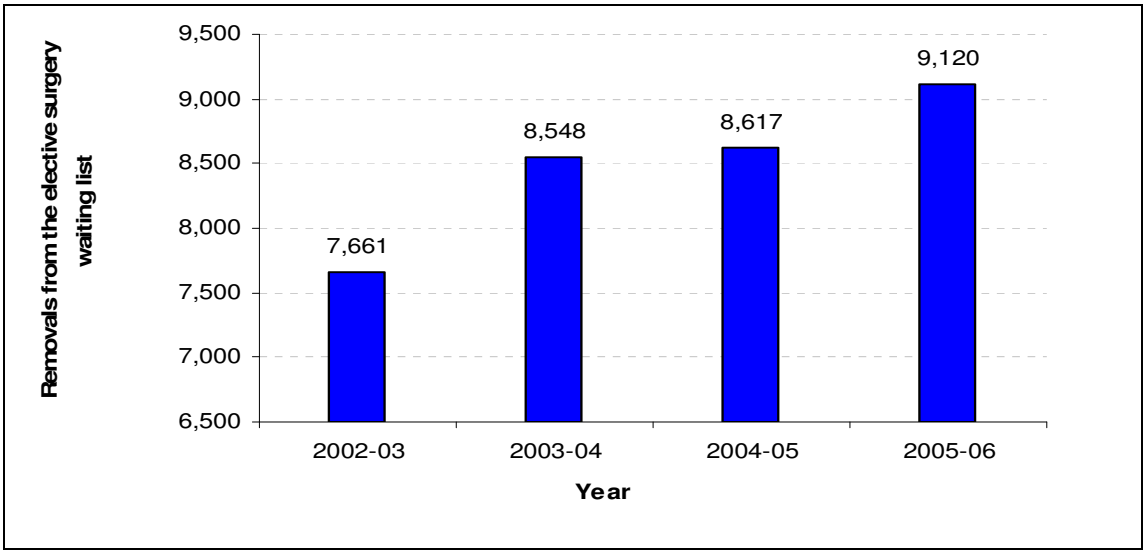
Data sources: AIHW 2007a; AIHW 2006c.

Note: Rates are age-standardised per 1,000 population.
Note: Totals have been rounded.
Note: (b) These conditions are preventable with vaccination. They include influenza, bacterial pneumonia, tetanus, measles, mumps, rubella, pertussis and polio.
Note: (c) These conditions may not be preventable, but theoretically would not result in hospitalisation if adequate and timely care had been received. They include complicated appendicitis, dehydration/gastroenteritis, pyelonephritis, perforated ulcer, cellulitis, pelvic inflammatory disease, ENT infections and dental conditions.
Note: (d) These conditions may be preventable through behaviour modification and lifestyle change. They include diabetes, asthma, angina, hypertension, congestive heart failure and chronic obstructive pulmonary disease.

6.3.4 Access to elective surgery

The Access Improvement Program (AIP) is a major initiative aimed at improving patient access to public health services in the ACT. Under the auspices of the AIP, a number of activities have been actioned to improve timely access to elective surgery in the ACT (ACT Health 2006a, 2006b). As a result, there have been successive increases in throughput over the last three years, with record numbers reported in 2005-06 (Figure 6.1).

Figure 6.1: Removals from the ACT elective surgery waiting list, 2002-03 to 2005-06.



Data Source: ACT Health 2006a

6.3.5 Emergency department triage category timeframes

Estimates derived from the 2005 ACT General Health Survey suggest that between 1-3% of the population visited an ACT public hospital emergency department, at least once, in the four weeks prior to survey.

Between 2004-05 and 2005-06, there was a six percent increase in emergency department presentations at ACT public hospitals (The Canberra Hospital and Calvary Public), up from 93,710 presentations in 2004-05 to 99,616 in 2005-06. Most of the increase occurred in the complex care area, with presentations for the three most acute types of presentation up 28 percent over the last two years (ACT Health 2006a). This increase has had an impact on the capacity of public hospital emergency departments to meet triage category timeframes (Table 6.9).

In response, as part of the AIP, ACT Health has boosted capacity to help meet demand by engaging more medical staff in ACT hospital emergency departments. Other initiatives are aimed specifically at improving processes to alleviate emergency department access block (admission to hospital through the emergency department in less than eight hours).

Table 6.9: Percentage of emergency department patients seen within triage category timeframes, public hospitals, ACT, 2004-05 to 2005-06.

	2004-05	2005-06
Category 1, seen immediately	100	100
Category 2, seen within 10 minutes	70	71
Category 3, seen within 30 minutes	49	44
Category 4, seen within 1 hour	52	47
Category 5, seen within 2 hours	84	84

Data sources: ACT Health 2005b; ACT Health 2006a.

6.4 Primary health care

The primary and community health sector is the part of the healthcare system most frequently used by Australians. Within this sector health care professionals provide preventative care, diagnosis and treatment of illness, and referral to other healthcare services. In 2006, ACT Health released the *ACT Primary Health Care Strategy 2006-2009*. The strategy aims to provide a direction for primary health care in the ACT, and will be implemented by ACT Health and other key stakeholders over the next few years.

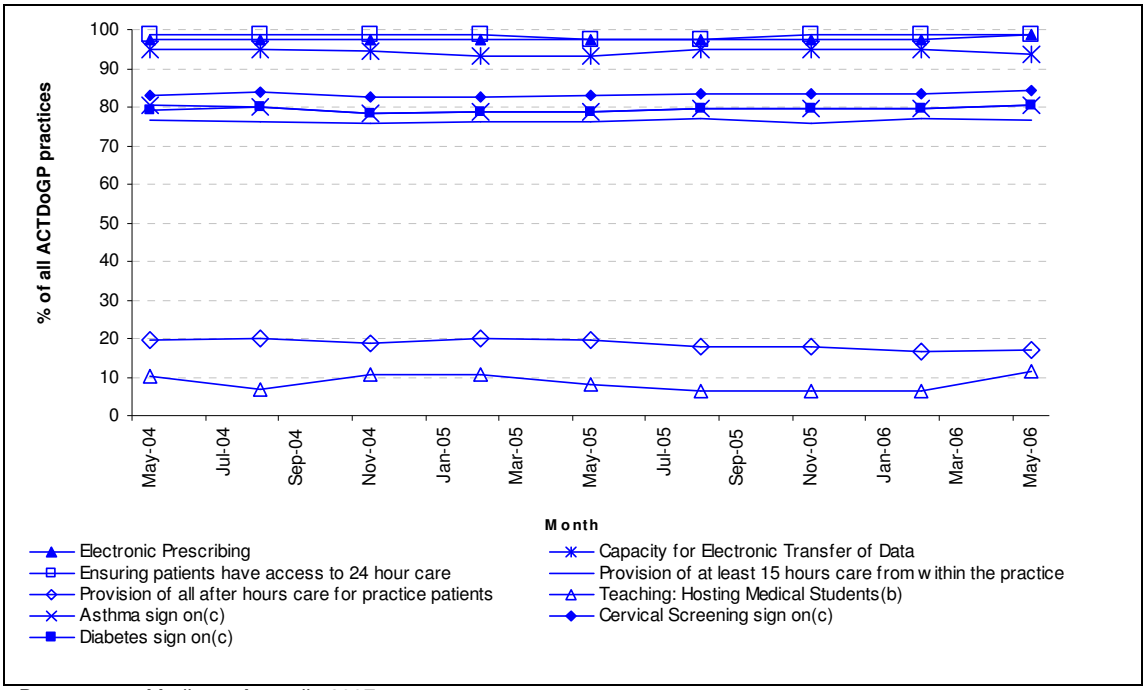
6.4.1 General practitioners

General practitioners (GPs) are among the most commonly consulted health professionals in Australia. Administrative data from Medicare suggest that about 75% of people in the ACT consulted a doctor at least once in 2004-05 (Medicare Australia 2006) and estimates derived from the 2005 ACT General Health Survey suggest that about one in five (20.6%) females and one in ten (11.8%) males consulted a GP, at least once, in the four-week period before the survey.

The services provided by GPs are partly funded by the Australian Government through Medicare and the Department of Veteran Affairs. The Australian Government also provides payments to GPs through the General Practice Immunisation Incentives Scheme (GPII) and the Practice Incentives Program (PIP) (DoHAC 2000).

The PIP aims to compensate for the limitations of fee-for-service arrangements that provide higher rewards for GPs and practices with higher levels of throughput. The PIP payment focuses on aspects of general practice that contribute to quality care (Medicare Australia 2007). In the ACT, most of the ACT Division of General Practice practices participate in the PIP, with high levels of electronic prescribing; patient access to 24 hour care; asthma, cervical screening and diabetes practice sign on; capacity for electronic transfer of data; and high levels of provision of at least 15 hours care in the after hours period; and subsequently reported on their activities (Figure 6.2).

Figure 6.2: PIP participation of ACT Division of General Practice practices (selected items), percent, May 2004 - May 2006.



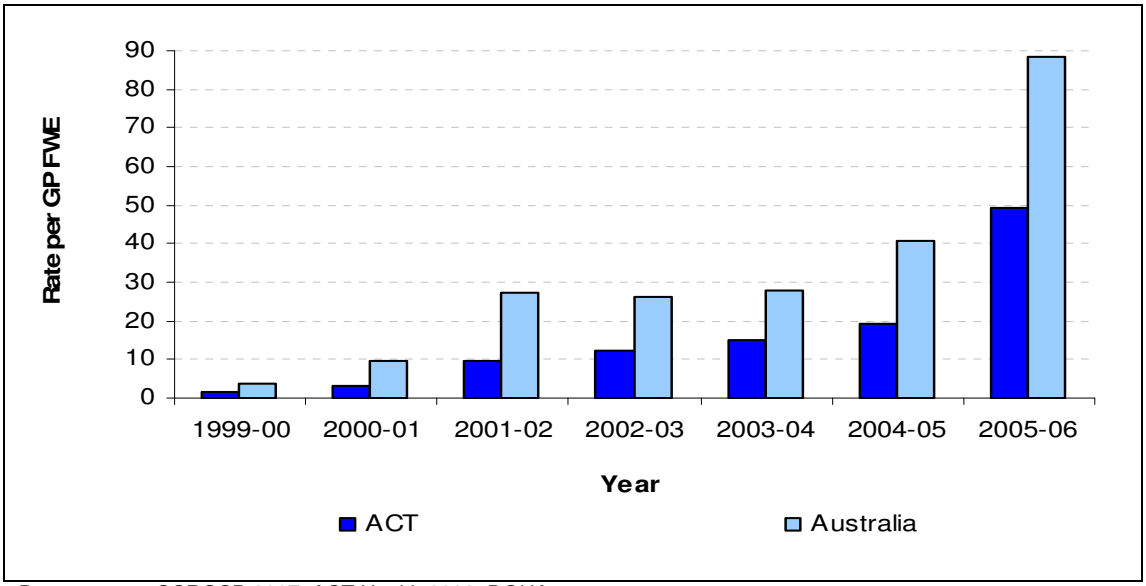
Data source: Medicare Australia 2007
Note: As % for some items are too small, they are not included in the graph.
Note: (b) All payments, except for the teaching incentive, are based on the number of SWPEs covered by a practice. The teaching incentive is paid on a sessional basis.
Note: (c) Sign on payments are one off practice payments that commenced in the November 2001 payment quarter.

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.

Since its introduction, the uptake of EPC items in the ACT has been consistently lower than the average for Australia. The relatively low level of uptake is evenly spread across individual

EPC items and believed to be the result of the GP FWE shortage in the ACT. However, there was a marked increase in uptake in 2005-06, for both the ACT and Australia (Figure 6.3). This increase is believed to be due to the introduction of the chronic disease management items in July 2005, which increased care planning options for GPs (DoHA 2007).

Figure 6.3: MBS enhanced primary care item uptake per GP FWE, ACT & Australia, 1999-00 to 2005-06.



Data sources: SCRGSP 2007, ACT Health 2003, DOHA

During the reporting period, ACT Health developed the *ACT Primary Health Care Strategy 2006-2009* (ACT Health 2006c). The Strategy sets the direction for primary health care services in the ACT up to 2009 and provides for the efficient and effective delivery of services. ACT Health worked with the ACT Division of General Practice in developing the Strategy and consulted with other stakeholders and the wider community before finalising it. The Strategy was launched by the Minister for Health in September 2006, with implementation commencing in November 2006. An implementation steering committee has since been established to monitor and assist with the implementation of the Strategy and priority actions.

ACT Health entered into a Memorandum of Understanding with the ACT Division of General Practice for the period July 2005 to June 2008. Executive management from both organisations meet on a monthly basis to liaise over joint projects and areas of common interest, including the ACT Primary Health Care Strategy.

Between December 2005 and June 2006, ACT Health ran the pilot project *Better General Health for People with Mental Illness*. The project was aimed at improving the physical health of people with enduring mental illness by improving access to general practitioner services in the Adult City Mental Health Team area. Sixty-two GPs in 16 practices participated in the pilot and 59 mental health care consumers were participating by the end of the pilot period. The results of the pilot showed that there had been an improvement in the level of general health care for consumers with enduring mental health illness and the program has since been expanded with recurrent funding secured.

Antenatal Shared-Care Guidelines were also developed over the reporting period. The Guidelines were developed by ACT Health, in conjunction with GPs. They are aimed at improving quality and safety in antenatal care in the Territory by clarifying roles and responsibilities between service providers.

In 2005-06, ACT Health worked with the Canberra After Hours Locum Medical Service (CALMS) to develop and implement a model for the provision of after hours GP services. The service now has recurrent funding supporting after hours clinics at The Canberra Hospital and Calvary Hospital, weekend services at the Tuggeranong Health Centre, home visits and after hours support to residential aged care.

6.4.2 Oral health

ACT Health offers oral health services to all children under 14 years, young people (over 14 years) and adults who are covered by current Pension Concession or Healthcare cards. Clients must be a ACT residents, or an ACT primary or secondary school student.

Oral health services provided by ACT Health include: general restorative and preventive services, emergency care, health promotion and a range of denture services. ACT Health has a special focus on young children through its First Smiles Program. This program promotes the establishment of good oral health practices early in life and is facilitated by the provision of free dental check-ups for children, less than 5 years of age.

Although oral conditions comprised less than one percent of the burden of disease in Australia in 2003, estimates suggest that oral conditions accounted for about 6.2% of total health system expenditure in 2003-04. (AIHW 2005c, 2007b). Much of this is spent on dental caries and periodontal disease, which are amenable to prevention through private and public health activities, including having regular dental check-ups (AHMC 2004).

There is little recent reliable information available on dental check-ups in the ACT. However, estimates from the 2005 ACT General Health Survey suggest that about 15.4 % of the ACT population had been to see a dentist in the six months prior to the survey and a further 13.5% had been to see a dentist in the 6-12 months prior to survey. About 1.7% of survey respondents reported delaying use of a dentist last time they needed one and 1.9% reported that they did not see a dentist last time they needed one because they could not afford it.

6.4.3 Pathology and radiology

The ACT has both public and private diagnostic testing available. There was a slight increase in the number of pathology tests ordered during the reporting period, but diagnostic imaging requests remained the same.

The number of pathology and diagnostic imaging tests ordered per capita in the ACT is consistently lower than for Australia (Table 6.10, Table 6.11). If the order rates for the ACT were similar to the rates for Australia, and the ACT were paid accordingly, then the ACT would have received an estimated additional $2.57 million for testing in 2005-06.

Table 6.10: Pathology tests ordered by medical practitioners, ACT & Aust., 2003-04 to 2005-06.

	2003-04	2004-05	2005-06
ACT			
No of tests '000	825	875	921
No of tests per person	2.5	2.7	2.8
Australia			
No of tests '000	57,932	60,548	64,225
No of tests per person	2.9	3.0	3.1

Data source: SCRGSP 2007.

Table 6.11: Diagnostic imaging ordered by medical practitioners, ACT & Aust., 2003-04 to 2005-06.

	2003-04	2004-05	2005-06
ACT			
No of tests '000	122	120	123
No of tests per person	0.38	0.37	0.37
Australia			
No of tests '000	8,997	9 322	9 766
No of tests per person	0.45	0.46	0.47

Data source: SCRGSP 2007.

6.5 Residential aged care

The provision of Residential Aged Care Services is primarily the responsibility of the Australian Government 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 number of residential aged care places increased slightly in the ACT between 2004-05 and 2005-06, from 1,556 to 1,594 places (AIHW 2006d, 2007c). However, the rate per 1,000 population aged 70 years or more remains lower than the rate for Australia (Table 6.12).

There are two community care programs aimed at providing assistance to people in their homes. Community aged care packages (CACP) provide care for frail or older people in the community whose level of need would otherwise qualify them for entry to an aged care service. The extended aged care at home (EACH) program is aimed at providing care at home equivalent to high-level residential care.

There was an increase in the number of operational CACP and EACH packages in the ACT between 2004-05 and 2005-06 and rates for the ACT were higher than rates nationally in 2005-06.

In 2005-06, the Transition Care Program (TCP) was introduced. This program was introduced to provide short-term support and management for older people following discharge from hospital. The ACT had 10 TCP operational places at 30 June 2006.

Table 6.12: Residential aged care operational places & packages, ACT & Australia, 2004-05 to 2005-06.

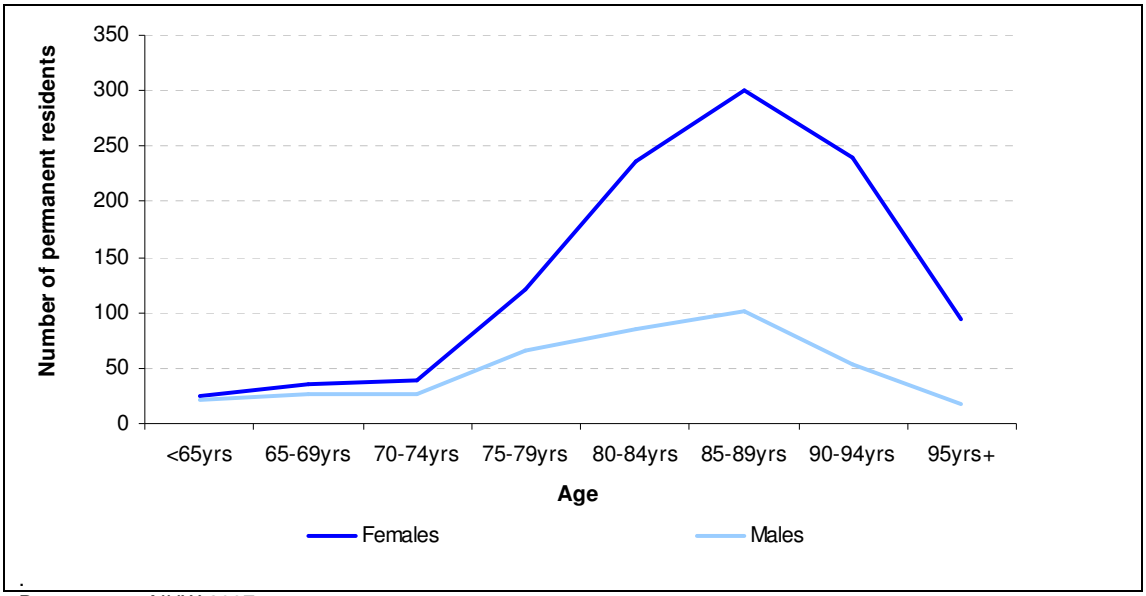
	2004-05		2005-06	
	No.	Rate	No.	Rate
ACT				
Residential aged care places	1,556	72.6	1,594	72.1
Community aged care packages	426	19.6	466	21.1
Extended aged care at home packages	50	2.3	85	3.8
Transition care program packages	-	-	10	0.5
Australia				
Residential aged care places	161,765	83.3	166,291	85.6
Community aged care packages	30,973	16.0	35,383	18.2
Extended aged care at home packages	1,673	0.9	3,181	1.6
Transition care program packages	-	-	595	0.3

Data source: AIHW 2006d; AIHW 2007c.

Note: Rates of 'used' places and packages are per 1,000 population aged 70 years or more.

There were 1,491 permanent residents in residential aged care in the ACT, as at 30 June 2006. Almost three quarters (73.2%) were female. At least a quarter (27.2%) of all permanent residents were aged 90 years or more and about 3.2% were aged less than 65 years (Figure 6.4).

Figure 6.4: Permanent residents in residential aged care, by age group, ACT, 30 June 2006.



Data source: AIHW 2007c

There were 458 admissions to residential aged care facilities in the ACT in 2005-06 for permanent care and 480 admissions for respite care. The average length of stay for permanent residents in 2005-06 was 158 weeks. As at 30 June 2006, just over two thirds (69.4%) of residents in permanent care were high-level dependency residents and just under a third (30.4%) were low-level dependency residents in the ACT (AIHW 2007c).

6.6 Quality and safety in health care

Quality and safety in health care in the ACT is focussed on a continuous program of improvement with an emphasis on promoting the quality use of medicines, the appropriate use of blood, reducing patient falls, healthcare associated infections and pressure ulcers.

The quality and safety agenda in the ACT is underpinned by the ACT Health Quality and Safety Plan 2004-2008, which has links to the national agenda/plan.

The Quality First Awards recognise leadership and innovation in patient safety and quality of care and publicly acknowledge innovations that improve the delivery of quality care in the ACT. Award recipients for 2005-06 were (by category):

- *Safety:* Joint Replacement: Intensive Pre-operative Care, Calvary Health Care
- *Access and efficiency*: The Better General Health Program, Mental Health ACT
- *Innovative models of care:* Super Stroke Unit, The Canberra Hospital
- *Consumer participation:* Occupational Therapy Pre-operative Patient Questionnaire, Calvary Health Care
- *Systems support (overall winner):* Building Partnerships through GP Teaching Modules, The Canberra Hospital
- *Student category:*
  - (i) Sexual Intercourse and your Total Hip Replacement, University of Canberra (overall winner)
  - (ii) Transfer of Elderly Patients, ANU
- *Private sector:* Simple Strategies to Enhance Medication Safety, Calvary Health Care.

A Patient Safety and Quality Unit was formed in 2005-06 to standardise and enhance patient safety systems across health. Reporting arrangements for clinical review and audit were improved and new policies and procedures were introduced in several areas including:

- Medical appointments, privileging and credentialing;
- Management of complaints concerning the clinical competence of clinicians;
- Mandatory reporting of significant incidents;
- Clinical risk management framework; and
- Management of external investigations.

Clinical audit was enhanced with the implementation of a new information management system to assist procedural clinicians in the clinical review of cases.

ACT Health also adopted a portfolio-wide approach to accreditation with the Australian Council on Healthcare Standards (ACHS). ACT Health is seeking accreditation of the entire health system, including corporate areas, by 2008.

Planning and reporting is an ongoing responsibility for ACT Health. During the reporting period a number of relevant documents were finalised. They include the Clinical Services Plan, which will guide the development of future services in the Territory and the ACT Public Health Services Performance Report, a quarterly public report on system performance, which commenced publication at the beginning of 2005-06. The report presents indicators on several dimensions of performance including accessibility, efficiency, effectiveness, activity and patient safety.

Workplace safety and injury prevention programs were rolled out during the reporting period. ACT Health performance in preventing workplace injury and associated costs has improved as a result.

Emerging Issues

- Elective surgery waiting lists and emergency department triage category timeframes provide an indication of access to public hospital services. Both have been identified as key areas for improvement in the ACT. A number of initiatives have been implemented under the auspices of the Access Improvement Program and early results are positive. In 2005-06, for instance, there was a record number of removals from the elective surgery waiting list and although there was an increase in emergency department presentations between 2004-05 and 2005-06, especially in the complex care area, emergency departments were able to maintain existing triage category timeframes.

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7 CARDIOVASCULAR DISEASE

At a Glance

- In 2005, cardiovascular disease accounted for 480 deaths among ACT residents and is a leading cause of mortality in the ACT, however the mortality rate has declined over time.
- The leading cardiovascular diseases contributing to mortality were ischaemic heart disease, accounting for 42.9% of all cardiovascular disease deaths in the ACT, and stroke, accounting for a further 27.1% of all cardiovascular disease deaths.
- Cardiovascular disease was listed as a principal diagnosis for 5,143 ACT hospital separations for ACT residents in 2005-06 with the hospitalisation rate for this disease being stable since 1997-98.
- Commonly performed procedures at ACT hospitals for cardiovascular disease include coronary angiography, coronary artery bypass grafting and coronary angioplasty.
- In 2004-05 NHS, 18.9% (59,700) of ACT respondents reported having a disease of the circulatory system (CVD, including hypertension), which was expected to last, or had lasted six months or more. This rate was similar to that reported for the whole of Australia (18%) in this time period.

Cardiovascular disease (CVD) comprises a range of diseases affecting the heart and blood vessels. Ischaemic heart disease, heart failure, stroke and peripheral circulatory disease are the major conditions contributing to the CVD burden in Australia. Nationally, CVD accounted for 35.3% of all deaths in Australia in 2005 (ABS 2007), and contributed 18% of the total burden of disability life adjusted years (Mathers et al 1999). In terms of direct health care expenditure the cost burden from CVD is substantial. In 2000-01 cardiovascular diseases were responsible for 11% ($5.4 billion) of total health care expenditure in Australia (AIHW 2004a).

The major preventable risk factors for CVD are tobacco smoking, high blood pressure, high blood cholesterol, insufficient physical activity, overweight and obesity, poor nutrition and diabetes. The risk of CVD increases with age, in males, in Aboriginal and Torres Strait Islander peoples, and people from lower socioeconomic groups (AIHW 2004b).

Cardiovascular disease features as one of the target areas of the Australian Better Health Initiative. Announced in 2006, this initiative represents a partnership project between the Australian and state and territory governments with the aim of strengthening the focus of the health system on prevention and health promotion, and management of chronic disease.

7.1 Cardiovascular disease statistics and trends

According to the results from the 2004-05 National Health Survey (NHS), 18.9% (59,700) of ACT respondents reported having a disease of the circulatory system (CVD), which was expected to last, or had lasted six months or more. This rate is similar to that reported for the whole of Australia (18%) in this time period (ABS 2006).

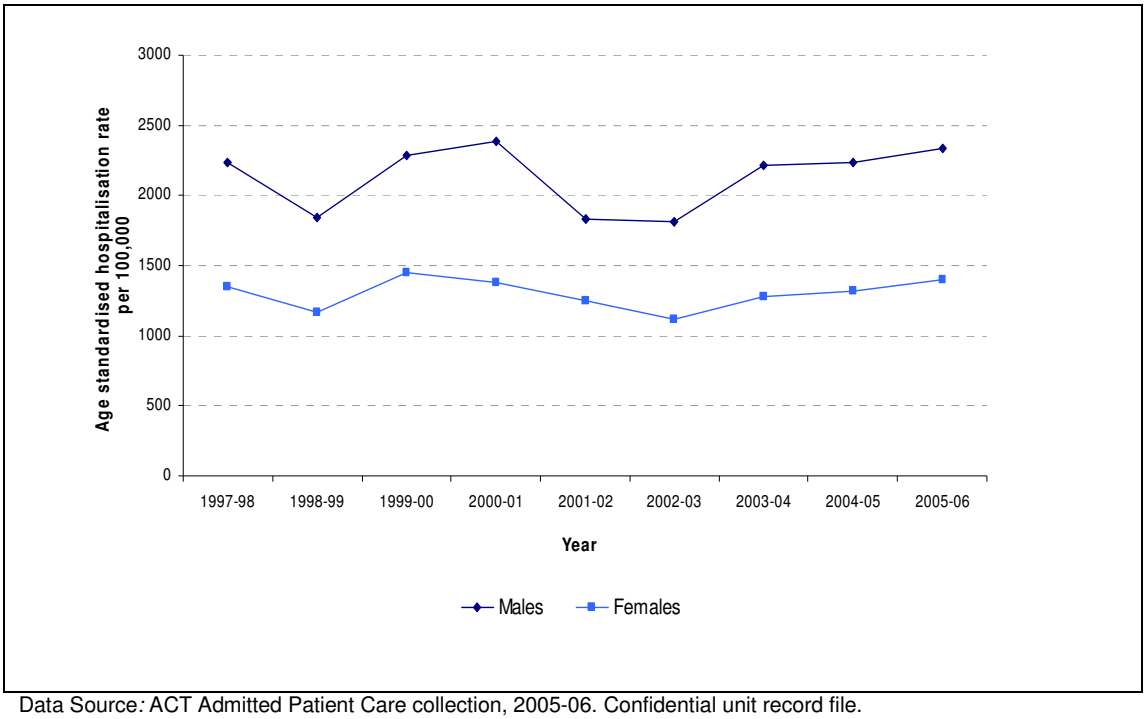
Although mortality from CVD has declined markedly over the last few decades, it is still the main cause of mortality in Australia, accounting for 34% and 39% of male and female deaths respectively (NHF 2006). Cardiovascular disease is also a leading cause of disability in Australia, contributing 18% to the total burden of disability-adjusted life years (DALYs) (NHF 2006).

In 2005 there were 480 deaths registered for ACT residents with CVD recorded as the underlying cause. The mortality rate for CVD (189.5 deaths per 100,000) in 2005 has

decreased markedly in the ACT when compared to the ACT rate in 1995 (279.1 per 100,000). This age-standardised rate also compares favourably with the 2005 Australian rate (207.7 per 100,000) (ABS 2006). Ischaemic heart disease and stroke accounted for 70% of all CVD deaths for ACT residents in 2005. (2006 deaths data are unavailable at the time of writing this report).

Cardiovascular disease accounted for 5,143 hospital separations in 2005-06. Of these separations 58.5% were for males and 41.5% were for females. Three-quarters of all CVD separations were for people aged 55 years and over. Although the mortality rate for CVD has declined over time, the rate of hospital separations due to CVD has remained stable over the period 1997-98 to 2005-06 (Figure 7.1).

Figure 7.1: Standardised separation rates for CVD, ACT residents, 1997-98 to 2005-06.



Data Source: ACT Admitted Patient Care collection, 2005-06. Confidential unit record file.

7.1.1 Ischaemic heart disease

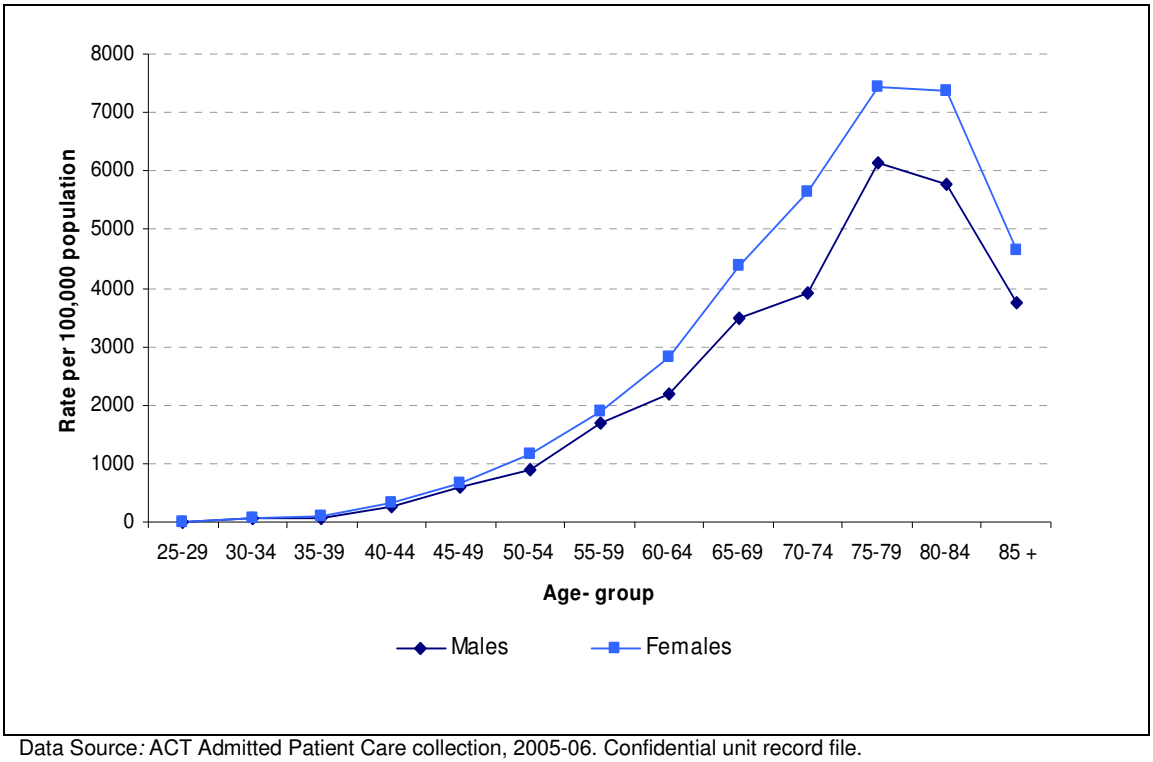
Ischaemic heart disease (IHD), or coronary heart disease, is the most common single cause of premature death in Australia (AIHW 2004c). The main forms of IHD are heart attack and angina. A heart attack occurs when a vessel supplying blood to the heart becomes blocked following the 'breaking open' of a plaque in the coronary vessels. Angina is temporary pain or discomfort in the chest caused by a reduction in blood supply to the heart. This usually occurs when a plaque has formed in a coronary artery and is restricting the blood flow to the heart.

In 2005 there were 206 ACT registered resident deaths with IHD recorded as an underlying cause. The age-standardised death rate for the ACT was 79.8 per 100,000 population (Australia: 106.3/100,000 population). Ischaemic heart disease accounted for 42.9% of all cardiovascular deaths and 13.8% of all deaths in the ACT in 2005. Males were twice as likely to die from IHD as females (age standardised death rate for ACT males was 109.8 per 100,000; females 53.6 per 100,000). Two thirds (66.8%) of IHD deaths occurred among residents aged 75 years or more.

In 2005-06, there were 1,715 hospital separations in the ACT for ACT residents, where IHD was recorded as the principal diagnosis. Ischaemic heart disease accounted for 33.3% of all cardiovascular disease separations and 2% of all separations for ACT residents in the ACT. ACT males were more likely to be hospitalised for IHD than females.

Hospital separation rates for IHD increased with age (Figure 7.2). In 2005-06, 72.1% of hospital separations for ACT residents with a principal diagnosis of IHD occurred among those aged 60 years or more. The rates peaked at ages 75-79 years for both males and females.

Figure 7.2: ACT hospital separation rates for ischaemic heart disease, ACT residents, by age group & sex, 2005-06.



Data Source: ACT Admitted Patient Care collection, 2005-06. Confidential unit record file.

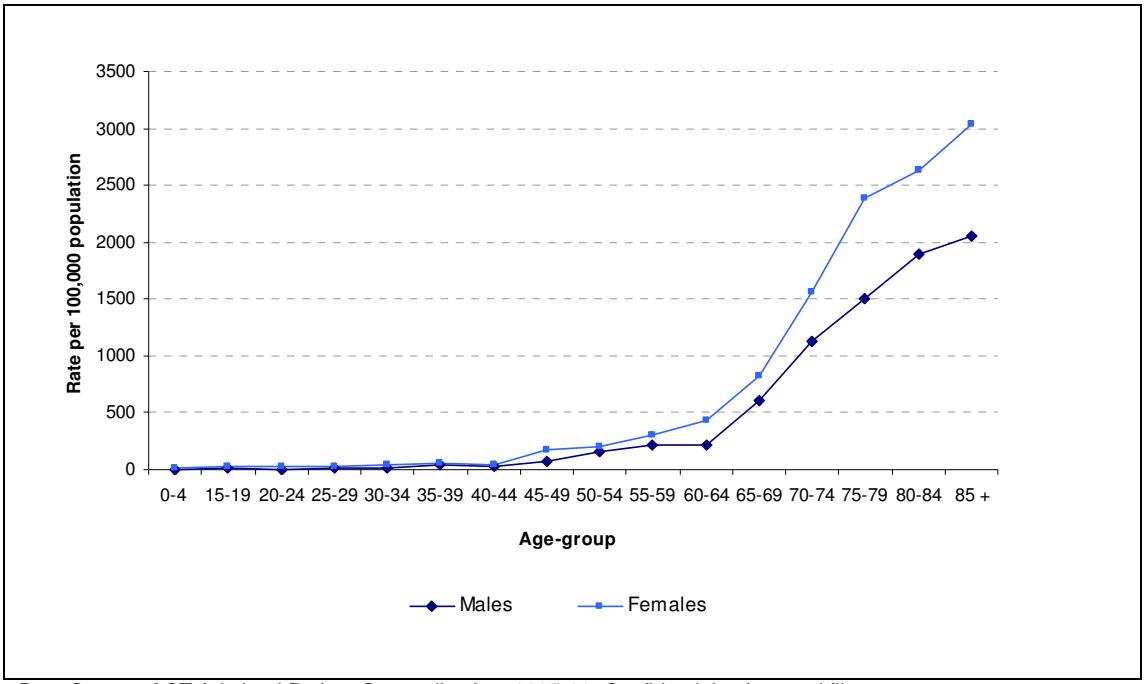
7.1.2 Stroke

Stroke includes a range of conditions in which the vessels supplying blood to the brain are blocked or bleed. 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 (AIHW 2002).

In 2005, stroke was recorded as the underlying cause of 130 ACT resident deaths (50 male and 80 female), accounting for 27.1% and 8.7% of CVD deaths and all deaths among ACT residents respectively. The age-standardised mortality rate was 51.1 per 100,000 population. The majority of stroke deaths (81.3%) occurred among residents aged 75 years or more.

There were 472 ACT hospital separations with stroke recorded as the principal diagnosis for ACT residents in 2005-06. Stroke accounted for 9.2% of all ACT resident separations for cardiovascular disease and 0.6% of all separations for ACT residents in the ACT. Hospitalisation for stroke increased with age, with the rates peaking among those in older age groups in 2005-06 (Figure 7.3). A greater increase over age was evident in females when compared to males.

Figure 7.3: ACT hospital separation rates for stroke, ACT residents, by age and sex, 2005-06.



Data Source: ACT Admitted Patient Care collection, 2005-06. Confidential unit record file.

7.2. Health services and their use

Acute, specialist and rehabilitative services are commonly utilised by those with CVD. Access Economics (2005) has shown that 'people with CVD take more health actions than the average Australian'. This section describes some of the medical procedures undertaken in the ACT for persons with heart disease.

Coronary angiography, a procedure that provides a picture of the arteries, is used to diagnose IHD. In 2005-06, there were 1,835 coronary angiograms performed in ACT hospitals. ACT residents accounted for 54.5% of these procedures (1000 procedures); non-ACT residents accounted for the remaining 45.5% (835) procedures. Males (1,180 procedures) were nearly twice as likely as females (655 procedures) to have undergone this procedure.

Coronary artery bypass grafting (CABG), a treatment for coronary artery disease, usually involves opening a patient's chest and using blood vessel grafts to bypass blockages in the coronary arteries and restoring adequate blood supply to the heart muscle. In 2005-06, there were 237 CABG operations performed in the ACT. Just over half (53.3%) of these were performed on ACT residents. Males were three times more likely to undergo this procedure than females (176 males, 51 females).

Coronary angioplasty, as with coronary artery bypass surgery, is used to restore adequate blood flow to blocked coronary arteries. In 2005-06, there were 86 coronary angioplasty procedures in ACT hospitals. Around 60% of procedures were performed on ACT residents and males accounted for 82.7% of these procedures.

Coronary stenting involves expanding a metal mesh tube within an artery to form a supporting structure to hold the artery open at the point where there is narrowing. In 2005-06, there were 540 stenting procedures performed in the ACT. ACT residents accounted for 52.9% of these procedures and persons aged 60 years accounted for 61.9%. Males were more than twice as likely as females to undergo stenting procedures (373 males, 167 females).

7.3 Cardiovascular disease initiatives

In 2004, stress testing was introduced in the Calvary hospital emergency department, leading to better clinical assessment and management of patients and avoiding long waits for

assessment at later dates. Stress testing is one of the most widely used investigative techniques in cardiology and can help diagnosis of Coronary Artery Disease (CAD) in symptomatic patients and it is useful in assessing functional capacity in patients with known CAD.

Some initiatives implemented in the Canberra Hospital coronary care unit include:

- Introduction of the Intra Aortic Balloon Pump to support patients awaiting coronary artery bypass graft;
- Implemented processes to enhance staff morale and therefore retain staff as evidenced by a low staff turnover;
- Improved timely patient transfers to other hospitals for interventional procedures; and
- Facilitated placement of undergraduate nursing student and medical student final placements.

The ACT has two cardiac rehabilitation programs - one at the Canberra Hospital and the other at Calvary Hospital. The aims of cardiac rehabilitation are to assist patients with heart disease return to an active and satisfying life, and to prevent recurrence of cardiac events. New initiatives in cardiac rehabilitation programs include an early morning gym group to cater for young patients who return to work early and also a six minute walk test which is used as a functional test pre and post program. Programs also continue to establish relationships with community gyms to promote maintenance programs in the community, and facilitate progress to these programs on discharge.

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8 CANCER

At a Glance

- Cancer is a major cause of morbidity in the ACT.
- Cancer contributed to 19% of the total burden of disease in Australia.
- The potential for health gain with cancer control lies in prevention, screening and early detection, treatment, providing support for people with cancer and improving palliative care.
- During 2001-05, there were 6,121 new cancers in the ACT with an overall age standardised incidence rate of 517.9 per 100,000 population for males and 390.5 per 100,000 population for females. The risk of developing cancer before the age of 75 years was one in three for males and one in four for females.
- At the same period, the most common cancers diagnosed were breast cancer (17%), prostate cancer (15%), colorectal cancer (13%), melanoma (11%), and lung cancer (7%).
- Cancer projections suggest that the number of people diagnosed with cancer will increase by about 22% each year, largely because of growth and changes in the age structure of the population.
- The female breast cancer incidence rate in the ACT was 130.7 per 100,000 females during 2001-05. However, its mortality rate was 22.4 per 100,000 females. These figures indicate the importance of mammographic screening and breast cancer treatment in the ACT.
- During 2001-05, the leading causes of cancer mortality in the ACT were lung cancer (15%), colorectal cancer (12%), breast cancer (8%), prostate cancer (7%) and non-Hodgkin's lymphoma (5%).
- The cancer mortality rate has declined markedly over the last 20 years, largely due to advances in prevention, screening and treatment. Between 1983 and 2005, there was an average annual decrease in mortality rates for males and females by 2.6% and 1.2%, respectively.

This chapter provides an overview of cancer incidence and mortality in the ACT for the period 2001 to 2005. Non-melanocytic skin cancer (NMSC) is excluded, as it is rarely life-threatening.

Use of combined data from the five-year period provides a larger total number of cases and a more accurate estimate of the true rate. The five-year average ACT rates have been compared to Australian rates for 2001, which are the most recent national rates available.

8.1 All cancers

Cancer rate is expected to continue to increase due to the effect of the growing and ageing population in the ACT. The increased prevalence of obesity, low dietary intake of fruit and vegetables and insufficient physical activity will also have impacts on the occurrence of new cancer cases in the coming years. Australian Institute of Health and Welfare predicted an increase of 22% in the number of new cancers diagnosed each year in the ACT(AIHW 2005), largely as a result of an increase in population and the changing age structure. Most of the increase in numbers is expected to occur in older age groups.

During 2001-05 there were 6,121 new cases of cancer (excludes non-melanocytic skin cancers) diagnosed among ACT residents (an average of 1224 cases per year) and 2068 deaths registered for ACT residents with cancer as the underlying cause of death.

The risk of cancer was low in childhood and increased with age. About 46% of all new cancers diagnosed between 2001 and 2005 were in persons aged 65 years or above. About 2% of all new cancers diagnosed were among children less than 15 years.

Table 8.1: Summary statistics, cancer, average annual incidence & mortality, by sex, ACT, 2001-05.

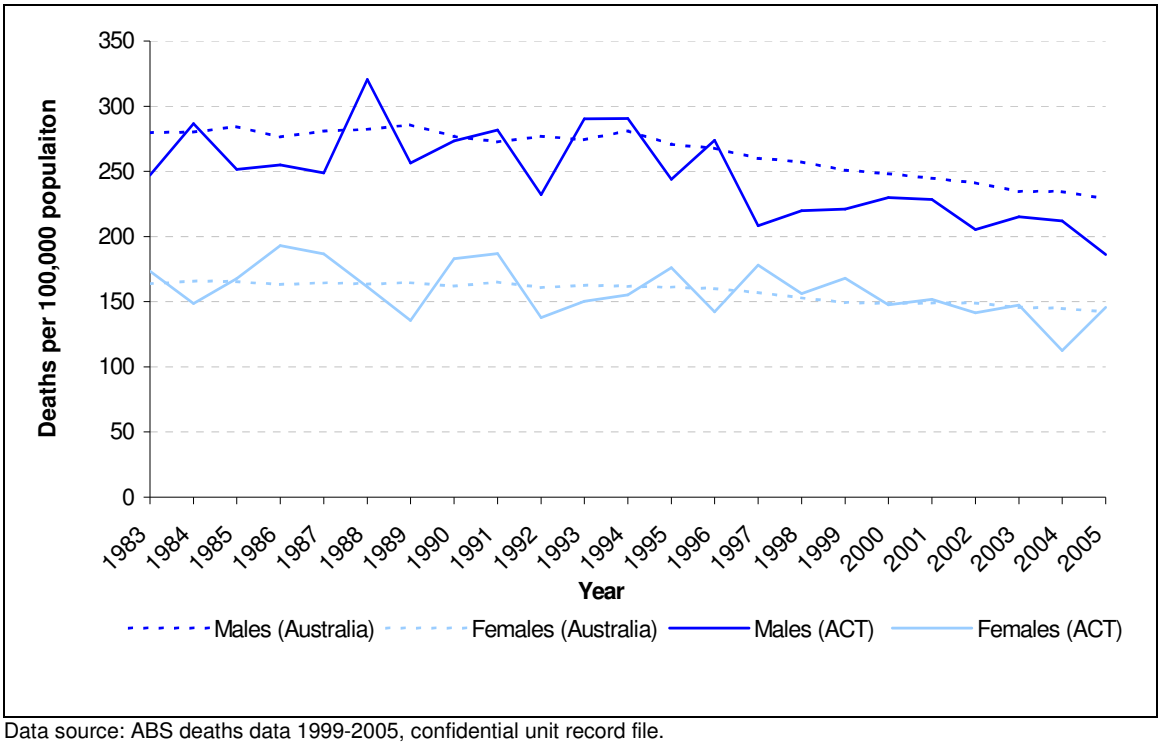
All cancers	Number of cases	Crude rate (per 100,000)	ASR (Aus 2001) (per 100,000)	Lifetime risk	Median age at diagnosis/death
Incidence					
Male	638	400	517.9	1 in 3	65
Female	586	358.9	390.5	1 in 4	60
Mortality					
Male	220	138.1	205.6	1 in 9	72
Female	193	118.3	136.4	1 in 12	72

Data sources: ACT Cancer Registry 2001-2005, confidential unit record file;
ABS deaths data 2001-2005, confidential unit record file.

Note: Cancer statistics presented include all malignant neoplasms, defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code) as C00-C96, excluding C44 (non-melanocytic skin cancers).
Note: All rates are per 100,000 population, ASR is the age standardised rate standardised to the Aust. population at 30 June 2001.
Note: Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
Note: Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.
Note: Deaths data for 2006 not available at time of writing this report.

Over the last two decades, there has been a decline in the mortality rate for cancer in the ACT (Figure 8.1). Between 1983 and 2005, there was an average annual decrease in mortality rates for males and females of 2.6% and 1.2%, respectively. These reductions may be attributed to improvements in earlier detection and treatment of many cancers, the efficacy of screening programs, and a decline in the prevalence of tobacco smoking(AIHW 2004).

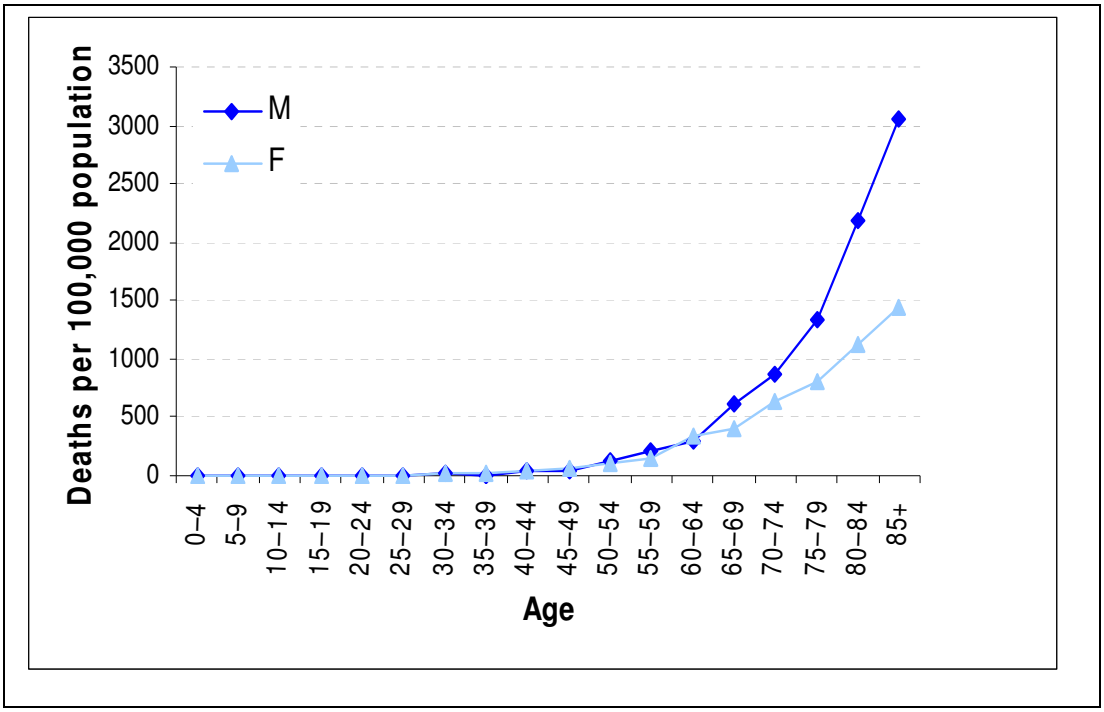
Figure 8.1: Mortality rates for cancer, by sex, ACT & Australia, 1983-2005.



Data source: ABS deaths data 1999-2005, confidential unit record file.
Note: Deaths are for residents of the ACT, by year of registration for 2006, by year of death for 1983-2005.
Note: Rates are age-standardised to the Australian population at 30 June 2001.

Mortality rates for cancer increase with age. During 2001-05, age standardised mortality rates peaked for both genders at aged 85 years or more (Figure 8.2). Two thirds (67.7%) of all cancer deaths during the period occurred in persons aged 65 years or more. From 50 years or more, mortality rates were higher for males. However, the female mortality rate was higher than males in 40-49 years, largely reflecting the impact of female breast cancer.

Figure 8.2: Age-specific mortality rates for cancer, by sex, ACT, 2001-05.



Data source: ABS deaths data 2001-2005, confidential unit record file.
Note: Deaths for residents of the ACT, by year of registration.

8.2 Living with cancer

2004-05 National Health Survey results suggest that an estimated 388,500 persons (2% of the population) currently had a medically diagnosed neoplasm. Of these people, 87% reported a malignant neoplasm (cancer) and 13% a benign neoplasm or neoplasm of uncertain nature.

Cancers with the longest survival time are melanoma of skin, female breast cancer and prostate cancer. The five-year survival of Australians with these cancers diagnosed during 1992-97 were: melanoma of skin (male: 87.4%; female: 92.3%); female breast cancer (82.8%) and prostate cancer (81.7%) (AIHW 2003). People who get these cancers survived longer than other cancer patients which is probably due to early diagnosis through screening programs (eg. BreastScreen), better awareness of the disease through campaigns (eg. Slip, Slop and Slap for skin cancers) that leads to earlier medical intervention, better diagnostics (eg. Prostate Antigen Test that can pick up clinically silent prostate cancers) and improvement in treatments.

The most common cancers diagnosed in the ACT during 2001-05 were breast cancer (17%), prostate cancer (15%), colorectal cancer (large bowel) (13%), melanoma of skin (11%), lung cancer (7%) and non-Hodgkin's lymphoma (4%).

The most common causes of death from cancer in males were lung cancer (18%), colorectal cancer (large bowel) (11%), prostate cancer (13%). For females in the ACT, the most common causes of death from cancer were breast cancer (17%), colorectal cancer (large bowel) (12%) and lung cancer (12%).

Table 8.2: Summary statistics, selected cancers, average annual incidence & mortality, by sex, ACT, 2001-05.

	Incidence		Mortality	
	Number	Rate	Number	Rate
Female breast cancer	203	130.7	33	22.4
Prostate cancer	186	153.3	29.2	33.4
Colorectal cancer				
Male	93	75.8	24.6	21.4
Female	71	49.9	22.8	16.4
Persons	165	62.0	47.4	19
Melanoma of skin				
Male	70	52.3	9.4	7.5
Female	62	39.8	5	3.4
Persons	132	45.4	14.4	5.3
Lung cancer				
Male	49	43.3	40.4	36.6
Female	32	22.4	23.2	16.8
Persons	80	31.3	63.6	25.4
Non-Hodgkins lymphoma				
Male	31	24.5	11	10.7
Female	22	15.1	10	7.3
Persons	53	19.4	21	8.5
Cervical cancer	11	7.1	11.2	0.9

Data sources: ACT Cancer Registry 2001-05, confidential unit record file;
ABS deaths data 2001-05, confidential unit record file.
Note: Cancer statistics presented defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code). See Appendix 2 for ICD-10 codes.
Note: All rates are per 100,000 population;
ASR is the age standardised rate standardised to the Australian population at 30 June 2001.
Note: Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
Note: Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.

8.2.1 Breast cancer

Breast cancer is the most common cancer occurring in females, and the highest cause of female cancer death in the ACT. During 2001-05, one in 10 females in the ACT developed breast cancer before the age of 75 years (Table 8.3).

During 2001-05 there was an annual average of 203 breast cancers diagnosed in ACT females. The incidence rate of female breast cancer both nationally and in the ACT is increasing. For example, the average age standardised incidence rate for female breast cancer in the ACT increased from 102 per 100,000 in 1990-94 to 130.7 per 100,000 in 2001-05 (AIHW 2007a).

The ACT continues to have higher age standardised rates of breast cancer than other jurisdictions. In the 2000-04 period, the age standardised incidence rate for the ACT was 132.4 per 100,000 compared to the Australian rates of 114.9.

Women living in urban areas and areas of high socio-economic status have higher incidence of breast cancer (AIHW & NBCC 2006). This is consistent with known risk factors for breast cancer such as: higher socio-economic status, low fertility, delayed age of having first child, and living in a highly urbanised area.

The mortality rate of female breast cancer in the ACT is decreasing. During 2001-05 there was an annual average of 33 breast cancer deaths for ACT females. The current average standardised mortality rate was lower compared to previous periods (1990-94: 24.2 deaths per 100,000; 1995-99: 26.9 deaths per 100,000; 2001-05: 22.4 per 100,000).

Table 8.3: Summary statistics, Female breast cancer, average annual incidence & mortality, ACT, 2001-05.

Breast cancer	2001-2005
Incidence	
Number of cases	203
Percent of all cancers	34.6
Crude incidence rate	124.1
ASR (Aust 2001)	130.7
Culmulative risk	1 in 10
Median age at diagnosis (years)	56
Mortality	
Number of cases	33
Percent of all deaths	17.1
Crude incidence rate	20.2
ASR (Aust 2001)	22.4
Culmulative risk	1 in 56
Median age at death (years)	63

Data sources: ACT Cancer Registry 2001-05, confidential unit record file;
ABS deaths data 2001-05, confidential unit record file.
Note: Cancer statistics presented defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code). See Appendix 2 for ICD-10 codes.
Note: All rates are per 100,000 population;
ASR is the age standardised rate standardised to the Australian population at 30 June 2001. This rate cannot be compared with the crude rate above it.
Note: Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
Note: Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.

Improved treatment options, together with a population screening program for early detection, have contributed to the fall in mortality from breast cancer during 2001-05. The age standardised mortality rate in the ACT at 2001-05 (24.9 deaths per 100,000 females) was the second lowest compared to other jurisdictions and lower than the national figure in 2000-04 (AIHW & NBCC 2006). BreastScreen Australia aims to achieve 70% participation in breast screening for women aged 50 to 69 years. The participation rate for ACT women in 2004-05 was 55.2% (Australia 56.2%). This is a significant decrease in ACT participation rates from 58.2% in 1999-2000. The decrease in ACT participation may be explained by a known increase in the population size in the target age group. BreastScreen are looking at opportunities to increase the participation rate.

Table 8.4: Participation in BreastScreen Australia, ACT resident women, 50-69 years,1999-2005

	ACT		Australia	
	AS rate	95% CI	AS rate	95% CI
1999-00	58.2	57.3 - 59.1	55.9	55.8 - 56.0
2002-03	55.7	54.9 - 56.5	56.2	56.1 - 56.3
2004-05	55.2	54.4 - 56.0	56.2	56.1 - 56.3

Source: AIHW 2007a
Note: Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian 2001 population.

8.2.2 Colorectal cancer

Colorectal cancer (large bowel) is the second most common cancer and the third most common cause of cancer death for both genders in the ACT. In 2001-05, one in 16 males and one in 27 females developed colorectal cancer before the age of 75 years (Table 8.5).

The incidence rate of colorectal cancer has seen an increase in the last two decades. Both male and female incidence rate have increased nationally since 1991 by an average of 0.3% and 0.1% respectively per year. (AIHW: Cancer in Australia 1001. AIHW Cat. No. CAN23). Compared to previous periods, the age standardised incidence rate for colorectal cancer is increasing in ACT males (1990-94: 72.8 per 100,000; 1995-99: 75.3 per 100,000; 2001-05: 75.8 per 100,000). The increase of incidence rate in ACT females fluctuated over time (1990-94: 55.1 per 100,000; 1995-99: 46.2 per 100,000; 2001-05: 49.9 per 100,000).

Table 8.5: Summary statistics, colorectal cancer, average annual incidence & mortality', by sex, ACT, 2001-05.

Colorectal cancer	Males	Females
Incidence		
Number of cases	93	71
Percent of all cancers	14.6	12.2
Crude incidence rate	58.5	43.6
ASR (Aust 2001)	75.8	49.9
Sex ratio (M:F= 1:x)	0.8	-
Culmulative risk	1 in 16	1 in 27
Median age at diagnosis (years)	66	69
Mortality		
Number of cases	25	23
Percent of all deaths	11.2	11.8
Crude incidence rate	15.4	14
ASR (Aust 2001)	21.4	16.4
Sex ratio (M:F= 1:x)	0.9	-
Culmulative risk	1 in 68	1 in 108
Median age at death (years)	70	76

Data sources: ACT Cancer Registry 2001-05, confidential unit record file;
ABS deaths data 2001-05, confidential unit record file.

Note: Cancer statistics presented defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code). See Appendix 2 for ICD-10 codes.
Note: All rates are per 100,000 population;
ASR is the age standardised rate standardised to the Australian population at 30 June 2001.
Note: Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
Note: Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.

The increase in incidence of colorectal cancer is expected. In the ACT, a large proportion of the adult population do not consume sufficient vegetables (five serves a day) and only half of the adult population consumed enough fruits (two serves a day)(ACT Health 2004). About half of the adult population in the ACT have insufficient physical activity and about half were either overweight or obese (ACT Health 2004). Insufficient intake of fruits and vegetables, physical inactivity, high level of consumption of saturated fat, alcohol, smoking and excessive weight are all the risk factors for colorectal cancer.

The mortality rate for colorectal cancer in the ACT is decreasing. The average standardised mortality rates in 2001-05 (21.4 deaths per 100,000 males; 16.4 deaths per 100,000 females)

were lower than previous periods (1990-94: 29.6 deaths per 100,000 males; 23.4 deaths per 100,000 females; 1995-99: 28.1 deaths per 100,000 males; 21.4 deaths per 100,000 females).

Colorectal cancer can be treated successfully if detected at early stages. In the ACT, a screening program for this cancer was launched in September 2006 as part of a nationwide program funded by the Australian Government. In the first phase, the screening program is targeted at Australians turning 55 or 65 years of age.

8.2.3 Prostate cancer

Prostate cancer is the most common cancer occurring in males, and the second most common cause of male cancer death in the ACT. During 2001-05, one in eight males in the ACT developed prostate cancer before the age of 75 years (Table 8.6).

The incidence rate for prostate cancer in the ACT is decreasing. Compared to previous periods, the average age standardised incidence rate for prostate cancer during 2001-05 (153.3 per 100,000 males) was lower than 1995-99 (185.3 per 100,000 males), but higher than 1990-94 (142 per 100,000 males). The jump of incidence rate between 1990-94 and 1995-99 was thought to be the results of improvements in diagnostic testing using Prostate Antigen Test (PSA). This technical advancement results in earlier diagnosis of clinically silent cancers.

The mortality rate for prostate cancer in the ACT is rising slightly. Compared to the average age standardised mortality rate in 1995-99 (28.5 deaths per 100,000 males), the rate during for 2001-05 was slightly higher (33.4 deaths per 100,000 males).

Table 8.6: Summary statistics, prostate cancer, average annual incidence & mortality, ACT, 2001-05.

Prostate cancer	2001-2005
Incidence	
Number of cases	186
Percent of all cancers	29.1
Crude incidence rate	116.3
ASR (Aust 2001)	153.3
Culmulative risk	1 in 8
Median age at diagnosis (years)	66
Mortality	
Number of cases	29
Percent of all deaths	13.2
Crude incidence rate	18.3
ASR (Aust 2001)	33.4
Culmulative risk	1 in 110
Median age at death (years)	80

Data sources: ACT Cancer Registry 2001-05, confidential unit record file;
ABS deaths data 2001-05, confidential unit record file.

Note: Cancer statistics presented defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code). See Appendix 2 for ICD-10 codes.
Note: All rates are per 100,000 population;
ASR is the age standardised rate standardised to the Australian population at 30 June 2001.
Note: Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
Note: Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.

8.2.4 Melanoma

Melanoma of skin is the third most common cancer in both males and females in the ACT. It was the seventh most common cause of death from cancer in males and twelfth in females. During 2001-05, one in 25 males and one in 33 females in the ACT developed melanoma of skin before the age of 75 years (Table 8.7).

The incidence rate for melanoma of skin in the ACT is increasing for both males and females. Compared to previous periods, the age standardised incidence rate for melanoma is increasing in both males (1990-94: 50.8 per 100,000 males; 1995-99: 45.1 per 100,000 males; 2001-05: 52.3 per 100,000 males) and females (1990-94: 35.3 per 100,000 females; 1995-99: 33.7 per 100,000 females; 2001-05: 39.8 per 100,000 females).

Table 8.7: Summary statistics, melanoma of skin, average annual incidence & mortality', by sex, ACT, 2001-05.

Melanoma of skin	Males	Females
Incidence		
Number of cases	70	62
Percent of all cancers	10.9	10.6
Crude incidence rate	43.7	38.2
ASR (Aust 2001)	52.3	39.8
Sex ratio (M:F= 1:x)	0.9	-
Culmulative risk	1 in 25	1 in 33
Median age at diagnosis (years)	58	53
Mortality		
Number of cases	9	5
Percent of all deaths	4.3	2.6
Crude incidence rate	5.9	3.1
ASR (Aust 2001)	7.5	3.4
Sex ratio (M:F= 1:x)	0.5	-
Culmulative risk	1 in 204	1 in 535
Median age at death (years)	63	74

Data sources: ACT Cancer Registry 2001-05, confidential unit record file;
ABS deaths data 2001-05, confidential unit record file.
Note: Cancer statistics presented defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code). See Appendix 2 for ICD-10 codes.
Note: All rates are per 100,000 population;
ASR is the age standardised rate standardised to the Australian population at 30 June 2001.
Note: Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
Note: Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.

The mortality rate for melanoma of skin is increasing slightly for both males and females in the ACT. Compared to the average age standardised mortality rate in 1995-99 (5.5 deaths per 100,000 males; 2.5 deaths per 100,000 females), the mortality rate during 2001-05 increased (7.5 deaths per 100,000 males; 3.4 deaths per 100,000 females).

Evidence of association between sun exposure and melanoma has been reported in Australia (Green, Siskind et al. 1985) and overseas (Scotto and Fears 1987; Osterlind, Tucker et al. 1988; Bentham and Aasa 1996). Significant increased risk was found to be associated with severe sunburn before age 15, sunbathing, boating and vacations spent in the sun (Osterlind, Tucker et al. 1988). Despite evidence suggesting the risk of sun exposure for melanoma, the results of the 2005 ACT Secondary Students Alcohol and Drug Survey showed a significant reduction in the sun protection behaviours by ACT secondary school students (ACT Health Feb 2007).

8.2.5 Lung cancer

Lung cancer was the fourth most common cancer in both males and females in the ACT. It was more commonly diagnosed in males than females (see sex ratio in Table 8.8). During 2001-05, one in 35 males and one in 59 females developed lung cancer before the age of 75 years.

Lung cancer was the most common cause of death from cancer in males and the second in females.

Mortality and incidence rates were similar, giving an indication of poor survival from this cancer.

Table 8.8: Summary statistics, lung cancer, average annual incidence & mortality', by sex, ACT, 2001-05.

Lung cancer	Males	Females
Incidence		
Number of cases	49	32
Percent of all cancers	7.6	5.4
Crude incidence rate	30.6	19.4
ASR (Aust 2001)	43.3	22.4
Sex ratio (M:F= 1:x)	0.6	-
Culmulative risk	1 in 35	1 in 59
Median age at diagnosis (years)	71	69
Mortality		
Number of cases	40	23
Percent of all deaths	18.3	12.0
Crude incidence rate	25.3	14.2
ASR (Aust 2001)	36.6	16.8
Sex ratio (M:F= 1:x)	0.6	-
Culmulative risk	1 in 40	1 in 80
Median age at death (years)	72	70

Data sources: ACT Cancer Registry 2001-05, confidential unit record file;
ABS deaths data 2001-05, confidential unit record file.

Note: Cancer statistics presented defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code). See Appendix 2 for ICD-10 codes.
Note: All rates are per 100,000 population;
ASR is the age standardised rate standardised to the Australian population at 30 June 2001.
Note: Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
Note: Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.

The incidence rate for lung cancer in the ACT is decreasing. Compared to previous periods, the age standardised incidence rate for lung cancer is decreasing in males (1990-94: 59.4 per 100,000; 1995-99: 45.8 per 100,000; 2001-05: 43.3 per 100,000) and females (1990-94: 24.4 per 100,000; 1995-99: 25.8 per 100,000; 2001-05: 22.4 per 100,000).

The downward trend of incidence rate of lung cancer in males could be explained by the national trend of decrease in the prevalence of tobacco smoking (daily smoking) over time in males, from 26.7 percent in 1991 to 18.6 percent in 2004 (AIHW 2005). Prevalence in female smoking also decreased over time, but not to the extent that was seen in males (22 percent in 1991 to 16.3 percent in 2004) (AIHW 2005).

The mortality rate for lung cancer in the ACT is decreasing. Compared to the previous period, the average age standardised mortality rate during 2001-2005 was much lower for males (1990-94: 49.9 per 100,000; 1995-99: 37.5; 2001-05: 36.6) and females (1990-1994: 17.9 per 100,000; 1995-99: 19.0; 2001-2005: 16.8).

8.2.6 Non-Hodgkins lymphoma (NHL)

Non-Hodgkin's lymphoma was the fifth most common cause of cancer in males and the seventh in females in the ACT. It was the sixth most common cause of cancer death in males and females. During 2001-05, one in 52 males and one in 87 females in the ACT developed non-Hodgkin's lymphoma before the age of 75 years (Table 8.9).

Compared to previous periods, the average age standardised incidence rate of NHL for males remained steady (1990-94: 21.7 per 100,000; 1995-99: 24.2 per 100,000; 2001-05: 24.5 per 100,000) while it has been decreasing in females (1990-94: 17.7 per 100,000; 1995-99: 17.8 per 100,000; 2001-05: 15.1 per 100,000).

The risk of developing NHL increases with age. This disease rarely occurs among children (less than one percent of NHL cases during 2001-05). About 60 percent of the cases during 2001-05 were 60 years or older. The highest incidence rate at the same period was seen in 70-85 years and over.

During 2001-05 the average age standardised mortality rate was slightly higher in males than females (10.7 deaths per 100,000 males; 7.3 deaths per 100,000 females). Due to the small numbers of death from NHL, its mortality rate is fluctuating due to an increase/decrease of a few deaths. For this reason, an interpretation of the trend of deaths from NHL is not provided in this report.

Table 8.9: Summary statistics, non-Hodgkin's lymphoma, average annual incidence & mortality, by sex, ACT, 2001-05.

Non-Hodgkin's lymphoma	Males	Females
Incidence		
Number of cases	31	22
Percent of all cancers	4.8	3.8
Crude incidence rate	19.2	13.5
ASR (Aust 2001)	24.5	15.1
Sex ratio (M:F= 1:x)	0.7	-
Culmulative risk	1 in 52	1 in 87
Median age at diagnosis (years)	64	64
Mortality		
Number of cases	11	10
Percent of all deaths	5.0	5.2
Crude incidence rate	6.9	6.1
ASR (Aust 2001)	10.7	7.3
Sex ratio (M:F= 1:x)	0.9	-
Culmulative risk	1 in 227	1 in 206
Median age at death (years)	75	74

Data sources: ACT Cancer Registry 2001-05, confidential unit record file;
ABS deaths data 2001-05, confidential unit record file.

Note: Cancer statistics presented defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code). See Appendix 2 for ICD-10 codes.
Note: All rates are per 100,000 population;
ASR is the age standardised rate standardised to the Australian population at 30 June 2001.
Note: Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
Note: Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.

8.2.7 Cervical cancer

Cervical cancer was the twelfth most common cause of female cancer, and the nineteenth most common cause of female cancer death in the ACT. During 2001-05, one in 177 females developed cervical cancer before the age of 75 years (Table 8.10).

The incidence rate of cervical cancer in the ACT is decreasing. Compared to previous periods, the average age standardised incidence rate for cervical cancer during 2001-05 remained low (1990-94: 12.8 per 100,000; 1995-99: 8.5 per 100,000; 2001-05: 7.1 per 100,000). Cervical cancer affected females of all age groups from 25 years of age.

The mortality rate of cervical cancer in the ACT is decreasing. Compared to previous periods, the total number of deaths and the average age standardised mortality rate for cervical cancer during 2001-05 remained low (1990-94: 2.1 per 100,000 (11 deaths); 1995-99: 2.8 per 100,000 (19 deaths): 2001-05: 1.4 per 100,000 (7 deaths).

Table 8.10: Summary statistics, cervical cancer, average annual incidence & mortality, ACT, 2001-05.

Cervical cancer	2001-2005
Incidence	
Number of cases	11
Percent of all cancers	1.9
Crude incidence rate	6.9
ASR (Aust 2001)	7.1
Culmulative risk	1 in 177
Median age at diagnosis	48
Mortality	
Number of cases	1.4
Percent of all deaths	0.7
Crude incidence rate	0.9
ASR (Aust 2001)	0.9
Culmulative risk	1 in 1705
Median age at death (years)	49

Data sources: ACT Cancer Registry 2001-05, confidential unit record file;
ABS deaths data 2001-05, confidential unit record file.
Note: Cancer statistics presented defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code). See Appendix 2 for ICD-10 codes.
Note: All rates are per 100,000 population;
ASR is the age standardised rate standardised to the Australian population at 30 June 2001.
Note: Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
Note: Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.

Cervical cancer is one of the most preventable and curable of all cancers. Those at increased risk for cervical cancer include women with a history of infection with Human Papilloma Virus (HPV) (a common sexually transmitted infection), those who become sexually active at a young age, those who have had multiple sexual partners and are smokers. To prevent this cancer, ACT has a cervical screening program and a cervical cancer vaccination program in place.

The ACT Cervical Screening Program, supported by the National Cervical Screening Program, prevents cancer by detecting abnormalities that could lead to cervical cancer. The screening program actively targets women in the 20-69 years age group. The program

reminds women if they are overdue for a routine Pap test. Evidence suggests that up to 90 percent of the most common form of cervical cancer could be prevented if all women had regular Pap tests. The program follows up women if there is an abnormality in the Pap test results that has not yet been addressed. The participation rate of the target group in the ACT was 63.8 percent during 2005-06 (the third highest rate for states and territories) (AIHW 2008).

The ACT Cervical Cancer Vaccination Program prevents cancer by providing a free vaccine that could protect two types of HPV that causes 70 percent of cervical cancer. The HPV vaccine Gardasil, registered by Therapeutic Goods Administration (TGA) in 2006, has been added to the National Immunisation Program and will be available free to women aged 12 to 26 via a school-based vaccination program in 2007 and through GPs (from July 2007 to June 2009). The school-based program will be rolled out as follows:

- 2007: year 7,10,11 and 12 (students in year 8 and 9 this year will be vaccinated in 2008)
- 2008: year 7,9 and 10
- 2009 and ongoing: year 7

The vaccine will be available free from July 2007 until June 2009 for females aged 18 to 26 years (inclusive) from GPs. The three doses must be completed before the end of June 2009 and before the woman turns 27.

Even young girls who are vaccinated will need to have Pap tests when they are older. This is because the vaccine does not protect against all types of cancer-causing HPV.

8.3 Cancer services and initiatives

Australian Government initiatives

The Australian Government launched a "Strengthening Cancer Care" initiative, committing $189.4 million over five years till 2008-09 to reduce the burden of cancer in Australia. The initiative focuses on establishing a national cancer agency (Cancer Australia), providing better coordination of services, enhancing prevention, providing more support for those with cancer, providing support and training for health professionals and increasing cancer research funding (Department of Health and Ageing (DoHA) 2005).

ACT Health priorities

The ACT *Health Action Plan* (ACT Health 2002) 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.

A report titled *Health Action Plan: Report on Progress* was published in 2005 (ACT Health 2005) to report on the progress of the implementation of the Health Action Plan. The report viewed that the ACT Government has introduced several positive initiatives aimed at reducing the gaps in health status that certain individuals and groups experience.

ACT Health is currently developing a Cancer Services Plan, to be completed in 2007.

Capital Region Cancer Service

Established early in 2005, the Capital Region Cancer Service (CRCS) is a joint initiative between ACT Health and the Greater Southern Area Health Services of NSW. The service was established with the aim to integrate existing cancer services in the ACT and Southern NSW, with the ultimate goal of improving the quality and accessibility of cancer services to

clients. The CRCS includes services ranging from prevention, screening, diagnosis, treatment and rehabilitation to palliative care and includes:

- Medical oncology
- Radiation oncology
- Haematology
- Immunology
- Breast screening
- Cervical screening
- Palliative care through Calvary Hospital and Clare Holland House
- Psychosocial cancer support

A screening program for colorectal cancer was launched in September 2006 as part of a nationwide program. In its first phase, the program targets persons at age 55 and 65 years.

There are recent improvements to self-sufficiency with the increase in the capacity of radiation oncology in the ACT. The ACT Government provided funding for a third radiation linear accelerator to assist in managing the increased demand for services. When commissioned in 2008, the new machine will increase capacity by 50 percent, thus ensuring that waiting time targets are met. The Government is committed to purchasing a fourth linear accelerator in the next few years. The CRCS have recruited more staff to radiation oncology to increase the service by extending hours of operation of the radiation machines.

The ACT & SE NSW Breast Cancer Treatment Group

This Group was established in 1995 to assist the implementation of the National Health Medical Research Council's (NHMRC) Clinical Practice Guidelines for the Management of Early Breast Cancer. The group consists of surgeons, medical and radiation oncologists, pathologists, nurses, and other health professionals involved in the management of breast cancer. The group also includes representatives from the ACT Division of General Practice, the Cancer Council ACT and consumers.

The group collects information on the treatment of women with newly diagnosed breast cancer in the ACT and surrounding NSW and monitors treatment patterns. This provides useful information to benchmark breast cancer management in the ACT and SE NSW with national statistics and to compare against best practice guidelines.

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9 MENTAL HEALTH

At a Glance

- Mental health disorders are the third leading burden of disease for Australians and is a major cause of chronic disability. The *ACT Mental Health Strategy and Action Plan 2003-2008* (ACT Health 2004) outlines a series of actions aimed at reducing the mental health disability burden through an increased emphasis on promotion and prevention, an increased capacity for early intervention, access to appropriate, coordinated, quality treatment services and refined service delivery systems in the ACT.
- Survey estimates suggest that about 15.3% of the adult (18 years or more) ACT population had a mental health disorder that had been diagnosed by a doctor in 2005. National estimates suggest that about half of those with a mental health disorder also have a co-morbidity.
- The number of hospitalisations for mental health disorder in the ACT has decreased each year over the last five years. At the same time, there has been an increase in the number of community-based occasions of service provided by Mental Health ACT each year. This trend may continue as more services are provided in the community setting for those with less acute conditions, leaving hospital services for those with more acute care needs.
- Mental health and behavioural disorders accounted for 2.7% of all registered deaths for ACT residents in 2005. This figure excludes death from intentional self-harm or suicide, which accounted for a further 2.3% of registered deaths.

Mental health disorder is the third leading cause of the disease burden (among major disease groups) for the Australian population, after cancer and cardiovascular disease, accounting for an estimated 13% of the total disease burden in 2003 (AIHW 2007a). Most of this burden is the result of years of life lost due to disability rather than years lost due to mortality. This reflects the fact that mental health disorder is a major cause of chronic disability rather than a major cause of death. In the 2003 Survey of Disability, Ageing and Carers (ABS 2004), 16.1% of all respondents with a disability reported a mental or behavioural disorder as the main health condition causing their disability.

Reducing the disability burden of mental health disorder is a key area of concern for the ACT. The *ACT Mental Health Strategy and Action Plan 2003-2008* (2004) outlines a series of actions aimed at reducing the mental health disability burden through an increased emphasis on health promotion, prevention and early intervention, as well as the improved co-ordination and management of services.

9.1 Mental health status

9.1.1 Prevalence and incidence of mental health disorder

Mental ill health can affect anyone at any stage in the life course, however, the prevalence of mental health disorder peaks in young adults. Rates of depression and anxiety, self-harm and eating disorders are high, and psychoses such as schizophrenia and bipolar disorder often first emerge in young adulthood. Older adults are at increased risk of dementia, and depression is common, especially among those who are socially disadvantaged or socially isolated (DoHA 2000b).

Estimates of the prevalence and incidence of mental health disorder in the ACT are derived from health survey data. The results of the 2005 ACT General Health Survey (2005 ACTGHS), show that 15.3% of adult (aged 18 years or more) respondents reported having a current mental health disorder and 13.2% of adult respondents reported having been diagnosed by a doctor with at least one mental health disorder in the last 12 months (Table 9.1).

Table 9.1: Current prevalence & 12 month incidence, mental health disorder, by disorder type, ACT 2005.

		%	95%CI
Current prevalence	Any mental health disorder	15.3	(13.1 - 17.5)
Incidence (last 12 months)	Anxiety	5.9	(4.5 - 7.3)
	Depression	8.1	(6.4 - 9.8)
	Stress-related	7.4	(5.8 - 9.0)
	Any mental health disorder	13.2	(11.1 - 15.3)

Data source: 2005 ACT General Health Survey, confidentialised unit record file.

9.1.2 Prevalence of co-morbidity

The prevalence of co-morbidities with mental health disorders often present challenges in terms of management strategies as they are commonly associated with more severe illness, higher service use and poorer health outcomes (NDARC 2001). About half of all Australian respondents (aged 18 years or more) to the 1997 National Survey of Mental Health and Well-being who were affected by a mental health disorder in the 12 months prior to the survey had also experienced at least one other co-morbidity, either one or more additional mental health disorders or physical disorders (McLennan 1998).

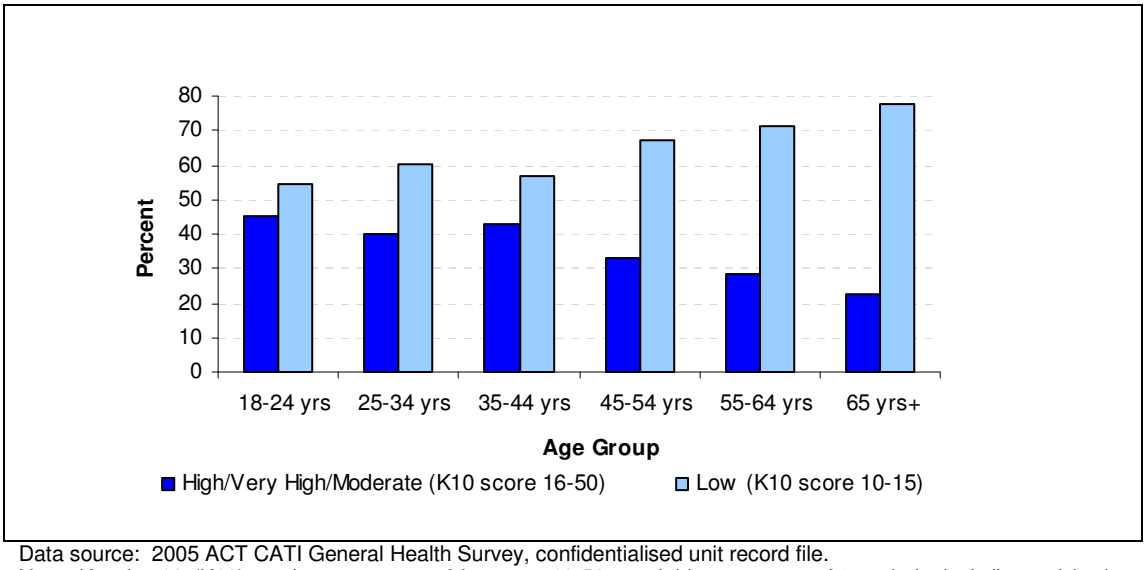
The prevalence of co-morbidity among individuals with a mental health disorder in the ACT is not known, however, service utilization information suggests that at least 20% of case managed ACT Health patients have a substance use (alcohol or other drug) issue.

9.1.3 Psychological distress

Psychological distress can contribute to the development of mental health disorder (DoHA 2000b), and survey results have shown that individuals with high or very high levels of psychological distress are more likely to report the use of health services than individuals with lower levels of distress (AIHW 2004).

The 2005 ACTGHS included the Kessler Psychological Distress Scale (K10), 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. Significance testing of estimates from the survey show an inverse relationship between increasing age and decreasing levels of psychological distress (Figure 9.1).

Figure 9.1: Psychological distress proportion of adults (18 years or more) by K10 score & age group, ACT 2005.



Data source: 2005 ACT CATI General Health Survey, confidentialised unit record file.
Note: Kessler 10 (K10) produces a score of between 10-50, to yield a measure of 'psychological distress' in the previous four weeks.

9.1.4 Health service use

Hospitalisation data provides an insight into the level of mental health disorder at the more severe end of the treatment spectrum. In 2005-06, there were 2,812 ACT resident separations for mental health disorders from ACT hospitals, accounting for 3.3% of all ACT hospital separations for ACT residents. The most common causes of these hospitalisations were 'depressive episodes', accounting for 26.7% of all ACT resident separations with a principal diagnosis of mental health disorder, followed by 'neurotic, stress related and somatoform' separations (26.5%).

Over the last five years, there has been an ongoing annual decrease in the number of hospitalisations for mental health disorder in the ACT, although the number of occupied bed days has increased. Between 2004-05 and 2005-06 there was a 4.8% decrease in the number of ACT resident mental health separations from ACT hospitals. Over the same period, there was a 14% increase in the number of community-based occasions of service provided by Mental Health ACT (ACT Health 2006a). This trend could continue as more services are provided in the community setting for those with less acute conditions, leaving hospital services for those with more acute care needs.

In the primary care setting, GPs provide care to individuals with mental health disorders. According to the results of the BEACH (Bettering the Evaluation and Care of Health) survey in 2005-06, 11.1% of all GP national patient encounters involved a mental health problem (AIHW 2007b). The most frequently reported mental health related problem managed by GPs was depression (3.6%), followed by anxiety (1.8%) and sleep disturbance (1.6%).

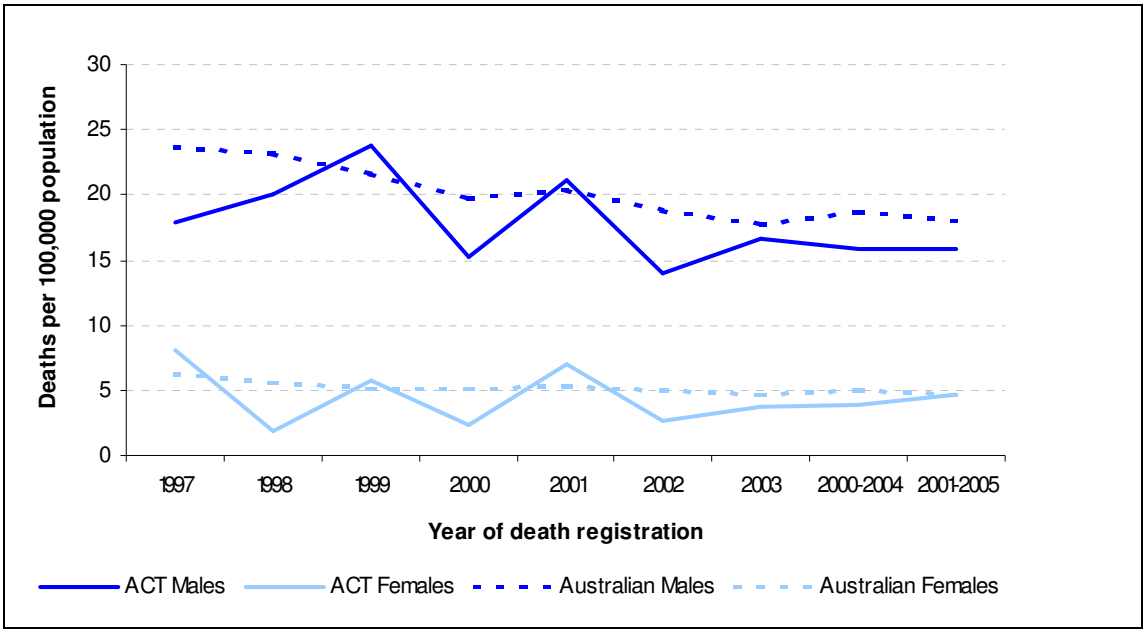
9.1.5 Mortality

Mental health and behavioural disorders accounted for 2.7% of all registered deaths for ACT residents in 2005. This figure excludes death from intentional self-harm or suicide, which accounted for a further 2.3% of registered deaths. (Deaths data for 2006 were unavailable at the time of writing this report)

Trends in mortality rates from intentional self harm in the Australian and ACT populations are similar, with an annual fluctuation in rates for the ACT, reflecting variation in the small number of deaths each year (Figure 9.2). Although mortality rates for males are consistently higher than rates for females, male rates have declined over the last decade.

Females are more likely to be hospitalised for intentional self-harm than males in Australia. In 2005, for instance, females accounted for a quarter (25.7%) of all deaths from intentional self-harm, but in 2005-06, females accounted for 69.8% of all hospitalisations with a primary diagnosis of intentional self-harm.

Figure 9.2: Mortality rates, intentional self-harm, by sex, ACT & Australia, 1997-2005.



Data sources: ABS 2003; ABS 2006; ABS 2007.

Note: Rates per 100,000 population, standardised to the Australian 2001 population.
Note: Data for 1997 to 2003 are based on death registrations for individual years and data for 2003 to 2005 are based on three year aggregates of death registrations.
Note: Since 2004, ABS practice has been to provide aggregated figures (5 years), which reduces annual fluctuations in rates.

9.2 Plans, services and initiatives

Mental Health ACT (MHACT) provides mental health services to the ACT and surrounding region through hospitals and community-based public facilities, as well as through partnerships with community organisations. The services provided include promotion and prevention activities, inpatient services, community based services, triage, crisis assessment and treatment, forensic services and supported accommodation.

The key areas of concern for MHACT include the coordination and management of services to better suit the patient and the need to better address prevention in the community. This is reflected in the range of activities undertaken during the reporting period.

There has been considerable progress made in the development and implementation of mental health strategic and action plans for the ACT to address the key areas of concern. For instance, the *ACT mental health strategy and action plan 2003-2008* (ACT Health 2004), which provides direction for mental health activity in the ACT, underwent a progress review. The review showed that half way through the period covered by the Plan, the majority of actions outlined had already been completed or greatly progressed. In addition, work commenced on a mental health services plan in 2006.

The stigma of a mental health disorder and the resulting discrimination that people often experience contribute to the disability load as it is a major barrier to recovery from mental ill health. The *ACT Action Plan for Mental Health Promotion, Prevention and Early Intervention 2006-2008* (ACT Health 2006b) was released in the second half of the year. Along with the national BeyondBlue initiative, which aims to reduce the stigma of mental health illness by raising community awareness of depression, anxiety and substance-use related disorders, the Action Plan recognizes the stigma of mental health illness and aims to support the promotion of positive mental health in the community.

In November 2005 a suicide prevention strategy was endorsed by ACT Government. *Managing the Risk of Suicide: A Suicide Prevention Strategy for the ACT 2005-2008* (ACT

Health 2006c) combines actions for at-risk groups with broader population–based approaches to suicide prevention, and aims to reduce the impact and number of suicides in the ACT.

Other achievements during the reporting period include the completion of preparatory work on the review of the *Mental Health (Treatment and Care) Act 1994.* The review is ongoing and aims to ensure the Act will reflect best practice in mental health law and is compatible with the *ACT Human Rights Act 2004*.

A review of clinical services provided by MHACT was completed in 2005. The review investigated existing protocols across the service, including care management and care plans, as well as the role of carers and consumers in care planning and advocacy. An implementation plan to address the recommendations of the review has since been developed.

In addition, MHACT undertook a review of the crisis assessment and treatment team, focussing on access, availability and the adequacy of the performance of the team. An implementation plan to address the recommendations of the review has since been developed.

MHACT have continued to work on partnerships with key stakeholders. Relationships with local GPs have been strengthened through a number of initiatives including, having a GP representative on the MHACT Executive, establishing scholarships for GPs to undertake mental health studies at the NSW Institute of Psychiatry and through the Better General Health for People with Mental Illness project. This project supports GPs and patients to maintain regular contact and facilitates improved support for GPs with specialist mental health staff. MHACT have also had a pilot program running with local GPs to manage the physical needs of 30 patients with mental illness.

Other projects that have enhanced partnerships with key stakeholders include the MindMatters program, which is a partnership between the mental health and education sectors to promote and protect the mental health of school communities and administer the Children of Parents with Mental Illness project. This project involves a network of government, community and mental health agencies that meet and communicate regularly to improve services for children of parents with mental illness.

MHACT have introduced a number of strategies to ensure that consumers and carers are involved in service planning and delivery. In 2005-06, a discussion paper was developed of a new model on their participation. The paper was released for public comment in 2005 and the proposed model has since been further developed.

A pilot project on collaborative therapy was successfully completed in 2005-06 and is now being rolled out across MHACT. The pilot involved implementing an integrated approach to treatment involving patients, carers, clinicians and services.

Finally, MHACT has progressed plans for capital works during the reporting period. Feasibility studies were completed for an adolescent mental health unit and a secure inpatient unit to replace the existing Psychiatric Service Unit at The Canberra Hospital. In addition, construction on the Older Persons Mental Health Facility at the Calvary Hospital campus commenced, and the facility is now open.

Emerging Issues

- There has been an increase in demand for forensic psychiatry services in the ACT during the reporting period.
- Meeting the mental health needs of a burgeoning older population is an important issue for the ACT. Along with dementia, depression is a major cause of ill health in older age groups (DoHA 2000a). Chronic illness is often overlooked as a cause of depression in older age groups, but can contribute considerably to the mental health disability burden, along with iatrogenic illness, especially as a side effect of single or multiple medications for chronic disease.

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10 INJURY

At a Glance

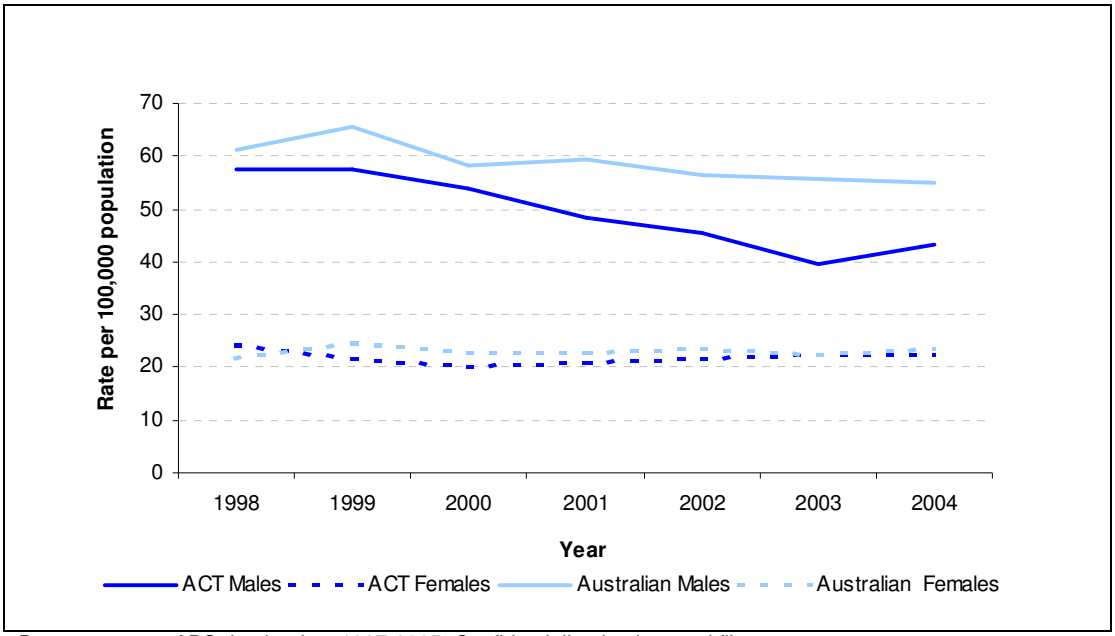
- Injury is estimated to account for about 7% of the total burden of disease in Australia (AIHW 2007a), and about 8% of direct health system costs (AIHW 2004a). It is a leading cause of premature mortality and can result in a range of physical, cognitive and psychological disabilities that can impact on longer-term quality of life. Strategies to prevent injury provide an opportunity to reduce the burden due to premature mortality, chronic disability and associated health system costs.
- Mortality rates from injury have decreased in recent decades, however, male mortality rates are higher than female rates. In 2005, there were 120 deaths registered (males: 81; females: 39) from injury in the ACT. In 2004, the leading underlying causes of injury-related *mortality* in the ACT were intentional self-harm (32.0%), road transport injury (20.3%), accidental poisoning (12.0%) and falls injury (8.0%).
- In 2005-06, an injury was recorded as the principal diagnosis in 6.9% of all ACT resident *separations* from ACT hospitals. The leading causes of injury-related separations were falls (28.6%), complications of care (15.6%), road transport injury (11.7%) and intentional self-harm (7.0%).
- According to the results of the 2005 ACT General Health Survey, almost a third (31.5%) of respondents aged 65 years or more reported having a fall in the 12 months prior to survey. Generally, older females were more likely to be hospitalised for an injury resulting from a fall than older males, but older males were more likely to die from a fall-related injury. Hospitalisation data shows that nationally, among older people, most fall-related injuries occur in the home and about one in five occur in aged-care facilities.
- The road transport injury mortality rate has decreased markedly since the late 1990s. The ACT has a relatively low mortality rate compared to Australia, but in 2005, there was an increase in the rate, largely due to an increase in the number of motorcycle deaths registered for ACT residents.
- The ACT has the highest participation rates in ice and snow sports in the country and the highest hospitalisation rates from ice and snow-related injury. International research has shown that head injury accounts for an estimated 14% of ice and snow-related injuries and more than half of all ski-related deaths are from a head injury. In 2002-03, 9.9% of all ice and snow-related injury hospitalisations in Australia were for a head injury, highlighting the importance of wearing helmets in ice and snow sports.

10.1 Injury mortality

Deaths from injury have decreased markedly over the last 30 years in Australia, mainly because of decreases in mortality due to road transport injury (ABS 2004b). This was the leading cause of injury-related mortality up to about 1990-1991. After this date, intentional self-harm became the leading cause of injury-related mortality for both the ACT and Australia (NISU 2007).

In 2005, there were 120 deaths registered (males: 81; females: 39) from injury in the ACT. (Deaths data for 2006 were unavailable at the time of writing this report). Figure 10.1 shows the downward trend in injury-related mortality rates for the ACT between 1998 and 2004. The figure shows that male injury-related mortality rates exceed female rates and although there was very little change in mortality rates for females, injury-related mortality rates for males decreased over time. The mortality rate for ACT males decreased at a greater rate than the rate for Australian males, largely due to the decline in mortality from road transport injury.

Figure 10.1: Injury-related mortality rates, by sex, ACT & Australia, 1998-2004.



Data sources: ABS deaths data 1997-2005. Confidentialised unit record file;
ABS (1999 – 2005)

Note: Injury-related deaths were identified using ICD-10 codes V01-Y98.

Note: ACT rates were standardised to the 2001 Australian population for comparison with published national rates.

Note: Because of the small number of deaths each year in the ACT and annual fluctuations in the rates, three-year moving averages have been presented for the ACT, so the year '2004' is based on death registrations for the years 2003 – 2005.

The leading causes of injury-related mortality for ACT residents, during the period 2003 to 2005, were intentional self-harm, accounting for about a third (32.0%) of all injury-related deaths, road transport injury (20.3%), accidental poisoning (12.0%) and falls (8.0%).

10.2 Morbidity from injury

Information about morbidity from injury in the ACT is largely limited to hospital separation and emergency department presentation data. However, these data sources tend to underestimate the level of morbidity due to injury, as many minor injuries may be treated by the individual who has sustained the injury, or by another health professional, such as a general practitioner.

Information derived from surveys provides further insights into the incidence of injury in the population and the level of associated morbidity or disability. Estimates derived from the 2004-05 National Health Survey suggest that about one in five (18.0%) ACT residents suffered an injury that resulted in treatment or other action, in the four weeks prior to survey (ABS 2006).

The results of the 2003 Survey of Disability Ageing and Carers provides information on the prevalence of disability due to injury in the ACT. According to the results of the survey, 15.2% of respondents with a disability reported their main health condition was due to either an accident or injury (ABS 2004a).

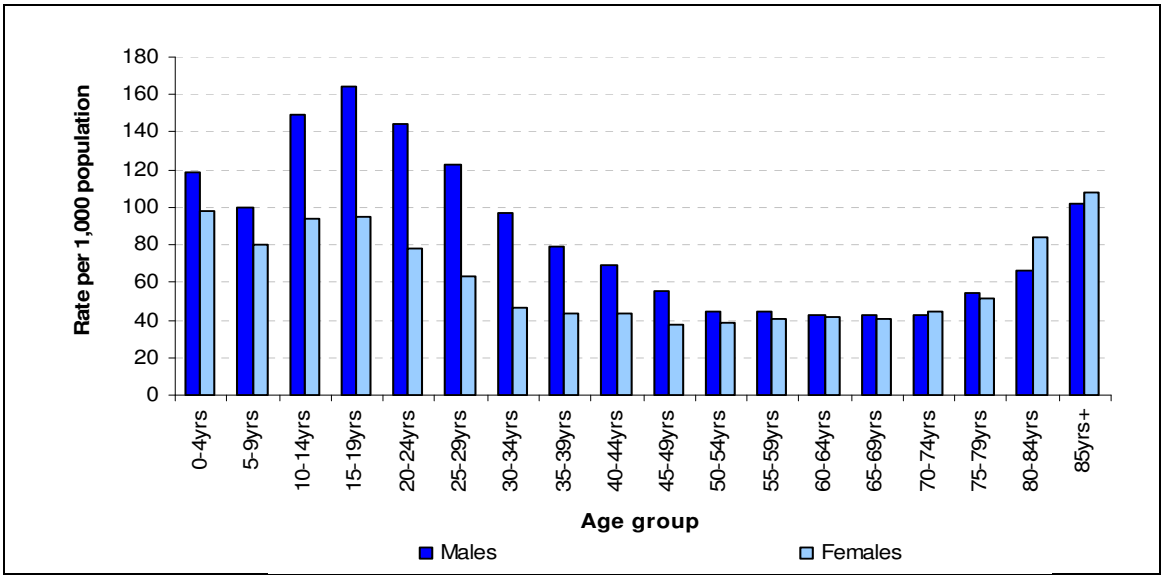
Hospital separation data show injury to be an important cause of hospitalisation in the ACT. In 2005-06, there were 5,841 (males: 55.6%; females: 44.4%) ACT resident separations from ACT hospitals, where the principal diagnosis was for injury, accounting for 6.9% of all ACT resident separations from ACT hospitals. Falls were the leading cause of hospitalisation for injury, accounting for 28.6% of all injury-related hospital separations, followed by complications of care (15.6%), road transport injury (11.7%) and intentional self-harm (7.0%).

In contrast, there were 25,260 (males: 60.2%; females: 39.8%) presentations by ACT residents to an ACT hospital emergency department with an injury in 2005-06, accounting for

more than a quarter (29.1%) of all ACT resident emergency department presentations in the Territory. However, only 3,362 (13.3%) of injury-related presentations resulted in an admission to hospital. About a third of the injury-related presentations that required hospital admission occurred among those aged 65 years or more (32.5% of all injury-related presentations that resulted in an admission to a hospital).

Figure 10.2 shows injury presentation rates for ACT residents to ACT hospital emergency departments in 2005-06. Males aged less than 80 years had higher presentation rates for injury than females, but females aged 80 years or more had higher rates of presentation to hospital emergency departments for injury. Although the cause of injury from the emergency department data was not available at the time of writing, it is likely that the difference in presentation rates for older females is due to a higher rate of falls injury. Higher presentation rates among males aged less than 80 years are likely due to road transport injury, assault and falls injury (leading causes of injury-related hospitalisation for males in this age range).

Figure 10.2: ACT resident injury presentation rates to ACT hospital emergency departments, by age group & sex, 2005-06.



Data source: ACT Emergency Department Information System 2005-06. Confidentialised unit record file.

10.3 Causes of injury

10.3.1 Falls injury

Falls injury is a major cause of mortality and hospitalisation in Australia (AIHW 2006a). In the ACT, falls injury accounted for 8.0% of injury-related death registrations in 2005 and 28.6% of injury-related hospital separations for residents in 2005-06. Most injury-related deaths and hospitalisations occur among older people, as the risk of falling, and the risk of serious injury as the result of a fall, rises with age.

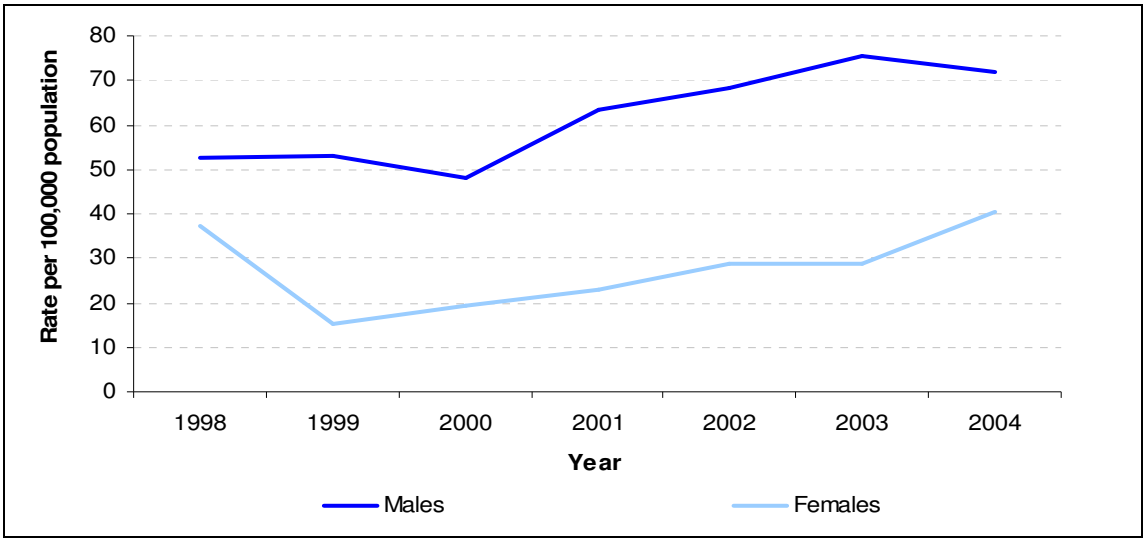
According to the results of the 2005 ACT General Health Survey, almost a third (31.5%) of respondents aged 65 years or more reported having a fall in the 12 months prior to survey. Females (37.1%) were significantly more likely to report a fall than males (24.5%), however, the difference between respondents aged 65-74 years (25.8%) and respondents aged 75 years or more (40.0%) was not statistically significant.

When asked about the number of falls they had over the previous 12 months, about one in five (19.3%) of all respondents aged 65 years or more reported having had one fall, and 12.5% reported having had more than one fall.

Older females are more likely to be hospitalised for a fall than older males, but older males are more likely to die from a fall. In 2005-06, for instance, ACT females aged 65 years or

more were 2.6 times more likely to be hospitalised for falls injury than their male counterparts. However, ACT males aged 65 years or more were 1.8 times more likely to die from falls injury than older ACT females during the period 2003 to 2005 (Figure 10.3) This would suggest that there is something about the injuries sustained by older males that are different to the injuries sustained by older females. Or that males experience co-morbidities which complicate recovery (eg. CVD).

Figure 10.3: ACT mortality rates from falls injury, for residents aged 65 years or more, by sex, 1998-2004.



Data source: ABS deaths data 1997-2005. Confidentialised unit record file.

Note: Due to the small number of deaths each yr in the ACT & annual fluctuations in rates, 3-yr moving averages are presented for the ACT, so the year '2004' is based on death registrations for the years 2003 - 2005.

Hospitalisation data shows that among older people, about half of all fall-related injuries occur in the home and about one in five occur in aged-care facilities (AIHW 2007c). In 2003-04, the national hospitalisation rate for falls injury in the home was 1319.6 per 100,000 population and 6404.3 per 100,000 (aged-care) population for falls injury in an aged care facility. The higher rate of hospitalisation for older people from aged care facilities likely reflects the older age and frail health of this population.

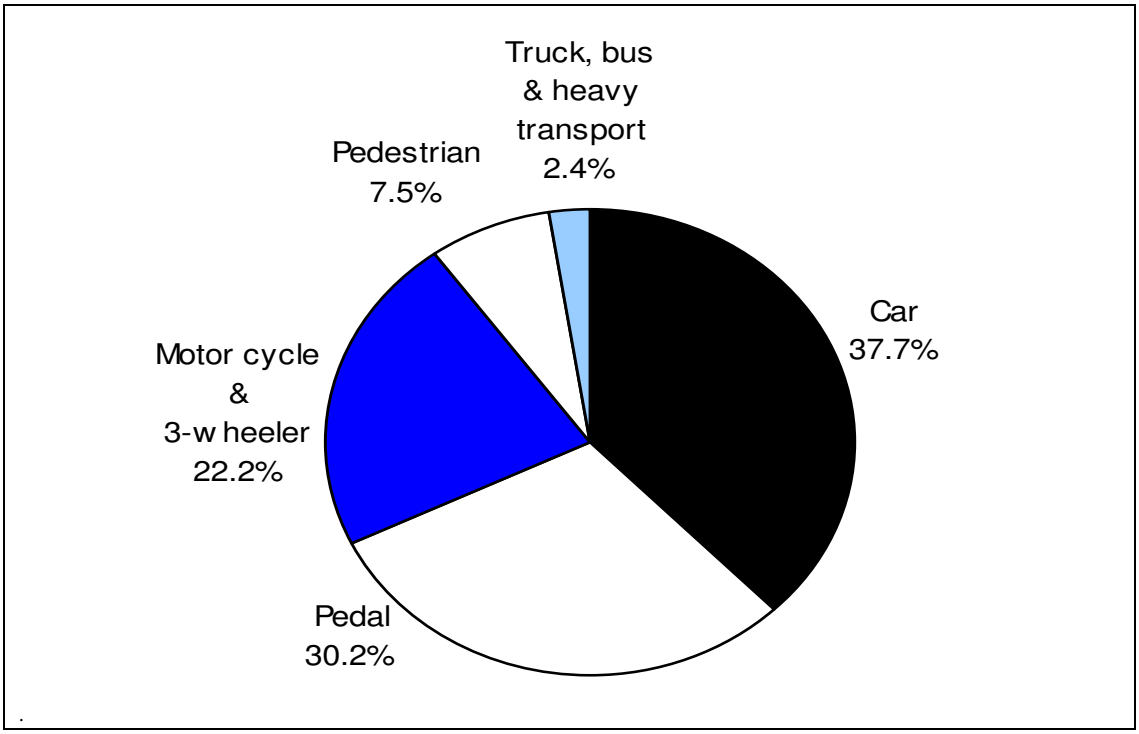
10.3.2 Road transport injury

Road transport injury is a major cause of injury-related hospitalisation and mortality. Since the late 1990s, road fatality rates in the ACT have decreased markedly (Figure 10.4). Mortality rates are usually lower in the ACT than for Australia, mainly because of the better road system, the urbanised environment and the relatively modern vehicle fleet in the ACT compared to other jurisdictions (TAMS 2005). However, in 2005 there were 26 deaths registered for ACT residents with an underlying cause of death due to road transport injury. This was the highest number of deaths registered for the ACT since 1998, when there were 32 deaths due to road transport injury. The large number of deaths registered in 2005 is largely due to an increase in the number of motorcycle deaths for residents of the ACT.

Road transport injury mortality rates for males exceed female rates. In 2005, ACT males were 2.8 times more likely to die as the result of road transport injury than females. Mortality rates are also highest among younger adults. In 2005, almost half (46.1%) the deaths from road transport injury occurred among residents aged 15 and 29 years. These differences have been explained by differences in risk taking behaviours and risk exposures between the sexes and different age groups (Hatfield et al 2005, Williamson 2005).

Hospital separation data provide further insights into the level of injury. In 2005-06, injury caused by road transport accidents comprised 11.7% of all injury-related separations for ACT residents from ACT hospitals. Road transport injury separations most commonly involved a car, followed by pedal and motorcycle-related injury separations in 2005-06 (Figure 10.4).

Figure 10.4: ACT resident road transport injury separations from ACT hospitals, by mode of transport, 2005-06.



Data source: ACT Health admitted patient care collection 2005-06. Confidentialised unit record file

10.3.3 Intentional self-harm

Refer Chapter 9: Mental Health for information about injury due to intentional self-harm.

10.3.4 Accidental poisoning

Accidental poisoning is a major cause of injury-related mortality, especially for males, but is less likely to result in hospitalisation than other causes of injury. In 2005, for instance, accidental poisoning was the third leading cause of injury-related mortality, accounting for 12.0% of all injury-related death registrations, and almost all accidental poisoning deaths were for males (91.0%). By contrast, accidental poisoning accounted for only 2.6% of ACT resident ACT hospital separations with an injury-related principal diagnosis in 2005-06, with very little difference between the sexes (males 47.0%; females 53.0%).

Most hospital separations for accidental poisoning were for children and younger adults. In 2005-06, more than a third (37.1%) of ACT residents hospitalised for accidental poisoning were between 15-34 years and 14.6% were under five years of age.

10.3.5 Ski injury

Ice and snow sports are very popular among ACT residents, largely because of the ACT's proximity to the snowfields. The results of the 2005 Participation in Exercise, Recreation and Sport survey showed that 2.4% of the ACT population, aged 15 years or more, participated in ice or snow sports in the previous 12 months (Australian Sports Commission 2006), compared to 1.4% nationally.

International research suggests that ski injury rates are about 2-3 per 1,000 skiers per day (Koehle et al 2002). Beginners are at higher risk of injury, as are snow boarders (6-10 injuries/1,000 boarders/day). In the ACT, hospitalisation rates for ice and snow-related injury provide insights into the level of injury among local skiers. In 2002-03, the hospitalisation rate

for ACT residents from ice and snow-related injury was 11.2 per 100,000 population (AIHW 2006b). This compares to a rate of just 5.5 for Australia. Most of the more severe local ice and snow-related injuries are referred to The Canberra Hospital, the closest major trauma centre to the Snowy Mountains ski fields. Less severe injuries may be referred to the hospital in Cooma. The overall hospitalisation rate for the ACT in 2002-03 was 41.1 per 100,000 population, which includes all people hospitalised in the ACT for an ice or snow-related injury, regardless of the state or territory where they normally live. This rate was more than 7.5 times higher than the rate for Australia.

International research suggests that most ski-related injuries are relatively minor. The most common type of injury is a knee sprain, accounting for about 30% of all ski-related injuries. At the more severe end of the spectrum, about 14% of ski-related injuries involve a head injury and more than half of all ski-related deaths are from a head injury (Koehle et al 2002).

In 2002-03, 9.9% of all ice and snow-related injury hospitalisations *in Australia* were for a head injury (AIHW 2006b).

10.4 Injury prevention initiatives

ACT Health is working to reduce the incidence of falls and the burden of falls-related injury in the ACT.

During the reporting period the *ACT Wide Falls And Falls Injury Prevention Reference Group* was formed. This group provides strategic direction for the prevention of falls and falls injury in the ACT and aims to:

- Facilitate the integration of falls prevention policies, training and initiatives across government;
- Promote collaboration across government and non-government organisations; and
- Raise awareness of evidence-based falls and falls injury prevention strategies for older adults.

As part of this work, the Territory Wide Falls and Falls Injury Prevention Reference Group hosted a successful inaugural Summer Falls Prevention Forum in December 2005, attended by over 100 delegates.

Another initiative, the *ACT Health Falls Prevention in Residential Aged Care Grants program,* was developed by Healthpact (now the ACT Health Promotion Grants team) in partnership with the Population Health Research Centre and the Aged Care and Rehabilitation Service. Funding is provided to assist residential aged care facilities working with community organisations to develop, implement and evaluate falls prevention programs in the ACT. The program promotes a research-based approach to preventing falls among elderly Canberrans and has produced measurable success to date.

The Road Transport section, within the Department for Territory and Municipal Services, is responsible for implementing the *ACT Road Safety: Action Plan 2005-2006* (TAMS 2005) in the ACT, which ties in with the *National Road Safety Strategy 2000-2010* (Australian Transport Council 2000). Specific actions undertaken during the reporting period include expanding the speed camera network, identifying and ameliorating 'black spot' areas and looking at options to improve motorcycle licence arrangements in the Territory. Road Transport has also been involved in the Drug Driving Working Party, researching implementation issues for drug driver testing in the ACT (Urban Services 2006).

The Australian Ski Areas Association (ASAA) supports the wearing of helmets by persons undertaking recreational snow sports activities, but recognises that the decision to wear a helmet is a matter of personal, or parental choice. The major ski fields in the Snowy Mountains support this policy. Helmets are worn by ski field staff at Perisher Blue and Thredbo, and those taking lessons from ski instructors are advised to wear a helmet and are taught about aspects of injury prevention and safety in the snow.

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11 DIABETES

At a Glance

- Diabetes is a progressive chronic disease, accounting for 3.5% of the disease burden in the ACT. Prevention initiatives aimed at reducing the prevalence of modifiable risk factors, especially overweight and obesity, present an important opportunity to reduce the burden. There are further opportunities to reduce the burden with the introduction of new therapies, improved disease management strategies and new screening programs to identify patients with the disease and its complications at an earlier stage.
- The evidence available suggests that the prevalence of diabetes has increased for both the ACT and Australian populations in recent years. However, mortality rates for the ACT and hospital separation rates for ACT residents in the ACT, where the primary diagnosis is diabetes, have not changed significantly over time.
- Estimates from the 2004-05 National Health Survey show 3.2% of the ACT population had been diagnosed with diabetes for six months or more, however, estimates from the AusDiab study in 2000 suggest that this is likely to be an underestimate of prevalence in the population.
- The prevalence of diabetes in the ACT is expected to increase markedly over the next decade. Estimates indicate that there were between 10-15,000 people in the ACT with diabetes in 2005. Projections indicate that by 2020, there will be between 15-22,000 people with diabetes in the ACT, an increase of about 50% over the period.
- In 2005, there were 45 ACT resident deaths where diabetes was reported as the underlying cause of death. The mortality rate for diabetes in the ACT was 17.8 deaths per 100,000 population, similar to the rate in recent years.
- There were 4,324 ACT resident diabetes-related separations from ACT hospitals in 2005-06. Cardiovascular disease, contact with health services and endocrine, nutritional and metabolic disorders were the most common principal diagnoses with an associated diagnosis of diabetes in 2005-06.

Diabetes contributes to significant illness, disability and premature mortality. The disease is linked to about 8% of all deaths in the ACT each year and contributes to approximately 3.5% of the total disease burden (AIHW 2007).

Type 1 diabetes accounts for about 10-15% of all people with diabetes in Australia, and accounts for most of the diabetes in children (Dunstan et al 2002). It has a genetic component, and may be triggered by environmental factors such as viruses (Larsson et al 2004). To date, no modifiable risk factors have been clearly linked to the development of Type 1 diabetes.

Type 2 diabetes, which is potentially preventable, most commonly occurs in people over the age of 40 years and is responsible for approximately 85-90% of all diabetes in Australia (Dunstan et al 2002). 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 14: Maternal and Child Health). Non-modifiable risk factors for Type 2 diabetes include age, ethnicity and family history (Dunstan et al 2002).

11.1 Diabetes status

The prevalence of diabetes mellitus (Type 1 & Type 2) in the Australian population has risen from an estimated 3.4% in 1980 (Glatthaar et al 1985), to 7.4% in 2000 (AIHW 2004).

Estimates for Australia suggest that one in four people have either diabetes mellitus or impaired glucose metabolism, which is strongly associated with an increased risk of future development of the disease (Dunstan et al 2002). Results from the National Health Survey (NHS) series show that prevalence in the ACT has also increased in recent years, largely due to an increase in prevalence among males (ABS 2002, 2006).

Estimates from the NHS rely on self-reporting of diagnosed diabetes and are thought to underestimate the actual number of people with the disease in the population. The AusDiab study identified people with diabetes by blood test and results showed that in 2000, 7.2% of the people surveyed who were over 25 years of age had diabetes and a further 16.4% had impaired glucose metabolism, and were at high risk of developing diabetes in the future (Dunstan et al 2002). Therefore, although the 2004-05 NHS results show that 3.2% of the ACT population had been diagnosed with diabetes, true prevalence was likely to be much higher (ABS 2006).

The prevalence of diabetes in the ACT is expected to increase markedly over the next decade (Table 11.1). Estimates of the prevalence of the disease, derived from the 2004-05 National Health Survey (ABS 2006) and the AusDiab study (Dunstan et al 2001), indicate that there were between 10-15,000 people in the ACT with diabetes in 2005 (ACT Health 2008). This is consistent with the number of people registered with the National Diabetes Services Scheme (NDSS). There were more than 11,000 people registered in the ACT in 2006. Projections indicate that by 2020, there will be between 15-22,000 people with diabetes in the ACT, an increase of about 50% over the period.

Most of this increase is expected to be driven by increases in the prevalence of overweight and obesity, which currently account for about 41% of Type 2 diabetes in Australia, along with associated changes in dietary patterns and physical activity levels (Marks et al 2001). Therefore, prevention initiatives aimed at reducing the prevalence of diabetes risk factors present an important opportunity to reduce future prevalence of the disease.

There are also opportunities to reduce the burden of diabetes with the introduction of new therapies, improved disease management strategies and new screening programs to identify patients with the disease and its complications at an earlier stage.

Table 11.1: Estimates & projections of the no. of people in the ACT with diabetes, 2005 - 2020.

	2005	2010	2015	2020
High estimates	15,482	17,433	19,650	22,286
Medium estimates	12,827	14,460	16,336	18,494
Low estimates	10,172	11,486	13,022	14,701

Data source: ACT Health 2008.

Note: Projections are based on extrapolations from age-specific rates, derived from the National Health Survey series and the AusDiab study. National rates have been applied to the ACT population.

The number of ACT residents who die primarily as a result of diabetes varies each year; however, the mortality rate from diabetes has remained fairly constant over recent years. In 2005, there were 45 ACT resident deaths where diabetes was recorded as the underlying cause of death (17.8 deaths per 100,000 population) (ABS 2007). However, this is an underestimate of the 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. In 2005, there was a total of 119 deaths (60 males, 59 females) among residents where diabetes was either an *underlying cause of death* or *an associated cause*.

As diabetes is a chronic progressive disease, the burden on sufferers and the community is better reflected in service utilisation information. In 2005-06, diabetes was the principal diagnosis for 710 ACT resident hospital separations. However, the disease was more likely to be reported as an additional diagnosis (Table 11.2). When separations for diabetes as either

a principal or additional diagnosis are combined, the total number of separations increases from 710 to 4,324.

Table 11.2: ACT resident separations from ACT hospitals with an associated diagnosis of diabetes, by principal diagnosis, 2004-05 & 2005-06.

		2004–05		2005–06	
ICD-10-AM	Principal diagnosis	Separations	%	Separations	%
Q00-Q99	Congenital malformations, deformations & chromosomal abnorm.	2	0.1	4	0.1
H60-H95	Ear and mastoid process	13	0.4	8	0.2
O00-099	Pregnancy, childbirth & the peurperium	14	0.4	11	0.3
H00-H59	Eye and adnexa	16	0.4	21	0.5
F00-F99	Mental & behavioural disorders	71	1.9	66	1.7
D50-D89	Blood & blood forming organs & immune mechanism disorders	51	1.4	68	1.7
A00-B99	Certain infectious & parasitic diseases	61	1.7	72	1.8
L00-L99	Skin & subcutaneous tissue	97	2.6	88	2.2
G00-G99	Nervous system	91	2.5	110	2.8
J00-J99	Respiratory system	226	6.1	229	5.8
N00-N99	Genitourinary system	217	5.9	242	6.1
S00-T98	Injury & poisoning	247	6.7	247	6.2
C00-D48	Neoplasms	300	8.1	269	6.8
M00-M99	Musculoskeletal system & connective tissue	303	8.2	286	7.2
R00-R99	Symptoms, signs & abnorm. clinical & lab findings	225	6.1	291	7.3
K00-K93	Digestive system	409	11.1	369	9.3
E00-E99	Endrocrine, nutritional & metabolic disorders	298	8.1	407	10.3
Z00-Z99	Health status & contact with health services	364	9.9	453	11.4
I00-I99	Circulatory system	684	18.5	725	18.3
Total		3,689	100.0	3,966	100.0

Data sources: ACT Admitted Patient Care Collection 2004-05 & 2005-06. Confidentialised unit record files.

Note: Associated diagnoses of diabetes defined using ICD-10-AM E10-E14.
Note: This table includes all associated diagnoses, including separations with a primary diagnosis of 'diabetes'.
Note: Refer appendices for list of ICD-10-AM codes used to produce table.

The separation rate for ACT residents hospitalised in ACT hospitals, where the primary diagnosis on the hospital record is diabetes, has remained relatively constant in recent years. However, separation rates, where there is an associated diagnosis of diabetes, have increased, most likely because of improvements in the recording of associated diagnoses.

The ACT resident separation rate from ACT hospitals for diabetes (primary and associated diagnoses combined) for 2005-06 was 1,566 per 100,000 persons. Male residents had higher separation rates than females, (1,291 per 100,000 compared to 1,894 per 100,000).

Gestational diabetes occurs during pregnancy and is a health risk for both the mother and the developing foetus, but usually abates following birth. However, the mother and baby remain at an increased risk of developing Type 2 diabetes later in life. In 2003, 176 women gave birth in the ACT with a diagnosis of gestational diabetes, accounting for 3.7% of all women who gave birth in that year, which is consistent with estimates from other sources (Wright 1997).

11.2 Diabetes services and initiatives

Diabetes services in the ACT are co-ordinated and delivered in an integrated service environment. The ACT Diabetes Service comprises a multidisciplinary nursing and allied health team situated across seven 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 educators from a number of disciplines, registered nurses, dieticians, podiatrists, a part-time social worker and a part-time psychologist.

The care provided by the Service is tailored to meet the requirements of individuals. People in the community with Type 2 diabetes, impaired glucose tolerance and impaired fasting glycaemia are first diagnosed 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, women with gestational diabetes, and those with active foot problems 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. In addition, the team staffs a vision screening service which operates one day a week, screening patients for detection of retinopathy. The service screens about 900 patients a year. The collaborative approach between health professionals in the ACT optimises the promotion, prevention, detection and clinical management of diabetes in the ambulatory setting.

A number of services operate within the primary, secondary and tertiary health settings, including:

- The Child and Adolescent Paediatric Service which provides assessment and clinical services to children with Type 1 and Type 2 diabetes, including a fortnightly Young Adult Clinic, a weekly Annual Review Clinic and an insulin pump service;
- Adult services also include a Periodic Diabetes Review Clinic, insulin pump services and ambulatory initiation of insulin services. Health promoting exercise groups are conducted in Health Centres and include Footsteps in the Community for those who do not exercise, Tai Chi and resistance training groups in partnership with the YWCA;
- The paediatric and adolescent service conducts a number of parent nights and parent/children health promoting activities throughout the year and approximately 70 school visits each year to speak to staff about diabetes in the school environment; and
- The ACT Diabetes Service health promotion program which 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 national data collection and monitoring projects.

New initiatives implemented during the reporting period include:

- The **ACT Health Vision Screening Service** for people with diabetes. The service is located within the Outpatients Department at The Canberra Hospital and offers the ACT an additional eye screening service for the detection of diabetes related retinopathy. The service commenced using a non mydriatic camera in April 2005.

  Funds to establish this service were allocated by the Australian Government Department of Health and Ageing under the National Diabetes Strategy Vision Impairment Prevention Program.

  Clients require a referral to attend this service. People with diabetes eligible for registration with the ACT Diabetes Service and Medicare are able to access this service. This includes clients with Type 1 diabetes, residing in the ACT or SE NSW and Type 2 diabetes, residing in the ACT

  Referrals to the ACT Health Vision Screening Service are from General Practitioners, endocrinologists, physicians, paediatricians and diabetes health professionals following the NHMRC endorsed national guidelines for retinopathy.

  An appointment with the ACT Health Vision Screening service takes about 10 minutes with no preparation necessary and is free to the patient. An ophthalmologist reports on the images. If retinopathy is detected the client is referred for further treatment. If no retinopathy is detected the client is registered into a recall program and will be recalled when their next eye screen is due according to the NHMRC recommendations. To date data available shows detection of active retinopathy in about 10% of patients.
- ACT Health has recently developed and released the *ACT Diabetes Services Plan 2007-2010*, which sets the future direction for managing the disease in the ACT. The Plan incorporates a framework for primary and secondary prevention as well as disease management. It outlines a best practice model of care that consists of a series of complimentary services across the care continuum, aimed at meeting the needs of the individual. This includes a Diabetes Care Centre, which will work with people at risk of diabetes in a primary and secondary setting, and the ACT Health Acute and Complex Care Service, which will work with people who require care in a tertiary setting.

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12 ASTHMA

At a Glance

- Although there are indications that asthma prevalence has declined nationally in recent years, it remains high by international standards.
- The results of the 2004-05 NHS show that about 32,300 people in the ACT had current asthma at the time of interview. This equates to about 10.2% of the ACT population in 2004-05, compared to 12.3% of the population in 2001.
- The 2004-05 NHS also shows that one in ten (10.8%) adults (18 years or more) with asthma were also current smokers, two-thirds (67.0%) were sedentary or had low exercise levels and about half (52.4%) were overweight or obese at the time of the survey. Nationally, less than a quarter of respondents with asthma had an asthma management plan and 14.1% of people with current asthma reported the use of corticosteroids in the previous two weeks. These results present opportunities for action to reduce the asthma burden.
- A recent Australian study has shown that people with asthma are more likely to have major chronic conditions such as cancer, cardiovascular disease, diabetes and arthritis than the wider population and they are more likely to experience a reduced quality of life as a result.
- Mortality rates and hospital separations for asthma have decreased over time in the ACT. However, hospital separation data show that serious asthma morbidity is more common among young children and older people, providing further direction for targeting efforts to reduce the asthma burden.
- The ACT Health Chronic Disease Strategy that will provide a framework for the provision of better coordinated services and the development of new and innovative programs aimed at reducing the incidence or complications of chronic diseases such as asthma.

Asthma is a chronic disease, accounting for an estimated 2.4% of the total burden of disease in Australia (AIHW 2007a). Most of the disease burden is due to disability, as individuals with persistent asthma experience a reduced quality of life due to severe attacks and regular bouts of coughing and wheezing (AIHW 2007b). In contrast, individuals with episodic asthma are often asymptomatic and may not perceive their condition as chronic, especially if they only experience the occasional mild episode.

12.1 Asthma status

Although there are indications that asthma prevalence has declined nationally in recent years, the prevalence of asthma in Australia remains high by international standards (GINA 2004, AIHW 2007b). Estimates derived from the 2004-05 National Health Survey (NHS) show that asthma rates for the ACT are similar to rates at the national level (ABS 2006a, 2006b). The results of the NHS show that about 32,300 people in the ACT had current asthma in 2004-05. This equates to about 10.2% of the ACT population in 2004-05, compared to the rate of 12.3% in 2001 (ABS 2002).

Estimates also show there are differentials in the prevalence of asthma between population groups. Children (0-14 years) and young people (15-24 years) have the highest prevalence rates nationally, with males having higher rates than females (ABS 2006a). However, females 15 years or more, have higher prevalence rates than their male counterparts.

It is important to note when considering these rates that they are based on survey data obtained through self-report. Caution should be used in interpretation as the rates rely on respondent recall of having ever been told they have asthma by a doctor or nurse, and responding ‘yes’ to the question: ‘do you still get asthma?”. It should also be noted that

diagnosing asthma among infants and very young children is often problematic, given the similarity of symptoms and their susceptibility to other respiratory conditions and difficulties in communication. Similarly, diagnosis among older people is sometimes confused with related respiratory conditions, especially COPD.

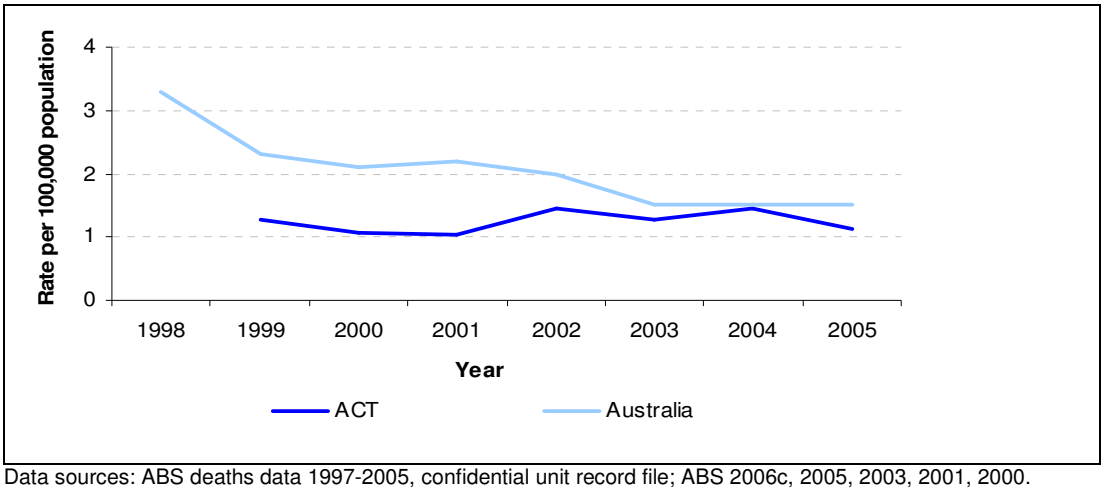
A recent Australian study has shown that people with asthma are more likely to have major chronic conditions such as cancer, cardiovascular disease, diabetes and arthritis than the wider population (Adams et al 2006). The study showed that not only was having asthma associated with a reduced quality of life, but that this was compounded when another chronic condition was present. The authors of the study noted that these findings have important implications for the management of the disease and care coordination.

Primary prevention of asthma is currently the subject of several longitudinal studies, but as yet it is not clear what may be done to prevent the development of the condition (Arshad 2005). The current focus for minimising the burden of asthma is on appropriate management of the disease. This includes having regular contact with a doctor, developing a personal asthma management plan, monitoring symptoms, taking medications appropriately, identifying and avoiding asthma triggers and staying active and healthy.

Although there is little explicit information available on the appropriate management of asthma in the population, the results of the 2004-05 NHS identify opportunities to reduce the asthma burden (ABS 2006a, 2006b). Results for the ACT show that one in ten (10.8%) adults (18 years or more) with asthma were also current smokers, two-thirds (67.0%) were sedentary or had low exercise levels and about half (52.4%) were overweight or obese at the time of the survey. Although estimates were not reliable for the ACT, national estimates showed that less than a quarter of people with current asthma had written asthma management plans and only 14.1% of people with current asthma reported the use of corticosteroids (preventers) on a daily basis in the previous two weeks. Although many people with current mild asthma do not require preventers, the low number using them is of particular concern since drug therapy is the mainstay for asthma management and current guidelines recommend regular use of corticosteroids for people with persistent asthma (NAC 2006). (It may be that they are using non-steroid preventers such as Intal or Spiriva however).

Mortality and hospitalisation data provide further insights into asthma control and opportunities to reduce the asthma burden. Although the prevalence of asthma in Australia is high by international standards, Australian mortality rates for asthma compare more favourably against those for other countries (GINA 2004). There has been an ongoing decline in the Australian mortality rate over the last two decades and Figure 12.1 shows that the rate for the ACT is lower than the national rate. (2006 deaths data were unavailable at the time of writing this report).

Figure 12.1: Asthma mortality rates for the ACT & Australia, 1998-2005.

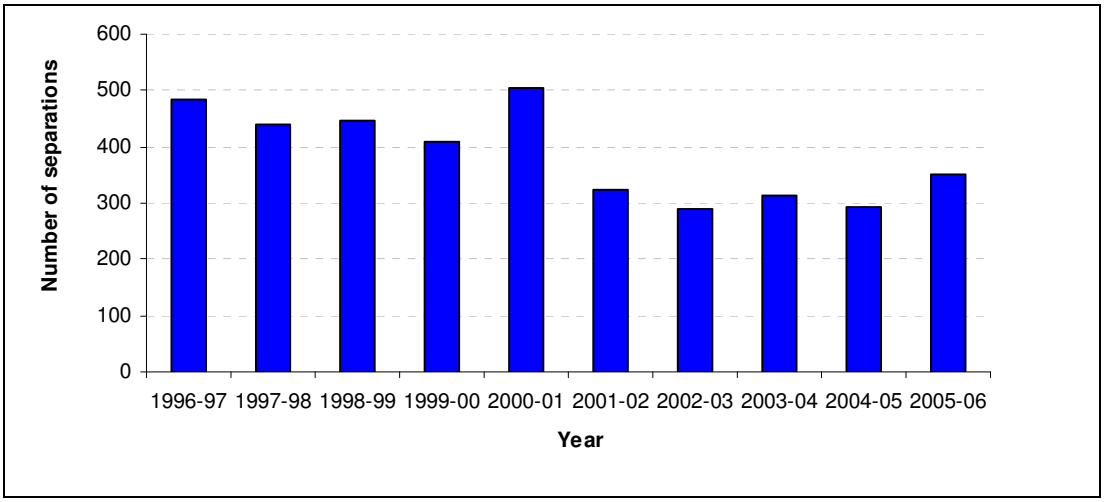


Data sources: ABS deaths data 1997-2005, confidential unit record file; ABS 2006c, 2005, 2003, 2001, 2000.

Note: Asthma death based on underlying cause of death, ICD-10 codes J45 & J46.
Note: Data for the ACT are based on three-year aggregates of death registrations.

Hospitalisation data also show a decline in the number of separations with a principal diagnosis of asthma over the last decade (Figure 12.2). Between 1996-97 and 2005-06, there was an average reduction in asthma separations by residents of 1.9% per annum. In 2005-06, asthma separations for ACT residents accounted for less than one percent of all separations for residents from ACT hospitals.

Figure 12.2: Hospital separations for ACT residents from ACT hospitals with a principal diagnosis of asthma, 1996-97 to 2005-06.

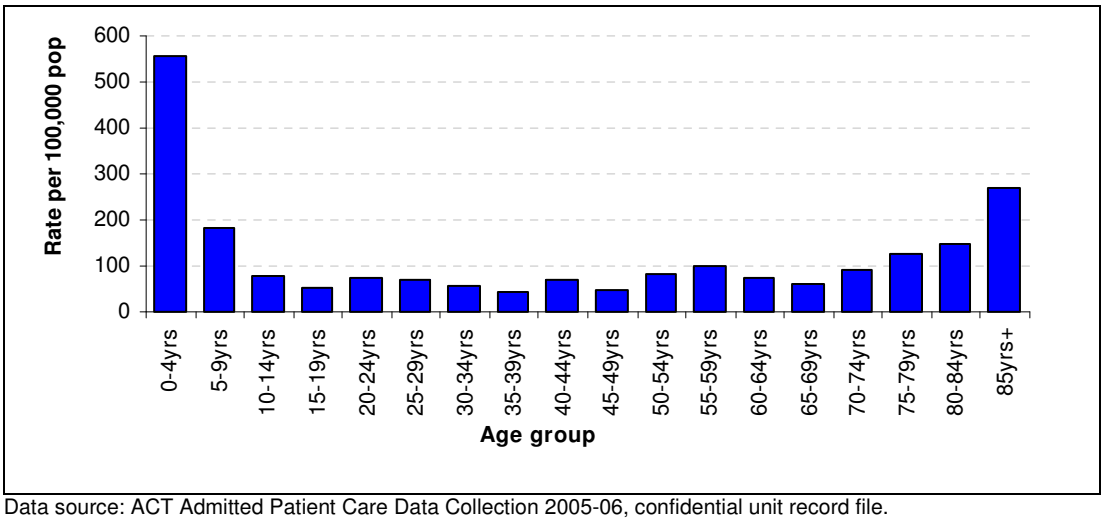


Data source: ACT Admitted Patient Care Data Collection 1996-97 - 2005-06, confidential unit record file.

Note: Asthma defined using principle diagnosis, ICD-9-CM code 493 (1996-97 - 1997-98) and ICD-10-AM codes J45 & J46 (1998-99 - 2005-06).

However, additional analysis shows that separation rates are not evenly dispersed across the population and serious asthma morbidity is more common among certain age groups. Figure 12.3 shows that separation rates are higher for children, with infants and very young children (0-4 years) accounting for almost a third (32.1%) of all asthma separations from ACT hospitals by ACT residents in 2005-06. The figure shows that older people aged 85 years or more, are also more likely to suffer serious morbidity due to asthma than younger adults.

Figure 12.3: Age-specific separation rates for asthma, from ACT hospitals by ACT residents, 2005-06.



Data source: ACT Admitted Patient Care Data Collection 2005-06, confidential unit record file.

Note: Asthma defined using principle diagnosis, ICD-10-AM codes J45 & J46.

Emergency department presentation data show a similar pattern, with asthma presentation rates varying by age (ACT Health 2006). The higher rates of presentation and hospitalisation in these age groups may be indicative of higher prevalence, greater severity, poor management, or poor identification of asthma and they provide direction for future efforts to reduce the burden of the disease in the population.

12.2 Asthma initiatives

Planned approaches to asthma care and management in the ambulatory setting present opportunities for health gain as they are expected to further reduce asthma mortality and hospitalisation over time and improve the quality of life for asthma sufferers.

The Academic Unit of General Practice and Community Health 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 suggest that between 11-15% of ACT kindergarten children have asthma and about 35% of these children use inhaled corticosteroids (Phillips et al 2007). Between 2000 and 2005 there was an increase in the use of spacers and a decrease in the use of nebulisers in this population, which is in line with national guidelines for better asthma management.

ACT Health is currently developing a Chronic Disease Strategy that will provide a framework for the provision of better coordinated services and the development of new and innovative programs aimed at reducing the incidence or complications of chronic diseases such as asthma.

The National Service Improvement Framework has been developed in accord with the National Chronic Diseases Strategy.

This will further integrate evidence based best practice with available services to improve asthma management and quality of life for people with the condition.

Emerging Issues

- Exposure to environmental tobacco smoke remains an important issue, as it is both a risk factor for developing asthma and for provoking symptoms.
- There is also evidence to show that about one in ten people with asthma in the ACT are current smokers, which is of concern as smoking exacerbates asthma and can reduce the effectiveness of medications (NAC 2006).
- There is evidence to suggest that most people with asthma are not using corticosteroids regularly. This is of particular concern since drug therapy is the mainstay for asthma management and current guidelines recommend regular use of corticosteroids for people with persistent asthma.

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13 NOTIFIABLE COMMUNICABLE DISEASE

At a Glance

- Immunisation coverage rates for children in the ACT were amongst the highest in Australia and were consistently above the national average during 2004-06.
- Coverage of childhood immunisation in the ACT rose between 2003 and 2005, and then declined slightly in 2006. In 2006 the coverage rates were 91.4% (12-15 months), 93.4% (24-27 months) and 86.8% (72-75 months).
- In 2006, there were 2,327 notifications of communicable diseases reported in the ACT. There were increases in notification rates for chlamydial infection, salmonellosis, cryptosporidiosis, and influenza between 2004 and 2006. There were decreases in notification rates for gonococcal infections, pertussis, invasive pneumococcal disease, meningococcal disease, mumps, malaria and hepatitis C (incident) over the same period.
- The most commonly notified communicable diseases in 2006 were chlamydia (35%), campylobacter (17%), pertussis (11%) and hepatitis C (8%).
- In 2006, notification rates for tuberculosis (TB) and malaria in the ACT were lower than the national rate. All malaria cases in the ACT were imported (acquired outside Australia). Most new cases of TB are imported (acquired outside Australia) or introduced (derived from imported cases). No relapse cases of TB were reported in the ACT in 2005.
- There was an average of seven HIV notifications a year between 2004 and 2006 in the ACT.
- Between 2004 and 2005, there was a slight decrease (6%) in number of hospitalisations for all vaccine preventable diseases (VPD). VPD comprised nearly a third (29%) of all hospitalisations for notifiable communicable diseases in 2005.

Notifiable diseases data are collected by states and territories under their public health legislation. This legislation requires pathology laboratories, medical practitioners, and some other classes of people, to notify health authorities of certain communicable and other diseases. In 2006, 61 communicable diseases and conditions were nationally notifiable in Australia. States and territories reported these notifiable diseases to the National Notifiable Disease Surveillance System (NNDSS). In the ACT, there are 57 notifiable conditions recorded.

Prevention and control of communicable disease is dependent on the ability to quickly detect and report occurrences of disease. The *ACT Public Health Act 1997* requires that laboratories, hospitals, medical practitioners, schools and child care centres (vaccine preventable diseases only) notify ACT Health of diagnoses of the list of notifiable diseases and conditions. Often diseases are notified on suspicion, pending a confirmatory diagnosis.

The number of notifications received by ACT Health is almost always an underestimate of the number of cases that actually occur. For a condition to be notified a patient must seek medical help; be diagnosed with a condition, and in some cases, have a laboratory test to confirm the condition. The disease must then be reported to ACT Health for assessment. Despite these limitations, communicable disease notifications provide valuable information on disease patterns in the ACT.

ACT Health assesses notifications in line with national guidelines to determine whether a public health response is required, such as immunisation or treatment of contacts. In the event of an outbreak of an emerging infectious disease that is not notifiable, the Chief Health Officer has the power to temporarily designate a non-notifiable disease as a notifiable condition, as in the case of Severe Acute Respiratory Syndrome (SARS) and Avian Influenza.

In general, for each notifiable disease, crude rates are presented per 100,000 of the ACT population. Notifications and rates are based on date of onset of disease. Where the date of onset is unavailable then date of notification is used.

13.1 Overview

In 2006, ACT Health received 2,327 notifications of communicable diseases which represents a 13% increase from the total number of notifications in 2005. The increase was almost entirely due to an increase in influenza, salmonellosis and chlamydial notifications for 2006.

In 2006, 37% of all notifications were classified as sexually transmissible disease; 31% gastrointestinal; 17% vaccine preventable and 12% were bloodborne viruses. Quarantinable, zoonotic and vectorborne disease only represents a small fraction of total notifications. The most frequently notified specific diseases were: chlamydial infection (35%); campylobacter infections (17%); pertussis (11%) and hepatitis C (8%).

The sharp increase of notification rate of influenza (Table 13.1) in 2006 was due to an outbreak of influenza-like illness at nursing homes in the ACT.

In 2005, there were 256 hospital admissions where a notifiable disease was listed as a diagnosis. Nearly a third were as a result of a vaccine preventable disease and the majority of these were due to either influenza, invasive pneumococcal, or meningococcal infection (Figure 13.1).

Table 13.1: Communicable disease notifications & rates, ACT 2002-06, NSW & Australia, 2006.

	Number of notifications			Notifiations rate per 100,000 population						
	ACT	NSW	Aust	ACT					NSW	Aust
	2006	2006	2006	2002	2003	2004	2005	2006	2006	2006
Vaccine preventable diseases										
Pertussis	258	4916	11000	17.1	109.0	37.0	96.5	78.6	70.5	52.3
Pneumoncocal disease (invasive)	18	564	1445	10.3	11.2	17.0	9.2	5.5	8.1	6.9
Meningococcal disease	5	107	320	1.9	4.0	3.4	2.5	1.5	1.5	1.5
influenza (laboratory confirmed)*	80	614	3259	5.9	2.2	0.3	12.9	24.4	8.8	15.5
Measles	1	60	125	0.0	0.0	0.0	0.0	0.3	0.9	0.6
Mumps	1	154	275	0.0	0.6	0.9	0.3	0.3	2.2	1.3
Rubella	0	37	59	0.9	0.0	0.0	0.0	0.0	0.5	0.3
Rubella-congenital	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haemophilus influenzae type b	0	11	22	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Tetanus	0	2	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diptheria	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poliomyelitis	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sexually transmitted diseases										
Chlamydial infection	820	11914	47100	145.3	162.9	192.3	214.7	249.9	170.9	224.1
Gonococcal infection	33	1701	8556	5.0	9.3	10.8	10.1	10.1	24.4	40.7
Syphillis^	2	0	40	3.7	3.1	0.3	0.0	0.6	0.0	0.2
Syphilis < 2 years^	2	217	822	0.0	0.3	0.9	1.2	0.6	3.1	3.9
Syphilis >2 years or unspecified duration^	9	887	1810	0.0	0.0	2.2	1.9	2.7	12.7	8.6
Syphillis- congenital	0	5	14	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Donovanosis	0	0	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bloodborne diseases										
Hepatitis B (incident)	6	54	295	0.0	0.0	1.5	0.9	1.8	0.8	1.4
Hepatitis B (unspecified)+,++	70	2489	6296	25.2	17.3	15.7	26.3	21.3	35.7	30.0
Hepatitis C (incident)	15	40	429	2.5	4.0	1.9	4.6	4.6	0.6	2.6
Hepatitis C (unspecified)+,++	177	4416	12089	68.4	75.3	63.3	49.9	53.9	63.3	57.5
Hepatitis D	0	15	31	0.0	0.0	0.0	0.0	0.0	0.2	0.1
Gastrointestinal diseases										
Campylobacteriosis	401	NN	15402	113.2	125.8	117.0	123.4	122.2	NN	109.7
Salmonellosis	133	2059	8264	28.9	24.8	30.9	28.8	40.5	29.5	39.3
Cryptosporidiosis	79	780	3201	11.2	2.5	1.9	8.3	24.1	11.2	15.2
Shigellosis	2	75	544	0.0	0.9	0.6	2.1	0.6	1.1	2.6
Hepatitis A	1	95	280	1.2	1.5	0.3	0.9	0.3	1.4	1.3
Listeriosis	1	26	61	0.0	0.3	0.3	0.9	0.3	0.4	0.3
Typhoid	0	0	77	0.3	0.0	0.3	0.0	0.0	0	0.4
SLTEC, VTEC	0	10	74	0.0	0.0	0.0	0.0	0.0	0.1	0.4
Haemolytic uraemic syndrome (HUS)	0	11	13	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Hepatitis E	2	10	24	0.3	0.6	0.0	0.6	0.6	0.1	0.1
Botulism	0	0	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other bacterial diseases										
Tuberculosis	14	471	1229	5.3	5.0	3.7	5.8	4.3	6.8	5.8
Legionellosis	1	77	348	0.9	0.3	0.3	0.3	0.3	1.1	1.7
Leprosy	0	1	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vectorborne diseases										
Malaria	11	140	775	4.0	5.6	5.2	3.7	3.4	3.3	3.7
Dengue	6	51	188	0.9	2.2	1.9	0.6	1.8	0.7	0.9
Ross River virus infection	10	1225	5489	0.0	0.3	1.9	1.2	3.0	17.6	26.1
Barmah Forest virus infection	8	645	2122	0.0	0.3	0.6	0.0	2.4	9.3	10.1
Flavivirus (NEC)	0	0	33	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Kunjin virus	0	0	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Murray Valley encephalitis virus	0	0	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Japanese encephalitis virus	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zoonotic diseases										
Q fever	0	174	404	0.0	0.3	0.6	0.0	0.0	0.0	1.9
Ornithosis	2	94	170	0.3	0.0	0.0	0.6	0.6	1.3	0.8
Leptospirosis	0	17	147	0.0	0.0	0.0	0.0	0.0	0.2	0.7
Brucellosis	0	8	50	0.0	0.0	0.0	0.0	0.0	0.1	0.2
Australian bat lyssavirus	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lyssaviurs (NEC)	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Anthrax	0	1	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quarantinable diseases										
Cholera	0	3	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plague	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rabies	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Viral haemorrhagic fever	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow fever	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Data sources: NSW and Australian data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA; ACT data from Communicable Diseases Control Section, ACT Health.

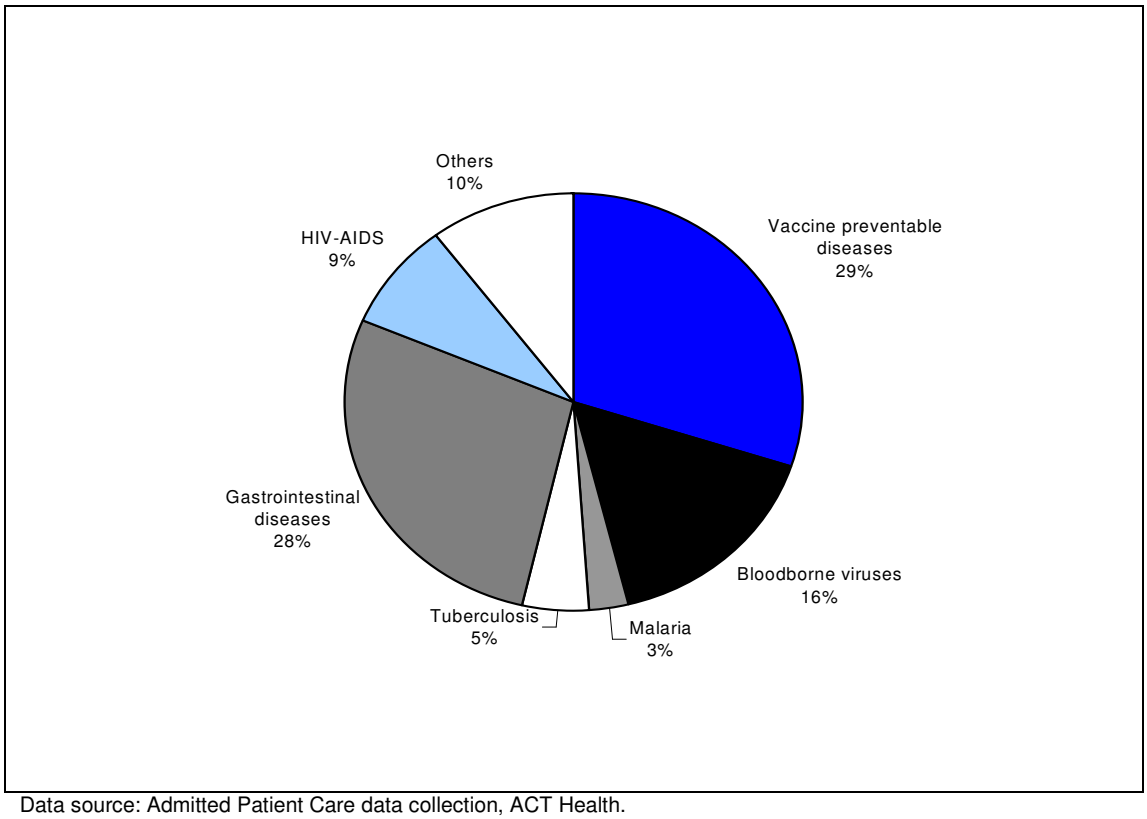
Note: Notification analyses were based on date of onset, (except for hepatitis B and hepatitis C unspecified, where date of report of disease used). Where date of onset was not available the date of specimen collection or the date of notification used.

^Syphilis was reported as a single category before 2004; after 2004 Syphilis was split into <2 year or >2 years of duration.

† Unspecified hepatitis includes cases with hepatitis in which the duration of infection cannot be determined.

‡ Analysis by report date; * Made notifiable in 2005; NN Not notifiable; NEC Not elsewhere classified.

Figure 13.1: Hospital admissions as a result of notifiable communicable diseases by disease category, %, ACT, 2005.



Data source: Admitted Patient Care data collection, ACT Health.
Note: See Appendix 2 for ICD-10-AM codes used to define disease categories.
Note: Number of cases= 256

13.2 Immunisation

Immunisation is the main primary prevention strategy for the control of communicable diseases. High levels of vaccinated people in the community act as a "firebreak" in the spread of disease, slowing or preventing transmission of disease to others.

The practice of immunisation is constantly evolving. The Australian Immunisation Handbook provides clear guidance about immunisation practice, as recommended by the National Health and Medical Research Council (NHMRC 2003). The Handbook outlines the vaccines funded by the National Immunisation Program (NIP) as well as detailing vaccines that are not funded, but recommended for various 'at risk' people/groups. This handbook is reviewed and republished every 2-3 years. The 9th edition was released for public consultation in early 2007 and published the same year.

A range of vaccination programs have been implemented in the ACT in the last few years, as part of the NIP. They include:

- **Childhood Meningococcal C vaccination program** providing free vaccines for all children turning 12 months. The program also provided free vaccines for children and adolescents who were one to 19 years old in 2003 until 30 June 2006. (Meningococcal C disease accounts for more than half of all meningococcal deaths in Australia.
- **Childhood Pneumococcal vaccination program** providing free vaccines for all children born on or after 1 January 2005 at 2, 4 and 6 months of age. Pneumococcal infection is potentially life-threatening and occurs most frequently in children under two years or people 65 year or older. The vaccine is available for children less than two years of age.
- **National pneumococcal vaccination program for older Australians** providing free vaccines to adults 65 years or over from 1 January 2005.

- **National Indigenous pneumococcal and influenza immunization program** commenced in 1999 providing free vaccines for Indigenous people over 50 years and those 15 to 49 years with risk factors (according to NHMRC recommendations).
- **Varicella (chickenpox) vaccine program** commenced 1 November 2005, providing free vaccines for all children born on or after 1 May 2004 from 18 months of age and those in Year 7 of high school who have not received varicella vaccine or had the disease.
- **National Rotavirus vaccination program** commenced in July 2007, providing free vaccines for all children born on or after 1 May 2007. Rotavirus is the most common cause of severe gastroenteritis in infants and young children, causing around half of all hospitalised cases of gastroenteritis in children less than 5 years of age.
- **National influenza vaccination program for older Australians** commenced in 1999, providing free vaccines for adults 65 years or over. Elderly are at high risk from influenza and its complications, with the majority of deaths from influenza occurring in this age group.
- **Human papillomavirus (HPV) vaccination program** commenced in July 2007, providing free vaccines on an ongoing basis for 12 and 13 year old girls to be delivered through schools. It also provides a two-year catch-up program for 13-18 year old girls in school and 18-26 year old females to be delivered through general practice and community based programs. This vaccine prevents infection of HPV types 16, 18, 6 and 11. HPV 16 and 18 are responsible for 70% of cervical cancers.
- **Replacement of the oral polio vaccine** with inactivated poliomyelitis vaccine into a combination vaccine from 1 November 2005.
- A **booster dose of pertussis vaccination (dTpa)** at 15-17 years replaced the ADT booster, and the removal of the 18 month booster.

Changes to the NIP have made the childhood immunisation schedule considerably more complex. For this reason the Australian Childhood Immunisation Register (ACIR) was established to provide information on the immunisation coverage of all Australian children less than seven years of age (Table 13.2). Immunisation coverage rate is a key indicator for determining the effectiveness of an immunisation program. A threshold of 90% is usually accepted as sufficient immunisation coverage to provide such protection to others (herd immunity), though for some diseases like measles coverage needs to be 95%.

ACT is leading Australia in the proportion of children who are immunised against vaccine preventable diseases (VPD) on the NIP. Immunisation coverage rates for children in the ACT were amongst the highest in Australia and were consistently above the national average during 2004-06. The immunisation coverage rates for 12-15 months and 24-27 months during this period were all above the threshold of 90%. Fully immunised six year-olds increased by 12% in the ACT between 2001 and 2006 (Table 13.2).

Table 13.2: Immunisation coverage in children, ACT, NSW & Australia, 2000-06.

	2000	2001	2002	2003	2004	2005	2006
12-15 months							
ACT	91.8	92.0	90.7	90.4	92.5	93.9	91.4
NSW	88.3	90.6	90.7	91.2	90.9	90.6	90.7
Australia	89.6	91.1	90.9	91.3	91.1	90.9	90.7
24-27 months							
ACT	87.6	88.5	87.9	87.0	90.8	93.6	93.4
NSW	80.2	84.7	87.8	88.9	91.2	91.4	91.7
Australia	83.4	86.6	88.5	89.8	91.8	91.9	92.3
72-75 months							
ACT	-	75.0	81.4	82.5	85.0	89.1	86.8
NSW	-	70.8	78.5	81.7	83.3	84.1	85.3
Australia	-	73.2	80.2	82.8	83.5	83.6	85.2

Data source: Australian Childhood Immunisation Register.
Note: Quoted figures are average of quarterly figures.

Interpretation of the trend of immunisation coverage needs to be taken cautiously because of the complexity of the immunisation register. In 2004, the increase in the coverage for 24-27 months is related to the change of NIP for the fourth dose of DTPa. In September 2003, the fourth dose was no longer required as given at 18 months of age, but instead recommended at 4 years of age. This means that only three doses of DTPa is sufficient to classify as being fully immunised for 24-27 months.

In 2005, there was a general increase in coverage in all childhood immunisations (Table 13.2). This increase was due to some local events in the ACT. In 2004, ACT Health implemented a pilot project to follow up children recorded as overdue for immunisation. This involved providing a reminder to parents of children who had missed vaccine doses and also assisted with data cleaning and follow up of missing data in immunisation records. This contributed to the increase in number of immunisation records being counted in 2005.

In 2006, there was a general decrease in coverage in all childhood immunisations from the previous year (Table 13.2). This could be explained by the closing of the pilot project that followed up missing data in immunisation records. Further, the immunisation clinics changed from drop-in basis to appointment basis.

Efforts have been made to boost the immunisation coverage in 2007 and there is evidence that the coverage rate is increasing (Personal communication: Director of Communicable Diseases Control Section, ACT Health). ACT Health sends out letters to parents to remind them of children who are overdue for immunisations.

The services of childhood immunisation in the ACT are provided by several sectors. During 1996-2006, vaccinations to children less than 7 years were provided by general practitioners (38.2%), community health centres (60.8%), and public hospitals (0.9%) (Australian Government Productivity Commission 2007) (ACIR data). The provision of childhood vaccination services has differed slightly from most other jurisdictions in Australia where GPs have played a greater role in service delivery.

Hospitalisations due to vaccine preventable diseases are decreasing in the ACT. A reduction in hospitalisation rates may indicate improvements in vaccination program coverage or effective treatment by primary healthcare providers. In 2005, hospitalisations in the ACT due to VPD was 29% compared to 32.3% in 2003 (ACT Health 2006). ACT also had lower hospital separation rates for influenza, pneumonia and vaccine preventable conditions than NSW and Australia in 2003-04 and 2004-05 (Table 13.3).

Table 13.3: Hospital separation rates for vaccine preventable conditions, NSW, ACT & Aust, 2003-04 to 2004-05.

		NSW	ACT	Australia
2003-04				
	Influenza and pneumonia	0.69	0.41	0.66
	Other vaccine preventable conditions	0.16	0.08	0.14
	Total vaccine preventable conditions	0.85	0.49	0.80
2004-05				
	Influenza and pneumonia	0.55	0.41	0.52
	Other vaccine preventable conditions	0.17	0.05	0.15
	Total vaccine preventable conditions	0.72	0.45	0.67

Data source: Australian Hospital Statistics 2003-2004. AIHW Health Series no.23. AIHW Cat. No. HSE 37.
Australian Hospital Statistics 2004-2005. AIHW Health Series no.26. AIHW Cat. No. HSE 40.

Note: Separation rates are directly age standardised to the Australian population at 30 June 2001.
Rates are per 1,000 population.
Totals may not equal the sum of the individual conditions due to rounding.

13.3 Vaccine preventable diseases

Vaccine preventable diseases are those diseases that have vaccines available and hence are preventable. During the reporting period, the National Immunisation Program (NIP) included vaccinations for: *Haemophilus influenza* type b (Hib) infection, diphtheria, influenza, measles, mumps, pertussis, invasive pneumococcal disease (IPD), poliomyelitis, rubella, tetanus, hepatitis B, chickenpox, influenza and meningococcal C disease.

Successful vaccination programs in the ACT have prevented occurrence of new cases of poliomyelitis, diphtheria, and tetanus since 1991; and *Haemophilus influenza* type b (Hib) since 2003.

13.3.1 Pertussis

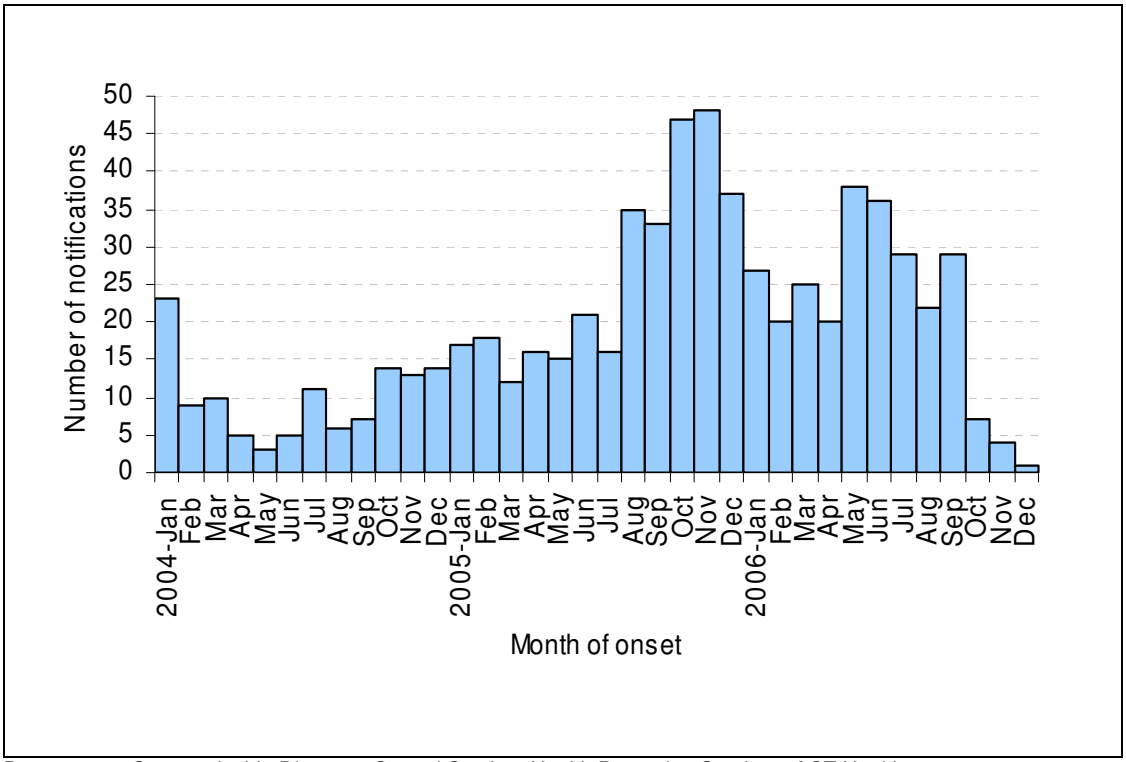
Pertussis (whooping cough) is caused by an infection with the bacteria *Bordetella pertussis.*

Pertussis can occur at any age, but infants and young children are at highest risk of life-threatening consequences of pneumonia and encephalitis. Adolescents and older children can have a milder form of the disease that is hard to recognise. A pertussis booster at 15-17 years of age is now part of the Australian National Immunisation Program to boost waning immunity.

Although there was a decrease in pertussis during 2004 (120 cases) when compared to the 2003 (352 cases) outbreak, the rates of pertussis were higher than usual (hyperendemic) during 2005 (315 cases) and 2006 (258 cases).

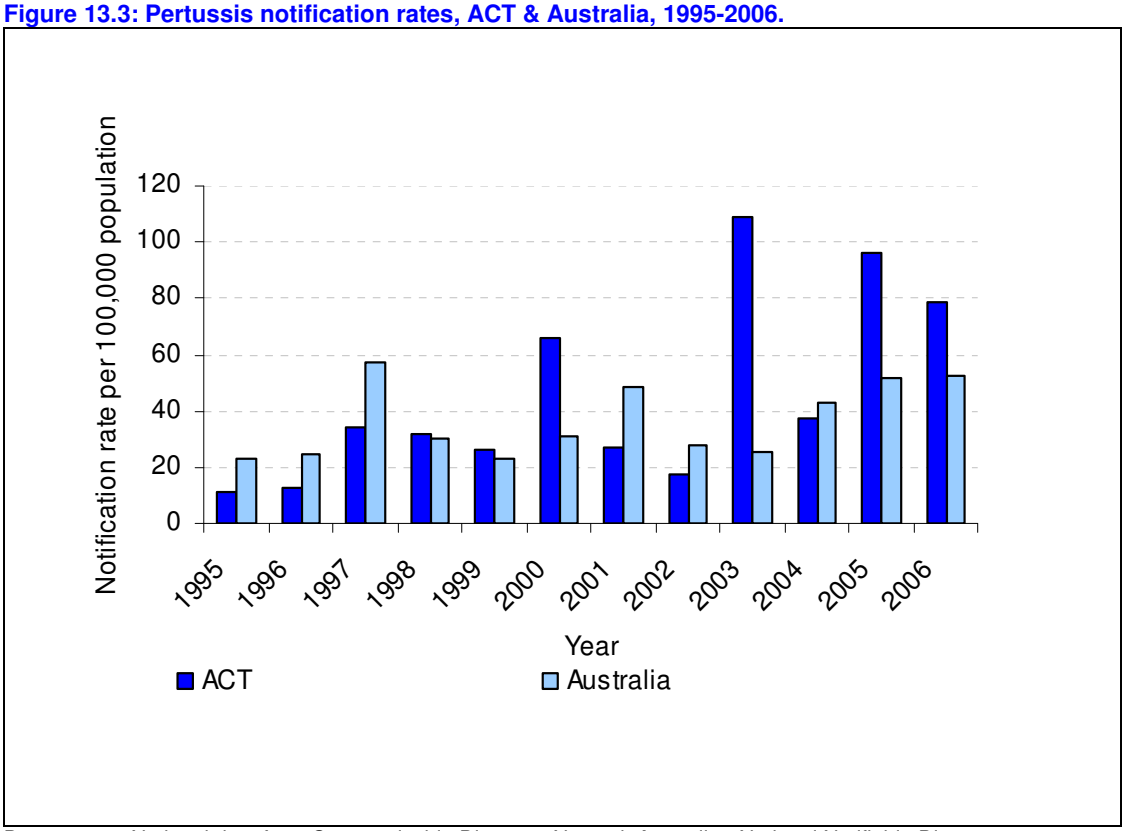
From the middle of December 2005 until September 2006, ACT Laboratories were using pertussis testing kits where the cut-off determination point had been set too low leading to an elevation in the false positive rate. This may account for a large proportion of the positive cases notified in 2005-06.

Figure 13.2: Pertussis notifications by month, ACT, Jan 2004-Dec 2006.



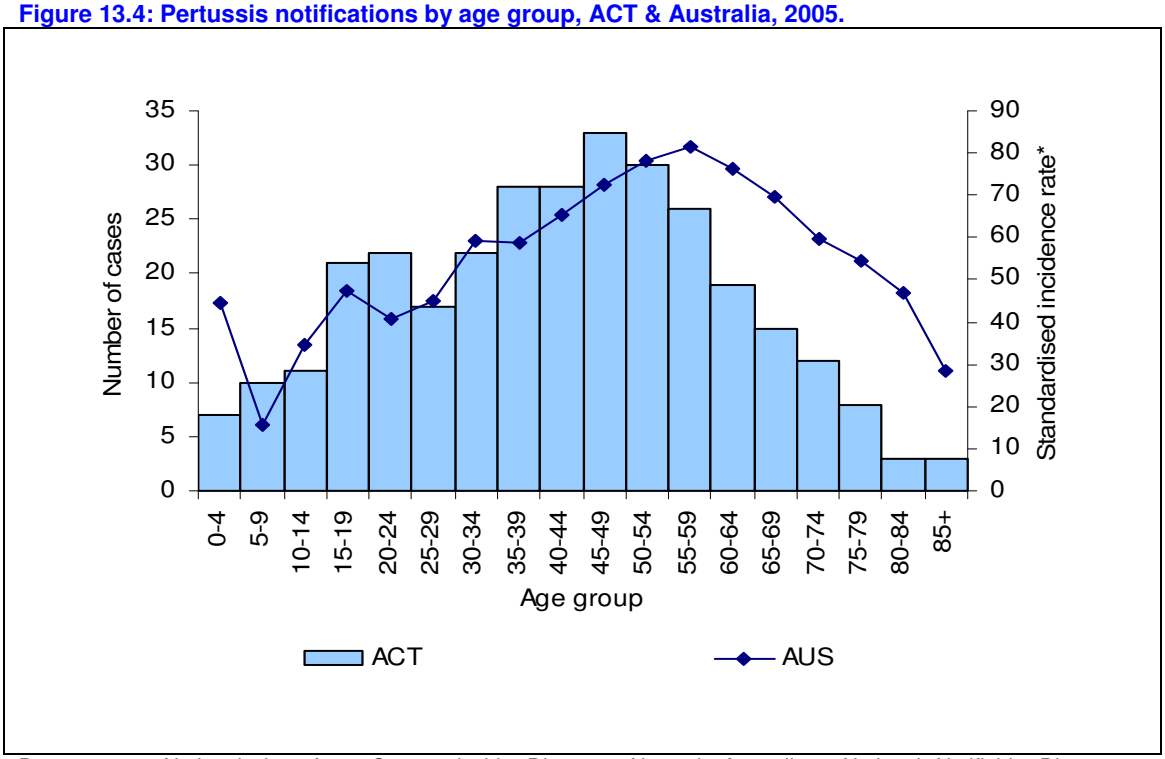
Data source: Communicable Diseases Control Section, Health Protection Services, ACT Health.

Figure 13.3: Pertussis notification rates, ACT & Australia, 1995-2006.



Data source: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health

Figure 13.4: Pertussis notifications by age group, ACT & Australia, 2005.



Data source: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.
* Standardised incidence rate per 100,000 population.

13.3.2 Invasive pneumococcal disease

Infection with the bacterium *Streptococcus pneumoniae* is a leading cause of otitis media, pneumonia, bacteraemia and meningitis. The organism is responsible for considerable morbidity and mortality in infants, older people and those with predisposing risk factors.

Invasive pneumococcal disease (IPD) is the clinical condition in which *Streptococcus pneumoniae* infects a normally sterile site such as blood, cerebrospinal fluid or pleural fluid. IPD presents most commonly as pneumonia in adults and bacteraemia in children. IPD was made a notifiable disease in all Australian states and territories in 2001 (Table 13.4).

Table 13.4: IPD notification rates , states & territories, 2001-06.

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Australia
2001	6.8	6.7	49.8	11.6	7.8	13.1	7.9	10.6	9
2002	20.4	13.3	33.3	11.5	11.8	13.2	11.2	11.5	12.5
2003	12.7	12	36.5	12.1	11.5	10.8	9.4	7.6	11.1
2004	16.9	13.5	45.9	12	12.8	11.7	7.7	9.9	11.7
2005	9.2	9.7	35	5.9	8.7	9.5	6.1	7	8
2006	5.2	8	25.6	6.5	6.7	7.4	5.2	6.1	6.8

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.
Note: Rates per 100,000 population.
Note: Notifications by date of disease onset.
Note: The sudden jump in rates in 2002 in the ACT was due to the fact that IPD became a notifiable disease in the preceding year. The small number of cases contributed to apparent large increase.

In 2005, Australia's highest rates of IPD continued to be in children aged less than five years and adults aged 85 years or more(Roche, Krause et al. 2007). In the less than five years age group, the highest rates were recorded in children aged one year (36.5 cases per 100,000 population) (Roche, Krause et al. 2007). In all age groups there were fewer male than female cases (overall male to female ratio 0.9:1) (Roche, Krause et al. 2007).

A conjugate vaccine is now available in Australia to provide an effective pneumococcal vaccine for children. A nationally funded pneumococcal vaccination program for children at high risk commenced in June 2001. Universal infant vaccination with pneumococcal vaccine commenced on 1 January 2005. A national pneumococcal vaccination program for 65 year old Australians also commenced on 1 January 2005. The uptake of these vaccination programs impacted on IPD notifications soon after their introduction. Between 2004 and 2005, the rate fell by 57% in the under 5 years age group (from 55.4 to 24 cases per 100,000 population) and by 69% specifically, in children aged one year (from 119 to 36.5 cases per 100,000 population). (Roche, Krause et al. 2007) (Table13.4).

13.3.3 Meningococcal disease

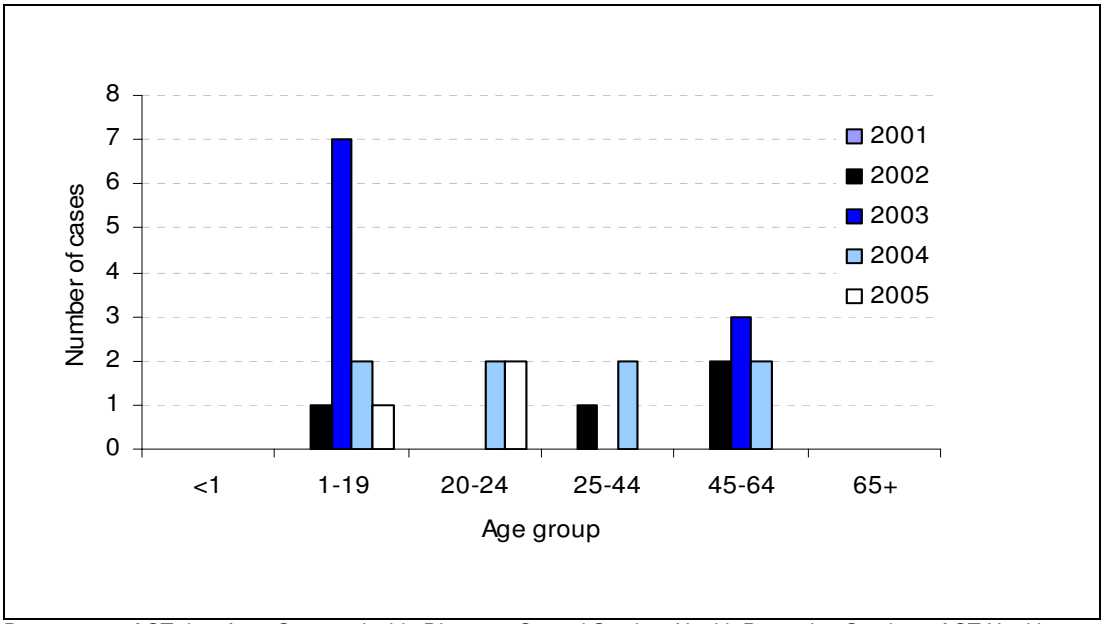
Meningococcal disease is caused by the bacterium *Neisseria meningitidis* (meningococcus). The most common strains that cause most diseases in Australia are serogroups B and C.

The disease is passed from person to person by regular, close, prolonged household or intimate contact. The disease is most common in winter and early spring. In Australia, the highest risk is in children under five years of age and young adults aged 15 to 24 years, although about a third of cases are in people aged 25 years or more.

Immunisation against meningococcal serogroup C disease has been available in the ACT since 2001. In 2003 the Federal Government funded a meningococcal C catch-up program over three years, for 1-19 years. The coverage achieved by the meningococcal serogroup C campaign in the ACT was between 76% and 90% for children up to 16 years (personal communication with Health Protection Services). In the three years after the introduction of the meningococcal serogroup C vaccine, there was a notable decrease in the number of notifications of the targeted age groups (1-19 years) in the ACT (Figure 13.5). This is

consistent with the decreased number of notifications reported nationally since the introduction of the free vaccine (Figure 13.6).

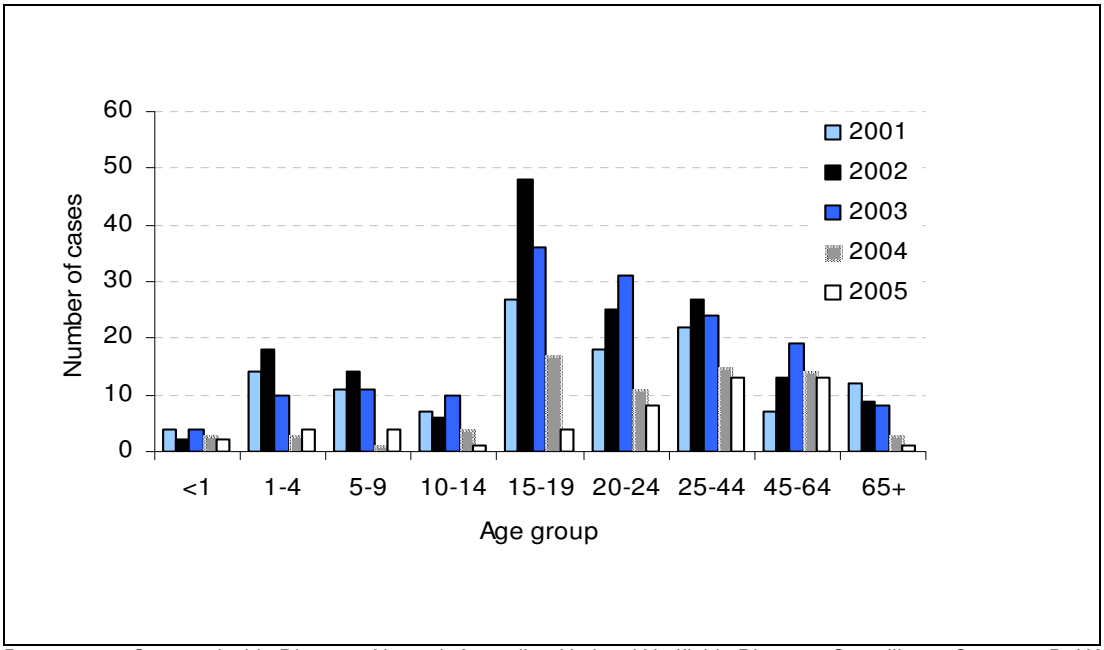
Figure 13.5: Meningococcal notifications by age group, ACT, 2001-05.



Data source: ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.

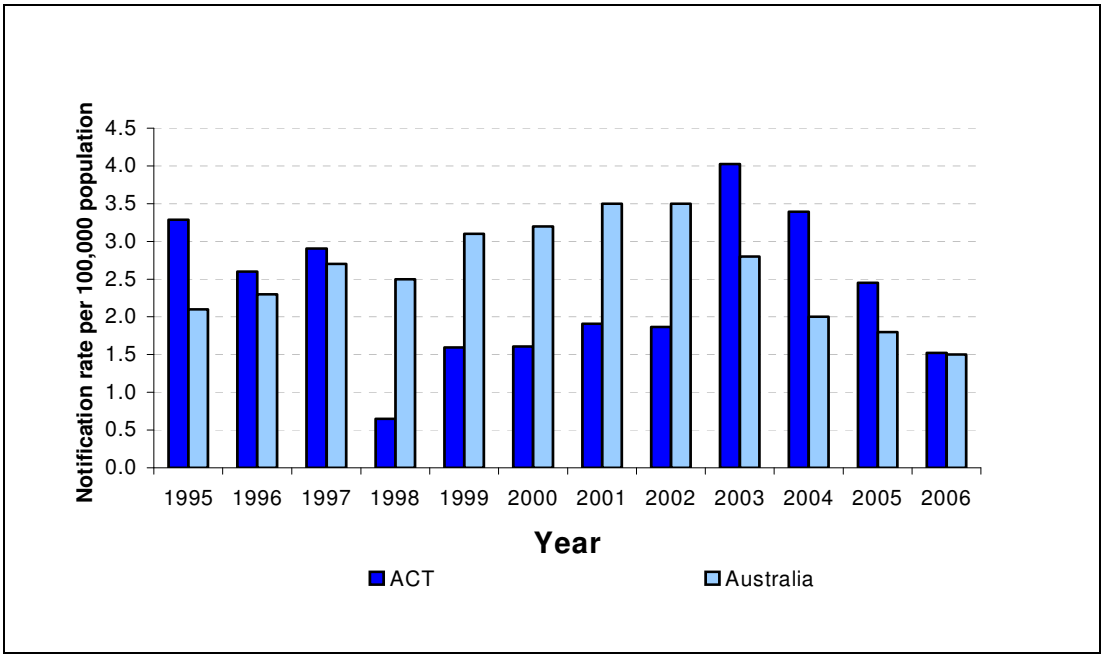
In the ACT, the HPS receives on average, seven notifications of meningococcal infection each year. There were five notifications of the disease in 2006. The notification rate of meningococcal diseases for the ACT in 2006 (1.5 per 100, 000 population) was lower than the previous two years (3.4 per 100,000 population in 2004; 2.5 in 2005) and the same as the national rate (1.5) (Figure 13.7).

Figure 13.6: Meningococcal notifications by age group, Australia, 2001-05.



Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA

Figure 13.7: Meningococcal notification rates, ACT & Australia, 1991-2006.



Data sources: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health

The response to meningococcal disease is coordinated by the HPS, with advice from the Infectious Diseases Unit of The Canberra Hospital (TCH). The aim is to prevent further cases, minimise further transmission and identify any source to prevent a potential outbreak.

The public health strategy to reduce the number of meningococcal diseases included four main interventions: free immunisation for all 1-19 year olds in the ACT; a poster campaign to raise awareness; media releases by the Chief Health Officer; and distribution of information to relevant groups such as GP's, schools, hospitals, laboratories and neighbouring Public Health Units in NSW and Victoria, on a regular basis through a series of e-mail alerts.

13.3.4 Influenza

Influenza is an acute viral disease of the upper respiratory tract. The influenza virus has three strains (A, B and C). Influenza virus types are further subtyped by the antigenic properties of two surface proteins: haemagglutinin (H) and neuraminidase (N). Only influenza A and B are clinically important in human disease.

The 2006 influenza season in Australia started in June, about the same time as in 2005. The majority of the laboratory confirmed notifications reported in 2006 were type A (69%) (Department of Health and Ageing (DoHA) 2006.

In 2006, Australia's highest notification rate was recorded in infants under the age of one year (approximately 90 cases per 100,000 population). Notification rate among the 0-4 years age group in 2006 (43 cases per 100,000 population) was lower than in 2005 (82 cases per 100,000 population) (Department of Health and Ageing (DoHA) 2006.

In 2006 in the ACT, there were 80 laboratory confirmed cases (Influenza A: 72; Influenza B: 8) reported. Laboratory confirmed influenza became notifiable in the ACT from 2005. A large number of the cases were among children aged 0-4 years (14%) and elderly aged over 70 years (33%). The significant proportion of cases among the elderly was due to an outbreak in aged care facilities.

The NHMRC recommends annual influenza vaccination for all Australians aged over 65 years. In 2004, the vaccination coverage of Australians in this age group was 80%, which was slightly lower than in 2003 (80.7%).

Influenza outbreak in Aged Care Facilities in the ACT

Between 13th September 2006 and 18th December 2006, 116 residents and 54 staff at 14 ACT Aged Care Facilities (ACFs) in the ACT reported onset of Influenza-Like Illnesses (ILI) symptoms including cough, fever and runny nose. Clusters of ILI are not notifiable in the ACT. A retrospective review of ILI in the first affected ACF revealed that six staff and 43 residents had become ill by the time the Health Protection Service was asked for assistance.

At the time of the outbreak, at least 77% of the 31,164 adults aged over 65 years in the ACT were appropriately immunised in the ACT. However, immunisation rates of ACF residents and staff prior to the outbreak were insufficient to prevent the spread of influenza. While immunisation rates for residents ranged from less than 50% to over 90%, the average immunisation rate for staff was 30% (range 7% - 90%).

Ten residents died during the outbreak period, five with confirmed influenza and all with respiratory illness. The mean age at death was 88 years, median 91 (range 75 to 100 years). Eight of the residents who died had not been vaccinated with the 2006 influenza vaccine.

Key features of the outbreak control strategy included vaccination clinics for staff and residents, enhanced infection control (including exclusion of unvaccinated staff and visitors), isolation of cases, restricting resident transfers and admissions, cancellation of group activities and infection control advice for staff working in multiple ACFs.

Oseltamivir (Tamiflu) prophylaxis was provided to asymptomatic staff and recommended to residents' medical practitioners. Treatment doses were prescribed for those who had respiratory symptoms. Tamiflu for staff was provided by the Health Protection Service from the ACT stockpile. Residents generally experienced severe nausea resulting in suspension of many courses of Tamiflu. A small proportion of staff reported minor short term nausea.

Overall, Influenza A was confirmed with laboratory evidence in 56 of the 170 identified cases.

As information arrived from the testing laboratories, a late season immunisation campaign was mounted for unvaccinated residents and staff of ACFs in the ACT.

This outbreak underscored the importance of vaccinating staff and residents of Aged Care Facilities to prevent influenza outbreaks in the future.

Influenza pandemic planning

Since the occurrence of avian influenza (bird flu) in humans in 2003, countries around the world, including Australia, have started to prepare for the possibility of an influenza pandemic.

The Health Protection Services of ACT Health is responsible for coordinating the planning and response to avian influenza and pandemic influenza in the ACT. The ACT Influenza Pandemic Action Committee (ACTIPAC) is chaired by the Chief Health Officer, and comprises representatives from both Government and non-Governmental agencies who have a role in coordinating the ACT response and preparedness plans to manage an influenza pandemic. The ACT Influenza Pandemic Plan was endorsed in June 2004 and updated in 2006.

ACT Health is represented on the National Influenza Pandemic Action Committee (NIPAC) that ensures a national and coordinated approach to pandemic planning across Australia.

In October 2006, a national exercise, Exercise Cumpston, was carried out to test Australia's preparedness for responding to pandemic influenza involving widespread human-to-human transmission of a new strain of the influenza virus. This exercise not only tested the Australian Health Management Plan for Pandemic Influenza, but also tested the strength of state and territory pandemic response plans. Exercise Cumpston highlighted issues that

needed to be addressed in the ACT Influenza Pandemic Plan and the territory's capacity to respond.

Consequently, the ACT and other jurisdictions have revised their plans to take account of exercise results and emerging issues.

13.3.5 Measles

Measles is a highly infectious disease characterised by fever, rash, runny nose, sore eyes, and cough. Serious complications, including pneumonia, encephalitis and death, can follow infection.

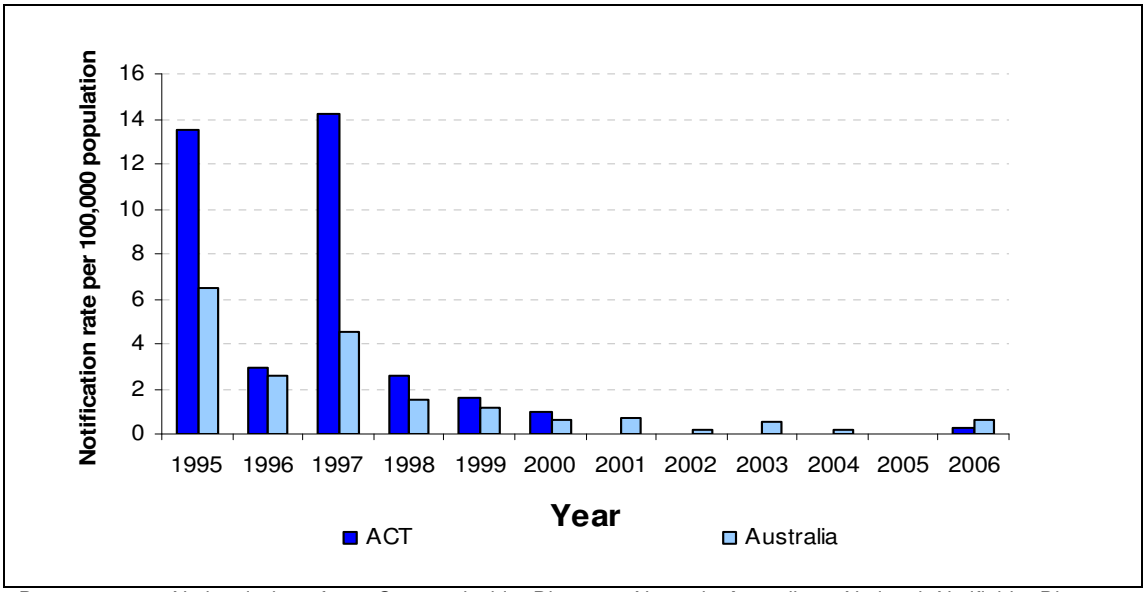
In line with global efforts for the elimination of measles, the Australian Government has embarked on a strategy for measles elimination in Australia. In 1998, the Measles Control Campaign consisted of initiatives that aimed to improve measles immunisation coverage rates in Australian children.

Enhanced surveillance for measles is underway to ensure that any cases are rapidly detected and controlled. Encouraging vaccination of young adults (especially those who are travelling) and maintaining high levels of childhood vaccination is central to eliminating measles in Australia.

The ACT had no notifications of measles during 2001-05 (Figure 13.8). The increase in notifications in Australia between 2002 (31 cases) and 2003 (92 cases) can be linked to seven outbreaks in four states. The index cases in five of the seven outbreaks acquired their infection outside of Australia.

The sudden increase of measles notifications in 2006 was linked to an interstate (NSW, WA, SA, Victoria and ACT) outbreak in a national spiritual tour during April. The tour included overseas visitors who became sick with symptoms of measles as they travelled around Australia. The tour also included meetings and retreats in Melbourne, Sydney, Brisbane and the Gold Coast. All but six of the adult cases were not immunised against measles. All the child cases were unimmunised. This outbreak underscored the highly infectious nature of measles and the importance of vaccination.

Figure 13.8: Measles notification rates, ACT & Australia, 1995-2006.



Data sources: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.

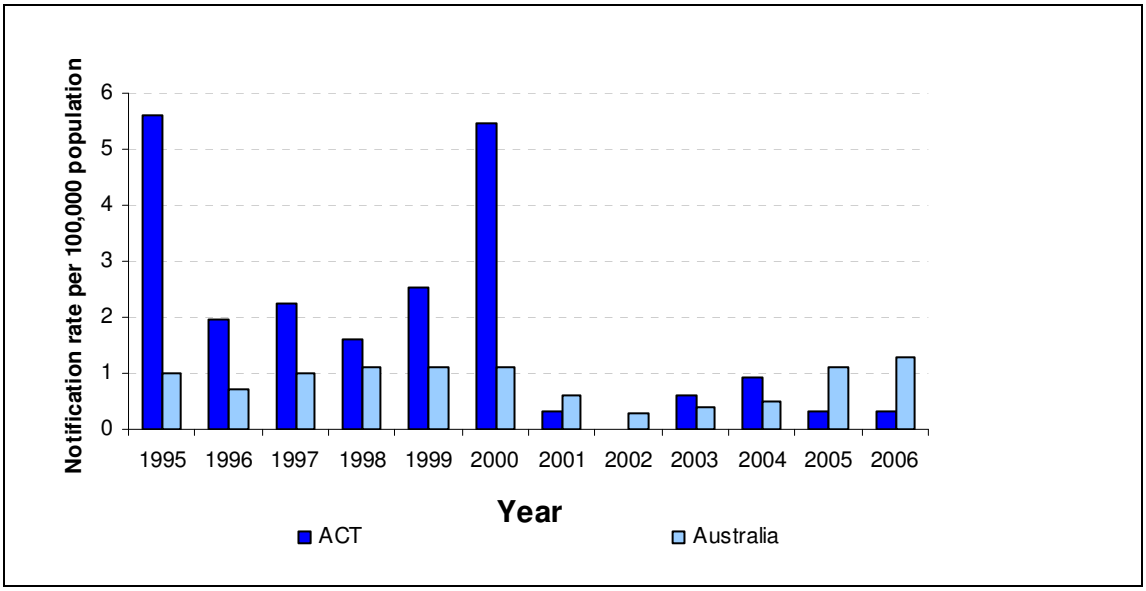
Note: Post 1 January 1999, measles cases have been confirmed by serology (IgM positive)

13.3.6 Mumps

Mumps is an acute viral infection of the salivary glands. Transmission is airborne or through direct contact with infected droplets or saliva.

In 2002, rates of mumps in the ACT (zero case) and Australia (0.3 case per 100,000 population) declined to a record low, presumably due to the ongoing impact of the Measles Control Campaign and delivery of the Measles Mumps Rubella (MMR) vaccine (Figure 13.9). Since 2003, a small rise in the rates of mumps in Australia was observed. There was only one case notified in the ACT in 2006.

Figure 13.9: Mumps notification rates, ACT & Australia, 1995-2006.



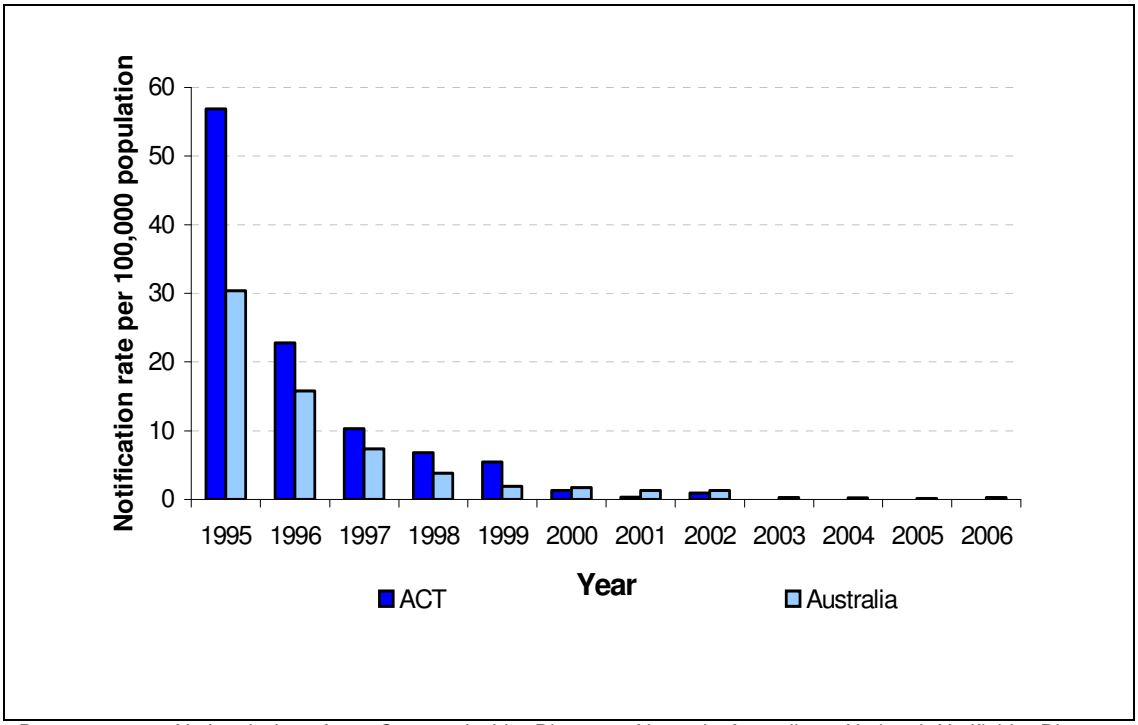
Data sources: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.

13.3.7 Rubella

Rubella is a serious viral disease that when contracted by a woman during her first trimester of pregnancy, can cause developmental defects in the foetus. Congenital rubella syndrome (CRS) may occur in up to 90 percent of infants born to these women. Early infection may also cause intrauterine death and spontaneous abortion. The incidence of congenital defects is rare if the disease is contracted after the twentieth week of pregnancy.

Rubella vaccination is part of the routine MMR given to children at 12 months and four years of age. The decline in the number of rubella cases over time can be partially attributed to the introduction of MMR vaccines for both males and females in year 6 (school) in 1994, the Measles Control Campaign and enhanced MMR immunisation levels (Figure 13.10). In 2006, Australia's notification rate remained low (0.3 per 100,000 population). There were no cases notified in the ACT in 2006.

Figure 13.10: Rubella notification rates, ACT & Australia, 1995-2006.



Data source: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.

13.3.8 Hepatitis B

Hepatitis B (HBV) is caused by a virus that targets the liver. Infection can be mild and often goes undetected. Most people who become infected will clear the virus, but some become chronically infected. In some cases HBV can cause cirrhosis (scarring) of the liver, liver cancer, liver failure, and death.

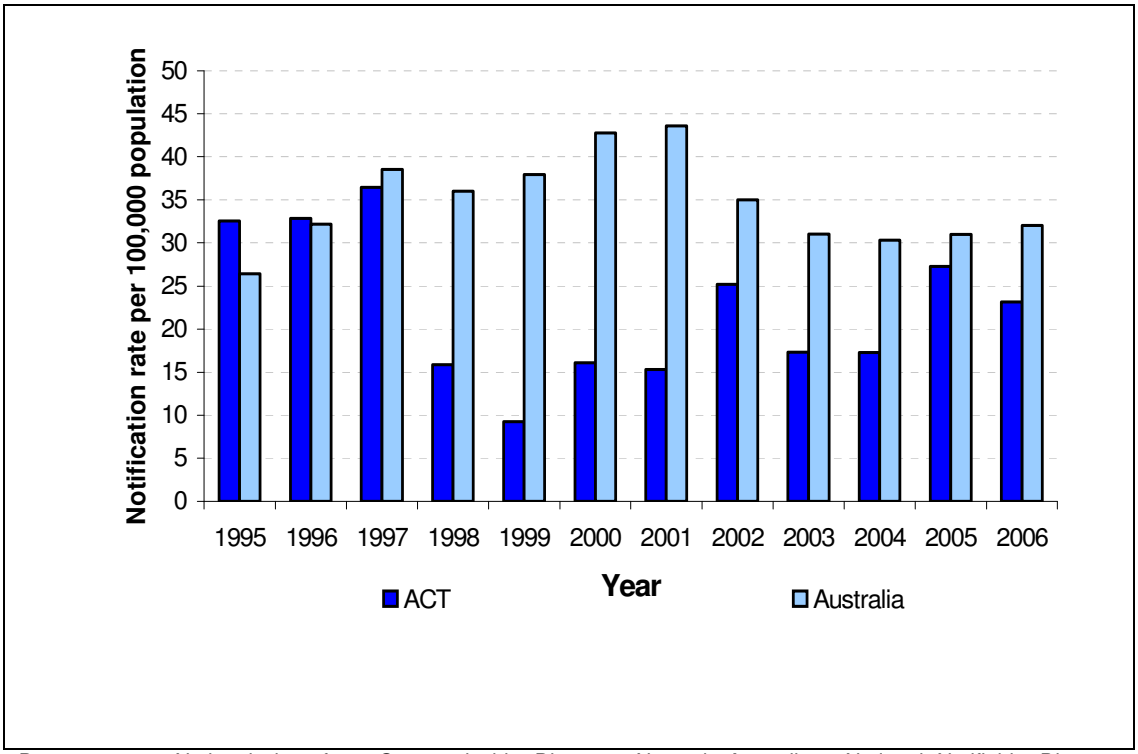
HBV is found in body fluids including blood, saliva, semen, mucus, vaginal fluid and breast milk. Common routes of exposure include: sharing injection equipment; needle-stick injury and other types of parenteral inoculation by injection or infusion; sexual intercourse and transmission from infected mothers to neonates. Close personal contact in households in which a carrier or acute sufferer resides has a low, but significant risk and sharing of razors and toothbrushes should be avoided in these circumstances.

When a notification is known to be from a recent infection it is classified as 'incident HBV'. This is distinguished from those who have antibodies from a past infection of HBV (unspecified HBV).

The ACT has few notifications of incident HBV. In 2006, six cases of incident HBV and 70 cases of unspecified HBV were notified. The rate of combined incident and unspecified HBV (23.2 per 100,000 population) was much lower than the national rate (32.1 per 1000,000 population) (Figure 13.11). Over half of notifications (56%) in the ACT in 2006 occurred in the 20-34 year age group.

HBV vaccine is available for all age groups to prevent HBV virus infection. In the ACT, HBV vaccine was introduced as a nationally funded universal infant vaccination program (a birth dose plus three additional doses at 2, 4 and 6 months or at 2, 4 and 12 months) since 2000, with continued maternal screening so that infants born to mothers with chronic HBV can be given hepatitis B immunoglobulin as well as the vaccine (DoHA 2003). Since 1998, there has been a catch up program for children in Year 6. Workers in healthcare and childcare industries who are at risk of exposure to HBV are recommended to be vaccinated.

Figure 13.11: HBV (incident & unspecified) notification rates, ACT & Australia, 1995-2006



Data source: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.

13.3.9 Human Papillomavirus

HPV is a sexually transmitted infection. In 98% of cases HPV infections clear spontaneously, but occasionally the virus can persist and lead to cervical cancer. There are many strains of HPV, only some of which cause cancer. HPV strains 16 and 18 cause approximately 70% of all cervical cancers. Gardasil®, which is the vaccine being used for the HPV vaccination program, can prevent HPV strains 16 and 18 if the individual is vaccinated before infection. It also contains protection against HPV strains 6 and 11 which can cause 90% of genital warts.

The National Human Papilloma Virus (HPV) Vaccination Program commenced via a schools program in April 2007 for girls aged 12 to 17 and for women aged 18-26 years via General Practice in July 2007.

The vaccine is given as a series of three injections over a six-month period. The course of vaccines must be completed before the end of June 2009.

13.4 Sexually transmissible infections

Sexually transmissible infections (STI) are infections whose primary mode of transmission is through sexual contact with an infected partner. Sexually active individuals are at risk of a range of STIs, of which chlamydia is the most prevalent bacterial infection.

Notifiable diseases include *Chlamydia trachomatis* genital infections (commonly known as chlamydia), gonorrhoea, syphilis, donovanosis, chancroid and lymphogranuloma venereum (LGV). Other STIs such as, genital herpes, human papillomavirus (causing genital warts and cervical cancer – refer above) and parasitic infections (trichomoniasis), are not notifiable.

The most effective means of prevention and control is through the use of safe sex practices, risk reduction, early case identification, contact tracing and treatment. If detected early, most infections can be effectively treated with antibiotics. Notification rates of STI can be used as

an indicator of unsafe sexual activity and provide information for policy and program development.

An inability to detect these diseases is of particular concern in women since the complications can be serious and infections such as gonorrhoea, syphilis or herpes may be passed on to a foetus in utero or to a baby during childbirth.

13.4.1 Chlamydia trachomatis genital infection

Chlamydia is a common sexually transmitted disease caused by the bacterium, *Chlamydia trachomatis*. It is known as a "silent" disease because about three quarters of infected women and about half of infected men have no symptoms. If symptoms do occur, they usually appear 1-3 weeks after exposure.

The bacteria initially infect the cervix, urethra, anus or throat. In women, symptoms include dyspareunia (painful sexual intercourse due to medical or psychological causes), irregular menses or a burning sensation when urinating. If left untreated, the infection can spread to the fallopian tubes causing pelvic inflammatory disease, ectopic pregnancy and tubal infertility in women. In men, symptoms include a urethral discharge or a burning sensation when urinating or more severe symptoms of epididymo-orchitis resulting in infertility.

In 2001, the ACT Ministerial Advisory Council on Sexual Health, HIV/AIDS, Hepatitis C and Related Diseases (SHAHRD) recommended an education campaign to raise the awareness of chlamydial disease in the ACT particularly amongst young people. ACT Health launched the campaign in November 2002. It aimed to raise awareness of chlamydial disease, promote testing for chlamydia, treatment and use of safe sex practices.

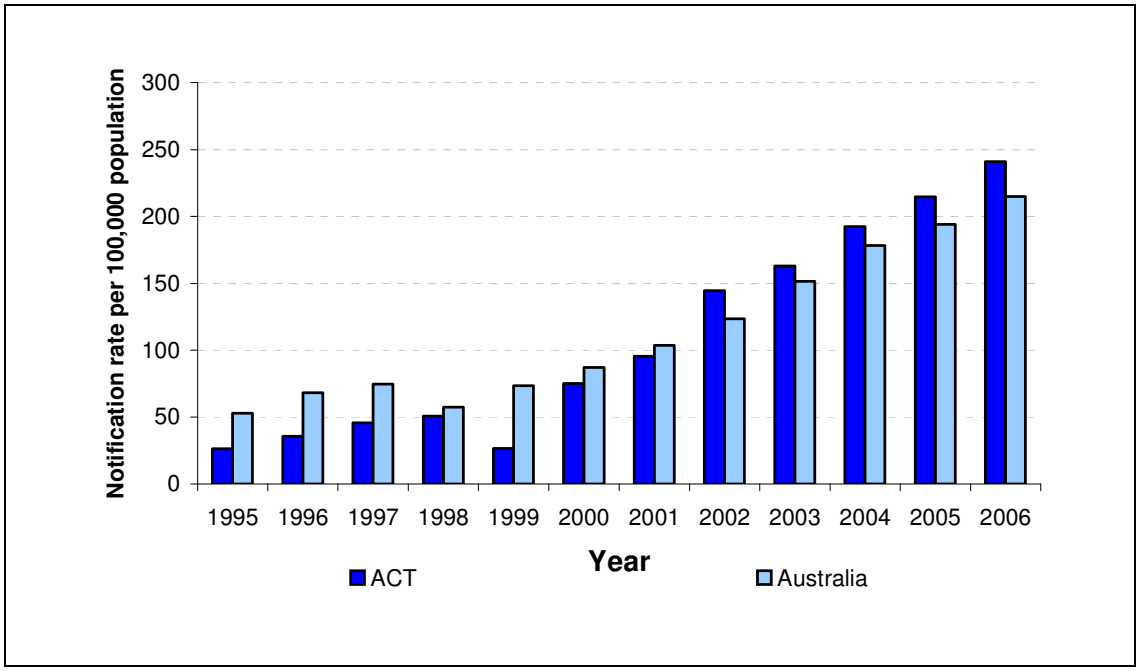
Notification rates of chlamydia infections of the genital tract have continued to increase. In the ACT (and Australia), the highest rates of infection are observed in young females aged 15-30 years.

ACT rates have increased above national and NSW rates since 2001, most likely as a result of increased awareness of, and testing for, the disease in the ACT, compared to other jurisdictions. Research has demonstrated an increase of nearly 50% in the number of tests for chlamydia performed in the ACT over the six-year period to 2004. This research also showed that the proportion of positive tests increased by 40.5% (Currie & Bowden 2006).

Since 2002, several programs, services and campaigns targeting chlamydia have been conducted. These programs focus on outreach for diagnosis and treatment. This approach should eventually reduce the transmission of chlamydia in the community. Programs include:

- The ACT Chlamydia Campaign (2002) – aiming to raise awareness;
- Sexual Health, Lifestyle and Referral Program (SHLiRP targeting awareness and screening (1340 students had a sexual health consultation with 820 chlamydia tests);
- Partnership Approach to Comprehensive Testing (PACT) program to raise awareness in target groups such as: men who have sex with men (MSM), youth and sex workers (655 clients resulting in 1210 occasions of service);
- Screening the Rectum, Urethra and Throat (STRUT) program - targeting screening of men who have sex with men (1557 chlamydia tests performed); and
- General Practice Pap and Chlamydia Testing Study (GPPaCTS) - a study which includes chlamydia screening of women 16-39 years (1590 chlamydia tests performed).

Figure 13.12: Chlamydia notification rates, ACT & Australia, 1995-2006.



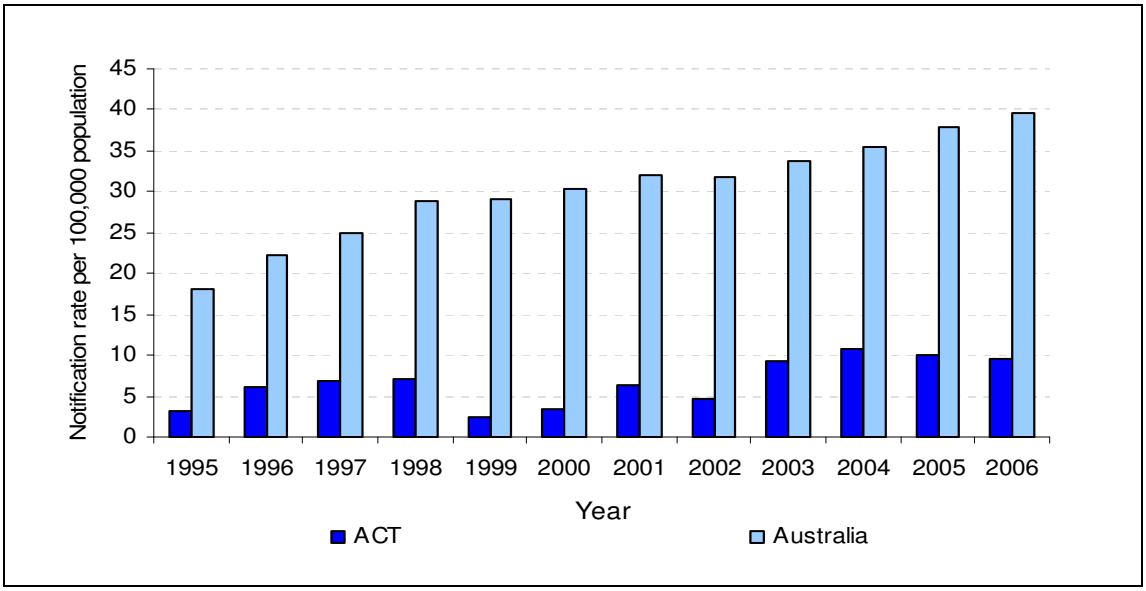
Data source: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.

13.4.2 Gonococcal infection

Gonococcal infection (gonorrhoea) is a sexually transmissible infection caused by the bacterium *Neisseria gonorrhoeae*. The infection causes a purulent discharge, with difficulty urinating in males, and inflammation of the urethra or cervix that can progress to more serious pelvic inflammatory disease and infertility in females. The organism can cause throat and ano-rectal infections. Babies can contract eye infections from an infected mother at delivery. Because of the emergence of resistance, there is no oral antibiotic that can be routinely recommended for treatment and intramuscular ceftriaxone is required for all new diagnoses pending the results of sensitivity testing. If a person is tested for gonorrhoea, they should also be tested for Chlamydia.

The notification rates of gonorrhoea have steadily increased in Australia since 1995. In the ACT, slightly higher notification rates have been seen since 2003, but were well below national rates (Figure 13.13).

Figure 13.13: Gonorrhoea notification rates, ACT & Australia, 1995-2006.



Data sources: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health

13.5 Blood borne viruses

A number of viruses whose primary mode of transmission is via blood and body fluids are notified to ACT Health. These include hepatitis B, hepatitis C and Human Immunodeficiency Virus (HIV). These viruses are of public health concern as their occurrence is associated with risk taking behaviours such as unprotected sexual intercourse and the sharing of needles and syringes. Transmission of blood borne viruses (BBV) can also occur from body piercing or tattooing where unsterilised equipment has been used.

The Needle and Syringe Program (NSP) aims to reduce the risk of transmission of blood borne viruses through the sharing of contaminated injecting equipment by providing injecting equipment packs free of charge or for a minimal charge from pharmacies and 24-hour vending machines. There are 40 NSP outlets across the ACT and 58% of ACT pharmacies participate in the program.

13.5.1 Hepatitis C

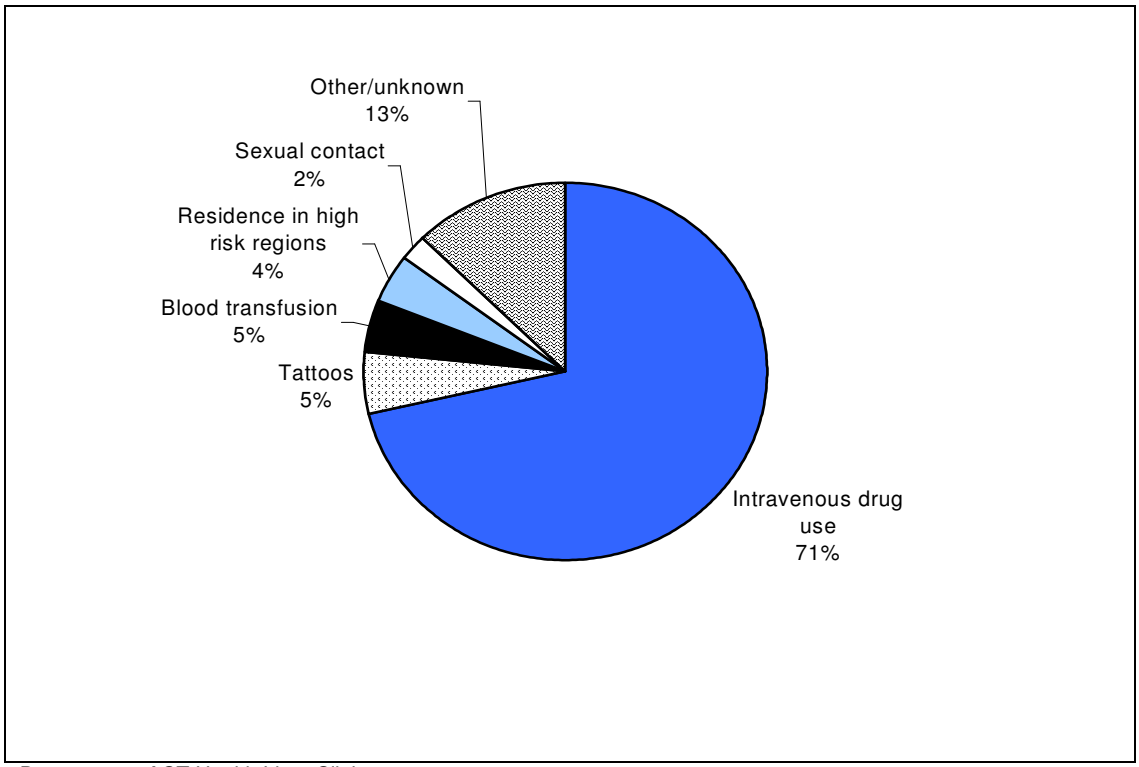
Hepatitis C is caused by an infection with a virus that was first identified in 1989. Infections with hepatitis C are frequently asymptomatic, however, the infection may result in chronic carriage of the virus in 50% of cases and some of these will go on to develop cirrhosis of the liver and possibly liver cancer.
The virus is primarily transmitted by contact with an infected person's blood. Infection through contaminated blood transfusion has been addressed by the introduction hepatitis C screening of blood donations since 1990. The vertical transmission from an infected mother to her baby can be prevented when appropriate antenatal and obstetric practice, together with appropriate treatment, is given to the pregnant woman prior or during birthing. In the ACT, the main risk factor for acquiring hepatitis C is intravenous drug use (71%) and sharing of needles and injecting equipment (Figure 13.14).

There has been a slight decline in the number of cases notified in the ACT since the late 1990s (Figure 13.15).

In 2006, there were 15 incident cases and 177 unspecified cases of hepatitis C notified in the ACT. Between 2001 and 2006, there was an average of 13 incident cases and 200 prevalent cases notified in the ACT. In 2006, males were more likely than females to be diagnosed with the disease (male to female ratio is 1:0.6). The majority of the cases (80%) were in the 20-49 year age group.

In 2006, it is estimated that about 3,000 ACT residents were living with hepatitis C, approximately 1% of the population. Hepatitis C antibody prevalence amongst Needle and Syringe Program clients in the ACT peaked in 2003 (80%) and dropped slightly in 2006 (72%) with a high proportion of clients who agreed to be surveyed, testing positive for the hepatitis C antibody (NCHECR 2007).

Figure 13.14: Risk factors for hepatitis C in the ACT, 2006.



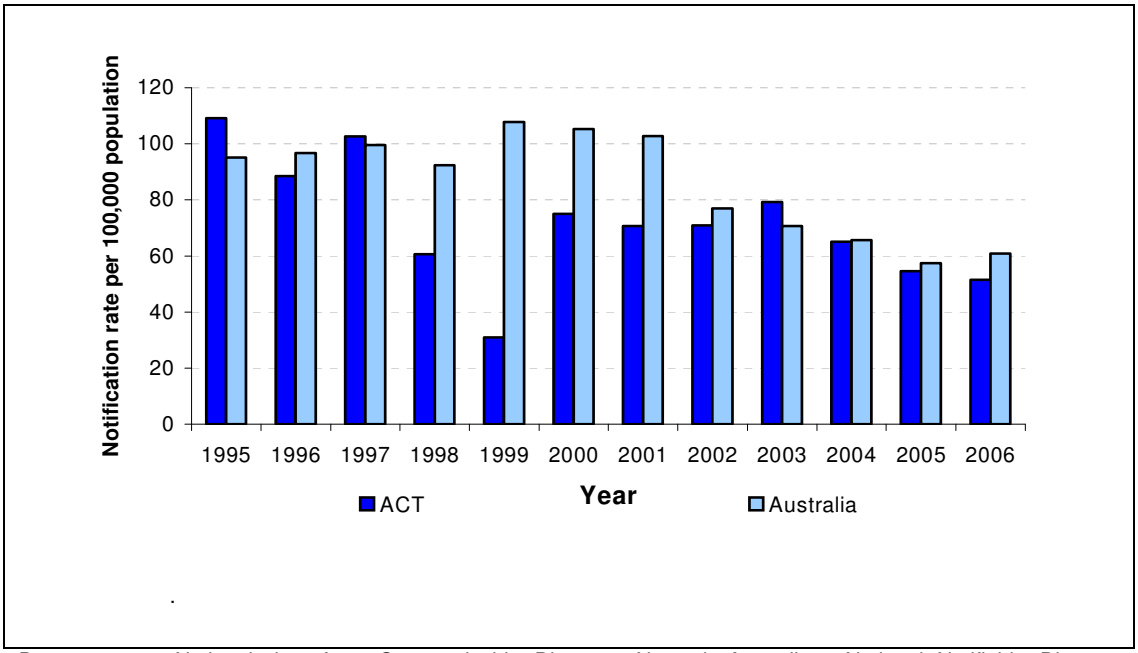
Data source: ACT Health Liver Clinic

The current management of hepatitis C in the ACT focuses on antiviral treatment and education. As there is no vaccine for hepatitis C, prevention strategies focus on education of injecting drug users to avoid sharing of needles and syringes. Treatment is available for persons with the disease and has been shown to clear the virus in 60% of cases (DoHA 2001). Under the Pharmaceutical Benefits Scheme, persons are eligible for treatment if a liver biopsy shows evidence of liver cirrhosis. In the ACT, 243 persons with hepatitis C commenced antiviral treatment during 2001-06 (Personal communication with the Acting Director of Pharmacy Services, The Canberra Hospital).

Hepatitis C poses a significant burden of disease to the ACT population. Based on the modelling estimates developed by the Hepatitis C Projections Working Group (Lowe and Cotton 1999) for the 3000 ACT cases, 2250 (75%) will develop chronic long term hepatitis C; 240 (8%) will develop liver cirrhosis 20 years after the infection; 60 (2 %) will experience liver failure 20 years after the infection; 24 (0.8%) will develop liver cancer 20 years after the infection. To reduce this future burden of disease, antiviral treatment is crucial. However, patient compliance is a major issue, mainly due to the side-effects of the antiviral treatment. To address this issue, ACT Health funded The ACT Hepatitis C Council Inc in 2007-08 to

provide follow-up and support to people on antivirals in order to increase patient compliance and the number of people being treated for hepatitis C.

Figure 13.15: Hepatitis C (incident & unspecified) notification rates, ACT & Australia, 1995-2006.



Data source: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health

13.5.2 Human Immunodeficiency Virus

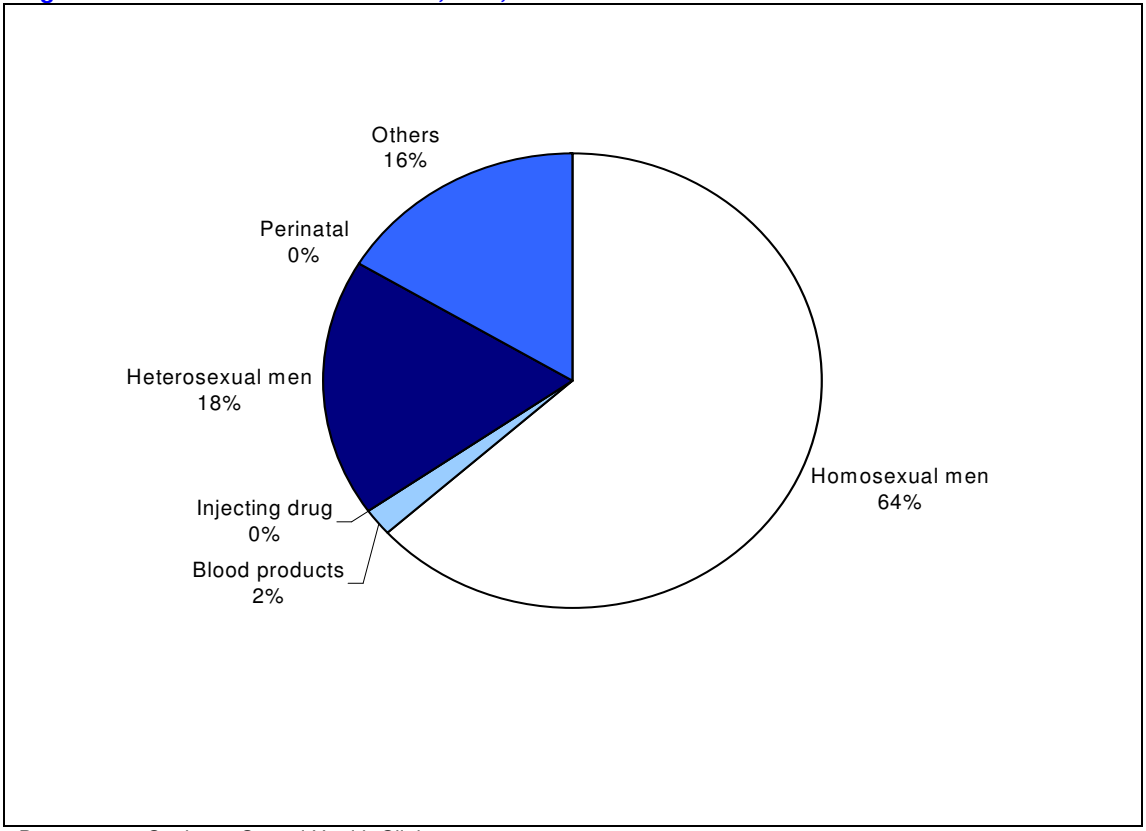
Human Immunodeficiency Virus (HIV) can severely damage the immune system, resulting in Acquired Immune Deficiency Syndrome (AIDS). AIDS is a disease in which the body's immune system breaks down and is unable to fight certain infections, known as "opportunistic infections," and other illnesses that the body could previously fight.

HIV is transmitted from person to person through sexual contact, sharing of HIV contaminated injecting equipment, transfusion of infected blood and blood products or transplantation of infected tissue and organs. In the ACT, transmission of HIV occurs primarily through sexual contact: homosexual men (64%); heterosexual men (18%) (Figure 13.16).

There has been a steady decline in the number of new diagnoses of HIV since the mid 1990s. Between 2004 and 2006, there was an average of seven diagnoses each year in the ACT, compared to an average of 20 diagnoses a year for the three-year period 1994 to 1996. Community education, safe sex practices, early case identification and treatment, have all contributed to the effective management of HIV in the community.

Throughout Australia, there has also been a decline in the progression to AIDS, attributable to improvements in antiretroviral therapy for people with HIV infection.

Figure 13.16: Source of HIV infection, ACT, 2001-06.



Data source: Canberra Sexual Health Clinic.
Note: Data for 2001 to 2006 have been pooled to produce percentages.

13.6 Gastrointestinal, food and water related diseases

Gastrointestinal infections notifiable in the ACT and Australia include; botulism, campylobacteriosis, cryptosporidiosis, haemolytic uraemic syndrome (HUS), hepatitis A and E, listeriosis, salmonellosis, shigellosis, shiga-like toxin-producing Escherichia coli (SLTEC) / verotoxigenic Escherichia coli (VTEC) and typhoid.

Gastrointestinal infections can be contracted through: ingestion of contaminated food and water, person to person transmission, and contact with the environment or animals. Despite difficulties in identifying source of infections, transmission from food is estimated to account for most cases of gastroenteritis each year in Australia.

Enhanced food borne disease surveillance has been recognised as an essential tool to help reduce food poisoning. OzFoodNet was established by the Australian Government in 2000 to strengthen Australia's capacity to enhance food borne disease surveillance. An OzFoodNet epidemiologist has been appointed in the ACT to work closely with the network.

Identifying the source of an outbreak is often difficult. Between July 2004 and June 2006, the HPS investigated seven outbreaks of gastrointestinal disease considered to be of food-borne origin and 59 outbreaks of gastrointestinal disease associated with person-to-person transmission in the ACT. Among the seven outbreaks of foodborne origin, one person died and four people were hospitalised. Among the outbreaks from person-to-person transmission, most occurred in childcare centres (38), schools/preschools (8) and aged care facilities (9). The common causative agents in childcare centres and aged care facilities were rotavirus and norovirus respectively.

In 2006, notifications of gastrointestinal disease comprised 30% of all notifications in the ACT. The majority of these notifications were: campylobacteriosis (n=401) and salmonellosis (n=133). There were also notifications of other illnesses, including hepatitis A, listeriosis, giardiasis and cryptosporidiosis.

13.6.1 Outbreak control of gastroenteritis in the ACT

Outbreak control of gastroenteritis requires early identification and interruption of further transmission.

Identification of an outbreak relies on ongoing surveillance and reporting. In the ACT, once a cluster of cases of gastroenteritis has been identified to HPS, the OzFoodNet epidemiologist carries out an investigation to determine the mode of transmission and the source of infection.

Identifying the source of infection determines actions to control the outbreak of food-borne gastroenteritis. Particular attention is paid to those cases resulting from foodborne transmission because of the possibility of many cases arising from popularly consumed foods. If a contaminated food is identified, the investigation also attempts to identify the source of the contamination. As most food consumed in the ACT is produced outside the Territory, the cooperation of food safety agencies in other states and territories during these investigations is sought. Once the source of contamination is verified, removal of the contaminants and the source of infection is carried out to prevent further transmission of the illness.

Interrupting person-to-person transmission controls the outbreak of viral gastroenteritis. Outbreaks involving person-to-person transmission are most commonly seen in institutions such as childcare centres and aged care facilities. HPS collects information on cases and provides expert advice on infection control to the institution to limit the spread of illness. If necessary, an on-site inspection to evaluate the infection control practices of the institution may be conducted.

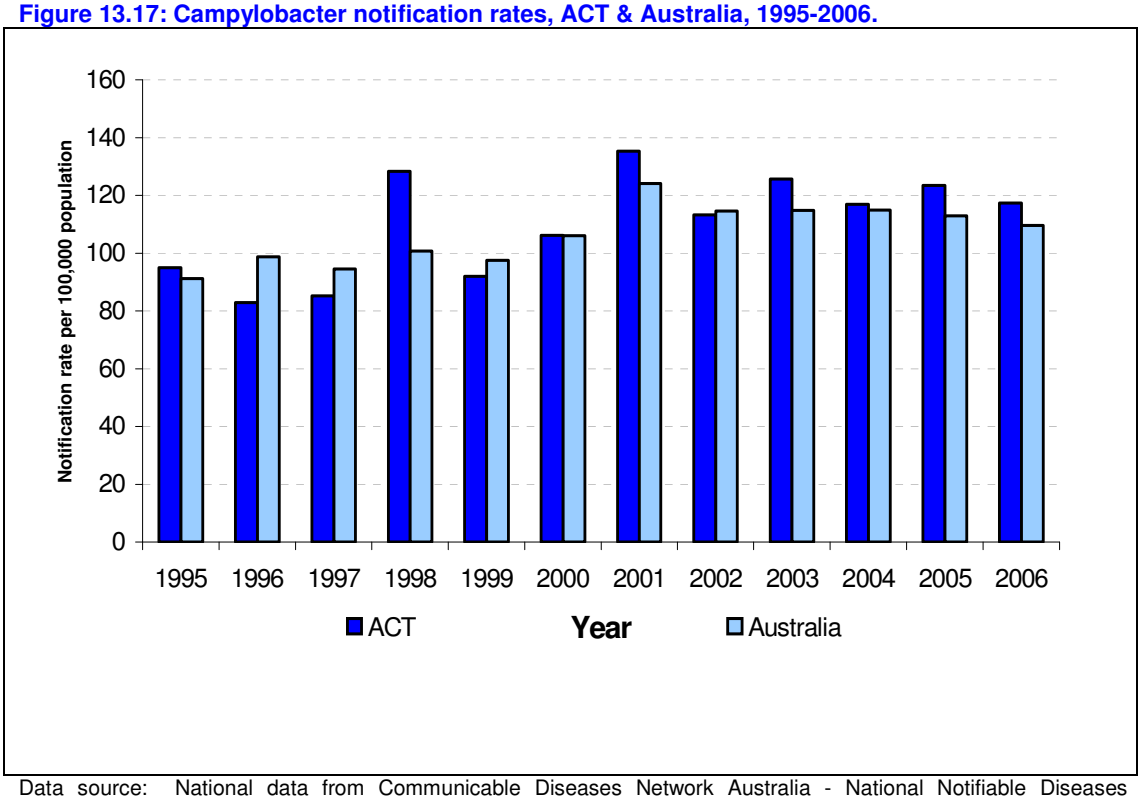
13.6.2 Campylobacteriosis

Campylobacter infections are usually caused by the bacterium *Campylobacter jejuni*. Infection is usually acquired through the ingestion of contaminated food or water. Unpasteurised milk, untreated surface water, defects in municipal water systems and undercooked meats (especially poultry) have all been implicated in outbreaks.

In the ACT, the notification rates of *Campylobacter* infections have been steady in the last few years. Notification rates have slowly increased since 1995, which may reflect better reporting of the disease (Figure 13.17) in the ACT. Although the ACT appears to have a higher rate of the disease than Australia as a whole, comparison should be treated with caution due to the small number of ACT notifications. During the reporting period, there was one outbreak of *Campylobacter* infection investigated in a restaurant setting. Cases of *Campylobacter* infections occurred in all age groups with almost a quarter of cases (41%, n=159) occurring in the 20-39 year age group during 2006.

Since 2003, all individuals who are notified as a case of *Campylobacter* are sent a postal survey to collect information on risk factors and the existence of possible related cases.

Figure 13.17: Campylobacter notification rates, ACT & Australia, 1995-2006.



Data source: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.
Note: Australian rates and population base do not include NSW.

13.6.3 Salmonellosis

Salmonellosis is caused by infection with a *Salmonella* species. There are many different strains of *Salmonella.* Typing of these bacteria assists with the identification of the source of infection and detection of clusters of related cases.

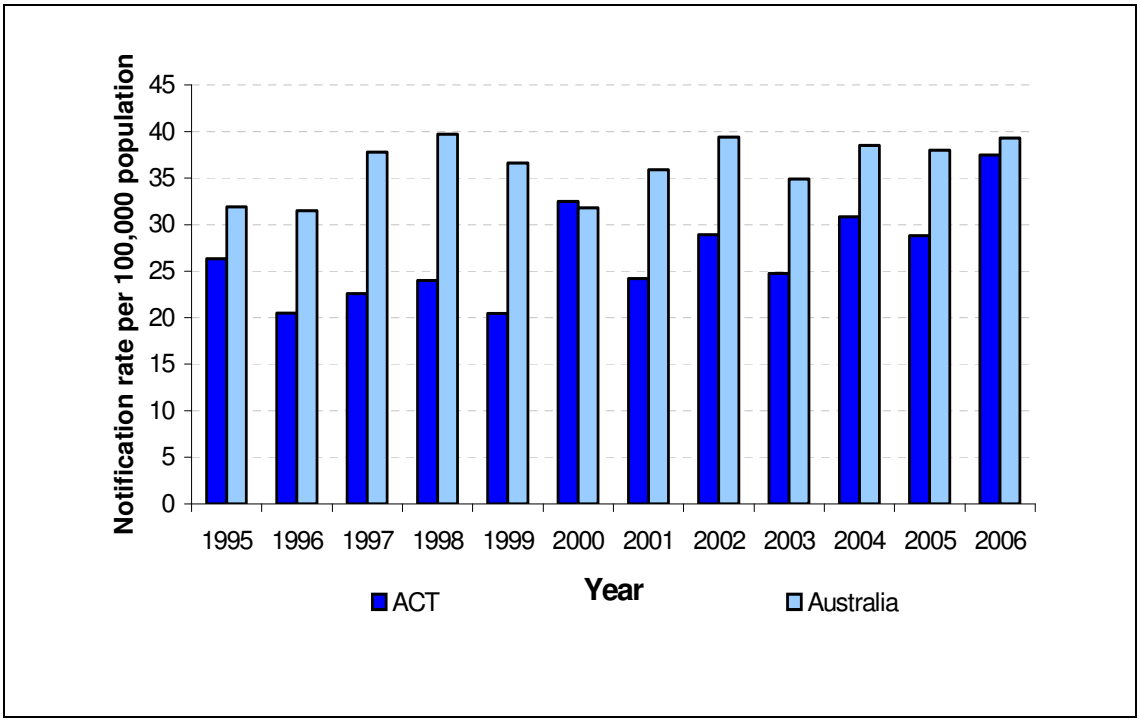
Salmonella is highly contagious. It is usually transmitted to humans by eating foods contaminated with animal faeces. Many raw foods of animal origin are frequently contaminated with *Salmonella*, but thorough cooking kills the bacteria. Raw eggs and food made with raw eggs (eg. homemade ice cream and tiramisu) have been identified as the source of a number of food outbreaks. Food may also become contaminated by transmission from an infected food handler.

Outbreaks of salmonellosis occur every year in the ACT. The HPS investigates clusters of salmonellosis notifications to determine contacts of cases and possible source to prevent further transmission of the disease.

In 2006, the most commonly notified salmonella types were *Salmonella* Typhimurium 135a (9%) and *Salmonella* Typhimurium 170 (9%).

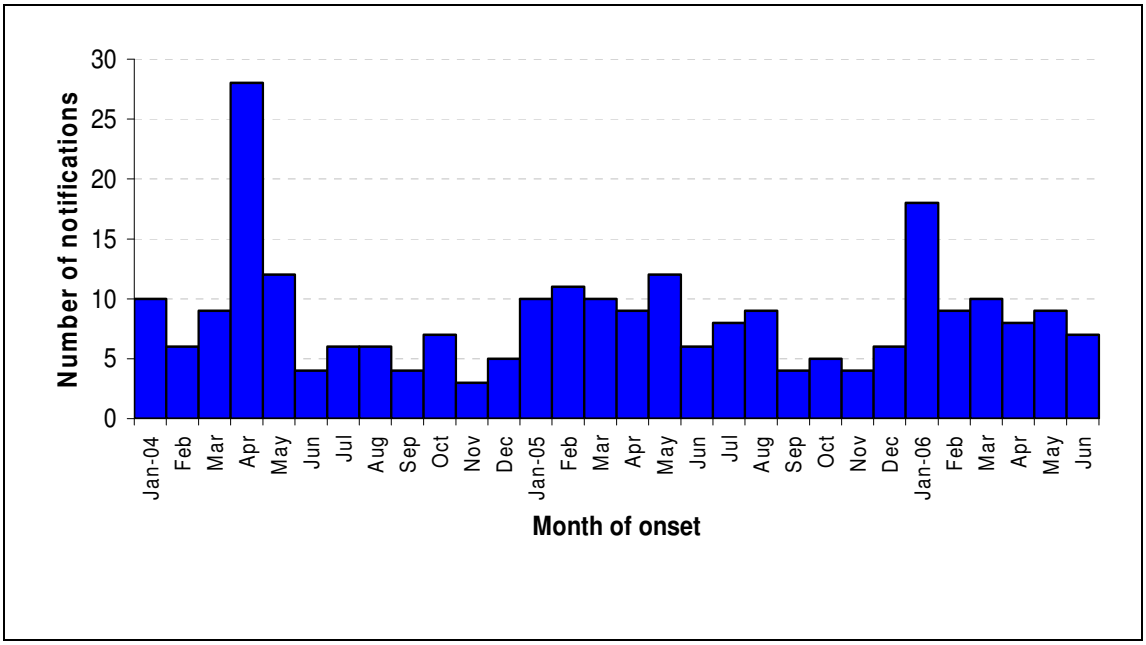
In 2006, there were 123 notifications of salmonellosis in the ACT (Figure 13.18). Most cases occurred in the summer months (Figure 13.19). The highest numbers of notifications were seen in people aged 20-24 years. During the reporting period, there was one outbreak caused by *Salmonella* Hessarek in a restaurant setting.

Figure 13.18: Notification rates of salmonellosis, ACT & Australia 1995-2006.



Data sources: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.

Figure 13.19: Notifications of salmonellosis, by month, ACT, Jan 2004-Jun 2006.



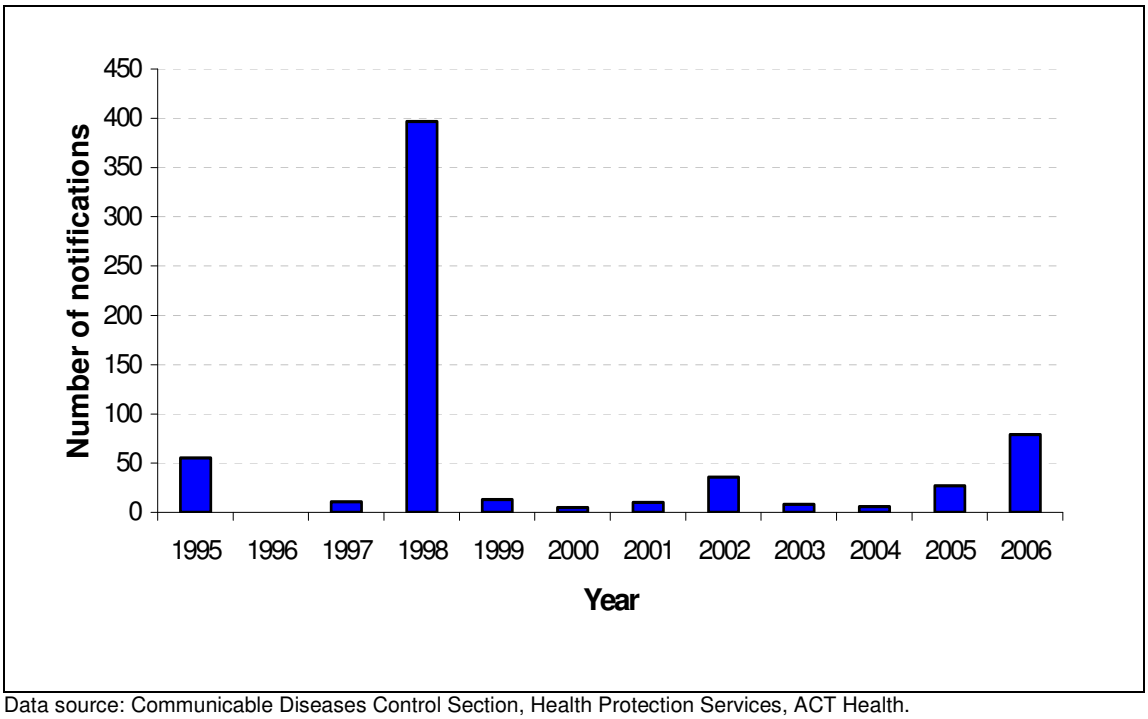
Data source: Communicable Disease Section, Health Protection Services, ACT Health.

13.6.4 Cryptosporidiosis

Cryptosporidiosis is caused by infection with a parasite *Cryptosporidium parvum*. These parasites are transmitted by ingestion, either through water or food (eg unpasteurised milk), by an infected animal to person or by a person to person. The oocysts of the parasite are highly resistant to chlorine and other disinfectants.

In 1998, the ACT experienced a large outbreak of cryptosporidiosis associated with contamination of a number of swimming pools in the ACT (Figure 13.20). Since that outbreak, the ACT has experienced low numbers of notifications until 2006. ACT Health was able to contact most of the cases notified in the ACT in 2006. Twenty-two cases (out of the 79 cases) had visited public swimming pools either in the ACT or other states during the incubation period.

Figure 13.20: Notifications for cryptosporidiosis, ACT, 1995-2006.



Data source: Communicable Diseases Control Section, Health Protection Services, ACT Health.

13.7 Other bacterial diseases

13.7.1 Tuberculosis

Tuberculosis (TB) is caused by infection with the bacterium *Mycobacterium tuberculosis*. The incidence of TB in Australia has remained between five and six cases per 100,000 population since the mid-1980s, and represents one of the lowest incidence rates in the world.

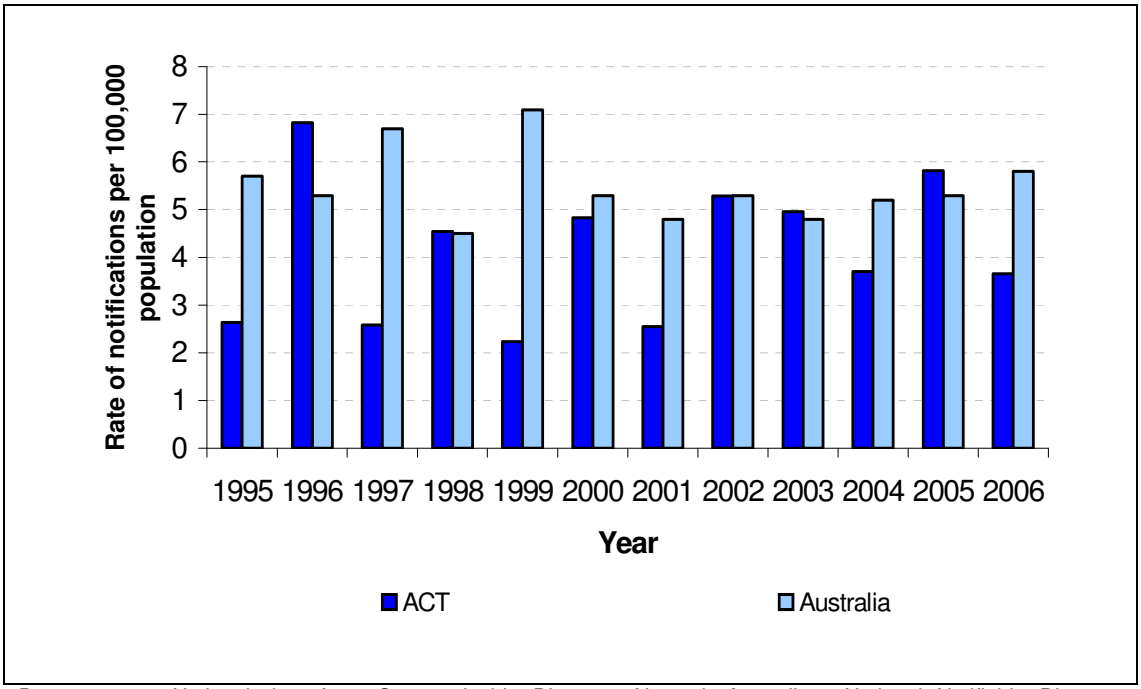
TB control in low-incidence countries faces specific problems and challenges, such as the reduced awareness of TB among healthcare professionals, the increasing importance of imported TB among migrants and the recognition of sub-groups at high risk of TB.

The notification rates of tuberculosis in the ACT were lower or about the same when compared to the national level for most of the years since 1995 (Figure 13.21). The low numbers of cases in the ACT often cause large fluctuations in rates each year. In 2006, the notification rate of tuberculosis in the ACT was lower than the previous year (5.8 cases per 100,000 population in 2005; 3.7 cases in 2006) (Figure 13.21). The ACT reported no relapsed cases in 2005 (Table 13.5) (Roche P. et al 2005).

Essential elements of TB control include having easy access to effective TB treatment programs, contact tracing, and provision of health education in appropriate languages.

In the ACT, the Tuberculosis Control Program is managed by the Department of Thoracic Medicine at the Canberra Hospital. This program follows the principles of the World Health Organisation's TB control recommendations and the National Tuberculosis Advisory Committee's strategic plan.

Figure 13.21: Tuberculosis notification rates, ACT & Australia, 1995-2006.



Data sources: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.

Table 13.5: New & relapsed TB cases & rates per 100,000 population, ACT & Australia, 2005.

	New cases		Relapsed cases		Total cases	
	Number	Crude rate	Number	Crude rate	Number	Crude rate
ACT	19	5.8	0	0	19	5.8
Australia	1022	5	50	0.2	1072	5.3

Data source: Tuberculosis notifications in Australia, 2005. CDI 2007 Vol 31, No. 1, p.71-80.

13.7.2 Legionellosis

Legionellosis is an acute bacterial disease caused by infection with a *Legionella* species of bacteria. The disease usually presents as clinical atypical pneumonia. The bacteria are found in soil and water, and the main mode of transmission is through airborne particles. Hot water systems, air-conditioning cooling towers, evaporative condensers, humidifiers, spas, disturbances of soil and potting mix have all been associated with infections.

Those most at risk include older people, especially smokers, persons with chronic illnesses and the immunocompromised. The ACT experiences few cases of legionellosis each year. There were no cases notified in 2005.

In the ACT, the HPS is responsible for administration and enforcement of the *ACT Cooling Tower and Warm Water Storage Systems Code of Practice 2000* and since 2000 all non-Commonwealth cooling towers operating in the ACT are required to be registered under the *Public Health Act 1997*. The HPS has a program to ensure monitoring of cooling towers in the ACT for high risk events that could cause cases of legionellosis.

13.8 Vectorborne diseases

Vectorborne diseases are those diseases transmitted by a vector such as a mosquito or tick. These diseases include malaria and a number of viral diseases belonging to the group of alphaviruses (Barmah Forest and Ross river virus) and flaviviruses (dengue, Murray Valley encephalitis, Kunjin and Japanese encephalitis). There have been very few cases of vectorborne viruses in the ACT, but a number of malaria notifications are made each year.

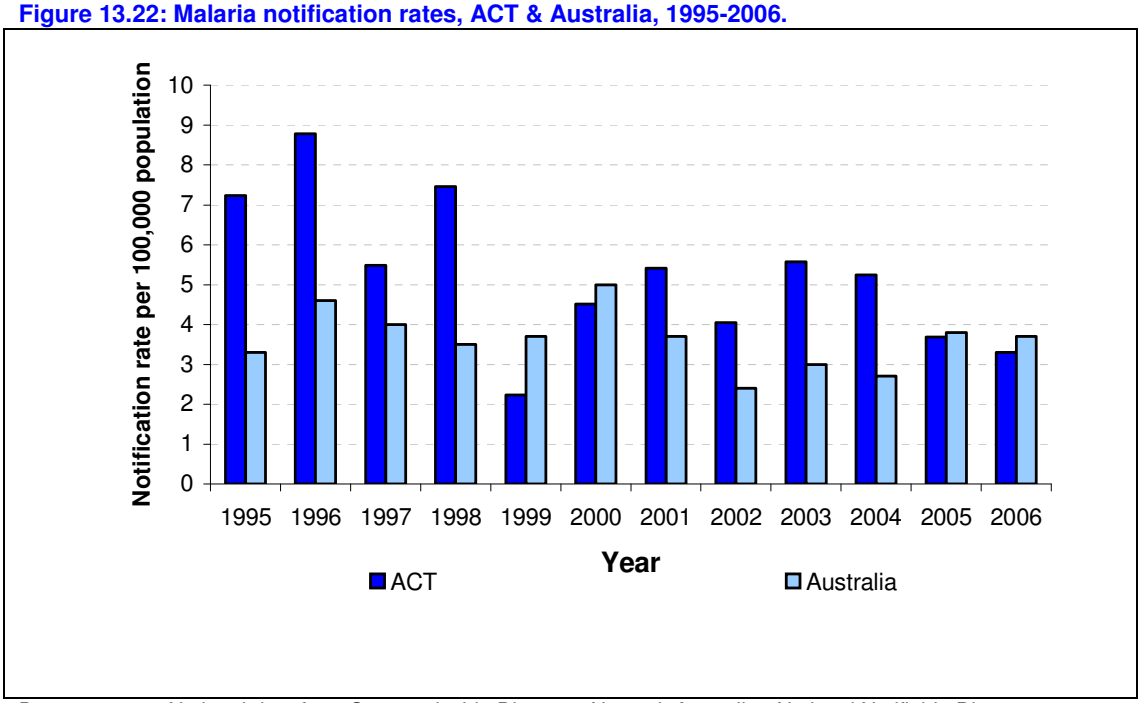
13.8.1 Malaria

Australia has not had endemic transmission of malaria since 1981, although the vectors for transmission remain in Australia and transmission from imported cases still occurs. Imported cases (acquired outside Australia) and introduced cases (derived from imported cases), which still occur, do not invalidate Australia's "free from endemic malaria" status.

Although the ACT experiences relatively higher rates of imported malaria than the national level for most years since 1995 (Figure 13.22), its rate was much lower than for Queensland and NT. The high notification rate in the ACT can be explained by the high numbers of international residents and overseas travellers returning from malaria epidemic countries.

During 2005-06, the notification rate for the ACT was lower than the national level. Due to the small numbers of malaria cases in the ACT, its notification rate fluctuates due to a change of a few cases. The rate decrease in 2005-06 was caused by a drop of five to six cases.

Figure 13.22: Malaria notification rates, ACT & Australia, 1995-2006.



Data sources: National data from Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA;
ACT data from Communicable Diseases Control Section, Health Protection Services, ACT Health.

13.8.2 Ross River virus

Ross River virus is the most common, widespread arboviral disease in Australia, with 3058 notifications in 2006. The virus is transmitted by mosquitoes, and there is a seasonal pattern, with outbreaks usually occurring between February and April, or following periods of heavy rain (DoHA 2006).

The disease is rarely notified in the ACT as the vector is not endemic to the area and infection occurs interstate. However, there were 10 cases notified in 2006. It is possible the vector was brought into the ACT. Notifications of Ross River virus in the ACT will be closely monitored over the next few years.

13.9 Quarantinable diseases

Human diseases covered by the Quarantine Act 1908 and notifiable in 2005 include cholera, plague, rabies, yellow fever, viral haemorrhagic fevers and SARS. These diseases are of international public health importance and are notifiable to the World Health Organisation. No cases of quarantinable diseases were notified in Australia in 2005, however, travellers are advised to be aware of countries where these diseases occur and take appropriate precautions.

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14 MATERNAL AND CHILD HEALTH

At a Glance

- There were 4,995 women who gave birth to 5,088 babies in the ACT during 2005. Non-ACT resident women accounted for 15.5% of these women.
- Caesarean section and induction of labour rates were significantly lower in the ACT than reported nationally.
- The percentage of ACT women who smoked during pregnancy was significantly lower than for Australian women.
- There is a continuing trend for women to be older when giving birth. ACT women 35 years and older who gave birth were more likely to have a caesarean section and less likely to have spontaneous onset of labour. They were also more likely to have a multiple birth and to have a longer stay in hospital. Older women were less likely to smoke during pregnancy.
- The perinatal mortality rate for the ACT was 8.7 per 1,000 births for 2001 to 2005, similar to the Australian rate (8.2 per 1,000 births).
- Over the ten year period from 1996 to 2006 the population size of children declined by more than 7%.
- In 2006, one in four children (25.8%) in Year 6 ACT primary schools were overweight or obese, with this tendency being greater in boys.
- In the 2004-08 budget initiative, ACT Health established the "Combating Childhood Obesity" initiative to address issues of obesity in the ACT child population through interventions that increase good nutrition, levels of physical activity, change environments and provide improved surveillance of trends in the prevalence of obesity in ACT children.

Maternal, perinatal and child health are important indicators of the overall health and wellbeing of a community. This chapter provides an overview of maternal, perinatal and child health in the ACT. It includes information on pregnancy outcomes, fertility trends, perinatal and child mortality, and behaviours influencing the health of babies and children including exposure to tobacco smoke, nutrition and physical activity.

14.1 Maternal and perinatal health

This section provides information on women who gave birth and babies born in the ACT, pregnancy related interventions and outcomes, risk factors, fertility rates and an overview of issues relating to older women giving birth for the years 2003 to 2005.

14.1.1 Women who gave birth and babies born in the ACT

There were 4,995 women who gave birth to 5,088 babies during 2005. This represents a modest increase of 4.4% in the number of women who gave birth in the ACT between 2003 and 2005 from 4,784 to 4,995 (Table 14.1). Provisional statistics for birth numbers following 2005 indicate a more rapid increase in recent years in line with the rest of Australia.

Table 14.1: Women who gave birth & babies born, by maternal state of residence, ACT, 2003-05.

	2003	2004	2005
Number of women who gave birth	**4,784**	**4,799**	**4,995**
ACT residents	4,054	4,018	4,221
Non ACT residents	730	781	774
Number of babies born	**4,876**	**4,926**	**5,088**
to ACT residents	4,111	4,110	4,282
to Non ACT residents	765	816	806

Data source: ACT Maternal Perinatal Data Collection, 2003-05, confidential unit record files

The percentage of non ACT residents who gave birth in the ACT ranged slightly from 15.3% in 2003 to 16.3% in 2004. A proportion of these non ACT resident women were referred to ACT maternity services for care during high risk pregnancies and births at the Fetal Medicine Unit and The Centre for Newborn Care at The Canberra Hospital.

The following sections focus on ACT resident women who gave birth in the ACT.

Maternal and perinatal information for ACT and non-ACT residents is available in *Maternal and Perinatal Health in the ACT, 2000 to 2004. (*ACT Health 2008).

14.1.2 Summary measures of maternal and perinatal health

The following summary measures of maternal and perinatal health are presented for ACT residents who gave birth in the ACT (Table 14.2).

Key points for the ACT include:

- The ACT was significantly less likely to have teenagers who gave birth and significantly more likely to have women aged 35 years and over giving birth for the first time.
- The percentage of women who smoked during pregnancy was significantly lower in the ACT.
- The percentage of women who identified as Aboriginal and Torres Strait Islander was also significantly lower in the ACT.
- ACT resident women who gave birth in the ACT were significantly more likely to have a spontaneous onset of labour and an instrumental birth. They were significantly less likely to have a caesarean section.
- There was no significant difference in the percentage of ACT and Australian women who had a multiple birth.
- There were no significant differences between the percentage of ACT and Australian babies who were preterm or low birthweight. The percentage of ACT babies with a low Apgar score five minutes after birth was significantly lower.

Table14.2: Summary measures of maternal & perinatal health, ACT residents and Australia, 2005.

Variable	Description of measure	ACT	Australia
Maternal age	Percentage of mothers who were teenagers (less than 20 years)	2.7	4.4*
Maternal age	Percentage of first-time mothers aged 35 years and over	23.0	13.3*
Smoking	Percentage of women smoking during pregnancy	13.8	17.4*
Aboriginal Status	Percentage of women who identified as Aboriginal or Torres Strait Islander	1.9	3.7*
Mothers country of birth	Percentage of women born in Australia	79.6	76.9*
Hospital sector	Percentage of women who gave birth in public hospitals	60.1	69.8*
Multiple pregnancy	Percentage of women who had a multiple pregnancy	1.4	1.7
Onset of labour	Percentage of women who had a spontaneous onset of labour	63.0	56.5*
Induction of labour	Percentage of women who had an induced onset of labour	19.6	25.6*
Instrumental vaginal birth	Percentage of women who had an instrumental (forceps or vacuum extraction) birth (a)	12.4	10.8*
Caesarean section	Percentage of women who had a caesarean section (a)	27.8	30.3*
Maternal postnatal stay	Median length of hospital stay (days) for women who were discharged home	4.0	3.0
Preterm birth	Percentage of all births that were less than 37 weeks gestation	7.3	8.1
Low birthweight	Percentage of liveborn babies weighing less than 2,500 grams at birth	6.1	6.4
Apgar scores	Percentage of liveborn babies with an Apgar score of less than 7 at 5 minutes	0.9	1.3*

Source: ACT Maternal and Perinatal Data Collection and Laws P et al 2006

*Significantly different at $p<0.05$.
(a) For multiple births, the method of birth for the first born baby was used.

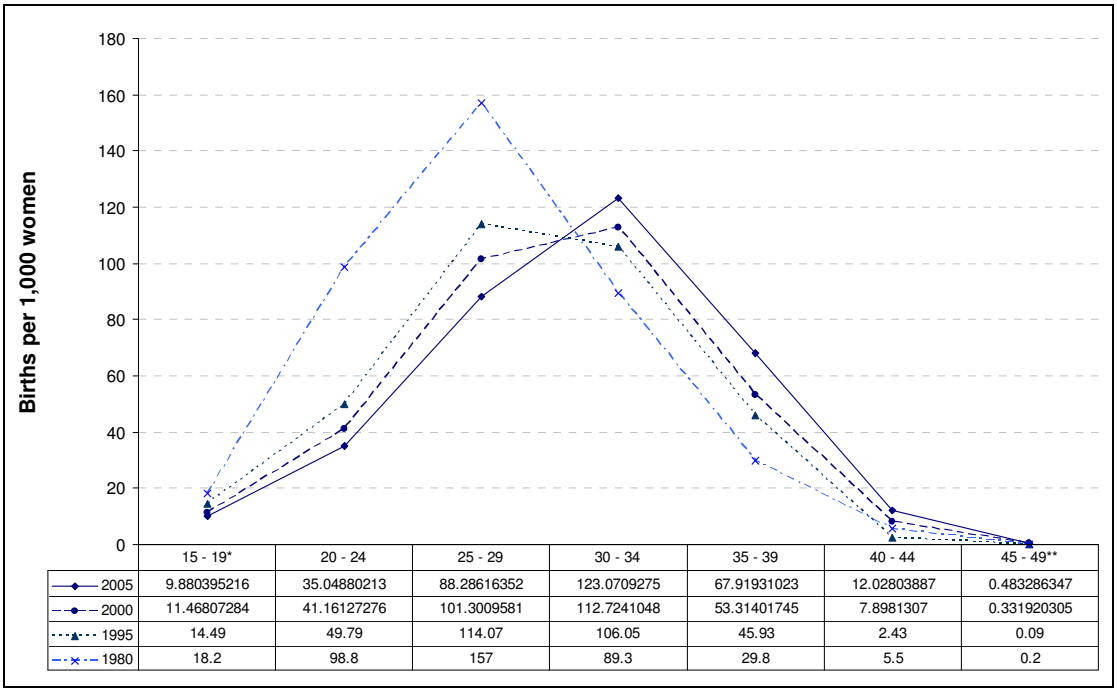
14.1.3 Trends in fertility

The total fertility rate (TFR) for the ACT has increased slightly from a low of 1.5 in 2001 to 1.8 in 2006. (TFR refers to the number of children a woman would deliver during her lifetime if she experienced current age-specific fertility rates at each age of her reproductive life – ABS 2004).

The ACT and Australia are experiencing an ongoing shift toward fertility at older ages and it is worth noting that the shift towards older age at first birth artefactually reduces the fertility rate. However, the shift toward older age at first birth has a biological limit and once it is reached the fertility rate may increase in the short term. The ACT continues to lead the increase in older age at first birth, and it is therefore expected that the ACT will be the first to reach this biological limit. This may explain the recent increase in the ACT fertility rates.

The shift in ACT age specific fertility rates is demonstrated in Figure 14.1, with fertility peaking in 25 to 29 year old women in 1980 and 1995 and in 30 to 34 year old women in 2000 and 2005. The fertility rate for women aged over 35 years in 2005 is approximately double the rate in 1980. Consistent with the shift in age specific fertility rates, average maternal age increased significantly from 29.2 years in 1997 to 30.5 years in 2005 ($p<0.05$).

Figure 14.1: Age specific fertility rates, ACT, 1980, 1995, 2000 & 2006.



	15 - 19*	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49**
2005	9.880395216	35.04880213	88.28616352	123.0709275	67.91931023	12.02803887	0.483286347
2000	11.46807284	41.16127276	101.3009581	112.7241048	53.31401745	7.8981307	0.331920305
1995	14.49	49.79	114.07	106.05	45.93	2.43	0.09
1980	18.2	98.8	157	89.3	29.8	5.5	0.2

Source: ACT Maternal Perinatal Data Collection and Estimated Residential Population by sex and age, ABS Cat. No. 3201.0

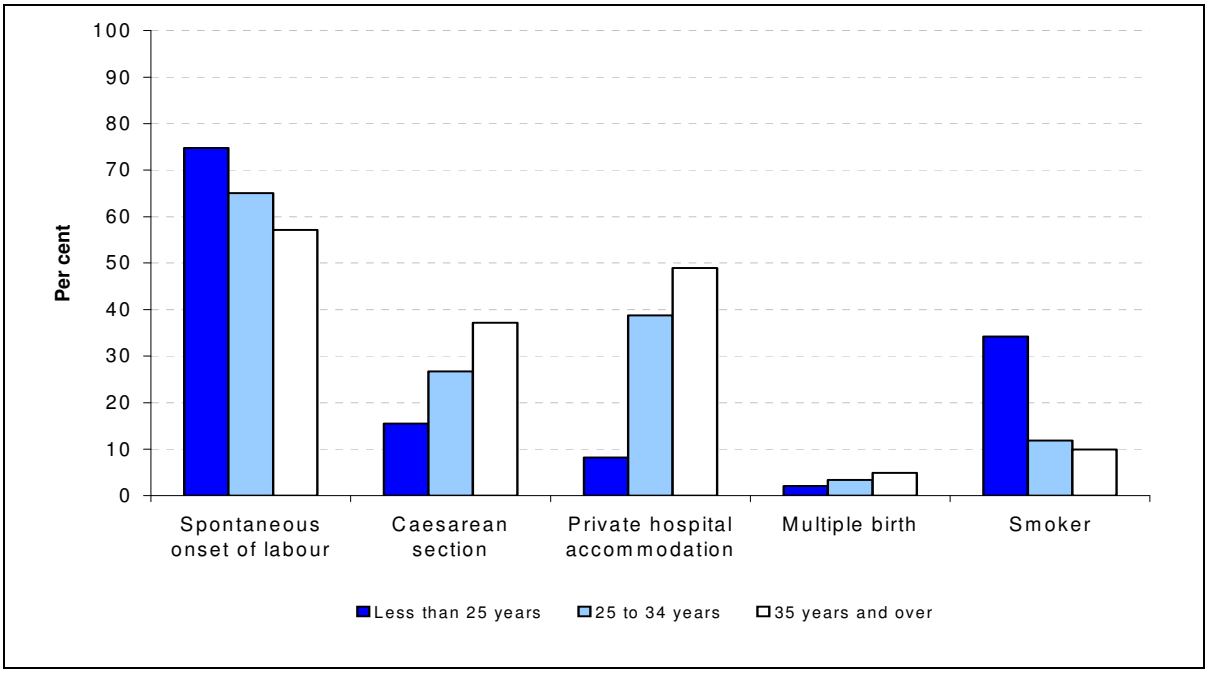
Notes: *By definition, all births for women aged less than 15 years are included in the 15 to 19 age group.
**Births for women aged 50 years and over are included in the 45 to 49 year age group.
2006 data is preliminary. Fourteen records were maternal age was 'not stated' have been excluded.

14.1.4 Older women giving birth in the ACT

The age of ACT women giving birth has increased significantly over time and the percentage of ACT women aged 35 years and over giving birth for the first time was significantly higher than the percentage for Australia. This section provides information on maternal characteristics associated with older women giving birth.

- Women aged 35 years or more were significantly less likely to have a spontaneous onset of labour (57.1%; less than 25 years 74.8%, $p<0.05$) and significantly more likely to have a caesarean section (37.2%; less than 25 years 15.5%, $p<0.05$).
- ACT women aged 35 years or more were also more likely to choose to give birth in a private hospital (48.9%; less than 25 years 8.2%, $p<0.05$).
- The percentage of women having a multiple birth also increased significantly with age, with 4.9% of women aged 35 years and over having a multiple birth compared with 3.4% of women aged 25 to 34 years and 2.1% of women aged less than 25 years ($p<0.05$) (Figure 14.2).
- The average postnatal length of stay was also significantly longer for ACT women aged 35 years or more (3.9 days) compared with women aged less than 35 years (3.5 days, $p<0.05$).
- The percentage of women who reported that they smoked during pregnancy decreased significantly with age. Just over one third (34.9%) of women aged less than 25 years reported smoking during pregnancy compared with 11.9% of 25 to 34 year old women and 9.9% of women aged 35 years and over.

Figure 14.2: Selected characteristics by maternal age, ACT residents, 2005.



Data source: ACT Maternal Perinatal Data Collection

14.1.5 Perinatal mortality

Perinatal mortality rates reflect the risk in the population of a fetus being stillborn or not surviving beyond 28 days of life. Perinatal mortality rates in the ACT fluctuate from year to year due to the small number of them each year. With such small numbers a single event, for example the fetal death of triplets, can substantially elevate rates.

Perinatal mortality rates for babies of at least 400 grams birthweight for ACT residents and Australia are presented in Table14.3.There was no significant difference between perinatal mortality rates for the ACT and Australia between 2001 and 2005 for either the annual rates or for the five-year combined rate.

Table14.3: Perinatal mortality rates, birthweight of 400 grams or more, ACT & Australia, 2001-05.

	ACT residents				Australia			
Perinatal deaths	**Rate**	**95% CI**			**Rate**	**95% CI**		
2001	8.0	5.2	-	10.8	8.4	8.1	-	8.8
2002	6.7	4.2	-	9.2	8.0	7.7	-	8.4
2003	11.0	7.8	-	14.2	8.0	7.7	-	8.4
2004	9.3	6.3	-	12.2	8.0	7.7	-	8.4
2005	8.4	5.7	-	11.2	8.5	8.1	-	8.8
2001 – 2005	**8.7**	**7.4**	**-**	**9.9**	**8.2**	**8.0**	**-**	**8.3**

Sources: ACT Maternal and Perinatal Data Collection, ACT Health, ACT Perinatal Deaths Data Collection, ACT Health and, ABS (2005)
Note: Fetal death rates and perinatal death rates are per 1,000 births.
Note: Neonatal death rates are per 1,000 live births.
Note: Comparisons of perinatal mortality rates across jurisdictions require the same definitions and criteria to be applied to the data. The definition used by the ABS is based on birthweight, with the inclusion of all fetuses and infants of at least 400 grams birthweight regardless of gestational age. Gestational age is only considered when birthweight is unknown (ABS 2007).
Note: 2006 deaths data were unavailable at time of writing this report.

The four main causes of perinatal deaths in the ACT during 2001 to 2005 were congenital abnormalities (2.5 per 1,000 births), unexplained antepartum deaths (1.6 per 1,000 births),

spontaneous preterm births (1.5 per 1,000 births) and specific perinatal conditions (1.3 per 1,000 births) (ACT Health 2008).

14.1.6 Support for parents experiencing perinatal loss

The management of perinatal loss continues to be challenging for the ACT and Australia generally. The ACT has a standardised approach to the investigation and reporting of stillbirth and a follow-up clinic is also available to all women. In addition, there are counselling services outside the health system that women can access. ACT Health is currently investigating other services to enhance the support for women experiencing perinatal loss.

14.2 Child health

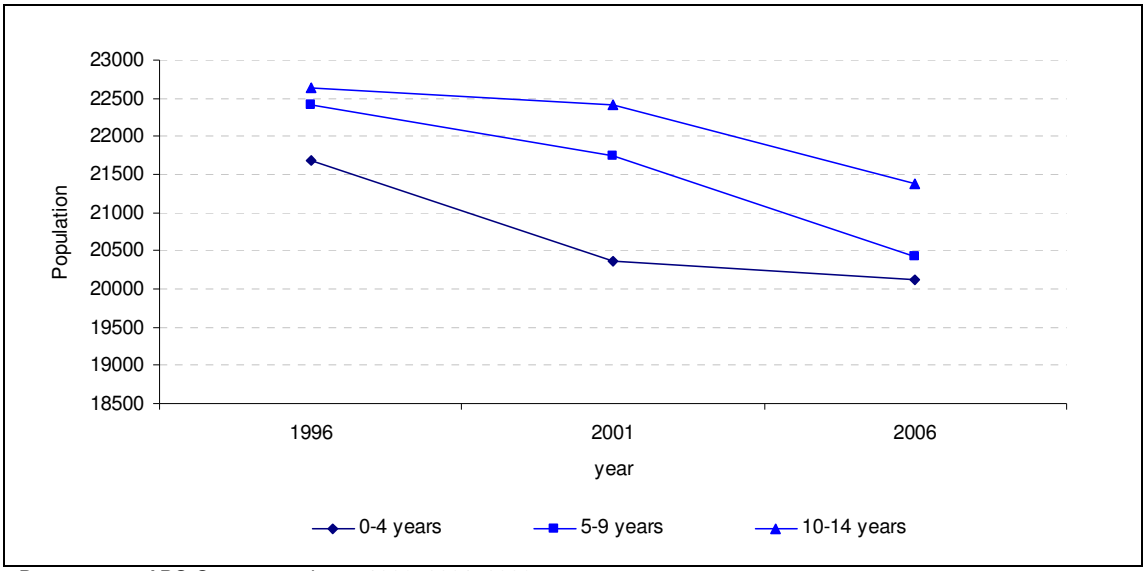
Children in the ACT generally enjoy higher levels of health compared to children nationally. Morbidity, disability and mortality rates all tend to be lower in children than older people. However, childhood obesity, nutrition and physical inactivity/sedentary behaviour are recognised as key health issues for children and young people in the ACT.

This section provides information on selected health characteristics of children aged 0-14 years living in the ACT.

14.2.1 Demographic profile of children in the ACT

In 2006 there were 61,926 children aged 0-14 years living in the ACT, representing approximately 19% of the ACT population. Over the ten year period from 1996 to 2006 the population size of children declined by more than 7% (Figure 14.3). This decline is due to the decrease in the fertility rate seen not only in the ACT but nationwide, particularly in the period between 1996 and 2001. The levelling out of change in the population of 0-4 year olds between 2001 and 2006 reflects a reverse in fertility decline seen over this period.

Figure 14.3: Population size of ACT children by age-group and year, 1996-2006.



Data source: ABS Census products, 1996, 2001, 2006.

14.2.2 Morbidity

During 2005-06 there were 9,520 separations from ACT hospitals for children aged 0-14 years who lived in the ACT. Excluding live births and conditions arising in the perinatal period, the leading cause of hospitalisation was ear, nose, mouth and throat (22.5%), followed by injury and poisoning (14.8%) and musculoskeletal disorders (13.6%).

14.2.3 Mortality

Over the two-year period 2004 and 2005 there was a total of 62 deaths for children aged 0-14 years. About 40% occurred in the first 28 days of life, with many of these deaths due to congenital malformations. The leading causes of death for older children were accidental injury and cancer.

14.2.4 Nutrition, physical activity and obesity

Nutrition and physical activity are key determinants of young people's health and development and helps set the stage for health in adulthood. Children who do not have a balanced, well-proportioned diet and who do not get sufficient physical activity are at risk of becoming overweight and obese.

ACT Year 6 Physical Activity and Nutrition Survey

In order to gain a clearer picture of childhood overweight and obesity and associated characteristics in the Territory, ACT Health conducted the ACT Year 6 Physical Activity and Nutrition Survey (ACTPANS) in 2006. This survey collected for the first time self-reported information on a range of healthy weight priority areas in ACT Year 6 children, including weight status, participation in physical activity, eating patterns and environments, attitudes and psychosocial outcomes. Table 14.4 presents selected findings from this survey.

Table 14.4: Selected nutrition & physical activity findings, 2006 ACT Year 6 ACTPANS, (%) by sex.

	Boys (%)	Girls (%)	All (%)
Obese	6.6	4.1	5.3
Overweight	22.5	18.6	20.5
Overweight or obese	*29.1*	*22.7*	*25.8*
Consume energy dense snacks* at least 4 times a week	69.4	60.7	65.1
Eat fast-food at least once a week	29.2	20.5	24.8
Drink coke or other sugary drinks at least once a week	49.9	41.4	45.6
Eat 2-3 serves of vegetables a day	82.7	87.4	85.0
Eat 2-3 serves of fruit each day	77.0	78.1	77.5
Meet the physical activity guidelines**	24.9	13.6	19.0
Involved in an organised sport	74.8	76.1	75.5
Use the TV or computer on weekdays for 2 hours or less a day	65.7	65.5	65.6
Walked or rode bike to school every day	37.32	23.81	30.47

*Includes lollies, chips, ice-creams, pies, chips, chocolates, energy bars

** The Australian Government guidelines for physical activity state that children should be moderately to vigorously physically active for at least an hour every day

Table 14.4 shows that more than one in four children (25.8%) in Year 6 ACT primary schools are overweight or obese with this tendency being greater in boys (29.1%) than girls (22.8%). Consumption of energy dense foods and sugary soft-drinks feature prominently in many children's diets with boys more likely to consume these foods than girls. However the frequency of fruit and vegetable consumption are high.

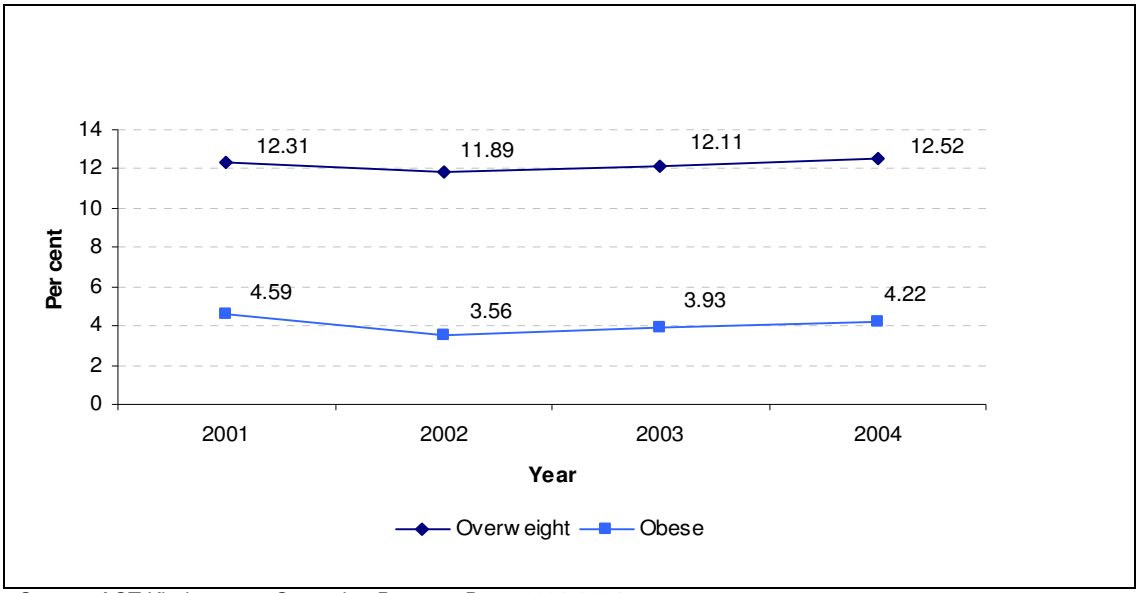
Findings indicate that only one in five (19%) children are physically active at levels that meet the Australian guidelines. However two-thirds of all children were found to watch television or use the computer for no more than two hours a day and are thus meeting Australian guidelines of small screen use of no more than 2 hours a day.

ACT Kindergarten Screening Program

The ACT Kindergarten Screening Program is conducted throughout ACT primary schools each year. The program provides health screening to all children in kindergarten. Hearing, vision, weight, height and other general health checks are provided by ACT Health child nurses and a questionnaire sent to parents. The data collected can be used to examine trends in health and development in children of kindergarten age living in the ACT.

Data collected in relation to height and weight indicate that in 2004, 16.7% of kindergarten children were overweight (12.5%) or obese (4.2%) with girls (17.8%) more likely to be overweight or obese than boys (15.7%). Figure 14.4 shows that between 2001 and 2004 the rates of overweight and obesity in ACT kindergarten children have not changed.

Figure 14.4: Percent of overweight & obese kindergarten children, ACT, 2001-04.



Source: ACT Kindergarten Screening Program Data, 2001-2004

14.2.5 Children's health service initiatives

Over the period 2004-06, ACT health introduced a number of initiatives targeting healthy development and wellbeing in children.

The Go for 2&5® campaign was introduced as an ongoing campaign for ACT Health to run for three years from 2005-08. The aim of the campaign is to increase fruit and vegetable consumption. The campaign includes television and radio advertising, cooking demonstrations and taste testing at community events, healthy eating resources targeting children, and distribution of Go for 2&5® resources to schools.

In the 2004-08 budget Initiative, ACT Health established the "Combating Childhood Obesity" initiative to address issues of obesity in the ACT child population through interventions that increase good nutrition, levels of physical activity, change environments and provide improved surveillance of trends in the prevalence of obesity in ACT children. Components of the initiative include:

- Surveillance - improving appropriate levels of data regarding trends in the prevalence of obesity in ACT children and providing a basis for evaluating the outcome of prevention strategies.
- Family Weight Management Program - improving eating and physical activity patterns of children identified as obese.
- Expanding the Tuckatalk in Schools Program - improving dietary behaviours of ACT school children, their families and their school communities.

- Health Promoting Schools Vitality Funding Round - improving ACT child and youth health through improved nutrition, increased physical activity, safer behaviours, and healthier school environments.

- Implementation of the National Obesity Action Plan - initiation and development of projects / campaigns in line with recommendations from the National policy document: Healthy Weight 2008.

In 2005, *The ACT Children's Plan* (ACT Government) was released. The Plan is a whole of government policy framework for children up to 12 years of age that will guide the policy and planning of children's initiatives for the period 2004-14. The Plan identifies specific actions to be implemented over the next five years, aimed at providing practical support for children and their families. Many of the actions are focused on early intervention and collaborative practice, with the Plan recognising that integrated prevention and early intervention programs are crucial in setting the foundation for improved health, learning and behaviour outcomes for children. The Plan also acknowledges that vulnerable families and children need additional help, and outlines actions aimed at building on family strengths and providing early, targeted support. ACT Health has an essential role in the implementation of the Plan, through both hospital and community sectors.

ACT Health provides a range of community health and hospital services to children and their families in the ACT. These services include: health checks and screening; dental health services; immunisations; information, advice, counselling and support for parents; child health and child at risk assessments; mental health; paediatric; nutrition; physiotherapy; occupational therapy; orthoptic; and social work services.

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15 THE HEALTH OF ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE

At a Glance

- In the 2006 census 3,875 Aboriginal and Torres Strait Islander people were counted as living in the ACT. This is an increase of 9.2% since the last census in 2001.
- In 2004-05, nearly four in ten males and half of all female respondents reported being current smokers.
- Fifty-seven percent of ACT Aboriginal and Torres Strait Islander respondents were classed as overweight or obese compared to 47% of ACT non-Aboriginal respondents.
- The average age of Aboriginal and Torres Strait Islander people who had a hospital separation was 33 years, significantly younger than the average age for non-Aboriginal people (44 years).
- In 2006, ACT Health provided funds to Winnunga Nimmityjah Aboriginal Health Service for health promotion activities targeting health risk factors including smoking cessation programs such as "No more boondah". A particular target area for this funding was smoking during pregnancy.
- In 2006, a new Aboriginal and Torres Strait Islander Health and Family Wellbeing Plan for the ACT was released, with a focus on family resilience, maternal and child health, social health, chronic and infectious disease, the frail aged and people with disabilities.

The Aboriginal and Torres Strait Islander population has disproportionately higher levels of social and economic disadvantage than the non-Aboriginal population. People who are disadvantaged socially or economically are at risk of poor health outcomes. Although Aboriginal and Torres Strait Islander people living in the ACT tend to show less socio-economic disadvantage than their Australian counterparts they lag behind the ACT non-Aboriginal population (ACT Government, 2004) and therefore are at greater risk of the development of illness and chronic disease.

This chapter presents an overview of the latest data giving information on the health of the ACT's Aboriginal and Torres Strait Islander population. Information is presented from a number of sources, including the 2004-05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) (ABS 2006a). The NATSIHS was conducted from August 2004 to July 2005 and included people who identified or are identified as being of Aboriginal, Torres Strait Islander or both Aboriginal and Torres Strait Islander origin. A detailed account of the health status of Aboriginal and Torres Strait islander people living in the ACT is available in the report - *The Health of Aboriginal and Torres Strait Islander People in the ACT 2000-2005* (ACT Health, 2007).

Note that in some sections in this chapter the term 'Aboriginal' has been used to refer to Aboriginal and Torres Strait Islander peoples as a contraction to improve readability and interpretation.

15.1 Data quality

Although there has been some progress in the improvement of data quality in relation to Aboriginal and Torres Strait Islander people living in the ACT there are still issues in relation to the correct identification of these people in data collections.

For example, the total number and leading causes of death of Aboriginal and Torres Strait Islander ACT residents remains unknown, due to uncertainty regarding the accuracy of death notifications. Statistics on cancer, pap smears and notifiable diseases are also unavailable, due to the absence of an Aboriginal and Torres Strait Islander indicator on key forms from which these registers are compiled.

Current initiatives aimed at improving Aboriginal identification in ACT health data include:

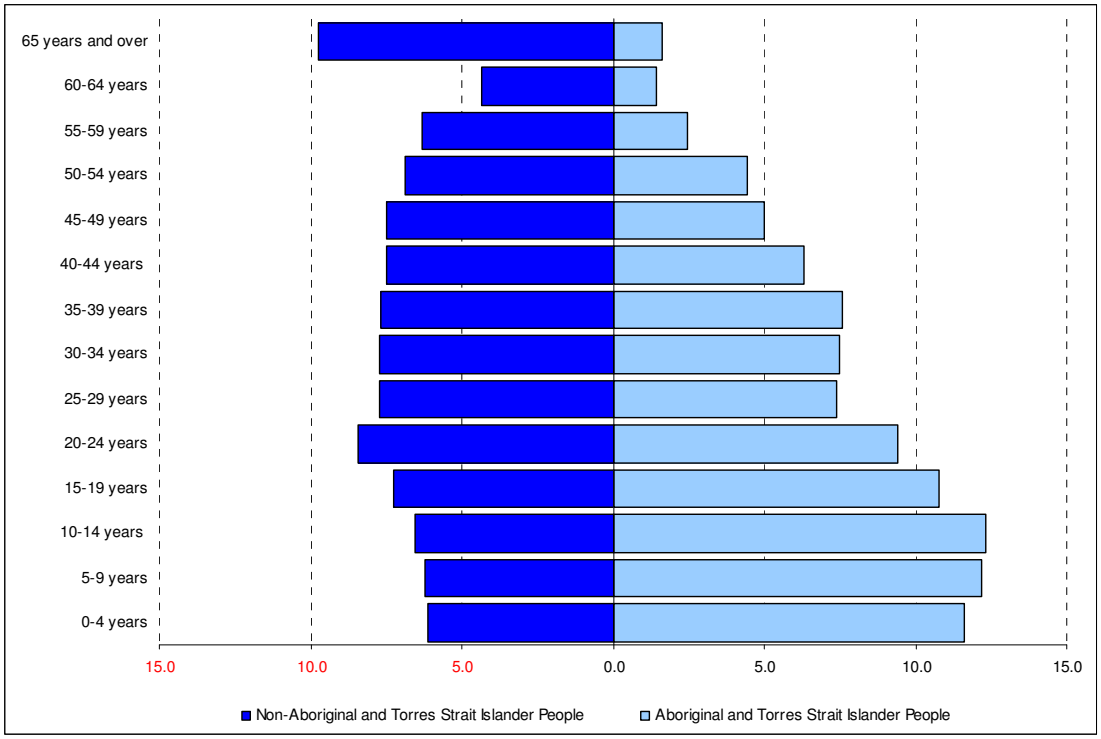
- a study to identify the causes behind the under-identification of hospital patients;
- amendments to the ACT death regulations to require Aboriginal status on death certificates and death registration forms; and
- introduction of an Aboriginal identifier on pathology request forms. A feasibility study for an ACT pilot is currently underway, under the auspices of the National Advisory Group on Aboriginal and Torres Strait Islander Health Information and Data (NAGATSIHID).

15.2 Demographic overview

In the 2006 census 3,875 Aboriginal and Torres Strait Islander people were counted as living in the ACT. This represents a 9.2% and 36% increase from the number of Aboriginal people living in the ACT that were counted in the 2001 (3,548) and 1996 (2,840) censuses respectively.

The ACT Aboriginal population continues to have a younger age structure than the non Aboriginal population in the ACT. Figure 15.1 shows that 46.9% of the Aboriginal population is aged 19 years or less compared to 26% in the non-Aboriginal population. Just over five percent (5.5%) of Aboriginal and Torres Strait Islander people in the ACT are aged over 55 years compared to 20% of the non-Aboriginal population.

Figure 15.1: Age distribution, Aboriginal & non-Aboriginal ACT residents, percent, 2006.



Data source: ABS (2007) 2006 Census tables, Cat. No. 2068.0

In 2006, 43% of Aboriginal people living in the ACT resided in Belconnen, Gungahlin and North Canberra. Thirty-six percent resided in South Canberra, Woden and Weston Creek and the remaining 21% resided in Tuggeranong and ACT South.

15.3 Health profile

15.3.1 Long term health conditions

Results from the NATSIHS (ABS 2006b) reveal that eight in ten ACT Aboriginal respondents reported at least one long term health condition (82.3%) with the age standardised rate being similar for males and females. Just over half (51.6%) of respondents reported having three or more long term conditions.

The most frequently reported long term health conditions reported were eye/sight problems (37.9%) and asthma (18%) (Table 15.1). The proportions of long term health conditions reported were similar for ACT Aboriginal and Australian Aboriginal people.

Table 15.1: Long term health conditions, ACT & Australia, 2004-05.

	Aboriginal & Torres Strait Islander	
	ACT %	Australia %
Long term conditions (a)		
Eye/sight problems	37.9	30.2
Asthma	18.0	15.1
Ear /hearing problems	14.5	12.2
Back pain/problems, disc disorders	13.6	13.1
Heart/circulatory disorders	10.0	11.8
Arthritis	8.7	9.1

Data source: ABS, 2006. ATSIHS, 2004-05, ACT results. Cat. No. 4715.8.55.005
(a) ICD-10 based output classification.

Age standardised rates were similar for Aboriginal and non-Aboriginal ACT residents with the exception of asthma and back pain/problems. The rate of Aboriginal people reporting these conditions was 2 times higher for asthma and 1.4 times higher for back problems.

Prevalence rates for important chronic conditions such as diabetes and cancer are unable to be included as the sample sizes in the NATSIHS were too small to report.

15.3.2 Health risk behaviours

Results in this section are drawn from the 2004-05 NATSIHS, unless otherwise indicated.

Smoker status

In 2004-05, nearly four in ten male and half of female respondents reported being current smokers (Table 15.2). One quarter of males and females reported being ex-smokers. Thirty seven per cent of males and 24.7% of females reported that they had never smoked. The differences between males and females were not statistically significant.

Table 15.2: Smoker status for Aboriginal & Torres Strait Islander residents aged 18 years & over, by sex, ACT, 2004-05.

	Males %	Females %	Persons %
Smoker status			
Current smoker(a)	38.0	49.4	43.9
Ex-smoker	25.0	25.9	25.4
Never smoked	37.0	24.7	30.6
Total (b)	**100.0**	**100.0**	**100.0(c)**

Data source: ABS, 2006. NATSIHS, 2004-05, ACT results. Cat. No. 4715.8.55.005

(a) Current smoker includes daily smokers and other persons who reported smoking at least once a week.
(b) Includes 'smoker status' not known.
(c) Percentage may not equal 100% due to rounding.

Smoking rates have remained stable over recent years with 43.1% of Aboriginal ACT residents reporting being daily smokers in 2002 (ABS 2004) compared with 41.1% in 2004-05.

Data from the ACT Maternal and Perinatal Data collection indicate that smoking during pregnancy is relatively high among ACT Aboriginal women. Almost half (42.9%) of ACT resident Aboriginal and Torres Strait Islander women who gave birth during 2000-04 reported that they smoked during pregnancy (Table 15.3). This was significantly higher than the percentage of non-Aboriginal ACT resident women (13.8%, $p<0.05$). Seven in ten Aboriginal women who smoked during pregnancy reported that they smoked 10 or more cigarettes per day (70.9%).

Table 15.3: Smoking status during pregnancy by Aboriginal & Torres Strait Islander status, ACT residents, 2000-04.

		Aboriginal and Torres Strait Islander		Non Aboriginal and Torres Strait Islander	
		No.	%	No.	%
Smoked during pregnancy	Yes	103	42.9	2,716	13.8
	No	133	55.4	16,490	83.9
	Not stated	4	1.7	455	2.3
	Total	240	100.0	19,661	100.0

Data source: ACT Maternal and Perinatal Data Collection, 2000-04
Note: Sixty nine records for which Aboriginal and Torres Strait Islander status was not stated are excluded.

Smoking is also relatively high among ACT Aboriginal secondary students. In the 2005 ACT Secondary School Alcohol and Drug Survey (ASSAD), six in ten secondary students reported that they had ever smoked and one quarter reported that they had smoked during the 7 days prior to sitting the survey (Table 15.4).

Table 15.4: Smoking status, secondary school students by Aboriginal & Torres Strait Islander status, ACT, 1999, 2002 and 2005.

	Aboriginal and Torres Strait Islander %	Non-Aboriginal and Torres Strait Islander %
Ever smoked		
1999	64.1	53.5*
2002	56.1	46.1
2005	61.9	30.8*
Smoked in last 7 days		
1999	39.0	19.9*
2002	31.4	14.9*
2005	23.3**	8.0*

Data sources: ACT Health, 1999, 2002 and 2005, confidentialised unit record file, ASSAD.
* Significant difference between Aboriginal and non-Aboriginal results at $p<0.05$.
** This estimate has a relative standard error of 27.7 due to the small sample size and should be treated with caution.

Aboriginal students were significantly more likely than non-Aboriginal students to report that they had smoked during the week prior to all three ASSAD surveys and were significantly more likely to report that they had ever smoked on the 1999 and 2005 ASSAD surveys. The percentage of Aboriginal students reporting that they had smoked during the week prior to the ASSAD survey reduced significantly between 1999 and 2005 ($p<0.05$).

Alcohol use

Approximately half of respondents reported low risk consumption of alcohol during the week prior to the NATSIHS survey (Table 15.5). More than one third of respondents reported that they had not consumed any alcohol during the week prior to the survey. There was no significant difference between alcohol use reported by males and females.

Table 15.5: Alcohol use, Aboriginal & Torres Strait Islander residents by sex, ACT, 2004-05.

	Males %	Females %	Persons %
Alcohol risk (a)(b)			
Low risk	50.8	42.7	46.6
Last consumed alcohol 1 week or more ago	34.5	40.4	37.6

Data sources: ABS, 2006. NATSIHS, 2004-05, ACT results. Cat. No. 4715.8.55.005
(a) Risk level based on Australian Alcohol Guidelines, October 2001.
(b) Risk level based on consumption in week prior to interview.

One in ten respondents (11%) reported risky/high risk alcohol use during the week prior to the survey, similar to the rates reported by Aboriginal people nationally and by non-Aboriginal residents in the ACT.

Results from the ASSAD indicate that nine in ten ACT Aboriginal secondary students aged 12 to 17 years (92.8%) reported that they had consumed alcohol at least once in their lives. Four in ten Aboriginal students reported that they had consumed alcohol during the week prior to the 2005 ASSAD survey. These rates were similar to non-Aboriginal respondents to the same survey in 2005.

Illicit substance use

Results from the 2004-05 NATSIHS show reported use of illicit substances by Aboriginal people in the ACT has remained stable over time; however reported history of substance use was significantly higher in the ACT compared with nationally reported rates (Table 15.6).

Table 15.6: Illicit substance use, Aboriginal & Torres Strait Islander residents aged 18 years & over, ACT & Australia, 2002 & 2004-05.

	2002(a) %	ACT 2004-05 %	Australia 2004-05 %
Illicit substance use			
Never used substances	43.2	34.7	48.0
Used substances but not in last 12 months	27.5	34.0	21.5
Used substances in last 12 months	29.1	30.2	28.0

Data sources: ABS, 2006. NATSIHS, 2004-05, ACT results. Cat. No. 4715.8.55.005
(a) Data from the 2002 National Aboriginal and Torres Strait Islander Social Survey.

Just over one third of ACT respondents (34.7%) to NATSIHS reported never having used illicit substances; this was significantly less than the proportion reported nationally (48.0%). A further third (34.0%) reported that they had used substances during their lifetime, however had not used substances in the 12 months prior to the survey. This proportion was similar to that reported for the ACT in 2002, however significantly higher than that reported by Aboriginal people nationally (21.5%). Just under one third of ACT respondents (30.2%) reported that they had used illicit substances during the 12 months prior to the survey, similar to 2002 and reported nationally.

Marijuana, hashish or cannabis resin were the most frequently reported substances used (24.7%).

Body mass index

Over half (57.2%) of ACT respondents to NATSIHS reported being overweight or obese. Male respondents were significantly more likely to report being overweight or obese than female respondents and non-Aboriginal male respondents to the National Health Survey (Table 15.7).

Table 15.7 Body mass index, by sex & Aboriginal & Torres Strait Islander status, ACT residents, age-standardised data, 2004-05.

	Aboriginal and Torres Strait Islander	Non-Aboriginal and Torres Strait Islander	
	%	%	RATE RATIO(a)
Overweight/Obese			
Males	76.4	54.7	1.4
Females	38.6	40.3	1.0
Total	**57.2**	**47.3**	**1.2**

Data sources: ABS, 2006. NATSIHS, 2004-05, ACT results. Unpublished data. ABS, 2006. National Health Survey, 2004-05, ACT results. Unpublished data.

(a) Rate ratios are calculated by dividing the proportion of Aboriginal people with a particular characteristic by the proportion of non-Aboriginal people with the same characteristic. A rate ratio of 1.0 indicates that the prevalence of the characteristics is the same in both populations. Rate ratios of greater than 1.0 indicate higher prevalence in the Aboriginal population and rate ratios less than 1.0 indicate higher prevalence in the non-Aboriginal population.

There was no significant difference between Aboriginal and non-Aboriginal respondents for females or for the total percentages.

Nutrition

Almost all ACT respondents to NATSIHS reported that they consumed vegetables (98.4%) or fruit (93.6%) daily. This was similar to the proportions reported nationally (vegetables 95%; fruit 86%).

The Dietary Guidelines for Australian Adults recommends that adults eat two serves of fruit and five serves of vegetables on average each day (NHMRC, 2003). Over half of respondents reported that they consumed one or less serves of fruit daily (57.1%). A third (37.7%) reported consuming 2-4 serves of fruit daily. Nine out of ten respondents reported that they consumed less than the recommended number of serves of vegetables each day with 64.7% reporting that they consumed 2-4 serves of vegetables and 24.6% reporting they consumed one or less serves of vegetables daily. These proportions were similar to those reported by non-Aboriginal ACT respondents to the NHS.

Overall, three quarters of children aged 0-3 years were reported to have been breastfed (74.9%) with one third (33.9%) being breastfed for more than six months.

15.3.3 Contact with health services

Just over one in ten ACT respondents to NATSIHS reported that they had been admitted to hospital during the 12 months prior to interview (Table 15.8). This was similar to the rate reported by Aboriginal people nationally and non-Aboriginal people in the ACT.

Approximately one in five ACT respondents reported that they had at least one day away from work or study during the two weeks prior to the NATSIHS interview.

Table 15.8: Health related actions summary, Aboriginal & Torres Strait Islander people, ACT & Australia, 2004-05.

	ACT %	Australia %
Health Related Actions(a)		
Admitted to hospital	13.5	16.4
Consulted GP/Specialist	13.1	20.1
Consulted dentist(b)	4.6	3.8
Consulted other health professional	16.0	17.3

Data source: ABS, 2006. NATSIHS, 2004-05, ACT results. Cat. No. 4715.8.55.005

(a) Hospital admissions relate to 12 months prior to the interview. All other health related actions relate to the two weeks prior to interview.

(b) Persons aged 2 years and over.

15.3.4 Hospital service use

During the five year period 2001-02 to 2005-06, there were 2,921 separations (excluding 2,238 renal dialysis separations) provided at ACT hospitals for ACT residents who identified as Aboriginal and Torres Strait Islander. The average age of Aboriginal and Torres Strait Islander people who had a hospital separation was 42 years, which is 5 years younger than the average age for non-Aboriginal people (47 years).

The most frequent reasons for hospitalisation included pregnancy and birth, digestive system diseases, injury and poisoning and mental and behavioural disorders.

There were 6,431 presentations to ACT public hospital emergency departments by ACT residents who identified as Aboriginal and Torres Strait Islander. One quarter of these presentations were for injuries or poisonings.

15.3.5 Oral health

Almost five per cent of ACT respondents aged two years or more reported that they had consulted a dentist in the two weeks prior to the NATSIHS interview. Almost all (94.9%) of ACT respondents reported that the last person that they had consulted about their teeth was a dentist. A small percentage reported that they had consulted another health professional, for example a general practitioner.

Just over half of ACT Aboriginal respondents reported that they had not lost any natural teeth (51.5%); a further third (33.5%) reported that they had lost between one and four of their natural teeth. Younger people were more likely to have lost no teeth (15-24 years, 82.8%) than older people (25-44 years, 46.4%).

15.3.6 Adult immunisation

Almost half of ACT respondents aged 50 years and over reported that they had received a vaccination for influenza during the 12 months prior to the NATSIHS interview (47.8%). Just over one third of respondents reported that they had never had a vaccination for influenza (36.3%). Eight in ten ACT respondents (85.3%) reported that they had never had a vaccination for pneumonia. This was significantly higher than reported nationally (58%).

15.3.7 Childhood immunisation

The following is based on information from the Australian Child Immunisation Register (ACIR) for children who are identified as Aboriginal.

Of those children identified as Aboriginal in the ACT, the following proportions were fully immunised in 2003:

- 12-15 months 87%
- 24-27 months 79%
- 72-75 months 80%

The reliability of information on immunisation coverage in the Aboriginal population in the ACT is currently under investigation. Initial findings indicate that, on average each year, about 60% of all ACT resident Aboriginal children on the ACIR are identified as Aboriginal.

15.3.8 Maternal, infant & child health

During the period 2000-04, 240 Aboriginal and Torres Strait Islander women in the ACT gave birth to 246 babies. Aboriginal and Torres Strait Islander women are giving birth at younger ages. Age specific fertility rates for Aboriginal and Torres Strait Islander women aged less than 25 years are approximately double those for non-Aboriginal women. The percentage of low birthweight (less than 2,500 grams) babies born during 2000 to 2004 was significantly higher for Aboriginal and Torres Strait Islander women when compared with non-Aboriginal women. The average birthweight for babies of Aboriginal and Torres Strait Islander women who smoked during pregnancy was significantly lower than for Aboriginal women who did not smoke.

15.4 Aboriginal and Torres Strait Islander health services and initiatives

ACT Health currently funds a range of Aboriginal and Torres Strait Islander health and wellbeing programs, including maternal and child health, dental health, hearing health, substance misuse, detoxification support and mental health. These services are delivered by two Aboriginal community-controlled services, *Gugan Gulwan Youth Centre* and *Winnunga Nimmityjah Aboriginal Health Service*.

As a major primary health care provider for the Aboriginal and Torres Strait Islander community in the ACT and surrounding region, Winnunga Nimmityjah Aboriginal Health services also include general practice, a diabetes clinic, health promotion programs, and a social and emotional well-being team that provides support, counselling, advocacy, referrals and community education.

In 2006, ACT Health provided funds to Winnunga Nimmityjah Aboriginal Health Service for health promotion activities targeting health risk factors including smoking cessation programs such as “No more boondah”. A particular target area for this funding was smoking during pregnancy.

Improving accessibility and support for Aboriginal people has been a focus in ACT public hospitals with *Aboriginal Liaison Officers* being employed to promote cultural awareness and provide support for Aboriginal and Torres Strait Islander people in hospital.

A new *Aboriginal and Torres Strait Islander Health and Family Wellbeing Plan for the ACT* was released in 2006, with a focus on family resilience, maternal and child health, social health, chronic and infectious disease, the frail aged and people with disabilities. Other priorities include the effectiveness and responsiveness of the health and family wellbeing system for Aboriginal and Torres Strait Islander people in the ACT, the health and family wellbeing impacts of the health-related sector, and resourcing and accountability.

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16 THE HEALTH OF PRISONERS FROM THE ACT

At a Glance

- The ACT prison population has a demographic profile similar to that of the NSW prison population. It is a predominantly male population that is ageing, with a mean age of 33.9 years in 2006. Although their actual numbers are small, Aboriginal and Torres Strait Islander people are over-represented.
- Eighty percent of all detainees have been sentenced.
- The health status of the ACT prison population is not known, but can be inferred from health information obtained in 2001 from the NSW prison population. Just over half (52.3%) the ACT prison population was detained in NSW prisons, as at 30 June 2006.
- The 2001 NSW Inmate Health Survey showed that prisoners were less likely to report their health as 'very good' or 'excellent' compared to the non-prison population and were more likely to report their health as 'fair' or 'poor'.
- The survey showed prisoners had high rates of substance use, current smoking rates were high (males: 77.6%; females: 82.9%) and just under half of those surveyed reported having ever used illicit drugs in prison (males: 48.1%; females: 48.7%). Hazardous and harmful rates of alcohol consumption in the 12 months before going to prison were also high among respondents to the survey (males: 48.4%; females: 29.0%).
- More than a quarter of all prisoners surveyed had high levels of serum cholesterol, indicating an increased risk of heart disease. There were also high rates of high blood sugar recorded among prisoners who identified as 'non-diabetic'. Ninety-five percent of females and 78% of males reported having been diagnosed with at least one chronic health condition.
- However, NSW prisoners had similar levels of overweight and obesity to the non-prison population, they had a reasonably healthy diet, with the majority reporting daily consumption of fruit and vegetables. About two-thirds of males reported at least 30 minutes of exercise a day in the previous four weeks, compared to about half of all females.
- The prevalence of hepatitis C antibody positive was extremely high among inmates (males: 40%; females: 64%).
- Prisoners reported high rates of disability, but injury rates were similar to rates in the non-prison population. Intentional injuries were common and most injuries reported were the result of being struck by an object or person.
- Estimates suggest that 43% of the NSW prison population had at least one mental illness in 2001, significantly higher than the rate for the non-prison population. Prisoners at the point of reception to the correctional system had higher rates of mental illness than sentenced prisoners and females had higher rates than males.
- The new ACT prison, the 'Alexander Maconochie Centre' (AMC), is currently under construction and is due to commence operations in 2008. All persons sentenced by ACT courts, currently in NSW, will be relocated once this facility opens.

The health of prisoners in Australia has been shown to be poor in comparison to the health of the non-prison population and is characterised by high rates of mental illness, communicable disease and health risk factors (NSW Health 2004, AIHW 2006). As a population, prisoners have high rates of mortality, Aboriginal and Torres Strait Islander people are over-represented and studies have shown that prisoners experience significant social and psychological disadvantage in comparison to the non-prison population (ABS 2006, Kariminia et al 2007, Allerton et al 2003).

ACT Corrective Services, a division of the Department of Justice and Community Safety (JACS), manages two custodial services in the ACT (JACS 2007). At present, JACS has responsibility for the Belconnen Remand Centre and the Symonston Temporary Remand Centre, providing remand services for detainees, as well as the Periodic Detention Centre and the Court Transport Unit.

At present, adult sentenced prisoners from the ACT are detained in correctional facilities in NSW. The ACT prison, currently under construction, is due to commence operations in 2008 and all ACT prisoners in NSW will be relocated once this facility opens. The new prison will be called the 'Alexander Maconochie Centre' and will include a new 110 bed remand centre (which will replace the Belconnen Remand Centre and the Symonston Temporary Remand Centre); a 145 bed facility for sentenced prisoners, and a 15 bed transitional release centre for prisoners in the last 12 months of their sentence.

16.1 Demographic profile

As at 30 June 2006, there were 218 prisoners from the ACT detained in either ACT or NSW prisons (Table 16.1). This was similar to the number of prisoners reported in June 2001 (211) and demonstrates that there has been very little increase in the size of this population in the last five years. However, information from the Australian Bureau of Statistics annual National Prisoner Census (NPC) shows that there have been changes to the demographic profile of ACT prisoners over the last ten years (ABS 2006).

Similar to NSW, the ACT prison population is predominantly male, with less than 10% of inmates reported as female. In 2006, there were only 15 ACT females identified in the NPC. The ACT prison population is ageing, with the mean age increasing by more than four years between 1996 and 2006. The mean age of the NSW prison population also increased during this period, although the increase was less pronounced.

Aboriginal peoples are over-represented in the prison population. In 2006, one in 200 Aboriginal people in the ACT were in custody, compared to one in 2000 non-Aboriginal people in the ACT. In addition, the proportion of ACT prisoners identifying as ‘Aboriginal’ has increased over the last ten years from 3.2% in 1996 to 11.9% at 30 June 2006. A similar increase was reported in the NSW prison population, however, NSW prisoners were 2.3 times more likely to identify as Aboriginal than ACT prisoners in 2006. The apparent increase in the proportion of Aboriginal prisoners should be interpreted with caution as it may be a reflection of changes in the way Aboriginal information has been collected over time, and/or reflect a greater propensity for Aboriginal persons to self-identify (ABS 2006). It should also be noted that the number of Aboriginal prisoners for the ACT is relatively small (26 persons in 2006), so small changes in the number of Aboriginal prisoners each year can result in relatively large fluctations in incarceration rates.

Table 16.1: Characteristics of ACT & NSW prisoners, 1996, 2001 & 2006.

	No. of prisoners	% Male	Mean age	% Indigenous	% Sentenced
ACT prisoners in the ACT					
1996	38	88.2	28.5	10.5	0.0
2001	82	93.9	29.7	14.6	35.4
2006	104	93.3	34.5	12.5	57.7
ACT prisoners in NSW					
1996	87	96.6	30.4	0.0	100.0
2001	129	90.7	31.8	6.2	100.0
2006	114	93.0	33.4	11.4	100.0
All ACT prisoners					
1996	125	94.4	29.5	3.2	69.6
2001	211	91.9	30.8	9.5	74.9
2006	218	93.1	33.9	11.9	79.8
NSW prisoners					
1996	7,691	94.3	32.1	12.4	89.5
2001	8,846	93.0	32.9	15.1	81.5
2006	9,822	92.5	34.4	19.9	78.3

Data source: ABS 2006.

16.2 Health status

At present, very little is known about the health status of the ACT prison population, as there is no health information available that is specific to this population. However, insights into the health status of prisoners from the ACT can be gleaned from health surveys undertaken in prisons in other jurisdictions around Australia. Health surveys undertaken in NSW prisons are likely to provide the most relevant information, given that about half the ACT prison population was detained in NSW prisons as at 30 June 2006, the two prison populations have similar demographic characteristics (Table 16.2) and the relative ease of movement between the two jurisdictions.

In 2001, the NSW Corrections Health Service conducted a health survey of inmates in NSW prisons (Butler and Milner 2003). The results of the 2001 NSW Inmate Health Survey showed that prisoners reported high rates of substance use, with high levels of current smoking, use of illicit drugs in prison, and high levels of hazardous and harmful drinking in the 12 months before going to prison (Table 16.2).

More than a quarter of all prisoners surveyed had high levels of serum cholesterol, indicating an increased risk of heart disease. There were also high rates of high blood sugar recorded among prisoners who identified themselves as being ‘non-diabetic’. A study reviewing these results found cardiovascular disease risk factor rates were high, particularly among younger prisoners, when compared to the non-prison population (D’Souza et al 2005).

However, NSW prisoners had similar levels of overweight and obesity to the non-prison population and a reasonably healthy diet, with the majority reporting daily consumption of fruit and vegetables. About two-thirds of males reported at least 30 minutes of exercise a day in the last four weeks, compared to about half of all females.

Table 16.2: Selected health risk behaviours & immunisation status, NSW prisoners, percent by sex, 2001.

	Males %	Females %
Health-risk behaviours		
Substance use		
Current smokers	77.6	82.9
Regular use of any illicit drug[(b)]	66.6	73.7
Ever injected illicit drugs	53.1	73.5
Illicit drug use in prison	48.1	48.7
Hazardous or harmful drinkers[(c)]	48.4	29.0
Daily alcohol use in prison	2.7	0.0
Healthy weight		
Overweight[(d)]	35.5	23.6
Obese[(d)]	14.3	20.6
Insufficient exercise[(h)]	33.4	49.0
Consumed fruit <once a day	28.7	35.5
Consumed veges <once a day	33.6	30.9
Chronic disease		
High blood pressure[(e)]	21.9	6.6
High cholesterol[(f)]	29.3	28.2
High blood sugar[(g)]	42.9	60.3
Immunisation status[(i)]		
Tetanus	88.9	88.2
Measles	56.0	69.0
Hepatitis A	11.9	13.5
Hepatitis B	55.3	61.3
Rubella	39.4	80.0

Data source: Butler & Milner 2003.

Note: Survey sample includes ACT prisoners in NSW prisons.
(b) Regular use of any illicit drug in the 12 months before prison.
(c) Hazardous or harmful levels of drinking in the 12 months before prison.
(d) 'Overweight' defined as having a body mass index (BMI) 25-30; 'Obesity' defined as having a BMI >30.
(e) 'High blood pressure' defined as having systolic bp >=140mmHg and/or diastolic bp >=90mmHg and/or being on medication for high blood pressure.
(f) Had a blood cholesterol level >=5.5mmol/L.
(g) Had a blood sugar level >=5.5mmol/L (self-reported non-diabetics).
(h) Did less than 30 minutes. of moderate to vigorous exercise each day in the past four weeks.
(i) Self-reported immunisation status.

The results of the survey also showed that prisoners were less likely to report their health as 'very good' or 'excellent' compared to the non-prison population and were more likely to report their health as 'fair' or 'poor' (Table 16.3).

Ninety-five percent of females and 78% of males reported having been diagnosed with at least one chronic condition in 2001.

The prevalence of bloodborne virus infection was high among inmates. In particular, the prevalence of hepatitis C antibody positive was high in the prison population. Only one male was identified with HIV in the survey, but this was a previously known case - there were no new cases of HIV detected.

Finally, there were high rates of disability arising from conditions that had 'lasted six months or more' and had 'limited routine activities in the past two weeks'. Injury rates were similar to rates in the non-prison population, however, intentional injuries were common and most injuries reported were the result of being struck by an 'object' or 'person'.

Table 16.3: Self-reported health status & selected conditions, NSW prisoners, percent by sex, 2001.

	Males %	Females %
Self-reported health status		
Excellent	9.8	10.0
Very good	24.2	22.0
Good	37.9	30.7
Fair	22.1	26.0
Poor	6.0	11.3
Chronic disease[b]		
Asthma	20.6	43.8
Arthritis	13.1	19.0
Cancer	4.5	15.3
Diabetes	3.2	3.3
Chest/angina pain	11.0	10.5
Communicable disease		
Bloodborne Virus		
Hepatitis A	45.8	50.3
Hepatitis B	28.0	31.1
Hepatitis C	40.1	63.6
HIV	0.1	0.0
STIs		
Chlamydia	2.1	1.3
Gonorrhoea	0.4	0
Syphilis[c]	1.4	2.2
Disability[d]	41.5	36.2
Injury[e]	17.6	19.2

Data source: Butler & Milner 2003.
Note: Survey sample includes ACT prisoners in NSW prisons.
(b) Prisoners were asked whether a doctor had ever diagnosed these conditions.
(c) Untreated latent syphilis.
(d) Any condition lasting six months or more that had limited routine activities in the past two weeks.
(e) Injury sustained in the past three months.

Butler et al (2005) found high rates of mental illness among both sentenced prisoners and those at the point of reception to the correctional system in NSW (Table 16.4). Overall, they found 43% of prisoners who were screened in the study had at least one of the following diagnoses: psychosis, anxiety disorder, or affective disorder. Reception prisoners suffered from mental illness to a greater extent than sentenced prisoners and females had higher rates than males. The prevalence of mental illness in the prison population was found to be significantly higher than the rate in the non-prison population (Butler et al 2006).

Table 16.4: Twelve-month prevalence estimates of mental health disorder among reception & sentenced NSW prisoners, by sex, 2001.

	Sentenced prisoners		Reception prisoners	
	Males	Females	Males	Females
% Affective disorder[b]	12	20	21	34
% Anxiety disorder[c]	28	54	34	56
% Substance use disorder	34	57	64	75
% Any psychiatric disorder	**61**	**79**	**78**	**90**

Data source: Butler et al 2006.
Note: 'Reception' prisoners were screened consecutively at five centres in NSW whenever possible during a study undertaken in 2001, while the 'sentenced' group was randomly selected as part of the 2001 NSW Survey of Inmates.
(b) Includes depression, dysthymia, mania, hypomania and bipolar affective disorder.
(c) Includes post-traumatic stress disorder, panic disorder, agoraphobia, obsessive-compulsive disorder and social phobia.

ACT Health plan to undertake a health survey of the ACT prison population once the Alexander Maconochie Centre is fully operational. The information obtained from the survey will be used to plan future health services for prisoners in the ACT.

16.3 Health services

At present, NSW Justice Health manages prison health services for ACT prisoners in NSW prisons. Health services for prisoners in the ACT include community and hospital services which are managed by the Corrections Health Program, within ACT Health.

Drug and alcohol and primary care services are provided by nurses within the Corrections Health Program and visiting medical officers, credentialled through the Medical Appointments Unit.

Mental Health ACT provides forensic psychiatry services, including assessment and consultation, to ACT Courts, the Parole Board, at the Belconnen Remand Centre and the Mental Health Tribunal. Mental health workers are employed by Mental Health ACT at the Belconnen Remand Centre and Symonston Temporary Remand Centre to provide nursing care to people with mental illness.

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17 APPENDICES

17.1 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. 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) and maternal and infant data (Maternal Perinatal Data Collection).

ACT Data Collections

ACT ADMITTED PATIENT CARE COLLECTION 1992/93 – 2005/06

The data sets in this collection used to produce information for the report contain details of all ACT hospital inpatient records between July 1992 and June 2006. 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 after 2000-01 have been coded based on the 10th revision of the International Classification of Diseases, Australian Modification (ICD-10-AM). The diagnoses included in data sets prior to this date are coded according to the 9th revision of the International Classification of Diseases, Clinical Modification (ICD-9-CM).

ICD codes used in the analysis of specific diagnoses are provided in Appendix 2 of this report.

AUSTRALIAN BUREAU OF STATISTICS DEATHS DATA 1993-2005

In Australia, mortality statistics are collected by state and territory Registrars of Births, Deaths and Marriages, and are collated nationally by the Australian Bureau of Statistics (ABS). The data sets in this collection that were used to produce data for this report were obtained from the ABS and contain details of all ACT residents' death registrations between January 1993 and December 2005. The collection includes deaths data for ACT residents registered anywhere in Australia. The deaths data from the ABS have been presented based on year of death registration rather than year of actual death, unless otherwise stated.

The underlying cause of death for deaths registered between 1999 and 2003 is coded according to the 10th Revision of the International Classification of Diseases (ICD-10). Deaths registered prior to 1999 are coded according to the 9th Revision of the International Classification of Diseases (ICD-9).

Some of the deaths data (including data for 2003) presented in this report have been obtained from various reports produced by the ABS or from the GRIM Books (interactive excel-based mortality database) produced by the Australian Institute of Health and Welfare (AIHW). These data are referenced accordingly in the text and in figures and tables.

ACT MATERNAL PERINATAL COLLECTION 1994-2005

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, from 1994. It does not include interstate births where the mother is usually resident in the ACT. Each data set includes all live births and still births of at least 20 weeks gestation or at least 400 grams birthweight. The data are managed and maintained by the Population Health Research Unit, within ACT Health.

Some of the maternal, infant and birth-related data presented have been obtained from various reports produced by the ABS. 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.

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 contain details of patient demographics and diagnoses, triage categories and sources of referral. The EDIS data derived from The Canberra Hospital Emergency Department are based on ICD-10-AM diagnosis codes and the data derived from the Calvary Hospital are based on ICD-9-CM diagnosis codes.

Survey Data Sources

2002 GENERAL SOCIAL SURVEY

The ABS 2002 General Social Survey collected data on a range of social dimensions. Information was collected nationally on health, housing, education, work, income, financial stress, assets and liabilities, transport, family and community, and crime. Personal interviews were conducted with survey respondents. In the ACT, 1,909 usual residents of private dwellings, aged 18 years or more, were surveyed.

2002 NATIONAL ABORIGINAL AND TORRES STRAIT ISLANDER SOCIAL SURVEY

The ABS 2002 National Aboriginal and Torres Strait Islander Social Survey, conducted from August 2002 to April 2003, collected information about personal and household characteristics for Aboriginal and Torres Strait Islander persons aged 15 years or more living in private dwellings throughout remote and non-remote areas of Australia, (private dwellings included houses, flats, home units and any other structures used as private places of residence at the time of the survey). Some 330 Indigenous persons aged 15 years or more in 240 ACT households (i.e. usual residents of private dwellings) were interviewed.

The survey collected information on demographic/core characteristics; culture and language - including main language spoken, and participation in cultural activities; family and community (social networks; removal from natural family; and voluntary work); health (including self-assessed health status; disability and long term health conditions; smoking status; alcohol consumption; and substance use); housing; education; employment; income; financial stress; information technology; transport; and law and justice.

2004-5 NATIONAL HEALTH SURVEY

The 2004-5 National Health Survey conducted by the ABS 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 1777 respondents.

For this report, data were obtained from tabulated summary tables produced by the ABS and from published reports.

2004 NATIONAL DRUG STRATEGY HOUSEHOLD SURVEY

This was the eighth 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 of 29,445 completed questionnaires included an ACT sample of 1,161 questionnaires completed by people aged 12 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.

NATIONAL ABORIGINAL AND TORRES STRAIT ISLANDER HEALTH SURVEY 2004-05

The 2004-05 NATSIHS sample covered usual residents of private dwellings only, in remote and non-remote areas. A total of 10,044 Aboriginal and Torres Strait Islander adults and children from across Australia were surveyed in the NATSIHS, which was conducted from August 2004 to July 2005. In addition, 395 Indigenous Australians were enumerated in the 2004-05 NHS and these are combined to make a sample of 10,439 Indigenous Australians, comprising 5,757 adults and 4,682 children. The ACT component was 368 (approximately one in eleven).

Health related topics included health status, including long term medical conditions, oral health and recent injuries; use of health services such as consultations with health practitioners and visits to hospitals, and other health related actions; health related aspects of lifestyle, such as smoking, diet, exercise, substance use (non-remote only), alcohol consumption, social and emotional wellbeing; demographic and socio-economic characteristics; and discrimination.

In addition, there were two small paper questionnaires that covered substance use (for all persons aged 15 years and over) and specific supplementary women's health topics (for women aged 18 years and over). These additional questionnaires were voluntary and self-enumerated.

The ACT sample was large enough to report on self-assessed health status, most long-term conditions, most health related actions, smoking, alcohol and weight (obesity/overweight).

2004 ACT SMOKING, NUTRITION, ALCOHOL AND PHYSICAL ACTIVITY SURVEY

The 2004 ACT Smoking, Nutrition, Alcohol and Physical Activity Survey (SNAPS) was conducted by computer assisted telephone interview (CATI) in December 2004. The survey included questions on demographics, smoking status, alcohol consumption levels, physical activity levels, dietary behaviours and heights and weights. The target population for the survey was adults aged 18 years or more. A total sample of 1,215 was achieved for the ACT.

2005 AUSTRALIAN SECONDARY STUDENTS ALCOHOL AND DRUG SURVEY

In 2005, ACT Health and the Cancer Council ACT conducted the ACT Secondary Students Alcohol and Drug (ASSAD) survey. It was administered in ACT secondary schools by external research staff using a self-completion questionnaire.

The main aim of the survey was to obtain information about substance use among secondary school students in the ACT. The 2005 survey was also designed to collect information about sun protective behaviours, nutrition, physical and leisure-time activities.

The target population for the survey was students in Years 7 to 12, between 12 to 17 years of age, enrolled in government, Catholic and independent schools in the ACT. Students completed a total of 1,675 questionnaires.

ASSAD surveys are conducted in the ACT every three years.

ACT GENERAL HEALTH SURVEY 2005

The ACT commissioned South Australia Health to undertake a CATI general health survey in the ACT in 2005. Topics covered included: overweight & obesity, alcohol, smoking, nutrition, physical activity, sun protection, breast-feeding, early years, food security, immunisation, childcare, asthma, cardiovascular disease precursors, diabetes, mental health (Kessler scale), psychosocial events, suicidal ideation, co-morbidities, health care utilisation, social capital, and mobile telephone use.

The sample comprised some 1238 respondents.

ACT PHYSICAL ACTIVITY AND NUTRITION SURVEY (PANS)

As a first stage in the development of a Child Healthy Weight Surveillance System for the ACT, an ACT year 6 school children's physical activity and nutrition survey (PANS) was developed and administered in 2006. It was a schools based study involving the collection of height and weight information on approximately 1,200 ACT children in year 6. In addition, a questionnaire on physical activity, nutrition, attitudes and psycho-social outcomes was administered to these children.

Other Data Sources

COMMUNICABLE DISEASE NETWORK AUSTRALIA

The Communicable Disease Network Australia (CDNA) was established in 1989 (as the Communicable Diseases Control Network. It 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, and since 1995, has overseen the development of the National Communicable Diseases Surveillance Strategy which 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 (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 Department of Health and Ageing website: <www.health.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 under 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. The source of the demographic data that is presented has been referenced accordingly throughout the report.

Statistical Methods

AGE-STANDARDISED RATES

The standardized 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 2001 Australian population.

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. So, the confidence interval is the likely range of the true value.

95% confidence intervals (95% CI) have been included in tables and in text discussion throughout the report, where they are available to ACT Health, or can be calculated or estimated from published data sources.

RELATIVE STANDARD ERRORS (RSE)

Relative standard errors (RSE) provide an indication of the reliability of an estimate. Estimates with RSEs less than 25% are generally regarded as 'reliable'. All estimates presented in tables in this report have RSEs less than 25%, unless otherwise stated. Estimates presented in tables with an RSE between 25-50% have been marked with an '*' (asterisk) and should be interpreted with caution. For the purposes of this report, estimates for the ACT with RSEs over 50% were not considered reliable and have not been presented.

CRUDE RATES

Crude 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 the ACT Admitted Patient Care Collection, CDNA data and ABS population data, derived from demographic reports.

INFANT MORTALITY RATE

The infant mortality rates that appear in this report are based on the number of infant deaths registered in a calendar year, divided by the number of registered births to ACT residents in a given calendar year, multiplied by 1,000.

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 provided has been obtained from ABS reports and referenced accordingly in the text.

LIFE-EXPECTANCY AT AGE 30, 60 & 85 YEARS

This is an estimate of the average number of additional years a person who has reached the age of 30, 60 and 85 would expect to live if current death rates were to continue.

Data for life expectancy at age 30, 60 and 85 years has been obtained from ABS reports and referenced accordingly in the text.

YEARS OF LIFE LOST

The person years of life lost (YLL) provide an indication of the impact of ageing on mortality in a population. In this report, the following formula has been used:

YLL_{80} = 80 (all deaths before this age are deemed premature) – age at death x the number of deaths at each age.

DISABILITY ADJUSTED LIFE YEARS

A DALY (Disability Adjusted Life Years) is equivalent to the loss of one year of "healthy" life. As such, it is an indication of the "unfinished" health agenda and identifies areas where health gains can be made.

The DALY extends the concept of potential years of life lost due to premature death (PYLL) by including equivalent years of ‘healthy’ life lost by virtue of being in states of poor health or disability. A DALY for a disease or health condition is calculated as the sum of the years of life lost due to premature mortality (YLL) in the population and the equivalent ‘healthy’ years lost due to disability (YLD) for incident cases of the health condition:
DALY = YLL + YLD
YLL = number of deaths x standard life expectancy at age of death and
YLD = incidence x duration x severity weight.

STATISTICAL SIGNIFICANCE

In statistics, a result is significant if it is unlikely to have occurred by chance. Statistical significance has been assessed in this report by comparing confidence intervals (95% CI) or calculating p-values, depending on the type of data available for hypothesis testing.
A result was deemed statistically significant (ie there is an effect) if the p-value obtained was less than 0.05, or if comparing confidence intervals, there was no overlap between intervals.

Note that statistical significance is different to clinical significance.

17.2 ICD-10-AM Diagnostic & Procedural Codes used to produce data

Diagnostic description	ICD-10-AM code
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
Non-hodgkins lymphoma	C82–C85, C96
Non-melanocytic skin cancer	C44
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**
Dementia	F00–F03
Other organic mental disorders	F04–F09
Mental, behavoural disorders due to alcohol	F10
Mental, behavioural disorders due to other psychoactive substances use	F11–F19
Schizophrenia	F20
Other schizophrenic, schizotypal, delusional disorders	F21–F29
Manic episode	F30
Bipolar affective disorders	F31
Depressive disorders	F32–F33
Other mood (affective) disorders	F34–F39
Neurotic, stress-related and somatoform disorders	F40–F48
Eating disorders	F50
Other behav. syndromes assoc. with physiological disturbances, physical factors	F51–F59
Disorders of adult personality and behaviour	F60–F69
mental retardation	F70–F79
disorders of psychological development	F80–F89
disorders onset usually occurring in childhood, adolescence	F90–F98
mental disorder not otherwise specified	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**

Diagnostic description	ICD-10-AM code
Congenital malformations/deformations etc	**Q00-Q99**
Symptoms/signs/abnormal clinical and laboratory findings	**R00-R99**
External causes of mortality and morbidity	**V01-Y98**
Transport accidents	V01-V99
Falls	W00-W19
Drowning	W65-W74
Poisoning by pharmeceuticals	
Poisoning other	X45-X49
Fires/burns/scalds	X00-X19
Suicide/intentional self-harm	X60-X84
Homicide/intentional harm by another	X85-Y09
Undetermined intent	Y10-Y34
Complications of medical and surgical care	Y40-Y84
Other unintentional	W20-W64, W75-W99, X20-X39, Y86, X50-X59, Y85, Y89.9
Notifiable diseases	
Adverse event after immunisation	Y58 - Y59.2
Arboviral infection: other-not specified	A83 - A84.9, A85.2, A90, A92 - A94
Arboviral infection: Ross River	B33.1
Botulism	A05.1
Brucellosis	A23
Campylobacter	A04.5
Chancroid	A57
Chickenpox	B01
Chlamydia trachomatis: congenital pneumonia	P23.1
Chlamydia trachomatis: lymphogranuloma venereum	A55
Chlamydia trachomatis: other sexually transmitted	A56, A74.8, K67.0, N74.4
Cholera	A00
Cryptosporidiosis	A07.2
Eschirichia coli: enterohaemorrhagic	A04.3
Giardiasis	A07.1
Gonorrhoea	A54, K67.1, M73.0, N74.3, O98.2
Haemolytic uraemic syndrome	D59.3
Haemophilus infuenzae meningitis	G00.0
Hepatitis A	B15
Hepatitis B	B16.2, B16.9, B18.1
Hepatitis C	B17.1, B18.2
Hepatitis D	B16.0, B16.1, B17.0, B18.0
Hepatitis E	B17.2
Hepatitis: viral (type not specified)	B17.8, B18.8, B18.9, B19.0, B19.9, B94.2, O98.4, P35.3
HIV-AIDS	B20 - B24
Influenza	J10 - J11.9
Legionnaires' disease	A48.1, A48.2
Leprosy	A30, B92
Leptospirosis	A27
Listeriosis	A32, P37.2
Malaria	B50 - B54, P37.3, P37.4
Measles	B05
Meningococcal disease	A39, M01.0, M03.0
Mumps	B26
Pertussis (whooping cough)	A37
Pneumococcal infection	A40.3, B95.3, G00.1, J13, M00.1
Psittacosis	A70
Q fever	A78
Rubella: congenital	P35.0
Rubella: other	B06, M01.4
Salmonella infection (non-typhoid)	A02
Shigellosis	A03
Syphilis: congenital	A50

Diagnostic description	ICD-10-AM code
Syphilis: other	A51 - A53, I98.0, K67.2, M03.1, M73.1, N74.2, O98.1
Tetanus	A33 - A35
Tuberculosis	A15 - A19, B90, J65, K23.3, K67.3, K93.0, M01.1, M49.0, M90.0, N33.0, N74.0, N74.1, O98.0, P37.0
Typhoid and paratyphoid	A01
ICD-10-AM procedural code 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

17.3 Glossary

Age standardisation - demographic technique for adjusting for the effects of age and sex between populations, which allows comparisons between populations (ABS definition).
Age-specific rates – the number 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.
AWOTE - The AWOTE refers to one week's average earnings under award, standard or agreed hours of work and is calculated before taxation, or any other deductions have been made.
Baby boomer is someone who is born in a period of increased birth rates. In Australia, this is usually defined as being someone born between the mid-1940s and the mid-1960s.
Birthweight is the first weight of an infant obtained after birth.
Body mass index is based on height and weight. In this report, 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.
Comorbidity
Crude birth rate is the number of live births per 1,000 population in a given year.
Crude death rate is the number of deaths per 1,000 population (unless otherwise stipulated) in a given year.
Elective surgery refers to a surgical procedure, that in the opinion of the treating clinician can be delayed for at least 24 hours.
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.
Food (in)security is a term that reflects hunger as a result of having insufficient food, or having a diet that is nutritionally inadequate.
ICD-10 refers to the International Classification of Diseases, tenth revision, as developed by the World Health Organisation (ICD-10-AM includes Australian modifications).
IDU refers to an injecting drug user. Drugs commonly used in this way include amphetamines, heroin, other opioids 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. In this report, it is usually expressed as a rate, per 100,000 population.
Ischaemic heart disease is coronary heart disease.
Kessler 10 (K10) is a tool designed to measure psychological distress in a population. The K10 uses a 10-question scale to determine levels of anxiety and depressive disorder in the last four weeks.
Labour force participation reflects those persons who are in the labour force and the labour force is defined as those persons aged 15 years or more who are employed or unemployed.
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 livebirth 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 birthweight. This is consistent with the definitions for spontaneous or induced abortions.

Mean equivalised gross household income (per week) - provides an indication of the level of economic resource available to households. Gross household income refers to all income in a household before any deductions are made. The equivalised gross household income adjusts household income for the number of people living in the household.

Median is a measure of central tendency. It refers to the point between the upper and lower halves of a 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.

Neoplasm is a new or abnormal growth or tumour. A neoplasm may be malignant or benign.

Over-consumption occurs when the energy consumed through diet exceeds energy needs.

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 childhood communicable disease.

Potentially preventable hospitalisations (PPH) includes hospitalisation for conditions resulting from diseases preventable through population based health promotion strategies (eg smokefree legislation) and diseases sensitive to prophylactic or therapeutic intervention in the ambulatory setting.

Prevalence refers to the number of instances of a given disease or other condition in a given population at a designated time. In this report, it is usually expressed as a rate, per 100,000 population.

Relative stay index (RSI) The relative stay index is a case-mix adjusted figure derived by comparing actual length of stay (in days) in hospital against an expected (based on a national average) length of stay in hospital.

Reporting period refers to the two year period 1 July 2004 to 30 June 2006.

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.

Statistically significant infers that it can be concluded on the basis of statistical analysis that it is highly probable.

Triage category Used in emergency departments to indicate the urgency of a patient's need for medical and nursing care. Patients are triaged into one of five categories on the National Triage Scale.

Underlying cause of mortality refers to "the disease or injury which initiated the train of morbid events leading directly to death" (ABS, *Causes of Death*, 2006, cat. No. 3303).

Years of Life Lost (YLL) reflects the burden of premature mortality in a population.

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Chief Health Officer Report evaluation survey

Please take a few minutes to provide us with some valuable feedback on the 2008 ACT Chief Health Officer's Report. This information will be used to improve future reports.

Please provide your name and contact details if you are prepared to be contacted about your comments and suggestions:

Name:

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1. Area of interest:

2. Please identify the parts of this report you have found most useful:

3. Which parts were least useful? Why?

4. Do you use the CHO report as a reference for information on the health of the ACT population?

5. What topics would you like to see presented in future reports?

6. How would you like information presented in this report?

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