ACT Health

Population Health Division

# ACT Chief Health Officer's Report

2006


# ACT CHIEF HEALTH OFFICER'S REPORT

## 2006

**Dr Paul Dugdale**
**Dr Charles Guest**
**Liza Kelsall**

# ACKNOWLEDGEMENTS

This publication has been prepared by the Population Health Research Centre, ACT Health, under the stewardship of the ACT Chief Health Officer Dr Paul Dugdale, and Dr Charles Guest, who served as Chief Health Officer between 19 May 2005 and 25 December 2005, for the ACT Minister for Health, the ACT Legislative Assembly and the ACT community. We wish to thank staff from across the ACT health portfolio, other government agencies, non-government agencies, community group representatives and individuals who have provided their time and expertise in the drafting of this document. A list of those who have provided input into various sections of the report is included in Appendix 3: Special Acknowledgements.



Enquiries about this publication should be directed to the:

Office of the Chief Health Officer
Level 2,
11 Moore St
Canberra ACT 2601
www.health.act.gov.au

Publication No 06/0795

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 2002 to 30 June 2004, as required under Section 10 of the *Public Health Act 1997*. The Act requires that I report biennially on the following:

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

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

Yours sincerely

Dr Paul Dugdale
**Chief Health Officer**

27 June 2006

# CONTENTS

**ACKNOWLEDGEMENTS** 2

**CONTENTS** 4

**LIST OF FIGURES** 7

**LIST OF TABLES** 9

**ABBREVIATIONS** 11

**EXECUTIVE SUMMARY** 14

**1 INTRODUCTION** 21

**2 ACT PROFILE** 23

2.1 The ACT population in 2004 ..... 25
2.2 The ACT population in 2014 ..... 25
2.3 Populations surrounding the ACT ..... 26
2.4 Population mobility ..... 26
2.5 Social factors that influence health ..... 26

**3 HEALTH STATUS** 31

3.1 Life expectancy ..... 31
3.2 Mortality ..... 33
3.3 Self-reported health status ..... 37
3.4 Morbidity ..... 38
3.5 Hospitalisations ..... 39

**4 LIFESTYLE AND HEALTH** 41

4.1 Physical activity ..... 42
4.2 Nutrition ..... 44
4.3 Healthy weight ..... 47
4.4 Tobacco Use ..... 49
4.5 Alcohol consumption ..... 52
4.6 Illicit substance use ..... 54
4.7 Sun protection ..... 57
4.8 Sexual Health ..... 58

**5 HEALTH AND THE ENVIRONMENT** 65

5.1 Water quality ..... 66
5.2 Air quality ..... 67
5.3 Food safety ..... 70
5.4 Infection control ..... 70
5.5 Radiation safety ..... 71
5.6 Forensic toxicology ..... 71
5.7 Pharmaceutical services ..... 71
5.8 Emergency planning in the ACT ..... 72

**6 HEALTH SERVICES AND THEIR USE** 74

6.1 Profile of health services ..... 74
6.2 Hospital service use ..... 75
6.3 Primary health care ..... 80
6.4 Residential aged care ..... 82
6.5 Quality and safety in health care ..... 84

**NATIONAL HEALTH PRIORITY AREAS** 87

**7 CARDIOVASCULAR HEALTH 88**

7.1 Cardiovascular disease status ... 89
7.2. Services and their use ... 91
7.3 Cardiovascular disease initiatives ... 92

**8 CANCER CONTROL 94**

8.1 All cancers ... 95
8.2 National health priority cancers ... 97
8.3 Cancer control services and initiatives ... 102

**9 MENTAL HEALTH 105**

9.1 Mental health status ... 106
9.2 Plans, services and initiatives ... 108

**10 INJURY PREVENTION AND CONTROL 113**

10.1 Injury status ... 113
10.2 Injury prevention initiatives ... 118

**11 DIABETES MELLITUS 121**

11.1 Diabetes status ... 122
11.2 Services and initiatives ... 124

**12 ASTHMA 127**

12.1 Asthma status ... 128
12.2 Asthma initiatives ... 130

**13 ARTHRITIS AND MUSCULOSKELETAL CONDITIONS 133**

13.1 Levels of arthritis and musculoskeletal conditions ... 133
13.2 Services and initiatives ... 134

**14 COMMUNICABLE DISEASE 137**

14.1 Surveillance, investigation and control ... 138
14.2 Overview ... 139
14.3 Immunisation ... 141
14.4 Vaccine preventable diseases ... 143
14.5 Sexually transmissible infections ... 151
14.6 Blood borne viruses ... 154
14.7 Gastrointestinal, food and water related diseases ... 157
14.8 Other bacterial diseases ... 161
14.9 Vectorborne diseases ... 163
14.10 Zoonotic diseases ... 164
14.11 Quarantinable diseases ... 164

**15 MATERNAL, INFANT AND CHILD HEALTH 166**

15.1 Maternal health ... 166
15.2 Infant health ... 169
15.3 Multiple births ... 170
15.4 Child health ... 171

**16 THE HEALTH OF OLDER PEOPLE IN THE ACT 178**

16.1 Introduction ... 178
16.2 The demographic shift ... 178
16.3 Overview of health status ... 180
16.4 The health response to the demographic shift ... 185

**17 THE HEALTH RESPONSE TO THE ACT BUSHFIRES OF JANUARY 2003 188**

17.1 Introduction ... 188
17.2 The Health Response ... 189
17.3 The health impacts ... 192
17.4 Lessons learned ... 196

**18 THE HEALTH OF ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES 199**

18.1 Demographic transitions ..... 200
18.2 Health transitions ..... 202
18.3 Aboriginal and Torres Strait Islander health services and initiatives ..... 207

**19 OPPORTUNITIES FOR HEALTH GAIN IN THE ACT 210**

**APPENDICES 213**

Appendix 1: Methods ..... 214
Appendix 2: ICD-10-AM Diagnostic and Procedural Codes Used to Produce Data ..... 219
Appendix 3: Special Acknowledgements ..... 221
Appendix 4: The ACT Health and Medical Research Council ..... 222

**GLOSSARY 223**

# LIST OF FIGURES


Figure 2.1: Maps of the Australian Capital Region including Canberra districts and surrounding NSW. ..... 24
Figure 2.2: Estimated resident population 2004 and estimated projected population 2014, by age group, ACT[(a)]. ..... 25
Figure 3.1: Trends in life expectancy, males, ACT 1971 – 2003[(a)] ..... 32
Figure 3.2: Trends in life expectancy, females, ACT 1971 – 2003[(a)] ..... 32
Figure 3.3: Trends in all-cause mortality, ACT & Australia, by sex, 1983–2003 ..... 34
Figure 3.4: Infant mortality rates[(a)], ACT & Australia, 1974 – 2004. ..... 34
Figure 3.5: ACT infant mortality rates[(a)], with 95% confidence intervals, 1993 – 2004. ..... 35
Figure 3.6: Leading causes of years of life lost ($YLL_{80}$), ACT, 2003. ..... 37
Figure 3.7: Self-reported health status (adults aged 15 years or more), by age group, ACT, 2001. ..... 37
Figure 4.1: Proportion of eligible[(a)] ACT females screened by Cervical Screening Programme, by age group, 2003-04. ..... 60
Figure 6.1: Recurrent health expenditure per person, by source of funds, states & territories, ..... 75
Figure 6.2: % Hospital separations, by age and sex, ACT, 2003-04. ..... 76
Figure 6.3: Residential aged care places, operational and benchmark, ACT, 2004. ..... 83
Figure 7.1: ACT hospital separation rates for ischaemic heart disease, ACT residents, by age group and sex, 2003-04. ..... 90
Figure 7.2: ACT hospital separation rates for stroke, ACT residents, by age and sex, 2003-04. ..... 91
Figure 8.1: Mortality rates[(a),(b)] for cancer, by sex, ACT & Australia, 1983-2003. ..... 96
Figure 8.2: Age-specific mortality rates[(a)] for cancer, by sex, ACT, 2003. ..... 97
Figure 9.1: Psychological distress: proportion of ACT adults (18 years or more) by Kessler 10 score[(a),(b)] & age group, 2004. ..... 107
Figure 9.2: Mortality rates[(a),(b)] for intentional self harm[(c)], by sex, for the ACT[(d)] & Australia, 1997-2003. ..... 108
Figure 10.1: Injury-related[(a)] mortality rates[(b)], by sex, ACT[(c)] & Australia, 1998 –2002. ..... 114
Figure 10.2: Leading causes[(a)] of injury-related mortality for ACT residents, 2001-2003[(b)] ... 115
Figure 10.3: ACT resident injury-related separation rate[(a)] from ACT hospitals, by age group and sex, 2003-04. ..... 116
Figure 10.4: ACT resident transport accident injury separations from ACT hospitals, by mode of transport[(a),(b)] and sex, 2003-04. ..... 117
Figure 10.5: ACT resident injury-related[(a)] presentation rates to ACT hospital emergency departments, 2003-04. ..... 118
Figure 12.1: Asthma[(a)] mortality rates for the ACT & Australia, 1986 - 2003. ..... 128
Figure 12.2: Hospital separations for ACT residents from ACT hospitals with a principal diagnosis of asthma[(a)], 1995/96 - 2003/04[(b)]. ..... 129
Figure 12.3: Proportion of ACT resident presentations to TCH and Calvary Emergency Departments, with a principal diagnosis of asthma[(a)], by age group, 2002-03. ..... 130
Figure 14.1: % Hospital admissions as a result of notifiable communicable diseases (n=234) by disease category[(a)], ACT, 2003. ..... 139
Figure 14.2: Pertussis notifications by month, ACT, 2003. ..... 144
Figure 14.3: Pertussis notification rates per 100,000 population, ACT & Australia, 1995 – 2003. ..... 144
Figure 14.4: Pertussis notifications by age group, ACT, 2003. ..... 145
Figure 14.5: Meningococcal notification rates per 100,000 population, ACT & Australia, 1991 – 2003. ..... 147
Figure 14.6: Measles[(a)] notification rates per 100,000 population, ACT & Australia, 1995 - 2003. ..... 149
Figure 14.7: Mumps notification rates per 100,000 population, ACT & Australia, 1995 – 2003. ..... 150
Figure 14.8: Rubella notification rates per 100,000 population, ACT & Australia, 1995 - 2003. ..... 150
Figure 14.9: *Haemophilus influenzae* type b (Hib) notification rates per 100,000 population, ACT & Australia, 1995 - 2003. ..... 151

Figure 14.10: Chlamydia notification rates per 100,000 population, ACT & Australia, 1995 - 2003. ..... 152
Figure 14.11: Gonorrhoea notification rates per 100,000 population, ACT & Australia, 1995 - 2003. ..... 153
Figure 14.12: HBV (incident & unspecified) notification rates, ACT & Australia, 1995-2003. 155
Figure 14.13: Risk factors for hepatitis C in the ACT. ..... 156
Figure 14.14: Hepatitis C (incident & unspecified) notification rates, ACT & Australia, 1995-2003. ..... 156
Figure 14.15: Source of HIV infection, ACT, 1999-2004[(a)]. ..... 157
Figure 14.16: Campylobacter notification rates per 100,000 population, ACT & Australia[(a)], 1991 - 2003. ..... 159
Figure 14.17: Notification rates of salmonellosis, ACT & Australia 1991 - 2003. ..... 160
Figure 14.18: Notifications of salmonellosis, by month, ACT, Oct 2002 - Dec 2003. ..... 160
Figure 14.19: Notifications for cryptosporidiosis, ACT, 1997-2003. ..... 161
Figure 14.20: Tuberculosis notification rates per 100,000 population, ACT & Australia, 1995 - 2003. ..... 162
Figure 14.21: Malaria notification rates per 100,000 population, ACT & Australia, 1995 - 2003. ..... 164
Figure 15.1: Age-specific fertility rates, ACT, 1980, 2000 & 2003 ..... 167
Figure 16.1: The projected age structure of the ACT population, 2005 & 2035. ..... 179
Figure 16.2: The projected age structure of the ACT population (%), by sex, 2005 & 2035. 179
Figure 17.1: Daily hospital[(a)] emergency department fire-related presentations[(b)] and admissions[(c)] during the ACT bushfire State of Emergency (18-28 January 2003). ..... 189
Figure 17.2: ACT resident admissions to ACT hospitals for CVD, by month, October 2000-June 2005. ..... 193
Figure 17.3:ACT resident admissions to ACT hospitals for respiratory disease, by month, September 2000-June 2005. ..... 194
Figure 17.4: ACT resident admissions to ACT hospitals for burns, by month, December 2000-June 2005. ..... 194
Figure 17.5: ACT resident admissions to ACT hospitals for toxic effect of substances, by month, January 2001-June 2005. ..... 194
Figure 17.6: ACT resident admissions to ACT hospitals for falls injury, by month, December 2000-June 2005. ..... 195
Figure 17.7: ACT resident admissions to ACT hospitals for other injuries caused by exposure to smoke, fire and flames, by month, December 2000-June 2005 ..... 195
Figure 17.8: ACT resident admissions to ACT hospitals for mental health disorders, by month, December 2000-June 2005 ..... 195
Figure 18.1: Age distribution of the ACT Aboriginal and Torres Strait Islander & total population, 2001 ..... 201

# LIST OF TABLES


Table 2.1: Selected social factors that influence health, ACT & Australia. ..... 27
Table 3.1: Selected summary mortality statistics, ACT, 1993–2003[a] ..... 33
Table 3.2: Leading underlying causes of death, by sex, ACT, 2003. ..... 36
Table 3.3: Estimates of the proportion of the population with a long-term condition[a],[b], by disease category, ACT & Australia, 2001. ..... 38
Table 3.4: Total ACT hospital separations and proportion attributable to ACT residents and non-ACT residents, by sex, 2003-04. ..... 39
Table 4.1: Proportion of the population, aged 18 years or more, by physical activity level[a], ACT, 2004. ..... 43
Table 4.2: Proportion of adults (aged 19 years or more) reporting the usual use of low fat milk and recommended daily serves of fruit and vegetables[a], ACT, 2004. ..... 45
Table 4.3: Proportion of the population aged 18 to 64 years by BMI category[a], ACT, 2004. 48
Table 4.4: Proportion of the population aged 18 to 64 years overweight or obese[a], ACT, 2004. ..... 48
Table 4.5: Tobacco smoking status, proportion of the population aged 14 years or more, ACT & Australia, 2001 & 2004. ..... 49
Table 4.6: Proportion of ACT secondary students (12-17 years) who reported recent[a] smoking, by age and sex, 1996, 1999 & 2002. ..... 50
Table 4.7: Proportion of the ACT & Australian populations, aged 14 years and over, supporting[a] tobacco measures, 2004[b] ..... 51
Table 4.8: Use of alcohol, proportion of the population aged 14 years or more, ACT, 2001 & 2004. ..... 53
Table 4.9: Proportion of ACT secondary students (12-17 years) who reported recent[a] and harmful[b] levels of alcohol consumption, by age and sex, 2002. ..... 53
Table 4.10: Recent[a] use of illicit substances, proportion of the population aged 14 years or more, ACT 2001 & 2004. ..... 54
Table 4.11: Proportion of ACT secondary students (12-17 years) who reported lifetime use of illicit substances, 1999 & 2002. ..... 55
Table 4.12: Proportion of secondary students aged 12-17 years reporting usually or always using sun protection measures[a], ACT 2002. ..... 58
Table 5.1: Summary of ActewAGL drinking water monitoring results, 2003-04. ..... 67
Table 6.1: Employed medical practitioners[a], by state & territory, 2003. ..... 75
Table 6.2: Employed nurses[a], by state & territory, 2003. ..... 75
Table 6.3: Separation rates of public hospital separations per 1,000 people in public (non-psychiatric) hospitals[a],[b]. 1999/00 – 2003/04. ..... 76
Table 6.4: Hospital separations by principal diagnosis[a], by public and private ACT hospitals, for ACT[b] and Non-ACT residents, 2003-04. ..... 77
Table 6.5: Average length of stay in ACT hospitals, by principal diagnosis[a], 2000/01 - 2003/04. ..... 78
Table 6.6: Selected potentially preventable hospitalisation separation rates (per 1,000 population), states and territories, 2004-05. ..... 78
Table 6.7: % Emergency department patients seen within triage category timeframes, public hospitals, ACT, 2003-04. ..... 79
Table 6.8: Pathology tests ordered by registered GPs and other medical practitioners, ACT & Australia, 2001/02 - 2003/04. ..... 81
Table 6.9: Diagnostic imaging ordered by registered GPs and other medical practitioners, ACT & Australia, 2001/02 - 2003/04. ..... 81
Table 8.1: Summary statistics for cancer[a],[b] , average annual incidence[c] and mortality[d], by sex, ACT, 1999-2003. ..... 95
Table 8.2: Summary statistics for selected national health priority cancers[a], [b], average annual incidence[c] and mortality[d], by sex, ACT, 1999-2003. ..... 98
Table 11.1: ACT resident separations from ACT hospitals with an associated diagnosis of diabetes[a],[b], by principal diagnosis[c] (ICD-10-AM chapter), 2003-04 & 2001-02. ..... 123
Table 13.1: % Population reporting a musculoskeletal condition, by sex, ACT, 2001[a], [b]. .. 134
Table 14.1: Communicable disease notifications* and rates (per 100,000 population), ACT 1999 - 2003, NSW & Australia, 2003. ..... 140
Table 14.2: Immunisation coverage in children, ACT, NSW & Australia, 2000-2005 ..... 142

Table 14.3: Hospital separation rates for vaccine preventable conditions, per 1,000 population[(a)], NSW, ACT & Aust, 2002/03 - 2003/04. ..... 143
Table 14.4: IPD notifications and rates per 100,000 population, states & territories, 2003[(a)] 145
Table 14.5: Clinical presentations[(a)] of IPD, ACT, NSW & Australia, 2003. ..... 146
Table 14.6: New & relapsed TB cases and rates per 100,000 population, ACT & Australia, 2003. ..... 162
Table 14.7: National TB performance indicators, criteria & the current status, Australia, 2003. ..... 163
Table 15.1: Women who gave birth and babies born, by maternal state of residence, ACT, 2001 – 2003. ..... 167
Table 15.2: Maternal characteristics by state of residence, ACT, 2003. ..... 168
Table 15.3: Self-reported[(a)] smoking during pregnancy by maternal state of residence, ACT, 2003. ..... 168
Table 15.4: Pre-existing maternal medical conditions by maternal state of residence, ACT, 2003. ..... 169
Table 15.5: Babies characteristics by maternal state of residence, ACT, 2003. ..... 170
Table 15.6: Women having a multiple birth, by maternal state of residence, ACT & Australia, 2001 - 2003. ..... 171
Table 15.7: Number and percentage of the ACT child population (aged 0-14 years), by region, June 2004. ..... 171
Table 15.8: Selected health risk factors for children in the ACT, 2001 & 2003. ..... 173
Table 16.1: Health status indicators for ACT residents, by age group, various years. ..... 181
Table 16.2: Health risk factors for ACT residents, by age group, 2004. ..... 184
Table 18.1: Selected health status indicators, Aboriginal and Torres Strait Islander persons aged 15 years or more, ACT & Australia, 2002 ..... 205
Table 18.2: Selected social factors influencing health, Aboriginal and Torres Strait Islander persons aged 15 years or more, ACT &Australia, 2002. ..... 206

# ABBREVIATIONS

| | |
|---|---|
| ABS | Australian Bureau of Statistics |
| ACIR | Australian Childhood Immunisation Register |
| ACT | Australian Capital Territory |
| ACTCOSS | Australian Capital Territory Council of Social Services |
| ACTDGP | Australian Capital Territory Division of General Practice |
| ACTGAL | Australian Capital Territory Government Analytical Laboratory |
| ACTIPAC | ACT Influenza Pandemic Action Committee |
| ACTPLA | ACT Planning and Land Authority |
| AHMC | Australian Health Ministers Conference |
| 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 |
| 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 |
| AU | University of Adelaide |
| AWOTE | Average weekly ordinary time earnings |
| BBV | Blood borne virus |
| BMI | Body mass index |
| CABG | Coronary artery bypass graft |
| CALMS | Canberra After Hours Locum Medical Service |
| CATI | Computer-Assisted Telephone Interview |
| CDNA | Communicable Disease Network Australia |
| CHD | Coronary heart disease |
| CHIP | Clinical Practice Improvement Program |
| CHQ | Child Health Questionnaire |
| CHS | Child Health Survey |
| CMD | Chief Ministers Department |
| COPD | Chronic obstructive pulmonary disease |
| CRCS | Capital Region Cancer Service |
| CVD | Cardiovascular disease |
| DoHA | Department of Health and Ageing |
| DoHAC | Department of Health and Aged Care |
| DHFS | Department of Health and Family Services |
| DRG | Diagnostic Related Group |
| DUS | Department of Urban Services |
| EDIS | Emergency department information system |
| EPC | Enhanced Primary Care |
| ERP | Estimated resident population |
| ETS | Environmental tobacco smoke |
| FWE | Fulltime workforce equivalents |
| GP | General practitioner |

| | |
|---|---|
| GSAHS | Greater Southern Area Health Service |
| GSS | General Social Survey |
| HBV | Hepatitis B |
| Hib | Haemophilus influenzae type b |
| HIV | Human Immunodeficiency Virus |
| HPS | Health Protection Service |
| HPV | Human papilloma virus |
| HSC | Higher School Certificate |
| ICD-9 | International Statistical Classification of Diseases and Related Health Problems, 9th Revision. |
| 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 |
| IPD | Invasive pneumococcal disease |
| IVF | In-vitro fertilisaton |
| K10 | Kessler Psychological Distress Scale -10 |
| MBS | Medicare Benefit Schedule |
| MMR | Measles, Mumps and Rubella |
| NAGATSIHID | National Advisory Group on Aboriginal and Torres Strait Islander Health Information and Data |
| NAPSS | Newborn and Parent Support Services |
| NATSISS | National Aboriginal and Torres Strait Islander Social Survey |
| NCCI | National Cancer Control Initiative |
| NCSP | National Cervical Screening Program |
| NDSHS | National Drug Strategy Household Survey |
| NDSS | National Diabetes Services Scheme |
| NGO | Non-government organization |
| NHMRC | National Health and Medical Research Council |
| NHPA | National Health Priority Area |
| NHS | National Health Survey |
| NIP | National Immunisation Program |
| NIPAC | National Influenza Pandemic Action Committee |
| NMDS | National Minimum Data Set |
| NMSC | Non-melanocytic skin cancer |
| NPHP | National Public Health Partnership |
| NSMHWB | National Survey of Mental Health and Wellbeing |
| NSP | Needle Syringe Program |
| NSW | New South Wales |
| NTAC | National Tuberculosis Advisory Committee |
| NTPI | National Tuberculosis Performance Indicators |
| NTS | National Tobacco Strategy |
| OECD | Organisation for Economic Co-operation and Development |
| PHCI | Primary Health Care Institute, Australian National University |
| PHIDU | Public Health Information Development Unit |
| PPH | Potentially preventable hospitalisations |

| | |
|---|---|
| PPIRS | Postnatal Parenting Information and Referral Service |
| PSA | Prostate specific antigen |
| PSS | Pharmaceutical Services Section |
| PTCA | Percutaneous transluminal coronary angioplasty |
| QEII | Queen Elizabeth II Family Centre |
| QTY | Queanbeyan, Tallaganda and Yarrowlumla shires |
| RSE | Relative standard error |
| RWH | Royal Hospital for Women |
| SAAP | Supported Accommodation Assistance Program |
| SAHS | Southern Area Health Service |
| SARS | Severe acute respiratory syndrome |
| SEIFA | Socio-economic indexes for areas |
| SF-36 | Short Form 36 |
| SIDS | Sudden infant death syndrome |
| SIGPAH | Strategic Inter-Governmental forum on Physical Activity and Health |
| SLN | Stroke liaison nurse |
| SLTEC | Shiga-like *Escherichia coli* |
| STI | Sexually transmitted infection |
| SNAPS | Smoking, Nutrition, Alcohol and Physical Activity Survey |
| TB | *Mycobacterium tuberculosis* |
| TCH | The Canberra Hospital |
| THMs | Trihalomethanes |
| TFR | Total fertility rate |
| TTTS | Twin-to-twin transfusion syndrome |
| UVR | Ultra-violet radiation |
| VIPP | Vision Impairment Prevention Program |
| VTEC | Verotoxigenic *Escherichia coli* |
| WHO | World Health Organisation |
| Winnunga | Winnunga Nimmityjah Aboriginal Health Service |
| YLL | Years of life lost |
| YWCA | Young Women's Christian Association |
| 95% CI | 95% Confidence Interval |

# EXECUTIVE SUMMARY

The ACT Chief Health Officer's Report 2006 has been prepared to meet the requirements of the *Public Health Act 1997*. It includes data on the ACT population for the two-year reporting period 1 July 2002 to 30 June 2004, information about public health programs current at the time of writing, and identification of emerging issues in public health for the next few years.

## ACT PROFILE

The demographic profile of the population and projected demographic shifts have implications for health and planning in the ACT. The estimated resident population of the ACT was 324,021 people at 30 June 2004. The projected ACT population for 2014 is 354,877, an estimated increase of 9% from 2004. The ACT population is slightly younger than the national population, although it is expected to age over time, and it is a highly mobile population, with net migration being an important driver of population growth (or decline).

## SOCIAL FACTORS THAT INFLUENCE HEALTH

The majority of social indicators that have been reviewed in the report yield favourable results for the ACT compared to Australia. For example, income and education levels in the ACT are high in comparison to Australian income and education levels and the unemployment rate for the ACT is lower than the rate for Australia.

## HEALTH STATUS

Health status indicators suggest that overall the ACT enjoys a high level of health. In 2001, for instance, about half (54.1%) of all respondents aged 15 years or more in the ACT to the 2001 National Health Survey reported their health status to be 'excellent' or 'very good'.

Life expectancy at birth in the ACT has increased over the last three decades, largely due to decreases in infant mortality and all-cause mortality. For the period 2001-2003, life expectancy at birth in the ACT was 79.2 years for males and 83.8 years for females. The ACT had the highest life expectancy at birth of all other states and territories.

There is scope for future health gain in the ACT with further reductions in mortality and increases in life expectancy possible through advances in healthcare technologies, therapies, and disease prevention measures.

## LIFESTYLE AND HEALTH

Over the last few decades, there has been a reduction in the prevalence of some modifiable health risk factors, which has led to a decline in the incidence of related morbidities and mortality. Although the prevalence of lifestyle factors in the ACT is generally similar to prevalence levels nationally, prevalence rates in the ACT vary between population groups and there are trends of concern emerging with implications for the future health and wellbeing of the population. Thus, the evidence available suggests that major health gains in the ACT are still possible through lifestyle modification.

In 2004, about half (47.8%) of all adults (aged 18-64 years) in the ACT were estimated to be either overweight or obese. The proportion of overweight and obese adults in the ACT has increased over the last decade and the health benefits to be achieved through regular physical activity and good nutrition are considerable. However, estimates from the 2004 SNAPS survey suggest that only about half (55.2%) of all adults (aged 19 years or more) in the ACT were undertaking sufficient levels of physical activity to meet national guidelines and about one in ten adults were physically inactive or sedentary in 2004. Further, survey estimates suggest that only one in ten (10.4%) adults (aged 19 years or more) in the ACT consumed sufficient vegetables, and about half (51.3%) consumed sufficient fruit to meet dietary guidelines in 2004.

## HEALTH AND THE ENVIRONMENT

The ACT enjoys high-quality drinking water and a pleasant physical environment, lacking many of the sources of pollution found elsewhere. The water quality in Canberra's lakes varies with the season, rainfall intensity and run-off. Occasionally, lakes are closed for recreation because of unsafe levels of faecal coliforms.

Air quality during the July 2002 to June 2004 period was generally very good, with the exception of occasional high concentrations of fine particles from open wood fires in winter and the January 2003 bushfires.

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 2002 and 2004.

During the reporting period, research into driver drug testing in the ACT and the development of toxicological methodologies related to amphetamine-like substances has been undertaken. Advice has been provided on a range of legislative issues pertaining to the safe supply of pharmaceuticals in the Territory and ACT Health has managed the ACT response to a national pharmaceutical recall. Audits of the controls for sales transactions of pharmaceutical medicines are undertaken and out-of-date drugs are collected from pharmacies to ensure the safe management and supply of pharmaceuticals in the ACT.

The ACT Health Emergency Sub-plan has undergone a series of revisions since 2003. The Sub-plan now includes a series of minor plans for specific emergencies and as part of the ongoing process of revision, the Sub-plan will undergo regular testing. The first test of the revised Sub-plan was undertaken in July 2004.

## HEALTH SERVICES AND THEIR USE

There were 105,685 separations from public and private hospitals in the ACT in 2003-04. One in four hospital separations were for non-ACT residents (25,534 separations). The average length of stay (excluding same day separations) in an ACT hospital in 2003-04 was 6.0 days, compared to 6.3 days for Australia.

Medical workforce data shows that the ACT (365) had the second highest rate of employed full-time equivalent medical practitioners in 2003, after the Northern Territory. However, the ACT (61.0) had the second lowest rate of GP fulltime workforce equivalents (FWE) per 100,000 population in 2003-04, after the Northern Territory and the rate of GP FWE per capita for the ACT has declined over time.

ACT Health is implementing a range of initiatives to reduce waiting times for elective surgery in the ACT and initiatives aimed at increasing the number of residential care services available. There is also potential for health gain in improving quality and safety in health care and ACT Health has implemented a range of relevant initiatives during the reporting period.

## CARDIOVASCULAR DISEASE

Prevention strategies that are aimed at reducing the prevalence of modifiable risk factors, screening, and the management of disease, through advances in surgical techniques, pharmaceutical therapies and rehabilitation, provide the greatest opportunities for health gain with cardiovascular disease (CVD).

Estimates from the 2001 National Health Survey suggest that 17.4% of ACT residents had a CVD in 2001. Although mortality from CVD has declined over the last 30 years, it is the leading cause of death in the ACT, accounting for 34.7% of all ACT resident deaths in 2003.

## CANCER CONTROL

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.

Between 1999 and 2003, the most common cancers diagnosed were breast cancer (17.9% of all cancer diagnoses), colorectal cancer (14.1%), prostate cancer (13.2%), melanoma (10.4%), and lung cancer (6.2%). Cancer projections suggest that although the cancer incidence rate for the ACT is not likely to increase between 2003 and 2011, the number of people diagnosed with cancer will increase by about 22%, largely because of growth and changes in the age structure of the population.

The cancer mortality rate has declined markedly over the last 20 years, largely due to advances in prevention, screening and treatment. Between 1983 and 2003, there was an average annual decrease in mortality rates for males and females by 1.3% and 0.9%, respectively. Between 1999 and 2003, the leading causes of cancer mortality in the ACT were lung cancer (15.3% of all cancer deaths), colorectal cancer (12.3%), breast cancer (8.4%), prostate cancer (6.3%) and non-Hodgkin's lymphoma (5.5%).

## MENTAL HEALTH

Mental health disorder is the third leading burden of disease for Australians and is a major cause of chronic disability. Depression accounts for about 3.7% of the total burden and research suggests that this is on the increase.

Survey estimates suggest one in five residents of the ACT will experience a mental health disorder over a 12-month period. National estimates suggest half of those with a mental health disorder will suffer a comorbidity.

The greatest opportunities for future health gain lie with promotion, prevention and early intervention strategies, increasing service responsiveness, strengthening service quality and fostering research, innovation and sustainability.

## INJURY PREVENTION

Injury has been estimated to account for about 8.4% of the total burden of disease in Australia, 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 and disability and associated health system costs.

There were 94 injury-related deaths among ACT residents in 2003, accounting for 6.6% of all deaths among ACT residents. Most deaths from injury in the ACT occurred among people aged 15-44 years, most of whom were males. The leading causes of injury death in 2003 were intentional self-harm, transport accidents, falls and accidental poisoning.

## DIABETES MELLITUS

There are opportunities for future health gain and a reduction in the burden of diabetes in the ACT with disease prevention initiatives aimed at reducing the prevalence of risk factors for Type 2 diabetes (see Chapter 4: Lifestyle and Health), the introduction of new therapies to better manage the disease and new screening programs to identify complications of the disease 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.

## ASTHMA

The prevalence of asthma increased in Australia and the ACT from the early 1980s through to the 1990s, however, at the national level, there are indications prevalence may have peaked. There are no recent data available to indicate whether prevalence has peaked in the ACT. According to the results of the 2001 National Health Survey, 12.3% of ACT residents reported having asthma, compared to 11.6% nationally.

Mortality, hospital separation, and emergency department presentation rates for asthma have continued to decrease over time in the ACT. The reasons for these decreases are unknown, however, changes in environmental factors, such as improved asthma management in the ambulatory setting, new asthma preventative medications and dose-delivery devices (spacers) may partially explain these trends.

There are opportunities for further health gain and a reduction in the burden of asthma in the ACT with the ongoing integration of services, based on the Asthma 3+ Visit Plan.

## ARTHRITIS AND MUSCULOSKELETAL DISORDER

Arthritis and musculoskeletal disorders were endorsed as a National Health Priority Area in July 2002. Estimates derived from the 2001 National Health Survey suggest that the prevalence of self-reported musculoskeletal disorder was similar for the ACT (32.2%) and Australia (32.0%) in 2001. According to the results of the survey, the most commonly reported conditions in the ACT were back pain, neck problems, disc disorders and arthritis.

The burden of disease attributable to arthritis and musculoskeletal disorder is primarily due to the reduced quality of life associated with chronic pain and disability. In 1998, musculoskeletal disorders were reported as the most common cause of disability in the ACT and in 2003-04, they accounted for 5.2% of all ACT resident separations from ACT hospitals.

## COMMUNICABLE DISEASE

Immunisation coverage levels for children in the ACT aged 12-15 months and 24-27 months declined during the 2000 to 2003 period. However, more recent information on coverage levels shows that they have increased again, up from 88.3% in 2003 to 92.1% as at 31 March 2006 for children aged 12-15 months, and up from 89.0% to 92.1% for children aged 24-27 months, over the same period.

There was an increase in notification rates for pertussis, invasive pneumococcal disease, meningococcal disease and influenza and decreases in notification rates for mumps and rubella between 2000 and 2003. Between 2002-03 and 2003-04, there was an increase in hospitalisations for all vaccine preventable diseases (VPD) and VPD comprised a third (32.3%) of all hospitalisations for notifiable communicable diseases in 2003-04.

The most commonly notified communicable diseases in 2003 were chlamydia (28%), campylobacter (21%), pertussis (19%) and hepatitis C (13%). In 2003, there was an outbreak of pertussis in the ACT.

Meningococcal notification rates for the ACT were high in 2003 compared to previous years as a result of two clusters of disease that occurred between November 2003 and January 2004. More recent information shows that notification rates have since declined.

## MATERNAL, INFANT & CHILD HEALTH

Maternal infant and child health are important indicators of the overall health and wellbeing of a population.

The ACT has experienced a long-term decline in fertility over time, although there was a slight increase in the total fertility rate in 2003. Fertility trends also suggest that women in the ACT are continuing to delay childbirth.

There were 4,112 births to ACT residents in the ACT in 2003 and 764 births in the ACT to non-ACT residents. The majority of babies were live births (98.9%), and 4.5% of non-ACT residents who gave birth in the ACT had a multiple birth compared with 1.4% of ACT residents. Twelve per cent of ACT resident women who gave birth in the ACT during 2003 reported having smoked during their pregnancy.

In 2004, there was an estimated 63,750 children aged 0-14 years living in the ACT, representing approximately 19% of the ACT population. Over the two-year period 2002 to 2003 there was a total of 42 deaths for children aged 0-14 years.

## THE HEALTH OF OLDER PEOPLE IN THE ACT

Population projections suggest that the population is ageing. About 10% of the ACT population were aged 65 years or more in 2005, but by 2035, 24% of the ACT population is projected to be aged 65 years or more.

As the population ages, the number of people in the population with age-related illnesses (especially chronic diseases) will increase. This will lead to changes in the mix and allocation of health resources across the ACT. ACT Health is currently working with other Government agencies, developing strategies and implementing initiatives, to meet the future health needs of older people in the population.

## THE HEALTH RESPONSE TO THE ACT BUSHFIRES OF JANUARY 2003

There were 501 homes destroyed in the ACT, with many more damaged as a result of the January 2003 bushfires. There were losses to the local infrastructure – including the ACT Health Protection Service building at Holder - and almost 70 per cent of the forests and parkland areas of the ACT were burnt out. Four people lost their lives.

A State of Emergency was declared by the Chief Minister on 18 January and remained in place until 28 January 2003. In accord with legislation, the ACT Chief Health Officer assumed the role of Territory Health Controller during this period, with responsibility for management and co-ordination of the health response to the Emergency.

Hospitals in the region were placed on alert and all elective surgery in the ACT was suspended for two days following the firestorm. There were a record 260 presentations to The Canberra Hospital Emergency Department on 18 January. Many of the patients who were treated at both The Canberra Hospital and Calvary Hospital Emergency Departments presented with fire-related health problems.

A Mental Health Control Centre Team was set-up to co-ordinate the mental health response to the fires. Counseling services were provided to residents in affected areas, as well as emergency services staff, volunteers and others in need.

A number of public health issues arose as a result of the fires including water quality, sanitation, toxic substance, infectious disease and air quality issues. Public health services in the ACT responded promptly to these issues, liaising with other agencies to effect timely responses to environmental hazards, performing onsite inspections and tests in the interests of public safety, preparing evacuation plans, and collating and disseminating public health information and advice to residents.

Although the health response to the emergency was effective, the Health Emergency Management Sub-Plan was later revised with a series of minor amendments made in the wake of the bushfire experience.

## THE HEALTH OF ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES IN THE ACT

Although information on Aboriginal and Torres Strait Islander peoples living in the ACT is limited, survey and administrative data indicate that they enjoyed more positive outcomes than their national counterparts in the social indicator areas of income, labour force participation, education levels, access to transport and community involvement. They did however, have a higher fertility rate and a lower life expectancy than their non-Aboriginal counterparts.

The Aboriginal and Torres Strait Islander community had a much younger age structure than the total ACT population. Furthermore, they were diagnosed with major diseases such as cardiovascular disease, cancer and diabetes mellitus at a younger age than their non-Aboriginal counterparts. They were over-represented in hospital statistics for mental health and behavioural disorders.

Almost one third of Aboriginal and Torres Strait Islander people in Canberra moved house once, and one in ten moved three times, in a one-year period.

ACT Health continues to pursue improved data collections on the health of Aboriginal and Torres Strait Islander people to inform policy developments for service delivery. Several initiatives to enhance and improve the health of Aboriginal and Torres Strait Islander people in the ACT are underway.

# REFERENCES

ACT Health 2003, *The ACT Mental Health Strategy and Action Plan 2003 –2008*, ACT Health, Canberra.

Reid M 2002, *ACT Health revie*w, ACT Health, Canberra, viewed 7 November 2005, <http://health.act.gov.au/c/health?a=da&did=10013722&pid=1053516738>.

# 1 INTRODUCTION

I am pleased to present you with the fourth ACT Chief Health Officer's Report, covering the two-year period from 1 July 2002 to 30 June 2004. 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 enjoys excellent health compared to other jurisdictions in Australia. Life expectancy is higher than in any other jurisdiction and mortality rates from chronic diseases such as cardiovascular disease, diabetes and asthma are lower in the ACT compared to the rest of the country. The report also shows that there have been significant reductions in cannabis use and smoking rates among secondary students in recent years.

There are however, areas of concern, including health inequalities between population groups, population differentials for social factors that influence health, disease prevention issues, lifestyle factors and service access issues.

In addition to specific health issues, the report identifies opportunities for future health gain in the ACT. This is a major theme for the report and an important consideration for future planning. The opportunities identified include reducing exposure to health risk behaviours, early detection of disease, early intervention and health promoting activities.

The format of the report is similar to previous reports with one health topic covered in each chapter. A text box with a summary of the main points for each health topic is provided at the beginning of each chapter. This is followed by an introduction, a section that includes statistical information, and a section on services, innovative health policy, program and promotion initiatives. Where relevant, emerging issues are highlighted at the end of each chapter.

The report is divided into 19 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, the national health priority areas, communicable diseases and maternal, infant and child health in the ACT.

I am particularly pleased to present you with special profiles on the health of older people and the health of Aboriginal and Torres Strait Islander peoples in the ACT, as well as a chapter on the January 2003 bushfires. The profile on older people describes how the ageing of the population will impact on health and outlines the strategic approach and relevant actions being undertaken by ACT Health to meet this challenge. The chapter on Aboriginal and Torres Strait Islander peoples provides a snapshot of health for this population (ACT Health plans to release a more comprehensive report in 2006). The chapter on the bushfires provides an overview of the health response to the emergency and highlights the importance of emergency planning and preparedness in the ACT.

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 and there is a methods section in the appendices with 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 2003) or for a financial year (eg 2003-04) or for a specific period (eg 2002-03 – 2003-04 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 2002) or follows the reporting period (ie 1 July 2004 onwards). This is clearly noted in each instance.

Most of the information provided in this report is focussed on the ACT resident population, however, there are specific sections of the report that include information relevant to the wider Australian Capital Region, 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 widely from year to year. The reliability of survey estimates is also a concern for the ACT, again this is 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.

The last two years have been a very busy time for ACT Health and this is reflected in the content of this report. There are many people who have assisted in compiling this report and I would like to extend my thanks to everyone who has been involved. I hope that you find the information provided useful and that you enjoy the read.

**Dr Paul Dugdale**
**ACT Chief Health Officer**

# 2 ACT PROFILE

**At a Glance**

- The estimated resident population of the ACT was 324,021 people at 30 June 2004. The projected ACT population for 2014 is 354,877, an estimated increase of 9% from 2004.
- The ACT population is slightly younger than the national population. In 2004, the proportion of older people aged 65 years or more (9.3%%) in the ACT was below the national average of 13%. However, the ACT population is expected to age over time, with a decline in population expected in almost every age group up to 30 years between 2004 and 2014.
- The ACT population is a highly mobile population, with net migration being an important driver of population growth (or decline). Net migration for the ACT in 2002 was -1,251 persons. Population growth is also influenced by the natural increase (births less deaths) and in the ACT, death rates and fertility rates have been declining for the last 20 years and are expected to continue to decline during the 2000s.
- The NSW catchment area of the Greater Southern Area Health Service (GSAHS) region covers an area of 166,000 $km^2$ and has an estimated population of 460,000. Canberra is the major tertiary health referral centre for the region. Population projections suggest the population of the GSAHS will increase by 6% to 481,180 persons by 2011.

There are a number of major population features which impact on the health and quality of life of those living in the ACT. This chapter provides a brief overview of important demographic features of the ACT population such as the age and sex distribution. This chapter also describes some of the important social factors that influence health, such as income and education levels, housing and households, and transport. The distribution of social factors, and changes in their distribution over time, effects both the configuration of health services and the way in which people utilise these services. The information presented in this section has been derived from a number of sources, including the 2001 National Census and a series of Australian Bureau of Statistics and ACT Government demographic and social reports.

At approximately 2,400 sq km, the Australian Capital Territory (ACT) is the smallest state or territory in Australia. Around 10% of the ACT is designated as urban, a further 22% is rural, 10% is reserved for forestry and more than half of the ACT is reserved for conservation. In January 2003, around 70% of the ACT land area was burnt out by bushfires (for further information see Chapter 17: The Health Response to the ACT Bushfires of January 2003).

The great majority of the ACT population resides within one of seven districts in the city of Canberra, 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 a number of surrounding towns and villages including Queanbeyan, Yass, Murrumbateman, Bungendore, Sutton, Gunning, Gundaroo and Bredbo and it is the tertiary 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 and surrounding NSW.**



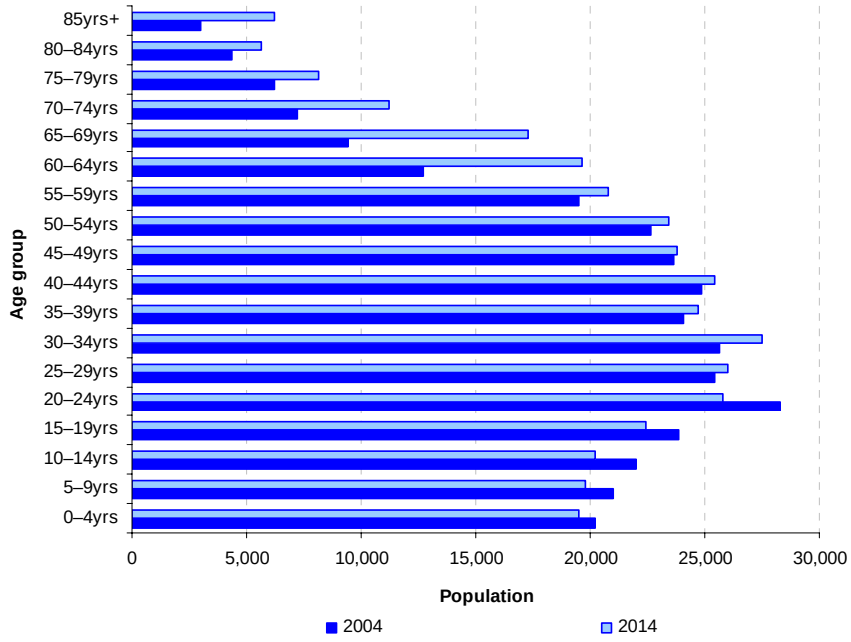
Data source: ACT Planning and Land Authority 2003.

## 2.1 The ACT population in 2004

At June 2004, the estimated resident population (ERP) of the ACT was 324,021. The ERP for the ACT has increased 2.8% since 2000 (315,215), and in 2004, the ACT accounted for approximately 1.6% of the national ERP (ABS 2004a).

In 2004, there were more females (163,768; 50.5%) than males (160,253; 49.5%) in the ACT population and three quarters of the population were aged less than 50 years. Young adults between 20–24 years of age were the largest age group (9% of the total population), followed by adults between 25-29 years (8%) and 30–34 years (8%) (Figure 2.2). In 2004, the proportion of older people aged 65 years or more (9.3%%) in the ACT was below the national average of 13% (ABS 2004a).

**Figure 2.2: Estimated resident population 2004 and estimated projected population 2014, by age group, ACT[(a)].**




Data sources: ABS 2004a; ACT Government, Chief Ministers Department 2003.

(a) The population estimates for 2014 are based upon a medium growth scenario and have been calculated using the ERP from the 2001 Census, as the base population.

## 2.2 The ACT population in 2014

Changes to the size and composition of the ACT population over time will have implications for future health planning, policy and service utilisation. The rate of population growth in the ACT has slowed down over the last 40 years, from an annual average of 9% growth in the 1960s to around 0.4% in the 1990s. During the 2000s, the annual rate of growth is expected to increase slightly to around 0.9% per annum. The projected ACT population for 2014 is 354,877, an estimated increase of 9% from 2004 (ACT Government 2003).

Population growth in the ACT is not expected to occur equally across age groups (Figure 2.2). Population decline is expected in almost every age group up to 30 years, with this group projected to decline by 4,000 persons by 2014 (ACT Government, 2003). Children aged 0–14 years are expected to account for 83% of this decline (an estimated decline in population of 3,300). The population aged 32 years or more is expected to increase by around 86,000 by 2014, of which 48,500 will be people aged 65 years or more. By 2014, 13.7% of the ACT population is expected to be 65 years or more. The population aged 85 years and over is expected to more than quadruple to over 15,000 persons by 2014, from a base of 3,000 in 2004.

## 2.3 Populations surrounding the ACT

The NSW catchment area of the Greater Southern Area Health Service (GSAHS) (formed in January 2005, by linking what was formerly the Greater Murray with the Southern Area Health Service), surrounds the ACT. This GSAHS region covers an area of 166,000 $km^2$ and has an estimated population of 460,000 (GSAHS 2005). At the time of the 2001 Census, there were 439,951 people in the region. One in five (22.3%) of the population were aged less than 15 years and 14.4% of the population were aged 65 years or more. There were 11,125 Aboriginal and Torres Strait Islander persons (2.5% of the population) and 15.0% of the population were born overseas (GSAHS 2005).

Over the last decade, the population of the GSAHS has increased by approximately 6%. The largest increase has occurred in the population aged 65 years or more, with this age group increasing by approximately 25%. Between 2002 and 2011, population growth is projected to be consistent at 6% (projected population for 2011, 481,180). Patterns of population growth will not, however, be consistent across the area. Some small rural towns are projected to decrease by as much as 18%, other areas, such as those surrounding Canberra and coastal communities, are projected to increase by as much as 25%.

Population projections modelled for the former Southern Area Health Service (SAHS) predict growth of an additional 18,138 persons by 2011– an average rate of 0.9% per annum. Nearly 45% of this growth will be in what were the Queanbeyan, Tallaganda and Yarrowlumla (QTY) shires. The population aged 65 years or more in the QTY planning area is projected to grow by 4.3% per annum to 2011, faster than the projected growth rate for this section of the ACT population. The former Tumut Shire population is projected to remain relatively static (GSAHS 2005).

## 2.4 Population mobility

Population growth is influenced by the natural increase (births less deaths) in a population and net migration (immigration less emigration). In the ACT, death rates and fertility rates have been declining for the last 20 years and are expected to continue to decline during the 2000s. The ACT population is highly mobile, making net migration an important driver of population change, but it is more difficult to predict than future fertility and death rate patterns. In the past, migration patterns have proved sensitive to changes in the local economy and labour market. Periods of rapid expansion and downsizing of the Federal public service workforce, for example, have been associated with both positive and negative net migration levels in the ACT. Therefore, population projections for the ACT are particularly sensitive to assumptions about migration patterns over time (ACT Government 2003).

During 2003-04, the ACT had a total inward migration of 25,644 persons. This was the sum of permanent and long-term overseas arrivals of 7,755 and an estimated 17,889 interstate arrivals. The total outward migration in 2003-04 was 26,895 persons. There were an estimated 6,614 persons who moved overseas from the ACT and 20,281 persons who moved interstate. Overall, net migration for the ACT in 2002 was -1,251 persons (ABS 2005a).

## 2.5 Social factors that influence health

Social factors are well recognised as having an important impact on both population and individual health status (WHO 2003). Indicators of material disadvantage, for instance, have been linked to poor health status and lower levels of service utilisation and service access in the ACT (Glover et al 1999). The factors that explain the interrelationships between the social environment and health are not always clear, and social factors that influence health are often external to the health care system. However, they are an important consideration in population health status assessment for health policy and planning purposes, as they are important in improving population health outcomes.

The health portfolio currently engages in cross-sectoral approaches to better understand and respond to social factors that influence health in the ACT. Improved health outcomes are sought through 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.

For instance, ACT Health has an involvement with the Community Development Network. The Network is open to parties in the region involved in service delivery, skill development and training, or advocacy for community development. The Network promotes cultural diversity, health and wellbeing, economic development, and a sustainable environment for ACT communities. ACT Health is actively involved in the Community Development Network Working Group, with the Health Promotion Unit of ACT Health providing the secretariat support for the group.

Table 2.1 presents selected social indicators for the ACT that are related to labour force and income, education and training, housing and households, and transport. Most of the indicators for the ACT are positive and compare favourably to indicators for Australia.

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

| | ACT | Australia |
|---|---|---|
| **Labour force and income** | | |
| Labour force participation rate (15 years or over)[(a)] | 74% | 65% |
| Labour force unemployment rate (15 years or over)[(a)] | 3.9% | 5.0% |
| Not in the labour force[(a)] | 26% | 35% |
| Gross household income per capita[(b)] | $48,920 | $34,345 |
| Gross household disposable income per capita[(b)] | $38,173 | $25,946 |
| Average weekly ordinary-time earnings[(b)] | $1,075 | $960 |
| **Education and training** | | |
| Pop with a non-school qualification (15–64 years)[(c)] | 58% | 48% |
| Pop whose highest level of attainment is a tertiary level education[(c)] | 30% | 19% |
| Households with access to a home computer | 80% | 66% |
| Households with home internet access | 66% | 53% |
| **Housing and households** | | |
| Households with an owner without a mortgage[(d)] | 29% | 35% |
| Housing costs as a proportion of gross income[(d)] | 12% | 13% |
| **Transport** | | |
| Households with access to a vehicle | 94% | 90% |

Data sources: ABS 2004d; ABS 2005b; ABS 2004b; ABS 2005c.

(a) Data for December 2004
(b) For financial year 2003-04
(c) As at May 2004
(d) For financial year 2002-03

### 2.5.1 Labour force and income

Labour force participation is an important social factor that can affect an individual's ability and opportunity to make healthy choices. In 2004, the ACT had the highest total labour force participation rate in Australia, at 71.3%. The participation rate reflects those persons who are in the labour force and the labour force is defined as those persons aged 15 years and over who are employed or unemployed. The ACT participation rate for males in 2004 was the highest in Australia (76.7%) and the female participation rate was equal highest with the Northern Territory (66.2%). Of those employed in the ACT in 2004, 71% were employed full-time (ABS 2005b). The average annual unemployment rate for the ACT has decreased in recent years and currently, the ACT has the lowest level of unemployment in Australia. As at June 2004, 3.9% of ACT residents were unemployed, the lowest unemployment rate in thirty years.

Income levels are an important indicator of material status in society, which again, has implications for health. Lower income levels have been associated with lower health status and high levels of health need (Glover et al 1999). The ACT is fortunate to experience high levels of economic prosperity, with Canberrans having the highest disposable incomes in Australia in 2003-04 ($38,173 for the ACT in 2003-04, compared to $25,946 nationally) (ABS 2004b). The average weekly ordinary time earnings (AWOTE) for a full-time adult employee in the ACT, was $1,075.30 as at August 2004. Nationally, the ACT had the highest level of AWOTE for both males ($1,161.60) and females ($972.40) (ABS 2004c).

Income support levels are another indicator of material status in society. The Department of Family and Community Services provides income support for people according to a series of set eligibility criteria. Recipients of support payments include the retired, the unemployed, the unwell, widows, single parents, students and families with children. Almost 90,000 people in the ACT (27% of the population) were receiving some form of FaCS pension or benefit (including family assistance) at 30 June 2003 (ABS 2004d). Nationally, almost 40% of Australians were clients of FaCS at this time. Family Assistance benefits were the form of support most likely to be received in the ACT, by 45% of FaCS clients. The second form of support most likely to be received was the Age pension, which was received by 20% of clients. People in the ACT also received FaCS support in the form of disability pensions (an estimated 7,000 persons), support for carers (an estimated 4,000 persons), and youth and student support (an estimated 7,100 persons).

### 2.5.2 Education and training

Education levels are associated with income levels and are another important social factor influencing health. In 2004, there was a total of 134 primary and secondary schools in the ACT. There were an estimated 59,780 full-time school students, following a steady decline since it peaked at approximately 61,350 in 1989 (ABS 2004d; ABS 2004e).

The ACT had the highest apparent retention rate of any State or Territory in 2004. The retention rate is a measure of full-time students in a designated level of education who continue to a particular level of education. The retention rate for the ACT in 2004, for full-time students in Year 7 to Year 12, was 88.5%. This compares to a rate of 75.7% for Australia in 2004 (ABS 2004e).

The ACT also had the highest level of educational attainment overall in Australia in 2004. As at May 2004, more than half (58%) of the ACT population aged 15-64 years had a non-school qualification, compared to the national average of 51%. Almost one in three adults in the population (31% of males and 29% of females) had attained a Bachelor's degree or higher level degree. Nationally, an estimated 19% of Australians had a Bachelor's degree or higher level degree (ABS 2004f).

The ACT also had the highest non-school course of study participation rate in Australia, as at May 2004. There were 23,200 males and 26,700 females aged 15–24 years, enrolled in a course of study in the ACT, representing 22% of the population aged 15–24 years. The national average for this age group was 18%. Those aged 15–19 years accounted for almost 40% of all non-school enrolments in a course of study. Almost half (46%) of all enrolments in 2004 were in higher education institutions, and 18% were enrolments in Technical and Further Education institutions (TAFE) (ABS 2004h).

In 2003, households in the ACT had the highest rate of home computer access in Australia. Eighty per cent of households in the ACT had access to a computer at home compared to the national average of 66% (ABS 2004g). This was a substantial increase from 64% of households in the ACT in 1998. Home internet access was available to 66% of households in the ACT in 2003. Again, this was the highest rate nationally, with the national average of home internet access being 53% in 2003.

### 2.5.3 Housing and households

Appropriate, safe and affordable housing is a key social factor influencing health (AIHW 2003). In 2001, there were an estimated 120,000 households in the ACT. The ABS has projected that the Territory will experience a growth in the number of households to between 158,000-167,000 by 2026, a growth of between 31-39% (ABS 2004h). The number of private dwellings is expected to increase at a greater rate than the increase in population over time. This is due largely to the projected increase in one-person households over time, increasing from 29,000 in 2001 to between 43,000-62,000 by 2026.

*The Canberra Spatial Plan* (ACT Government 2004a) acknowledges the projected changes in household composition over time. The Plan promotes high-density residential development to accommodate an increase in demand for housing locations close to employment and services. Residential intensification is expected to result in lower levels of transport use with easy access to work and essential services, higher levels of physical activity and greater sociability in the community.

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 (AIHW 2004). Statistics from the SAAP provide estimates of homeless persons in the ACT. In 2002-03, there were an estimated 1,800 SAAP clients in the ACT. Slightly more than half (53%) of these clients were female. The mean age of female clients was 26.4 years, whereas for male clients it was 31 years. A third of the clients in the ACT were identified as having a disability (AIHW 2005).

### 2.5.4 Transport

The ability to access safe, reliable and affordable transportation, and having access to alternatives such as safe walking and cycle paths, is also an important social factor influencing health. In 2001, approximately 94% of households in the ACT had access to a motor vehicle (ABS 2002, 2004i). There is also public transportation in Canberra to access health care services. The ACT Government introduced a single flat fare pricing structure for ACT bus travel during the 2002-2004 period, which has made travel more accessible for people with lower incomes.

ACT Government have developed and released *The Sustainable Transport Plan for the ACT* (ACT Government 2004b), which provides a policy framework to create a more sustainable public transport system for the ACT over the next 25 years. A more sustainable public transport system is expected to lower greenhouse gas emissions, air pollution and traffic-related accidents, all of which have potential health benefits. 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. The Plan aims to encourage the development of infrastructure to ensure that town centres and suburbs throughout Canberra can better accommodate the needs of both cyclists and walkers.

# References


ACT Government, Chief Ministers Department 2003, *Australian Capital Territory population projections 2002-2032 and beyond*, ACT Government, Canberra.

ACT Government, ACTPLA (ACT Planning and Land Authority) 2004a, *The Canberra spatial plan*, ACT Government, Canberra.

ACT Government, ACTPLA (ACT Planning and Land Authority) 2004b, *The sustainable transport plan for the ACT,* ACT Government, Canberra.

ABS (Australian Bureau of Statistics) 2002, *2001 census basic community profile and snapshot: Australian Capital Territory,* viewed 23 March 2005, <http://www.abs.gov.au>.

ABS (Australian Bureau of Statistics) 2004a, *Australian demographic statistics: June quarter 2004,* cat. no. 3101.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004b, *Australian national accounts: State accounts*, cat. no. 5220.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004c, *Average weekly earnings: Australia*, cat. no. 6302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004d, *Australian Capital Territory in focus: 2004,* cat. no. 1307.8, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004e, *Schools 2004*, cat. no. 4221.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004f, *Education and work: Australia,* cat. no. 6227.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004g, *Household use of information technology: 2002 and 2003,* cat. no. 8146.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004h, *Household and family projections Australia: 2001 to 2026*, cat. no. 3236.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004i, *Motor vehicle census,* cat. no. 9309.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005a, *Migration*, *Australia 2003-04*, cat. no. 3412.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005b, *Labour force: January 2005*, cat. no. 6202.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005c, *Housing occupancy and costs, Australia, 2002-03*, cat. no. 4130.0.55.001, ABS, Canberra.

AIHW (Australian Institute of Health and Welfare) 2003, *Australia's welfare 2003,* AIHW cat. no. AUS 41, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004, *Demand for SAAP assistance by homeless people 2002-03: a report from the SAAP national data collection*, AIHW cat. no. HOU 110, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005, *Homeless SAAP clients with a disability 2002-03*, AIHW cat. no. AUS 56, AIHW, Canberra.

Glover J, Watts V & Tennant S 1999, *A social health atlas of Australia, volume 9: Australian Capital Territory*, Public Health Information Development Unit, Adelaide.

GSAHS (Greater Southern Area Health Service) 2005, *Greater southern area* h*ealth services plan 2005*, unpublished report.

WHO (World Health Organization) 2003, *Social determinants of health: The solid facts, 2nd Edition*, World Health Organization, Denmark.

# 3 HEALTH STATUS

**At a Glance**

- Health status indicators suggest that overall, the ACT enjoys a high level of health. In 2001, for instance, about half (54.1%) of all respondents aged 15 years or more in the ACT to the 2001 National Health Survey reported their health status to be 'excellent' or 'very good'.
- Life expectancy at birth in the ACT has increased over the last three decades, largely due to decreases in infant mortality and all-cause mortality. For the period 2001-2003, life expectancy at birth in the ACT was 79.2 years for males and 83.8 years for females. The ACT had the highest life expectancy at birth of all states and territories.
- In 2003, the leading causes of death in the ACT were ischaemic heart disease, cerebrovascular disease and other heart diseases.
- There was an increase in the ACT infant mortality rate in 2003 and 2004 compared to previous years, however, these increases were not statistically significant and the ACT rates did not differ significantly from the rates for Australia in 2003 and 2004.
- There is scope for future health gain in the ACT with further reductions in mortality and increases in life expectancy possible through advances in healthcare technologies, therapies, and disease prevention measures.

Because of the complex nature of measuring health, a range of summary indicators spanning different dimensions of health are presented in this chapter to provide a brief snapshot of health status in the ACT. The indicators presented include mortality-derived measures, information morbidity derived from ACT hospital records, self-reported estimates of disease prevalence and levels of health status derived from survey data.

The majority of the indicators presented are health outcome measures, used to monitor population health over time. Historical trends in mortality, in particular, show where the greatest gains in health have been achieved in the past. By deconstructing these measures and historical trends it is possible to identify opportunities for future health gain.

## 3.1 Life expectancy

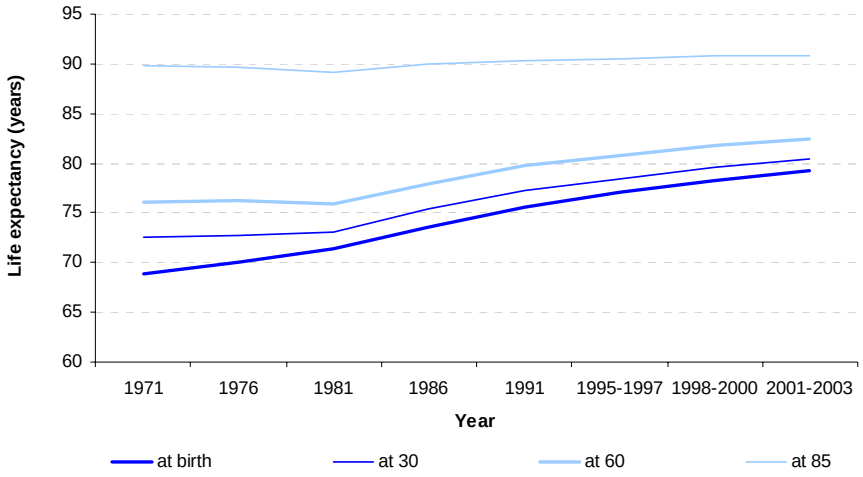
Life expectancy is a key summary measure of population health. Although it is not possible to quantify individual life expectancy with any certainty, it is possible to estimate average life expectancy for an age cohort within a population. The estimate that is derived is defined as the *average* number of years an individual of a given age could be expected to live, if current mortality rates were to continue.

In the ACT, life expectancy has increased for both males and females, at all ages, over the last three decades. For males born in the ACT, life expectancy at birth increased by 10.3 years between 1971 (68.9 years) and the period 2001-2003 (79.2 years) (Figure 3.1). Over the same period, life expectancy at birth for females increased by 7.8 years, from 76.0 years in 1971 to 83.8 years for the period 2001-2003 (Figure 3.2). For both males and females, life expectancy at birth in the ACT was greater than that for all Australia (77.8 years for males; 82.8 years for females) for the period 2001-2003 (ABS 2004).

Decreases in infant mortality and all-cause mortality at younger ages explain a large portion of these increases in life expectancy at birth, between 1971 and 2001. This is largely the result of advances in healthcare technologies, therapies and disease-prevention measures. In addition, advances in the treatment of conditions such as cancer and cardiovascular disease (heart disease and stroke), where male mortality rates have traditionally exceeded female rates, partially explain the greater increase in life expectancy for males. A reduction in road transport deaths (where young males are over-represented) over this period has also contributed to the increase in life expectancy at birth for males (AIHW 2002a).

There were also marked gains in life expectancy for persons reaching the age of 60 years and some improvement for those reaching 85 years, over the 30-year period from 1971. These gains in older age are mainly attributable to advances in treatment and care for people with cancer and cardiovascular disease and the subsequent reductions in mortality (AIHW 2002b). In 1971, males aged 60 years in the ACT could expect to live on average to 76.1 years of age whilst females could expect to live to 80.1 years. For the period 2001–2003, the average life expectancy for males in the ACT aged 60 years was 82.5 years, and 85.3 years for females.

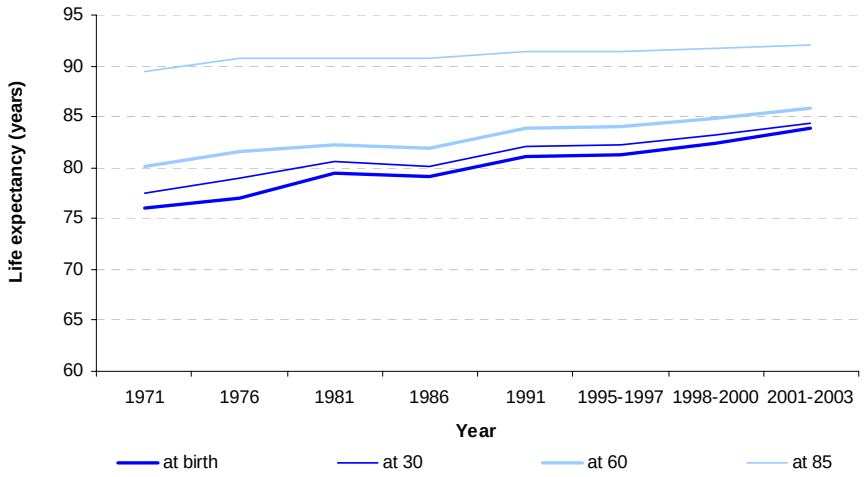
**Figure 3.1: Trends in life expectancy, males, ACT 1971 – 2003[(a)]**




Data source: Australian Bureau of Statistics 2005, information provided by special request.

(a) Data for 1971 to 1991 are based on individual years of deaths data and data for 1995 to 2003 are based on three year aggregated deaths data.

**Figure 3.2: Trends in life expectancy, females, ACT 1971 – 2003[(a)]**




Data source: Australian Bureau of Statistics 2005, information provided by special request.

(a) Data for 1971 to 1991 are based on individual years of deaths data and data for 1995 to 2003 are based on three year aggregated deaths data.

## 3.2 Mortality

In 2003, a total of 1,414 deaths were registered for persons whose usual state of residence was the ACT (Table 3.1), The age-standardised death rate was 5.8 per 1,000 population. Male deaths (751) outnumbered female deaths (663), with a crude death ratio of 1.6:1. There has been an increase in the absolute number of registered deaths for ACT residents since 1993, reflecting the increasing size of the ACT population. However, the age-standardised death rate has decreased by an average of 1.3% a year for the ACT since 1993.

With average life expectancy in the ACT now exceeding 80 years at birth, statistics on premature death are presented here as those deaths that occur at less than 80 years of age. In 2003, there were 797 (56% of all deaths) deaths in the ACT defined as premature. The majority of these were for males (63% of all premature deaths). The leading causes of premature death for males were ischaemic heart disease, lung cancer and suicide. For females, the leading causes of premature death were breast cancer, lung cancer and ischaemic heart disease.

**Table 3.1: Selected summary mortality statistics, ACT, 1993–2003[(a)]**

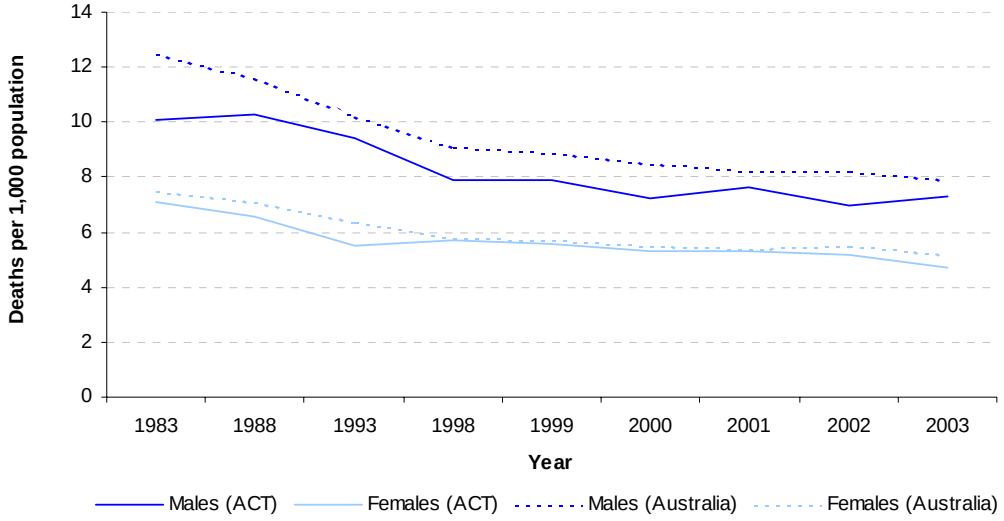
| Statistics | 1993 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|
| **Number of deaths** | | | | | | |
| Males | 632 | 682 | 642 | 729 | 712 | 751 |
| Females | 478 | 649 | 658 | 690 | 661 | 663 |
| Persons | 1,110 | 1,331 | 1,300 | 1,419 | 1,373 | 1,414 |
| **Age-standardised death rate (deaths per 1,000 population)** | | | | | | |
| Males | 9.4 | 7.9 | 7.2 | 7.6 | 7.0 | 7.3 |
| Females | 5.5 | 5.6 | 5.3 | 5.3 | 5.2 | 4.7 |
| Persons | 7.1 | 6.5 | 6.1 | 6.3 | 5.9 | 5.8 |
| **Median age at death (years)** | | | | | | |
| Males | 64.6 | 66.1 | 67.4 | 67.6 | 69.3 | 73.9 |
| Females | 71.3 | 73.2 | 74.2 | 74.9 | 75.2 | 81.5 |
| Persons | 67.5 | 69.5 | 70.8 | 71.7 | 72.3 | 78.1 |
| **Infant mortality rate (deaths at age less than 1 year, per 1,000 live births)** | | | | | | |
| Males | 6.7 | 6.1 | 4.8 | 4.5 | 4.3 | 7.5 |
| Females | 1.8 | 5.2 | 3.5 | 1.5 | 2.5 | 4.0 |
| Persons | 4.3 | 5.6 | 4.2 | 3.0 | 3.4 | 5.8 |
| **Premature deaths (deaths at age less than 80 years)** | | | | | | |
| Males | 484 | 491 | 453 | 498 | 411 | 503 |
| Females | 292 | 334 | 332 | 314 | 315 | 294 |
| Persons | 776 | 825 | 785 | 812 | 726 | 797 |
| **Premature death rate (deaths per 1,000 population aged less than 80 years)** | | | | | | |
| Males | 3.3 | 3.2 | 2.9 | 3.2 | 2.6 | 3.2 |
| Females | 2.0 | 2.2 | 2.1 | 2.0 | 2.0 | 1.8 |
| Persons | 2.6 | 2.7 | 2.5 | 2.6 | 2.3 | 2.5 |

Data sources: ABS 2004; AIHW State & Territory General Record of Incidence of Mortality (GRIM) Books, 2005.

(a) Deaths for 2003 are by year of registration. Deaths for all other years are by year of death.

Overall, mortality rates have declined over time in the ACT and in Australia, with the ACT age-standardised mortality rate consistently below the rate for Australia (Figure 3.3). The reduction in rates has been more pronounced among males than females and largely reflects advances in healthcare technologies, therapies and disease-prevention measures over the last two decades. In particular, there have been significant advances in treatment for conditions where male mortality rates have traditionally far exceeded female rates, such as cardiovascular disease and cancer (both leading causes of mortality) (AIHW 2002a).

**Figure 3.3: Trends in all-cause mortality, ACT & Australia, by sex, 1983–2003**



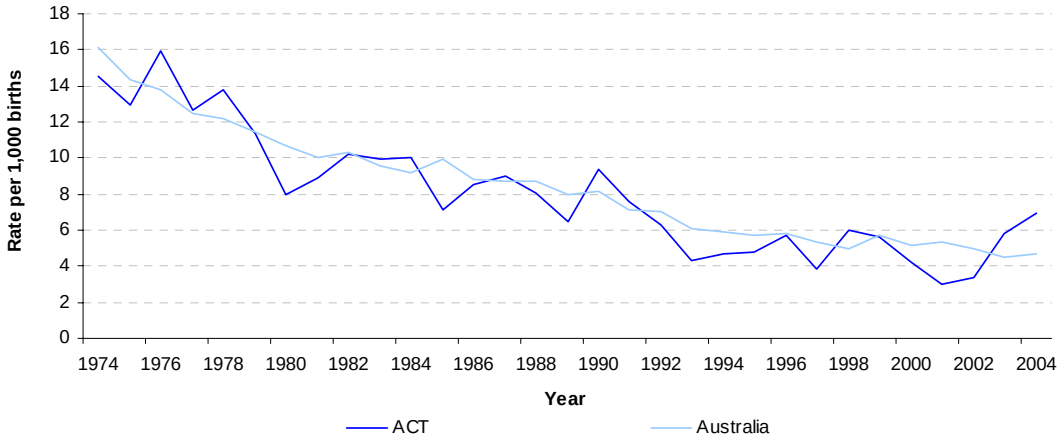

Data source: AIHW State & Territory General Record of Incidence of Mortality (GRIM) Books, 2005.

**Box 3.1: Focus on infant mortality**

Deaths that occur prior to one year of age are defined as infant deaths. The infant mortality rate is a summary statistic derived from the number of deaths in the first year of life divided by the number of live births in a calendar year.

Over the last 30 years, the infant mortality rate has declined (Figure 3.4), largely due to advances in antenatal and neonatal care, as well as a greater understanding of disease aetiology and a greater emphasis on health promotion, education and disease prevention activities (Taylor et al. 1998). Successful public health campaigns aimed at reducing the incidence of sudden infant death syndrome (SIDS), in particular, have had a marked impact on the infant mortality rate since the early 1990s (ACT Health 2006).

**Figure 3.4: Infant mortality rates[(a)], ACT & Australia, 1974 – 2004.**



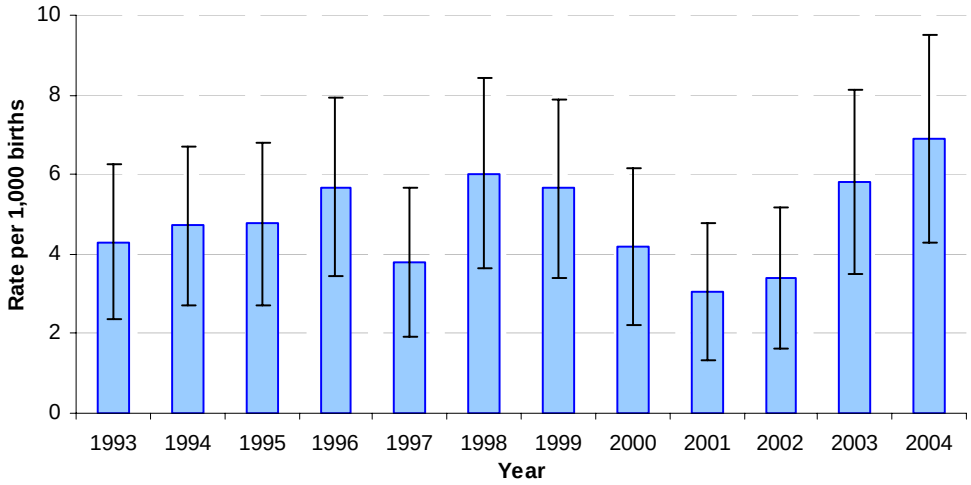

Data sources: ABS 2005a; ABS 2005b; ABS 2004; ABS 2002a; ABS 2002b.

(a) Rates based on number of infant (<12 months) deaths registered in 2004, (where the infant was an ACT, or Australian, resident at the time of death) per 1,000 births (registered to ACT, or Australian, residents in 2004).

Most infant deaths occur during the neonatal period (aged <28 days) from conditions related to immaturity at birth, or as a result of a birth defect, and the infant mortality rate in the ACT largely reflects the number of babies born each year with extremely low birth weights and/or congenital abnormalities. In 2003, for instance, about two thirds of all infant death registrations were due to conditions related to immaturity at birth, or a birth defect. Further reductions in the infant mortality rate are unlikely in the ACT unless there are further advances in medical care that enable more extremely immature infants and infants with severe birth defects to survive.

Like the rate for other small jurisdictions in Australia, the ACT infant mortality rate fluctuates markedly on an annual basis because of the small number of death registrations each year. In 2004, there were 29 ACT resident infant death registrations, compared to 24 in 2003 and 14 in 2002. Figure 3.5 shows the impact of changes in small numbers on annual rates. Although there was an apparent increase in the infant mortality rate in 2003 (5.8, 95% CI 3.5 – 8.1) and again in 2004 (6.9, 95% CI 4.4 – 9.5), these increases were not statistically significant (confidence intervals for 2003 and 2004 overlap with confidence intervals for rates between 1993 and 2002). It is also worth noting that rates for the ACT in 2003 and 2004 did not differ significantly to rates for Australia, with 4.8 deaths registered nationally per 1,000 birth registrations (95% CI 4.5 – 5.0) in 2003 and 4.7 (95% CI 4.4 – 4.9) in 2004 (ABS 2005a).

**Figure 3.5: ACT infant mortality rates[(a)], with 95% confidence intervals, 1993 – 2004.**




Data sources: ABS 2005a; ABS 2005b; ABS 2004; ABS 2003; ABS 2002a; ABS 1998.

(a) Rates based on number of infant (<12 months) deaths registered in 2004, (where the infant was an ACT resident at the time of death) per 1,000 births (registered to ACT residents in 2004).

### 3.2.1 Leading causes of mortality

In 2003, the leading underlying cause of death for residents of the ACT was ischaemic heart disease. There were 134 male deaths and 96 female deaths, accounting for 16.2% of all deaths registered in 2003. Lung cancer was the second most common underlying cause of death for males, accounting for 47 male deaths (6.3% of all male deaths), followed by cerebrovascular disease (43 deaths; 5.7%). For females, cerebrovascular disease was the second leading underlying cause of death in 2003, accounting for 71 female deaths (10.7% of all female deaths in the ACT), followed by other heart diseases (47 deaths; 7.1% of all females deaths).

**Table 3.2: Leading underlying causes of death, by sex, ACT, 2003.**

| | Males | | | Females | | |
|---|---|---|---|---|---|---|
| Rank | Cause of death | Number of deaths | % of all male deaths | Cause of death | Number of deaths | % of all female deaths |
| 1 | Ischaemic heart disease | 134 | 17.8 | Ischaemic heart disease | 96 | 14.5 |
| 2 | Lung cancer | 47 | 6.3 | Cerebrovascular disease | 71 | 10.7 |
| 3 | Cerebrovascular disease | 43 | 5.7 | Other heart diseases | 47 | 7.1 |
| 4 | Other heart diseases | 42 | 5.6 | Dementia and related disorders | 42 | 6.3 |
| 5 | COPD | 32 | 4.3 | Breast cancer | 27 | 4.1 |
| 6 | Prostate cancer | 30 | 4.0 | Lung cancer | 24 | 3.6 |
| 7 | Suicide | 29 | 3.9 | COPD | 24 | 3.6 |
| 8 | Diabetes | 25 | 3.3 | Unknown primary site cancers | 22 | 3.3 |
| 9 | Colorectal cancer | 23 | 3.1 | Dis. of arteries, arterioles and capills | 22 | 3.3 |
| 10 | Unknown primary site cancers | 22 | 2.9 | Colorectal cancer | 17 | 2.6 |
| 11 | Dis. of arteries, arterioles and capills | 20 | 2.7 | Pneumonia & influenza | 14 | 2.1 |
| 12 | Liver diseases | 18 | 2.4 | Ovarian cancer | 12 | 1.8 |
| 13 | Dementia and related disorders | 17 | 2.3 | Diabetes | 11 | 1.7 |
| 14 | Lymphomas | 11 | 1.5 | Lymphomas | 9 | 1.4 |
| 15 | Pneumonia & influenza | 10 | 1.3 | Renal failure | 8 | 1.2 |
| 16 | Land transport accidents | 9 | 1.2 | Pancreatic cancer | 7 | 1.1 |
| 17 | Leukaemia | 9 | 1.2 | Suicide | 6 | 0.9 |
| 18 | Pancreatic cancer | 8 | 1.1 | Stomach cancer | 5 | 0.8 |
| 19 | Septicaemia | 7 | 0.9 | Exposure to unspecified factor | 5 | 0.8 |
| 20 | Stomach cancer | 6 | 0.8 | Land transport accidents | 4 | 0.6 |

Data source*:* Australian Bureau of Statistics deaths data, 2003. Confidential unit record file.

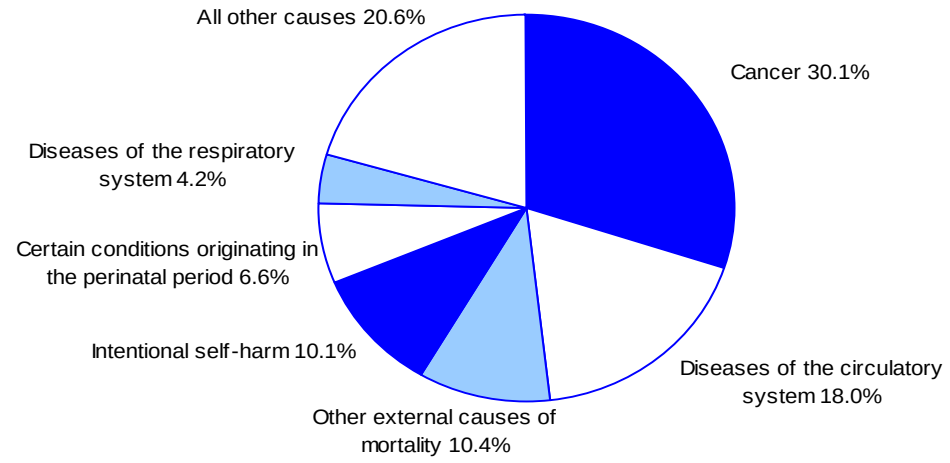
### 3.2.2 Years of life lost

The potential years of life lost (YLL) provide an indication of the impact of premature mortality in a population. While there are a number of methods used to estimate the impact of premature death in a population, this report uses the approximation:

$YLL_{80}$ = 80 (all deaths before this age are deemed premature) – age at death x the number of deaths at each age.

There was a total of 15,515 $YLL_{80}$ due to premature death in 2003 (Figure 3.6). Although the leading causes of $YLL_{80}$ were cancer and cardiovascular disease, they contributed less to the total $YLL_{80}$ than external causes. This reflects the high rate of death for young ACT adults aged 15-44 years from transport accidents and suicide, in comparison to deaths from cancer and cardiovascular disease, which are more likely to occur in older age groups (both transport accidents and suicide are included in *other external causes of mortality*).

**Figure 3.6: Leading causes of years of life lost ($YLL_{80}$), ACT, 2003.**




Data source: ABS deaths data 2003, confidential unit record file.

## 3.3 Self-reported health status

Self-reported health status has been shown to be a reliable, independent predictor of future health service use and survival, complementing more objective measures of health (Idler & Benyamini 1997; Milunpalo et al 1997). The 2001 National Health Survey asked survey respondents to rate their general health as 'excellent', 'very good', 'good', 'fair' or 'poor'. The results of the survey suggest that there was a relationship between age and self-reported health status in the ACT in 2001(Figure 3.7). The proportion of the ACT respondents, aged 15 years or more, reporting 'excellent' or 'very good' health status declined with age and the proportion of respondents reporting 'fair or 'poor' health increased with age.

These patterns are consistent with those observed nationally in 2001, with 51.7% of adult respondents (15 years or more) reporting 'excellent' or 'very good' health status, compared to 54.1% in the ACT (ABS 2002c).

**Figure 3.7: Self-reported health status (adults aged 15 years or more), by age group, ACT, 2001.**


Data source: ABS 2002c.

## 3.4 Morbidity

Table 3.3 presents the proportion of the ACT and Australian population that reported having a long-term condition (which had lasted or was expected to last for six months or more) in the 2001 National Health Survey. Overall, the results of the survey show that ACT respondents reported similar levels of long term conditions as respondents nationally. However, significance testing of survey estimates suggests that a higher proportion of ACT respondents reported having hay fever and allergic rhinitis than respondents nationally.

**Table 3.3: Estimates of the proportion of the population with a long-term condition[(a),(b),] by disease category, ACT & Australia, 2001.**

| | ACT | Australia |
|---|---|---|
| **Certain infectious & parasitic diseases** | ** | 0.9 |
| **Neoplasms** | 1.8* | 1.6 |
| **Diseases of the blood & blood forming organs** | 2.4* | 1.5 |
| **Endocrine, nutritional & metabolic diseases** | | |
| Diabetes mellitus | 3.1 | 2.9 |
| High cholesterol | 5.9 | 6.0 |
| **Mental & behavioural problems** | 8.7 | 9.6 |
| **Diseases of nervous system** | | |
| Epilepsy | ** | 0.6 |
| Migraine | 7.7 | 6.2 |
| Other diseases of the nervous system | 0.8* | 0.9 |
| **Diseases of eye & adnexa** | | |
| Short sightedness | 23.5 | 20.8 |
| Long sightedness | 21.7 | 22.2 |
| Other diseases of the eye & adnexa | 24.2 | 21.1 |
| **Diseases of ear & mastoid** | | |
| Deafness (complete/partial) | 10.6 | 10.6 |
| Other diseases of the ear & mastoid | 3.5 | 3.8 |
| **Diseases of circulatory system** | | |
| Hypertensive disease | 10.5 | 10.1 |
| Ischaemic & other heart disease | 2.2* | 1.9 |
| Other diseases of the circulatory system | 7.6 | 8.3 |
| **Diseases of respiratory system** | | |
| Bronchitis/emphysema | 4.4 | 3.5 |
| Asthma | 12.3 | 11.6 |
| Hayfever & allergic rhinitis | 25.3 | 15.5 |
| Chronic sinusitis | 11.3 | 10.7 |
| **Diseases of the digestive system** | 6.7 | 6.8 |
| **Diseases of the skin & subcutaneous tissue** | 3.7 | 3.4 |
| **Diseases of musculoskeletal system & connective tissue** | | |
| Arthritis | 11.8 | 13.6 |
| Rheumatism | 1.4* | 1.3 |
| Back pain/problems neck/disc disorders | 22.8 | 20.8 |
| Osteoporosis | 1.7* | 1.6 |
| Other diseases of the musculoskeletal system | 5.3 | 5 |
| **Diseases of genito-urinary system** | 3.3 | 3.1 |
| **Congenital malformations, deformations & chromosomal abnormalities** | ** | 0.9 |
| **Symptoms, signs & conditions** | | |
| Allergy (unspecified) | 7.7 | 5.5 |
| **% population with a long-term condition** | 82.1 | 77.9 |

Data source: ABS 2002c.

* Estimate has a relative standard error of between 25% and 50% and should be used with caution.
** Estimate is not presented as it has a relative standard error greater than 50%.
(a) Conditions that have lasted or are expected to last for six months or more.
(b) Percentages are age and sex standardised.

## 3.5 Hospitalisations

Hospital separations describe single episodes of admitted patient care, which may include a total 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 an episode of acute care to rehabilitation) (AIHW 2005).

There were more than 105,000 separations reported from public and private hospitals in the ACT in 2003-04 (Table 3.4), an increase of 12,806 (13.8%) from 2001-02. Public hospital separations increased by 11.2% (7,183) between 2001-02 and 2003-04 and there was a 19.7% increase (5,623) in separations reported from private hospitals in the ACT in the same period.

In the ACT, hospital services are provided to residents of the ACT and to non-ACT residents. The majority (75.8%) of separations in 2003-04 were for ACT residents, with ACT females accounting overall for the majority of separations (39.9%).

The leading principal diagnostic category for hospital separations in the ACT in 2003-04 was 'factors influencing health status and contact with health services'. This category, which includes same day separations for care involving dialysis, chemotherapy and other follow-up examinations, accounted for 32.1% of total separations in 2003-04. Other major contributors to hospitalisations were 'diseases of the digestive system' (including appendicitis, hernias, diseases of the gall bladder, gastritis etc), 'neoplasms', 'diseases of the circulatory system' and 'pregnancy, childbirth and the puerperium'.

**Table 3.4: Total ACT hospital separations and proportion attributable to ACT residents and non-ACT residents, by sex, 2003-04.**

| ICD-10-AM chapter[a] | Total seps. | | ACT residents | | Non-ACT residents | |
|---|---|---|---|---|---|---|
| | | | Male | Female | Male | Female |
| | No. | % | | | | % |
| Certain Infectious and Parasitic Diseases | 1,002 | 0.9 | 43.0 | 41.1 | 9.9 | 6.0 |
| Neoplasms | 7,632 | 7.2 | 37.1 | 37.7 | 13.4 | 11.8 |
| Diseases of the Blood and Blood-Forming Organs | 1,204 | 1.1 | 38.0 | 41.4 | 12.3 | 8.3 |
| Endocrine, Nutritional, and Metabolic Diseases | 2,115 | 2.0 | 45.8 | 35.6 | 10.9 | 7.8 |
| Mental and Behavioural Disorders | 2,756 | 2.6 | 32.1 | 51.6 | 5.3 | 11.1 |
| Diseases of the Nervous System | 1,488 | 1.4 | 33.1 | 44.6 | 11.4 | 11.0 |
| Diseases of the Eye and Adnexa | 2,119 | 2.0 | 30.0 | 47.6 | 9.4 | 13.0 |
| Diseases of the Ear and Mastoid Process | 617 | 0.6 | 38.9 | 33.7 | 15.1 | 12.3 |
| Diseases of the Circulatory System | 6,796 | 6.4 | 39.9 | 27.2 | 21.4 | 11.5 |
| Diseases of the Respiratory System | 4,101 | 3.9 | 41.4 | 39.0 | 10.8 | 8.8 |
| Diseases of the Digestive System | 9,311 | 8.8 | 41.0 | 39.0 | 10.2 | 9.8 |
| Diseases of the Skin and Subcutaneous Tissue | 1,634 | 1.5 | 46.6 | 38.1 | 7.1 | 8.2 |
| Diseases of the Musculoskeletal System and Connective Tissue | 5,784 | 5.5 | 36.4 | 37.3 | 14.1 | 12.3 |
| Diseases of the Genitourinary System | 5,439 | 5.1 | 23.0 | 53.7 | 9.2 | 14.1 |
| Pregnancy, Childbirth, and the Puerperium | 6,664 | 6.3 | 0.0 | 83.0 | 0.0 | 17.0 |
| Certain Conditions Originating in the Perinatal Period | 2,262 | 2.1 | 43.5 | 34.4 | 13.1 | 8.9 |
| Congenital Malformations, Deformations and Chromosomal Abnormalities | 700 | 0.7 | 41.0 | 31.3 | 15.9 | 11.9 |
| Symptoms, Signs and Abnormal Clinical and Laboratory Findings NEC[b] | 3,850 | 3.6 | 38.2 | 42.6 | 9.8 | 9.5 |
| Injury, Poisoning and Certain Other Consequences of External Causes | 6,335 | 6.0 | 41.4 | 30.7 | 18.4 | 9.4 |
| Factors Influencing Health Status and Contact with Health Services | 33,876 | 32.1 | 39.3 | 33.8 | 15.3 | 11.5 |
| **Total** | **105,685** | **100.0** | **35.9** | **39.9** | **12.8** | **11.4** |

Data source: 2003-04 ACT Admitted Patient Care collection. Confidential unit record file.

(a) See Appendix 2 for list of ICD Codes for each chapter heading.
(b) NEC Not elsewhere classified

# References


ABS (Australian Bureau of Statistics) 1998, *Demography ACT 1997*, cat no 3311.8, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002a, *Demography ACT 2001*, cat no 3311.8, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002b, *Deaths Australia 2001*, cat no 3302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002c, *2001 National health survey: Summary of results*, cat no 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2003, *Deaths Australia 2002*, cat no 3302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004, *Deaths Australia 2003*, cat no 3302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005a, *Deaths Australia 2004*, cat no 3302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005b, *Births Australia 2004*, cat no 3301.0, ABS, Canberra.

ACT Health 2003, *Perinatal deaths in the ACT 1991-2000*, Health series no 30, ACT Health, Canberra.

ACT Health 2006, *Review of ACT child deaths*, Health series no 38, ACT Health, Canberra.

AIHW (Australian Institute of Health and Welfare) 2002a, *Trends in deaths: Analysis of Australia data 1987–1998 with updates to 2000*, cat no PHE 40, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2002b, *Older Australia at a glance 2002*, (3rd edition), cat no AGE 25, AIHW & DOHA, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005, S*tate & territory general record of incidence of mortality (GRIM) books*, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005, *Australian hospital statistics 2003–04*, cat no HSE 37, AIHW, Canberra.

Idler EL & Benyamini Y 1997, **'**Self-rated health and mortality: a review of twenty-seven community studies', *J Health Soc Behav* vol 38(1), pp 21-37.

Milunpalo S, Vuori I, Oja P, Pasanen M & Urponen H 1997, 'Self-rated health status as a health measure: the predictive value of self-reported health status on the use of physician services and on mortality in the working-age population', *J Clin Epidemiol vol 50(5),*
pp 517-28.

Taylor R, Lewis M & Powles J 1998, 'Australian mortality decline: all cause mortality 1788–1990', *Aust NZ Journal of Public Health,* vol 22(1), pp 27–36.

# 4 LIFESTYLE AND HEALTH

**At a Glance**

- In 2004, survey estimates suggested that just over half (55.2%) of all adults (aged 18 years or more) in the ACT were engaging in sufficient levels of physical activity to meet national guidelines and about one in ten (10.8%) were physically inactive. Survey estimates also suggest that physical activity levels in the ACT are slightly higher than activity levels nationally, although they have declined in recent years.
- Survey results suggest that about one in ten (10.4%) adults (aged 19 years or more) in the ACT consumed the recommended minimum daily serves of vegetables in 2004; about half (51.3%) consumed the recommended minimum daily serves of fruit and about half (53.6%) consumed low fat milk, as recommended in the Dietary Guidelines for Australians. Both over-consumption and food security have emerged as important issues for the ACT in recent years.
- Survey results suggest that about half (47.8%) of all adults aged between 18 and 64 years in the ACT were either overweight or obese in 2004. Survey results also suggest that the proportion of overweight and obese adults in the ACT has increased in recent years. The health benefits of reducing overweight and obesity in residents, through a combination of regular physical activity and good nutrition, are considerable.
- Tobacco smoking is the single largest preventable cause of premature death and ill health in Australia, so there is considerable scope for health gain in encouraging people not to take-up smoking and assisting smokers to cease smoking. Survey estimates suggest that about one in five (20.4%) adults in the ACT were smokers in 2004, which was consistent with results for Australia. Survey estimates also suggest that there has been a decrease in the prevalence of smoking among ACT secondary students in recent years.
- Survey estimates suggest that the prevalence of alcohol consumption in the ACT has not changed in recent years. According to the results of the 2004 NDSHS, about one in ten (9.1%) adults (aged 14 years or more) in the ACT consumed alcohol on a daily basis in 2004, consistent with the estimate in 2001, and the estimate for Australia in 2004.
- Survey estimates suggest that the prevalence of illicit substance use over a 12-month period has not changed in recent years in the ACT. According to the results of the NDSHS, the 12-month prevalence of use of any illicit substance, marijuana/cannabis and meth/amphetamines did not change between 2001 and 2004 in the ACT. In 2004, 17.6% of ACT respondents surveyed in the NDSHS reported using at least one illicit substance in the previous 12 months, 14.0% reported using marijuana/cannabis, 6.0% reported using ecstasy and 4.3% reported using meth/amphetamines.
- Eighty per cent of injecting drug users in the ACT who were surveyed in the ANSPS in 2003 tested positive for hepatitis C. Heroin and amphetamines were the most common drugs to have been injected and 27% of injecting drug users reported sharing needles and syringes at least once in the previous month.
- Survey results suggest sun protection practices among ACT secondary students have declined 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.
- There has been considerable health gain in the area of sexual health in recent decades, largely due to successful health promoting activities and screening programs. There is scope for further health gain in the ACT by increasing participation in the cervical screening program and encouraging safe sex practices.

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

This section of the report presents a series of indicators profiling a variety of lifestyle behaviours that impact on health. The data presented has largely been derived from population health surveys and includes the most recent results available for the ACT. Note that the statistical significance ($p<0.05$) of survey estimates has been tested, where possible, to determine the likelihood of patterns and trends and are reported in the text (see Appendix 1: Methods for further information). Comparable results for Australia have been tabled where information is available, and wherever possible, the data are specific to the period covered by the report (1 July 2002 to 30 June 2004).

## 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. However, research has shown that physical inactivity is an important health issue, accounting for 6.7% of the burden of disease and injury in Australia (Mathers et al 1999). This is an area of concern, providing scope for future health gain in the ACT.

This section includes information about physical activity levels in adults and compares survey results to national guidelines. In order to maintain health, the *National Physical Activity Guidelines for Australians* recommend at least 30 minutes of moderate intensity activity on most, preferably all days (DoHAC 1999). Moderate intensity activity includes brisk walking, swimming, cycling and dancing.

For information on physical activity in children, see Chapter 15: Maternal, Infant & Child Health. Further detail about physical activity levels in older adults (aged 65 years or more) is contained in Chapter 16: The Health of Older People in the ACT. Physical activity in adolescents is discussed in a recent publication that is available from the Population Health Research Centre, ACT Health (2004b).

### 4.1.1 Physical activity and inactivity 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 physical 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).

The results of national surveys suggest that ACT physical activity levels are slightly higher than activity levels nationally (ACT Health 2002a). However, the results of the most recent ABS National Health Surveys suggest that activity levels in the ACT have declined in recent years. Significance testing of survey estimates suggest that moderate levels of physical activity among adults (aged 18 years or more) in the ACT were similar between 1995 (26.8%, 95% CI: 25.3 – 28.3) and 2001 (30.2%, 95% CI: 27.8 - 32.6), but there were decreases in levels of vigorous physical activity between 1995 (10.7%, 95% CI: 9.7 – 11.7) and 2001 (8.1%, 95% CI: 6.7 - 9.5). The results of the 2005 National Health Survey will provide further insights into trends in physical activity levels when they become available. These results will be reported in the next Chief Health Officer's Report, which will cover the period 1 July 2004 to 30 June 2006.

The 2004 ACT SNAPS (Smoking, Nutrition, Alcohol and Physical Activity Survey) survey provides the most recent information available on physical activity levels in the ACT (Table 4.1). More than half (55.2%) of all respondents to the survey, aged 18 years or more, reported undertaking sufficient physical activity in the week before the survey to meet national guidelines (sufficient activity was defined as 150 minutes of moderate activity, or its equivalent, undertaken over at least five occasions in the week before the survey). However, about one in ten (10.8%) respondents indicated that they were inactive during the week before the survey (inactivity was defined as having no reported moderate or vigorous activity).

Significance testing of survey estimates suggests the proportion of respondents reporting sufficient activity to meet guidelines varied by age group and sex (Table 4.1). A higher proportion of males (58.5%) reported sufficient activity compared to females (52.0%,) and respondents aged 18-24 years (69.5%) were more likely to report sufficient activity than respondents aged 65 years or more (39.9%). However, significance testing of survey estimates suggests the proportion of respondents reporting sufficient activity by SEIFA quintile (this is an indicator of relative socio-economic disadvantage, based on the geographical area where survey respondents lived) was similar between quintiles, in 2004.

Significance testing of survey estimates also suggests that although the proportion of respondents reporting inactivity in the week before the survey varied significantly by age group, levels of inactivity did not vary significantly by sex or SEIFA quintile in 2004 (Table 4.1).

**Table 4.1: Proportion of the population, aged 18 years or more, by physical activity level[(a)], ACT, 2004.**

| | Inactive | | Insufficient | | Sufficient | |
|---|---|---|---|---|---|---|
| | % | 95%CI | % | 95%CI | % | 95%CI |
| ***Sex*** | | | | | | |
| Males | 10.6 | (8.1 - 13.1) | 30.9 | (27.2 - 34.6) | 58.5 | (54.5 - 62.5) |
| Females | 10.9 | (8.4 - 13.4) | 37.1 | (33.3 - 40.9) | 52.0 | (48.1 - 55.9) |
| Persons | 10.8 | (9.0 - 12.6) | 34.0 | (31.3 - 36.7) | 55.2 | (52.4 - 58.0) |
| ***Age group*** | | | | | | |
| 18-24 years | 7.4 | (3.7 - 11.1) | 23.2 | (17.2 - 29.2) | 69.5 | (63.0 - 76.0) |
| 25-34 years | 7.2 | (4.0 - 10.4) | 34.3 | (28.4 - 40.2) | 58.6 | (52.5 - 64.7) |
| 35-44 years | 7.9 | (4.5 - 11.3) | 38.1 | (31.9 - 44.3) | 54.0 | (47.7 - 60.3) |
| 45-54 years | 9.3 | (5.5 - 13.1) | 37.3 | (31.0 - 43.6) | 53.3 | (46.8 - 59.8) |
| 55-64 years | 12.1 | (7.0 - 17.2) | 36.3 | (28.8 - 43.8) | 51.6 | (43.8 - 59.4) |
| 65 years or more | 26.4 | (19.3 - 33.5) | 33.8 | (26.2 - 41.4) | 39.9 | (32.0 - 47.8) |
| ***SEIFA quintile*** [(b)] | | | | | | |
| 1st quintile (most disadvantaged) | 13.3 | (9.0 - 17.6) | 38.3 | (32.1 - 44.5) | 48.3 | (42.0 - 54.6) |
| 2nd quintile | 12.9 | (8.0 - 17.8) | 33.7 | (26.8 - 40.6) | 53.4 | (46.1 - 60.7) |
| 3rd quintile | 9.4 | (5.9 - 12.9) | 32.7 | (27.1 - 38.3) | 57.9 | (52.0 - 63.8) |
| 4th quintile | 9.9 | (5.8 - 14.0) | 35.5 | (28.9 - 42.1) | 54.7 | (47.9 - 61.5) |
| 5th quintile (least disadvantaged) | 9.0 | (5.9 - 12.1) | 31.4 | (26.3 - 36.5) | 59.6 | (54.2 - 65.0) |

Data source: 2004 ACT SNAPS Survey, confidential unit record file.

(a) Physical activity levels are defined as:
Inactive - did not report doing any moderate or vigorous physical activity in the last week.
Insufficient - did some moderate or vigorous physical activity in the last week, but not sufficient to meet guidelines.
Sufficient - reported doing at least 150 minutes moderate activity (or its equivalent) on at least five occasions in the last week – this level meets the guidelines.
(b) The 2001 socio-economic indexes for areas (SEIFA) is reported here by quintile.

### 4.1.2 Services and initiatives

ACT Health is represented on the Strategic Intergovernmental Forum on Physical Activity and Health (SIGPAH), under the auspices of the National Public Health Partnership (NPHP). SIGPAH is comprised of representation from all state and territory health departments, the Commonwealth Department of Health and Ageing, the Australian Sports Commission and the Australian Institute of Health and Welfare. SIGPAH is a collaborative body established to coordinate a national approach in supporting health promoting physical activity in Australia.

In 2003, SIGPAH commenced the development of a health sector national physical activity action plan, incorporating an update of evidence related to best practice approaches to promoting physical activity. ACT Health held local consultations on the draft plan in May 2004. The final report *Be Active Australia: A Framework for Health Sector Action for Physical Activity 2005 -2010* (SIGPAH) is soon to be released.

At the local level, ACT Health implemented several physical activity initiatives over the period 2002/03 – 2003/04. These included:

- Funding the development of *"Keep Moving",* a health promotion pamphlet targeting inactive older people who are contemplating being more active.
- The release of the report, *Preventing injury in older people: Fear of falling and physical activity*. This report looked at participation in physical activity; barriers to physical activity; and, fear of falling.
- The commencement of the *10Kaday program.* This program, offered to staff in ACT government agencies, encourages participants to walk 10 000 steps each day for better health.
- The provision of funding for the Healthpact 9th Australian Masters Games.

## 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. In recent years, food security and over-consumption have emerged as important dietary issues (AIHW 2004a). Both of these issues are discussed in this section of the report because of their potential for health gain.

This section also includes a profile of dietary behaviours in the ACT. The information on dietary behaviours for the ACT has been derived from surveys and the results compared to national guidelines. The NHMRC *Dietary Guidelines for Australian Adults* (2003) 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. The guide recommends consuming a high level of vegetables, fruit, cereals, legumes and nuts, while limiting the consumption of saturated fat in the diet. Five daily serves of vegetables and two daily serves of fruit are recommended for men and women aged 19 years or more. Milk is a source of saturated fat and the dietary guidelines recommend the use of low fat, or skim milk for adults.

This section of the report includes information about adult nutrition in the ACT. For information about nutrition in children, see Chapter 15: Maternal, Infant & Child Health and further detail about nutrition in older adults (aged 65 years or more) is contained in Chapter 16: The Health of Older People in the ACT. Nutrition in adolescents is discussed in a recent publication that is available from the Population Health Research Centre, ACT Health (2004b).

### 4.2.1 Nutrition status

Survey estimates of vegetable and fruit consumption and use of low fat milk by adults have been derived from the 2004 SNAPS survey. There is no comparable trend data available for the ACT.

#### 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. However, rates of vegetable consumption for the ACT are consistent with rates for the Australian population (ABS 2002a, 2002b).

The results of the 2004 ACT SNAPS survey (Table 4.2) show that only about one in ten (10.4%) respondents, aged 19 years or more, reported usually consuming sufficient daily serves of vegetables to meet dietary guidelines. Significance testing of survey estimates suggests the proportion of respondents who reported consuming sufficient daily serves of vegetables to meet dietary guidelines varied significantly by age group, but did not vary significantly by sex or SEIFA quintile.

## Fruit consumption

Survey estimates suggest that only about half (51.3%) the adult (aged 19 years or more) ACT population consume sufficient (two serves a day) fruit each day to meet dietary guidelines (Table 4.2). However, rates of fruit consumption for the ACT are consistent with rates for the Australian population (ABS 2002a, 2002b).

Significance testing of survey estimates derived from the 2004 ACT SNAPS survey suggests the proportion of respondents who reported consuming sufficient daily serves of fruit to meet dietary guidelines varied significantly by age group and sex, but did not vary significantly by SEIFA quintile.

## Milk consumption

Table 4.2 shows that about half (53.6%) of the respondents to the 2004 ACT SNAPS survey, aged 19 years or more, reported low fat milk as the milk they usually consume - as recommended in the guidelines. Significance testing of survey estimates suggests the proportion of respondents who reported the usual use of low fat milk varied significantly by age group and sex, but did not vary significantly by SEIFA quintile.

**Table 4.2: Proportion of adults (aged 19 years or more) reporting the usual use of low fat milk and recommended daily serves of fruit and vegetables[(a)], ACT, 2004.**

| | At least five serves of vegetables | | At least two serves of fruit | | Use of low fat milk | |
|---|---|---|---|---|---|---|
| | % | 95%CI | % | 95%CI | % | 95%CI |
| ***Sex*** | | | | | | |
| Males | 9.3 | (6.9 - 11.7) | 45.1 | (41.1 - 49.1) | 45.5 | (41.5 - 49.5) |
| Females | 11.5 | (8.9 - 14.1) | 57.3 | (53.3 - 61.3) | 61.5 | (57.6 - 65.4) |
| Persons | 10.4 | (8.7 - 12.1) | 51.3 | (48.4 - 54.2) | 53.6 | (50.8 - 56.4) |
| ***Age group*** | | | | | | |
| 19-24 years | 10.2 | (5.5 - 14.9) | 40.4 | (32.7 - 48.1) | 38.9 | (31.3 - 46.5) |
| 25-34 years | 5.2 | (2.4 - 7.9) | 41.6 | (35.5 - 47.7) | 52.4 | (46.2 - 59.0) |
| 35-44 years | 8.8 | (5.2 - 12.4) | 52.9 | (46.6 - 59.2) | 48.1 | (41.8 - 54.4) |
| 45-54 years | 13.2 | (8.8 - 17.6) | 55.1 | (48.6 - 61.6) | 55.1 | (48.6 - 61.6) |
| 55-64 years | 10.8 | (6.0 - 15.6) | 56.7 | (48.9 - 64.5) | 68.2 | (60.9 - 75.5) |
| 65 years or more | 17.6 | (11.5 - 23.7) | 65.5 | (57.8 - 73.2) | 62.2 | (54.4 - 70.0) |
| ***SEIFA quintile*** [(b)] | | | | | | |
| 1st quintile (most disadvantaged) | 8.5 | (4.9 - 12.1) | 44.3 | (37.9 - 50.7) | 55.3 | (49.0 - 61.6) |
| 2nd quintile | 9.8 | (5.4 - 14.2) | 48.3 | (40.8 - 55.8) | 46.5 | (39.0 - 54.0) |
| 3rd quintile | 11.3 | (7.4 - 15.2) | 51.8 | (45.7 - 57.9) | 52.7 | (46.6 - 58.8) |
| 4th quintile | 11.9 | (7.4 - 16.4) | 56.7 | (49.8 - 63.6) | 52.0 | (45.1 - 58.9) |
| 5th quintile (least disadvantaged) | 10.3 | (6.9 - 13.7) | 54.5 | (49.0 - 60.0) | 58.3 | (52.8 - 63.8) |

Data source: 2004 ACT SNAPS Survey, confidential unit record file.

(a) NHMRC 2003, *Dietary guidelines for Australian adults*, NHMRC, Canberra.
(b) The 2001 socio-economic indexes for areas (SEIFA) is reported here by quintile.

## Undernutrition and food security

Research undertaken by the ACT Council of Social Services (ACTCOSS) has identified food security as an important issue for vulnerable residents in the ACT. There are people in the ACT who experience hunger as a result of having insufficient food, or they have a diet that is nutritionally inadequate. ACTCOSS has found that many residents relied on emergency food relief and meals provided by local community groups. During 2002-03, 47% of the total emergency relief expenditure in the ACT was spent on food (Lilburn 2005). The accessibility of nutritious, reasonably priced food in the ACT is an important issue for vulnerable groups, with implications for future health gain.

Both the ACT Health Promotion Board, known in the community as Healthpact, and ACT Community Health support initiatives to improve the accessibility of safe nutritious foods to vulnerable groups in the ACT (see section 4.2.2 Nutrition services and initiatives for further information).

### 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 over this period. In the ACT, eating patterns and changes in energy intake over time have not been studied to this level of detail, but the following section 4.3 Healthy Weight provides insights into the extent of the issue and scope for health gain in the ACT.

## 4.2.2 Services and initiatives

The *ACT Health Action Plan (*ACT Health 2002b) identifies four nutrition priority areas for action for future health gain:

- Prevention of overweight and obesity in children and prevention of further weight gain in adults.
- Increasing the consumption of vegetables, legumes and fruit.
- Promotion of optimal nutrition for women, infants and children.
- Improving nutrition amongst vulnerable groups.

These action areas were incorporated into the development of *Eat Well ACT: A Public Health Nutrition Plan 2004 –2010* (ACT Health 2004a). This document provides a framework, strategies and a set of priorities for public health nutrition in the ACT.

The ACT Nutrition Advisory Group supports a coordinated approach to addressing national and ACT public health nutrition issues. During 2002-03, this group focussed on the development of strategies to increase the consumption of fruit and vegetables in the ACT.

During 2002/03-2003/04, ACT Health delivered a number of programs targeting specific population groups. These programs include:

- *Aboriginal and Torres Strait Islander Nutrition Project*: Family Fun at Meals Time program with Young Mothers Group at Gugan Gulwan.
- *Tuckatalk in Schools: A* program aimed to improve the nutritional health of children at three targeted primary schools and feeder preschools.
- *Heart Fare*: A program for people with cardiovascular risk factors with a focus on diet and healthy weight.
- *Men's Fare and Share:* A program that provides skills in meal preparation and cooking to men who are carers or who are recently bereaved.
- *Youth Nutrition:* A program aimed at improving the nutrition of young people (12-25 years) identified as being at risk. It includes *Foodwize,* a nutrition manual for youth workers.
- *ACT Health Vitality Campaign:* This program incorporated TV and media advertising, supermarket tours targeting isolated older people, information seminars delivered by dieticians on healthy eating, shopping tips and reading food labels and the development of children's resource books promoting healthy eating and physical activity.

In addition to these programs ACT Health provides a range of individual and group client services both within the hospital and community setting. These include: nutrition counselling and advice; coordination of special dietary needs; infant formulas and enteral feeding programs; education sessions, and skills based activities to improve nutrition.

Finally, the ACT Health Promotion Board, has funded the ACTCOSS Health Inequalities Action Model, which supports disadvantaged communities in North Canberra to improve their health. A key focus area of this project, which takes a social determinants approach to health, is increasing awareness of nutritional issues and promoting linkages between the community and government to address these issues. Part of the project has included the establishment of a forum for community service providers of free and subsidised food (e.g. meals on wheels, breakfast clubs, drop in lunch events) to address structural barriers associated with the costs of foods for "free food" services.

## 4.3 Healthy weight

The increasing prevalence of excess weight (overweight and obesity) has emerged in recent years as an important international issue (AIHW 2004a; ABS 1998a, 2002a, 2002b; WHO 2000). Overweight, and obesity in particular, are modifiable risk factors for premature death and a range of diseases, and as such, are a significant public health issue. 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.

This section includes information about healthy weight issues in adults. For information about healthy weight issues in children see Chapter 15: Maternal, Infant & Child Health and further detail about healthy weight issues in older adults (aged 65 years or more) is contained in Chapter 16: The Health of Older People in the ACT.

### 4.3.1 Healthy weight levels

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 and is calculated as weight in kilograms, divided by height in metres squared ($kg/m^2$). 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 1998b; Flood et al 2000).

Estimates based on self-reported heights and weights, derived from the 2004 ACT SNAPS survey, suggest that about 47.8% of ACT adults aged 18-64 years were either overweight or obese, about half (50.1%) were normal weight and 2.1% were underweight in 2004 (Table 4.3 & Table 4.4). Comparable figures for this age range in the ACT are not available for earlier years, however, estimates based on self-reported data from the 1995 and 2001 National Health Surveys suggest that there has been an increase in the proportion of overweight and obese adults (18 years or more) in the ACT in recent years. In 1995, 25% of adult ACT respondents reported being overweight and 7% reported being obese, but by 2001, 30.2% reported being overweight and 11.8% reported being obese (ABS 2002b, 2002c). A similar increase in excess weight estimates derived from the 1995 and 2001 National Health Surveys was observed for Australia (2002a).

**Table 4.3: Proportion of the population aged 18 to 64 years by BMI category[(a)], ACT, 2004.**

| Category | BMI threshold | % | 95%CI |
|---|---|---|---|
| Underweight | (BMI <18.5) | 2.1 | (1.2 - 3.0) |
| Normal | (BMI 18.5 - 24.9) | 50.1 | (47.0 - 53.2) |
| Overweight | (BMI 25.0 - 29.9) | 32.7 | (29.8 - 35.6) |
| Obese | (BMI 30.0+) | 15.1 | (12.9 - 17.3) |

Data Source: 2004 ACT SNAPS Survey, confidential unit record file.

(a) Self-reported heights and weights used to calculate BMIs. WHO & NHMRC category thresholds for body mass index (kg/m$^2$).

Significance testing of survey estimates from the 2004 ACT SNAPS survey suggests the proportion of respondents who reported excess weight varied by age group and sex, but did not vary significantly by SEIFA quintile (Table 4.4).

**Table 4.4: Proportion of the population aged 18 to 64 years overweight or obese[(a)], ACT, 2004.**

| | % | 95%CI |
|---|---|---|
| **Age group** | | |
| 18-24 years | 22.3 | (16.1 - 28.5) |
| 25-34 years | 43.0 | (36.8 - 49.2) |
| 35-44 years | 55.0 | (48.6 - 61.4) |
| 45-54 years | 59.4 | (52.8 - 66.0) |
| 55-64 years | 57.1 | (49.3 - 64.9) |
| **Sex** | | |
| Males | 54.0 | (49.7 - 58.3) |
| Females | 41.2 | (36.9 - 45.5) |
| Persons | 47.8 | (44.7 - 50.9) |
| **SEIFA quintile[(b)]** | | |
| 1st quintile (most disadvantaged) | 53.9 | (47.1 - 60.7) |
| 2nd quintile | 45.9 | (38.1 - 53.7) |
| 3rd quintile | 49.8 | (43.2 - 56.4) |
| 4th quintile | 47.0 | (39.4 - 54.6) |
| 5th quintile (least disadvantaged) | 43.4 | (37.5 - 49.3) |

Data source: 2004 ACT SNAPS Survey, confidential unit record file.

(a) Self-reported heights and weights used to calculate BMIs.
(b) 2001 socio-economic index for areas (SEIFA) index of relative disadvantage (IRSD) by quintile.

### 4.3.2 Initiatives

Over the period 2002-03 to 2003-04, ACT Health coordinated a whole of government response to the report of the National Obesity Taskforce (2003), *Healthy Weight 2008: The National Action Agenda for Children and Young People and their Families.* In addition, ACT Health established a whole of government Healthy Weight Coordination Group to improve coordination of healthy weight initiatives and activities in the ACT. The National Obesity Taskforce work will focus in future on obesity in older Australians and Aboriginal and Torres Strait Islander peoples.

In 2004 several ACT initiatives were launched targeting healthy weight issues in children. Information on these initiatives is provided in Chapter 15: Maternal, Infant and Child Health.

## 4.4 Tobacco Use

Tobacco smoking is the single largest preventable cause of premature death and ill-health in Australia, and estimates suggest that of all modifiable risk factors, tobacco is associated with the greatest disease burden (Mathers et al 1999; Ridolpho & Stevenson 2001). Causal relationships have been established between tobacco smoking and a range of diseases including cancer, respiratory and cardiovascular diseases, and there is strong evidence that environmental tobacco smoke (ETS), or passive smoking, causes serious health effects (Mathers et al 1999; NHMRC 1997).

### 4.4.1 Levels of tobacco use

#### Tobacco use among adults

The results the 2004 National Drug Strategy Household Survey (NDSHS) suggest that about one in five (20.6%) people (aged 14 years or more) in the ACT were smokers in 2004 (Table 4.5). Significance testing of survey estimates suggests that this was consistent with results for Australia (20.6%) in 2004. Significance testing also suggests that the proportion of respondents in the ACT who reported daily smoking in 2004 (16.1%) was consistent with results for the ACT in 2001 (18.4%) and results for Australia in 2004 (17.4%).

The results of the 2004 NDSHS survey also suggest that about 4.5% people in the ACT smoked either weekly or less than weekly, about a quarter (25.6%) were ex-smokers and about half (53.7%) had never smoked (AIHW 2002, 2005a).

**Table 4.5: Tobacco smoking status, proportion of the population aged 14 years or more, ACT & Australia, 2001 & 2004.**

| | ACT | | | | Australia | | | |
|---|---|---|---|---|---|---|---|---|
| | 2001 | 95% CI | 2004 | 95% CI | 2001 | 95% CI | 2004 | 95% CI |
| **Daily** | 18.4 | (16.0 - 20.8) | 16.1 | (13.4 - 18.8) | 19.5 | (18.8 - 20.2) | 17.4 | (16.8 - 18.0) |
| **Weekly** | 1.8 | (1.0 - 2.6) | 2.3 | (1.2 - 3.4) | 1.6 | (1.4 - 1.8) | 1.6 | (1.4 - 1.8) |
| **Less than weekly** | 2.3 | (1.4 - 3.2) | 2.2 | (1.1 - 3.3) | 2.0 | (1.8 - 2.2) | 1.6 | (1.4 - 1.8) |
| **Ex-smoker[a]** | 27.7 | (24.9 - 30.5) | 25.6 | (22.4 - 28.8) | 26.2 | (25.4 - 27.0) | 26.4 | (25.7 - 27.1) |
| **Never smoked[b]** | 49.8 | (46.7 - 52.9) | 53.7 | (50.1 - 57.3) | 50.6 | (49.7 - 51.5) | 52.9 | (52.2 - 53.6) |

Data sources: AIHW 2002; AIHW 2005a.

(a) Smoked at least 100 cigarettes (or equivalent amount of tobacco) in lifetime, but no longer smokes.
(b) Never smoked more than 100 cigarettes (or equivalent amount of tobacco).

Estimates derived from the 2004 ACT Smoking, Nutrition, Alcohol and Physical Activity Survey (SNAPS) were similar to estimates derived from the 2004 NDSHS survey, with 14.7% (95% CI 12.7 – 16.7) of respondents aged 18 years or more identifying themselves as daily smokers, about a quarter (24.3%, 95% CI 21.9 – 26.7) identifying as ex-smokers and almost half (47.0%, 95% CI 44.2 – 49.8) identifying as non-smokers.

#### Tobacco use among young people

The results of the 2004 ACT SNAPS survey suggest that one in five (20.0%, 95% CI: 14.3 – 25.7) young people (aged 18-24 years) in the ACT were daily smokers in 2004. Significance testing of estimates from the 2004 ACT SNAPS survey suggests the proportion of young people who reported being daily smokers did not vary by sex (males: 23.2%, females: 19.0%).

Significance testing of estimates from the 2002 Australian Secondary Student Alcohol and Drug (ASSAD) survey suggests that recent smoking (smoked at least once in the week before the survey) rates among secondary students in the ACT declined by about 25% between 1996 (20.4%) and 2002 (15.3%). Nationally, there was a 12.5% decline in the proportion of secondary students reporting recent smoking between 1996 (16%) and 2002 (14%) (Hill et al 1999; White & Hayman 2004).

Although recent smoking rates did not vary by sex in 2002, there was a decline for females between 1996 (24.0%) and 2002 (16.0%). Significance testing also suggests that older students (16 to 17 years) (17.8%) were more likely to report recent smoking than younger students (12 to15 years) (14.1%) in 2002, however, there was a decline in the proportion of older students who reported recent smoking between 1996 (28.6%) and 2002 (Table 4.6) (ACT Health 2004b).

**Table 4.6: Proportion of ACT secondary students (12-17 years) who reported recent[(a)] smoking, by age and sex, 1996, 1999 & 2002.**

| | 1996 | 95% CI | 1999 | 95% CI | 2002 | 95% CI |
|---|---|---|---|---|---|---|
| **Age** | | | | | | |
| 12-15 years | 16.9 | (14.8 - 18.9) | 16.3 | (14.3 - 18.3) | 14.1 | (11.9 - 16.2) |
| 16-17 years | 28.6 | (25.8 - 31.4) | 29.3 | (26.3 - 32.3) | 17.8 | (14.9 - 20.7) |
| | | | | | | |
| **Sex** | | | | | | |
| Males | 16.9 | (14.7 - 19.2) | 18.2 | (16.0 - 20.4) | 14.6 | (12.3 - 16.9) |
| Females | 24.0 | (21.6 - 26.4) | 22.8 | (20.2 - 25.5) | 16.0 | (13.4 - 18.5) |
| Persons | 20.4 | (18.8 - 22.1) | 20.5 | (18.8 - 22.2) | 15.3 | (13.6 - 17.0) |

Data source: 1996, 1999 & 2002 Australian Secondary Student Alcohol and Drug Survey (ASSAD), confidential unit record file.

(a) Smoked at least once in the week before the survey.

In 2002, respondents to the ASSAD survey who reported that they had tried smoking at least once in their lifetime were asked where they usually smoked. ACT secondary students reported smoking in a variety of places including, dance venues, dance parties and nightclubs (14.6%, 95% CI: 9.5 – 19.7), parties (13.8%, 95% CI: 8.8 – 18.8), at a friend's home (10.8%, 95% CI: 6.3 – 15.3), at home (9.9%, 95% CI: 5.6 – 14.2), and about one in ten (10.8%, 95% CI: 6.3 – 15.3) reported that they usually smoked on school grounds during school hours (ACT Health 2004b).

Respondents to the 2002 ASSAD survey who reported smoking in the week before the survey (recent smokers) were also asked how many cigarettes they had smoked in the last week. Forty-three per cent of students who smoked in the week before the survey reported smoking seven cigarettes or less and a further 21.3% reported smoking between seven and 25 cigarettes. Overall, students who smoked in the week before the survey reported smoking an average of 29 cigarettes (ACT Health 2004b).

Significance testing suggests that there was a decrease in the proportion of recent smokers who purchased their last cigarette from a retailer themselves between 1996 (25.8%) and 2002 (19.1%). At the same time, there was an increase in the proportion of recent smokers who got someone else to purchase their last cigarette for them, up from 15.7% in 1996 to 21% in 2002.

Further information about the results of the 2002 ASSAD survey is discussed in a recent publication that is available from the Population Health Research Centre, ACT Health (2004b).

### Age of initiation

The results of the 2004 NDSHS suggest that the average age at people (aged 14 years or more) in the ACT, who had ever smoked, first began smoking was 16 years of age (95% CI: 15 – 17), which was consistent with the average age reported for all Australians (16 years) in 2004 (AIHW 2005b, AIHW 2005c).

### Support for tobacco measures

ACT Health is keen to reduce the harm caused by exposure to environmental tobacco smoke. The results of the 2004 NDSHS survey indicate a strong level of support in the ACT for measures that limit exposure to environmental tobacco smoke. Significance testing of results indicates a higher level of support in the ACT for banning smoking in the workplace (88.1%) compared to the result for Australia (82.3%) and higher levels of support in the ACT for increasing tax on tobacco products to pay for health education (ACT: 69.5%, Australia: 64.5%) and contributions to treatment costs (ACT: 73.1%, Australia: 67.1%) (Table 4.7). The results of the survey also suggest a high level of support in the ACT for banning smoking in pubs and clubs (69.0%).

**Table 4.7: Proportion of the ACT & Australian populations, aged 14 years and over, supporting[(a)] tobacco measures, 2004[(b)]**

| | ACT | | Australia | |
|---|---|---|---|---|
| | % | 95%CI | % | 95%CI |
| Banning smoking in the workplace | 88.1 | (85.7 - 90.5) | 82.3 | (81.7 - 82.9) |
| Banning smoking in pubs/clubs | 69.0 | (65.6 - 71.4) | 68.1 | (67.4 - 68.8) |
| Increasing tax on tobacco products to pay for health education | 69.5 | (66.1 - 72.9) | 64.5 | (63.8 - 65.2) |
| Increasing tax on tobacco products to contribute to treatment costs | 73.1 | (69.9 - 76.3) | 67.1 | (66.4 - 67.8) |
| Increasing tax on tobacco products to discourage smoking | 66.9 | (63.5 - 70.3) | 63.3 | (62.6 - 64.0) |
| Making it harder to buy tobacco in shops | 65.4 | (61.9 - 68.9) | 63.6 | (62.9 - 64.3) |
| Stricter enforcement of law against supplying to minors | 88.2 | (85.8 - 90.6) | 89.6 | (89.1 - 90.1) |
| Stricter penalties for sale or supply of tobacco products to minors | 86.6 | (84.1 - 89.1) | 87.2 | (86.7 - 87.7) |
| Bans on point of sale advertising and display of tobacco products | 72.6 | (69.3 - 75.9) | 70.0 | (69.3 - 70.7) |
| Implementing a licensing scheme for tobacco retailers | 71.6 | (68.3 - 74.9) | 70.3 | (69.6 - 71.0) |

Data source: AIHW 2005a.

(a) Support or strongly support; all results as a proportion of those that expressed an opinion.
(b) Note that the survey excluded the 'homeless' and penal institutions.

### Smoking in pregnancy

Smoking during pregnancy is one of the most important risk factors associated with adverse perinatal outcomes. Self-reported data on cigarette smoking is collected from women who give birth in ACT public hospitals. In 2003, 12.0% of ACT mothers who gave birth in ACT hospitals indicated that they had smoked at least once in the month prior to giving birth.

See Chapter 15: Maternal, Infant & Child Health for further information on smoking in pregnancy.

## 4.4.2 Services and initiatives

The approach by ACT Government to tobacco control is comprehensive, incorporating measures intended to reduce demand, control supply and protect non-smokers. A number of new initiatives were implemented during the reporting period and are planned to continue into the future:

- ACT Health has implemented a Youth Smoking Prevention Program, in accord with the *ACT Health Action Plan* (2002), targeting young people 12 to 15 years of age. The program incorporates anti-smoking messages in campaign activities, with anti-uptake and smoking cessation messages. In addition to this program, an anti-smoking advertising campaign aimed at adults was implemented in 2004-05.
- ACT Health is strengthening their focus on enforcement in relation to the sale and supply of tobacco products to minors with compliance testing.
- ACT Health implemented legislative change during the reporting period to ban the sale of tobacco products from vending machines in the ACT (*Tobacco (Vending Machine Ban) Amendment Bill 2004),* from 1 September 2005. ACT Health has also implemented legislative change to prohibit smoking in all enclosed public places by 1 December 2006 (*Smoking (Prohibition in Enclosed Public Places) Amendment Act 2005*).

Future measures to reduce tobacco-related harm in the ACT are being developed, consistent with the *National Tobacco Strategy 2004 – 2009* (Ministerial Council on Drug Strategy 2005). For example, ACT Health is now looking at developing policy to restrict smoking in public outdoors areas such as alfresco dining areas and school grounds.

There are a number of smoking cessation services available to residents including the QUIT program which is managed by the Cancer Council ACT. Advice and assistance about smoking cessation is also provided on a less formal basis from medical practitioners and from pharmacists (particularly in relation to the use of nicotine replacement therapy such as gum and patches) in the ACT.

Other ACT Government agencies involved in tobacco control include the Department of Education, Youth and Family Services, in relation to school-based health education and school drug policies; and ACT WorkCover, which remains closely involved in tobacco-related workplace issues.

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

In addition, there are a number of national anti-tobacco initiatives that benefit the ACT. Specific initiatives include the National Tobacco Campaign, a national anti-smoking mass media campaign.

## 4.5 Alcohol consumption

Alcohol consumption is associated with considerable morbidity and mortality and estimates suggest that the harm caused by alcohol consumption accounts for about 4.9% of the total burden of disease and injury in Australia (Mathers et al 1999). Although hazardous, or harmful, alcohol consumption increases the risk of a range of morbidities, low to moderate levels of alcohol consumption can have a protective effect on the health of individuals (exceptions include those with Hepatitis C, young people, those with mental health issues 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 2.2% of the total burden of disease and injury in Australia (Mathers et al 1999).

### 4.5.1 Levels of alcohol consumption

#### Alcohol consumption among adults

Survey estimates suggest that the proportion of adults in the ACT who consume alcohol has not changed in recent years. Significance testing of estimates from the NDSHS suggests that the prevalence of alcohol consumption by people (aged 14 years or more) in the ACT, in 2004, on a daily (9.1%), weekly (47.4%) and less than weekly (32.8%) basis was consistent with prevalence estimates in 2001(AIHW 2005a) (Table 4.8).

Survey estimates also suggest that the prevalence of alcohol consumption by adults in the ACT is consistent with estimates for Australia. Significance testing of estimates from the 2004 NDSHS suggests that the proportion of the adult ACT population who consumed alcohol on a daily and less than weekly basis was consistent with estimates for Australia (Aust: daily 8.9%; less than weekly 33.5%) in 2004. However, significance testing suggests that adults in the ACT were more likely to consume alcohol on a weekly basis than their national counterparts (41.2%) (AIHW 2005a) (Table 4.8).

**Table 4.8: Use of alcohol, proportion of the population aged 14 years or more, ACT, 2001 & 2004.**

| | 2001 | | 2004 | |
|---|---|---|---|---|
| | % | 95%CI | % | 95%CI |
| **Daily** | 9.6 | (7.8 - 11.4) | 9.1 | (7.0 - 11.2) |
| **Weekly** | 45.4 | (42.2 - 48.6) | 47.4 | (43.7 - 51.1) |
| **Less than weekly** | 34.5 | (31.4 - 37.6) | 32.8 | (29.3 - 36.3) |
| **Ex-Drinker[(a)]** | 5.2 | (3.8 - 6.6) | 4.7 | (3.1 - 6.3) |
| **Never consumed a full serve of alcohol** | 5.4 | (3.9 - 6.9) | 6.0 | (4.2 - 7.8) |

Data sources: AIHW 2005a; AIHW 2002.
(a) Have consumed a full serve of alcohol in lifetime, but not in the last 12 months.

The results of the 2004 NDSHS suggest that 36.3% (95% CI 32.8 – 39.8) of ACT residents were at short-term risk of harm from risky/high risk drinking and 8.9% (95% CI 6.8 – 11.0) were at long-term risk of harm from risky/high risk drinking in 2004 (AIHW 2005a). Significance testing suggests that these results were consistent with results for Australia in 2004 (Aust: risk of short-term harm 35.4%; risk of long-term harm 9.9%) (AIHW 2005a).

## Alcohol consumption among young people

The majority of students aged 12-17 years in the ACT who responded to the 2002 ASSAD, reported having consumed alcohol at least once in their lifetime (89.8%, 95% CI 88.3 – 91.2) (ACT Health 2004b).

About a third (31.2**%,** 95% CI 29.0 – 33.4) of students reported recent drinking (consumed alcohol on at least one occasion in the week before the ASSAD survey) and 8.4% (95% CI 7.1 – 9.6) reported harmful drinking in 2002 (Table 4.9). Harmful drinking was defined as five or more drinks on any one day in the week prior to the survey for females, and seven or more drinks on any one day in the week prior to the survey for males, which reflects current alcohol consumption guidelines (NHMRC 2001). Significance testing suggests that older students were more likely to report being recent or harmful drinkers than younger students, but similar proportions of males and females reported either recent or harmful drinking in 2002 (Table 4.9) (ACT Health 2004b).

Survey estimates also suggest that the prevalence of alcohol consumption among secondary students in the ACT has remained stable over recent years. Significance testing of prevalence estimates for recent and harmful alcohol consumption among students suggests estimates in 2002 (Table 4.9) were consistent with estimates derived from the 1999 ASSAD survey (1999: recent 32.9%; harmful 8.1%) (ACT Health 2004b).

**Table 4.9: Proportion of ACT secondary students (12-17 years) who reported recent[(a)] and harmful[(b)] levels of alcohol consumption, by age and sex, 2002.**

| | Recent Drinkers | | Harmful Drinkers | |
|---|---|---|---|---|
| | % | 95%CI | % | 95%CI |
| **Age** | | | | |
| 12-15 years | 24.5 | (21.8 -27.2) | 4.8 | (3.5 - 6.1) |
| 16-17 years | 45.5 | (41.7 - 49.3) | 16.2 | (13.4 - 19.0) |
| | | | | |
| **Sex** | | | | |
| Males | 32.6 | (29.5 - 35.7) | 9.0 | (7.1 - 10.9) |
| Females | 29.8 | (26.6 - 33.0) | 7.9 | (6.0 - 9.8) |
| Persons | 31.2 | (29.0 - 33.4) | 8.4 | (7.1 - 9.7) |

Data source: 2002 Australian Secondary Student Alcohol and Drug Survey (ASSAD), confidential unit record file.
(a) Recent drinkers include all students who reported consuming alcohol in the week before survey.
(b) Harmful drinkers include all females who reported consuming five or more drinks and all males who reported seven or more drinks on any one day in the week before survey. This reflects the current NHMRC (2001) guidelines.

Further information about the results of the 2002 ASSAD survey is discussed in a recent publication that is available from the Population Health Research Centre, ACT Health (2004b).

### 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 had ever consumed alcohol in their lifetime, first began drinking, was 17 years of age (95% CI: 16 – 17), which was the same as the average age reported for all Australians (17 years) in 2004 (AIHW 2005b, AIHW 2005c).

For service-related information see section 4.6.2, which discusses alcohol and illicit substance use services and initiatives in the ACT.

## 4.6 Illicit substance use

Illicit substance use is estimated to account for about 1.8% of the total burden of disease and injury in Australia (Mathers et al 1999). 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 2004a). 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 lies in minimizing 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 the restriction of supply.

### 4.6.1 Levels of illicit substance use

#### Illicit substance use among adults

Survey estimates suggest 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 2001 and 2004 NDSHS suggest there was no change in the 12-month prevalence of use of any illicit substance, marijuana/cannabis, or meth amphetamines, by people (aged 14 years or more) in the ACT, between 2001 and 2004 (AIHW 2005a) (Table 4.10).

**Table 4.10: Recent[(a)] use of illicit substances, proportion of the 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; AIHW 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.
(a) Used in the last 12 months
(b) For non-medical purposes
(c) In 2001 this included 'designer drugs'.

The prevalence estimates for other illicit substances included in Table 4.10 are based on a small number of survey 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 yielded reliable prevalence rates, based on a reasonable number of responses, however, the definition for this substance category changed between 2001 and 2004, also making it

impossible to determine whether there has been a change in the prevalence of use over time in the ACT.

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 listed in Table 4.10, with the exception of ecstasy. The comparison of estimates suggests that people in the ACT (6.0%) were more likely to have used ecstasy in the 12 months before the survey than their national counterparts (3.4%, 95% CI 3.1 – 3.7) (AIHW 2005a).

Injecting drug use is associated with a higher risk of transmission of blood-borne viruses such as HIV and hepatitis C. Transmission of HIV and hepatitis C can occur when injecting drug users share needles and syringes or other injecting equipment. According to the results of the 2003 Australian Needle Syringe Program Survey (ANSPS) of injecting drug users, 80% of the 60 respondents from the ACT tested positive for hepatitis C, but no one tested positive to the HIV antibody. In 2003, 27% (95% CI 12.4 – 41.6) of the injecting drug users surveyed in the ACT reported sharing needles and syringes at least once in the previous month. Heroin (50%) and amphetamines (28%) were the most common illicit substances to have been injected (NCHECR 2004).

The prevalence of injecting drug use in the ACT is not known, but in 2004, 2.4% (95% CI 1.3 – 3.6) 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 from the ACT who reported having ever injected illicit substances, 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%, 95% CI 1.6 – 2.2) (AIHW 2005b).

### Illicit substance use among young people

Survey estimates from the 2002 ASSAD suggest that 29.6% of students (aged 12 to 17 years) in the ACT had used an illicit substance at least once in their lifetime. The most common illicit substance reported by students was cannabis (28.1%) in 2002 (Table 4.11).

Survey estimates also suggest that there has been a decline in the lifetime prevalence of illicit substance use by students in the ACT in recent years. Significance testing of estimates from the 1999 and 2002 ASSAD surveys suggest that there was a decline in the proportion of students reporting ever having used any illicit substance (1999 35.0%; 2002 29.6%), cannabis (1999 33.5%; 2002 28.1%), inhalants (1999 25.1%; 2002 19.6%) and tranquillisers (1999 19.1%; 2002 15.1%) at least once in their lifetime. Because of the small number of ACT respondents reporting having ever used amphetamines (1999 7.7%; 2002 6.1%) and ecstasy (1999 4.5%; 2002 5.3%), it is not possible to determine with significance testing, whether there has been a change in lifetime prevalence of use of these substances (Table 4.11).

**Table 4.11: Proportion of ACT secondary students (12-17 years) who reported lifetime use of illicit substances, 1999 & 2002.**

| | 1999 | | 2002 | |
|---|---|---|---|---|
| | % | 95%CI | % | 95%CI |
| Used at least one illicit substance in lifetime | 35.0 | (33.0 - 37.0) | 29.6 | (27.4 - 31.8) |
| Used cannabis at least once in lifetime | 33.5 | (31.5 - 35.5) | 28.1 | (25.9 - 30.3) |
| Used inhalants at least once in lifetime | 25.1 | (23.3 - 27.0) | 19.6 | (17.7 - 21.5) |
| Used tranquillisers at least once in lifetime | 19.1 | (17.5 - 20.8) | 15.1 | (13.4 - 16.8) |
| Used amphetamines at least once in lifetime | 7.7 | (6.5 - 8.8) | 6.1 | (4.9 - 7.3) |
| Used ecstasy at least once in lifetime | 4.5 | (3.6 - 5.4) | 5.3 | (4.2 - 6.4) |

Data source: 1999 & 2002 Australian Secondary Student Alcohol and Drug Survey (ASSAD), confidential unit record file.

Further information about the results of the 2002 ASSAD survey is discussed in a recent publication that is available from the Population Health Research Centre, ACT Health (2004b).

### 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 (95% CI: 18 – 21), which was the same as the average age reported for all Australians (19 years) in 2004 (AIHW 2005b, AIHW 2005c).

## 4.6.2 Alcohol and illicit substance use services and initiatives

In the ACT, there are a variety of services aimed at reducing the burden of alcohol and other substance use in the community. Some of the services provided by drug and alcohol agencies in the ACT include rehabilitation, withdrawal, detoxification, counselling and case management services, as well as education, information and referral services.

Young people in the ACT receive alcohol and other drug education through the National School Drug Education Strategy (NSDES). Planning for the introduction of peer education and mentoring programs is underway and will be introduced to schools during the next reporting period, July 2004 to June 2006. Peer education programs are aimed at reducing the uptake of drugs and building resilience in children and young people.

Health promoting activities are provided in the ACT by a variety of government agencies, non-government organisations and community groups with an interest in preventing alcohol and illicit substance use.

Treatment, maintenance and rehabilitation services are provided by government and non-government agencies to assist those with alcohol and other substance use problems. In 2003-04, ACT Health funded ten non-government agencies to provide services to alcohol and other drug dependent people and their families. According to the Australian Institute of Health and Welfare National Minimum Data Set for Alcohol and Other Drug Treatment Services, alcohol and drug treatment agencies provided 1,317 treatment episodes. Cannabis (30%), alcohol (22%), heroin (20%) and amphetamines (18%) were the leading drugs of concern and counselling (47%), detoxification (withdrawal management) (36%), and rehabilitation (13%) were the leading treatments associated with these treatment episodes (AIHW 2005d).

The non-clinical services provided by alcohol and drug agencies in the ACT include specialist counselling services, case management, information and referral and educational programs.

There were a number of initiatives implemented during the reporting period July 2002 to June 2004. The ACT Government established the Alcohol, Tobacco and Other Drug Taskforce in August 2002, to make recommendations about minimising the harms associated with substance misuse, and to develop the next Alcohol, Tobacco and Other Drug Strategy for the ACT. The *ACT Alcohol, Tobacco and Other Drug Strategy 2004 – 2008* was released in August 2004 (ACT Health). The Strategy provides a framework that offers direction for decision making on issues associated with alcohol, tobacco and other substance use in the ACT for the period 2004 to 2008.

In 2004, the ACT Alcohol, Tobacco and Other Drug Strategy Implementation and Evaluation Group (ATODSEG) was established to oversee and evaluate the implementation of the Strategy, provide advice to Government on emerging issues, planning and policy matters, consult with other stakeholders, and contribute to the development of the next Strategy. The membership of the evaluation group is broad and involves both government and non-government organisations including representation from the ACT Police, drug and alcohol agencies, community groups representing the interests of consumers, women, church groups, people from multicultural backgrounds and Aboriginal and Torres Strait Islander peoples.

In 2004, a report on the needs of Aboriginal and Torres Strait Islander drug users in the ACT was released (Dance et al 2004). The authors of the report suggested that there had been an increase in the number of people accessing treatment services and that there was a need to improve access to, and adequately resource, local treatment services to meet the needs of Aboriginal and Torres Strait Islander drug users in the region.

ACT Health has increased support for treatment services for Aboriginal and Torres Strait Islander peoples, by:

- Establishing a Diversion Program that provides a mechanism for the diversion of individuals in the early stages of their drug use away from the criminal justice system and into assessment and treatment. ACT Health employs a designated Aboriginal Liaison worker as part of this program.

- Funding the Winnunga Nimmityjah Health Service for two dual diagnosis outreach workers to work with Aboriginal and Torres Strait Islander people who are experiencing difficulties with both mental health and drug and alcohol related issues. The outreach workers aim to improve and enhance the links between clients and both Aboriginal and mainstream health services.

- Funding the Winnunga Nimmityjah Health Service for two youth detoxification support workers. The workers provide support to young people up to the age of 25 years to improve access to mainstream detoxification services.

- Funding the ACT Division of General Practice for a full-time nurse to work specifically with clients of Winnunga Nimmityjah Health Service, as part of The Opiate Program.

- Funding the Gugan Gulwan Youth Aboriginal Corporation to provide individual and family support activities in relation to alcohol and drugs. This includes the provision of information, education and health service resources to people (primarily under the age of 25) of Aboriginal and Torres Strait Islander origin.

- ACT Health is funding a feasibility plan with the view to establish a bush healing farm.

The Needle and Syringe Program in the ACT has been successful in supplying clean injecting equipment to drug users from a variety of outlets across Canberra, including pharmacies and health centres, in order to reduce the transmission of blood-borne viruses among drug users. Estimates derived from the 2003 ANSPS and the 2004 NDSHS suggest that the majority of drug users obtain clean equipment from this service (NCHECR 2004; AIHW 2005c). However, a need was identified for after hours access to clean equipment.

In 2004, ACT Health began planning for a syringe vending machine trial. The 12-month syringe vending machine trial commenced in February 2005, with vending machines installed at four locations across Canberra.

## 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 Australia (AIHW 2004b). 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 as the ACT is exposed to a considerable degree of solar UVR, with long hours of sunshine, high altitude and relatively clean air.

### 4.7.1 Status of sun protective behaviours

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 secondary students in the ACT (for information on sun protection practices in children see Chapter 15: Maternal Infant and Child Health).

Significance testing of estimates from the 2002 ASSAD suggest that although almost two thirds (63.7%, 95% CI 61.7- 65.7) of students (aged 12-17 years) in the ACT responded correctly to questions about the causes of skin cancer and a similar proportion (64.5%, 95% CI 62.5 – 66.5) recalled having had at least part of a lesson on sun protection or skin cancer in the previous year, students in 2002 were less likely to report protecting themselves from the sun than students surveyed in 1996 and 1999 (ACT Health 2004b). The proportion of students reporting that they 'usually' or 'always' wore a hat, wore clothing to cover up, wore a maximum protection sunscreen, wore sunglasses, or mostly stayed inside, decreased between 1996 and 2002, whilst the proportion of students reporting that they 'usually' or 'always' wore briefer clothing to get sun on their skin increased (Table 4.12).

Some self-care practices were relatively unpopular with students in 2002. Only one in five (19.8%) students reported 'usually' or 'always' wearing clothes to cover up when outdoors and a similar proportion (22.4%) reported mostly staying inside between 11am and 3pm in summer.

A small proportion of students in 2002 (13.8%, 95% CI 12.4 – 15.3) indicated that they were unlikely to use any sun protection measures. Most of the students who indicated that they did not normally use any sun protection measures also reported a preference to obtain a suntan (90.1%, 95% CI 86.8 – 93.4). As a group, they were also likely to indicate that they had had at least part of a sun protection lesson in the previous year (57.2%, 95% CI 51.7 – 62.7) and they responded correctly to questions about the causes of skin cancer (64.6%, 95% CI 59.3 – 69.9) (ACT Health 2004b).

Further information about the results of the 2002 ASSAD survey is discussed in a recent publication that is available from the Population Health Research Centre, ACT Health (2004b).

**Table 4.12: Proportion of secondary students aged 12-17 years reporting usually or always using sun protection measures[(a)], ACT 2002.**

| | 1996 | 95%CI | 1999 | 95%CI | 2002 | 95%CI |
|---|---|---|---|---|---|---|
| % usually or always wear a hat | 53.1 | (51.1 - 55.1) | 45.8 | (43.7 - 47.9) | 43.6 | (41.2 - 46.0) |
| % usually or always clothes cover most of body | 27.3 | (25.5 - 29.2) | 22.4 | (20.6 - 24.1) | 19.8 | (17.9 - 21.8) |
| % usually or always delib. wear less/briefer clothing | 14.0 | (12.6 - 15.5) | 18.7 | (17.0 - 20.4) | 23.2 | (21.2 - 25.3) |
| % usually or always wear max.protect. sunscreen | 67.1 | (65.2 - 69.1) | 61.6 | (59.6 - 63.7) | 48.1 | (45.7 - 50.5) |
| % usually or always wear sunglasses | 32.9 | (31.0 - 34.8) | 34.5 | (32.5 - 36.5) | 28.3 | (26.2 - 30.5) |
| % usually or always stay mainly in the shade | 28.8 | (26.9 - 30.7) | 29.0 | (27.0 - 30.9) | 26.1 | (23.9 - 28.2) |
| % usually or always most of time inside | 17.8 | (16.2 - 19.3) | 20.6 | (18.8 - 22.3) | 22.4 | (20.3 - 24.4) |

Data source: 1996, 1999 & 2002 Australian Secondary Student Alcohol and Drug Survey (ASSAD), confidential unit record file.
(a) When out in the sun on a sunny day between 11am and 3 pm.

### 4.7.2 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. The ACT Health Promotion Board (Healthpact) also encourages local organisations to develop, implement and maintain practices and policies in accord with the Cancer Council ACT's SunSmart promotion program.

## 4.8 Sexual Health

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

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

> "experience of the ongoing process of physical, psychological, and socio-cultural well being related to sexuality. This is evidenced in the free and responsible expressions of sexual capabilities that foster harmonious personal and social wellness, enriching individual and social life. It is not merely the absence of dysfunction, disease and/or infirmity. For sexual health to be attained and maintained it is necessary that the sexual rights of all people be recognized and upheld" (PAHO, WHO 2001)

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 the incidence of sexually transmitted infections and pregnancy, are discussed in Chapter 14: Communicable Disease and Chapter 15: Maternal, Infant and Child Health.

### 4.8.1 Status of 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, but estimates derived from the 2001 National Health Survey indicate that they decline in popularity with age, as sterilisation procedures were more likely to be reported by older women (e.g. hysterectomy, tubal ligation and having a partner who was sterilised) (ABS 2002a, 2002b).

The Gay Community Periodic Survey, undertaken in 2003 by the National Centre of HIV and Social Research, the National Centre of Epidemiology and Clinical Research, and the AIDS Action Council of the ACT, surveyed safe and unsafe sexual and HIV related practices among gay and homosexually active men in Canberra. Consistent with results from this survey in previous years, the majority (85%, 95% CI 80.6 – 89.4) of respondents reported having been HIV tests in the last 12 months. Levels of unprotected anal intercourse were also unchanged from previous surveys, with one third (32.9%, 95% CI 27.1 – 38.7) of all respondents reporting unprotected anal intercourse in the six months prior to the survey (Hull et al 2004).

More recent national surveys (Rawstorne et al 2005) suggest that there has been an increase in rates of unprotected anal intercourse in some of the major metropolitan centres, which indicates a change in sexual practice that may flow through to the ACT.

#### Infertility

The causes of infertility are multifarious and the extent of infertility 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 25-44 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 aged 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 (IVF) (Dean & Sullivan 2003).

### Cervical screening

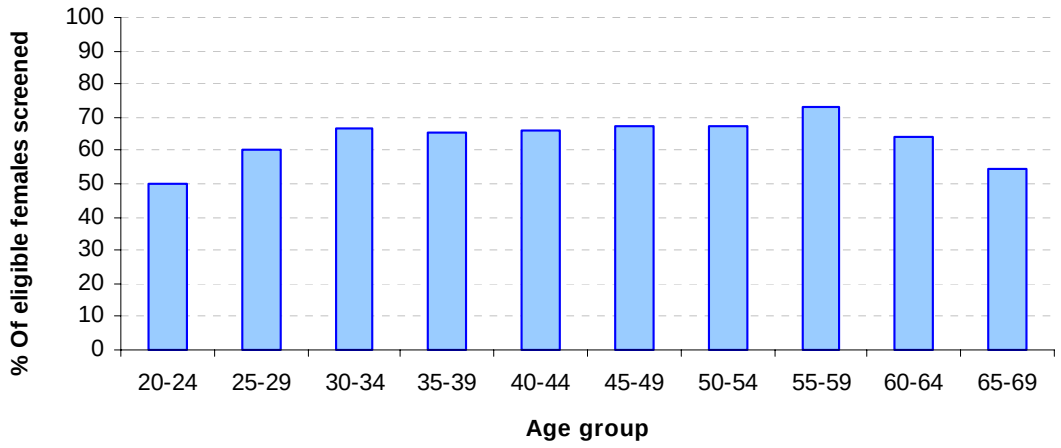
Clinical studies have established that certain types of human papilloma virus (HPV) can cause cervical cancer. However, cervical cancer can be prevented through regular cervical screening and treatment of abnormal cell changes on the cervix. There are about 70 types of HPV and 30 of these are sexually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

Cervical cancer is the eighth most common cancer affecting women in Australia (AIHW 2004a). 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 for the ACT in 2001-02 was 63.3 (95% CI 62.8 – 63.8) per 100 eligible ACT female population, which was higher than the rate for Australia (61.0, 95% CI 60.9 – 61.0)(AIHW 2004c).

In 2003-04, 63.2% of all ACT women in the target age group participated in the screening program, with the highest rate observed for women aged 55-59 years. Women aged 20-24 years had the lowest participation rate (Figure 4.1).

**Figure 4.1: Proportion of eligible[(a)] ACT females screened by Cervical Screening Programme, by age group, 2003-04.**




Data source: ACT Health Capital Region Cancer Service 2005.

(a) Target population is calculated from the average Estimated Resident Population for 2003 and 2004 and adjusted for the estimated proportion of women in each age group who are thought to have had a hysterectomy using state data from the 2001 ABS National Health Survey.

See Chapter 8: Cancer Control for further information on cervical cancer and Chapter 14: Communicable Disease for further information on sexually transmitted infections.

## 4.8.2 Services and initiatives

The Canberra Sexual Health Centre, 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. It 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, (established in 1985), who provides a range of services to people with, and affected by HIV/AIDS in the ACT. It 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. It also acts as a secondary needle and syringe exchange outlet. The Council provides these services to people living with HIV/AIDS, gay men, other men who have sex with men, injecting drug users, workers in sex employment, health care workers and other members of the community.

ACT Health funded sexual health services are also 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. SHFPACT also provide an Indigenous Peer Education Program with a sexual health focus.

The ACT Division of General Practice co-ordinates the care and support of people with HIV/AIDS and their carers. It also provides education and support to general practitioners treating people with HIV/AIDS. The ACT Hepatitis C Council is also funded by ACT Health.

Together, the AIDS Action Council, the Canberra Sexual Health Centre, and the ACT Division of General Practice have recently developed a series of initiatives (STRIP, TSHIRT & SWOP SHOP) to provide free sexual health check ups for sex workers in the ACT.

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

In June 2003, a sexual health and blood borne virus stakeholder forum was held, as recommended by SHAHRD, to share information about available services, discuss areas of concern, emerging issues and gaps in service delivery in the ACT. In February 2004, a similar forum was held with stakeholders to discuss nationally observed increases in HIV and STI notifications (not observed in the ACT).

**Emerging Issues**

- Although the ACT compares favourably to the Australian population, the proportion of overweight and obese adults has increased over the last decade. The health benefits to be achieved through regular physical activity and improved nutrition are considerable.
- Estimates obtained from recent substance use surveys in the ACT reveal some concerning issues that will require close monitoring in upcoming years. Survey data suggests that, in 2004, adults in the ACT were more likely to have used 'ecstasy' than adults nationally. In 2003, 80% of injecting drug users in the ACT, who were surveyed in the 2003 ANSPS, tested positive for hepatitis C and 27% of injecting drug users reported sharing needles and syringes at least once in the previous month.
- Sun protection practices have declined in recent years among young people. This is of particular concern as skin cancer is the most common cancer diagnosed in the ACT.
- HPV vaccines are in late phase clinical trials and are likely to be marketed by 2008. Up to 70% of cervical cancers could potentially be prevented. This development raises questions regarding the planning and development of a vaccination program.
- Incidence of HIV diagnoses appears to be increasing in other jurisdictions such as Sydney, Melbourne and Adelaide, although not in the ACT. Careful monitoring of the ACT situation will continue.

# References


ABS (Australian Bureau of Statistics) 1993, *Women in Australia,* cat no 4113.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 1998a, 1995 *National health survey: summary of results*, cat no 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 1998b, *How Australians measure up*, cat no 4359.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002a, *2001 National health survey: summary of results*, cat no 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002b, *2001 National health survey: summary of results, tables 27-41, Australian Capital Territory*, cat no 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002c, *Australian Capital Territory in focus*, cat no 1307.8, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2003, *Measuring dietary habits in the 2001 national health survey, Australia*, cat no 4814.0.55.001, ABS, Canberra.

ACT Health 2002a, *Physical activity patterns of adults in the ACT 2000,* ACT Health, Canberra.

ACT Health 2002b, *ACT health action plan*, ACT Health, Canberra.

ACT Health 2004a, *Eat well ACT: a public health nutrition plan 2004 –2010,* ACT Health, Canberra.

ACT Health 2004b, *Substance use and other health-related behaviours among ACT secondary students: Results of the 2002 ACT secondary student alcohol and drug survey*, Health series no 37, ACT Health, Canberra.

ACT Health Capital Region Cancer Service 2005, *ACT cervical screening program cervical cytology register statistical report 2004* (Draft report).

AIHW (Australian Institute of Health and Welfare) 2002, *2001 National drug strategy household survey: state and territory supplement*, cat no PHE 37, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004a, *Australia's health 2004,* AIHW cat no AUS-44, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004b, *Cancer in Australia 2001,* AIHW cat no CAN 23, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004c, *Cervical screening in Australia 2001-2002,* AIHW cat no CAN 22, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005a, *2004 National drug strategy household survey: state and territory supplement*, cat no PHE 61, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005b, *2004 National drug strategy household survey: first results*, Drug statistics series no 13, cat no PHE 57, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005c, *2004 National drug strategy household survey: selected results for the Australian Capital Territory*, special request, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005d, *Alcohol and other drug treatment services in the Australian Capital Territory (2003-04)*, AIHW, Canberra.

Armstrong T, Bauman A & Davies J 2000, *Physical activity patterns of Australian adults: results of the 1999 physical activity survey,* AIHW cat no CVD 10, AIHW, Canberra.

Bauman A, Ford I & Armstrong T 2001, *Trends in population levels of reported physical activity in Australia, 1997, 1999 and 2000,* Australian Sports Commission, Canberra.

Bryant, J Sullivan, E & Dean, JH 2004, *Assisted reproductive technology in Australia and New Zealand 2002*, AIHW cat no PER 26, Australian Institute of Health and Welfare National Perinatal Statistics Unit, Sydney.

Cook T, Rutishauser I & Seelig M 2001, *Comparable data on food and nutrition intake and physical measurements from the 1983, 1985 and 1995 health surveys*, DoHAC, Canberra.

Dance P, Tongs J, Guthrie J, McDonald D, D'Souza R, Cubillo C & Bammer G 2004, "*I want to be heard", an analysis of needs of Aboriginal and Torres Strait Islander illegal drug users in the ACT region for treatment and other services*, National Centre for Epidemiology and Population Health, Australian National University, Canberra.

Dean, J & Sullivan E 2003, *Assisted conception Australia and New Zealand 2000 and 2001,* AIHW cat no PER 22, Australian Institute of Health and Welfare National Perinatal Statistics Unit, Sydney.

DoHAC (Department of Health and Aged Care) 1998, *Australian guide to healthy eating*, DoHAC, Canberra.

DoHAC (Department of Health and Aged Care) 1999, *National physical activity guidelines for adults*, DoHAC, Canberra.

Flood V, Webb K, Lazarus R & Pang G 2000, 'Use of self-report to monitor overweight and obesity in populations: some issues for consideration', *Australian and New Zealand Journal of Public Health,* vol 24, pp 96-99.

Hill, D White, V & Letcher, T 1999, 'Tobacco use among Australian secondary students in 1996', *Australian and New Zealand Journal of Public Health* vol 23, no 3, pp 252-259.

Hull, P Van Der Ven, P Prestage, G Kippax, S Schamburg & K Coase, D 2004, *Gay community periodic survey Canberra 2003*, National Centre in HIV and Social Research, Sydney.

Lilburn S 2005, 'Basic inequalities: poverty, poor food and poor health', *The Australian Health Consumer,* no 2 2004-2005, pp 7-8.

Mathers C, Vos T, & Stevenson C 1999, *The burden of disease and injury in Australia,* AIHW, Canberra.

Ministerial Council on Drug Strategy 2005, *National tobacco strategy 2004 – 2009: the strategy,* DoHA, Canberra.

NCHECR (National Centre in HIV Epidemiology and Clinical Research) 2004, *Australian NSP survey, prevalence of HIV, HCV and injecting and sexual behaviour among IDUs at needle and syringe programs: National data report 1999-2003*, University of NSW, Sydney.

NCSP (National Cervical Screening Program) 1998, *Screening for the prevention of cervical cancer*, DoHAC, Canberra.

NHMRC (National Health and Medical Research Council) 1996, *The primary prevention of skin cancer in Australia: report of the sun protection programs working party*, NHMRC, Canberra.

NHMRC (National Health and Medical Research Council) 1997, *The health effects of passive smoking*, NHMRC, Canberra.

NHMRC (National Health and Medical Research Council) 2001, *Australian alcohol guidelines: Health risks and benefits,* AusInfo, Canberra.

NHMRC (National Health and Medical Research Council) 2003, *Dietary guidelines for Australian adults,* AusInfo, Canberra.

National Obesity Taskforce (2003), *Healthy weight 2008: the national action agenda for children and young people and their families,* DoHA, Canberra.

PAHO (Pan American Health Organisation), WHO (World Health Organisation) 2001, *Promotion of sexual health; Recommendations for action,* p*roceedings mortality and morbidity in Australia, 1998*, Drug statistics series no 7, AIHW, Canberra.

Rawstorne P, Treloar C & Richters J 2005, *Annual report of behaviour 2005: HIV/AIDS, of a regional consultation convened by the PAHO (Pan American Health Organization), WHO (World Health Organization), in collaboration with the WAS (World Association for Sexology) in Antigua Guatemala Antigua Guatemala May 19-22, 2000*, Pan American Health Organisation and the World Health Organisation, Guatemala, viewed 17 October 2005, <http://www2.hu-berlin.de/sexology/GESUND/ARCHIV/PSH.HTM#_Toc490155411>.

Ridolfo B & Stevenson C 2001, *The quantification of drug-caused hepatitis and sexually transmissible infections in Australia*, National Centre in HIV Social Research, Sydney.

SIGPAH (Strategic Inter-Governmental Forum on Physical Activity and Health), *Be active Australia: a framework for health sector action for physical activity 2005 –2010* (in press).

White, V Hayman J 2004, *Smoking behaviours of Australian secondary students in 2002*, Monograph 54, DoHA, Canberra.

WHO (World Health Organization) 2000, *Obesity, an epidemic*, WHO, Geneva.

WHO (World Health Organization) 2002, *The world health report 2002: reducing risks, promoting healthy life*, WHO, Geneva.

# 5 HEALTH AND THE ENVIRONMENT

**At a Glance**

- Monitoring results indicate that the ACT enjoys a high-quality supply of drinking water. Water quality in Canberra's lakes varies with the season, rainfall intensity and run-off. Occasionally, lakes are closed for recreation because of unsafe faecal coliform levels.
- For the period covered by this report air quality was generally very good, with the exception of occasional high concentrations of fine particles from open wood fires in winter and the bushfires in January 2003.
- 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 1,036 food premises inspections in 2002-03 and 1,858 inspections in 2003-04.
- 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 95 audits of licensed premises in 2002-03 and 184 audits in 2003-04.
- 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 2002 and 2004.
- The HPS is responsible for toxicological analyses in the ACT. During the reporting period, research into driver drug testing in the ACT and the development of toxicological methodologies related to amphetamine-like substances has been undertaken.
- HPS is also responsible for the safe management of pharmaceuticals in the ACT. This includes auditing the controls for sales transactions of pharmaceutical medicines to ensure their safe sale, collecting out-of-date drugs from pharmacies and managing the supply of drugs of dependence 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 managed the ACT response to a national pharmaceutical recall.
- The ACT Health Emergency Sub-plan has undergone a series of revisions since 2003. The Sub-plan now includes a series of minor plans for specific emergencies and as part of the ongoing process of revision the Sub-plan will undergo regular testing. The first test of the revised Sub-plan was undertaken in July 2004.

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 2004a).

## 5.1 Water quality

The quality and control of water in the environment has an impact on health. In the ACT, recreational water quality is monitored by the HPS. The quality of drinking water is monitored by ACTEW AGL Corporation, which also has responsibility for the provision of drinking water to the ACT.

### 5.1.1 Drinking water

In the ACT 'raw' water taken from reservoirs is treated to enhance water clarity, remove contaminants and kill or inactivate disease-causing organisms. Much of the Cotter catchment, which supplies the bulk of water to the ACT, was burnt out by the January 2003 bushfires and a new water treatment plant was built at Mt Stromlo to treat water from the Bendora reservoir. This treatment plant treats water from the Cotter reservoir, and if required, in drought conditions, will treat water from the Murrumbidgee River. The Googong water treatment plant has been upgraded to increase capacity. Consequently, all drinking water in the ACT is now fully treated before it enters the water distribution system.

Tests for aluminium, copper, manganese and lead in the ACT water supply are routinely conducted by ACTEW AGL and testing for pesticides and trace metals also take place, if considered necessary.

The ACT water supply is also regularly tested for contamination. Public health authorities in Australia use the presence of coliform bacteria (a natural component of faeces) as an indicator of faecal contamination of drinking water. In 2003-04 the target for thermotolerant coliforms was consistently met. Total coliforms are also measured, although these are a less specific measure of contamination. This is because some coliforms can occur naturally in soil and vegetation and may sometimes be present in water in the absence of faecal contamination. The total coliform target was met in 98.2% of the samples taken in 2003-04 (Table 5.1) (ACTEW AGL 2004).

**Table 5.1: Summary of ActewAGL drinking water monitoring results, 2003-04.**

| Parameter | Target | No. of Samples | % Meeting Target |
|---|---|---|---|
| PH | 6.5 to 8.5 | 940 | 91.9 |
| Alkalinity | <200 as CaC03 | 231 | 100 |
| Hardness | <200 as CaC03 | 233 | 100 |
| Turbidity | <5 NTU | 940 | 100 |
| Colour | <15 Pt-Co | 940 | 100 |
| Chlorine | <5 mg/L | 940 | 100 |
| Fluoride | <1.2 mg/L | 234 | 100 |
| THMs[(a)] | <250 mg/L | 232 | 95th percentile = 114 mg/L |
| Aluminium | <0.2 mg/L | 234 | 99.6 |
| Iron | <0.3 mg/L | 940 | 100 |
| Manganese | <0.1 mg/L | 940 | 100 |
| Copper | <2 mg/L | 940 | 100 |
| Lead | <0.01 mg/L | 940 | 100 |
| Total Coliforms | 0 CFU/100ml in 95% of samples | 940 | 98.2 |
| Thermotolerant Coliforms | 0 CFU/100ml in 98% of samples | 940 | 100 |

Data source: ActewAGL 2004.

(a) 'THMs' are trihalomethanes

### 5.1.2 Recreational water

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

#### Natural waterways

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

#### 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 need to be quickly killed to prevent disease transmission and this is achieved through continuous disinfecting.

The HPS routinely tests all public swimming and spa pools to ensure that disinfectant levels are adequately maintained. The HPS inspected 37 spa and swimming pools in the ACT in 2003-04.

## 5.2 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 and Civic.

### 5.2.1 Ambient air quality

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

The NEPC (1998) also recommend monitoring lead and sulphur dioxide ($SO_2$) concentrations. In July 2002, the ACT Government Analytical Laboratory (ACTGAL) ceased lead monitoring as ambient air lead levels in Canberra were shown to be consistently, significantly lower than the national standard. Similarly, $SO_2$ is not monitored in Canberra because high concentrations of atmospheric $SO_2$ are usually only associated with heavy industry, including mineral smelting and coal-fired power stations, which are not found in Canberra (ACT Health 2004b).

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 2002 to 2004 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) and the assistant manager, Hazardous Materials/Contaminated Sites, Environment ACT has advised that summer peaks recorded during January 2003 are due to bushfires (D Power, 2005, pers. comm., 9 June).

There have been no breaches of the NEPM standard for nitrogen dioxide in the last two years. Ambient air concentrations peaked in Canberra during the January 2003 bushfires. Ozone concentrations also peaked during the bushfire period, when there was one breach of the NEPM standard (Figure 5.1).

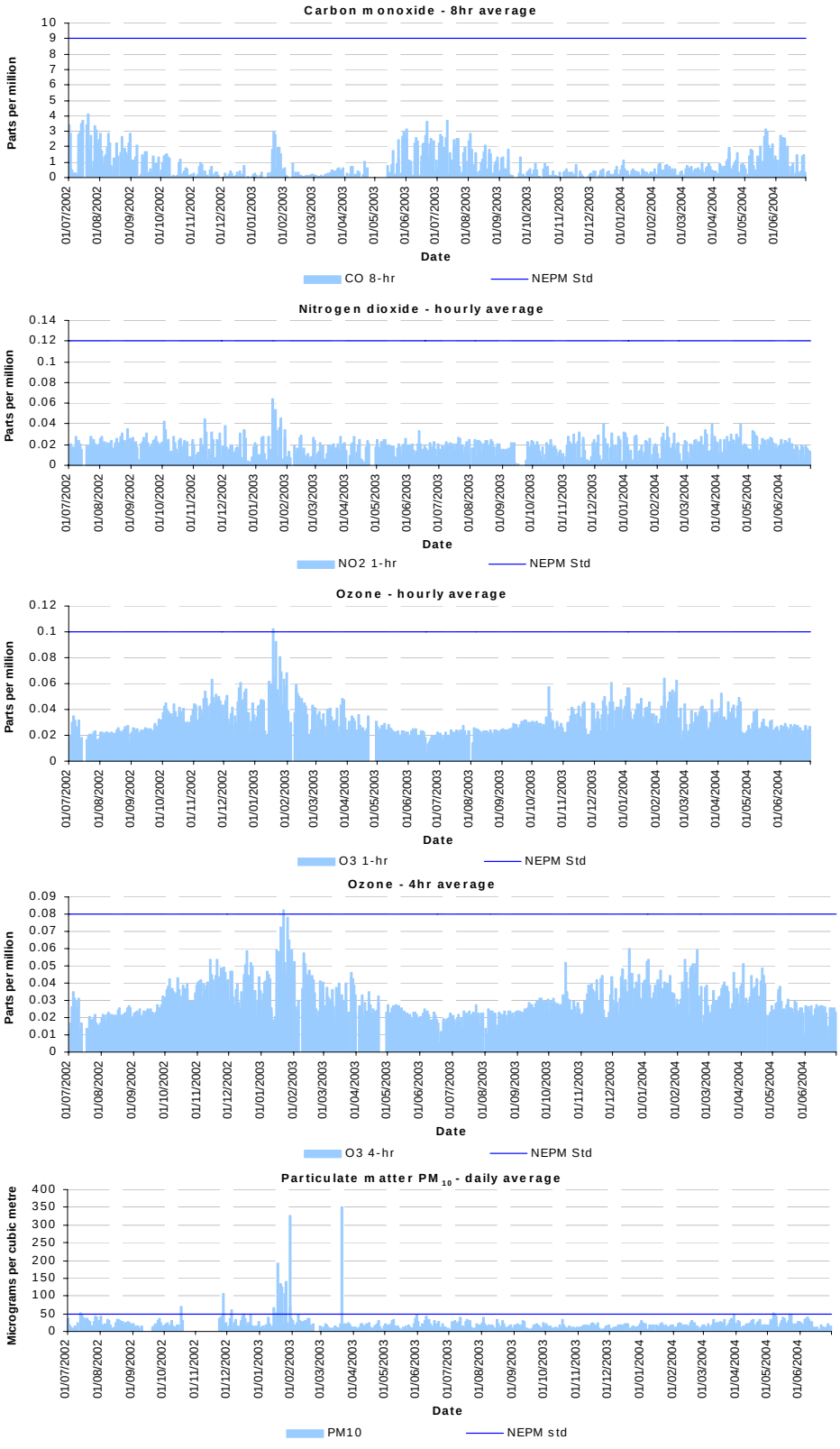
In Canberra, high concentrations of airborne particulates can be of concern in the winter months when open wood burning fires are used to heat homes. The particulate matter that is released when there are bushfires in and around the ACT can also be a cause for concern during the summer months. Airborne particulate levels (measurements of particulate matter less than 10 microns in diameter - $PM_{10}$) peaked in January 2003 (Figure 5.1) during the ACT bushfire State of Emergency (18-28 January 2003). Some of the measurements taken during this period were extremely high, more than five times the NEPM standard for this pollutant.

In addition to the exceedences during the bushfires of January 2003, there were winter exceedences of the NEPM standard for $PM_{10}$ recorded in 2002 and 2004 and three significant exceedences recorded in October and December 2002 and March 2003. Each of these spring/summer exceedences was associated with dust storms in and around Canberra at the time (Figure 5.1).

In response to concerns about the potential health effects of air borne particles with a diameter less than 2.5 microns ($PM_{2.5}$), the NEPC introduced a variation to the Ambient Air Quality NEPM in 2003 which included an advisory reporting standard for the collection of $PM_{2.5}$ concentration measures (Bascombe et al 1996**,** Brunekreef & Holgate 2002, NEPC 2003). In June 2003, the HPS began monitoring $PM_{2.5}$ (ACT Health 2004b) and the Director of ACTGAL has advised that HPS are currently considering the expansion of the woodsmoke monitoring network in the ACT (I Fox 2005, pers. comm., 25 May).

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)**.**

## Figure 5.1: ACT ambient air quality measures, July 2002 - June 2004.




Data source: Environment ACT 2005.

### 5.2.2 Indoor air quality

Small-scale studies have shown that indoor air quality can differ significantly from ambient air quality (Weisel et al 2005). Indoor air can contain a range of potentially toxic chemicals emitted from fittings, appliances and building materials, as well as dust mites, allergens in furnishings, bacteria and fungal spores from air conditioning and tobacco smoke. However, indoor air quality is not routinely monitored in Australia.

## 5.3 Food safety

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 (details of the current code are available from the Food Standards Australia New Zealand website <http://www.foodstandards.gov.au>). The HPS is responsible for the co-ordination of recalling food that does not meet the requirements of the Food Standards Code, or is otherwise defective. As part of the national food recall network, the HPS participates in food recalls initiated by health officials in other jurisdictions, as well as ACT-initiated recalls. The HPS conducted 1,036 food premises inspections in 2002-03 and 1,858 inspections in 2003-04.

The HPS is also responsible for the testing of food and water samples to monitor and identify possible sources of food poisoning in the ACT. The most common causes of food poisoning and food-borne illness in the ACT are poor food handling practices, including improper temperature control, contact between raw and cooked food and poor hygiene practices (ACT Health 2004a). During the reporting period, the HPS conducted a survey to assess the quality and safety of cooked kebab meat from vertical spits in the ACT. Survey results suggest that overall, the quality of kebab meat in the ACT is good. The recommendations arising from results included re-sampling and follow-up of premises with unsatisfactory results, ensuring retailers were educated in appropriate food handling practices, investigating the option of introducing a second heat treatment step to ensure meat was adequately cooked and future monitoring of kebab meat via survey (Rockliff & Khan 2003).

During the reporting period the HPS conducted weekly microbiological testing of other ready to eat foods from ACT food outlets including:

- Specialised milks
- Pre-packed long life milks
- Sushi
- Aquarium water

In general, food in the ACT has been found to be of a high standard.

## 5.4 Infection control

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. Businesses such as dentists, doctors, podiatrists, beauticians, tattooists, acupuncturists and body piercers are licensed to minimise the spread of infectious disease and protect clients and practitioners during the provision of these procedures. Some of the emerging practices that pose an infection risk include branding/scarification of the skin for decorative purposes, micro-pigmentation or non-permanent tattooing and the use of closed ear piercing devices on areas other than the lobe of the ear.

In addition to being licensed, businesses are audited for compliance against relevant nationally recognised infection control standards. There were 95 audits of licensed premises in 2002-03 and 184 audits in 2003-04.

## 5.5 Radiation safety

Activities involving the use of X-ray apparatus and radioactive materials have been conducted safely with no reported incidents of danger to radiation workers, the general public or the environment between 2002 and 2004. 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 and related fields.

Local premises and equipment are routinely inspected by HPS, ensuring that the radiation safety standards set by the Radiation Council under the *Radiation Act 1983* are maintained. Altogether, there were 293 inspections and a total of 1,411 licenses and registrations were issued or renewed during the reporting period.

The HPS provide specialist radiation safety advice and training to ACT Chemical Biological and Radiological (CBR) Emergency Services. The HPS also develops and implements ACT radiation safety policy and legislative initiatives, and contributes - through the 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.

The HPS building at Holder was partially destroyed by fire on 18 January 2003 and radiation safety equipment was destroyed. A limited inspection program recommenced shortly afterwards, and the regular inspection program recommenced in September 2003.

## 5.6 Forensic toxicology

The HPS is responsible for toxicological analyses in the ACT. It performs toxicological analysis of biological samples to both identify and quantify trace metals, blood alcohol, other drugs and poisons. The work undertaken assists in determining driver blood alcohol and other drug concentrations and assists ACT and NSW coroners in determining causes of death where alcohol, other drugs or poisons may be a factor. The HPS analyses alcohol levels in alcoholic beverages and identifies and certifies illicit drugs.

Post-graduate students from the National Centre for Forensic Studies at the University of Canberra work with the HPS. These post-graduate students gain access to laboratory facilities for research purposes, and are guided by staff from the HPS, experienced in forensic toxicology. Recent research projects have included a study into driver drug testing and the development of toxicological methodologies related to amphetamine-like substances.

## 5.7 Pharmaceutical services

The HPS is responsible for the safe management of pharmaceuticals in the ACT. It audits the controls for sales transactions of pharmaceutical medicines to ensure their safe sale and minimises the risk of harm from drugs by limiting the quantity of unwanted or harmful pharmaceuticals in circulation. Out-of-date drugs, unsafe medicines and medicines returned by customers, are collected from pharmacies, dentists and veterinarians, as required. During the reporting period, the HPS managed the local recall of products manufactured by Pan Pharmaceuticals Ltd, following an urgent product recall issued by the Therapeutic Goods Administration in April 2003 (TGA 2003).

The HPS manages the supply of drugs of dependence in the ACT. Local doctors are required to apply for permission to prescribe to individual patients. The chief pharmacist for the HPS advises that about 7,000 approvals are given each year to prescribe Schedule 8 drugs (J Strang 2005, Pers. Comm., 25 May). The HPS continues to work with local GPs and pharmacists to maintain the ACT's benzodiazepine voluntary undertaking program, which assists doctors and pharmacists to support patients in controlling their use of benzodiazepines. Approximately 150 patients are enrolled on the program at any one time.

In addition to regulatory functions, the HPS provides advice on a range of legislative issues pertaining to the safe supply of pharmaceuticals in the Territory. Of note during the reporting period has been the amendment of legislation to allow dentists to possess fentanyl in surgeries for relief of pain and pharmacists to provide a three-day emergency supply of medicines, in the case of an emergency, without prescription.

## 5.8 Emergency planning in the ACT

In recent years, the threat of bio-terrorism, the risk of a communicable disease pandemic such as Influenza, Severe Acute Respiratory Syndrome (SARS) etc, the bushfire experience in the ACT in January 2003 and the tsunami that hit Indonesia in December 2004, have all generated emergency situations in which health has taken a leading role. The significance of these issues and their potential for widespread devastation has highlighted the need for up-to-date, highly competent, collaborative emergency planning within the health sector.

The ACT Emergency Plan (ACT Emergency Management Committee 1994) is the principal document that outlines the broad policies, activation arrangements, and overall coordination arrangements for emergencies in the ACT. The ACT Emergency Plan also has provisions to request aid/support from other states and territories or the Australian government. There are a number of supporting sub-plans that provide detailed co-ordination information for specific types of emergency, including a health-specific sub-plan.

The ACT Health Emergency Sub-plan (ACT Emergency Management Committee 1994) is integrated with the ACT Emergency Plan and stresses command, control and coordination of medical and health resources across the ACT in the event of an emergency. The ACT Health Emergency Sub-plan provides for major incidents involving casualties, including on-site medical management and transportation of casualties, public health advice and support to other agencies and the community, the ongoing medical and health services during a recovery period - including psychological and counseling services for emergency affected persons.

The ACT Health Emergency Sub-plan has undergone a series of revisions since 2003, largely as a result of lessons learned during the bushfire disaster in January of that year. The Sub-plan now includes a series of minor plans, such as the Influenza Pandemic Plan and the SARS Plan, that outline the response required in the event of a specific health emergency (ACT Health 2004a). As part of an ongoing process of revision, the Sub-plan will now be subjected to regular testing. The first test of the revised Sub-plan was undertaken in conjunction with other agencies in the ACT in July 2004 (ACT Health 2004c).

(See Chapter 17 of this report for further information on the revision and testing of the ACT Health Emergency Sub-plan and the health response to the ACT Bushfires of January 2003).

# References


ActewAGL 2004, *ActewAGL annual drinking water quality report 2003-04*, ActewAGL, Canberra.

ACT Government 2004, ACT Government, Canberra, viewed 31 May 2005, <http://www.legislation.act.gov.au/a/annual/2004.asp>.

ACT Emergency Management Committee 1994, *Australian Capital Territory disaster plan*, ACT Government, Canberra.

ACT Health 2004a, *Public health in the ACT 2004-2008 health promotion, health protection and quality of care*, ACT Government, Canberra.

ACT Health 2004b,'The Australian Capital Territory 2003 ambient air quality report against the ambient air quality National Environment Protection Measure', unpublished report.

ACT Health 2004c, 'Exercise Acton: test of the ACT health emergency management sub-plan', unpublished report.

Bascom R, Bromberg PA, Costa DA, Devlin R, Dockery DW, Frampton MW, Lambert W, Samet JM, Speizer F & Utel M 1996, 'Health effects of outdoor air pollution: parts I and II', *Amer J Respir and Crit Care Med,* vol.153, pp.477-98.

Brunekreef B & Holgate ST 2002, 'Air pollution and health', *Lancet*, vol.360, pp.1233-42.

Environment ACT 2005, ACT Government, Canberra, viewed 20 May 2005, <http://www.environment.act.gov.au>.

Food Standards Australia New Zealand 2005, Food Standards Australia New Zealand, Canberra, viewed 31 May 2005, <http://www.foodstandards.gov.au>.

Millennium Ecosystem Assessment 2005, *Millennium Ecosystem Assessment Synthesis Report: Pre-publication final draft approved by MA Board on March 23 2005 - A report of the Millennium Ecosystem Assessment*, Island Press, Chicago.

National Drugs and Poisons Schedule Committee 2004,Therapeutic Goods Administration, Canberra, viewed 31 May 2005, < http://www.tga.gov.au/ndpsc/ndpscgan.htm#2004>.

NEPC (National Environment Protection Council) 1998, *National environment protection measure for ambient air quality*, Environment Protection and Heritage Council, Canberra.

NEPC (National Environment Protection Council) 2002, *Towards a national environment protection (ambient air toxics) measure*, Environment Protection and Heritage Council, Canberra.

NEPC (National Environment Protection Council) 2003, *Variation to the ambient air quality NEPM*, Environment Protection and Heritage Council, Canberra.

NEPC (National Environment Protection Council) 2004, *National environment protection (air toxics) measure explanatory document,* Environment Protection and Heritage Council, Canberra.

Rockliff S & Khan S 2003, *Microbiological quality of kebabs*, ACT Health, Canberra, viewed 31 May 2005, <http://www.health.act.gov.au/c/health?a=da&did=10053527&pid=1063349047&sid>.

Taylor R & Guest C 2001, 'Protecting health, sustaining the environment', in D Pencheon, C Guest D, Melzer JA, Muir Gray (eds) *Oxford Handbook of Public Health Practice*, 2nd edn, Oxford University Press, Oxford.

TGA (Therapeutic Goods Administration) 2003, *Medicine recall - various products manufactured and supplied by Pan Pharmaceuticals Limited,* Australian Government Department of Health and Ageing, Canberra, viewed 31 May 2005, <http://www.tga.gov.au/recalls/panprod.htm>.

Weisel CP, Zhang J, Turpin BJ, Morandi MT, Colome S, Stock TH, Spektor DM, Korn L, Winer A, Alimokhtari S, Kwon J, Mohan K, Harrington R, Giovanetti R, Cui W, Afshar M, Maberti S & Shendell D 2005, 'Relationship of Indoor, Outdoor and Personal Air (RIOPA) study: study design, methods and quality assurance/control results', *Journal of Exposure Analysis and Environmental Epidemiology,* March, vol 15, number 2, pp 123-37.

# 6 HEALTH SERVICES AND THEIR USE

**At a Glance**

- There were 105,685 separations from public and private hospitals in the ACT in 2003-04. One in four hospital separations were for non-ACT residents (25,534 separations). The most common cause of hospitalisation was due to 'factors influencing health status and contact with health services', accounting for 32.1% of all ACT hospitalisations in 2003-04. Other common causes of hospitalisation were due to 'diseases of the digestive system', 'neoplasms', 'diseases of the circulatory system' and hospitalisation due to 'pregnancy, childbirth and the puerperium'.
- The average length of stay (excluding same day separations) in an ACT hospital in 2003-04 was 6.0 days, compared to 6.3 days for Australia.
- Medical workforce data shows that the ACT (365) had the second highest rate of employed full-time equivalent medical practitioners in 2003, after the Northern Territory. However, the ACT (61.0) had the second lowest rate of GP fulltime workforce equivalents (FWE) per 100,000 population in 2003-04, after the Northern Territory. The rate of GP FWE per capita for the ACT has declined over time.
- There are opportunities for health gain in increasing service volume and improving service access to health services. ACT Health is implementing a range of initiatives to reduce waiting times for elective surgery in the ACT and initiatives aimed at increasing the number of residential care services available. There is also potential for health gain in improving quality and safety in health care and ACT Health has implemented a range of relevant initiatives during the reporting period.

## 6.1 Profile of health services

ACT Health has major responsibility for the public provision of health services and public health. The ACT Government funds and delivers a range of health care services, including:

- Public hospital services (acute care and psychiatric, including admitted patient services outpatient clinics and emergency departments)
- Dental health services
- Infant and community health centres
- Ambulance services
- Pathology and radiology services
- Public health programs (such as health promotion programs and disease prevention.
- Mental health services
- Community health services (including services specifically for Indigenous people).
- Health policy research and policy development

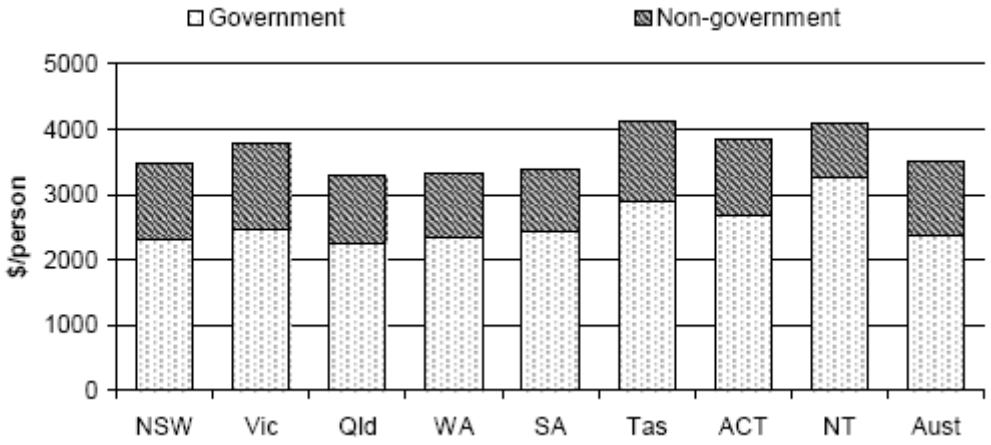
The private sector and other Government agencies also play an important role in the health system, delivering general practice services, specialist medical and surgical services, community pharmacy and dental services, a range of allied health services (such as optometry and physiotherapy), private hospital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

### Funding

In 2003-04, total health expenditure in Australia was estimated to have been $75.6 billion (AIHW 2005b). Health expenditure grew faster than the whole economy. The Australian Government funded 46.1% of health care expenditure and State and Territories funded 22.4%; health insurance funds, workers compensation and third party insurance providers funded the remainder. Public hospitals account for the greatest proportion of recurrent health funding each year (SCRGSP 2005).

In the ACT, total health expenditure (recurrent and capital) per person averaged $4,159 in 2003-04, higher than the national average of $3,766 (SCRGSP 2006). Health expenditure per person in each jurisdiction is affected by different policy initiatives and socio-economic and demographic characteristics (Figure 6.1).

**Figure 6.1: Recurrent health expenditure per person, by source of funds, states & territories, 2002-03 [(a), (b), (c)].**




Data source: SCRGSP 2006.

(a) Preliminary data.
(b) Includes expenditure on high level residential aged care and ambulance services.
(c) Government expenditure includes expenditure by Australian, State, Territory and local governments.

### Health workforce

Medical practitioners and nursing staff comprise the majority of the ACT health workforce. The ACT has one of the highest rates of employed full time equivalent (FTE) medical practitioners in Australia (Table 6.1). Since 1997 the rates of FTE nursing have increased in the ACT (Table 6.2)

**Table 6.1: Employed medical practitioners[(a)], by state & territory, 2003.**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Aust |
|---|---|---|---|---|---|---|---|---|---|
| **FTE practitioner rate (per 100 000 people) based on a 45 hour week** | | | | | | | | | |
| 2000 | 283 | 277 | 234 | 245 | 301 | 229 | 357 | 289 | 270 |
| 2003 | 288 | 298 | 236 | 232 | 313 | 258 | 365 | 451 | 279 |

Data source: AIHW 2005b.
(a) FTE practitioner rate (per 100,000 population) based on a 45 hour week.

**Table 6.2: Employed nurses[(a)], by state & territory, 2003.**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Aust |
|---|---|---|---|---|---|---|---|---|---|
| 1997 | 1,006 | 1,131 | 982 | 1,056 | 1,168 | 1,057 | 980 | 1,227 | 1,054 |
| 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 |

Data source: AIHW 2005c.
(a) FTE nurses rate (per 100,000 population) based on a 35 hour week.

## 6.2 Hospital service use

The ACT has two public hospitals: The Canberra Hospital 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 the 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 2003-04, there were 105,685 hospital separations in the ACT. The majority (68%; 71,526) were for public hospital patients and the remainder for private hospital patients. Separation rates in the ACT were higher in 2003-04 than in previous years (Table 6.3).

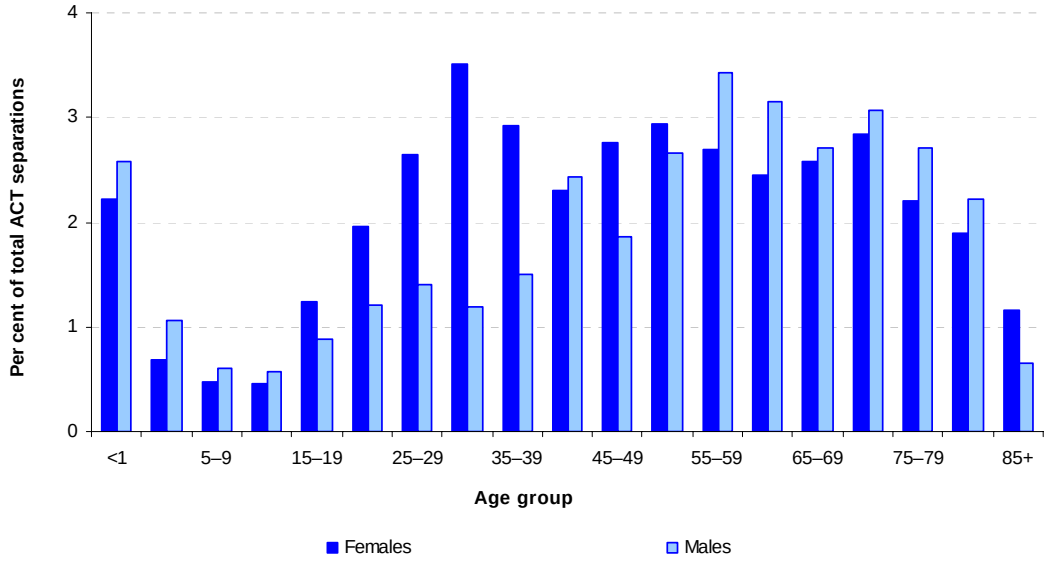
**Table 6.3: Separation rates of public hospital separations per 1,000 people in public (non-psychiatric) hospitals[(a),(b)], 1999/00 – 2003/04.**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Aust |
|---|---|---|---|---|---|---|---|---|---|
| 1999/00 | 192.1 | 211.7 | 205.0 | 202.0 | 232.6 | 160.1 | 219.2 | 372.9 | 204.6 |
| 2000/01 | 187.9 | 231.6 | 195.5 | 199.7 | 228.8 | 150.5 | 217.0 | 370.9 | 201.1 |
| 2001/02 | 188.6 | 222.5 | 192.5 | 190.7 | 229.7 | 165.0 | 216.3 | 394.3 | 202.8 |
| 2002/03 | 190.2 | 231.3 | 189.4 | 195.4 | 231.0 | 164.5 | 219.7 | 422.5 | 205.7 |
| 2003/04 | 192.9 | 235.0 | 189.3 | 191.0 | 235.9 | 162.8 | 235.6 | 428.9 | 207.7 |

Data source: SCRGSP 2006.
(a) Excludes separations for which the care type was reported as "newborn with no qualified days" and records for hospital boarders and posthumous organ procurement.
(b) Data are directly age standardised to the Australian population at 30 June 2001.

ACT females had higher separation rates than ACT males between 15–54 years of age (child-bearing years), but after 50 years, separation rates for males exceeded female separation rates (Figure 6.2).

**Figure 6.2: % Hospital separations, by age and sex, ACT, 2003-04.**




Data source: ACT Admitted Patient Care collection, 2003-04. Confidential unit record file.

In 2003-04, 24.1% of all ACT hospital separations were for non-ACT residents and most of these occurred at public hospitals. The most common cause of hospitalisation for both ACT and non-ACT residents was due to 'factors influencing health status and contact with health services', (accounting for 32.1% of all ACT hospitalisations in 2003-04). This category

includes a large number of same day separations for dialysis and chemotherapy. Other common causes were due to 'diseases of the digestive system', 'neoplasms', 'diseases of the circulatory system' and due to 'pregnancy, childbirth and the puerperium' (Table 6.4).

**Table 6.4: Hospital separations by principal diagnosis[(a)], by public and private ACT hospitals, for ACT[(b)] and Non-ACT residents, 2003-04.**

| | Public hospitals | | Private hospitals | | Total | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| | | | **ACT residents** | | | |
| Certain infectious and parasitic diseases | 780 | 1.5 | 63 | 0.2 | 843 | 1.1 |
| Neoplasms | 2,637 | 4.9 | 3,071 | 11.4 | 5,708 | 7.1 |
| Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism | 802 | 1.5 | 154 | 0.6 | 956 | 1.2 |
| Endocrine, nutritional, and metabolic diseases | 1,434 | 2.7 | 287 | 1.1 | 1,721 | 2.1 |
| Mental and behavioural disorders | 1,298 | 2.4 | 1,007 | 3.8 | 2,305 | 2.9 |
| Diseases of the nervous system | 828 | 1.6 | 328 | 1.2 | 1,156 | 1.4 |
| Diseases of the eye and adnexa | 706 | 1.3 | 938 | 3.5 | 1,644 | 2.1 |
| Diseases of the ear and mastoid process | 200 | 0.4 | 248 | 0.9 | 448 | 0.6 |
| Diseases of the circulatory system | 3,217 | 6.0 | 1,341 | 5.0 | 4,558 | 5.7 |
| Diseases of the respiratory system | 2,452 | 4.6 | 846 | 3.2 | 3,298 | 4.1 |
| Diseases of the digestive system | 4,347 | 8.2 | 3,103 | 11.6 | 7,450 | 9.3 |
| Diseases of the skin and subcutaneous tissue | 746 | 1.4 | 638 | 2.4 | 1,384 | 1.7 |
| Diseases of the musculoskeletal system and connective tissue | 1,459 | 2.7 | 2,800 | 10.4 | 4,259 | 5.3 |
| Diseases of the genitourinary system | 2,015 | 3.8 | 2,155 | 8.0 | 4,170 | 5.2 |
| Pregnancy, childbirth, and the puerperium | 3,567 | 6.7 | 1,963 | 7.3 | 5,530 | 6.9 |
| Certain conditions originating in the perinatal period | 1,075 | 2.0 | 689 | 2.6 | 1,764 | 2.2 |
| Congenital malformations, deformations and chromosomal abnormalities | 299 | 0.6 | 207 | 0.8 | 506 | 0.6 |
| Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified | 2,353 | 4.4 | 755 | 2.8 | 3,108 | 3.9 |
| Injury, poisoning and certain other consequences of external causes | 3,756 | 7.0 | 814 | 3.0 | 4,570 | 5.7 |
| Factors influencing health status and contact with health services | 19,353 | 36.3 | 5,420 | 20.2 | 24,773 | 30.9 |
| **Total** | **53,324** | **100** | **26,827** | **100.0** | **80,151** | **100** |
| | | | **Non-ACT residents** | | | |
| Certain infectious and parasitic diseases | 145 | 0.8 | 14 | 0.2 | 159 | 0.6 |
| Neoplasms | 1,037 | 5.7 | 887 | 12.1 | 1,924 | 7.5 |
| Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism | 212 | 1.2 | 36 | 0.5 | 248 | 1.0 |
| Endocrine, nutritional, and metabolic diseases | 319 | 1.8 | 75 | 1.0 | 394 | 1.5 |
| Mental and behavioural disorders | 146 | 0.8 | 305 | 4.2 | 451 | 1.8 |
| Diseases of the nervous system | 213 | 1.2 | 119 | 1.6 | 332 | 1.3 |
| Diseases of the eye and adnexa | 246 | 1.4 | 229 | 3.1 | 475 | 1.9 |
| Diseases of the ear and mastoid process | 89 | 0.5 | 80 | 1.1 | 169 | 0.7 |
| Diseases of the circulatory system | 1,657 | 9.1 | 581 | 7.9 | 2,238 | 8.8 |
| Diseases of the respiratory system | 566 | 3.1 | 237 | 3.2 | 803 | 3.1 |
| Diseases of the digestive system | 1,054 | 5.8 | 807 | 11.0 | 1,861 | 7.3 |
| Diseases of the skin and subcutaneous tissue | 126 | 0.7 | 124 | 1.7 | 250 | 1.0 |
| Diseases of the musculoskeletal system and connective tissue | 558 | 3.1 | 967 | 13.2 | 1,525 | 6.0 |
| Diseases of the genitourinary system | 571 | 3.1 | 698 | 9.5 | 1,269 | 5.0 |
| Pregnancy, childbirth, and the puerperium | 750 | 4.1 | 384 | 5.2 | 1,134 | 4.4 |
| Certain conditions originating in the perinatal period | 358 | 2.0 | 140 | 1.9 | 498 | 2.0 |
| Congenital malformations, deformations and chromosomal abnormalities | 132 | 0.7 | 62 | 0.8 | 194 | 0.8 |
| Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified | 566 | 3.1 | 176 | 2.4 | 742 | 2.9 |
| Injury, poisoning and certain other consequences of external causes | 1,509 | 8.3 | 256 | 3.5 | 1,765 | 6.9 |
| Factors influencing health status and contact with health services | 7,958 | 43.7 | 1,145 | 15.6 | 9,103 | 35.7 |
| **Total** | **18,212** | **100** | **7,322** | **100.0** | **25,534** | **100** |

Data source: ACT Admitted Patient Care collection, 2003-04. Confidential unit record file.
(a) For ICD-10-AM diagnostic categories, see Appendix 2.
(b) Data excludes separations for ACT residents hospitalised interstate and overseas.

Unless rehabilitation or palliative care is required, most acute patients require a relatively short stay in hospital. There is an increasing trend towards day surgery and overall there is a trend towards shorter lengths of stay in hospital. In Australia, the average length of stay (excluding same day separations) has decreased from 6.6 days in 1999-2000 to 6.3 days in 2003-04 (AIHW 2005d). The average length of stay in 2003-04 was 6.0 days (Table 6.5).

**Table 6.5: Average length of stay in ACT hospitals, by principal diagnosis[(a)], 2000/01 - 2003/04.**

| | 2000/01 | 2001/02 | 2002/03 | 2003/04 |
|---|---|---|---|---|
| Certain infectious and parasitic diseases | 4.7 | 4.5 | 4.9 | 5.9 |
| Neoplasms | 7.6 | 8.0 | 7.5 | 7.9 |
| Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism | 6.4 | 9.1 | 7.6 | 5.8 |
| Endocrine, nutritional, and metabolic diseases | 6.8 | 6.9 | 6.6 | 7.2 |
| Mental and behavioural disorders | 13.0 | 12.4 | 12.0 | 12.6 |
| Diseases of the nervous system | 7.2 | 7.0 | 7.1 | 6.7 |
| Diseases of the eye and adnexa | 1.9 | 1.6 | 1.8 | 1.9 |
| Diseases of the ear and mastoid process | 2.0 | 2.2 | 2.7 | 1.7 |
| Diseases of the circulatory system | 6.7 | 6.5 | 6.1 | 5.7 |
| Diseases of the respiratory system | 4.9 | 4.9 | 5.1 | 4.9 |
| Diseases of the digestive system | 4.3 | 4.5 | 4.2 | 4.2 |
| Diseases of the skin and subcutaneous tissue | 6.3 | 6.1 | 5.5 | 5.3 |
| Diseases of the musculoskeletal system and connective tissue | 5.5 | 5.6 | 5.0 | 5.2 |
| Diseases of the genitourinary system | 4.3 | 4.2 | 4.2 | 4.1 |
| Pregnancy, childbirth, and the puerperium | 4.2 | 4.3 | 4.2 | 4.3 |
| Certain conditions originating in the perinatal period | 12.3 | 12.6 | 14.1 | 11.7 |
| Congenital malformations, deformations and chromosomal abnormalities | 5.7 | 4.3 | 4.8 | 4.5 |
| Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified | 3.6 | 3.6 | 3.7 | 3.3 |
| Injury, poisoning and certain other consequences of external causes | 6.8 | 6.3 | 6.0 | 5.7 |
| Factors influencing health status and contact with health services | 9.4 | 9.3 | 12.9 | 12.5 |
| **Total** | **6.1** | **6.0** | **6.0** | **6.0** |

Data source: ACT Admitted Patient Care collection, 2003-04. Confidential unit record file.
(a) For ICD-10-AM diagnostic categories, see Appendix 2.

## 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 2006).

Table 6.6 shows that the ACT has a very low rate of PPH in comparison to other jurisdictions. The ACT had the lowest separation rates of any jurisdiction in 2004-05 for vaccine preventable conditions, acute conditions and chronic conditions.

**Table 6.6: Selected potentially preventable hospitalisation separation rates (per 1,000 population), states and territories, 2004-05.**

| | NSW | Vic | QLD | WA | SA | Tas | NT | ACT | Aust |
|---|---|---|---|---|---|---|---|---|---|
| Vaccine-preventable conditions[(a)] | 0.17 | 0.19 | 0.10 | 0.16 | 0.13 | 0.08 | 0.40 | 0.05 | 0.15 |
| Acute conditions[(b)] | 11.31 | 13.11 | 12.67 | 12.97 | 13.36 | 9.03 | 16.66 | 8.76 | 12.31 |
| Chronic conditions[(c)] | 15.21 | 19.27 | 18.97 | 31.22 | 17.16 | 17.99 | 27.21 | 10.21 | 18.71 |
| Total selected conditions | 27.11 | 32.85 | 32.12 | 44.77 | 30.97 | 27.34 | 45.00 | 19.36 | 31.54 |

Data source: AIHW 2006.
(a) These conditions are preventable with vaccination. They include influenza, bacterial pneumonia, tetanus, measles, mumps, rubella, pertussis and polio.
(b) 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, ear, nose and throat infections and dental conditions.
(c) 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.

## Emergency departments

Emergency department waiting times measure the proportion of patients seen within benchmarks set according to the urgency of treatment required and are an indicator of effectiveness of access to public hospitals. The benchmarks set according to triage category are as follows:

- Triage category 1: need for resuscitation — patients seen immediately
- Triage category 2: emergency — patients seen within 10 minutes
- Triage category 3: urgent — patients seen within 30 minutes
- Triage category 4: semi-urgent — patients seen within 60 minutes
- Triage category 5: non-urgent — patients seen within 120 minutes

It is desirable that a high proportion of patients are seen within the benchmarks set for each triage category. Non-urgent patients who wait longer are likely to suffer discomfort and inconvenience, and more urgent patients may experience poor health outcomes as a result of extended waits. Data may vary across jurisdictions as a result of differences in clinical practices. Table 6.7 shows the proportion of patients seen within benchmark waiting times at ACT public hospital emergency departments in 2003-04.

**Table 6.7: % Emergency department patients seen within triage category timeframes, public hospitals, ACT, 2003-04.**

| | Triage cat 1 | Triage cat 2 | Triage cat 3 | Triage cat 4 | Triage cat 5 |
|---|---|---|---|---|---|
| % seen within benchmark timeframe | 100% | 69% | 64% | 58% | 77% |

Data source: AIHW 2005d.

## Elective surgery

During 2003-04, 28 patients per 1,000 weighted population were admitted to public hospitals in the ACT for elective surgery, a reduction from 35 in 1998-99. The reduction in ACT elective surgery admission rates between 1998-99 and 2003-04 was due to increases in the proportion of emergency and semi-urgent admissions to ACT public hospitals. Although only 72% of elective surgery patients in the ACT were seen within the clinically appropriate time compared to the national average of 84%, 98% of category 1 elective surgery patients (those requiring the most urgent treatment) were treated on time, comparing favourably against the national average of 80%.

ACT Government has taken the following steps to improve elective surgery waiting times in the ACT:

- Increased the number of intensive care beds
- Established observation units at Calvary Public Hospital and The Canberra Hospital.
- Increased the number of medical beds
- Established a Rapid Assessment Team
- Increased funds for orthopaedics and ophthalmology elective surgery operations
- Established discharge lounges to improve access to acute hospital services and reduce waiting times in emergency departments

A series of further initiatives are planned for 2005-06 and beyond to achieve further reductions in waiting times.

## 6.3 Primary health care

The primary and community health sector is part of the healthcare system most frequently used by Australians. Within this sector General Practitioners (GPs) provide a high proportion of services as well as providing a gateway to other services such as pharmaceutical, radiology and pathology services. The ACT Primary Health Care Strategy will be finalised in 2006. The strategy aims to provide a direction for primary health care that will be implemented by ACT Health and other key stakeholders.

### General practitioners

In Australia, general practitioner services provide essential primary health care in the community and are a key interface for all sections of the health system. The services provided include: diagnosing and treating illnesses, providing preventative care through to palliative care, referring patients to consultants, allied health professionals, community health services, hospitals and other health care services. Almost all services provided by GPs are at least partly funded by the Australian Government through Medicare and the Department of Veteran Affairs.

The ACT had a lower rate of GP full-time work force equivalents (FWE) per 100,000 population compared to all other jurisdictions in 2003-04, with the exception of the Northern Territory. The ACT had 61.0 FWE practitioners per 100,000 population (Australia 83.9) 2003-04. The ACT has consistently had a low rate of GP FWE per capita compared to other jurisdictions and the rate has declined over time, down from 74.9 FWE in 1997-98 to 61.0 in 2003-04 (SCRGSP 2006).

GPs in the ACT make a significant contribution to local initiatives. In 2003-04, ACT Health, in collaboration with the ACT Division of General Practice (ACTDGP), conducted the Enhanced Primary Care (EPC) Demonstration Site Project. This project aims to develop a collaborative approach to patient management post discharge from hospital. The project was established in various wards at both The Canberra and Calvary Hospitals. As a result, ACT Health has initiated a Discharge Planning Project to develop a territory-wide discharge planning policy and associated guidelines.

GP liaison units have been established at both The Canberra and Calvary Hospitals. These units each consist of a GP liaison officer and a GP advisor. The role of the GP liaison units is to enhance integration and information flow between GPs and hospital departments in order to improve patient outcomes.

The Academic Unit of General Practice is an important initiative, funded by ACT health to provide research, teaching and clinical services. The Unit provides four key resources to the community:

- Teaching related to general practice and community health
- Research related to general practice and community health, including audit and evaluation
- Service, including both clinical services in general practice and community health, administrative/committee/other services relevant to joint venture partners
- Networking, promoting collaboration among health care providers within the community and between community health care providers and the hospital sector

ACT Health supports the work of GPs by funding of a number of programs such as the HIV/AIDS Program and the Opiate Program. 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 new model is a national first and allows access by all ACT residents to after hours GP services.

## Oral health

Oral health is fundamental to overall health and wellbeing and dental caries is the second most costly diet-related disease in Australia. In 2004, *Healthy Mouths Healthy Lives: Australia's National Oral Health Plan 2004 – 2013* (AHMC 2004) was released. The purpose of the Plan is to improve health and well-being by improving oral health status and reducing the burden of oral disease in the population.

In the ACT, there is a range of public and private oral (dental) health services available. ACT Health offers oral health services to all children under 14 years and adults and young people (14 years and older) who are covered by current Pension Concession or Healthcare cards. Clients must be a resident of the ACT, or a student enrolled at an ACT primary or secondary school.

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.

## Pathology and radiology

The ACT has both public and private diagnostic services available. Overall, the number of pathology tests per person increased slightly between 2001-02 and 2003-04 and diagnostic imaging requests remained the same (Table 6.8 & Table 6.9).

**Table 6.8: Pathology tests ordered by registered GPs and other medical practitioners, ACT & Australia, 2001/02 - 2003/04.**

| | 2001/02 | 2002/03 | 2003/04 |
|---|---|---|---|
| **ACT** | | | |
| No of tests '000 | 766 | 797 | 825 |
| No of tests per person | 2.4 | 2.5 | 2.5 |
| | | | |
| **Australia** | | | |
| No of tests '000 | 53,784 | 55,128 | 57,932 |
| No of tests per person | 2.7 | 2.8 | 2.9 |

Data source: SCRGSP 2006.

**Table 6.9: Diagnostic imaging ordered by registered GPs and other medical practitioners, ACT & Australia, 2001/02 - 2003/04.**

| | 2001/02 | 2002/03 | 2003/04 |
|---|---|---|---|
| **ACT** | | | |
| No of tests '000 | 124 | 124 | 122 |
| No of tests per person | 0.39 | 0.38 | 0.38 |
| | | | |
| **Australia** | | | |
| No of tests '000 | 8,768 | 8,952 | 8,997 |
| No of tests per person | 0.45 | 0.45 | 0.45 |

Data source: SCRGSP 2006.

## 6.4 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 ACT ACPAC provides advice and recommendations to DoHA for the ACAR. This advice focuses on the extent and priority of need (for residential and community care places) within the ACT. ACPAC meetings are held at least twice yearly, and include representatives from the Australian Government Department of Health and Ageing, ACT Planning and Land Authority, the ACT Ministerial Advisory Council on Ageing, the Department of Veterans Affairs, Alzheimer's Australia ACT and other Government and community representatives with relevant knowledge and experience in the delivery, or the ability to contribute to the planning, of aged care.

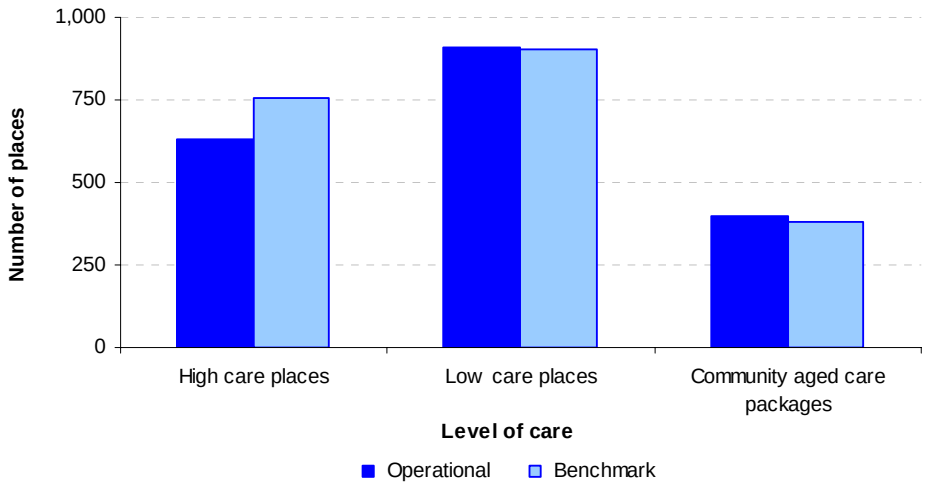
When places are allocated through the ACAR, they are known as "provisional allocations", which means they have been allocated to a provider but are not yet operational. Providers have two years to bring provisional places online. The places then become known as "operational places". When all of the provisional places are operational, the ACT will be above the Australian Government benchmark for all levels of aged care places.

As of 1 July 2004, under the 2004-05 Federal Budget, the Australian Government benchmark for places changed due to the increase in the residential aged care provision ratio from 100 to 108 operational places for every 1,000 people aged 70 years or over. The DoHA benchmark per 1,000 people aged 70 years or more, is: 40 high care places; 48 low care places; and, 20 community aged care packages. In the ACT, this translates to a total of 2,039 places: 755 high care places; 906 low care places; and 378 community aged care packages.

The ACT had 1,941 operational places at the June 2004 Australian Government Department of Health and Ageing stocktake. These included: 631 high care places; 911 low care places; and 399 community care packages (Figure 6.3). In addition, at the June 2004 stocktake, the ACT had 251 provisional allocations comprising: 126 high care; 113 low care; and 12 community care packages.

The ACT and Australian Governments collaborated to establish a further 100-bed aged care complex that will also include 150 self-care/independent living units, and will be developed on the banks of Lake Ginninderra in Belconnen. This proposal will include 40 high and 60 low aged care places. The Illawarra Retirement Trust has been selected to purchase and develop the site.

**Figure 6.3: Residential aged care places, operational and benchmark, ACT, 2004.**




Data source: ACT Health 2004.

The ACT Government works closely with DoHA and service providers to assist in bringing places online. The ACT Government has also funded a Residential Aged Care Liaison Nurse to streamline the process for accessing residential aged care beds, as well as to improve information sharing and communication between the community and acute sectors and residential aged care facilities, and to work towards the development of a low-level care waiting list.

ACT Health is seeking agreement from the Australian Government for provisional residential aged care allocations to be announced two years in advance, allowing for land approval processes to be progressed and finalised, and for providers to undertake more effective business planning. The outcome would be that provisional allocations could be operationalised and brought online in a timelier manner.

Planning reforms are being developed for the ACT. The ACT Government allocated $250,000 in the 2004-05 Budget for the amendment of the Land Act, as well as progressing the Building for Our Ageing Community strategy launched in December 2003 that is aimed at streamlining planning and approvals processes for older persons accommodation. This strategy will speed up the process for approving land applications for aged care homes in the ACT. Part of this strategy is the employment of the ACT Aged Care Accommodation Case Manager, within the Chief Minister's Department, who is dedicated to assisting approved providers through the development processes.

## 6.5 Quality and safety in health care

The Quality and Safety agenda in the ACT is underpinned by the *ACT Health Quality and Safety Plan 2004-2008* and the ACT Health Clinical Governance framework. The Plan is available from ACT Health's website <http://www.health.act.gov.au>.

ACT Health has established reference groups in five identified patient safety priority areas:

- Quality use of medicines
- Appropriate use of blood
- Patient falls
- Healthcare associated infections
- Pressure ulcers

These groups provide leadership in each of their respective quality and safety areas, undertake long-term strategic planning, foster collaboration, undertake research, co-ordinate approaches to monitoring and surveillance, facilitate on-going education and information exchange, support adherence to national guidelines and protocols, and identify emerging issues and needs in each of the five priority areas.

A number of safety and quality projects receive funding or support from ACT Health. These include:

- The ACT Child Death Review Team (CDRT). The ACT CDRT met for the first time in April 2004. The role of the group is to overview the health, social and environmental issues which impact on each child (0–17 years) death in the ACT. The CDRT has reviewed a series of data relating to Coronial Investigations, and Cancer and Perinatal Deaths. The resulting reports will form the basis of an inaugural report, which will be released in early 2006. The Team is also preparing a protocol for the investigation of Sudden Unexplained Deaths in Infancy (SUDI). The protocol is based on The Royal College of Pathologists and The Royal College of Paediatrics and Child Health (2004) report, *Sudden Unexpected Death in Infancy: A multi-agency protocol for care and investigation.*

- The Recognition of a Deteriorating Patient Steering Group. This group has been established to oversee the development of a detailed action plan to address the clinical risks associated with patients whose health is deteriorating.

- The Prospective Study of Interhospital Transfers project. This study has reviewed national and international literature demonstrating that transfer of patients between hospitals is associated with the occurrence of adverse events. It will examine all inter-hospital transfers over a three-month period in the ACT, to identify any similar links.

- The ACT Audit of Periprocedural and Perioperative Mortality (ACT APPM) project.

- The Quality First Awards were established in 2002 with the aim of recognising leadership and innovation in patient safety and quality of care, and to publicly honour innovations that improve the delivery of safe quality care within the ACT healthcare system. Award recipients during this reporting timeframe include The Canberra Hospital (Accessibility- participation in neonatal nursery reform and Emergency Department Investigation Quality Project); Community Health (Safety – towards best practice in equipment re-processing); and, Calvary Health Care ACT (Blood transfusion appropriateness and Falls minimisation in the acute hospital);

In February 2004, the ACT Health Clinical Audit Committee (CAC) was established. The Committee is responsible for clinical risk management and oversees all clinical audit processes conducted throughout ACT Health. CAC is responsible for reporting identified clinical risk and recommends remedial actions to the Clinical Council Executive. To date, one of the key functions of CAC has been the co-ordination of investigations of adverse events involving more than one division, or stream of ACT Health, or other party.

In 2004, the Australian Health Ministers agreed to take a uniform set of steps across the country to improve patient safety in public hospitals. Some of the identified initiatives have been implemented in the ACT, including:

- A policy on *Mandatory Reporting of Sentinel Events* has been introduced and preparation for contribution to the national report is underway.

- The *5-Step Correct Patient, Correct Site, Correct Procedure* policy has been introduced to all public hospitals in the ACT verifying the site of surgery and other procedures to reduce the risk of wrong site procedures. An evaluation plan and audit tools are being developed.

- The *10 Tips for Safer Health Care* consumer booklets have been widely promoted throughout ACT Health. Information has been included in the Healthy Territory Newsletter and the ACT Health Quality and Safety website and have been distributed to General Practitioners and Visiting Medical Officers.

- The *Public Patient Charter* has been reviewed and a draft circulated for comment.

- A review of the progress with implementation of the *Consumer Feedback Standards and Service Improvement Tool* has been undertaken in early 2005. All Divisions have implemented a consumer feedback process.

- A checklist for patient safety management systems and supporting booklet has been developed to assist people with different responsibilities within acute care organisations to ensure safe systems for patient care are in place.

- The Canberra Hospital and Calvary Health Care ACT have participated in the *National Inpatient Medication Chart Pilot* with plans to introduce the final chart in the next 12 months.

- The Canberra Hospital and Calvary Health Care ACT both conduct significant quality programs to support clinicians to provide the safety and quality of services across the ACT.

- The ACT Health Clinical Services Plan has been established to identify challenges to the health system, the services likely to be required and initiatives to be implemented. It informs strategic asset planning and workforce planning.

# References

ABS (Australian Bureau of Statistics) 2002, *2001 National health survey: Summary of results*, cat no 4364.0, ABS, Canberra.

AHMC (Australian Health Minister's Conference) 2004, *Healthy mouths healthy lives: Australia's national oral health plan 2004 – 2013,* South Australia Department of Health, Adelaide.

AIHW (Australian Institute of Health and Welfare) 2005a, *Health expenditure Australia 2003-04*, AIHW cat no HWE 32, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005b, *Medical labour force 2003*, AIHW cat no HWL 32, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005c, *Nursing and Midwifery labour force 2003*, AIHW cat no HWL 31, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005d, *Australian hospital statistics 2003-04*, AIHW cat no HSE 37, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2006, *Australian hospital statistics 2004-05*, AIHW, Canberra.

SCRGSP (Steering Committee for the Review of Government Service Provision) 2005, *Report on government services 2005*, Productivity Commission, Canberra.

SCRGSP (Steering Committee for the Review of Government Service Provision) 2006, *Report on government services 2006*, Productivity Commission, Canberra.

The Royal College of Pathologists and The Royal College of Paediatrics and Child Health 2004, '*Sudden Unexpected Death in Infancy: A multi-agency protocol for care and investigation'*, The Royal College of Pathologists and The Royal College of Paediatrics and Child Health, United Kingdom, viewed 3 April 2006, <http://www.rcpath.org/resources/pdf/SUDI%20report%20for%20web.pdf>.

# NATIONAL HEALTH PRIORITY AREAS

The National Health Priority Areas (NHPA) initiative is a collaborative effort involving the Australian Health Ministers Conference (AHMC), which consists of Federal, state and territory governments.

The NHPA initiative recognizes that the leading causes of mortality and morbidity in Australia are non-communicable diseases and that in order to reduce the burden of these diseases, a strategic approach is required which encompasses the continuum of care, from prevention through to treatment and management.

The initiative seeks to focus attention on seven health priority areas, for which there is potential for health gain:

- Cardiovascular health
- Cancer control
- Mental health
- Injury prevention and control
- Diabetes mellitus
- Asthma
- Arthritis and musculoskeletal conditions

The following seven chapters of the report provide an overview of these health priority areas for the ACT.

# 7 CARDIOVASCULAR HEALTH

**At a Glance**

- The greatest opportunities for health gain with cardiovascular disease (CVD) rest with prevention strategies aimed at reducing the prevalence of modifiable risk factors, screening, and management of disease, with advances in surgical techniques, pharmaceutical therapies and rehabilitation.
- Estimates from the 2001 National Health Survey suggest that 17.4% of ACT residents had a CVD in 2001.
- Mortality from CVD has declined over the last 30 years, however, CVD is the leading cause of death in the ACT, accounting for 34.7% of all ACT resident deaths in 2003. Together, ischaemic heart disease and stroke accounted for 70**%** of all CVD deaths for ACT residents in 2003.
- Cardiovascular disease was listed as a principal diagnosis for 4,558 ACT hospital separations for ACT residents in 2003-04. Commonly performed procedures at ACT hospitals for cardiovascular disease include coronary angiography, coronary artery bypass grafting and coronary angioplasty.
- In 2004, a Stroke Unit was opened at The Canberra Hospital to provide timely, evidence-based care to stroke patients. Since the Unit opened, there has been a reduction in the average length of stay for stroke patients and a reduction in stroke mortality.

Cardiovascular disease (CVD) (also known as circulatory disease or heart, stroke and vascular disease) is a range of diseases affecting the heart and blood vessels. Nationally, CVD is a leading cause of mortality, accounting for 35.3% of all deaths in Australia in 2003 (ABS 2005), and a significant cause of morbidity and disability (Mathers et al 1999). The cost burden from CVD is substantial, accounting for the largest single share of health expenditure in 2000-01 (AIHW 2004a).

The potential for health gain with CVD lies in prevention, screening, and timely and appropriate management of the disease. There is considerable potential for reducing the incidence of and mortality from CVD by reducing the prevalence of modifiable risk factors, such as tobacco smoking, high blood pressure, high blood cholesterol, insufficient physical activity, overweight and obesity, poor nutrition and diabetes (AIHW 2004b). Screening involves the use of cholesterol and blood pressure checks, exercise stress and electrocardiogram tests and medical imaging to identify those with a CVD, or at risk of disease. Advances in surgical techniques, pharmaceutical therapies and rehabilitation services tailored to individual needs present the greatest opportunities for health gain in the management of CVD (AIHW 2002).

Cardiovascular health became a National Health Priority Area in 1996, due to the widespread nature and the potential for prevention of cardiovascular disease.

## 7.1 Cardiovascular disease status

According to the 2001 National Health Survey results, 17.4**%** (95% CI: 15.8 – 19.0) 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 was consistent with results for Australia in 2001(16.8%)(ABS 2002).

Mortality from CVD has declined markedly over the last few decades, however, it is the leading cause of death in the ACT, accounting for 34.7% of all ACT resident deaths in 2003. The National Heart Foundation has estimated that 34% of deaths due to CVD between 1997 and 2000 were premature, resulting in almost 2,000 years of life lost in the ACT each year, during this period (National Heart Foundation 2003).

The reduction in the mortality rate has been largely due to a decline in the mortality rate for ischaemic heart disease. This has been attributed to a reduction in the incidence of heart attack and improved survival following heart attack, with recent advances in medical technologies, therapies and improved follow-up care (AIHW 2002). There has also been a modest reduction in mortality due to stroke, which reflects a decline in the incidence of stroke rather than an improvement in survival following stroke. The decline in the incidence of stroke (and ischaemic heart disease), can partly be attributed to reductions in the prevalence of risk factors such as tobacco smoking and the use of pharmaceutical therapies to lower blood pressure and treat and prevent blood clots (AIHW 2004b).

In 2003, there were 490 deaths registered for ACT residents with CVD recorded as the underlying cause. The mortality rate for the ACT was 213.2 deaths per 100,000 population (Australia: 235.5/100,000) (ABS 2005). Together, ischaemic heart disease and stroke accounted for 70**%** of all CVD deaths for ACT residents in 2003.

Cardiovascular disease was listed as a principal diagnosis for 4,558 ACT hospital separations for ACT residents in 2003-04. Males accounted for 59.5% and females accounted for 40.5% of these separations.

### 7.1.1 Ischaemic heart disease (IHD)

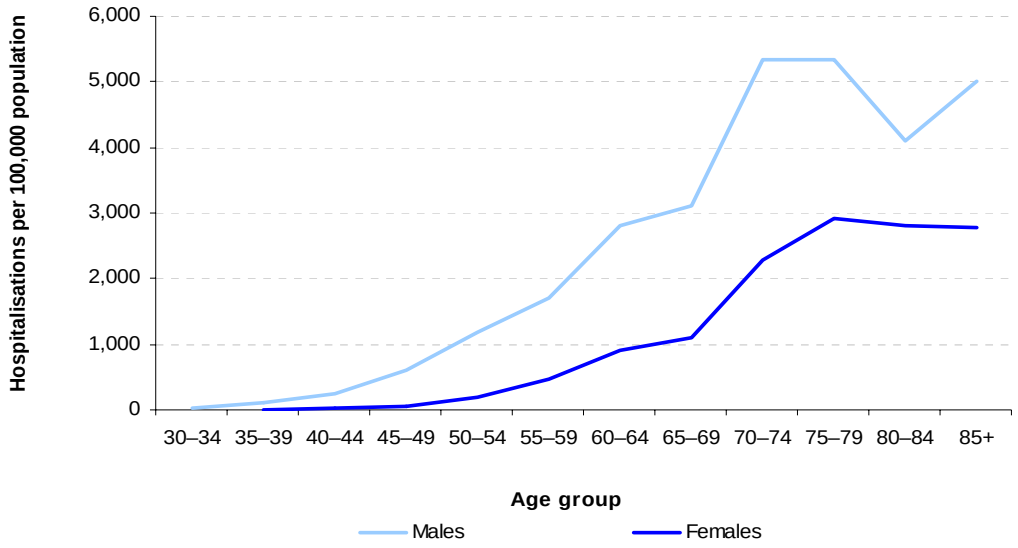
Ischaemic heart disease (IHD), or coronary heart disease, is the largest single cause of premature death in Australia (AIHW 2004c). IHD includes heart attack and angina. Underlying both conditions is the build-up of fatty substances on the inside walls of blood vessels and arteries, which is known as atherosclerosis. 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.

There were 230 ACT resident deaths registered in 2003 with an underlying cause recorded as IHD. The age-standardised death rate for the ACT was 99.0 per 100,000 population (Australia: 122.8/100,000 population). Ischaemic heart disease accounted for 46.9% of all cardiovascular deaths and 16% of all deaths in the ACT in 2003 and males were twice as likely to die from IHD as females (age standardised death rate for ACT males was 141.8 per 100,000; females 68.3 per 100,000). Two thirds (66.5%) of IHD deaths occurred among residents aged 75 years or more.

In 2003-04, there were 1,646 hospital separations in the ACT for ACT residents, where IHD was recorded as the principal diagnosis. Ischaemic heart disease accounted for 36.1% of all cardiovascular disease separations and 2.1% 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 increase with age (Figure 7.1). In 2003-04, 70.4% of hospital separations with a principal diagnosis of IHD occurred among those aged 60 years or more. The rates peaked among older males aged 70–74 years and older females aged 75–79 years.

**Figure 7.1: ACT hospital separation rates for ischaemic heart disease, ACT residents, by age group and sex, 2003-04.**




Data source: ACT Admitted Patient Care collection 2003-04, confidential unit record file.

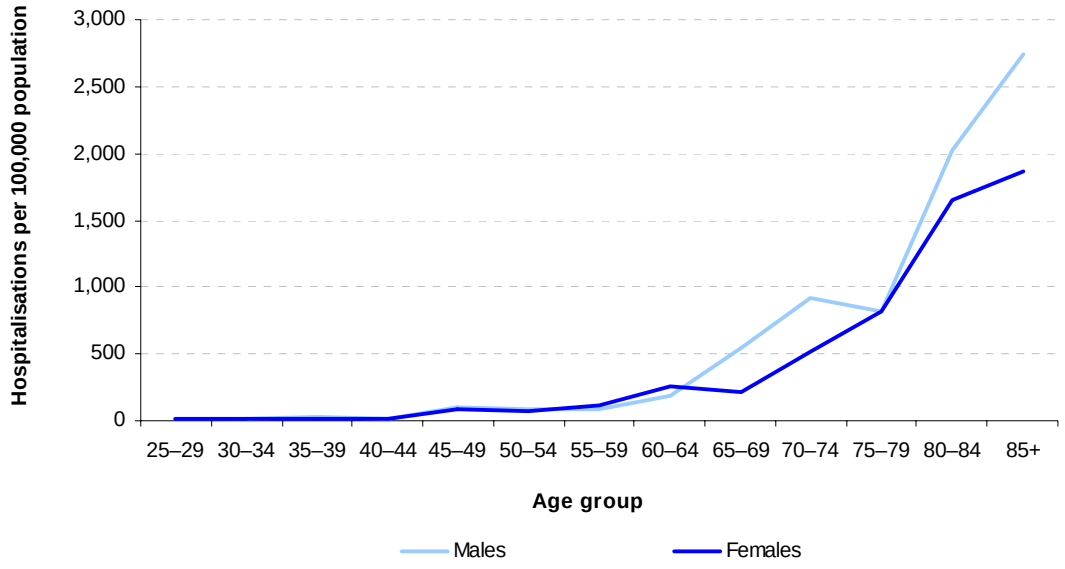
### 7.1.2 Stroke

Stroke includes a range of conditions in which the vessels supplying blood to the brain are blocked or bleed. This interruption in blood flow to an area of the brain can cause brain cell death, leading to loss of function of the affected part of the brain. The majority of strokes involve a blockage of a blood vessel or artery in the brain (an ischaemic stroke), however the less common form of stroke (a haemorrhagic stroke), caused by bleeding, has a much higher fatality rate. 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 2003, stroke was recorded as the underlying cause of 114 ACT resident deaths (71 male and 43 female deaths), accounting for 23.3% of all CVD deaths among residents. The age-standardised mortality rate was 0.7 per 1,000 population. The majority of stroke deaths (82.5%) occurred among residents aged 75 years or more.

There were 373 ACT hospital separations with stroke recorded as the principal diagnosis for ACT residents in 2003-04. Stroke accounted for 8.2% of all ACT resident separations for cardiovascular disease and 0.5% 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 2003-04 (Figure 7.2).

**Figure 7.2: ACT hospital separation rates for stroke, ACT residents, by age and sex, 2003-04.**




Data source: ACT Admitted Patient Care collection 2003-04, confidential unit record file.

## 7.2. Services and their use

Acute, specialist and rehabilitative services are commonly utilised by those with CVD. Access Economics (2005) has reported 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 2003-04, there were 2,045 coronary angiograms performed in ACT hospitals. ACT residents accounted for 52.5% of these procedures (1,073 procedures); non-ACT residents accounted for the remaining 47.5% (972) procedures. Males accounted for almost two thirds (66%) of all procedures and two thirds (67%) of all patients were aged 60 years or more.

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, thus restoring adequate blood supply to the heart muscle. In 2003-04, there were 417 CABG operations performed in the ACT. Just over half (53.2%) of these operations were performed on non-ACT residents and four times as many males than females underwent this procedure (337 procedures in males compared to 80 in females). More than three quarters (78.2%) of all patients were aged 60 years or more. The number of CABG operations performed on ACT residents in the ACT has decreased over recent years with developments in the less invasive percutaneous transluminal coronary angioplasty (PTCA). PTCA is an extension of cardiac catheterisation and involves the crossing and dilatation of coronary artery lesions by a balloon attached near the tip of a catheter. The procedure generally requires only a few days hospitalisation.

Coronary angioplasty, as with coronary artery bypass surgery, is used to restore adequate blood flow to blocked coronary arteries. The procedure involves inserting a catheter with a balloon into a narrowed coronary artery. The balloon is inflated against the blocked area to create a wider passage for blood flow. In 2003-04, there were 86 coronary angioplasty procedures in ACT hospitals. Just over half (55.8%) were performed on ACT residents and males accounted for 66.3% 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 2003-04, there were 723 stenting procedures performed in the ACT. ACT residents accounted for 52.6% of these procedures and 64.5% were performed on persons aged 60 years or more. Males were more likely than females to undergo stenting procedures, accounting for 76.2% of all stenting procedures in 2003-04.

## 7.3 Cardiovascular disease initiatives

In 2004, a Stroke Unit was opened at The Canberra Hospital (TCH). The Unit consists of 10 beds; four are fully monitored high dependency beds and six are step-down beds. The Unit has been fitted with state of the art lifting equipment for both staff and patient safety and comfort. Stroke patients now receive timely, evidence based care from a dedicated stroke team that comprises medical, nursing and allied health staff. All stroke patients are assessed by each member of the allied health team within the next business day following admission. Over 300 patients were managed by the Stroke Unit in the first 12 months. Preliminary analysis suggests there has been a marked reduction in length of stay for stroke patients and a reduction in mortality since the Unit opened.

A position was established for a Stroke Liaison Nurse (SLN) in conjunction with the Stroke Unit. The role of the SLN is to provide patient/family support and education during the acute phase of stroke care and recovery. The SLN manages each patient from admission through to discharge ensuring timely intervention and discharge planning occurs from the day of admission. The SLN is a single point of contact for the patient/family after discharge. The SLN provides a follow up call to stroke patients within weeks of discharge as well as stroke education to medical and nursing staff at both TCH and Calvary Hospital. In an effort to improve public awareness of stroke and stroke risk factors, the SLN also conducts education sessions for community groups such as Lions, Rotary etc.

The Continuing Care Nutrition Service manages the Heart Fare program, which is a therapeutic group education program for people with one or more risk factors for CVD. The program aims to reduce modifiable risk factors for heart disease. It rotates around Health Centres in Canberra and includes two sessions to developing skills in label reading, recipe modification and provides nutritional information etc.

Further information on initiatives to reduce modifiable risk factors for CVD can be found in Chapter 4: Lifestyle and Health.

# References

ABS (Australian Bureau of Statistics) 2002, *2001 National health survey: summary of results, tables 27-41, Australian Capital Territory*, cat. no. 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005, *2003 Causes of death: Australia*, cat. no. 3303.0, ABS, Canberra.

Access Economics 2005, *The shifting burden of cardiovascular disease in Australia,* Access Economics and The National Heart Foundation, Canberra.

AIHW (Australian Institute of Health and Welfare) 2002, *Chronic diseases and associated risk factors in Australia 2001,* cat. no. PHE 33, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004a, *Cardiovascular disease: health expenditure on cardiovascular diseases 2000–01* Cardiovascular Disease Data Briefing Number 1, AIHW, Canberra.

AIHW 2004b, *Heart, stroke and vascular diseases: Australian facts 2004,* cat. no. CVD 27 AIHW and National Heart Foundation of Australia (Cardiovascular Disease Series No. 22), AIHW, Canberra.

AIHW 2004c, *Australia's Health 2004,* AIHW cat. no. AUS 44, AIHW, Canberra.

Mathers C, Vos T, & Stevenson C 1999, *The burden of disease and injury in Australia,* AIHW, Canberra.

National Heart Foundation 2003, *The lost years of living tables and graphs*, National Heart Foundation, Sydney, viewed 18 August 2005 <www.heartfoundation.com.au>.

# 8 CANCER CONTROL

**At a Glance**

- 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.
- Between 1999 and 2003, the most common cancers diagnosed were breast cancer (17.9%), colorectal cancer (14.1%), prostate cancer (13.2%), melanoma (10.4%), and lung cancer (6.2%).
- Cancer projections suggest that although the cancer incidence rate for the ACT is not likely to increase between 2003 and 2011, the number of people diagnosed with cancer will increase by about 22%, largely because of growth and changes in the age structure of the population.
- The female breast cancer incidence rate in the ACT (141.4 per 100,000 females), for the period 1999 to 2003, was higher than the rate nationally (117.2 per 100,000 females) in 2001. However, The female breast cancer mortality rate for the ACT was 24.9 per 100,000 females, consistent with the mortality rate for Australia (24.8 per 100,000 females). These figures indicate the importance of mammographic screening and breast cancer treatment in the ACT.
- Between 1999 and 2003, the leading causes of cancer mortality in the ACT were lung cancer (15.3%), colorectal cancer (12.3%), breast cancer (8.4%), prostate cancer (6.3%) and non-Hodgkin's lymphoma (5.5%).
- The cancer mortality rate has declined markedly over the last 20 years, largely due to advances in prevention, screening and treatment. Between 1983 and 2003, there was an average annual decrease in mortality rates for males and females by 1.3% and 0.9%, respectively.

The term cancer refers to a range of diseases in which there is a transformation of normal body cells into abnormal cells. These abnormal cells lose their ability to grow and multiply in an orderly manner. They multiply uncontrollably and form masses known as tumours or neoplasms. If the neoplasms are malignant (cancerous) they have the ability to grow and invade other parts of the body (metastasise).

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 (DoHA 2001). Modifiable risk factors such as tobacco smoking, exposure to solar UVR, high levels of alcohol consumption, physical inactivity and poor nutrition are associated with specific cancers and present an opportunity for health gain. Early detection and early intervention strategies include appropriate screening and treatment and are essential for a favourable prognosis with certain cancers. Treatment may involve surgery, chemotherapy and radiotherapy depending on the type of cancer and stage of the cancer at diagnosis. Advances in diagnostic testing, medical imaging, radio-oncology and new generation pharmaceuticals all present opportunities for future health gain in the treatment of cancer.

In 1996, cancer control became a National Health Priority Area (NHPA). There are eight cancer groups identified as priorities, with potential for health gain. The priority cancers include lung cancer, breast cancer, cervical cancer, colorectal cancer, melanoma, prostate cancer, non-Hodgkin's lymphoma and non-melanocytic skin cancer.

This chapter presents information on all cancers and seven of the eight NHPA cancers. Non-melanocytic skin cancer (NMSC) is excluded, as it is rarely life-threatening. NMSC is the most commonly diagnosed cancer in Australia, with an estimated 374,000 persons treated nationally for the condition in 2002 (NCCI 2003). NMSC is often self-detected and usually removed in a doctor's surgery. Cases are typically not confirmed by histology and the collection of incidence data for NMSC is not legally required in Australia (AIHW 2004a).

In this chapter, incidence and mortality statistics for the ACT have been grouped into multiple years (1999 to 2003) and presented as five-year annual averages. Rates have been standardised to the June 2001 Australian population and are presented per 100,000 population. The five-year averages for the ACT have been compared to Australian rates for 2001, which are the most recent national rates available.

## 8.1 All cancers

Recent research on cancer projections for the ACT, undertaken by the Australian Institute of Health and Welfare, suggests that although the cancer incidence rate for the ACT is not likely to increase between 2003 and 2011, there will be an increase in the number of people diagnosed with cancer. Estimates suggest that between 2003 and 2011, there will be an increase of 22% in the number of new cancers diagnosed each year in the ACT (AIHW 2005c), 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, with almost 60% of new cases expected to be diagnosed in people aged 60 years or more by 2011.

During the five-year period 1999-2003, there were 5,858 new cases of cancer diagnosed in ACT residents (this excludes non-melanocytic skin cancers (NMSC)). The average annual incidence rate for the ACT during this period was 454.8 per 100,000 population (95% CI 428.8 – 480.8) (Table 8.1), which was consistent with the rate for Australia (455.3, 95% CI 452.3 – 458.4) in 2001 (AIHW 2004b). The average annual incidence rate for ACT males was 527.8 (95% CI 508.9–546.7) and 405.0 (95% CI 390.2–419.8) for ACT females, consistent with the rates for Australian males (541.4, 95% CI 536.5–546.3) and females (393.3, 95% CI 389.4–397.1) in 2001 (AIHW 2004b).

The risk of cancer was low in childhood and increased with age. Almost half of all new cancers diagnosed between 1999 and 2003 were in persons aged 65 years or more. The most common registered cancers for this age group were prostate cancer, colorectal cancer, breast cancer and lung cancer. During the same period, less than 1% of all new cancer diagnoses were in individuals aged less than 15 years.

**Table 8.1: Summary statistics for cancer[(a),(b)] , average annual incidence[(c)] and mortality[(d)], by sex, ACT, 1999-2003.**

| | Incidence | | Mortality | | Mean age at death, 2003 | Lifetime risk of dying, 2003 |
|---|---|---|---|---|---|---|
| | Number | Rate | Number | Rate | | |
| Male | 597 | 527.8 | 212 | 215.1 | 69.9 | 1 in 9 |
| Female | 574 | 405.0 | 194 | 147.5 | 70.2 | 1 in 12 |
| Persons | 1,172 | 454.8 | 407 | 174.1 | 70.7 | 1 in 10 |

Data sources: ACT Cancer Registry 1999-2003, confidential unit record file; ABS deaths data 1999-2003, confidential unit record file.

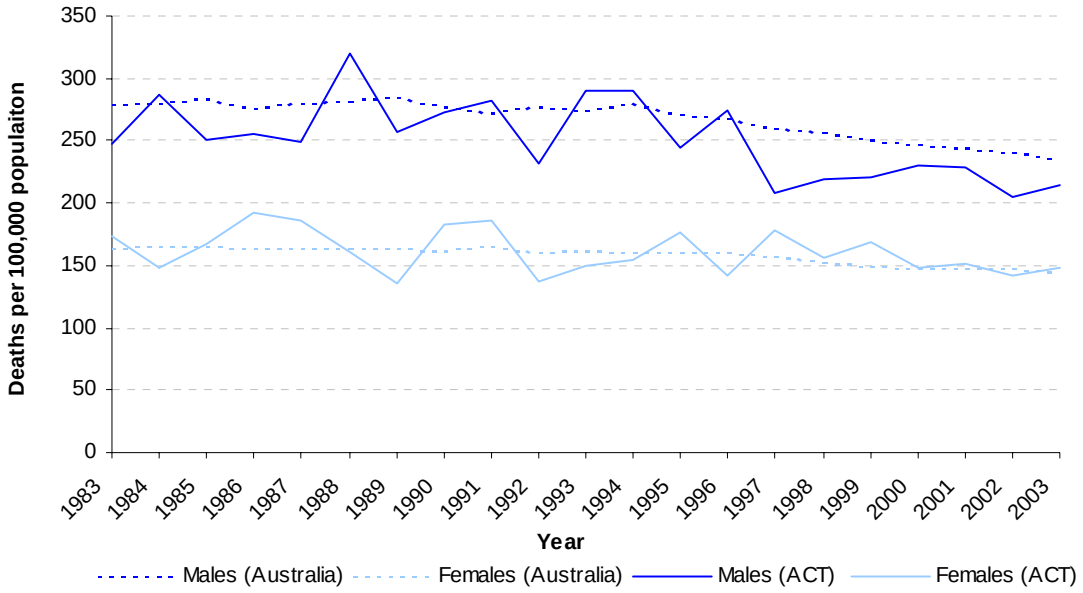
(a) Cancer statistics presented include all malignant neoplasms, defined according to the International Classification of Diseases, 10th Revision, Topo10 (ICD-10 Topography code) as C00-C97, excluding C44 (non-melanocytic skin cancers).
(b) All rates are per 100,000 population and have been standardised to the Australian population at 30 June 2001.
(c) Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
(d) Mortality is based on the State of usual residence (ACT) at the time of death and year of death registration.

Between 1999 and 2003, there were 2,034 deaths registered for ACT residents with cancer recorded as the underlying cause of death. The average annual mortality rate for cancer was 174.1 per 100,000 population (95% CI 157.2 – 191.1), consistent with the rate for Australia (187.1, 95% CI 185.2 – 189.0) in 2001 (AIHW 2004b).

The mortality rates for males (215.1, 95% CI 186.1–244.1) and females (147.5, 95% CI 126.7 – 168.3) in the ACT between 1999 and 2003 were consistent with the rates for Australian males (241.2, 95% CI 237.9–244.6) and females (147.8, 95% CI 145.5–150.1) in 2001 (AIHW 2004b). If the mortality rates for the ACT were to continue, 1 in 9 males and 1 in 12 females would be at risk of death from cancer.

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 2003, there was an average annual decrease in mortality rates for males and females by 1.3% and 0.9%, 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 2004a). Future improvements in these areas are expected to lead to further declines in the mortality rate for the ACT.

**Figure 8.1: Mortality rates[(a),(b)] for cancer, by sex, ACT & Australia, 1983-2003.**

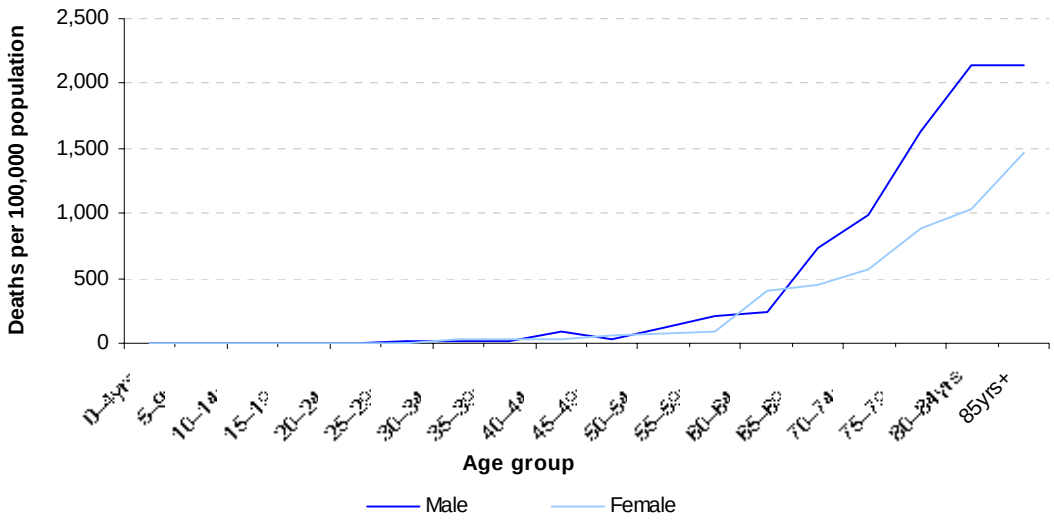



Data source: ABS deaths data 1999-2003, confidential unit record file; AIHW 2005a.

(a) Deaths for residents of the ACT, by year of registration for 2003, by year of death for 1983-2002.
(b) Rates are age-standardised to the Australian population at 30 June 2001.

Mortality rates for cancer increase with age. In 2003, rates peaked for males and females aged 85 years or more (Figure 8.2). Two thirds (67.8%) of all cancer deaths between 1999 and 2003 occurred in persons aged 65 years or more. In the majority of age groups, mortality rates were higher for males, with an all-age male to female mortality ratio of 1.6 to 1. However, the female mortality rate was higher than the mortality rate for males in some of the younger age groups, largely reflecting the impact of female cancers.

**Figure 8.2: Age-specific mortality rates[(a)] for cancer, by sex, ACT, 2003.**




Data source: ABS deaths data 1999-2003, confidential unit record file.

(a) Deaths for residents of the ACT, by year of registration.

## 8.2 National health priority cancers

Table 8.2 presents annual averages for cancer incidence and mortality for the five-year period 1999-2003. The seven national health priority cancers accounted for 67% of all cancers diagnosed in the ACT during this period. The most commonly diagnosed cancer was breast cancer, accounting for 18% of all cancers diagnosed, followed by colorectal cancer (14.1%) and prostate cancer (13.1%). The most commonly diagnosed cancer in Australia in 2001 was colorectal cancer (14.5%), followed by breast cancer (13.4%) and prostate cancer (12.7%).

The leading cancer recorded as the underlying cause of death for males in the ACT was lung cancer, followed by colorectal cancer and prostate cancer. For females in the ACT, the leading cancer recorded as the underlying cause of death was breast cancer, followed by colorectal cancer and lung cancer.

**Table 8.2: Summary statistics for selected national health priority cancers[a], [b], average annual incidence[c] and mortality[d], by sex, ACT, 1999-2003.**

Data sources: ACT Cancer Registry 1999-2003, confidential unit record file; ABS deaths data 1999-2003, confidential unit record file.

| | Incidence | | Mortality | |
|---|---|---|---|---|
| | Number | Rate | Number | Rate |
| **Breast cancer** | | | | |
| Male | - | - | - | - |
| Female | 209 | 141.4 | 34 | 24.9 |
| Persons | - | - | - | - |
| **Colorectal cancer** | | | | |
| Male | 89 | 80.3 | 26 | 25.4 |
| Female | 76 | 56.6 | 24 | 18.8 |
| Persons | 165 | 67.7 | 50 | 21.7 |
| **Prostate cancer** | | | | |
| Male | 154 | 141.7 | 26 | 32.5 |
| Female | - | - | - | - |
| Persons | - | - | - | - |
| **Melanoma** | | | | |
| Male | 68 | 53.6 | 8 | 6.6 |
| Female | 53 | 35.7 | 4 | 2.8 |
| Persons | 121 | 43.9 | 12 | 4.6 |
| **Lung cancer** | | | | |
| Male | 47 | 43.9 | 38 | 36.5 |
| Female | 26 | 20.1 | 24 | 18.6 |
| Persons | 73 | 30.5 | 62 | 26.4 |
| **Non-Hodgkins lymphoma** | | | | |
| Male | 29 | 25.6 | 11 | 10.3 |
| Female | 21 | 15.6 | 12 | 9.1 |
| Persons | 51 | 19.9 | 22 | 9.6 |
| **Cervical cancer** | | | | |
| Male | - | - | - | - |
| Female | 10 | 6.4 | 3 | 1.8 |
| Persons | - | - | - | - |

(a) 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.
(b) All rates are per 100,000 population and have been standardised to the Australian population at 30 June 2001.
(c) Incidence is based on the State of usual residence (ACT) at the time of diagnosis.
(d) 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 (excluding non-melanocytic skin cancer) diagnosed in Australian women. Risk factors for the disease include nulliparity, early onset of menstruation, later menopause, mutations in the BRCA1 and BRCA2 genes, use of oral contraceptives, hormone replacement therapy, obesity in postmenopausal women, the regular consumption of alcohol and having a family history of breast cancer. The risk of disease increases with age in women. Males can also develop breast cancer, although it is very rare (NBCC 2005).

BreastScreen Australia is the national mammographic screening program that provides free screening to women aged 50-69 years throughout Australia. One of the objectives of the program is to achieve a national participation rate of 70% for women in this age group, with the overall aim of reducing breast cancer mortality. During 2001-02, the participation rate for ACT women (aged 50-69 years) was 59.2% (95% CI 58.3 – 60.1). This rate was higher than the Australian rate (57.1%, 95% CI 57.0 – 57.2), and higher than the ACT rate in 2000-01 (57.0%, 95% CI 56.0 – 57.8) (AIHW 2005b).

Between 1999 and 2003, there was an annual average of 209 breast cancer diagnoses in ACT females (Table 8.2). Breast cancer was the leading cancer diagnosed in females, diagnosed at more than twice the rate of colorectal cancer, the second most common cancer diagnosed between 1999 and 2003.

The average annual incidence rate for breast cancer in females was 141.4 per 100,000 population (95% CI: 122.2 – 160.6), which was higher than the incidence rate for Australian females in 2001 (117.2, 95% CI 115.1–119.4). The risk of breast cancer increases with age, peaking in ACT females aged 65–69 years (470.6 per 100,000 population) during the period 1999 to 2003.

There were 170 breast cancer deaths registered for ACT females between 1999 and 2003. There was an average of 34 deaths each year during this period. The average annual mortality rate from breast cancer, for females, was 24.9 per 100,000 population (95% CI: 16.5 – 33.3), which was consistent with the Australian female mortality rate from breast cancer in 2001 (24.8, 95% CI: 23.8–25.8) (AIHW 2004b).

Further information about breast cancer in the ACT is discussed in a recent publication that is available from the Population Health Research Centre, ACT Health (2003).

### 8.2.2 Colorectal cancer

Colorectal cancer usually develops from polyps, or growths, on the internal lining of the bowel. The predisposing risk factors for colorectal cancer include polyps, diabetes, a family history of colorectal cancer, having had inflammatory bowel disease and increasing age. The modifiable risk factors for colorectal cancer include poor diet, physical inactivity, high levels of alcohol consumption, smoking and excessive weight (DoHA 2005a).

The prognosis for people diagnosed with the disease is largely dependent on the extent of the cancer at diagnosis. Colorectal cancer can be treated successfully if detected in its early stages, but currently fewer than 40% of bowel cancers are detected early. Between November 2002 and June 2004, the Australian Government piloted a bowel cancer screening program. Screening was undertaken using faecal occult blood tests (FOBT) and participants with a positive result were referred for further tests. The program will be rolled out nationally from 2006, over a number of years and offered to Australians turning 55 or 65 years of age, in the first instance (DoHA 2005a).

Colorectal cancer was the second most common cancer diagnosed for both males and females between 1999 and 2003. There was an annual average of 89 and 76 new cases in ACT males and females respectively during this period (Table 8.2). Relevant average annual incidence rates were 80.3 per 100,000 for ACT males (95% CI 63.6 – 97.0) and 56.6 for ACT females (95% CI 43.9 – 69.3), which were consistent with the Australian colorectal incidence rates for males (79.0, 95% CI 77.2–80.9) and females (55.4, 95% CI 53.9–56.8) in 2001(AIHW 2004b).

Between 1999 and 2003, there were 250 deaths from colorectal cancer. The average annual mortality rate for ACT males was 25.4 per 100,000 population (95% CI 15.6 – 35.2) and 18.8 (95% CI 11.3 – 26.3) for ACT females. These rates were consistent with the rates for Australian males (30.5, 95% CI: 29.3–31.6) and females (19.7, 95% CI: 18.8–20.5) in 2001 (AIHW 2004b).

### 8.2.3 Prostate cancer

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

Studies have found that increasing age and family history of prostate cancer, are the main risk factors and there is some evidence to suggest that ethnicity, environmental and lifestyle factors may also increase the risk of disease (Cancer Council Australia 2005).

The incidence of prostate cancer has increased in recent years, from the fourth leading cancer diagnosed prior to 1987 to the most common cancer diagnosed in men between 1999 and 2003. During this period, there was an annual average of 154 prostate cancer diagnoses in the ACT (Table 8.2). The increase in prostate cancer diagnoses was largely due to an increase in public awareness of the disease, together with the use of Prostate Specific Antigen (PSA) testing. ACT prostate cancer incidence trends over time show a substantial time lag behind Australia, which reflects a delayed uptake of PSA testing in the ACT, compared with the rest of Australia. The average annual incidence rate for prostate cancer in ACT males was 141.7 per 100,000 population (95% CI 119.3 – 164.1). This was not significantly different to the rate for Australian males (128.5, 95% CI 126.1–130.9) in 2001 (AIHW 2004b).

There were 120 deaths from prostate cancer in the ACT between 1999 and 2003, with an average annual mortality rate of 32.5 per 100,000 population (95% CI: 20.0 – 45.0), consistent with the rate for Australia (35.2, 95% CI 33.9–36.6) in 2001 (AIHW 2004b). Prostate cancer mortality increases with age, with the majority (64.3%) of prostate cancer deaths in the ACT occurring among males aged 75 years or more, between 1999 and 2003.

### 8.2.4 Melanoma

Australia has one of the highest prevalence rates for melanoma in the world. Incidence has increased over the last few decades, although incidence in the ACT is usually lower than incidence nationally (AIHW 2004b). The major risk factors for melanoma include a history of sun exposure and sunburn, especially in early life, having a fair complexion, having multiple dark moles, older age and a personal or family history of melanoma (Cancer Council Australia 2005).

During the 1999 to 2003 period, for both males and females, melanoma was the third most common site for new cancers, accounting for 11% of all male and 9% of all female cancers in the ACT. The average number of new cases diagnosed annually was 68 for males and 53 for females (Table 8.2). The incidence rates for males (53.6, 95% CI 40.9 – 66.3) and females (35.7, 95% CI 26.1 – 45.3) in the ACT were consistent with the Australian rates in 2001 (55.2, 95% CI 53.7–56.7 for males and 38.3, 95% CI 37.1–39.5 for females) (AIHW 2004b).

There were 31 male and 14 female melanoma deaths in the ACT during the 1999 to 2003 period. The average annual rates were 6.6 per 100,000 for males (95% CI 2.0 – 11.2) and 2.8 for females (95% CI 0.1 – 5.5), which were consistent with the rates for Australia in 2001 (males: 7.8, 95% CI 7.2–8.3; females: 3.7, 95% CI: 3.3–4.0) (AIHW 2004b).

### 8.2.5 Lung cancer

Lung cancer is an aggressive form of cancer originating in the trachea, windpipe and lung. Tobacco smoking is the major risk factor for lung cancer and estimates suggest that approximately 92% of all lung cancers in Australia are attributable to smoking (Mathers et al 1999). Exposure to environmental tobacco smoke, asbestos, uranium, chromium, nickel and radon are also risk factors for lung cancer. The risk of developing lung cancer increases with age and males have a higher risk of developing the disease than females, which is largely a reflection of historically higher smoking rates among men (AIHW 2002).

There was an annual average of 47 new cases of lung cancer diagnosed in ACT males and 26 new cases in ACT females between 1999 and 2003 (Table 8.2). During this period, lung cancer was the fourth leading cancer site for both males and females, with males (43.9, 95% CI 31.3 – 56.5) more than twice as likely to be diagnosed with lung cancer than females (20.1, 95% CI 12.4 – 27.8). Although the ACT male lung cancer incidence rate for this period was below the rate for Australian males (61.4, 95% CI 59.7 – 63.0), the ACT female lung cancer incidence rate was consistent with the rate for Australian females (27.7, 95% CI 26.7 – 28.7) in 2001(AIHW 2004b).

Between 1999 and 2003, lung cancer was the most common cause of cancer death in the ACT. There were 311 deaths from lung cancer during this period. About two thirds (68.2%) of all lung cancer deaths in the ACT occurred among older residents. The average annual mortality rate for ACT males was 36.5 per 100,000 population (95% CI 24.9–48.1) and 18.6 (95% CI 11.2 – 26.0) for ACT females. Although the ACT male lung cancer mortality rate for this period was below the rate for Australian males (53.7, 95% CI 52.1 – 55.2), the ACT female lung cancer mortality rate was consistent with the rate for Australian females (22.6, 95% CI 21.7 – 23.5) in 2001(AIHW 2004b).

### 8.2.6 Non-Hodgkins lymphoma (NHL)

Non-Hodgkin's lymphoma (NHL) is a malignant growth of B or T cells in the lymph system. The lymphatic system is important for fighting infection as it filters bacteria and cancer cells and carries fluid from the limbs and internal organs. As is the case for many other types of cancer, the cause of NHL is unknown, although the risk of developing the disease increases with age and over 95% of NHL cases occur in adults. Lymphomas are more likely to develop in people who have been exposed to high doses of radiation, people who have taken drugs to prevent rejection following an organ transplant, and people whose immunity has been reduced as a result of a health condition (American Cancer Society 2005).

Treatment options for NHL include surgery, chemotherapy, radiotherapy and biological therapies. Stem cell transplantation is another treatment option, but is usually only used for those whose disease is in remission or those who have a relapse following treatment.

There were 253 new cases of NHL diagnosed in the ACT between 1999 and 2003 (Table 8.2). The average annual incidence rate for the ACT during this period was 19.9 per 100,000 population (95% CI 14.4 – 25.4), consistent with the rate for Australia (18.0, 95% CI 17.4–18.6) in 2001 (AIHW 2004b).

Between 1999 and 2003 there were 112 NHL deaths among ACT residents. The average annual mortality rate for the ACT during this period was 9.6 NHL deaths per 100,000 population (95% CI 5.6 – 13.6), which was consistent with the rate for Australia (7.7, 95% CI 7.3–8.1) in 2001 (AIHW 2004b).

Table 8.2 shows that males in the ACT were more likely to be diagnosed with the disease than females (rate ratio: 1.6 for the period 1999 to 2003), but the mortality rate between the sexes was similar. This is consistent with disease patterns for Australia, with 21.4 males (95% CI 20.4 – 22.4) and 15.1 females (95% CI 14.4 – 15.9) per 100,000 population diagnosed with the disease, and 9.2 male deaths (95% CI 8.5 – 9.8) and 6.5 female deaths (95% CI 6.1 – 7.0) per 100,000 population in 2001.

### 8.2.7 Cervical cancer

Cancer of the cervix 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), smokers, those who become sexually active at a young age, and those who have had multiple sexual partners (NCSP 2005).

The cervical screening program prevents cancer by detecting abnormalities that could lead to cancer of the cervix. The evidence suggests that up to 90% of the most common form of cancer of the cervix could be prevented if all women had regular Pap tests. The National Cervical Screening Program recommends and encourages women to have Pap smears every two years in order to reduce the incidence and mortality from cervical cancer.

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

For further information on the ACT Cervical Screening Program and participation rates, see Chapter 4: Lifestyle and Health.

In the ACT, during the 1999 to 2003 period, 50 women were diagnosed with cervical cancer. New cases were diagnosed at an average annual rate of 6.4 per 100,000 female population (95% CI 2.4 – 10.4) (Table 8.2). There was no significant difference between the rate for the ACT and the rate for Australia (7.3, 95% CI 6.8 – 7.9) in 2001 (AIHW 2004b).

The average annual mortality rate for ACT females (1.8, 95% CI 0.0 – 3.8) during the 1999 to 2003 period was also consistent with the rate for Australia (2.6, 95% CI 2.4 – 3.1) in 2001 (AIHW 2004b).

## 8.3 Cancer control services and initiatives

### Australian Government initiatives

The Australian Government has recently launched a Strengthening Cancer Care initiative, committing $189.4 million over five years to reducing the burden of cancer in Australia. The initiative will focus on establishing a national cancer agency, 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 (DoHA 2005).

The National Cancer Control Initiative is an expert reference body providing advice to the Australian Government on cancer control. This includes advice about new evidence for therapeutic options in cancer control, including treatment modalities, medications and diagnostic tests. The reference body identifies appropriate initiatives and makes specific recommendations to government based upon the best evidence available.

The National Cancer Strategies Group was established in 1998 and also provides advice to the Australian Government on cancer control. However, this group focuses on strategies to improve the prevention, detection, treatment and management of cancer in Australia.

### 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 (see Chapter 4: Lifestyle and Health for further information). The Plan also supports participation in cancer screening programs for the early detection of cancer.

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

### 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 Service 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 these services to clients. CRCS ensures a continuum of care to patients ranging from prevention, screening, diagnosis, treatment and rehabilitation to palliative care.

Prevention, treatment and support services are provided by the CRCS. Services are delivered at a number of locations, in a variety of environments, ranging from hospital settings to patients' homes, and include:

- Breast screening
- Cervical screening
- Breast care nurses
- Psychosocial cancer support
- Palliative care nurses at The Canberra Hospital
- Medical oncology

### The Gastrointestinal Tumour Group

The Gastrointestinal Tumour Group has initiated a Colorectal Cancer Data Collection Project to develop a database of treatment protocols to enhance best practice management guidelines in the ACT.

### The ACT & SE NSW Breast Cancer Treatment Group

This group of clinicians and consumers is interested in breast cancer, breast cancer treatment, patient outcomes and support for patients. The group includes surgeons, radiation and medical oncologists, pathologists, nurses, and other health professionals involved in the management of breast cancer in the ACT and SE NSW. The group also includes representatives from the ACT Division of General Practice, the ACT Cancer Council and consumer representatives.

The group collects information on the treatment of women with newly diagnosed breast cancer in the ACT and surrounding NSW and monitors treatment patterns, making comparisons with best practice guidelines. In 2004, the group published findings from the Breast Cancer Treatment Group Quality Assurance Project. The report outlined the findings of breast cancer treatment from diagnosis to surgery to radiotherapy and chemotherapy with the ACT region for the five-year period 1997–2002. Importantly, the project provides the means to benchmark ACT breast cancer management with national statistics and to compare against best practice guidelines.

**Emerging Issue**

- Projections of cancer incidence in the ACT suggest that between 2003 and 2011, there will be an increase of 22% in the number of new cancers diagnosed each year (AIHW 2005c).

# References


ACT Health 2002, *Health action plan 2002*, ACT Government, Canberra.

ACT Health 2003, *Breast cancer in the ACT*, health series no. 31, ACT Government, Canberra.

AIHW (Australian Institute of Health and Welfare) 2002, *Chronic diseases and associated risk factors in Australia 2001,* AIHW cat. no. PHE 33, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004a, *Australia's health 2004*, AIHW cat. no. AUS 44, Australia's health no. 9, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004b, *Cancer in Australia 2001*, AIHW cat. no. CAN 23, cancer series no. 28, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005a, S*tate & territory general record of incidence of mortality (GRIM) books*, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005b, *BreastScreen Australia monitoring report 2001-02*, AIHW cat. no. CAN 24, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005c, *Cancer incidence projections Australia 2002 to 2011*, *supplementary report: states and territories*, unpublished tables.

American Cancer Society 2005, American Cancer Society, Atlanta, viewed 24 November 2005 <http//www.cancer.org>.

Cancer Council Australia 2005, Cancer Council Australia, Sydney, viewed 24 November 2005, <http//www.cancer.org.au>.

DoHA (Department of Health and Ageing) 2001, DoHA, Canberra, viewed 24 November 2005, <http//www.cancerscreening.gov.au>.

DoHA (Department of Health and Ageing) 2005a, *Priorities for action in cancer control 2001 – 2003*, DoHA, Canberra.

DoHA (Department of Health and Ageing) 2005b, DoHA, Canberra, viewed 24 November 2005, <http//www.health.gov.au>.

Mathers C, Vos T, & Stevenson C 1999, *The burden of disease and injury in Australia,* AIHW, Canberra.

NBCC (National Breast Cancer Centre) 2005, NBCC, Sydney, viewed 24 November 2005, <http//www.nbcc.org.au>.

NCCI (National Cancer Control Initiative) 2003, *The 2002 national non-melanoma skin cancer survey: a report by the NCCI non-melanoma skin cancer working group*, NCCI, Melbourne.

NCSP (National Cervical Screening Program) 2005, NCSP, Canberra, viewed 24 November 2005, <http//www.cervicalscreen.health.gov.au>.

# 9 MENTAL HEALTH

**At a Glance**

- Mental health disorder is the third leading burden of disease for Australians and is a major cause of chronic disability. Depression accounts for about 3.7% of the total burden and research suggests that this is on the increase.
- Survey estimates suggest one in five residents of the ACT will experience a mental health disorder over a 12-month period. National estimates suggest half of those with a mental health disorder will suffer a co-morbidity at the same time.
- In 2003, there were 35 deaths from intentional self-harm registered for ACT residents, accounting for 2.5% of all ACT resident deaths.
- Most ACT resident deaths from mental health disorder in 2003 were attributable to dementia (71%), followed by psychoactive substance use (21%), similar to the pattern for Australia in 2003 (AIHW 2004).
- The greatest opportunities for future health gain lie with promotion, prevention and early intervention strategies, increasing service responsiveness, strengthening service quality and fostering research, innovation and sustainability.

Mental health is a state of emotional and social wellbeing, in which the individual can cope with the normal stresses of life and achieve his or her potential (WHO 1999). Mental ill health encompasses a range of cognitive and behavioural disorders that can vary in severity, from mild forms of depression and anxiety to more serious disabling disorders, such as schizophrenia and other psychoses (DoHA 2003a). Mental ill health can affect anyone at any stage in the life course, however, evidence suggests that there may be differences in individual susceptibility to some disorders. Many factors can contribute to the onset of mental ill health in susceptible individuals including stress, bereavement, relationship breakdown, child abuse, unemployment, social isolation and times of accidents and life-threatening illness (DoHA 2000a).

Mental health disorder is the third leading burden of disease (among major disease groups) for the Australian population, after cardiovascular disease and cancer. Depression is the most common mental health disorder reported in Australia, and accounts for about 3.7% of the total burden, however, if the attributable burden of suicide and intentional self harm is included, then depression accounts for an overall 5% of the burden of disease in Australia (Mathers et al 1999). Estimates suggest that depression alone will constitute one of the leading health burdens worldwide by 2020 (Murray and Lopez 1996).

The burden of mental health disorder is dominated by years lost due to disability rather than years lost due to mortality. This reflects the fact that mental health disorder is not a major direct cause of death, but a major cause of chronic disability (Mathers et al 1999). The greatest opportunities for future health gain lie with promotion, prevention and early intervention strategies, increasing service responsiveness, strengthening service quality and fostering research, innovation and sustainability (DoHA 2003a) in order to reduce the disability burden associated with mental ill-health.

In recognition of its impact on individuals, their families and the wider community, and the potential for reducing the health burden, mental health was declared a National Health Priority Area in 1996.

## 9.1 Mental health status

### Prevalence of mental ill health

Estimates of the prevalence of mental ill health in the ACT come from survey data. According to the results of the 1997 National Survey of Mental Health and Wellbeing (NSMHWB), about one in five ACT respondents (aged 18 years or more) were affected by a mental health disorder in the 12 months prior to the survey (ABS 2001). The results of the survey suggest 12 month prevalence decreased with age (McLennan 1998). Young adult ACT respondents (aged 18-24 years) had the highest (32%) reported 12 month prevalence of disorder, declining steadily to 9% among respondents aged 65 years or more (ABS 2001).

More recent estimates of the prevalence of mental ill health in the ACT come from the 2001 National Health Survey (NHS). Unlike the 1997 NSMHWB, which was conducted as an interview to diagnose disorder, using the computer assisted version of the Composite International Diagnostic Interview (CIDI), the 2001 NHS relied on self-reporting of mental ill health. According to the results of the 2001 NHS, about 8.7% (95% CI 7.7 – 9.7) of respondents in the ACT self-reported a mental or behavioural problem that had lasted, or was expected to last six months or more, which was consistent with results for Australia (9.6%, 95% CI 9.2 – 10.0) in 2001(ABS 2002).

### Prevalence of co-morbidity

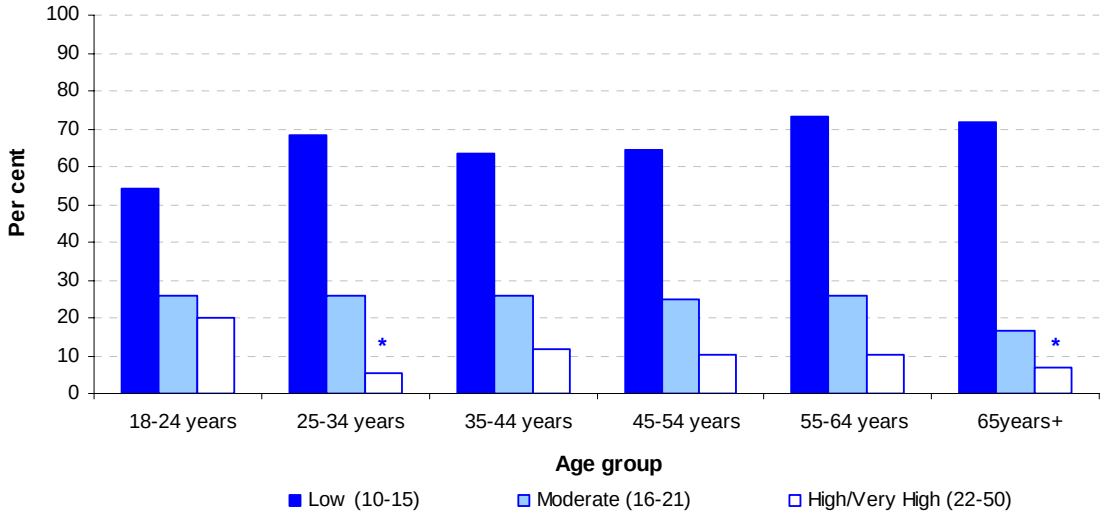
The presence of co-morbidities with mental health disorders often present challenges in terms of management strategies as they are commonly associated with more severe illness, higher service use and poorer health outcomes (NDARC 2001). Co-morbidity among individuals with a mental health disorder is common. About half of all Australian respondents (aged 18 years or more) to the 1997 NSMHWB 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) at the same time (McLennan 1998).

The current prevalence of co-morbidity among individuals with a mental health disorder in the ACT is not known, however, according to Steve Hartnett from the Dual Diagnosis Project, Mental Health ACT, service utilization information suggests that about 20% of case managed patients in the ACT have a current or recent problematic substance use issue alone (S Hartnett 2005, Pers. Comm., 3 November).

### Psychological distress

Psychological distress can contribute to the development of mental ill health and high or very high levels of distress are common among individuals with mental health disorders (DoHA 2000a; ABS 2003). According to the results of the 2001 NHS, individuals with high or very high levels of psychological distress are more likely to use health services than individuals with lower levels of distress (AIHW 2004). The 2004 ACT SNAPS survey included the Kessler Psychological Distress Scale -10 (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. Figure 9.1 shows that high/very high levels of psychological distress among ACT respondents (aged 18 years or more) declined significantly with age in 2004.

**Figure 9.1: Psychological distress: proportion of ACT adults (18 years or more) by Kessler 10 score[(a),(b)] & age group, 2004.**




Data source: 2004 ACT SNAPS survey, confidential unit record file.

(a) Kessler 10 (K10) produces a score of between 10-50 - see Glossary for further information.
(b) High/very high scores were grouped together because of the small number of survey respondents with these scores.
* Estimate has a relative standard error between 25-50% and should be used with caution.

## Health service use

According to the results of the 1997 NSMHWB about 62% of Australians suffering mental ill health will not access treatment from health services (McLennan 1998). There are a variety of reasons for this including service availability and responsiveness. The National Mental Health Strategy aims to increase mental health service responsiveness (DoHA 2003a).

Nationally, mental ill health accounted for about one in ten visits to general practitioners (GPs) and about one in ten medications prescribed by GPs in 2003-04 (AIHW 2005a).

In the ACT, there has been an increase in the number of service contacts by ambulatory care mental health services in recent years (DoHA 2002, 2003b). These services include hospital based outpatient clinic services and community mental health services. The number of service contacts increased by 42% between 1999-00 and 2003-04 in the ACT (AIHW 2002, 2005).

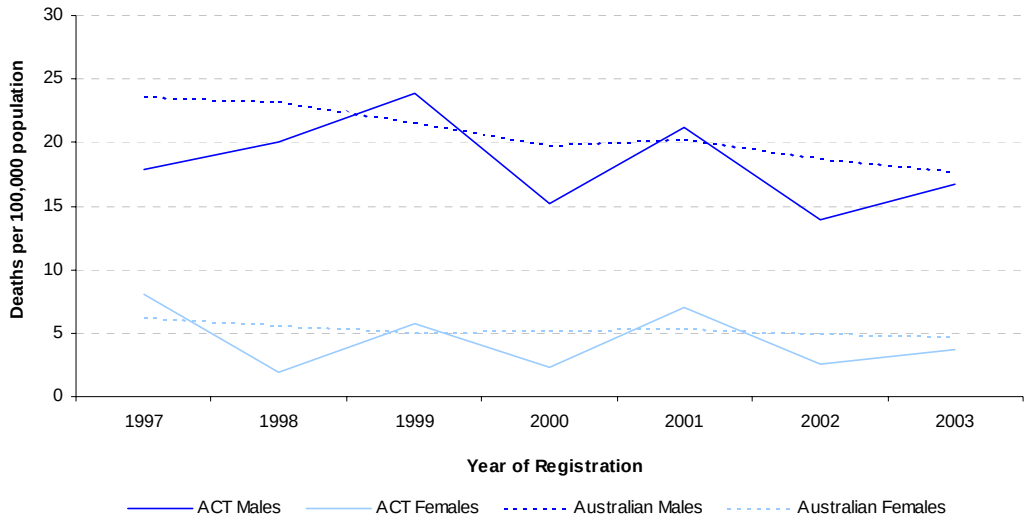
Hospitalisation data provides insights into the level of mental ill health at the more severe end of the treatment spectrum. According to the results of the 2001 NHS, individuals with a mental health disorder are more likely to be hospitalised than individuals without a mental health disorder (AIHW 2004). In 2003-04, mental health disorders accounted for 2.9% of all ACT hospital separations for ACT residents. The number of ACT resident female (1,421 separations, 61.9**%** of total separations for mental health disorder) separations for mental health disorder exceeded the number of male separations (875 separations, 38.1**%** of total separations for mental health disorder). The most common causes for hospitalisation included 'depressive episodes', accounting for 27.4**%** of all ACT resident separations with a principal diagnosis of mental health disorder, followed by 'neurotic, stress related and somatoform ' (23.6%) separations in 2003-04.

### Mortality

In 2003, mental health disorder was reported as the underlying cause of death in 3.7% of all registered deaths for ACT residents. This figure excludes death from intentional self harm, or suicide, which accounted for a further 2.5% of registered deaths in 2003. Most of the deaths from a mental health disorder were attributable to dementia (71%), followed by psychoactive substance use (21%), similar to the pattern for Australia in 2003 (AIHW 2004).

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, females are far more likely to be hospitalised for intentional self harm than males. In 2003, for instance, females accounted for less than 20% of deaths from intentional self harm, but in 2003-04 females accounted for 70% of ACT resident separations from ACT hospitals with a diagnosis of 'intentional self harm'.

**Figure 9.2: Mortality rates[(a),(b)] for intentional self harm[(c)], by sex, for the ACT[(d)] & Australia, 1997-2003.**




Data source: AIHW 2005b.

(a) Rates based on year of registration of death.
(b) Rates per 100,000 population have been standardised to the Australian 2001 population.
(c) Defined using ICD-10 codes X60-X84.
(d) Rates for the ACT are based on deaths of individuals whose usual place of residence at the time of death was recorded as the ACT.

See Chapter 16: The Health of Older People in the ACT for information on age-related mental health disorder.

## 9.2 Plans, services and initiatives

The National Mental Health Strategy was launched in 1992 (DoHAC 1992) in response to growing evidence of the increasing magnitude of mental illness and resulting burden of disease in Australia. The Strategy provides a framework for national reform from an institutionally based mental health system to one that is consumer focused with an emphasis on supporting the individual in their community. The Strategy was reaffirmed in 1998 with the *Second National Mental Health Plan* (DoHAC 1998) and again in 2003 with the endorsement by all health ministers of the *National Mental Health Plan 2003-2008* (DoHA 2003a).

Whilst the aims of the National Mental Health Strategy are to promote mental health, prevent the development, and reduce the impact of mental ill health, and to assure the rights of those who suffer mental ill health, the *National Mental Health Plan 2003-2008* builds on previous plans and aims to also increase service responsiveness, strengthen quality and foster research, innovation and sustainability (DoHA 2003a). The *ACT Health Action Plan 2002* (ACT Health 2002) incorporates key priorities and strategies from the National Mental Health Strategy to improve mental health in the ACT.

Inline with recommendations from the *ACT Health Revie*w (Reid 2002), public mental health services in the ACT were bought together to form a single integrated service known as Mental Health ACT, which commenced operations in 2003. In consultation with stakeholder groups in the ACT, Mental Health ACT has since developed the *ACT Mental Health Strategy and Action Plan 2003 –2008* (ACT Health 2003). The key features of the Plan are aligned with the National Mental Health Strategy and provide direction for the delivery of mental health services in the ACT for the five-year period 2003-2008, with a strong focus on the promotion of mental health, prevention of illness and improved access to services. The Strategy also places great importance on the participation of consumers and carers in all aspects of service planning and delivery and Mental Health ACT has been developing policies and practices to facilitate participation.

Mental Health ACT is responsible for a comprehensive range of local services that include:

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

Recent initiatives planned and/or operationalised by Mental Health ACT during the reporting period include the following:

- The development of a series of reports on mental health services in the ACT, which include service reviews, quality assessments and progress reports, were undertaken and published during the reporting period (specific reports can be viewed online at <http://health.act.gov.au/c/health?a=da&did=10050411&pid=1061180547>.

- The development of a series of protocols and strategies for the ACT, that have been guided by national plans and strategies (see the Mental Health ACT publications list on the ACT health website <http://health.act.gov.au/c/health?a=da&did=10050411&pid=1061180547>.

- Community organisation activity - increased funding to a range of community organisations to work in partnership with government services to provide mental health services to the Canberra community. These services include:
  - education, advocacy, information and referral services;
  - supported accommodation and respite programs;
  - psychosocial, recreational and vocational rehabilitation programs;
  - counselling and support programs;
  - individual funding arrangements for consumers with complex needs; and,
  - Aboriginal mental health services.

- Consumer and carer participation and feedback – Mental Health ACT acknowledges the significant expertise and contribution provided by consumers and carers. There are now established means for consumers and carers to participate at all levels of service delivery and planning. Mental Health ACT continues to strengthen its relationship with partner community organisations. Feedback is received via consumer and carer representatives who participate in Mental Health ACT executive meetings, quarterly community feedback forums and the Mental Health ACT Carers Committee.

- The Children of Parents affected by a Mental Illness (COPMI) project addresses the needs of children and families where there is a parent affected by a mental illness. It promotes and encourages intersectoral links to identify and address some of the issues specific to this population, such as the non discriminatory identification of COPMI, general education around COPMI, respite care needs, considerations regarding parenting and comorbidity/dual diagnosis, and peer support groups.

- The Mobile Intensive Treatment Team - South (MITT/S), which was established in 2003, provides intensive, mobile, and after hours clinical management within the southern ACT community. The main client group is aged 18 - 35 years, with a primary diagnosis of first or early onset psychosis, (and/or complex needs), who have the potential for high service use, in particular the need for in-patient readmission. (The Mobile Intensive Treatment Team - North (MITT/N) is in the process of being developed from the Extended Hours Teams, located in the City and Belconnen).

- MindMatters, which is a nationally coordinated program, aims to promote mental health in secondary schools by building the capacity of schools to enhance resilience in students and staff. The program includes two-day training workshops for school communities and The ACT MindMatters Drama Festival, a non-competitive event where students develop a short piece on an issue around mental health, with a positive, help-seeking focus. Recent developments with the program include the publication of the MindMatters Newsletter that publicises mental health promotion events to all secondary schools across the Territory and Staff Matters, the new national staff wellbeing resource. All ACT secondary schools have had some involvement with MindMatters since its inception in 2000, be it through the regular two day workshops, support meetings, in-school support or the drama festival.

- The Advance Agreement Pilot Project, which is a one-year pilot study aimed at reducing the severity of psychotic episodes and the need for hospitalisation among a group of relatively well patients. The study involves getting patients to work with their clinician to develop an agreed plan for their treatment and care for themselves if/when they become unwell.

- The Collaborative Therapy Project is a joint initiative between Mental Health ACT and the Mental Health Research Institute in Victoria. This project provides an individual and group based psychotherapy program which focuses on relapse prevention strategies. The approach was well received by consumers and clinicians in the trial phase and is being expanded to include all community adult teams.

- The National Action Plan for Promotion Prevention and Early Intervention for Mental Health (DoHA 2000b) states that:

  "It is becoming increasingly clear that treatment interventions alone cannot significantly reduce the enormous personal, social and financial burdens associated with mental health problems and mental disorders, and that interventions are required earlier in the development of these conditions. There is a compelling need to make promotion, prevention and early intervention priorities in global, national and regional policy, and to develop a clear plan for progressing activities in these areas."

Mental Health ACT implemented the Mental Health Promotion Prevention and Early Intervention (PPEI) project in late 2003 to develop a plan for the ACT, aligned with the aspirations expressed in the National Plan. The project has increased awareness of, and built capacity for PPEI in the ACT, and supported the development and implementation of local PPEI programs.

**Emerging Issues**

- The growing global burden of depression is an issue that is being addressed locally by Mental Health ACT who support the national depression initiative BeyondBlue and work with other health professionals in the ACT to reduce the burden.
- Many people with mental health disorders also suffer co-morbidities such as problematic substance use. The ACT Co-morbidity/Dual Diagnosis Project brings mental health and alcohol and other drug services together to work with patients, their families and other service providers in order to improve health outcomes for patients with co-morbidities.

# References


ABS (Australian Bureau of Statistics) 2001, *Australian Capital Territory in focus 2001*, cat. no. 1307.8, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002, *2001 National health survey: Summary of results*, cat. no. 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2003, *2001 National health survey: Mental health, Australia*, cat. no. 4811.0, ABS, Canberra.

ACT Health 2002, *Health Action Plan 2002*, ACT Health, Canberra.

ACT Health 2003, *The ACT Mental Health Strategy and Action Plan 2003 –2008*, ACT Health, Canberra.

AIHW (Australian Institute of Health and Welfare) 2002, *Mental health services in Australia 1999-00,* AIHW cat. no. HSE 19, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004, *Australia's health 2004,* AIHW cat. no. AUS-44, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005a, *Mental health services in Australia 2002-03,* AIHW cat. no. HSE 35, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005b, *State & territory general record of incidence of mortality (GRIM) books*, AIHW, Canberra.

DoHAC (Department of Health and Aged Care) 1992, *The national mental health plan,* DoHAC, Canberra.

DoHAC (Department of Health and Aged Care) 1998, *Second national mental health plan,* DoHAC, Canberra.

DoHA (Department of Health and Ageing) 2000a, *Mental illness – the facts,* DoHA, Canberra.

DoHA (Department of Health and Ageing) 2000b, *The national action plan for promotion prevention and early intervention for mental health,* DoHA, Canberra.

DoHA (Department of Health and Ageing) 2002, *National mental health report 2002: Seventh report,* DoHA, Canberra.

DoHA (Department of Health and Ageing) 2003a, *National mental health plan 2003 – 2008, Australian health ministers, July 2003,* DoHA, Canberra.

DoHA (Department of Health and Ageing) 2003b, *National mental health report 2004,* DoHA, Canberra.

McLennan W 1998, *Mental health and wellbeing: Profile of adults, Australia 1997*, cat. no. 4326.0, ABS, Canberra.

Mathers C, Vos T, & Stevenson C 1999, *The burden of disease and injury in Australia,* AIHW, Canberra.

Murray C & Lopez A 1996, 'Evidence-based health policy-lessons from the global burden of disease study', *Science* vol. 274: pp. 740-743.

NDARC (National Drug and Alcohol Research Centre) 2001, *National comorbidity project*, DoHA, Canberra.

Reid M 2002, *ACT Health revie*w, ACT Health, Canberra, viewed 7 November 2005, <http://health.act.gov.au/c/health?a=da&did=10013722&pid=1053516738>.

WHO (World Health Organization) 1999, *Strengthening mental health promotion*, WHO fact sheet no. 220, WHO, Geneva.

# 10 INJURY PREVENTION AND CONTROL

**At a Glance**

- Injury has been estimated to account for about 8.4% 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 and disability and associated health system costs.
- There were 94 injury-related deaths among ACT residents in 2003, accounting for 6.6% of all deaths among ACT residents. Most deaths from injury in the ACT occurred among people aged 15-44 years, most of whom were males. The leading causes of injury death in 2003 were intentional self-harm, transport accidents, accidental poisoning and falls.
- A total of 4,570 ACT residents were hospitalized for injury in ACT hospitals in 2003-04. Falls were the leading cause of injury-related hospitalization in 2003-04. Children (less than 15 years of age) and older people (aged 65 years or more) were more likely to be hospitalized for falls injury than for any other type of injury, and females had higher rates of hospitalization for falls injury than males.
- There were 22,827 ACT resident presentations to ACT hospital emergency departments for injury in 2003-04, 12.2 % of which resulted in hospitalisation.

Injury prevention and control was endorsed as a National Health Priority Area by the Australian Health Ministers in 1986. Injury has been estimated to account for about 8.4% of the total burden of disease in Australia (Mathers, Vos & Stevenson 1999), and about 8% of direct health system costs (AIHW 2004b). It is the principal cause of premature, preventable death, accounting for almost half of all deaths among people less than 45 years of age (DoHA 2001), and can result in a range of physical, cognitive and psychological disabilities that can seriously affect longer-term quality of life. Strategies to prevent injury provide an opportunity to reduce the burden due to premature death and disability and associated health system costs.

## 10.1 Injury status

This section includes an analysis of mortality, hospital separation and emergency department injury-related information. The analysis is presented and discussed in terms of injury cause (ie transport accident, falls injury, poisoning etc), rather than the physical location of an injury (head injury, dislocation of knee, injury of lower limb etc), as this provides more useful information for policy development and the targeting of prevention efforts.

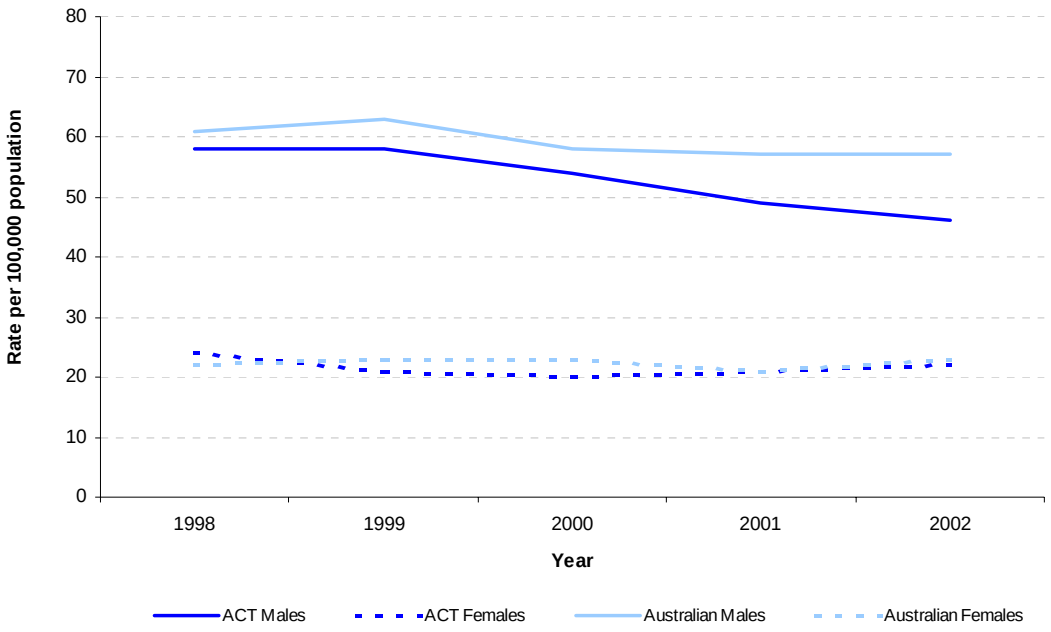
### 10.1.1 Mortality

Over the last two decades, there has been a gradual decline in the number of deaths due to injury in Australia (AIHW 2004a). In 2003, injuries accounted for 5.9% of all Australian deaths (ABS 2005), compared to 6.6% (94 deaths) of deaths among ACT residents.

Figure 10.1 shows that between 1998 and 2002, the trend in all-cause injury mortality rates for the ACT (three-year moving averages presented) was similar to the trend for Australia. The average rate for the 2001-03 period (presented as 2002 in the graph) for ACT males was 45.5 per 100,000 population, compared to 21.8 per 100,000 for females. The difference is attributable to a higher number of injury-related deaths among males aged 20-44 years. Both nationally and in the ACT, male deaths in this age group account for approximately one third of all injury-related deaths each year (AIHW 2004a). In 2003, for instance, twice as many ACT males died from injury in this age group than ACT females.

Because death due to injury is most prevalent in younger age groups, it accounts for many person-years of life lost. In 2003, death due to injury accounted for about 20.5% of years of life lost (see Chapter 3: General Health Status for further information on person-years of life lost).

**Figure 10.1: Injury-related[(a)] mortality rates[(b)], by sex, ACT[(c)] & Australia, 1998 –2002.**



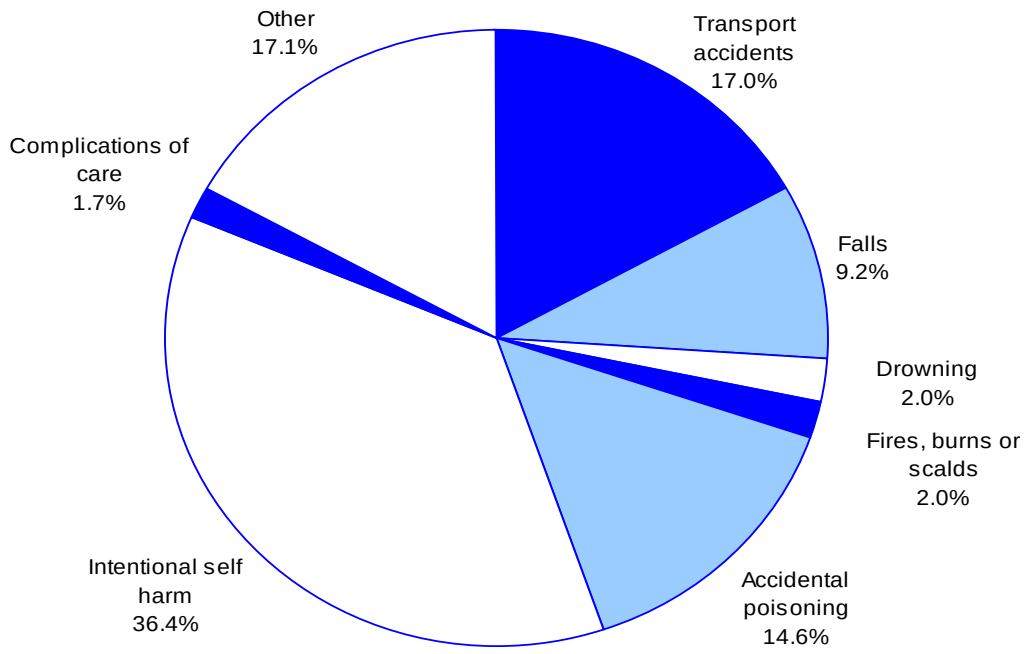

Data sources: ABS deaths data 1998-2003, confidential unit record files; ABS 2004; ABS 2002; ABS 2001; ABS 2000

(a) Injury-related deaths were identified using ICD-10 codes V01-Y98 (see Appendix 2 for further details).
(b) ACT rates have been standardised to the 2001 Australian population for comparison with published national rates.
(c) Because of the relatively low number of deaths each year in the ACT and annual fluctuations in the rates, three-year moving averages have been presented for the ACT.

In 2003, intentional self-harm, transport-related accidents and falls injury were the leading causes of injury death for Australia. The leading causes of injury death for ACT residents during the 2001 to 2003 period were very similar (Figure 10.2), although accidental poisoning was the third highest cause of injury-related death in the ACT. Intentional self-harm was the leading cause of injury-related death for ACT residents, accounting for 36% of all injury deaths and similar to the national pattern, 80% were males (for further information, see Chapter 9: Mental Health) (AIHW 2004).

Death as the result of a transport accident was the second leading cause of injury death, accounting for 17% of all injury-related deaths in the ACT. This compares to 23.3% of all injury deaths for Australia in 2003 (ABS 2004).

**Figure 10.2: Leading causes[(a)] of injury-related mortality for ACT residents, 2001-2003[(b)].**




Data source: ABS deaths data 2001-2003, confidential unit record file.

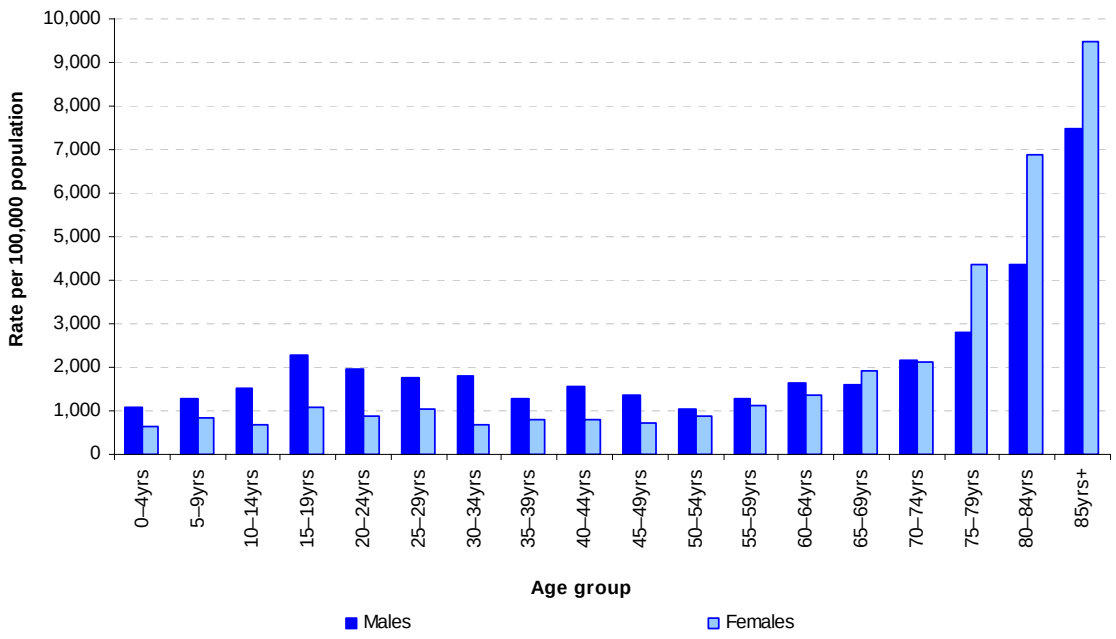
(a) Transport accident deaths defined using ICD-10 codes V01-V99; deaths due to falls injury defined using ICD-10 codes W00-W19; death due to drowning defined using ICD-10 codes W65-W74; deaths due to fires, burns or scalds defined using ICD-10 codes X00-X19; deaths due to accidental poisoning defined using ICD-10 codes X40-X49; deaths due to intentional self-harm defined using ICD-10 codes X60-X84; deaths due to complications of care defined using ICD-10 codes Y40-Y84; see Appendix 2 for all other ICD-10 codes used to define other external causes of injury.
(b) Cause of injury death proportions (%) are based upon the average number of deaths for the period 2001-2003.

## 10.1.2 Hospital separations

Information about morbidity due to injury 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 other health professionals, such as a general practitioner.

In 2003-04, there were 4,570 ACT resident separations from ACT hospitals, for injury. Separation rates for injury among ACT residents differed by age and sex (Figure 10.3). Contributing to these differences were higher rates of separation for transport accidents, falls, other unintentional causes, and assault among males aged less than 65 years and higher rates of falls among women aged 65 years or more.

**Figure 10.3: ACT resident injury-related separation rate[(a)] from ACT hospitals, by age group and sex, 2003-04.**




Data source: ACT Admitted Patient Care collection 2003-04, confidential unit record file.

(a) Injury-related separations were identified using ICD-10-AM codes V01-Y98.

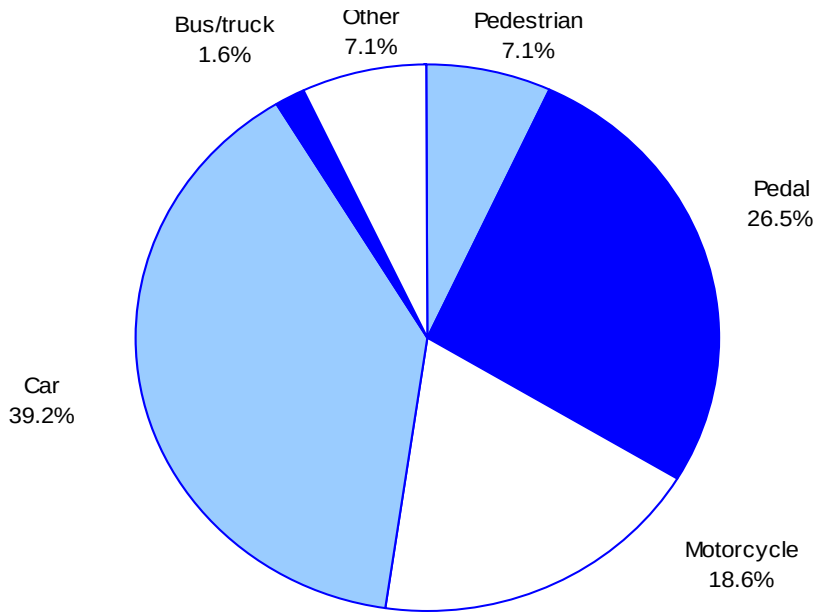
## Falls

Falls were the leading cause of injury-related separations, comprising 30.2% (1,379 separations) of all injury-related separations. Children (aged less than 15 years) (22.9% of all falls injury separations) and older people (aged 65 years or more) (41.5% of all falls injury separations) were more likely to be hospitalised for falls injury. The falls injury separation rate for females (462.7 per 100 000 population) from falls injury was higher than the rate for males (389.4 per 100 000 population), largely due to the higher number of falls injury separations among older females (see Chapter 18: The Health of Older People in the ACT for more information on falls injury in older people).

## Transport accidents

Injury caused by transport accidents comprised 10.8% of all injury-related separations for ACT residents from ACT hospitals in 2003-04. Figure 10.4 shows that transport accident injury separations were most commonly caused by car accidents, with 194 separations occurring in 2003-04 (4.2% of all injury separations and 39.2% of transport separations). Pedal and motorcycle accident separations comprised 26.5% and 18.6% of all transport accident injury separations respectively.

**Figure 10.4: ACT resident transport accident injury separations from ACT hospitals, by mode of transport[(a)] ,[(b)] and sex, 2003-04.**




Data source: ACT Admitted Patient Care collection 2003-04, confidential unit record file.

(a) Mode of transport separations were identified using the following ICD-10-AM codes: Pedestrian V01-V09; Pedal V10-V19; Motorcycle V20-V29; Car V40-V49; Bus/Truck V50-V79; Other V80-V99.
(b) Percentages are based on all transport accident separations (n=495).

### Accidental poisoning

Although accidental poisoning was the third leading cause of injury-related death in the ACT in 2003, there were 59 separations in 2003-04, accounting for only 1.29% of all injury-related separations. There were similar numbers of separations for males (32) and females (27) and similar numbers across the age spectrum. For instance, there were 14 accidental poisoning separations for children aged less than ten years, 13 for young adults aged 15-29 years and 12 for older adults aged 65 years or more.

### Intentional self-harm

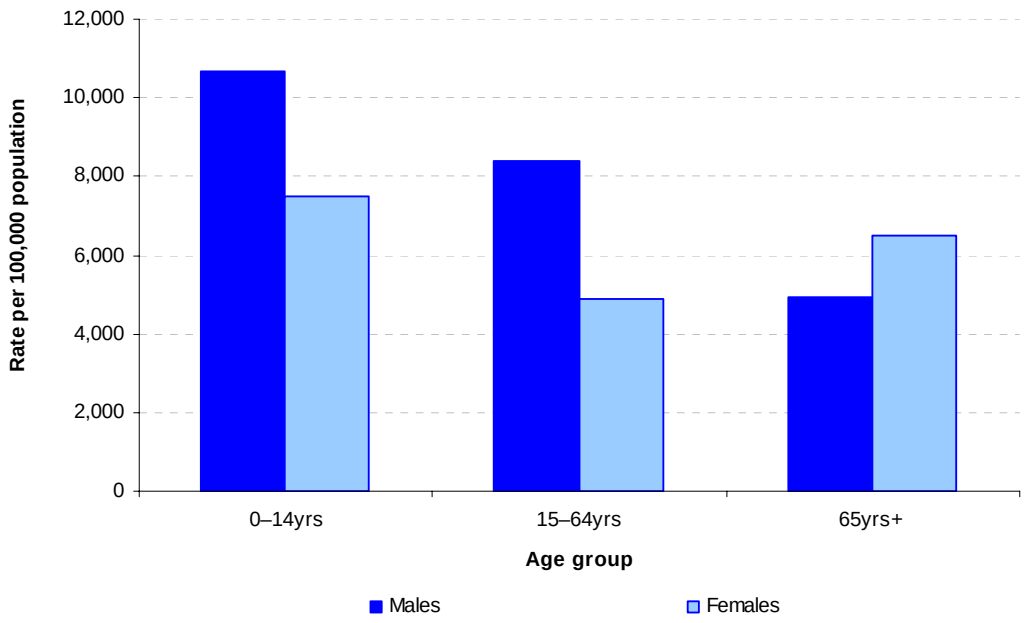
Intentional self-harm accounted for 6% of injury-related separations in 2003-04. See Chapter 9: Mental Health for further information on separations for intentional self-harm.

## 10.1.3 ACT hospital emergency department presentations

In 2003-04, there was a total of 22,827 presentations by ACT residents to an ACT hospital emergency department with injury, but only 2,784 of these presentations (12.2%) resulted in an admission to hospital. Most of the presentations that required hospital admission occurred among those aged 65 years or more (32.8%). In comparison, 9.7% of child (aged less than 15 years) presentations and 10.9% of presentations for adults aged 15-64 years required hospital admission in 2003-04.

Figure 10.5 shows injury presentation rates to ACT hospital emergency departments in 2003-04 by age group and sex. Similar to mortality and hospital separation data, males aged less than 65 years had higher presentation rates for injury than females, but females aged 65 years or more had higher rates of presentation to hospital emergency departments for injury compared to older males. Though the nature of injury is not recorded in emergency department data, it is likely that the difference in presentation rates for older females is due to a higher rate of falls injury.

**Figure 10.5: ACT resident injury-related[(a)] presentation rates to ACT hospital emergency departments, 2003-04.**




Data source: ACT Emergency Department Information System 2003-04, confidential unit record file.

(a) Injury has been defined using an injury and poisoning flag on the data set.

## 10.2 Injury prevention initiatives

Injury prevention was endorsed by Health Ministers as a National Health Priority Area in 1996. In 2001, the *National Injury Prevention Plan: Priorities for 2001-2003* (DoHA) was released, providing a broad framework for achieving reductions in the incidence of injury. The Plan contained priorities for immediate action including, falls in older people and childhood injuries (falls in children, drowning and near drowning, and poisoning in children) (DoHA 2001). The *ACT Health Action Plan* has identified child health and falls prevention in older people as strategic areas of focus (ACT Health 2002).

*The National Injury Prevention Plan Priorities for 2004 and Beyond Discussion Paper* was released in 2003 (Pointer et al 2003). This document recommends five priority areas for inclusion in the next national Injury Prevention Plan. The five priority areas include older people (75 years or more), children (0-14 years), emerging adults (15-24 years), the Aboriginal and Torres Strait Islander population, the rural and remote population, and alcohol and injury. These priority areas expand upon the work commenced in the previous Injury Prevention Plan (Pointer et al 2003).

The National Injury Prevention Program supports injury prevention in Australia through a range of funded projects and partnership arrangements with state and territory Governments, research institutions and community organisations. The program includes a series of projects in each of the following areas:

- Workforce training and the provision of information for injury prevention
- Community education
- Compliance strategies
- Research and data projects (DoHA 2005)

Within the ACT, there are a number of injury-related services and injury prevention initiatives in place. The Canberra Hospital (TCH) is a major trauma centre, providing tertiary referral and retrieval services to hospitals in the ACT and South East NSW. The service involves a multidisciplinary approach, coordinated between the Emergency Department, the Shock Trauma Service in the Department of Surgery, Intensive Care Unit, Radiology, Pathology, Anaesthetics and Operating Theatres within the hospital. Trauma is a time-critical issue, particularly in the first (or "Golden") hour, and coordination between the disciplines ensures that serious trauma in the region is cared for in an efficient and expeditious manner. The Canberra Hospital has approximately 4,000 to 5,000 trauma-related hospital admissions each year, although the majority of the Emergency Department's workload involves acute medical and surgical, child and adult presentations.

Road safety in the ACT is the responsibility of the Road Safety Unit and ACT policing. The *ACT Road Safety Action Plan 05-06* (ACT Road Safety Unit 2004), focuses on developing safer roads, vehicles, road users and systems. The NRMA-ACT Road Safety Trust was established in 1992, and provides grants for a wide range of road safety projects, with a focus on younger drivers who are over-represented in crash statistics. The measures undertaken by both the ACT Road Safety Unit, local police, and by organisations funded by the NRMA-ACT Road Safety Trust are working towards reducing the number of fatalities and casualties on ACT roads.

Healthpact, the funding arm of the Health Promotion Board in the ACT, includes injury prevention as a priority focus area and funds initiatives promoting safe behaviours in the community (Further information is available on the ACT Health website <http://health.act.gov.au/c/health?a=sp&did=10028428>).

Note that falls prevention initiatives in the ACT are discussed in Chapter 16: The Health of Older People in the ACT and intentional self-harm is discussed in Chapter 9: Mental Health. Chapter 4: Lifestyle and Health discusses strategies to address problematic alcohol and drug use, which is often involved in injury, and is identified both as a priority for injury prevention (Pointer et al 2003) and as a strategic area of focus in the *ACT Health Action Plan* (ACT Health 2002).

# References


ABS (Australian Bureau of Statistics) 2000, *Deaths Australia 1999*, cat. no. 3302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2001, *Deaths Australia 2000*, cat. no. 3302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002, *Deaths Australia 2001*, cat. no. 3302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004, *Deaths Australia 2003*, cat. no. 3302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005, *COD Australia 2003*, cat. no. 3303.0, ABS, Canberra.

ACT Health 2002, *Health action plan*, ACT Government, Canberra.

ACT Road Safety Unit 2004, *ACT road safety action plan 05-06,* ACT Government, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004a, *Australia's health 2004*, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004b, *Health system expenditure on disease and injury in Australia, 2000–01*, Health and welfare expenditure series no. 19, cat. no. HWE 26, AIHW, Canberra.

DoHA (Department of Health and Ageing) 2001*, National injury prevention plan: Priorities for 2001-2003,* DoHA, Canberra.

DoHA (Department of Health and Ageing), National injury prevention program, viewed 3 October 2005 <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pubhlth-strateg-injury-keyact.htm>

DoHA (Department of Health and Ageing) 2005, *Injury prevention in Australia* viewed 20 September 2005 <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pubhlth-strateg-injury-index.htm>.

Mathers C, Vos T & Stevenson C 1999, *The burden of disease and injury in Australia*, Australian Institute of Health and Welfare, Canberra.

Pointer S, Harrison J & Bradley C 2003, *National injury prevention plan priorities for 2004 and beyond: Discussion paper*, Injury research and statistics series no.18, cat no. INJCAT 55, Australian Institute of Health and Welfare, Adelaide.

# 11 DIABETES MELLITUS

**At a Glance**

- There are opportunities for future health gain and a reduction in the burden of diabetes in the ACT with disease prevention initiatives aimed at reducing the prevalence of risk factors for Type 2 diabetes (see Chapter 4: Lifestyle and Health), the introduction of new therapies to better manage the disease and new screening programs to identify complications of the disease 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 2001 National Health Survey suggest 3.1% of the adult (18 years or more) population in the ACT had been diagnosed with diabetes for six months or more in 2001, however, estimates from the AusDiab study in 2000 suggest that this is likely to be an underestimate of prevalence in the population.
- In 2003, there were 36 ACT resident deaths where diabetes was reported as the primary cause of death. The mortality rate for the ACT was 8.2 deaths per 100,000 population, compared to 16.5 deaths per 100,000 for Australia.
- There were 3,715 ACT resident diabetes-related separations from ACT hospitals in 2003-04, accounting for 4.6% of all ACT resident separations. Cardiovascular disease, digestive disorders and conditions related to health status and contact with health services were the most common principal diagnoses with an associated diagnosis of diabetes for ACT residents hospitalised in the ACT in 2003-04.

Diabetes contributes to significant illness, disability and premature mortality. Estimates suggest that diabetes is linked to 8% of all deaths in Australia and contributes to approximately 3% of the total burden of disease (AIHW 2004). The prevalence of the disease in the Australian population has doubled over the last two decades and estimates suggest that one in four Australians have either diabetes mellitus, or impaired glucose metabolism, which is strongly associated with an increased risk of future development of diabetes (Dunstan et al 2002).

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

Type 1 diabetes 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). Type 1 diabetes occurs when the body's immune system destroys insulin-producing cells, leading to an almost total lack of insulin. To survive, people with this condition require multiple daily insulin injections and lifelong monitoring. Type 1 diabetes 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.

The current Australian diabetes epidemic is being fuelled by an increase in the prevalence of Type 2 diabetes, which is potentially preventable. Type 2 diabetes is characterised by insulin resistance and a relative deficit in insulin secretion. Symptoms may develop insidiously and blood glucose levels may be abnormally high for some time prior to diagnosis. The disease most commonly occurs in people over the age of 40 years and is responsible for approximately 85-90% 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 15: Maternal, Infant and Child Health). Non-modifiable risk factors for Type 2 diabetes include age, ethnicity and family history (Dunstan et al 2002).

Gestational diabetes occurs during pregnancy in about 5% of Australian women with no prior diagnosis of diabetes (Dunstan et al 2002). The disease is a health risk for both the mother and developing baby during pregnancy, but usually abates following birth. However, the mother and baby remain at an increased risk of developing Type 2 diabetes later in life. Again, being overweight or obese is a modifiable risk factor for the disease. The non-modifiable risk factors for gestational diabetes include having a family history of diabetes, a history of glucose intolerance or previous gestational diabetes and maternal age (Buchanan & Xiang 2005).

Careful management of diabetes is required to minimise the risk of complications. Poor management of the condition can result in damage to blood vessels and nerves. This can, in turn, lead to a range of potential complications including blindness, kidney failure, cardiovascular disease, amputation of limbs and erectile dysfunction (Dunstan et al 2002).

## 11.1 Diabetes status

The only source of national and local incidence data for diabetes mellitus is from the National Diabetes Register, which was established in 1999. This is operated by the AIHW using data from the National Diabetes Services Scheme and the Australasian Paediatric Endocrine Group (AIHW 2004). Between January 2003 and December 2004 a total of 1,801 new registrations were recorded in the ACT. The vast majority of new registrations were for Type 2 diabetes, with 1,463 new registrations, 72 requiring insulin.

Registrations for children (<18 years) are mainly for Type 1 diabetes, comprising approximately half of all Type 1 registrations in the ACT. The number of patients with newly diagnosed diabetes under 18 years of age in the ACT Health catchment, which includes Southwest NSW, is approximately 30-35 patients per year. Although there are fluctuations in the number of new cases of Type 1 diabetes each year, the manager of the Diabetes Service, ACT Health, believes that incidence is increasing in the ACT (E Wright 2005, Pers.Comm., 3 September).

The incidence of Type 1 diabetes also appears to be increasing nationally. Findings from the National Diabetes Register show that there were 743 new cases of insulin treated diabetes among children less than 15 years of age in 2000 (19 cases per 100,000 population). This rate is much higher than previous estimates of disease incidence, however it is in line with other studies reporting a rising incidence of diabetes in Australia (AIHW 2003).

The prevalence of diabetes mellitus (Type 1 & 2) in the Australian population has risen markedly over the last 20 years, from an estimated 3.4% in 1980 (Glatthaar et al 1985), to 7.4% in 2000 (AIHW 2004). Estimates of diabetes prevalence from the 1995 and 2001 National Health Surveys suggest that prevalence in the ACT has also increased, largely due to an increase in prevalence among ACT males. Prevalence among ACT males is now very similar to Australian males, at approximately 3% in 2001 (ABS 2002).

Estimates from the National Health Survey rely on self-reporting of diagnosed diabetes and probably underestimate the true prevalence of diabetes. The AusDiab Study identified people with diabetes by blood test and suggested that in 2000, 7.2% of Australians over 25 years of age had diabetes, and 16.4% had impaired glucose metabolism, and were therefore at high risk of developing diabetes in the future (Dunstan et al 2002). Therefore, although the results from the 2001 National Health Survey suggested that about 3.1% (95% CI 2.4 – 3.8) of the adult ACT population had been diagnosed with diabetes for six months or more in 2001 (Aust. 2.9%), the true prevalence of diabetes in the ACT was likely to be well in excess of this figure (ABS 2002).

Increases in the incidence and prevalence of Type 2 diabetes are likely to be fuelled by increases in the prevalence of risk factors such as obesity, physical inactivity and impaired glucose tolerance (see Chapter 4: Lifestyle and Health and Chapter 15: Maternal, Infant and Child Health). In addition to risk factors, improved early detection, management of cases and the aging of the population will have an impact on future increases in the incidence and prevalence of Type 2 diabetes (AIHW 2004).

The number of ACT residents who die primarily as a result of diabetes varies each year, however, the mortality rate from diabetes has remained reasonably stable in recent years. In 2003, there were 36 ACT resident deaths where diabetes was reported as the primary cause of death (ACT: 8.2 per 100,000 ACT population; Australia 16.5 per 100,000 Australian population) (ABS 2005). However, this is an underestimate of the true number of diabetes-related deaths, as diabetes is a contributing factor in a number of deaths, particularly where the underlying cause of death is reported as cardiovascular or renal disease. In 2003, there was a total of 87 ACT resident deaths where the underlying cause of death, or associated cause of death was listed as diabetes. Fifty-four of these diabetes-related deaths occurred in males, and 33 in females. The majority of diabetes-related deaths occurred in older people (aged over 65 years).

As diabetes is a chronic progressive disease, the burden on sufferers and the community is better reflected in service utilisation information. Hospitalisation data, for instance, provides further insights into the burden of the disease. In 2003-04, diabetes was the principal diagnosis for 531ACT resident hospital separations. However, the disease was more likely to be reported as an additional diagnosis, especially where the primary diagnosis was cardiovascular disease (Table 11.1). When separations for diabetes as either principal or additional diagnoses are combined, the total number of separations increases from 531 to 3,715.

**Table 11.1: ACT resident separations from ACT hospitals with an associated diagnosis of diabetes[(a),(b)], by principal diagnosis[(c)] (ICD-10-AM chapter), 2003-04 & 2001-02.**

| *ICD-10-AM* | *Principal Diagnosis* | Separations[(a),(b)] | Per cent 2003/04 | Per cent 2001/02 |
|---|---|---|---|---|
| I00-I99 | Circulatory system | 646 | 19.6 | 19.9 |
| K00-K93 | Digestive system | 379 | 11.5 | 12.0 |
| Z00-Z99 | Health status & contact with health services | 363 | 11.0 | 8.6 |
| C00-D48 | Neoplasms | 283 | 8.6 | 9.0 |
| M00-M99 | Musculoskeletal system & connective tissue | 241 | 7.3 | 6.3 |
| J00-J99 | Respiratory system | 207 | 6.3 | 7.3 |
| S00-T98 | Injury, poisoning etc. of external causes | 201 | 6.1 | 6.1 |
| N00-N99 | Genitourinary system | 197 | 6.0 | 6.7 |
| R00-R99 | Symptoms, signs & abnormal clinical & lab. findings | 187 | 5.7 | 6.9 |
| E00-E99 | Endocrine, nutritional & metabolic | 157 | 4.8 | 5.7 |
| L00-L99 | Skin & subcutaneous tissue | 87 | 2.6 | 2.1 |
| G00-G99 | Nervous system | 85 | 2.6 | 1.8 |
| F00-F99 | Mental & behavioural disorders | 74 | 2.2 | 2.3 |
| D50-D89 | Blood & blood-forming organs & immune mechanism disorders | 67 | 2.0 | 2.3 |
| A00-B99 | Certain infectious & parasitic diseases | 63 | 1.9 | 1.5 |
| H00-H59 | Eye & adnexa | 46 | 1.4 | 0.4 |
| O00-O99 | Pregnancy, childbirth & the puerperium | 10 | 0.3 | 0.4 |
| H60-H95 | Ear & mastoid process | 8 | 0.2 | 0.5 |
| Q00-Q99 | Congenital malformations, deformations & chromosomal abnorm. | 2 | 0.1 | 0.3 |

Data source: ACT Admitted Patient Care Collection 2003/04, confidential unit record file.

(a) Associated diagnosis of diabetes defined using ICD-10-AM E10-E14.
(b) This table includes all associated diagnoses – including separations with a primary diagnosis of 'diabetes'.
(c) See Appendix 2 for list of ICD-10-AM codes used to produce this table.

The ACT resident separation rate from ACT hospitals for diabetes (primary and additional diagnoses combined) for 2003-04 was 1,151 per 100 000 ACT population, accounting for 4.6% of all hospital separations for ACT residents. Male ACT residents had higher hospitalisation rates than females, at 1,232 per 100 000 compared to 1072 separations per 100 000 population, respectively. The most recently published comparable figures for Australia suggest that 6.1% (2000-01) of all Australian hospital separations include either a principal or associated diagnosis of diabetes (AIHW 2004).

The crude 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 improved recording of associated diagnoses in recent years.

Between 1999 and 2003, 203 ACT women gave birth in ACT hospitals with a diagnosis of gestational diabetes, comprising 4.2% of all ACT women giving birth in the ACT, which is consistent with estimates from other sources (Wright 1997).

## 11.2 Services and initiatives

Diabetes mellitus was endorsed as the sixth National Health Priority Area in 1996 in recognition of its impact on the Australian community and the potential for improved health outcomes. This endorsement has been complemented by the development of national goals and priorities in the *National Diabetes Strategy 2002-2004* (DoHA 1999) and the implementation of evidence-based best practice diabetes prevention and care. The *National Integrated Diabetes Program* (DoHA 2002) builds upon the work undertaken in the *National Diabetes Strategy 2002-2004* and provides an integrated national approach to improving prevention, earlier diagnosis, and management of diabetes.

In the ACT, the *Health Action Plan 2002* (ACT Health 2002) includes strategies linked to *National Diabetes Strategy* goals, addressing the burden of diabetes in the Canberra region and a strategic plan for the ACT Diabetes Services Advisory Council has been developed. The strategic plan outlines plans and actions to improve and increase the promotion, educational services, and community care involved in broad-spectrum management of diabetes, with a focus on high-risk groups, including Aboriginal and Torres Strait Islander peoples.

Diabetes prevention, identification and management is identified as a priority in *Public Health in the ACT 2004-2008* (ACT Health 2004), which outlines how the *Health Action Plan 2002* will shape health improvement activities. These activities include ACT Health's "Eat Well, Be Active, Feel Good About Yourself –That's Vitality!" promotional campaigns. These campaigns target the primary modifiable risk factors for the development and progression of diabetes (nutrition and physical activity).

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

The ACT Diabetes Service, Community Health is an integrated service and 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, dietitians, 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 and 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 the Winnunga Nimmityjah Aboriginal Health Service. The collaborative approach between health professionals in the ACT optimises the promotion, prevention, detection and clinical management of diabetes in the ambulatory setting.

A number of services operate within the primary, secondary and tertiary health settings. For instance, the Child and Adolescent Paediatric Service provides assessment and clinical services to children with diabetes and, in partnership with the Children's Hospital at Westmead, conducts a biannual two-day outreach complications assessment program. In addition, a fortnightly Transition Clinic, weekly Annual Review Clinic and insulin pump service are in operation. Adult services also include a Periodic Diabetes Review Clinic, insulin pump services and ambulatory initiation of insulin services. Health promoting exercise groups conducted in Health Centres include Footsteps in the Community for those who do not exercise, Tai Chi and resistance training groups in partnership with the Young Women's Christian Association (YWCA).

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

Several new initiatives were implemented in 2003-04. They include the ACT Health Vision Screening Service, funded under the federal Vision Impairment Prevention Program (VIPP) and the United First People of Australia Western Australia Diabetic Program. The VIPP provides free screening to detect diabetes related retinopathy in referred patients and the United First People of Australia Western Australia Diabetic Program is a new health promotion initiative at Narrabundah Primary School targeting Aboriginal and Torres Strait Islander children.

A Diabetes Service Plan, describing an integrated service delivery model across all care providers, will be completed shortly (2006).

**Emerging Issues**

- There has been an increase in the use of pump therapy to deliver insulin subcutaneously, mainly due to evidence supporting its efficacy in achieving improved glucose levels in some people and due to improved access to pumps.
- Recent evidence confirms that Type 2 diabetes is a progressive disease and insulin therapy should be introduced early to prevent or delay the complications of diabetes. This is fuelling an increase in demand for ambulatory insulin initiation, changing service practice and has resource implications.

# References


ACT Health 2002, *Health action plan 2002*, ACT Government, Canberra.

ACT Health 2004, *Public health in the ACT 2004-2008 health promotion, health protection and quality of care*, ACT Government, Canberra.

ABS (Australian Bureau of Statistics) 2002, *2001 National health survey: ACT companion data,* cat. no. 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005, *Causes of death Australia 2003*, cat. no. 3303.0, ABS, Canberra.

AIHW (Australian Institute of Health and Welfare) 2003, *Childhood Type 1 diabetes 'moderate to high' in Australia-report*, media release, 23 August, AIHW, Canberra, viewed 28 July 2005, <http://www.aihw.gov.au/media/2001/mr011005.html>.

AIHW (Australian Institute of Health and Welfare) 2004, *Australia's Health 2004,* AIHW, Canberra.

Buchanan, TA & Xiang, AH 2005, 'Gestational diabetes mellitus', *Journal of Clinical Investigation*, vol.115, pp.485-491.

DoHA (Department of Health and Aged Care) 1999, *The national diabetes strategy 2000-2004,* AusInfo, Canberra.

DoHA (Department of Health and Ageing) 2002, *The national integrated diabetes program,* 17 May, DoHA, Canberra, viewed 11 October 2005, <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pq-diabetes-nidp.htm>

Dunstan DW, Zimmet PZ, Welborn TA, De Courten MP, Cameron AJ, Sicree RA, Dwyer T, Colagiuri S, Jolley D, Knuiman M, Atkins R & Shaw JE 2002, 'The rising prevalence of diabetes and impaired glucose tolerance: the Australian Diabetes, Obesity and Lifestyle Study', *Diabetes Care* vol 25(5), pp 829-834.

Glatthaar C, Welborn TA, Stenhouse NS & Garcia-Webb P 1985, 'Diabetes and impaired glucose tolerance: a prevalence estimate based on the Busselton 1981 survey', *Med J Aust,* vol 143, pp 436–440.

Larsson K, Elding-Larrson H, Cederwall E, Kockum K, Neiderud J, Sj"oblad S, Bengt L, Barbro L, Corrado C, Ivarsson S & Lernmark A 2004, 'Genetic and perinatal factors as risk for childhood Type 1 diabetes', *Diabetes Metabolism Research and Reviews,* vol 20, pp 429–437.

Wright E 1997, *Gestational diabetes: a management approach to identify increased risk of an adverse pregnancy outcome*, unpublished thesis, University of Canberra.

# 12 ASTHMA

**At a Glance**

- The prevalence of asthma increased in Australia and the ACT from the early 1980s through to the 1990s, however, at the national level, there are indications prevalence may have peaked. There are no recent data available to indicate whether prevalence has peaked in the ACT. According to the results of the 2001 National Health Survey, 12.3% of ACT residents reported having asthma, compared to 11.6% nationally.
- Mortality, hospital separation, and emergency department presentation rates for asthma have continued to decrease over time in the ACT. The reasons for these decreases are unknown, however, changes in environmental factors, such as improved asthma management in the ambulatory setting, new asthma preventative medications and dose-delivery devices (spacers) may partially explain these trends.
- There are opportunities for further health gain and a reduction in the burden of asthma in the ACT with the ongoing integration of services, based on the Asthma 3+ Visit Plan.

Asthma is a chronic inflammatory condition of the airways. If a person's immune system is sensitised to any of a wide range of 'triggers', exposure to a 'trigger' will cause the airways to spasm, narrow and release mucous. This results in wheezing, shortness of breath, chest tightness and coughing (AIHW 2005a). People are more likely to become asthmatic if they have a family history of asthma, other allergies such as eczema, or have experienced early exposure to tobacco smoke and house dust mites (Asthma Australia 2002). Common triggers of asthma include allergens such as pollen, tobacco smoke, and house dust mites, and other factors such as exercise, cold temperatures, and influenza (AIHW 2004).

Asthma is a dynamic condition, and the severity and frequency of symptoms varies between individuals. Some children with the condition become asymptomatic as they age, and similarly, some people develop asthma in adulthood (AIHW 2006). Whilst some individuals may experience episodic asthma, having an occasional mild episode, other individuals experience chronic asthma, with regular bouts of coughing or wheezing and severe attacks following exposure to triggers.

Asthma is the ninth leading contributor to the burden of disease in Australia, and the leading contributor to the burden of disease in children (AIHW 2005b). Nationally, it is a major cause of school and work absenteeism, visits to general practitioners, child emergency department attendance and admission to hospital. Mathers et al (1999) attribute most of the disease burden to disability rather than mortality. People with asthma rate their health more poorly, and are more likely to suffer from depression than non-sufferers. As a consequence, asthma has a substantial impact on service use and health care costs (AIHW 2005a).

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 involves individuals maintaining regular contact with their doctor, developing a personal asthma management plan, monitoring symptoms, taking medications appropriately, identifying and avoiding asthma triggers and staying active and healthy (Asthma Australia 2002).

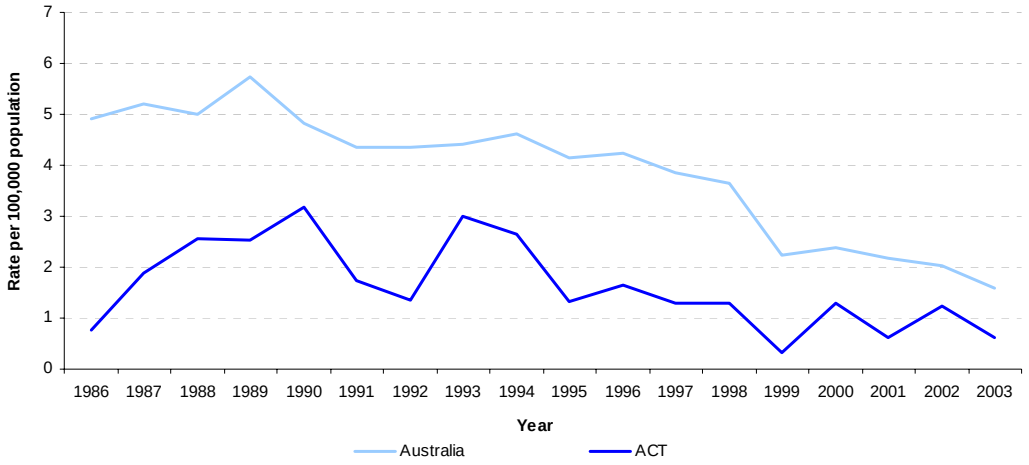
## 12.1 Asthma status

In comparison with other nations, Australia has a high prevalence of asthma (AIHW 2005a). Estimates suggest that about 14-16% of Australian children and 10-12% of Australian adults have diagnosed asthma that remains a current problem, and up to 30% of the population has had episodes of wheezing in the past year (AIHW 2005b). There was a rise in the prevalence of asthma diagnoses in Australia and the ACT from the early 1980s to the early 1990s, however, at the national level, there are indications prevalence may have peaked (AIHW 2005b). More recent data are required to determine whether prevalence has peaked in the ACT.

Existing prevalence estimates suggest that asthma rates in the ACT are comparable to those in other states and territories. According to the results of the 2001 National Health Survey, 12.3% (95% CI 11.2 – 13.4) of ACT residents reported having asthma, compared to 11.6% nationally (ABS 2002a). However, there are differentials in the prevalence of asthma between population groups. Among children, for instance, national estimates suggest the prevalence of disease is higher in males compared to females, whilst among adults, the prevalence of asthma is higher in females compared to males (AIHW 2005b). The evidence available for the ACT suggests that prevalence patterns among various population groups are very similar to those observed nationally. A recent study of asthma among children in the ACT suggests that Indigenous children have more respiratory morbidity than non-Indigenous children. However, this may, in part, be due to higher exposure to environmental tobacco smoke (Glasgow et al 2003).

Mortality from respiratory disease in Australia is relatively high in comparison to other OECD nations (AIHW 2005b). However, there has been an ongoing decline in the mortality rate for asthma over the last two decades (Figure 12.1). In 2003, the mortality rate in the ACT was 0.6 per 100 000 population (95% CI 0.0 – 1.5), compared to 1.5 per 100,000 population for Australia (95% CI 1.4 – 1.8).

**Figure 12.1: Asthma[(a)] mortality rates for the ACT & Australia, 1986 - 2003.**



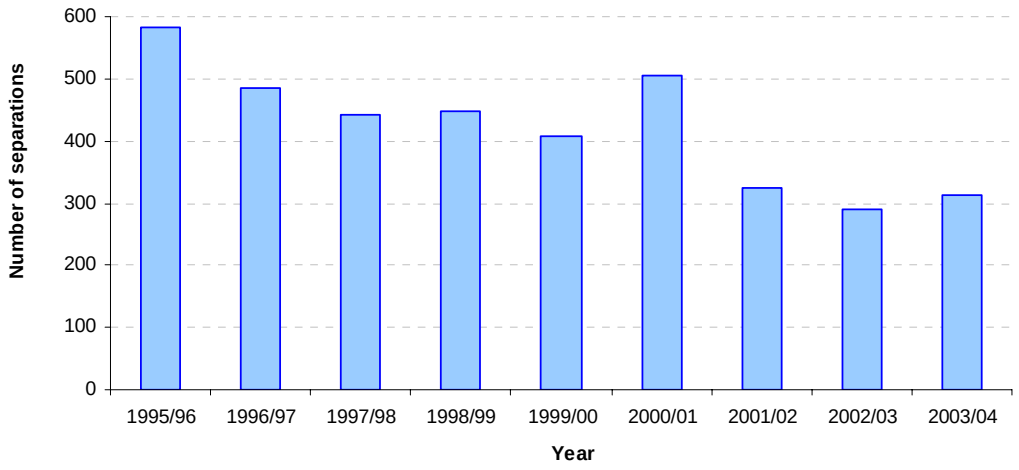

Data sources: ABS deaths data 2002 & 2003, confidential unit record files; ABS 2005; ABS 2004; ABS 2003a; ABS 2003b; ABS 2002b; ABS 2001; ABS 2000; ABS 1999a; ABS 1999b; ACT Government 2003.

(a) Asthma defined using ICD-9 code '493' (1986 - 1998) and ICD-10 codes 'J45' & 'J46' (1999 – 2003).

Since the mid-1990s, there has been an ongoing decline in the number of hospital separations with a principal diagnosis of asthma (Figure 12.2). In 1995/96 there were 583 ACT resident separations for asthma from ACT hospitals, representing 1% of all hospital separations for residents. In contrast, in 2003-04 there were 314 separations, representing approximately 0.4% of all ACT resident separations from ACT hospitals.

Serious morbidity due to asthma is more common among children than adults (AIHW 2005a). In 2003-04, the separation rate for ACT children from ACT hospitals was 264 per 100,000 population, compared to 56 per 100,000 population for ACT adults. During this period children accounted for more than half (54%)of all hospital separations for asthma.

**Figure 12.2: Hospital separations for ACT residents from ACT hospitals with a principal diagnosis of asthma[(a)], 1995/96 - 2003/04[(b)].**



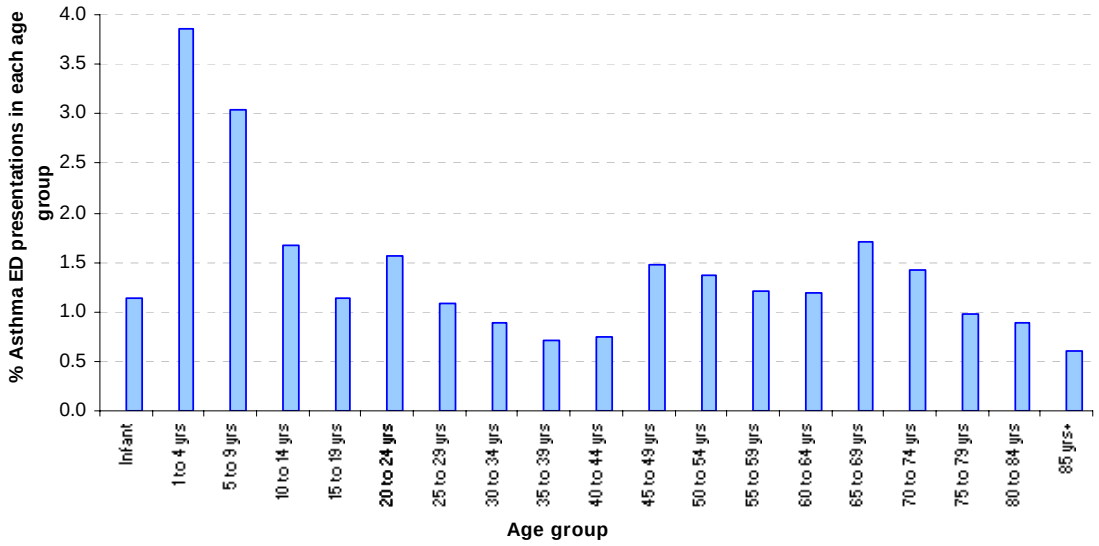

Data source: ACT Admitted Patient Care Collection 1995/96-2003/04, confidential unit record file.

(a) Asthma defined using ICD-9-CM code '493' (1995/96 – 1997/98) and ICD-10-AM codes 'J45' & 'J46' (1998/99 – 2003/04).
(b) Note that data for the year 2002-03 excludes data from one of the ACT private hospitals, as patient residency data was not collected for this year by the hospital concerned.

In addition to the decrease in hospital admissions, there has also been a decrease in ACT resident presentations for asthma to ACT hospital emergency departments over time. In 2003-04, 1,178 ACT residents presented to either The Canberra Hospital (TCH) or Calvary Hospital Emergency Department with asthma, compared to 1,490 residents presenting in 2001-02.

Figure 12.3 shows that the rate of ACT resident presentations to emergency departments at ACT hospitals also varies with age. The graph presents asthma presentations as a percentage of total resident presentations for each age group in 2002-03. Presentation rates for asthma were higher for children, comprising 3.9% of all presentations for children aged 1-4 years and 3.0% for children aged 5-9 years. Asthma presentations are also more frequent among older adults, comprising 5.6% of all presentations for residents aged 65 years or more in 2002-03. The higher rates of presentation and hospitalisation may be indicative of higher prevalence, greater severity, poor management, or poor identification of the disease in these age groups.

**Figure 12.3: Proportion of ACT resident presentations to TCH and Calvary Emergency Departments, with a principal diagnosis of asthma[(a)], by age group, 2002-03.**




Data source: ACT Emergency Department Information System 2002-03, confidential unit record file.

(a) Asthma defined using ICD-10-AM codes 'J45' & 'J46' (The Canberra Hospital ED) and ICD-9-CM code '493' (Calvary Hospital ED).

Nationally, there are indications that the prevalence of asthma may have peaked. Although there is no recent evidence available to indicate asthma prevalence has peaked in the ACT, mortality, hospitalisation separation and emergency department presentation rates have all decreased over time. The reasons for these decreases are unknown, however, changes in environmental factors, such as improved air quality, changes in diagnosis, improved asthma management in the ambulatory setting, new asthma preventative medications and dose-delivery devices (spacers) may partially explain these trends.

## 12.2 Asthma initiatives

In recognition of the burden that asthma places on the community, the disease was announced as the sixth National Health Priority Area (NHPA) in 1999. Since then the *National Asthma Action Plan 1999-2002* has been developed and a number of initiatives implemented. In 2001-02, the Commonwealth committed $48.4 million over four years to help improve moderate to severe asthma management. In 2001 the Australian Government announced the GP Asthma Initiative. This initiative promotes the use of the Asthma 3+ Visit Plan), which incorporates diagnoses, assessment, education and management, over at least three consultations with a GP. This program has been evaluated by ACT Health Academic Unit of General Practitioners (Glasgow et al).

The ACT Health Academic Unit of General Practice conducted an asthma guidelines harmonisation project in 2000, harmonising all asthma guidelines used by ACT health providers to National Asthma Council asthma management guidelines. Together with the Asthma 3+ Visit Plan this guideline harmonisation may have been responsible for a reduction in Asthma admissions for ACT children (Glasgow personal communication).

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 from the project suggest that about 16.5 % of kindergarten-aged children currently have asthma and 22.4% have had asthma at some stage (Glasgow et al 2001). About 23% of the ACT kindergarten children currently with asthma have a written asthma plan. Ideally, all children with frequent episodic or persistent asthma should have an asthma management plan.

A National Service Improvement Framework is being 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 Issue**

- An ongoing issue that remains pertinent is the need to avoid environmental tobacco smoke, as this is a risk factor for both developing asthma and provoking symptoms.

# References


ABS (Australian Bureau of Statistics) 1999a, *COD Australia 1997*, cat. no. 3303.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 1999b, *COD Australia 1998*, cat. no. 3303.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2000, *COD Australia 1999*, cat. no. 3303.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2001, *COD Australia 2000*, cat. no. 3303.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002a, *2001 National health survey: ACT companion data*, cat. no. 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002b, *COD Australia 2001*, cat. no. 3303.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2003a, *June 1997 to June 2002 population by age and sex Australian states and territories*, cat. no. 3201.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2003b, *June 2003 population by age and sex Australian states and territories*, cat. no. 3201.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004, *COD Australia 2002*, cat. no. 3303.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005, *COD Australia 2003*, cat. no. 3303.0, ABS, Canberra.

ACT Government 2003, *Australian Capital Territory population projections 2002-2032 and beyond,* ACT Government, Canberra.

AIHW (Australian Institute of Health and Welfare) 2006, AIHW, Canberra, viewed 15 May 2006, <http://www.aihw.gov.au/cdarf/diseases_pages/index.cfm#asthma>.

AIHW (Australian Institute of Health and Welfare) 2005a, AIHW, Canberra, viewed 5 August 2005, < http://www.aihw.gov.au/cdarf/diseases_pages/index.cfm#asthma>.

AIHW (Australian Institute of Health and Welfare), Australian Center for Asthma Monitoring 2005b, *Asthma in Australia 2005*, AIHW asthma series 2, cat. no. ACM 6, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004, *Australia's health 2004* AIHW, Canberra.

Arshad SH 2005, 'Primary prevention of asthma and allergy', *Journal of Allergy and Clinical Immunology*, vol 116, pp 3-14.

Asthma Australia 2002, *Asthma – the basic facts*, New South Wales Multicultural Communication Service, New South Wales, viewed 20 September 2005, <www.mhcs.health.nsw.gov.au/health-public-affairs/mhcs/publications/6000.html>.

Glasgow N J, Goodchild EA, Yates R & Ponsonby AL 2003, 'Respiratory health in Aboriginal and Torres Strait Islander children in the Australian Capital Territory', *Journal of Paediatric and Child Health*, vol 39, pp 534-539.

Glasgow N. Ponsonby A.L. Yates R. Beilby J. Dugdale P. 2003 Proactive asthma care in childhood: general practice based randomised controlled trial. British Medical Journal 327:659-63

Glasgow N J, Ponsonby AL, Yates R, Macdonald T & Attewell R 2001, 'Asthma screening as part of a routine school health assessment in the Australian Capital Territory', *Medical J Aust*, vol 174, pp 384-388.

Mathers C, Vos T & Stevenson C 1999, *The burden of disease and injury in Australia*, AIHW, Canberra.

New South Wales Health Multicultural Communication Service 2001, *Is your baby at risk of developing asthma?*, New South Wales Health Multicultural Communication Service, New South Wales, viewed 5 August 2005, <http://www.mhcs.health.nsw.gov.au/health-public- affairs/mhcs/publications/4290.html>.

# 13 ARTHRITIS AND MUSCULOSKELETAL CONDITIONS

**At a Glance**

- Arthritis and musculoskeletal conditions were endorsed as a National Health Priority Area in July 2002;
- Estimates derived from the 2001 National Health Survey suggest that the prevalence of self-reported musculoskeletal conditions was similar for the ACT (32.2%) and Australia (32.0) in 2001. The most commonly reported conditions were back pain, neck problems, disc disorders and arthritis;
- The burden of disease attributable to arthritis and musculoskeletal conditions is primarily due to the reduced quality of life associated with chronic pain and disability. In 1998, musculoskeletal conditions were reported as the most common cause of disability in the ACT and in 2003-04, they accounted for 5.2% of all ACT resident separations from ACT hospitals;
- Arthritis and other musculoskeletal conditions are not a common cause of death. In 2003, this group of diseases accounted for less than 1% of all deaths among ACT residents.

In July 2002, the Australian Health Ministers endorsed arthritis and musculoskeletal conditions as a National Health Priority Area, because of the health and economic burden this group of diseases place on the population. The ABS (2002) estimates that about six million Australians suffer from arthritis or other musculoskeletal condition. Mathers et al (1999) attribute most of the disease burden to disability, although more than 4,000 years of life are estimated to be lost each year due to premature death.

Regular moderate exercise and a healthy diet are recommended in preventing the onset of musculoskeletal disease, while early diagnosis and appropriate treatment are key to delaying the progression of disease, reducing pain, disability and loss of independence. Treatment options include physiotherapy, exercise, using medications aimed at reducing pain, surgery and increasing mobility and slowing the progression of inflammation. In terms of improving quality of life, mechanical aids and modifications to houses can enhance mobility, while self-help programs allow for better management of conditions and maintenance of independence in the community (DoHA 2005).

## 13.1 Levels of arthritis and musculoskeletal conditions

Estimates derived from the 2001 National Health Survey suggest that the prevalence of self-reported musculoskeletal conditions was similar for the ACT (32.2%, 95% CI: 30.2 – 34.2) and Australia (32.0) in 2001(ABS 2002). The estimates suggest that about 103,000 ACT residents reported having a musculoskeletal condition which lasted or was expected to last for six months or more in that year. The most commonly reported conditions were back pain, neck problems, disc disorders and arthritis.

The prevalence of self-reported musculoskeletal conditions increase with age. Although the results of the survey suggest that 32.2% of all ACT residents in 2001 had a musculoskeletal condition, the prevalence of self-reported conditions was significantly higher for residents aged 65 years or more (55.0%, 95% CI: 47.8 – 62.2)(see chapter 16 for further information). There were similar rates reported between males and females for most conditions, although females were significantly more likely to report having arthritis and osteoporosis than males (Table 13.1).

**Table 13.1: % Population reporting a musculoskeletal condition, by sex, ACT, 2001[(a), (b)].**

| | Males | 95%CI | Females | 95%CI |
|---|---|---|---|---|
| Arthritis | 8.5% | (6.8 - 10.2) | 12.3% | (10.3 - 14.3) |
| Rheumatism | 0.4%* | (0.0 - 0.8) | 1.9% | (1.1 - 2.7) |
| Back pain problems, neck/disc disorders | 21.2% | (18.7 - 23.7) | 23.6% | (21.0 - 26.2) |
| Osteoporosis | 0.7%* | (0.2 - 1.2) | 2.2% | (1.3 - 3.1) |
| Other diseases of the musculoskeletal system | 5.9% | (4.5 - 7.3) | 4.5% | (3.3 - 5.7) |
| All musculoskeletal conditions | 29.1% | (26.4 - 31.8) | 32.7% | (29.9 - 35.5) |

Data source: ABS 2002.
(a) Percentages are age-standardised.
(b) Self-reported conditions having lasted, or expected to last for six months or more.
* Estimate has a relative standard error of between 25% and 50% and should be interpreted with caution.

The high level of prevalence and the impact of these conditions on quality of life are best reflected in information on disability and service utilisation. From the results of the 1998 survey of Disability, Ageing and Carers, musculoskeletal conditions, including arthritis, were the most common cause of disability reported in the ACT, accounting for 42% of all people reporting a disability in 1998 (ABS 1999). In 2003-04, musculoskeletal conditions, including arthritis, accounted for 5.3% of all ACT resident separations from ACT hospitals (Table 6.4).

Death is not a common outcome of musculoskeletal conditions. Normally, less than 1% of annual ACT resident deaths are due to arthritis or other musculoskeletal conditions. In 2003, about 0.7% of resident death registrations included one of these conditions as the underlying cause of death. In 2003 the ACT death rate for musculoskeletal conditions was three deaths per 100,000 population. This compares to five deaths per 100,000 population for Australia in 2003 (ABS 2005).

## 13.2 Services and initiatives

There are a range of prevention, treatment and support services available to people with musculoskeletal conditions in the ACT. ACT Health provides services, including rheumatology, orthopaedic, rehabilitative and community care services, from the public hospital setting. Private hospitals in the ACT also provide services to residents. Pharmaceutical and support services are provided in the primary setting and organisations such as Arthritis Australia provide support and information to people in the ACT with arthritis, osteoporosis and related conditions.

New initiatives that assist in preventing musculoskeletal conditions include the Actively Ageing Framework launched by Sport and Recreation ACT in 2003. The Framework aims to increase participation in physical activity by older people (over 55 years of age) in the ACT. In conjunction with ACT Health, Sport and Recreation ACT has produced the *Keep Moving and Feel Great* brochure promoting physical activity in older people (Sport and Recreation ACT 2005).

In addition, initiatives such as the Primary Joint Replacement Project, run by the Orthopaedics Unit at The Canberra Hospital, have led to improvements in the quality of care provided to patients. The Project involves developing and introducing a comprehensive patient management model promoting a multidisciplinary integrated approach to clinical care. It includes pre-admission assessment, carer education, specific physiotherapy goals and a postoperative pain management plan. The project has resulted in a reduction in the average length of stay in hospital for patients, improved waiting times and increased patient satisfaction with the service.

Recent research undertaken by The Canberra Hospital has shown the use of anti-osteoporotic treatment in older patients admitted with fractures has increased markedly since the establishment of an Orthogeriatric Service. However, the primary use of anti-osteoporotic medications is still low, indicating a need for more effective education in primary care and the community.

(See Chapter 16: The Health of Older People in the ACT for further information on services and initiatives, such as The Falls and Balance Clinic which is relevant to this section).

**Emerging Issue**

- As the age structure of the population changes over time, there is likely to be an increase in the number of people with age-related disorders, such as arthritis (see Chapter 16 for further information).

# References

ABS (Australian Bureau of Statistics) 1999, Disability, ageing and carers, customised summary tables, Australian Capital Territory 1998.

ABS (Australian Bureau of Statistics) 2002, *2001 National health survey: summary of results Australia*, cat. no. 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005, *Deaths Australia 2003*, cat. no. 3302.0, ABS, Canberra.

DoHA (Department of Health and Ageing) 2005, Canberra, viewed 11 July 2005, <www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pq-nhpa-index.htm>.

Mathers C, Vos T & Stevenson C 1999, *The burden of disease and injury in Australia*, cat. no. PHE 17, AIHW, Canberra.

Sport and Recreation ACT 2005, Canberra, viewed 25 July 2005, <www.sport.act.gov.au/development/projects/prjageing.html>.

# 14 COMMUNICABLE DISEASE

**At a Glance**

- Immunisation coverage levels for children in the ACT aged 12-15 months and 24-27 months declined during the 2000 to 2003 period. However, more recent information on coverage levels shows that they have increased again, up from 88.3% in 2003 to 92.1% as at 31 March 2006 for children aged 12-15 months, and up from 89.0% to 92.1% for children aged 24-27 months over the same period.
- There was an increase in notification rates for pertussis, invasive pneumococcal disease, meningococcal disease and influenza between 2000 and 2003. There were decreases in notification rates for mumps and rubella over the same period. Between 2002-03 and 2003-04, there was an increase in hospitalisations for all vaccine preventable diseases (VPD) and VPD comprised a third (32.3%) of all hospitalisations for notifiable communicable diseases in 2003-04.
- The most commonly notified communicable diseases in 2003 were chlamydia (28%), campylobacter (21%), pertussis (19%) and hepatitis C (13%).
- In 2003, there was an outbreak of pertussis in the ACT. A pertussis booster at 14-15 years of age is now part of the ACT Immunisation Program.
- Meningococcal notification rates for the ACT were relatively high in 2003 compared to previous years as a result of two clusters of disease that occurred between November 2003 and January 2004. ACT Health responded to the issue by providing free immunisation to young people between 15-19 years of age and implementing an awareness campaign. Notification rates for the disease have since declined.
- Notification rates for tuberculosis (TB) and malaria in the ACT, whilst small in number, are relatively higher than notification rates for Australia. Most new cases in the ACT are imported (acquired outside Australia) or introduced (derived from imported cases). In 2003, there were no reported relapse cases of TB in the ACT.
- There was an average of six HIV notifications a year between 2002 and 2004 in the ACT.

Communicable diseases are diseases due to a specific infectious agent or its toxic products and arise through transmission of that agent or its products from an infected person, animal, or reservoir to a susceptible host. The diseases are caused by micro-organisms such as viruses, bacteria, protozoa and fungi. Despite major advances in treatment through the discovery of antibiotics, antivirals and development of vaccines against many diseases, micro-organisms have demonstrated their tremendous ability to adapt, survive and challenge populations. Infectious diseases remain the leading cause of mortality worldwide (WHO 2003).

Understanding how communicable diseases are transmitted is critical for prevention and control particularly for persons most at risk. Micro-organisms can be transmitted in a number of ways: directly through the air, usually via respiratory droplets; via food and water; hand to mouth; by body fluids; using vectors such as mosquitoes or ticks; or through direct contact with an infected person or animal. A mixture of promotion, prevention and treatment initiatives are used to limit the burden of communicable disease in the community.

In the ACT, controlling, treatment and prevention of communicable diseases are vital public health functions across the health sector. Essential to these important public health programs are activities to conduct surveillance, and investigate and manage cases of communicable disease. The Health Protection Service (HPS) coordinates aspects of communicable disease control to ensure efficient communication and coordination between surveillance, investigation and management units.

For example, during the ACT bushfires of January 2003, the Health Protection Service (HPS) worked with Emergency Services to ensure a coordinated response to any disease outbreaks as a result of sewage overflow, interruption to water supply and power outages that could result in spoiled food or contaminated water.

Key to the response was the establishment of enhanced surveillance for gastrointestinal illness, skin complaints, and unusual clusters of illness (eg rash, fever). General practitioners, pathology laboratories and hospitals cooperated to provide urgent notification of any cases to the HPS. HPS officers kept in daily contact with a wide range of health service providers, including nursing homes and childcare centres, in order to detect any unusual disease occurrence. General practitioners and immunisation providers were contacted to determine the impact of the fires on cold storage of vaccines. Vaccine viability and wastage was assessed and wasted vaccines were replaced within the first week of the disaster.

These prevention and control activities combined with wide dissemination of information on infection control through fact sheets on gastroenteritis, basic hygiene and food preparation, effectively protected the ACT community against the possibility of an outbreak of infectious disease as a result of critical infrastructure disruption during the bushfire period (for further information see Chapter 17: The Health Response to the ACT Bushfires of January 2003).

## 14.1 Surveillance, investigation and control

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 notify ACT Health of diagnoses of certain infectious diseases. Often diseases are notified on suspicion, pending a confirmatory diagnosis.

ACT Health assesses each notification to determine whether a public health response is required, such as immunisation or treatment of contacts. In the event of an outbreak of a non-notifiable disease, the Chief Health Officer has the power to temporarily designate a non-notifiable disease as a notifiable condition, as in the case of Severe Acute Respiratory Syndrome (SARS).

The number of notifications received by the HPS 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. Finally, the disease must be reported to ACT Health for assessment. Despite these limitations, communicable disease notifications provide valuable information on disease patterns in the ACT.

Communicable disease control, with the exception of quarantine, is the responsibility of states and territories, however many aspects of control are better addressed from a national perspective as diseases do not recognise state and territory boundaries. The ACT participates in the Communicable Diseases Network of Australia (CDNA), a national network that monitors the occurrence of communicable diseases in Australia to ensure that there is a national approach to surveillance and control. In 2003, CDNA endorsed a list of communicable diseases to be notified nationally. This chapter provides an overview of these nationally notifiable diseases in the ACT.

In general, for each notifiable disease, crude rates are presented per 100,000 of the ACT population. Adjusted rates are not provided. Notifications and rates are based on date of onset of disease, where the date of onset is unavailable then date of notification is used. This is to enable comparisons with other jurisdictions. In some diseases, where numbers of notifications are very small, information is suppressed or aggregated to ensure confidentiality of individuals.

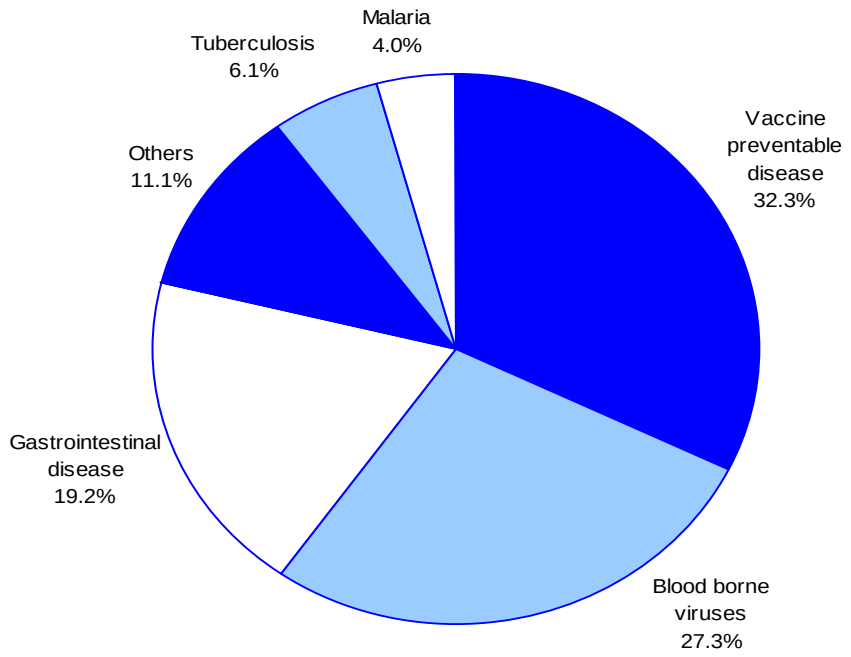
## 14.2 Overview

In 2003, ACT Health received 1,948 notifications of communicable diseases. This represents a 30% increase from the total number notifications in 2002. The increase was almost entirely due to an increase in pertussis and chlamydial notifications for 2003.

Notifications can be broadly classified into a number of categories based on mode of transmission and interventions. A number of diseases could fit into more than one broad classification. In 2003, 30% of all notifications were classified as sexually transmissible disease; 29% gastrointestinal; 21% vaccine preventable and 17% were bloodborne viruses. Quarantinable, zoonotic and vectorborne disease only represents a small fraction (3%) of total notifications, however the occurrence of any disease in these groups is important. The most frequently notified specific diseases were: chlamydial infection (28%); campylobacter infections (21%); pertussis (19%) and hepatitis C (13%).

Hospital admissions data provide a useful profile of persons who require hospitalisation as a result of infection with a communicable disease and as such provide a crude indication of severity. In 2003, there were 234 hospital admissions where a notifiable disease was listed as a diagnosis. A third (32.3%) of hospitalisations for notifiable communicable diseases were as a result of a vaccine preventable disease and the majority of these were due to either pneumococcal or meningococcal infection or gastrointestinal disease (Figure 14.1).

**Figure 14.1: % Hospital admissions as a result of notifiable communicable diseases (n=234) by disease category[(a)], ACT, 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

(a) See Appendix 2 for ICD-10-AM codes used to define disease categories.

## Table 14.1: Communicable disease notifications* and rates (per 100,000 population), ACT 1999 - 2003, NSW & Australia, 2003.

| | Notifications | | | Notification rate per 100,000 population | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ACT | NSW | Aust | ACT | | | | | NSW | Aust |
| | 2003 | 2003 | 2003 | 1999 | 2000 | 2001 | 2002 | 2003 | 2003 | 2003 |
| **Vaccine preventable disease** | | | | | | | | | | |
| Pertussis | 357 | 2,768 | 5,106 | 26.4 | 64.1 | 26.7 | 17 | 112.3 | 41.2 | 25.4 |
| Pneumococcal disease (invasive) | 40 | 784 | 2,174 | NN | NN | 6.8 | 10.2 | 14.2 | 11.9 | 11.1 |
| Meningococcal disease | 13 | 199 | 550 | 1.6 | 1.5 | 2.5 | 1.9 | 4 | 3 | 2.8 |
| #Influenza (laboratory confirmed) | 7 | 861 | 3,587 | NN | NN | 0.1 | 0.1 | 2.2 | 12.9 | 18 |
| Measles | 0 | 18 | 92 | 1.6 | 0.9 | 0 | 0 | 0 | 0.3 | 0.5 |
| Mumps | 2 | 35 | 76 | 2.5 | 5.2 | 0.3 | 0 | 0.9 | 0.5 | 0.4 |
| Rubella | 0 | 24 | 53 | 5.4 | 1.2 | 0.3 | 0.9 | 0.3 | 0.3 | 0.3 |
| Rubella - congenital | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.01 |
| *Haemophilus influenzae* type b | 0 | 6 | 19 | 0.3 | 0 | 0 | 0 | 0 | 0.1 | 0.1 |
| Tetanus | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diphtheria | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Poliomyelitis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Sexually transmitted disease** | | | | | | | | | | |
| Chlamydial infection | 523 | 7,556 | 30,161 | 58 | 76.2 | 96.1 | 145.6 | 166 | 115.6 | 151.4 |
| Gonococcal infection | 30 | 1,194 | 6,611 | 7.3 | 5.6 | 6.5 | 5.6 | 10.2 | 19.8 | 33.8 |
| Syphilis | 12 | 826 | 2,056 | 3.8 | 4.3 | 3.4 | 3.7 | 3.4 | 12.4 | 10.3 |
| Syphilis - congenital | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0.01 | 0.05 |
| Donovanosis | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| **Bloodborne disease** | | | | | | | | | | |
| Hepatitis B (incident) | 1 | 70 | 337 | 1 | 0.9 | 0.6 | 0 | 0.3 | 1.1 | 1.7 |
| Hepatitis B (unspecified)†,‡ | 57 | 2,632 | 5,833 | 23.2 | 15.4 | 20.8 | 26.3 | 17.6 | 41.2 | 29.3 |
| Hepatitis C (incident) | 12 | 114 | 460 | 7.6 | 6.8 | 7.5 | 2.5 | 4.3 | 1.9 | 2.3 |
| Hepatitis C (unspecified)†,‡, | 241 | 5,172 | 14,169 | 98.1 | 70.6 | 74.3 | 73.4 | 79.9 | 76.2 | 68.4 |
| Hepatitis D | 0 | 12 | 26 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.1 |
| **Gastrointestinal disease** | | | | | | | | | | |
| Campylobacteriosis | 406 | NN | 15,372 | 92.3 | 102.7 | 132.8 | 113.4 | 128.7 | NN | 114.9 |
| Salmonellosis (NEC) | 80 | 1,858 | 7,011 | 21 | 34.2 | 27.2 | 29.4 | 27.5 | 27.6 | 34.9 |
| Cryptosporidiosis | 9 | 202 | 1,219 | NN | NN | 3.1 | 11.2 | 3.1 | 3 | 6.1 |
| Shigellosis | 3 | 59 | 440 | 1.6 | 2.2 | 1.9 | 0 | 0.9 | 0.9 | 2.2 |
| Hepatitis A | 5 | 124 | 418 | 2.5 | 1.5 | 4.4 | 1.2 | 2.5 | 1.8 | 2.2 |
| Listeriosis | 1 | 28 | 69 | 0 | 0 | 0.3 | 0 | 0.6 | 0.4 | 0.3 |
| Typhoid | 0 | 16 | 51 | 0 | 0.3 | 1.2 | 0.3 | 0 | 0.2 | 0.3 |
| SLTEC, VTEC | 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| Haemolytic uraemic syndrome (HUS) | 0 | 5 | 15 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.1 |
| Hepatitis E | 2 | 6 | 10 | 0.3 | 0 | 0 | 0.3 | 1.2 | 0.1 | 0.1 |
| Botulism | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Other bacterial disease** | | | | | | | | | | |
| Tuberculosis | 18 | 378 | 944 | 8.3 | 4.9 | 2.2 | 4.6 | 5.9 | 5.3 | 4.8 |
| Legionellosis | 2 | 60 | 334 | 0.6 | 1.5 | 0.6 | 0.9 | 0.6 | 1.2 | 1.5 |
| Leprosy | 0 | 1 | 4 | 0.3 | 0 | 0 | 0.3 | 0 | 0.1 | 0.1 |
| **Vectorborne disease** | | | | | | | | | | |
| Malaria | 18 | 120 | 601 | 7 | 5.6 | 5.6 | 4 | 5.6 | 1.8 | 3 |
| Dengue | 7 | 69 | 868 | 0.6 | 0.3 | 4.7 | 0.9 | 2.5 | 1 | 4.3 |
| Ross River virus infection | 1 | 492 | 3,841 | 2.5 | 4.9 | 3.1 | 0 | 0.6 | 7.3 | 19.1 |
| Barmah Forest virus infection | 1 | 451 | 1,370 | 0 | 0 | 0 | 0 | 0.3 | 6.7 | 6.9 |
| Flavivirus (NEC) | 0 | 10 | 81 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.4 |
| Kunjin virus | 0 | 0 | 19 | NN | NN | 0 | 0 | 0 | 0 | 0.1 |
| Murray Valley encephalitis virus | 0 | 0 | 0 | NN | NN | 0 | 0 | 0 | 0 | 0 |
| Japanese encephalitis virus | 0 | 0 | 0 | NN | NN | 0 | 0 | 0 | 0 | 0 |
| **Zoonotic disease** | | | | | | | | | | |
| Q fever | 1 | 278 | 550 | 0 | 0 | 0.9 | 0 | 0.3 | 4.3 | 2.8 |
| Ornithosis | 0 | 87 | 211 | 0 | 0 | 0.3 | 0 | 0 | 1.3 | 1 |
| Leptospirosis | 0 | 37 | 125 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0.6 |
| Brucellosis | 0 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| Australian bat lyssavirus | 0 | 0 | 0 | NN | NN | 0 | 0 | 0 | 0 | 0 |
| Lyssavirus (NEC) | 0 | 0 | 0 | NN | NN | 0 | 0 | 0 | 0 | 0 |
| Anthrax | 0 | 0 | 0 | NN | NN | 0 | 0 | 0 | 0 | 0 |
| **Quarantinable disease** | | | | | | | | | | |
| Cholera | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plague | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rabies | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Viral haemorrhagic fever | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Yellow fever | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Severe acute respiratory syndrome | 0 | 0 | 0 | | | | | 0 | 0 | 0 |

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.
* Analyses in this report were based on date of onset, (except for hepatitis B and hepatitis C unspecified, where date of report of disease was used). Where date of onset was not available the date of specimen collection or the date of notification was used.
† 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.

## 14.3 Immunisation

Immunisation is the main primary prevention strategy for the control of communicable diseases. It is a simple, safe and effective means to protect children and adults against the harmful effects of certain diseases. Immunisation allows an individual to develop immunity to a disease not previously encountered and so provides protection when the individual becomes exposed.

High levels of vaccinated people in the community also act as a "firebreak" in the spread of disease, slowing or preventing transmission of disease to others. The fact that people in a population have been vaccinated provides protection to others, whether vaccinated or not. This protection is called “herd immunity”. A threshold of 90% is usually accepted as sufficient immunisation coverage to provide “herd immunity”.

The practice of immunisation is constantly evolving. The Australian Immunisation Handbook (DoHA 2003a) provides clear guidance about immunisation practice, as recommended by the National Health and Medical Research Council (NHMRC 2003).

The Handbook outlines the Australian Standard Vaccination Schedule (ASVS) and incorporates all vaccines recommended as ‘best practice’ (both funded and unfunded), according to the NHMRC. Vaccines that are funded by the Australian Government are included in the National Immunisation Program (NIP). Not all recommended vaccines receive funding from the Australian Government.

There were a number of changes to the Australian Standard Vaccination Schedule in 2003:

- Meningococcal C conjugate vaccine was funded for all children 1-18 months with a routine dose incorporated into the ASVS at 12 months of age and a catch up program for older children.
- The NHMRC (2003a) endorsed the addition of conjugate pneumococcal vaccine at 2, 4 and 6 months of age and varicella (chicken pox) vaccine at 18 months of age.
- The NHMRC also endorsed replacement of the oral polio vaccine (OPV) with inactivated poliomyelitis vaccine.
- Pertussis vaccination schedule now includes a booster at 15-17 years, and removal of the 18 month booster.

Changes to the ASVS have made the childhood immunisation schedule considerably more complex with increasing numbers of inoculations required for some age groups. For this reason the Australian Government established the Australian Childhood Immunisation Register (ACIR) in 1996. Data on the register provides information on the immunisation status of all Australian children less than seven years of age.

Immunisation coverage for the ACT is presented as the percentage of the eligible population that has been immunised according to the Australian Standard Vaccination Schedule (ASVS). Immunisation coverage rates are a key indicator for determining the effectiveness of an immunisation program. In the past the ACT has lead Australia in the proportion of children who are immunised against disease on the ASVS, with the exception of pertussis.

Over the 2000 to 2003 period there was a decrease in the number of children reported as fully immunised in the ACT for the 12-15 month and 24-27 month age cohorts. NSW coverage has increased over this period and the Australian coverage rate improved by 1.4% between 2000 and 2003 (Table 14.2). The percentage of fully immunised 6 year olds increased in all states and territories between 2000 and 2003.

**Table 14.2: Immunisation coverage in children, ACT, NSW & Australia, 2000-2005**

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|
| 12-15 months | | | | | | |
| ACT | 92.7 | 90.9 | 91.0 | 88.3 | 92.8 | 93.7 |
| NSW | 90.5 | 89.9 | 91.4 | 91.0 | 90.7 | 90.7 |
| Aust | 91.3 | 90.4 | 91.7 | 91.0 | 91.2 | 91.0 |
| 24-27 months | | | | | | |
| ACT | 87.9 | 90.1 | 87.4 | 89.0 | 92.0 | 94.8 |
| NSW | 82.0 | 86.4 | 88.5 | 90.8 | 91.1 | 91.7 |
| Aust | 85.1 | 88.0 | 89.4 | 91.6 | 91.7 | 92.1 |
| 72-75 months | | | | | | |
| ACT | - | 73.1 | 81.9 | 84.7 | 87.2 | 88.2 |
| NSW | - | 74.1 | 80.8 | 83.0 | 83.7 | 84.6 |
| Aust | - | 75.9 | 82.2 | 83.7 | 83.6 | 84.0 |

Data source: ACIR 2006a.

A portion of the decrease in immunisation coverage for the 12-15 month cohort in the ACT, in 2003, may be a result of data lost in the bushfires and subsequent delay in transmission of data to the ACIR. ACT Health worked with the ACT Division of General Practice to retrieve some of these lost data. However a number of other factors could also have contributed to a decrease in immunisation coverage including: an increase in the complexity of the immunisation schedule, changes to the follow up process for children overdue for immunisations and the introduction of the central booking process at clinics.

ACT Health implemented a system for following up immunisations involving Saturday morning clinics operating on a drop-in basis in an attempt to boost immunisation rates.

The most recent immunisation coverage information available at the time of writing (as at 31 March 2006) shows immunisation coverage for the 12-15 month cohort in the ACT had increased to 92.1%, higher than the rate for NSW (90.0%) and Australia (90.2%) (ACIR 2006b). Immunisation coverage in the 24-27 months age cohort for the ACT had also increased and was at 92.1%, as at 31 March 2006, on a par with immunisation coverage nationally and higher than coverage for NSW (91.6%). Coverage for the 72-75 month cohort had increased to 87%, higher than coverage for both NSW (84.1%) and Australia (83.8%).

In Australia, general practitioners see 93% of children in the 0-6 year age group seven times per year on average. This places them in a prime position to target children and to monitor and promote immunisation in that age group. In the ACT, however, there is a long history of public immunisation clinics and general practitioners provided only 37% of immunisations in the 1996-2004 period. This was one of the lowest rates for general practitioners in Australia (SCRGSP 2005). This rate increased to over 48 per cent of childhood immunisations in 2005-06.

Hospitalisations due to vaccine preventable diseases provide an indication of the effectiveness of primary and community healthcare immunisation initiatives. A reduction in hospitalisation rates may indicate improvements in vaccination program coverage or effective treatment by primary healthcare providers (Table 14.3).

**Table 14.3: Hospital separation rates for vaccine preventable conditions, per 1,000 population[(a)], NSW, ACT & Aust, 2002/03 - 2003/04.**

| | | NSW | ACT | Aust |
|---|---|---|---|---|
| **2002/03** | | | | |
| | Influenza and pneumonia | 0.6 | 0.3 | 0.6 |
| | Other conditions | 0.2 | 0.0 | 0.2 |
| | Total[(b)] | 0.8 | 0.3 | 0.8 |
| **2003/04** | | | | |
| | Influenza and pneumonia | 0.7 | 0.4 | 0.7 |
| | Other conditions | 0.2 | 0.1 | 0.1 |
| | Total[(b)] | 0.9 | 0.5 | 0.8 |

Data source: SCRGSP 2006.

(a) Separation rates are directly age standardised to the Australian population at 30 June 2001.
(b) Totals may not equal the sum of the individual conditions due to rounding.

## 14.4 Vaccine preventable diseases

Vaccine preventable diseases are those diseases that have vaccines available and hence are preventable. However, despite extensive vaccination programs, cases of vaccine preventable diseases still occur and notifications of these diseases provide important information for vaccine providers.

A number of diseases are targeted by the Australian Standard Vaccination Schedule (ASVS). During the reporting period, the ASVS 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.

### 14.4.1 Pertussis

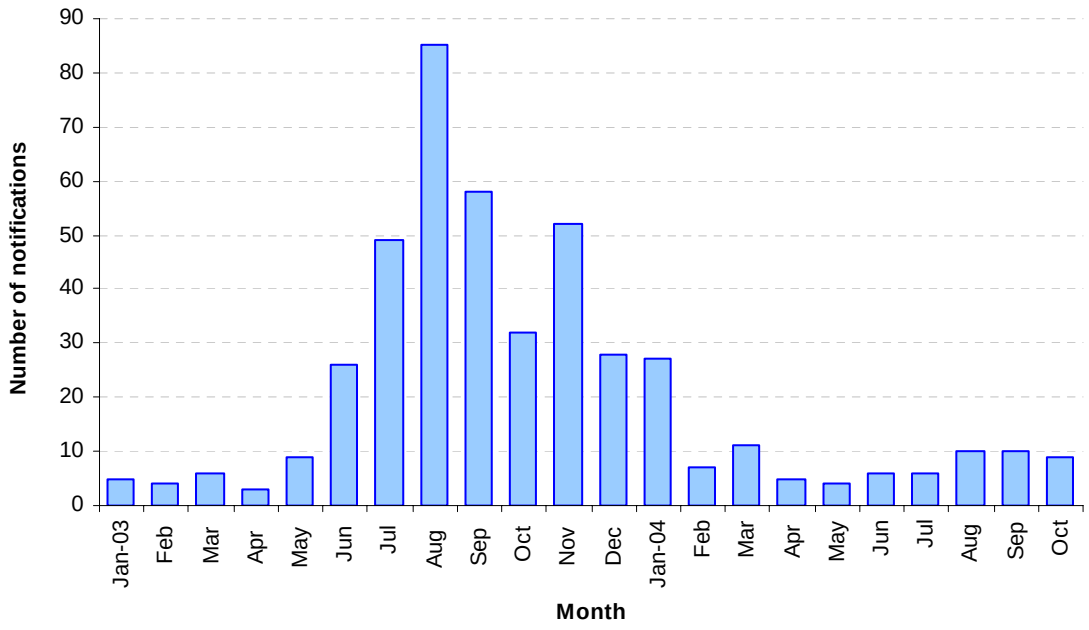
Pertussis (whooping cough) is caused by an infection with the bacteria *Bordetella pertussis.* The bacterium causes a prolonged and often severe cough that is accompanied by a 'whoop', characteristic of the disease. Pertussis can occur at any age, but infants and young children are at highest risk of life-threatening consequences of pneumonia and encephalitis. Persons can remain infectious up to 21 days after the cough begins unless five days of a seven-day course of appropriate antibiotic has been taken. Adolescents and older children can have a milder form of the disease that is hard to recognise. Undiagnosed mild disease contributes to the spread of the disease among non-immunized and partially immunized infants and young children who are more susceptible to severe illness and complications.

Vaccination is currently recommended at 2, 4 and 6 months, and at four years of age, but protection wanes over time and a booster dose of pertussis vaccine is now recommended for all 15-17 year olds to boost waning immunity. A pertussis booster at 14-15 years of age is now part of the Australian National Immunisation Program. In the ACT, acellular pertussis, diphtheria and tetanus booster (trade name Boostrix) was introduced in 2004 to Year 9 children.

In 2003, there were 357 notifications of pertussis in the ACT. Most cases occurred between May and December, with a peak in August (Figure 14.2). This represents higher rates than any other jurisdiction in 2003, or previous year in the ACT (Figure 14.3). The highest incidence was in adolescents aged 10-19 years, with a smaller peak observed among 40-50 year-olds (Figure 14.4).

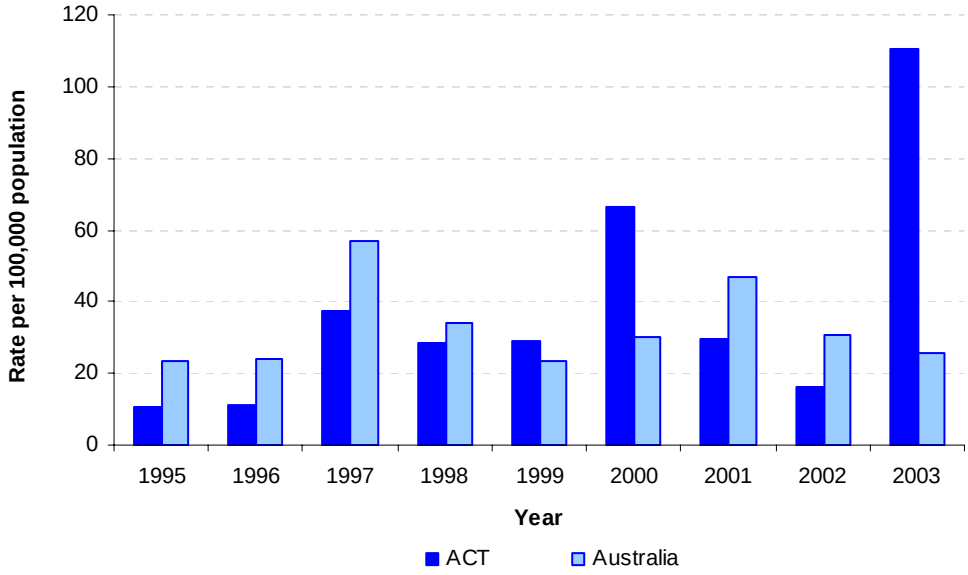
As a result of the increase in notifications, ACT Health issued information alerts to increase awareness of pertussis amongst health care workers and the community. These helped to promote earlier diagnosis and treatment to decrease the infectious period and protect contacts (Hiam et al 2005).

**Figure 14.2: Pertussis notifications by month, ACT, 2003.**



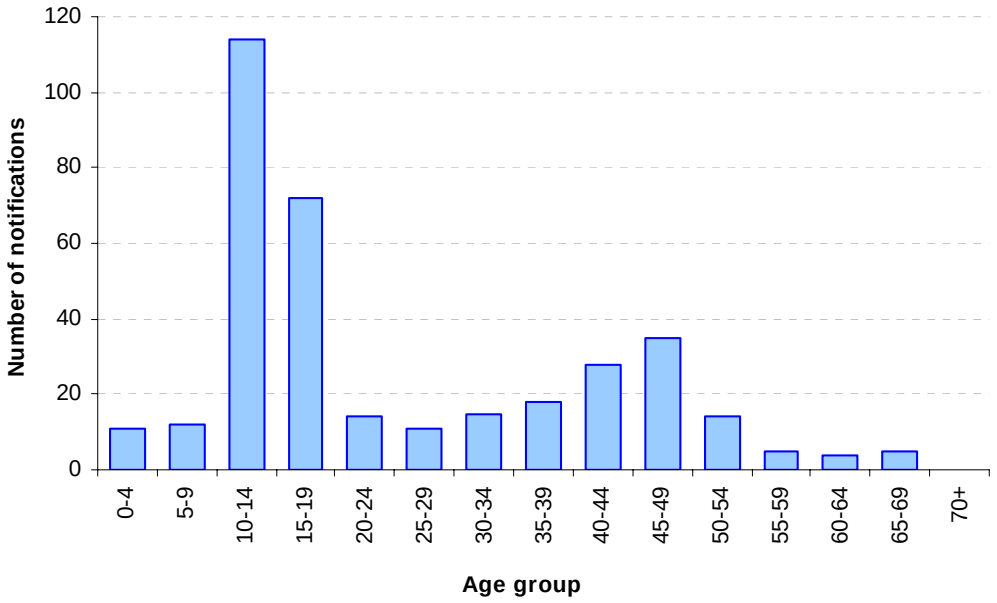

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

**Figure 14.3: Pertussis notification rates per 100,000 population, ACT & Australia, 1995 – 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

**Figure 14.4: Pertussis notifications by age group, ACT, 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

## 14.4.2 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. The incidence of IPD in Aboriginal and Torres Strait Islanders is much higher than that of non-Indigenous Australians. IPD was made a notifiable disease in all Australian states and territories in 2001 (Table 14.4).

**Table 14.4: IPD notifications and rates per 100,000 population, states & territories, 2003[(a)]**

| | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | Aust |
|---|---|---|---|---|---|---|---|---|---|
| Notifications | 40 | 784 | 72 | 466 | 176 | 43 | 443 | 150 | 2,174 |
| Rate per 100,000 population | 12.4 | 11.7 | 37.3 | 12.3 | 11.5 | 9 | 9 | 7.7 | 10.9 |

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

(a) By date of disease onset.

In Australia, the highest rates of disease were in children aged less than five years and adults aged 85 years or more. Among children aged less than five years, the highest rates were recorded in children aged one year (119 per 100,000 population). In all age groups there were more male than female cases (overall male to female ratio 1.3:1).

Clinical presentation varied by age with pneumonia being the most common presentation among cases over 65 years (72%) and bacteraemia the most common presentation among cases in children under five years (68%). In the ACT, the most common clinical presentation was bacteraemia (82%) (Table 14.5).

**Table 14.5: Clinical presentations[(a)] of IPD, ACT, NSW & Australia, 2003.**

| Clinical presentation | ACT | NSW | Aust |
|---|---|---|---|
| Pneumonia | 0 (0%) | 208 (48%) | 662 (36%) |
| Meningitis | 1 (3%) | 27 (6%) | 109 (6%) |
| Bacteraemia | 36 (82%) | 180 (42%) | 592 (32%) |
| Other | 3 (7%) | 8 (2%) | 45 (2%) |
| Unknown | 4 (9%) | 5 (1%) | 516 (28%) |

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

(a) Totals may exceed case total and percentages exceed 100% since cases may have had more than one type of clinical presentation in some jurisdictions.

The escalating resistance of the pneumococcus to antibiotics has been an important factor for developing a new pneumococcal vaccine. In Australia, the proportion of penicillin resistant pneumococci increased from 1% in 1984 to 25% in 1997. Reduced susceptibilities to other antimicrobials has also emerged in recent years with the proportion of reduced susceptibility to third generation cephalosporins in Australia reaching 13% in 1997. In 1999, 6.8% of invasive pneumococcal isolates in Australia were multi-drug resistant.

A conjugate vaccine is now available to provide an effective pneumococcal vaccine for children. This vaccine was licensed for use in Australia in January 2001 and a nationally funded vaccination program for children at high risk commenced in June 2001.

### 14.4.3 Meningococcal disease

Meningococcal disease is caused by the bacterium *Neisseria meningitidis* (meningococcus). Meningococci bacteria live naturally in the back of the nose and throat in about 5 % of the general population with carriage rates being higher in adolescents (15-25%). In a very small number of people, the bacterium manages to get through the lining of the throat, enter the blood stream and cause invasive meningococcal disease.

Meningococcal infection can progress rapidly and symptoms include fever, headache, nausea, vomiting, neck stiffness, drowsiness and rash. The infection can rapidly progress to invasive disease that can result in severe life threatening meningitis (infection of the membranes covering the brain and spinal cord) and septicaemia (infection in the bloodstream).

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. However, about one third of cases are in people aged 25 years or more.

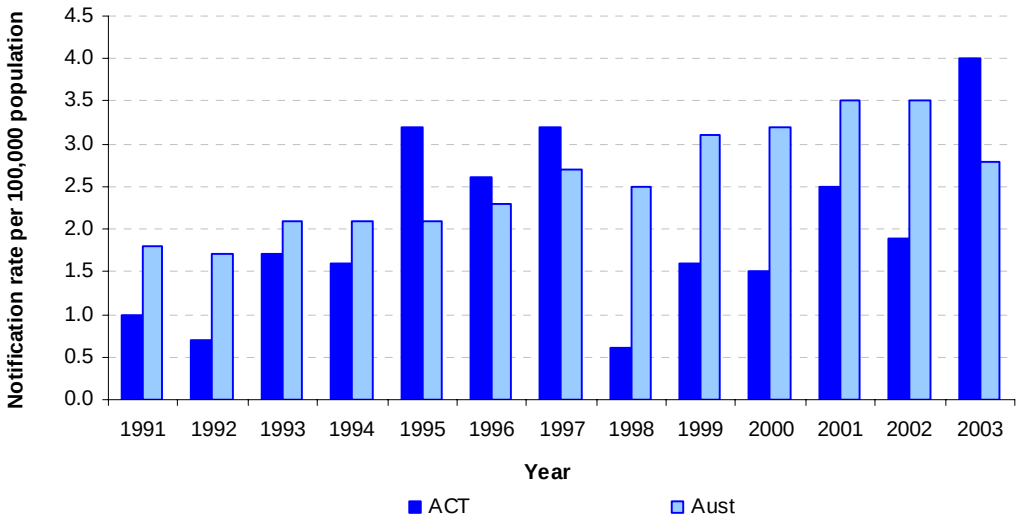
Meningococcal disease is treatable with antibiotics. Early diagnosis and commencement of treatment are important to minimise severe complications.

All cases of meningococcal disease are notified to the HPS of ACT Health. Close contacts of people diagnosed with meningococcal infection are given antibiotics to prevent infection and further transmission of the disease.

There are many strains of meningococci, but the strains that cause almost all disease in Australia are serogroup B and serogroup C. Although there are no vaccines that protect against meningococcal serogroup B disease, there are vaccines that protect against serogroup C disease. Immunisation against meningococcal serogroup C disease has been available in the ACT since 2002. Free immunisation is available for certain ages and at risk groups, such as overseas travellers.

In the ACT, the HPS receives on average, six notifications of meningococcal infection each year. In 2003, there were 13 notifications of the disease, more than any previous year (Figure 14.5). More recent information shows that the notification rate for the ACT has since declined, down from 4.0 per 100,000 population in 2003, to 3.4 in 2004 and 2.5 in 2005 (DoHA 2006).

**Figure 14.5: Meningococcal notification rates per 100,000 population, ACT & Australia, 1991 – 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

The cases in 2003 appeared to occur in two clusters between November 2003 and January 2004. At the time of the occurrence of the first cluster of meningococcal cases, an immunisation program for all persons aged 15-19 years attending school was just being completed and a program for 15-19 year olds who did not attend school was about to commence.

The response to managing the increase in meningococcal disease was coordinated by the HPS, with advice from the Infectious Diseases Unit of The Canberra Hospital (TCH). The aim was to prevent further cases, minimise further transmission and identify a source to prevent a potential outbreak.

The public health response included four main interventions including: free immunisation for all 15-19 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.

### 14.4.4 Influenza

Influenza is an acute self-limiting viral disease of the upper respiratory tract. The health and economic impact of influenza largely arises from related complications such as lower respiratory tract infections and exacerbation of cardiopulmonary and other chronic diseases. These complications can result in hospitalisation and mortality.

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). Influenza virus A and B are the cause of widespread annual epidemics.

The 2003 influenza season in Australia started later than the 2002 season. The highest notification rates were recorded in August in NSW, Victoria and QLD and in September in the NT, SA and WA. Laboratory confirmed influenza was not notifiable in the ACT until 2005, although nine cases were reported to the HPS in 2003.

In Australia, the highest notification rates were recorded in the 0-4 years age group (257 cases per 100,000 population). Infants under the age of one year accounted for 38% of these notifications.

The NHMRC recommends annual influenza vaccination for all Australians aged over 65 years. In 2003, the vaccination coverage of Australians in this age group was 77%, similar to 2002. Notification rates among older people aged 65 years or more were marginally lower in 2003 (16 cases per 100,000 population), compared to 2002 (18 cases per 100,000 population).

### Influenza pandemic planning

In some cases the influenza viruses that usually do not affect humans can undergo a major change that results in a new influenza virus that becomes adaptable to humans. As the human population has not been exposed to this virus previously the population has no immunity. This can result in an influenza pandemic as the virus spreads globally.

Since the occurrence of Avian Influenza (bird flu) in humans in 2003, countries around the world, including Australia, have started to prepare themselves for the possibility of an influenza pandemic relating to this virus.

The HPS 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 is being updated to complement the Australian Management Plan for Pandemic Influenza.

ACT Health is represented on national committees involved in pandemic planning such as the National Influenza Pandemic Action Committee (NIPAC). NIPAC provides scientific and clinical advice on pandemic influenza preparedness and response to all jurisdictions in Australia, and is chaired by the Australian Government Chief Medical Officer. NIPAC ensures a national and coordinated approach to pandemic planning across Australia.

## 14.4.5 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. Complications following measles can be serious, and pneumonia occurs in one in 25 cases. Approximately one child in every 2,000 who contracts measles will develop inflammation of the brain (encephalitis). More deaths have been caused in Australia by measles in the past 15 years than diphtheria, whooping cough and tetanus combined.

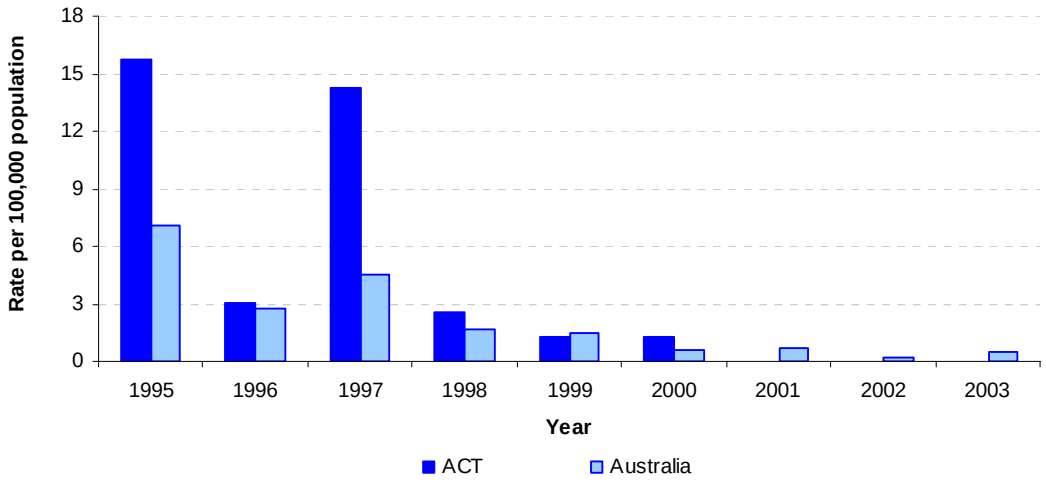
In line with global efforts for the elimination of measles, the Australian Government has embarked on a strategy for measles elimination in Australia. In 1998, the Measles Control Campaign consisted of initiatives that aim to improve measles immunisation coverage rates in Australian children.

In 2001, the Australian Government funded vaccination of young adults between 18 and 30 years of age who had been identified as a susceptible group. This group was too old to be included in the MMR vaccination program introduced in 1994 or the later 1998 campaign and did not have the level of immunity of older people who had been exposed to the wild measles virus prior to the introduction of the measles vaccine in 1968.

Enhanced surveillance for measles is underway to ensure that 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 has had no notifications of measles since 2000 (Figure 14.6). 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 case in five of the seven outbreaks acquired their infection outside of Australia. Rates in 2003 were highest in the 20-29 year age group.

**Figure 14.6: Measles[(a)] notification rates per 100,000 population, ACT & Australia, 1995 - 2003**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

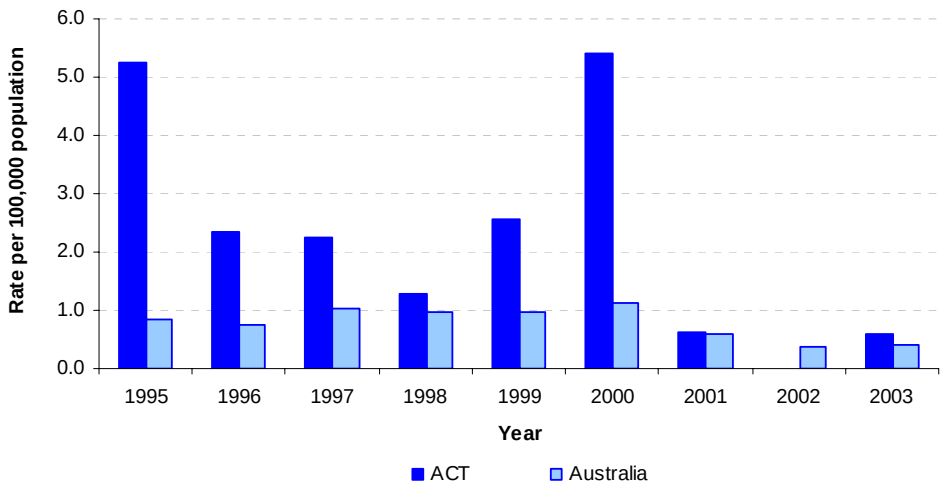
(a) Post 1 January 1999, measles cases have been confirmed by serology (IgM positive).

## 14.4.6 Mumps

Mumps is an acute infection of the salivary glands caused by a virus. The disease is characterised by fever, swelling and tenderness of one or more salivary glands, usually the parotid. Complications of the disease can include; aseptic meningitis, inflammation of the testicles or ovaries, inflammation of the pancreas and deafness. Transmission is airborne or through direct contact with infected droplets or saliva.

Rates of mumps in the ACT and Australia have declined with a record low in 2002, presumably due to the ongoing impact of the Measles Control Campaign and delivery of the Measles Mumps Rubella (MMR) vaccine (Figure 14.7). In Australia, most cases are adults in the 20-44 year age group.

**Figure 14.7: Mumps notification rates per 100,000 population, ACT & Australia, 1995 – 2003.**



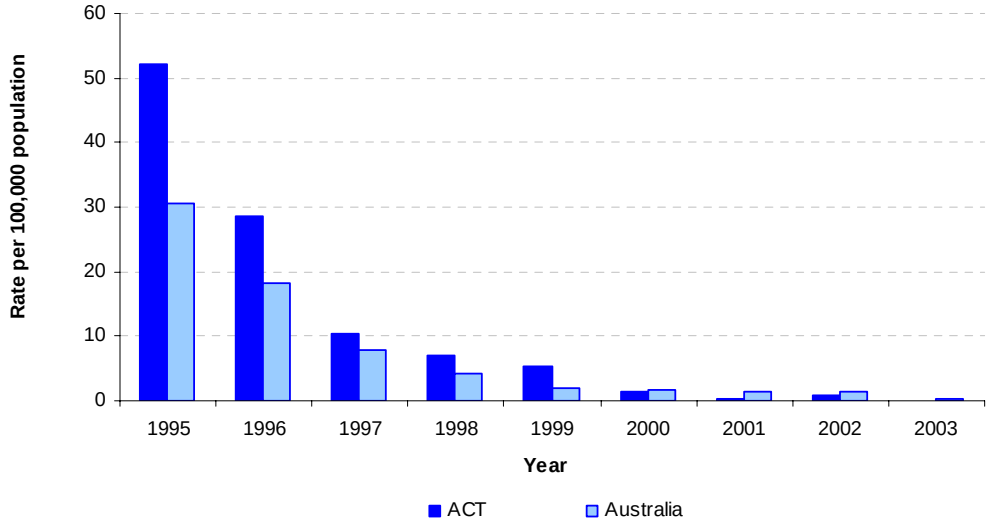

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

## 14.4.7 Rubella

Rubella is a viral disease (usually mild) characterised by a fever and rash. However it is of major public health concern because it can cause developmental defects in a foetus (Congenital Rubella Syndrome) if a woman contracts the disease during the first trimester of pregnancy. It is important that women of childbearing age have immunity to rubella.

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 contributed to the Measles Control Campaign and enhanced MMR immunisation levels (Figure 14.8). In 2003, Australia had the lowest rate of rubella notifications on record. There were no cases notified in the ACT.

**Figure 14.8: Rubella notification rates per 100,000 population, ACT & Australia, 1995 - 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

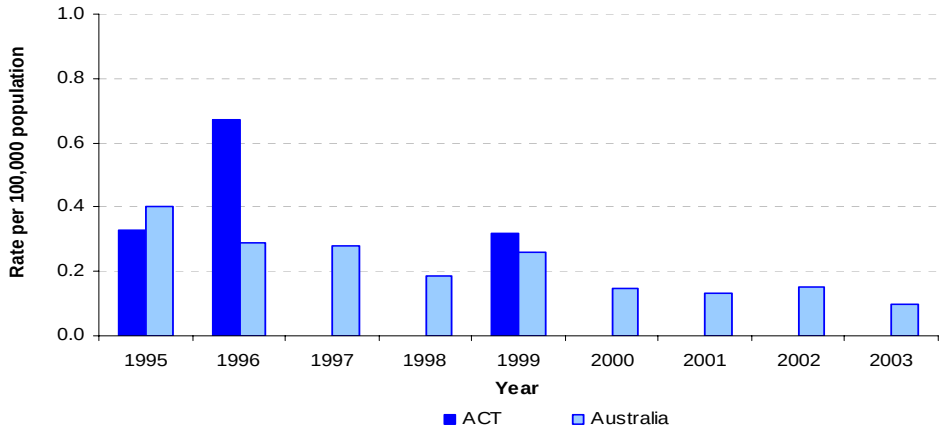
### 14.4.8 Diphtheria

Diphtheria is caused by a toxin produced by the bacterium *Corynebacterium diphtheriae*. There were no cases of diphtheria notified in the ACT or Australia in 2003. Other than a single case of cutaneous diphtheria in 2001, the last notification of diphtheria in Australia was in 1993. The patient acquired the disease overseas and had an uncertain vaccination history.

### 14.4.9 Haemophilus influenza type b disease

Notifications of *Haemophilus influenzae* type b (Hib) have fallen more than 30-fold since 1991 due to the introduction of the HIB conjugate vaccines. There were 19 notifications of Hib in Australia in 2003, and none of these were in the ACT.

**Figure 14.9: *Haemophilus influenzae* type b (Hib) notification rates per 100,000 population, ACT & Australia, 1995 - 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

### 14.4.10 Poliomyelitis

Widespread immunisation has eliminated poliomyelitis from Australia, and no cases of wild polio virus have been recorded for many years, despite enhanced surveillance for the disease. The World Health Organisation (WHO) declared the Western Pacific Region (includes Australia) officially polio-free in 2000. The vaccine remains on the current ASVS schedule because children remain at risk of imported disease until polio is eradicated globally.

### 14.4.11 Tetanus

Tetanus is a life threatening condition caused by a toxin produced by the bacterium *Clostridium tetani*, a common bacterium found in soil. Tetanus is a rare disease due to the availability of an effective vaccine. Several cases are reported throughout Australia each year, often in unvaccinated individuals. There were no notifications of tetanus in the ACT in 2003.

## 14.5 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 papilloma virus (causing genital warts and cervical cancer) 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, herpes may be passed on to a foetus in utero or to a baby during childbirth.

### 14.5.1 Chlamydia trachomatis genital infection

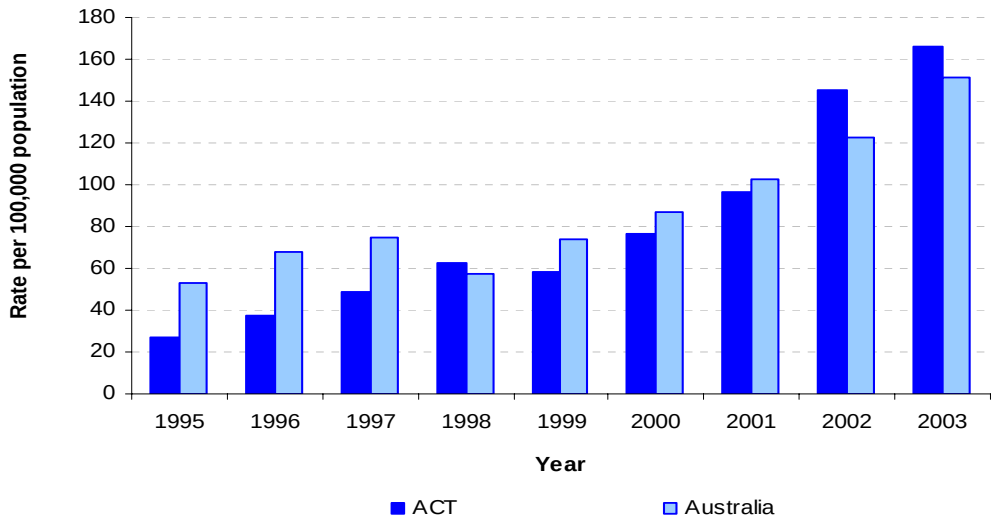
Chlamydia is a common sexually transmitted disease (STD) caused by the bacterium, *Chlamydia trachomatis*. Chlamydia is known as a "silent" disease because about three quarters of infected women and about half of infected men have no symptoms. If symptoms do occur, they usually appear 1-3 weeks after exposure.

The bacteria initially infect the cervix, urethra, anus or throat. Women who have symptoms can have an abnormal vaginal discharge or a burning sensation when urinating. If left untreated, the infection can spread to the fallopian tubes causing pelvic inflammatory disease (PID), 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 Group 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. The campaign 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 increased since 1995 (Figure 14.10). ACT rates have increased above national and NSW rates since 2001, most likely as a result of increased awareness and testing for the disease as a result of the SHAHRD campaign. In the ACT (and Australia), the highest rates of infection are observed in young females in the 15-24 year age group.

**Figure 14.10: Chlamydia notification rates per 100,000 population, ACT & Australia, 1995 - 2003.**



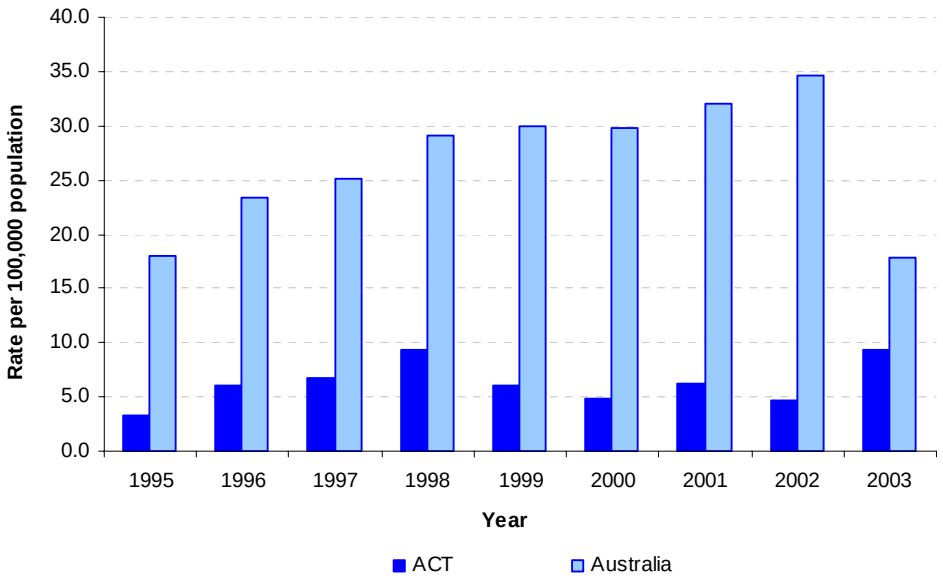

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

## 14.5.2 Gonococcal infection

Gonococcal infection (gonorrhoea) is a sexually transmissible infection caused by the bacterium *Neisseria gonorrhoea*. 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. Gonococcal infections can be treated with antibiotics, although there is an emerging resistance to some antibiotics routinely used for treatment.

The notification rates of gonorrhoea have steadily increased in Australia since 1995. In the ACT, higher notifications were seen in 2003 but were below national rates (Figure 14.11).

**Figure 14.11: Gonorrhoea notification rates per 100,000 population, ACT & Australia, 1995 - 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

## 14.5.3 Syphilis

Syphilis is a sexually transmitted disease caused by the bacterium *Treponema pallidum.* Infection causes a primary lesion (chancre) that appears about 10-90 days after exposure. Secondary syphilis develops 7-10 weeks after the initial infection and a generalised rash and lymphadenopathy can follow. If untreated the infection can lead to cardiovascular disease and neurosyphilis.

Many infections go undiagnosed until the later stages of the disease when cardiovascular and neurological symptoms develop. If the disease goes untreated in a pregnant woman the infection can be passed on to the foetus resulting in congenital syphilis. Primary syphilis is treated with antibiotics such as penicillin.

Since 1995, there has been an average of 13 cases of syphilis notified to ACT Health each year. Most of these cases were not primary infection and were unlikely to result in transmission of the disease.

## 14.6 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 NSP (see Chapter 4: Lifestyle and Health for further information).

### 14.6.1 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 (infected for life). 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; 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.

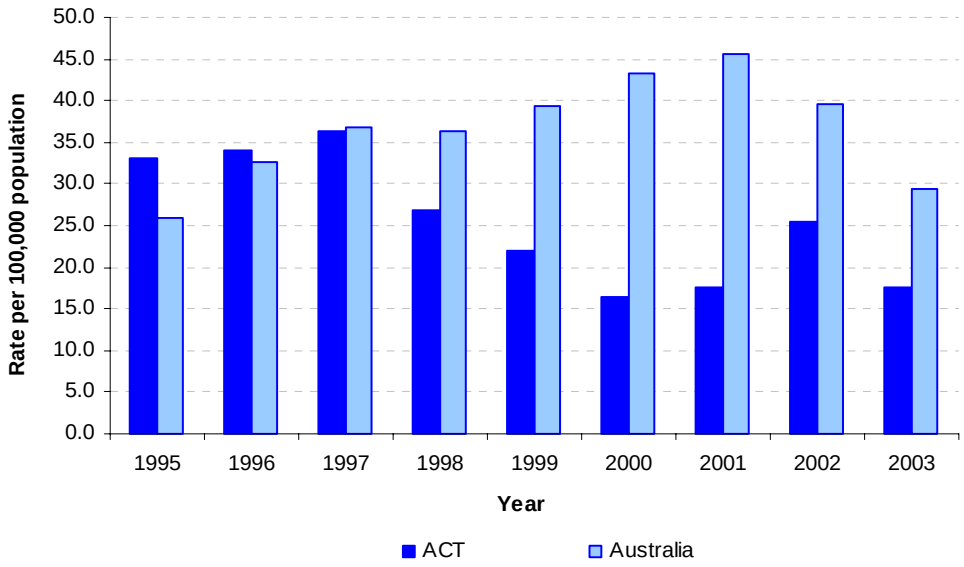
When a notification is known to be from a recent infection it is classified as ‘incident HBV’. This is distinguished from those who have antibodies from a past infection of HBV (unspecified HBV).

The ACT has few notifications of incident HBV. In 2003, the ACT had no cases of incident HBV, but there were 57 cases of unspecified HBV. The rates of combined incident and unspecified HBV (17.7 per 100,000 population) were lower than national rates (29.3 per 1000,000 population) (Figure 14.12). Most notifications in the ACT in 2003 occurred in the 20-39 year age group.

HBV vaccine is available for all age groups to prevent HBV virus infection. In the ACT, HBV is given according to the NHMRC recommendations and the Australian Standard Vaccination Schedule. The current strategy endorsed by the Australian Government is to vaccinate those at risk, including persons working in the healthcare and childcare industry. HBV is offered at birth and at 2, 4 and 6 months.

The national infant HBV immunisation program has been in place since 1 May 2000 (DoHA 2003a). Since 1998, there has been a catch up program for children in Year 6. Current guidelines recommend consideration of a booster vaccination after 5 years for those at risk but not for those vaccinated at birth or as young children. Maternal screening is recommended to detect mothers who may be infected with the virus so babies can be given HBV immunoglobulin at birth as well as a course of vaccination.

**Figure 14.12: HBV (incident & unspecified) notification rates, ACT & Australia, 1995-2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

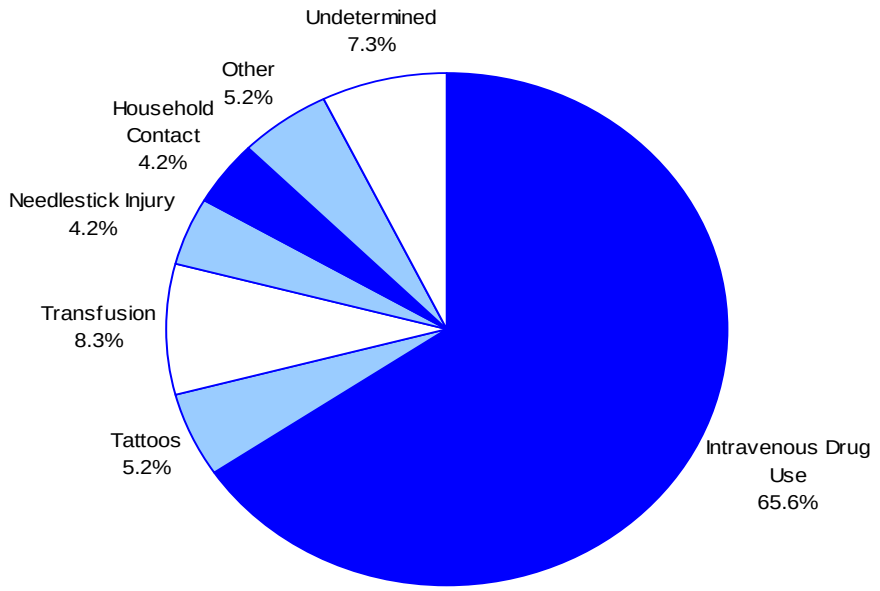
## 14.6.2 Hepatitis C

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. Prior to blood screening for hepatitis C, many people were infected through transfused blood and transplantation of infected tissue or organs, or transmission from an infected mother to her baby. This has been virtually eliminated since the introduction of hepatitis C screening in 1990. In the ACT, the main risk factor for acquiring hepatitis C is intravenous drug use and sharing of needles and injecting equipment (Figure 14.13).

In the ACT, between 2,500 and 5,000 people are estimated to be living with hepatitis C, approximately 1% of the population. Hepatitis C antibody prevalence amongst Needle and Syringe Program clients peaked in 2003 with 80% of clients who agreed to be surveyed testing positive for the hepatitis C antibody (NCHECR 2004).

**Figure 14.13: Risk factors for hepatitis C in the ACT.**

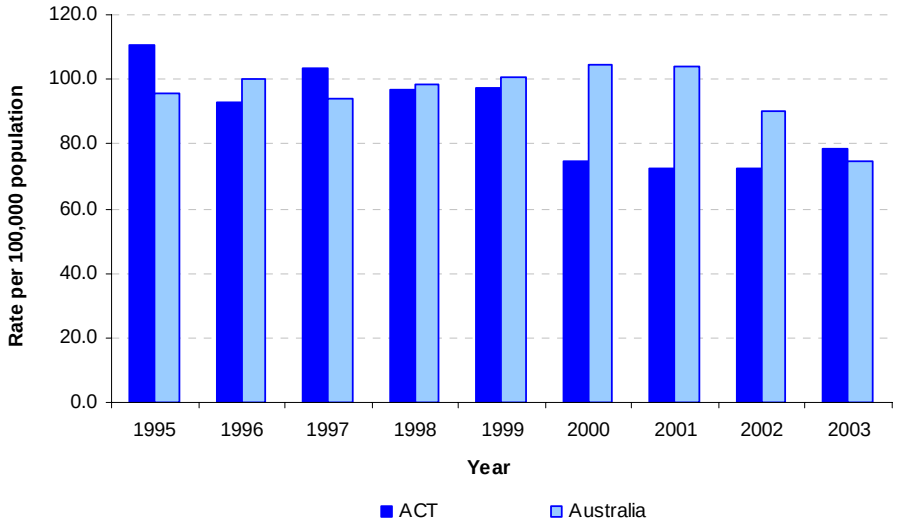



Data source: ACT Health Liver Clinic.

There has been a slight decline in the number of cases notified in the ACT since the late 1990s (Figure 14.14). Males are more likely than females to be diagnosed with the disease and most cases in the ACT in 2003 were in the 25-29 year age group.

There is no vaccine for hepatitis C and prevention strategies focus on education of injecting drug users to avoid sharing of needles and syringes. Treatment is available for persons with hepatitis C 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.

**Figure 14.14: Hepatitis C (incident & unspecified) notification rates, ACT & Australia, 1995-2003.**



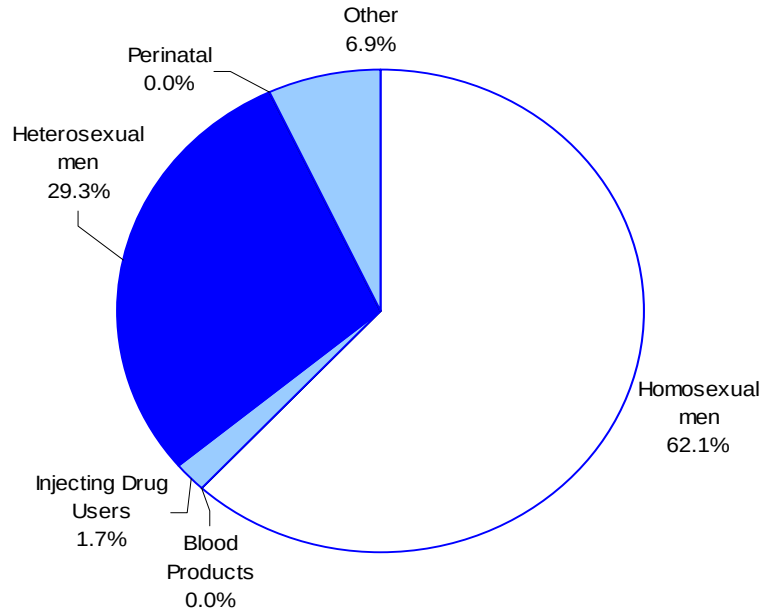

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

### 14.6.3 Human Immunodeficiency Virus

Human Immunodeficiency Virus (HIV) can severely damage the immune system, resulting in Acquired Immune Deficiency Syndrome (AIDS). The disease was first identified in 1984 and belongs to a group of viruses called retroviruses. AIDS is a disease in which the body's immune system breaks down and is unable to fight off 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 (and Australia), transmission occurs primarily through sexual contact between men (Figure 14.15).

**Figure 14.15: Source of HIV infection, ACT, 1999-2004[(a)].**




Data source: Canberra Sexual Health Clinic.

(a) Data for 1999 to 2004 has been pooled to produce percentages.

There has been a steady decline in the number of new diagnoses of HIV since the mid 1990s. Between 2002 and 2004, there was an average of six diagnoses of HIV each year in the ACT, compared to an average of 15 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.

## 14.7 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 the difficulties in identifying the pathways, transmission from food is estimated to account for most of cases of gastroenteritis each year in Australia. Most of these diseases can be associated with outbreaks as a result of contaminated food and water and so it is essential

that they are detected quickly through enhanced surveillance, and prevention and control practices implemented immediately.

Enhanced food borne disease surveillance has been recognised as an essential tool to help reduce food poisoning by the World Health Organization. In Australia, the Commonwealth Department of Health and Ageing established OzFoodNet in 2000 as a collaborative project with state and territory health authorities to provide better understanding of the causes and incidence of food borne disease in the community and to provide an evidence base for policy formulation. OzFoodNet has strengthened Australia's capacity to respond to new food borne diseases, and to identify sources of food borne illness and the possibility of deliberate contamination of food or water in Australia.

Identifying the source of an outbreak is often difficult. In 2003, the HPS investigated four outbreaks of gastrointestinal disease considered to be of food-borne origin. These outbreaks occurred in; a salad bar, a hospital setting, a private residence and a childcare setting. Two of these outbreaks were subsequently found to be as a result of food contamination by *Salmonella* Typhimurium 135. A number of smaller clusters of gastrointestinal disease were also investigated: a cluster of *Salmonella* Paratyphi B Java (unknown source) and a cluster due to Rudderfish poisoning.

Outbreaks of gastrointestinal disease can also be attributed to person to person transmission of a viral infection. In 2003, the HPS investigated five outbreaks of gastrointestinal disease associated with person to person transmission in the ACT. These included three outbreaks in childcare centres as a result of rotavirus infection (a viral infection common in children particularly in Spring), and an outbreak of norovirus in an aged care facility.

Ongoing education and enforcement of safe food handling procedures is essential for reducing the occurrence of gastrointestinal infections. Rapid detection, identification of causal agent, treatment and control are essential in controlling outbreaks of gastrointestinal illness.

Notifications of gastrointestinal disease comprise 28% of all notifications in the ACT. The majority of these notifications in 2003 were: campylobacteriosis (n=406) and salmonellosis (n=80). There were also notifications of other illnesses, including hepatitis A, listeriosis and cryptosporidiosis.

### 14.7.1 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.

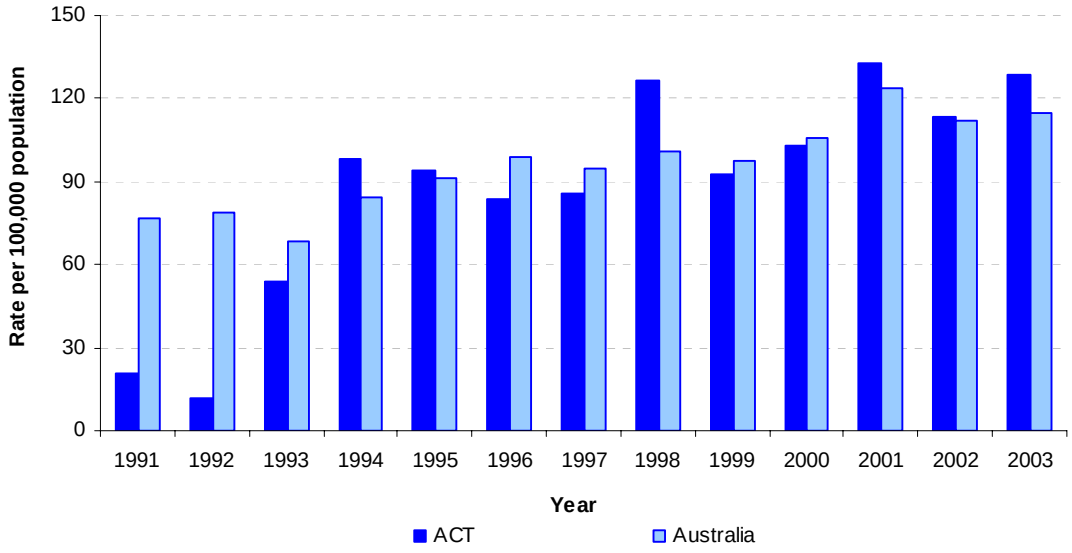
Most people who become ill with campylobacteriosis have symptoms of diarrhoea, cramping, abdominal pain, and fever, within 2-5 days of exposure to the organism. The diarrhoea may be bloody and can be accompanied by nausea and vomiting. Most cases occur as isolated, sporadic events, not as part of large outbreaks.

The majority of persons with campylobacteriosis will recover without any specific treatment. Patients should drink plenty of fluids as long as the diarrhoea lasts. In more severe cases, antibiotics can be used, and can shorten the duration of symptoms.

In the ACT, rates have slowly increased since 1991, which may reflect better reporting of the disease (Figure 14.16). 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). In 2003, there were no noticeable outbreaks or clustering of C*ampylobacter* infections and there was no obvious seasonality associated with the infections. Cases of *Campylobacter* infections occurred in all age groups with almost a quarter of cases (23%, n=97) occurring in the 20-29 year age group.

In 2003, all individuals who were notified with a case of *Campylobacter* were sent a postal survey to collect individual information on risk factors as part of an ACT Health survey.

**Figure 14.16: Campylobacter notification rates per 100,000 population, ACT & Australia[(a)], 1991 - 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

(a) Australian rates and population base do not include NSW.

## 14.7.2 Salmonellosis

Salmonellosis is caused by infection with a *Salmonella* species of bacteria. There are many different strains of *Salmonella.* Typing of these bacteria assists with the identification of the source of infection.

Most persons infected with *Salmonella* develop diarrhoea, fever, and abdominal cramps 12-72 hours after infection. The illness usually lasts 4-7 days, and most persons recover without treatment. However, in some persons the diarrhoea may be so severe that the patient needs to be hospitalised. A small number of persons who are infected with *Salmonella*, will go on to develop pains in their joints, irritation of the eyes, and painful urination. This is called Reiter's syndrome.

*Salmonella* is highly contagious. The organism lives in the intestinal tracts of humans and other animals, including birds. *Salmonella* are usually transmitted to humans by eating foods contaminated with animal faeces. Many raw foods of animal origin are frequently contaminated with *Salmonella*, but fortunately thorough cooking kills the bacteria. Raw eggs have been identified as the source of a number of food outbreaks. Raw eggs may go unrecognised in some foods such as sauces, salad dressings, tiramisu, homemade ice cream, homemade mayonnaise, cookie dough, and frostings.

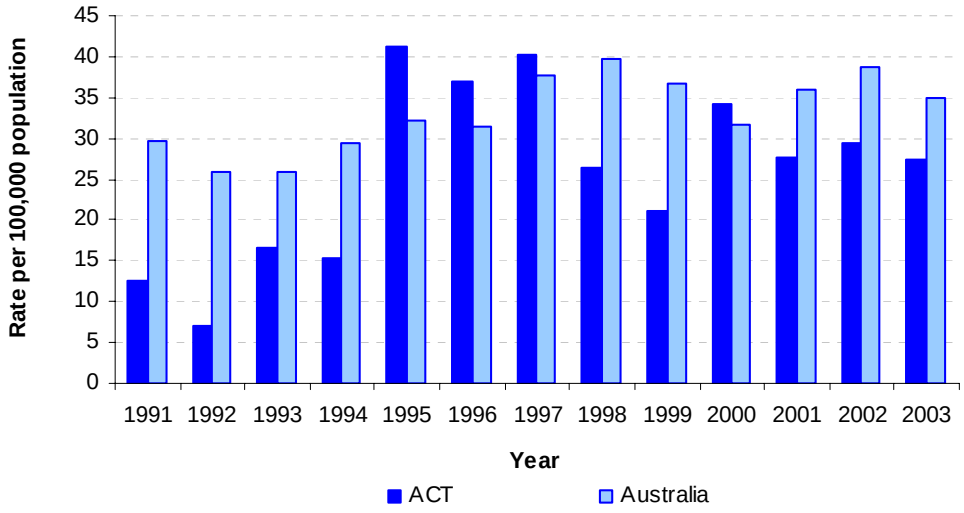
Food may also become contaminated by transmission from an infected food handler. People who have salmonellosis should not prepare food or pour water for others until they have been shown to no longer be carrying the *Salmonella* bacterium.

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 2003, the most commonly notified salmonella type was *Salmonella* Typhimurium 135 representing 35% of total notifications.

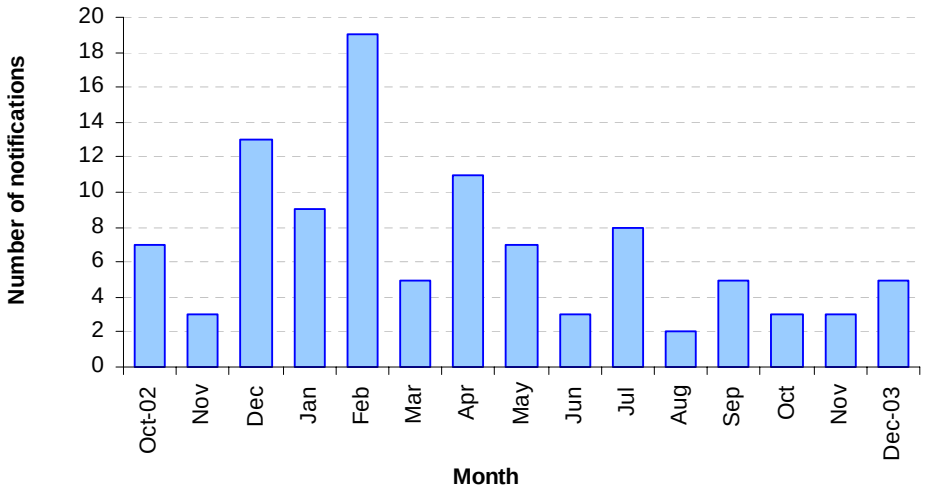
In 2003, there were 80 notifications of salmonellosis in the ACT (Figure 14.17). Most cases occurred in the summer months (Figure 14.18). The highest numbers of notifications were in children less than 5 years of age.

**Figure 14.17: Notification rates of salmonellosis, ACT & Australia 1991 - 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

**Figure 14.18: Notifications of salmonellosis, by month, ACT, Oct 2002 - Dec 2003.**




Data source: Notifiable Diseases Surveillance System, ACT Health.

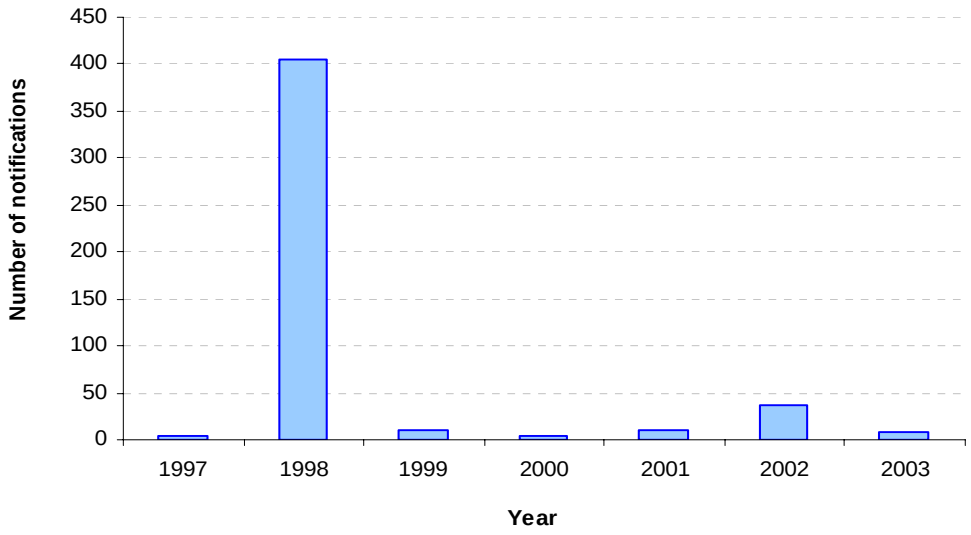
## 14.7.3 Cryptosporidiosis

Cryptosporidiosis is caused by infection with a parasite *Cryptosporidium parvum*. The parasite causes profuse diarrhoea and abdominal cramps. The disease can be prolonged and life threatening in severely immuno-compromised persons (eg HIV infected patients).

*Cryptosporidium* are transmitted by the ingestion of the parasite excreted by an infected animal or human either through water or food (eg unpasteurised milk), person to person or animal to person.

There is no effective treatment for cryptosporidiosis. 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 14.19). Since the outbreak, the ACT has experienced low numbers of notifications of cryptosporidiosis.

**Figure 14.19: Notifications for cryptosporidiosis, ACT, 1997-2003.**




Data source: Notifiable Diseases Surveillance System, ACT Health.

### 14.7.4 Hepatitis A

Hepatitis A is a virus usually transmitted by the faecal-oral route, most often in food or from person to person. Infections can be asymptomatic in small children, but in adults are usually symptomatic of hepatitis. A number of large outbreaks of hepatitis A in Australia have been associated with eating contaminated oysters.

Prevention of hepatitis A in the community involves the promotion of safe food production and handling practices and promoting safe sex practices. Close contacts of cases have immunoglobulin administered. A hepatitis A vaccine is available and is recommended for persons at risk, including travellers to countries with endemic hepatitis A, certain occupational groups, men who have sex with men, injecting drug users and people with chronic liver disease.

## 14.8 Other bacterial diseases

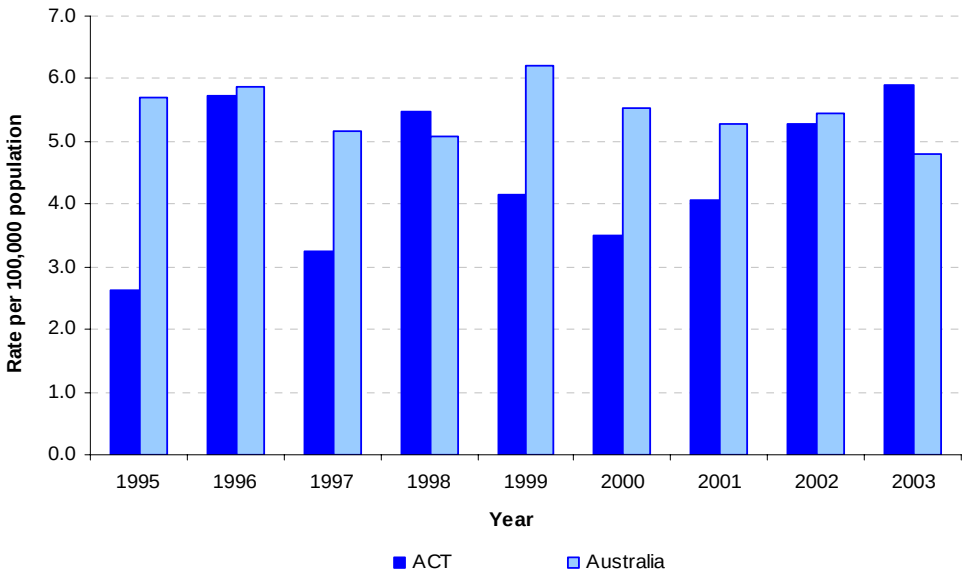
### 14.8.1 Tuberculosis

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.

In 2003, rates of tuberculosis in the ACT were slightly higher than previous years (Figure 14.20). The low numbers of cases in the ACT often cause large fluctuations in rates each year. The ACT reported no relapsed cases in 2003 (Table 14.6)..

**Figure 14.20: Tuberculosis notification rates per 100,000 population, ACT & Australia, 1995 - 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

**Table 14.6: New & relapsed TB cases and rates per 100,000 population, ACT & Australia, 2003.**

| | New cases | New cases rate | Relapsed cases | Relapsed cases rate | Total | Total rate |
|---|---|---|---|---|---|---|
| ACT | 17 | 5.3 | 0 | 0.0 | 17 | 5.3 |
| Australia | 947 | 4.8 | 33 | 0.1 | 980 | 4.9 |

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

In Australia, the high-risk populations for tuberculosis include: migrants, Indigenous Australians, and older non-Indigenous Australian-born patients. The overseas-born population represented an increasing proportion of new TB cases. Overseas-born people may come from countries with a high incidence of TB and are likely to have acquired latent infection prior to migration. Social contact with other migrants from high incidence countries may also increase the risk of exposure to TB. Similarly, Aboriginal and Torres Strait Islanders are at increased risk of TB with incidence rates nearly ten times higher than among non-Indigenous Australian-born people.

The National Tuberculosis Performance Indicators (NTPI) were set by National Tuberculosis Advisory Committee (NTAC) in 2002 and were reviewed in 2003. A comparison of the 2002 and 2003 TB notification data against the NTPI shows improvements in some areas, such as TB incidence rates for people born overseas who have been living in Australia for more than five years, and the rates of relapsed treatment in Australia (Table 14.7). A major threat to TB control is the emergence of strains of tuberculosis resistant to anti-tuberculosis drugs.

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 TCH. This program follows the principles of the WHO TB control recommendations and the NTAC strategic plan.

**Table 14.7: National TB performance indicators, criteria & the current status, Australia, 2003.**

| National TB Performance Indicator | Performance criteria | 2002 | 2003 |
|---|---|---|---|
| **Crude incidence (/100,000 pop)** | | | |
| Indigenous Australians | <1 | 8.5 | 8.7 |
| Non-indigenous Australian-born | <1 | 1.1 | 0.9 |
| Overseas-born persons[#] | † | 11.5 | 10.2 |
| Relapse cases initially treated in Australia | <2% of total treated cases | 2.3 | 1.1 |
| **Incidence in children <15 years, by risk group (/100,000 pop)** | | | |
| Indigenous Australian children | <0.1 | 4.3 | 5.6 |
| Non-indigenous Australian-born children | <0.1 | 0.5 | 0.4 |
| Overseas-born children[#] | † | 7.6 | 9.9 |
| HIV status in TB cases (% of cases with data collected) | 100% over next 3 years | 27.3 | 32.2 |
| **Treatment outcome measures (%)** | | | |
| Cases evaluated for outcomes[‡] | 100 | 78 | 89.3 |
| Cases that have treatment completed and are cured | >90 | 80 | 87.3 |
| Cases recorded as treatment failures[‡] | <2 | 0.1 | 0 |

Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.
# The performance criteria for overseas born are applied to people who have been living in Australia for more than 5 years. The denominator for this rate is the total overseas born population living in Australia in 2002.
† Performance criteria currently under review.
‡ The denominator used for both 2002 and 2003 was the number of cases evaluated for treatment outcome.

### 14.8.2 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 airborne transmission is the main mode of transmission. Hot water systems, airconditioning cooling towers, evaporative condensers, humidifiers, spas, disturbances of soil and potting mix have all been associated with outbreaks of infection.

Those most at risk include older people, especially smokers, persons with chronic illnesses and the immunocompromised. The ACT experiences few cases of legionellosis.

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.

## 14.9 Vectorborne diseases

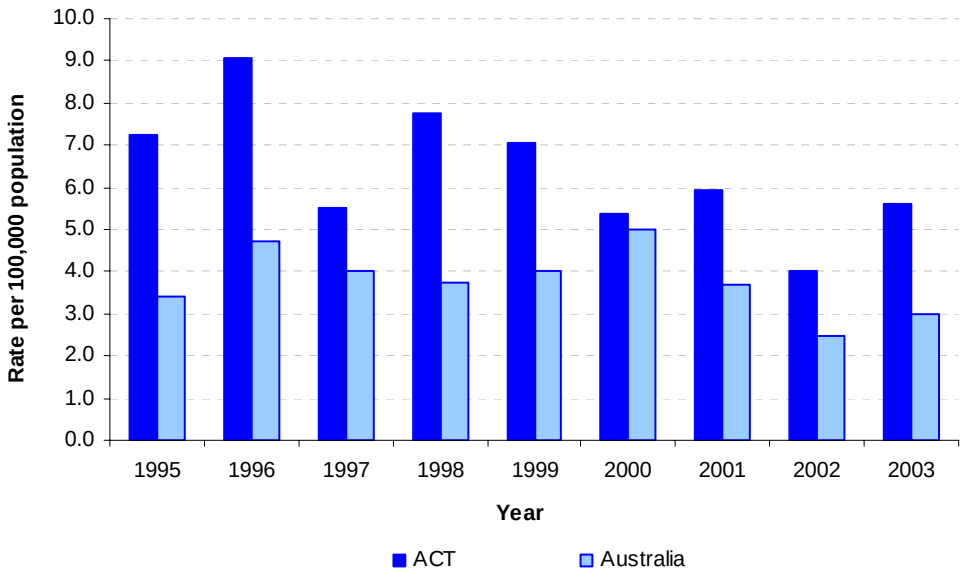
Vectorborne diseases are those diseases transmitted by a vector such as a mosquito or tick. These diseases include malaria (a parasitic disease transmitted by a mosquito vector) and a number of viral diseases belonging to the group of alphaviruses (Barmah Forest and Ross river virus) and flaviviruses (viruses causing 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.

### 14.9.1 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.

The ACT experiences relatively higher rates of imported malaria than most other jurisdictions (Figure 14.21). This can be explained by the high numbers of international residents and overseas travellers from malarious countries in the ACT.

**Figure 14.21: Malaria notification rates per 100,000 population, ACT & Australia, 1995 - 2003.**




Data source: Communicable Diseases Network Australia - National Notifiable Diseases Surveillance System, DoHA.

### 14.9.2 Ross River virus

Ross River virus is the most common, widespread arboviral disease in Australia, with 3,848 notifications in 2003. The virus is transmitted by mosquito, and there is a seasonal pattern to notifications, with outbreaks usually occurring between January and May, 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 was an isolated case in 2003 that was investigated, but proved difficult to determine how transmission occurred as the individual concerned had not travelled interstate. It is possible the vector was transported into the ACT. Notifications of Ross River virus in the ACT will be closely monitored over the next few years.

## 14.10 Zoonotic diseases

Zoonoses are diseases transmitted between vertebrate animals and people. The zoonotic diseases that were notifiable in 2003 were anthrax, Australian bat lyssaviral disease, brucellosis, leptospirosis, ornithosis and Q fever. The ACT receives very few notifications of zoonotic diseases. Following deliberate release of anthrax spores in the United States in 2001, ACT Health has been required to investigate a number of “white powder incidents” for the possibility of anthrax spores. No anthrax spores have been identified in these incidents.

## 14.11 Quarantinable diseases

Human diseases covered by the Quarantine Act 1908 and notifiable in 2003 included 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 2003, however, travellers are advised to be aware of countries where these diseases occur and take appropriate precautions.

# References


ACIR (Aust. Childhood Immunisation Register) 2006a, Medicare Australia, viewed 25 April, <http://www.medicareaustralia.gov.au/providers/health_statistics/statistical_reporting/acir.htm #coverage>.

ACIR (Aust. Childhood Immunisation Register) 2006b, Medicare Australia, viewed 25 May, <http://www.medicareaustralia.gov.au/providers/health_statistics/statistical_reporting/acir.htm #coverage>.

CDNA (Communicable Diseases Network Australia), DoHA (Department of Health and Ageing) 2001, *Guidelines for the early clinical and public health management of meningococcal disease in Australia*, DoHA, Canberra.

CDNA (Communicable Diseases Network Aust.), DoHA (Department of Health & Ageing) 2006, CDNA, Canberra, viewed 25 May, <http://www9.health.gov.au/cda/Source/Rpt_4.cfm>.

DoHA (Department of Health & Ageing) 2001, *National hepatitis C resource manual*, DoHA, Canberra.

DoHA (Department of Health & Ageing) 2003a, *Australian immunisation handbook 8th edition*, DoHA, Canberra.

DoHA (Department of Health & Ageing) 2003b, *Australia's notifiable disease status, 2003: Annual report of the National Notifiable Disease Surveillance System*, CDI, DoHA, Canberra.

DoHA (Department of Health & Ageing) 2003c, *Annual report of the National Influenza Surveillance Scheme 2003*, CDI, DOHA, Canberra.

DoHA (Department of Health & Ageing) 2003d, *Laboratory surveillance of invasive pneumococcal disease in Australia, 2003*, CDI, DoHA, Canberra.

DoHA (Department of Health & Ageing) 2003e, *Tuberculosis notifications in Australia 2003*, CDI, DoHA, Canberra.

DoHA (Department of Health & Ageing) 2006, Ross River virus infection – fact sheet, CDI, Canberra, viewed 3 May, <http://www.health.gov.au/internet/wcms/publishing.nsf/content/health-arbovirus-pdf-f>.

Hiam R, Guest C & Isaac-Toua G 2005, 'An evaluation of public health interventions during a pertussis outbreak in the ACT, 2003', *Aust NZ Journal of Public Health,* vol 29(6), pp 552-554.

NCHECR (National Centre in HIV Epidemiology and Clinical Research) 2004, *Australian NSP survey, prevalence of HIV, HCV and injecting and sexual behaviour among IDUs at needle and syringe programs: National data report 1999-2003*, University of NSW, Sydney.

NHMRC (National Health and Medical Research Council) 2003, *NHMRC approves new immunisation handbook*, media release, NHMRC, Canberra, 19 September.

SCRGSP (Steering Committee for the Review of Government Service Provision) 2005, *Report on government services 2005*, Productivity Commission, Canberra.

SCRGSP (Steering Committee for the Review of Government Service Provision) 2006, *Report on government services 2006*, Productivity Commission, Canberra.

Tapsal J 2003, *Annual report of the Australian Gonococcal Surveillance Program*, CDI, DoHA, Canberra.

WHO (World Health Organization) 2003, *The world health report 2003 – shaping the future*, WHO, Geneva.

# 15 MATERNAL, INFANT AND CHILD HEALTH

**At a Glance**

- There were 4,784 women who gave birth to 4,876 babies in the ACT in 2003. The ACT accounts for about 2% of all births nationally.
- The total number of women who gave birth in the ACT increased by 8.4% between 2001 and 2003
- There was a 21% increase in the number of non-ACT women giving birth in the ACT between 2001 and 2003.
- There is a continuing trend over time for women to be older when giving birth.
- Twelve per cent of ACT resident women who gave birth in the ACT during 2003 reported having smoked during their pregnancy.
- There was a total of 42 deaths for children aged 0-14 years, during the two-year period 2002 to 2003.
- The results of the 2003 ACT Kindergarten Screening Survey suggest that 14.4% of boys and 18.3% of girls of kindergarten age in the ACT were overweight or obese in 2003.
- In the May 2004 ACT Budget, funds were allocated over four years to several projects designed to address childhood obesity.

Maternal, infant and child health are important indicators of the overall health and wellbeing of a community. In Australia, it is recognised that childhood, particularly early childhood is an important period, which lays the foundations for children's later competence and physical wellbeing (AIHW 2005). It is in this context that the Australian Government is developing a National Agenda for Early Childhood.

This chapter provides an overview of maternal, infant (0-12 months) and child (aged 1 to 14 years) health in the ACT. It includes information on pregnancy outcomes, maternal, infant and child morbidity and mortality, child disabilities and behaviours influencing the health of infants and children such as nutrition, physical activity, sun protection and exposure to tobacco smoke. Most of the data presented in this chapter have been derived from the ACT Maternal Perinatal Data Collection, Australian Bureau of Statistics demographic publications and the 2001 ACT Child Health Survey.

## 15.1 Maternal health

This section provides information on women who gave birth and on babies born in the ACT, fertility rates and maternal characteristics, smoking during pregnancy and multiple births with territory and national trends for the years 2001 to 2003. Unless otherwise stated this section examines the population of women who gave birth in the ACT. It also features information about women who do not reside in the ACT but gave birth within its geographic boundary and makes comparisons with ACT residents who gave birth in the ACT to reflect the role of the ACT in providing tertiary services to the ACT and surrounding region.

### 15.1.1 Women who gave birth and babies born in the ACT

Table 15.1 shows that there were 4,784 women who gave birth to 4,876 babies in the ACT in 2003. The ACT accounts for about two per cent of all births nationally (1.9%, 4,876 of 252,584 babies born in Australia) (Laws & Sullivan 2005). Between 2001 and 2003, the total number of women who gave birth in the ACT increased by 8.4%. This increase appears to be partly due to a twenty-one per cent (20.8%) increase in the number of non-ACT residents who gave birth in the ACT between 2001 and 2003.

**Table 15.1: Women who gave birth and babies born, by maternal state of residence, ACT, 2001 – 2003.**

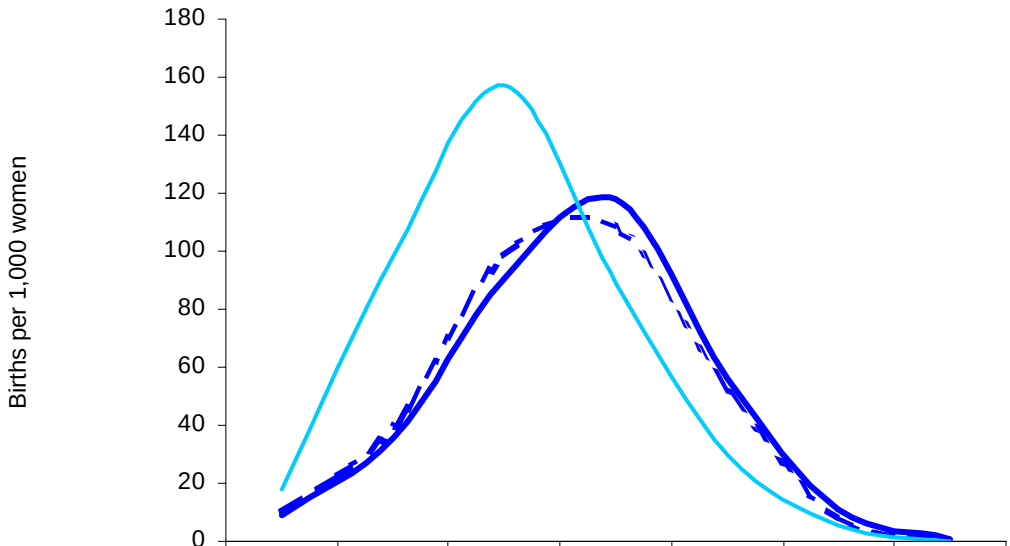
| | 2001 | 2002 | 2003 |
|---|---|---|---|
| **Number of women who gave birth** | **4,414** | **4,708** | **4,784** |
| ACT Residents | 3,811 | 3,982 | 4,055 |
| Non-ACT Residents | 603 | 726 | 729 |
| **Number of babies born** | **4,513** | **4,804** | **4,876** |
| to ACT Residents | 3,887 | 4,047 | 4,112 |
| to Non-ACT Residents | 626 | 757 | 764 |

Data source:ACT Maternal Perinatal Data Collection 2001–2003, confidential unit record files.

## 15.1.2 Fertility

The total fertility rate for the ACT resident population has declined over the last 20 years, ranging from a high of 1.994 births per 1,000 women in 1980 (ABS 2001) to 1.580 in 2000 (ABS 2004a). The 2003 total fertility rate for the ACT increased slightly to 1.601 births per 1,000 women (ABS 2004a). The total fertility rate for the Australian population has also decreased over time, from 1.896 in 1980 (ABS 2001), to 1.755 in 2003 (ABS 2004a). Figure 15.1 shows that there is a continuing trend over time for women in the ACT to be older when giving birth.

**Figure 15.1: Age-specific fertility rates, ACT, 1980, 2000 & 2003**




| | 15–19 | 20–24 | 25–29 | 30–34 | 35–39 | 40–44 | 45–49 |
|---|---|---|---|---|---|---|---|
| 2003 | 8.8 | 36.0 | 90.1 | 118.0 | 55.8 | 10.8 | 0.8 |
| 2000 | 10.6 | 39.5 | 98.6 | 108.0 | 51.2 | 8.0 | 0.2 |
| 1980 | 18.2 | 98.8 | 157.0 | 89.3 | 29.8 | 5.5 | 0.2 |

Data Source: ABS 2004a, (Table 40)

There is no doubt that Australia is experiencing a long-term decline in fertility. There has also been a shift towards older age at first birth. It is worth noting that even if the total fertility rate were not in decline, the shift towards older age at first birth would artefactually reduce 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. Since the ACT is leading the increase in older age at first birth, we would expect the ACT to be first to reach this biological limit. This may explain the recent increase in the rate observed for the ACT.

## 15.1.3 Maternal characteristics

Maternal characteristics have been presented by residency status, due to the high percentage of non-ACT women giving birth in the ACT (15.2% of all women giving birth in the ACT in 2003). In 2003, the percentage of teenagers (2.8%) who gave birth in the ACT (Non-ACT residents 3.0%; ACT residents 2.7%) was the lowest in Australia (4.6%) (Laws & Sullivan 2005). Non-ACT women (23.6%) who gave birth in the ACT were more likely to be aged 35 years or more when compared with ACT women (20.3%) or Australian women (18.8%) in 2003 (Table 15.2).

**Table 15.2: Maternal characteristics by state of residence, ACT, 2003.**

| | | ACT residents | | Non-ACT residents | |
|---|---|---|---|---|---|
| | | No. | % | No. | % |
| **Age group** | Less than 20 yrs | 111 | 2.7 | 22 | 3.0 |
| | 20-24 yrs | 485 | 12.0 | 76 | 10.4 |
| | 25-29 yrs | 1,123 | 27.7 | 199 | 27.3 |
| | 30-34 yrs | 1,512 | 37.3 | 260 | 35.7 |
| | 35-39 yrs | 685 | 16.9 | 145 | 19.9 |
| | 40 yrs or more | 139 | 3.4 | 27 | 3.7 |
| | **Total** | **4,055** | **100.0** | **729** | **100.0** |

Data source: ACT Maternal Perinatal Data Collection 2003, confidential unit record file.

Women aged 35 years or more who gave birth in the ACT were more likely to have an invasive antenatal procedure such as amniocentesis or chorionic villus sampling (7.9%) compared with younger women (1.2%). Women aged 35 years or more were also more likely to have a caesarean section (32.6%) compared with 23.3% of younger women. Sixty-two per cent of caesarean sections to women aged 35 years or more were elective caesarean sections (i.e. no labour was reported).

## 15.1.4 Smoking during pregnancy

Smoking during pregnancy is an important risk factor for adverse perinatal outcomes. Self reported data on cigarette smoking was collected for women who gave birth in the ACT. Twelve per cent of ACT resident and 13.6% of non-ACT resident women who gave birth in the ACT during 2003 reported having smoked during their pregnancy (Table 15.3).

**Table 15.3: Self-reported[(a)] smoking during pregnancy by maternal state of residence, ACT, 2003.**

| Self reported smoking status | ACT residents | | Non-ACT residents | |
|---|---|---|---|---|
| | No. | % | No. | % |
| Smoker | 487 | 12.0 | 99 | 13.6 |
| Non smoker | 3,568 | 88.0 | 630 | 86.4 |
| **Total** | **4,055** | **100.0** | **729** | **100.0** |

Data source: ACT Maternal Perinatal Data Collection 2003, confidential unit record file.
(a) As the number of "not stated" smoking status was less than five, these records have been added to the non-smoking category.

Teenagers who gave birth in the ACT during 2003 were more likely to smoke during pregnancy (38.3%) than older women (11.5%). Aboriginal and Torres Strait Islander women who gave birth in the ACT in 2003 were also more likely to smoke during pregnancy (45.0%), compared to non-Aboriginal and Torres Strait Islander women (11.7%).

There was a higher percentage of babies born in the ACT in 2003 who weighed less than 2,500 grams where maternal smoking during pregnancy was reported (Smokers: 14.7%; Non-smokers: 6.2%). The average birthweight where maternal smoking during pregnancy was reported was 3,099 grams compared with 3,435 grams for non-smokers.

### 15.1.5 Maternal medical conditions

Pre-existing maternal medical conditions such as diabetes mellitus, epilepsy, hypertension, renal disease and cardiovascular disease add an additional level of complexity to obstetric management. The majority of women (95.2%) who gave birth in the ACT in 2003 had no reported pre-existing maternal medical conditions, while one in 20 women (4.8%) had one or more reported conditions. The two most frequently reported pre-existing maternal medical conditions were essential hypertension (2.0%) and diabetes mellitus (1.3%). Table 15.4 shows that non-ACT resident women were more likely to report a pre-existing maternal medical condition (7.1%) than ACT resident women (4.4%).

**Table 15.4: Pre-existing maternal medical conditions by maternal state of residence, ACT, 2003.**

| | ACT residents | | Non-ACT residents | | Total | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| No conditions | 3,878 | 95.6 | 677 | 92.9 | 4,555 | 95.2 |
| One or more conditions | 177 | 4.4 | 52 | 7.1 | 229 | 4.8 |
| **Total** | **4,055** | **100.0** | **729** | **100.0** | **4,784** | **100.0** |

Data source: ACT Maternal Perinatal Data Collection 2003, confidential unit record file.

### 15.1.6 Maternal depression

Maternal depression, both antenatal and postnatal, is often not diagnosed despite the potential impact of the condition on the mother, infant, and family relationships. To overcome the barriers to detection and early treatment, ACT Health service providers together with the ACT Division of General Practice and consumers developed a partnership to study mental health problems associated with childbirth with funding from the National *Beyond Blue* Postnatal Depression Program. The study found that the rate of postnatal depression in the ACT (7.1%) was similar to the national rate (7.6%).

Post & Ante Natal Depression Support and Information Incorporated (PANDSI) is an ACT Health funded community organisation that provides services in the ACT to raise the awareness of maternal depression within the community and with health professionals and provides assistance to women and their families with postnatal or antenatal depression.

### 15.1.7 Maternal deaths

Due to the relatively small number of maternal deaths each year in Australia (about 30 occur each year) (AIHW 2005), information is compiled and reported nationally using three-year periods. For the 1997 to 1999 period, the maternal death rate was 8.2 deaths per 100,000 women who gave birth in Australia (AIHW 2004).

## 15.2 Infant health

Infant health is an important indicator of the overall health and wellbeing of a community. This section provides an overview of infant (0-12 months) health in the ACT. As the percentage of non-ACT resident women giving birth in the ACT has increased over the last three years, baby characteristics have been presented by residency status to reflect the role of the ACT in providing tertiary services to the ACT and surrounding region.

### 15.2.1 Babies characteristics

The majority of babies born during 2003 in the ACT were liveborn (98.9%). The stillbirth rate for non-ACT residents (2.0%) was higher when compared with the stillbirth rate for ACT residents (1.0%)(Table 15.5).

There was a higher percentage of twins for non-ACT residents (8.1%) when compared with twins for ACT residents (2.6%) during 2003 (Table 15.5). The ACT had the highest Australian percentage of preterm births (8.8%) for all births occurring in the ACT during 2003 (ABS 2004b). However, the percentage of preterm births for ACT residents (6.7%) was the lowest in Australia. There is a strong association between preterm births and low birthweight, with a very low birthweight (less than 1,500 grams) recorded for 1.4% of ACT residents and 5.5% for non-ACT residents.

**Table 15.5: Babies characteristics by maternal state of residence, ACT, 2003.**

| | | ACT residents | | Non-ACT residents | |
|---|---|---|---|---|---|
| | | No. | % | No. | % |
| **Birth Condition** | Liveborn | 4,072 | 99.0 | 749 | 98.0 |
| | Stillborn | 40 | 1.0 | 15 | 2.0 |
| | **Total** | **4,112** | **100.0** | **764** | **100.0** |
| **Plurality** | Singleton | 4,000 | 97.3 | 696 | 91.1 |
| | Twin | 106 | 2.6 | 62 | 8.1 |
| | Triplets | 6 | 0.1 | 6 | 0.8 |
| | **Total** | **4,112** | **100.0** | **764** | **100.0** |
| **Sex** | Male | 2,134 | 51.9 | 410 | 53.7 |
| | Female | 1,978 | 48.1 | 354 | 46.3 |
| | **Total** | **4,112** | **100.0** | **764** | **100.0** |

Data source: ACT Maternal Perinatal Data Collection 2003, confidential unit record file.

### 15.2.2 Breastfeeding

The Australian Dietary Guidelines for Children and Adolescents (NHMRC 2003) emphasise the importance of encouraging and supporting breastfeeding and recommend exclusive breastfeeding of infants up to six months.

During 2003, 97% of babies born in the ACT were breastfed at least once during their hospital birth admission (selected ACT hospital data only).

### 15.2.3 Birth defects

Birth defects, or congenital abnormalities, are the leading cause of death in infants. Approximately five per cent of all babies born in the ACT are reported to have a birth defect each year. In 2003, there were 252 babies born to ACT residents in the ACT with reported birth defects. The majority of defects reported in 2003 were musculoskeletal deformities and defects of the genitourinary system. Most birth defects reported are non-fatal and can be treated, such as undescended testes or cleft palate with or without cleft lip. However, each year, a small number of babies are born with more serious defects, such as heart defects or syndromes like Patau's syndrome or Edwards' syndrome (Trisomy 13 and 18).

### 15.2.4 Infant mortality

In 2004, there were 29 ACT resident infant death registrations, compared to 24 in 2003 and 14 in 2002. There has been an increase in infant death registrations in recent years. The high number of registrations in 2003, compared to 2002, largely reflects the high number of babies born in that year with extremely low birth weights. ACT Health is currently investigating the high number of infant death registrations in 2004.

Information relating to infant mortality is presented in Box 3.1: Focus on infant mortality in Chapter 3. A report into Perinatal Deaths is currently planned as part of the ongoing monitoring of health status in the ACT.

## 15.3 Multiple births

In 1995, the Fetal Medicine Unit was established to give the ACT the capacity to provide tertiary level maternity services to ACT resident women and women from the surrounding region. About one in 20 (4.5%) non-ACT residents who gave birth in the ACT in 2003 had a multiple birth, compared with one in 70 (1.4%) ACT residents. The percentage of ACT resident women having a multiple birth in 2003 was similar to the Australian percentage (1.7%) (Table 15.6).

**Table 15.6: Women having a multiple birth, by maternal state of residence, ACT & Australia, 2001 - 2003.**

| | ACT residents | | Non-ACT residents | | Australia | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| 2001 | 76 | 2.0 | 22 | 3.6 | 4,157 | 1.7 |
| 2002 | 64 | 1.6 | 30 | 4.1 | 4,259 | 1.7 |
| 2003 | 55 | 1.4 | 33 | 4.5 | 4,259 | 1.7 |

Data sources: ACT Maternal Perinatal Data Collection 2001-2003, confidential unit record files; Laws & Sullivan 2004a, 2004b, 2005.

Women having a multiple birth (42.0%) were more likely to have a caesarean section than women having a singleton birth (24.9%) during 2003. The elective caesarean section rate for women having a multiple birth was 28.4%, while the rate for women having a singleton birth was 13.8%.

In 2003, babies from a multiple birth in the ACT were more likely to be stillborn (6.1%) or die within the first 28 days of life (neonatal death) (5.6%), compared with singleton births, where 0.9% were stillbirths and 0.3% died during the neonatal period. Babies from a multiple birth were also more likely to weigh less than 1,000 grams (15.0%) or be born before 28 weeks gestation (13.9%).

## 15.4 Child health

Children in the ACT generally enjoy higher levels of health compared children nationally. Morbidity, disability and mortality rates all tend to be lower in children than older people. However, childhood obesity and nutrition and physical inactivity/sedentary behaviour are recognised as key issues for children and young people in the ACT.

This section provides information on the health characteristics of children aged 0-14 years living in the ACT. Several indicators of health status are presented including morbidity, disability and mortality indicators, and selected health risk factors.

### 15.4.1 Demographic profile of children in the ACT

In June 2004, there was an estimated 63,750 children aged 0-14 years living in the ACT, representing approximately 19% of the ACT population (Table 15.7).

**Table 15.7: Number and percentage of the ACT child population (aged 0-14 years), by region, June 2004.**

| | Population | % Children aged 0-14 years in the ACT |
|---|---|---|
| North Canberra | 5,450 | 9 |
| South Canberra | 3,450 | 5 |
| Woden Valley | 5,550 | 9 |
| Weston Creek | 4,050 | 6 |
| Belconnen | 16,200 | 25 |
| Tuggeranong | 21,850 | 34 |
| Gungahlin-Hall | 7,200 | 11 |
| **Total** | **63,750** | **100** |

Data source: ACT Government 2003.

In 2004, almost 60% of all children aged 0-14 years lived in Belconnen and Tuggeranong. Though much smaller in number and proportion, Gungahlin represented the third largest concentration of children living in the ACT.

### 15.4.2 Morbidity

During 2003-04 there were 9,136 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 respiratory disease (19%), followed by injury and poisoning (13%) and digestive system disorders (12.5%). The leading respiratory disease recorded for children was asthma.

### 15.4.3 Disability

Results from the Australian Bureau of Statistics (ABS) 2003 Disability, Ageing and Carers Survey indicate that about 4,500 (7.2%) ACT children, aged 0-14 years, had a disability in 2003. This figure was consistent with results from the survey for all Australian children (8%). Around 60% of ACT children with a disability were reported to be restricted in their core activities. These activities included communication, mobility and self-care.

### 15.4.4 Mortality

Over the two-year period 2002-2003 there was a total of 42 deaths for children aged 0-14 years. About one-half 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.

### 15.4.5 Risk factors

Health risk behaviours account for a significant proportion of the health burden in adults (Mathers et al 1999). Encouraging the development of healthy behaviours in children helps minimise the risk of developing chronic disease later in life and the risk of premature death.

Table 15.8 presents selected health risk factors that contribute to children's long-term health outcomes. The information has been derived from the 2001 ACT Child Health Survey (CHS) and the 2003 ACT Kindergarten Screening Survey (KSS).

## Table 15.8: Selected health risk factors for children in the ACT, 2001 & 2003.

| | ACT % | 95% CI | NSW % |
|---|---|---|---|
| **Fruit and Vegetable consumption for children 2-12 yrs (2001)** | | | |
| % of children consuming the recommended quantity of fruit | 80.1 | 76.3 - 83.8 | 72.4 |
| % of children consuming the recommended quantity of vegetables | 23.9 | 19.8 - 27.9 | 12.9 |
| **Physical activity for children 5-12 yrs (2001)** | | | |
| % participating in sport or outdoor activity in past 12 months | 96.8 | 95.9 - 98.9 | 91.9 |
| % participating in sports with a coach outside school hours once per week | 68.9 | 64.1 - 73.7 | 58.1 |
| % participating in other organised activities outside school hours once per week | 34.2 | 29.2 - 39.2 | - |
| **Physical inactivity/sedentary behaviour for children 5-12 yrs (2001)** | | | |
| % watching TV or videos everyday for at least 1 to 2 hours | 41.8 | 40.6 - 53.5 | 41.6 |
| % watching TV everyday for at least 2-4 hours | 29.1 | 28.9 - 41.3 | 35.9 |
| % playing video or computer games every day for at least 1 to 2 hours | 12.4 | 8.5 - 16 4 | 12.8 |
| **Childhood overweight and obesity (2003)** | | | |
| % of boys ages 5-6 years who are overweight | 10.8 | - | - |
| % of boys aged 5-6 years who are obese | 3.6 | - | - |
| % of girls ages 5-6 years who are overweight | 13.5 | - | - |
| % of girls aged 5-6 years who are obese | 4.8 | - | - |
| **Sun protective behaviours for children 1-12 yrs[(Ba)] (2001)** | | | |
| % often or always wore broad brim hat or cap with back flap last summer | 85.6 | 82.4 - 88.8 | 75.8 |
| % often or always used sunscreen last summer | 88 | 85.0 - 91.0 | 86.6 |
| % often or always deliberately wore protective clothing last summer | 83.8 | 81.0 - 87.0 | 82.4 |
| **Smoking in the home (2001)** | | | |
| % no smokers in the home | 71.5 | 67.4 - 75.4 | 65.7 |
| % usually/always smoke outside the home | 23.2 | 19.1 - 27.2 | 24.1 |
| % sometimes/usually/always smoke in the home | 5.2 | 4.8 - 5.6 | 10.2 |

Data sources: 2001 ACT Child Health Survey, confidential tables.; 2003 Kindergarten Screening Survey, confidential tables.
(a) When in the sun for 15 minutes or more.

### Fruit and vegetable consumption

A diet high in fruit and vegetables helps protect against heart disease, diabetes and some cancers, and contributes to the maintenance of healthy weight. The *Dietary guidelines for children and adolescents in Australia* (NHMRC 2003) recommend that children aged 4-7 years consume 1 serve of fruit and 2 serves of vegetables each day and children aged 8-11 years consume 1 serve of fruit and 3 serves of vegetables each day.

Parents and carers of children aged 2-12 years were asked about healthy eating habits in the 2001 ACT CHS. Table 15.8 shows that 80.1% of children included in the survey consumed the recommended daily serves of fruit but only 23.9% consumed the recommended daily serves of vegetables. In comparison, a similar proportion of children from NSW were reported to consume the recommended daily serves of fruit, but a smaller proportion of children from NSW were reported to consume the recommended daily serves of vegetables in 2001.

### Physical activity

Adequate physical activity is key to good health and mental wellbeing. Evidence shows that physical activity in children has beneficial effects on adiposity, skeletal health and several aspects of psychological health (DoHA 2005). In addition, participation by children in physical activity and sport offers some protection again cigarette smoking, alcohol use and illegal drug use (DoHA 2005).

In the 2001 ACT CHS, parents and carers of children aged 5-12 years were asked about participation in sports and outdoor activities, and participation in organised physical activities outside school, as indicators of activity levels. Table 15.8 shows that most children (96.8%) were reported to have participated in sport or outdoor activity in the 12 months prior to survey. Over two thirds of the children were reported as having participated in physical activity with a coach outside of school hours at least once per week. A smaller proportion (34.2%) were reported as having participated in other organised activities outside school hours at least once per week. Comparisons with NSW indicate a larger proportion of children in the ACT were reported as having participated in outdoor activity in the last 12 months and in activity involving a coach.

### Physical inactivity/sedentary behaviour

Children in Australia are exposed to a growing range of sedentary alternatives to physical activities. These include, watching television and videos, playing computer games, using the internet, and doing homework, all of which can compete with time for more physically active pursuits.

In the 2001 ACT CHS, parents and carers of children aged 5-12 years were asked how many hours a day, on average, they watched television or videos during the school week. Table 15.8 shows that the results for indictors of physical inactivity/sedentary behaviour were similar between the ACT and NSW. In 2001, 41.8% of the ACT children included in the survey were reported to watch TV or videos for at least 1-2 hours each day and 29.1% were reported to watch TV or videos for at least 2-4 hours each day. Further, 12.4% were reported to play video or computer games for 1-2 hours each day.

### Childhood overweight and obesity

The growing number of children that are overweight or obese is recognised as a serious health concern in many western industrialised countries. Children who are overweight or obese are at risk of a number of health concerns such as diabetes, asthma, sleep apnoea, fatty liver, hypertension and dyslipidaemia (Lobstein et al 2004). In addition, overweight and obese children are more likely to show more immediate physical health concerns such as tiredness, breathlessness on exertion and heat intolerance, as well as suffer from poor self-esteem (Strauss 2000) and body image (Hill et al 1994), and are more likely to be teased and bullied (Jansen et al 2004).

In Australia, information on the prevalence of childhood overweight and obesity is limited and in the ACT, reliable prevalence rates for childhood overweight and obesity are only available for children of kindergarten age (5-6 years).

The results of the 2003 ACT Kindergarten Screening Survey suggest that 14.4% of boys and 18.3% of girls of kindergarten age in the ACT were overweight or obese in 2003 (Table 15.8). There are no comparable data for NSW, however, data from South Australia suggests 17.3% of South Australian boys and 21.4% of South Australian girls, aged 4 years, were overweight or obese in 2002 (Vaska & Volkmer 2004).

### Sun-protective behaviours

Sun exposure during childhood and adolescence is a risk factor for developing skin cancer later in life. In Australia, most cases of skin cancer are the result of too much sun exposure as children. Sun protective behaviours established in childhood help reduce the risk of developing skin cancer by minimising exposure to solar ultraviolet radiation (UVR) (Cancer Council Australia 2005).

In the 2001 ACT CHS, parents and carers of children aged 12 months or more were asked to describe their use of sun protection measures. Table 15.8 shows 85.6% of ACT children included in the survey were reported to have usually or always worn a broad brim hat or cap with back flap the previous summer. This was higher than the comparable figure reported for NSW children in 2001 (75.8%). The proportion of ACT children reported to use sunscreen and to have worn protective clothing during the previous summer was also high at 88.0% and 83.8% respectively, with similar proportions reported for NSW children in 2001.

### Passive smoking

Passive smoking increases the risk of lower respiratory tract infections such as bronchitis, pneumonia and bronchiolitis in children. It also increases the severity in the symptoms of asthma in children and is a risk factor for new cases of asthma in children (NHMRC 1997).

Parents and carers of children aged 0-12 years were asked about smoking in the home in the 2001 ACT CHS. About three quarters of ACT children were reported to live in a home where there were no smokers in 2001. About a quarter of ACT children were reported to live in a home with a smoker who usually/always smoked outside and about one in 20 ACT children were reported to live in a home where someone sometimes/usually/always smoked in the home (Table 15.8).

## 15.4.6 Children's health services and initiatives

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 2004-2014. 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.

Initiatives implemented during the reporting period that specifically targeted children include:

- *Nutrition for Children Under 5 Years of Age*: This program ensured caregivers in the ACT have the knowledge and skills to provide children under 5 years with nutrition in line with the *Dietary Guidelines for Children and Adolescents* (NHMRC 2003).
- *Tuckatalk in Schools*: This initiative involved activities aimed at improving the nutritional health of children at three targeted primary schools and feeder preschools in the ACT.
- *Youth Nutrition:* This initiative was aimed at improving the nutrition of young people (12-25 years) identified as being at risk, by increasing their ability to make healthy food choices (includes *Foodwize* a nutrition manual for youth workers).

In 2003, ACT Health also coordinated a whole of government response to the report of the National Obesity Taskforce (NOT), Healthy Weight 2008: The National Action Agenda for Children and Young People. Further to this, in 2004, ACT Health established a whole of Government Healthy Weight Coordination Group to improve coordination of healthy weight initiatives and activities across government.

In the May 2004 ACT Budget, funds were allocated over four years to several projects designed to address childhood obesity. These projects include:

- Child Healthy Weight Monitoring and Surveillance (from July 1 2004)
- Family Weight Management program (from July 1 2005)
- Expanding the Tuckatalk in Schools Program (from July 1 2004)
- Healthpact – Health Promoting Schools Vitality Funding Round (from July 1 2005)
- Implementation of the National Obesity Action Plan (from July 1 2005)

**Emerging Issues**

- Smoking during pregnancy is an issue for teenagers and women who identified as Aboriginal and Torres Strait Islanders.
- The prevalence of childhood overweight and obesity is increasing. In 2004, ACT Government allocated funds over four years to several projects to address this issue.

# References


ABS (Australian Bureau of Statistics) 2001, *Births Australia, 2000*, cat no 3301.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004a, *Australian historical population statistics*, cat no 3105.0.65.001, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004b, *Births Australia, 2003*, cat no 3301.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005, *Births Australia, 2004*, cat no 3301.0, ABS, Canberra.

ACT Government 2003, *Australian Capital Territory population projections 2002-2032 and beyond*, ACT Government, Canberra.

ACT Government 2005, *The ACT children's plan 2004-14*, ACT Government, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004, *Maternal deaths in Australia 1997-1999*, AIHW cat no PER 24, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005, *A picture of Australia's children, selected highlights*, AIHW cat no PHE 65, AIHW, Canberra.

DoHA (Department of Health and Ageing) 2005, *Discussion paper for the development of recommendations for children and youths' participation in health promoting physical activity*, DoHA, Canberra.

Cancer Council Australia 2005, *All about skin cancer*, Cancer Council Australia, Sydney, viewed 14 November 2005, <www.cancer.org.au/content.cfm?randid=960742>.

Hill AJ, Draper E & Stack J 1994, 'A weight on children's minds: body shape dissatisfactions at 9-years old', *International Journal of Obesity*, vol18, pp 383-389.

Janssen I, Graig WM, Boyce WF & Pickett W 2004, 'Associations between overweight and obesity with bullying behaviours in school-aged children', *Paediatrics*, vol 113, pp 1187–1194.

Laws PJ & Sullivan EA 2004a, *Australia's mothers and babies 2001*, AIHW cat no PER 25, perinatal statistics series no 13, AIHW National Perinatal Statistics Unit, Sydney.

Laws PJ & Sullivan EA 2004b, *Australia's mothers and babies 2002*, AIHW cat. no. PER 28, perinatal statistics series no 15, AIHW National Perinatal Statistics Unit, Sydney.

Laws PJ & Sullivan EA 2005, *Australia's mothers and babies 2003*, AIHW cat. no. PER 29, perinatal statistics series no 16, AIHW National Perinatal Statistics Unit, Sydney.

Lobstein T, Baur L & Uauy R 2004, 'Obesity in children and young people: a crisis in public health', *Obesity Reviews*, suppl 1, pp 4-85.

Mathers C, Vos T, & Stevenson C 1999, *The burden of disease and injury in Australia*, AIHW, Canberra.

NHMRC (National Health and Medical Research Council) 1997, *The health effects of passive smoking - A scientific information paper*, AusInfo, Canberra.

NHMRC (National Health and Medical Research Council) 2003, *Dietary guidelines for children and adolescents in Australia*, AusInfo, Canberra.

Strauss RS 2000, 'Childhood obesity and self-esteem', *Paediatrics,* vol105, p e15.

Vaska VL & Volkmer R 2004, 'Increasing prevalence of obesity in South Australian 4-year-olds: 1994-2002', *Journal of Paediatrics & Child Health*, vol 40, pp 353-355.

# 16 THE HEALTH OF OLDER PEOPLE IN THE ACT

**At a Glance**

- Population projections suggest that the population is ageing. About 10% of the ACT population were aged 65 years or more in 2005, but by 2035, 24% of the ACT population is projected to be 65 years or more.
- ACT residents aged 65 years or more accounted for three quarters of all ACT resident deaths registered in 2003.
- ACT residents aged 65 years or more accounted for less than a third of hospital separations in the ACT in 2003-04. Circulatory diseases and cancers were leading causes of death and hospital separations for this age group.
- According to survey results, ACT residents aged 65 years or more are more likely to have a disability or poor health status, than younger adult residents. They are more likely to be less active, and about half are either overweight or obese and they are more likely to consume alcohol on a daily basis, than younger adults. However, survey results also suggest that they are less likely to smoke daily; they are more likely to use low fat milk; and, more likely to consume sufficient fruit and vegetables to meet dietary guidelines, than younger adults.
- Survey results also suggest that about half (50.7%) of all ACT residents aged 65 years or more were either overweight or obese in 2004.
- As the population ages, the number of people in the population with age-related illnesses (especially chronic diseases) will increase. This will lead to changes in the mix and allocation of health resources across the ACT.
- ACT Health is currently working with other Government agencies, developing strategies and implementing initiatives, to meet the future health needs of older people in the population.

## 16.1 Introduction

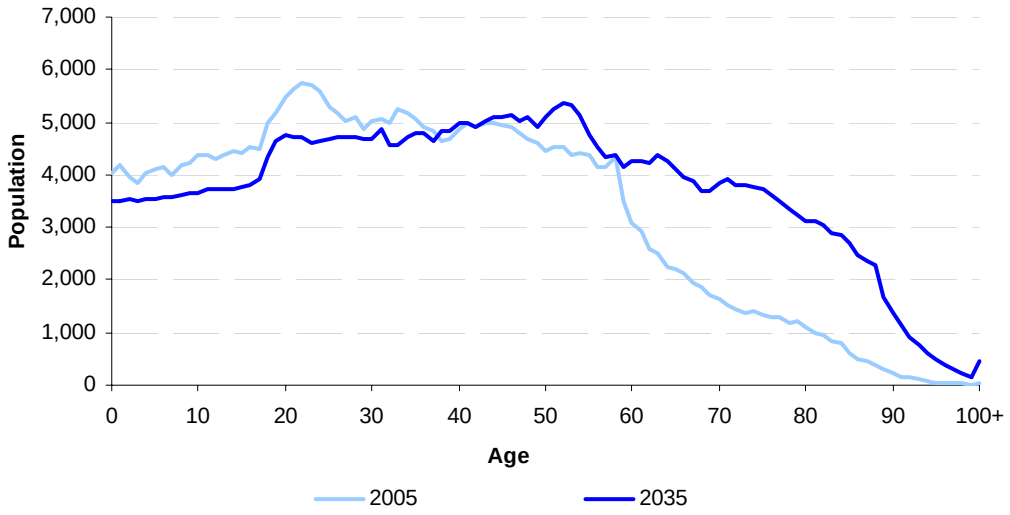
The ACT has a younger population than the national population, with an estimated 10% of people aged 65 years or more in 2005. Over time, however, the proportion of older people in the population is projected to increase markedly. By 2035, about 24% of the ACT population are expected to be 65 years or more (ACT Government 2005). The ageing of the population brings with it many benefits, but also presents a series of challenges for those involved in planning and service delivery. ACT Health focuses on approaches that maximise the independence and wellbeing of older people and promote positive and healthy ageing in the ACT. Over time, a growing number of older people are expected to be seeking access to health care and related services, as well as seeking access to more activities and services aimed at maintaining physical and mental health and well being. Therefore, as the number and proportion of older people in the ACT increases, a relative shift in the mix and allocation of health resources will be required to adequately meet the health needs of this section of the population.

## 16.2 The demographic shift

The ACT population is projected to increase by about 16% between 2005 and 2035. Much of the growth in population is projected to occur in the older age groups, with a considerable decline in population projected among younger age groups (Figure 16.1). For instance, the number of people aged 65 years or more are projected to more than double between 2005 and 2035, from about 31,000 in 2005 to about 89,000 by 2035. In contrast, the ACT population aged 0-14 years is projected to decline by about 14% over the same period, from about 63,000 in 2005 to 54,000 people by 2035 (ACT Government 2005).

These differences in projected population growth and decline between age groups will lead to a shift in the age structure of the ACT population over time. Population projections suggest that about 10% of the ACT population in 2005 were aged 65 years or more, but by 2035, 24% of the ACT population will be aged 65 years or more (ACT Government 2005).

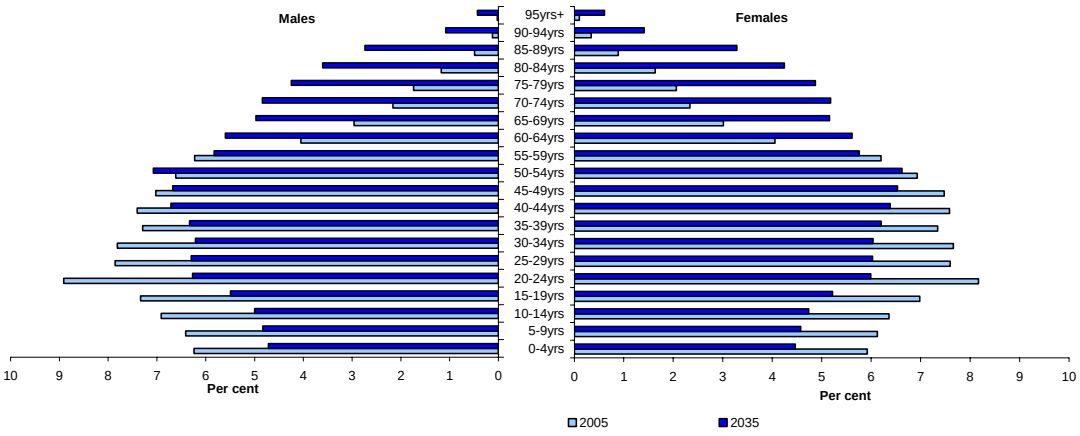
**Figure 16.1: The projected age structure of the ACT population, 2005 & 2035.**




Data source: ACT Government 2005.

In addition to shifts in the age structure, population projections suggest there will be changes in the sex ratio (Figure 16.2) and changes in the proportion of culturally diverse peoples in older age groups over time. If the discrepancy between male and female life expectancy continues to diminish over time (see Chapter 3: General Health Status), a greater number of males will be living longer than has been the case in the past. Although projections suggest that the 85 years or more female to male ratio was 2:1 (twice as many females as there are males in the population) in 2005, by 2035, the ratio is projected to be 1:1 (about one male for every female in the population) (ACT Government 2005).

**Figure 16.2: The projected age structure of the ACT population (%), by sex, 2005 & 2035.**




Data source: ACT Government 2005.

The proportion of older people from culturally and linguistically diverse backgrounds in the ACT population is growing faster than for other older Australian-born residents. In 2005, about one in ten older people in the ACT were from culturally and linguistically diverse backgrounds, but by 2011, more than a quarter (27%) of older people in the ACT are projected to be from those backgrounds (ACT Government 2003, AIHW 2004).

### 16.2.1 The drivers of the ageing of the ACT population

The major drivers of population ageing in the ACT include a declining fertility rate, increasing life expectancy and the ageing of the 'baby boomer' generation.

The fertility rate in the ACT is the lowest in Australia and it is expected to continue to decline, at least until 2016. An increase in the fertility rate, is unlikely to curb the ageing of the ACT population. This is because the projected ageing of the population is based on past fertility patterns, not current or future fertility patterns.

Life expectancy has increased dramatically over the last twenty years and is expected to continue to increase at a similar rate for at least the next twenty years.

Although an increase in net migration (the number of people moving to the ACT subtracted from the number of people leaving the ACT) can increase the level of population growth, it is unlikely to affect the ageing of the ACT population. Although the ACT has a high level of outflow of people aged 50-64 years, as people retire to other states and territories, and a high inflow of people aged 15-19 years moving to Canberra because of employment and study opportunities, this is offset by a moderate inflow of people aged 75 years or more and a high outflow of young people aged 20-24 years (ACT Government 2005).

Population growth in the older age groups may also be influenced by social and cultural factors. The availability of amenities, social support networks and initiatives that allow older people to contribute to community life will all encourage older people to remain in the ACT. Older people contribute experience, knowledge and skills to the community. They are economically important to the ACT and contribute significantly to family life.

## 16.3 Overview of health status

### 16.3.1 Health status

#### General health

Table 16.1 presents a series of health status indicators for ACT residents, by age grouping. Older residents aged 65 years or more are compared to residents aged 18-64 years. The results of the 2004 ACT Smoking, Nutrition, Alcohol and Physical Activity Survey (SNAPS) suggest that 43.2% (95% CI: 34.9 – 50.9) of respondents aged 64 years or more assessed their health status as either 'excellent' or 'very good', compared to 63.8% (95% CI: 60.9 – 66.7) of respondents aged 18-64 years (the difference between age groups was statistically significant).

#### Mortality

In 2003, residents aged 65 years or more comprised about three quarters (74.4%) of all ACT resident registered deaths. The leading underlying causes of death for people aged 65 years or more were diseases of the circulatory system (38.9% of all deaths for people aged 65 years or more), cancers (27.5%), followed by diseases of the respiratory system (8.6%), diseases of the nervous system (4.6%) and mental and behavioural disorders (4.0%).

#### Hospital separations

In 2003-04, residents aged 65 years or more comprised 29.1% of all hospitalisations. This compares to 58.2% of all hospitalisations for residents aged 18-64 years. The leading causes of hospitalisation differed between age groups, although 'factors influencing health status and contact with health services' was the leading cause for both groups. This ICD-10 category includes hospitalisation for a series of specific procedures and follow-up care, hospitalisation for socio-economic and psychosocial circumstances.

## Disability

Estimates derived from the 2003 survey of Disability, Ageing and Carers suggest that the prevalence of disability was higher for residents aged 65 years or more (43.4%) compared to residents aged 0-64 years (11.3%).

## Mental health

Finally, estimates derived from the 2004 ACT SNAPS survey and presented in Table 16.1 suggest that levels of psychological distress, as measured by the Kessler 10 (see Glossary for a description), were similar for residents aged 18-64 years and residents aged 65 years or more in 2004.

**Table 16.1: Health status indicators for ACT residents, by age group, various years.**

| | 18-64yrs | | 65yrs+ | |
|---|---|---|---|---|
| **Health Status Indicator** | **%** | | **%** | |
| **Self-assessed health (2004)[a]** | | | | |
| % excellent | 23.5 | (95%CI:21-26) | 15.5 | (95%CI:9.7-21.3) |
| % very good | 40.3 | (95%CI:37.4-43.2) | 27.7 | (95%CI:20.5-34.9) |
| % good | 23.9 | (95%CI:21.3-26.5) | 32.4 | (95%CI:24.9-39.9) |
| % fair | 9.3 | (95%CI:7.6-11) | 16.2 | (95%CI:10.3-22.1) |
| % poor | 3.0 | (95%CI:2-4) | 8.1* | (95%CI:3.7-12.5) |
| **Hospital separations (2003/04)[b]** | | | | |
| % of all separations in the ACT | 58.2 | | 29.1 | |
| *Top 5 causes of hospitalisation* | | | | |
| Leading cause | 28.7 | Factors influencing health[g] | 36.3 | Factors influencing health[g] |
| Second | 11.7 | Pregnancy, childbirth & the puerperium | 10.5 | Diseases of the circulatory system |
| Third | 10.5 | Diseases of the digestive system | 10.0 | Neoplasms |
| Fourth | 7.0 | Neoplasms | 7.6 | Diseases of the digestive system |
| Fifth leading cause | 6.6 | Diseases of the genitourinary system | 5.4 | Diseases of the eye and adnexa |
| Other causes | 35.5 | | 30.2 | |
| **Deaths (registered in 2003)[c]** | | | | |
| % of all deaths registered | 23.6 | | 74.4 | |
| *Top 5 leading causes of death* | | | | |
| Leading cause | 38.0 | Cancer | 38.9 | Diseases of the circulatory system |
| Second | 21.3 | Diseases of the circulatory system | 27.5 | Cancer |
| Third | 20.1 | External causes of morbidity & mortality | 8.6 | Diseases of the respiratory system |
| Fourth | 4.5 | Diseases of the digestive system | 4.6 | Diseases of the nervous system |
| Fifth leading cause | 3.0 | Diseases of the nervous system | 4.0 | Mental & behavioural disorders |
| Other causes | 13.2 | | 16.4 | |
| **Disability (2003)[d]** | | | | |
| % with a disability | 11.3[e] | | 43.4 | |
| **Mental Health (2004)[f]** | | | | |
| *Kessler 10 score* | | | | |
| % high/v.high psych. distress | 11.4 | (95%CI:9.5-13.3) | 6.8* | (95%CI:2.7-10.9) |
| % moderate psych. distress | 24.3 | (95%CI:21.7-26.9) | 21.2 | (95%CI:14.6-27.8) |
| % low psych. distress | 64.3 | (95%CI:61.4-67.2) | 71.9 | (95%CI:64.6-79.2) |

Data sources: 2004 ACT SNAPS Survey, confidential unit record file; 2003-04 Admitted Patient Care collection, confidential unit record file; ABS deaths data 2003, confidential unit record file; ABS 2005.

(a) Data derived from 2004 ACT SNAPS survey.
(b) Percentages for leading causes based on all separations from ACT hospitals in 2003-04 for ACT residents in each age group, by ICD-10-AM chapter heading (see Methods section in appendices).
(c) Percentages for leading causes are based on all registered deaths in 2003 for ACT residents in each age group, by ICD-10 chapter heading (see Methods section in appendices).
(d) Data derived from 2003 survey of Disability, Ageing & Carers.
(e) Estimate for ages 0-64 years.
(f) Data derived from 2004 ACT SNAPS survey. The Kessler 10 (K10) is described in the Glossary.
(g) Factors influencing health status and contact with health services.
* Estimate has a relative standard error between 25-50% and should be used with caution.

## 16.3.2 Age-related chronic disease and falls injury in the ACT

### Diseases of the circulatory system

In 2001, 52.1% (95% CI: 44.7 – 59.5; Aust 56.6) of ACT respondents to the National Health Survey, who were aged 65 years or more, reported having a disease of the circulatory system, which was expected to last, or had lasted six months or more (ABS 2002c). This would suggest that there were about 14,200 people aged 65 years or more in the ACT with a disease of the circulatory system at that time. This compares to about 56.6% of the Australian population aged 65 years or more, or about 1.28 million people (ABS 2002a).

Although it is not possible to be more specific, as the actual prevalence and incidence of diseases of the circulatory system are not known, if self-reported prevalence in people aged 65 years or more is a reasonable proxy for actual prevalence, and this were to remain constant over time, then by 2035, based on the self-reported levels of disease from the 2001 National Health Survey, and projected increases in population, we would expect to see more than a tripling in the number of people (aged 65 years or more) in the ACT with circulatory disease by 2035.

Table 16.1 shows that in 2003-04, about one in ten (10.5% or 2,457 separations) ACT hospital records for people aged 65 years or more included a primary diagnosis of a disease of the circulatory system. About 1.2% (268 separations) of ACT hospital separations for residents aged 65 years or more had stroke recorded as the primary diagnosis, 4.0% (932 separations) had ischaemic heart disease and 0.8% (176 separations) had myocardial infarction recorded as the primary diagnosis.

Table 16.1 also shows that 38.9% (405 deaths) of deaths registered in 2003 for residents aged 65 years or more included a disease of the circulatory system as the underlying cause of death. About 17.3% (182 deaths) of all deaths for residents aged 65 years or more included stroke as an underlying cause of death, 9.9% (104 deaths) included ischaemic heart disease and 8.0% (84 deaths) included myocardial infarction as the underlying cause of death.

### Cancer

According to the results of the 2001 National Health Survey, 8.4% (95% CI: 4.3 – 12.5; Aust 5.6) of residents aged 65 years or more reported having cancer, which was expected to last, or had lasted six months or more (ABS 2002c). This would suggest that there were about 2,300 people aged 65 years or more in the ACT with cancer in 2001. This compares to about 5.6% of the Australian population aged 65 years or more, or about 127,000 people (ABS 2002a).

Current projections suggest that the number of new cases of cancer diagnosed in residents of the ACT, aged 65 years or more, will increase by about 57% in the 10 years from 2001 to 2011. This represents a projected increase from about 210 new cases for persons aged 65 years or more in 2001 to about 340 new cases diagnosed each year by 2011(AIHW 2005b).

Table 16.1 shows that in 2003-04, one in ten (10.0%, 2,322) ACT hospital separations for residents aged 65 years or more included a primary diagnosis of a neoplasm (7.7%; 1,803 separations were for malignant neoplasms, or cancers). Table 16.1 also shows that 27.5% (296 deaths) of older persons deaths registered in 2003 included cancer as the underlying cause of death.

### Diseases of the respiratory system

About a third (33.1%, 95% CI: 26.1 – 40.1; Aust 31.4) of ACT respondents to the National Health Survey, who were aged 65 years or more in 2001, reported having a disease of the respiratory system, which was expected to last, or had lasted six months or more (ABS 2002c). This would suggest that there were about 9,000 people aged 65 years or more in the ACT with a respiratory disease in 2001. This compares to about 31.4% of the Australian population aged 65 years or more, or about 710,000 people (ABS 2002a).

In the ACT in 2003-04, 4.6% (1,062 separations) of ACT hospital separations for residents aged 65 years or more included a primary diagnosis of a disease of the respiratory system. In 2003, 8.6% (87 deaths) of registered deaths for older residents included a disease of the respiratory system as the underlying cause of death.

### Diabetes mellitus

About one in ten (10.4%, 95% CI: 5.9 – 14.9; Aust 10.8%) ACT respondents to the 2001 National Health Survey who were aged 65 years or more, reported having diabetes mellitus (ABS 2002c). This would suggest that there were about 2,850 people aged 65 years or more in the ACT with the disease in 2001. This compares to about 10.8% of the Australian population aged 65 years or more, or about 244,000 people (ABS 2002a).

In the ACT in 2003-04, 1.4% (330 separations) of ACT hospital separations for residents aged 65 years or more included a primary diagnosis of diabetes mellitus. In 2003, 2.7% (28 deaths) of registered deaths for older residents included diabetes mellitus as the underlying cause of death.

### Arthritis & musculoskeletal conditions

According to the results of the 2001 National Health Survey, 55.0% (95% CI: 47.6 – 62.3; Aust 63.6%) of ACT respondents aged 65 years or more reported having arthritis or other musculoskeletal condition, which was expected to last, or had lasted six months or more (ABS 2002c). This would suggest that there were about 15,000 people aged 65 years or more in the ACT with arthritis or other musculoskeletal condition in 2001. This compares to about 63.7% of the Australian population aged 65 years or more, or about 1.44 million people (ABS 2002a).

In the ACT in 2003-04, 4.9% (1,146 separations) of ACT hospital separations for residents aged 65 years or more included a primary diagnosis of arthritis or other musculoskeletal condition. In 2003, 0.8% (less than 10 deaths) of registered deaths for older residents included arthritis or other musculoskeletal condition as the underlying cause of death.

### Dementia

The number of people aged 65 years or more in the ACT with dementia in 2004 is estimated to have been about 7% of the older population, which is consistent with 2004 estimates for the Australian population aged 65 years or more (7%) (Access Economics 2005).

Between 2004 and 2050, the proportion of the ACT population with dementia is expected to increase from 0.7% to 2.5% (Access Economics 2005). This increase is expected to occur as the ACT population distribution ages into the dementia-prevalent years. The number of people aged 65 years or more in the ACT with dementia is projected to increase to 9,330 persons by 2050. Over the same period, the number of new cases diagnosed each year in people aged 65 years or more in the ACT is projected to increase from about 550 in 2004 to about 2,260 new cases by 2050. This represents a quadrupling in the incidence and prevalence of dementia in this age group.

There were no registered deaths for older residents in 2003 with dementia recorded as either an underlying, or associated cause of death.

### Falls injury

Prevention of falls injury is a national priority as falls are a significant cause of disability and death in older people (NARI 2004). Estimates suggest that rates of hospitalisation and death from falls injury for older people in the ACT are consistent with rates for Australia (Cripps & Carman 2001). In 2003-04, 4.7% of all older resident hospital separations included falls injury as either a primary or associated diagnosis**.** In comparison, 4.4% of all Australian hospital separations for older people included falls injury as either a primary or associated diagnosis in 2003-04(AIHW 2005a).

Projections suggest that there will be a significant increase in the number of falls injuries experienced by ACT residents aged 65 years or more over time. Moller (2004) has projected an increase of 13,700 hospital bed days per annum and a need for an additional 50 nursing home places between 2001 and 2051, for people aged 65 years or more, with falls injuries in the ACT. The health costs are projected to more than triple between 2001 and 2051, from $5.3 million in 2001 to about $18.5 million by 2051.

Osteoporosis increases the risk of significant falls injury. Although the prevalence of osteoporosis among older people in the ACT is not known, in 2001, 1.4% (95% CI: 0.9 – 1.9) of all ACT respondents to the 2001 National Health Survey reported having osteoporosis, which was expected to last, or had lasted six months or more (ABS 2002c).

The risk of death from unintentional falls injury increases with age and most deaths from injury occur after the age of 75 years. In 2003, there were 14 falls injury deaths (1.3% of all deaths for people aged 65 years or more) registered for residents aged 65 years or more. The Australian comparison for 2003 was not available at the time of writing, however, 1.2% of all deaths registered for older people in 2002 included falls injury as the underlying cause of death (Kreisfeld et al 2004).

### 16.3.3 Health risk factors

Table 16.2 presents a series of health risk factors for ACT residents aged 65 years or more and residents aged 18-64 years.

**Table 16.2: Health risk factors for ACT residents, by age group, 2004.**

| | 18-64yrs | | 65yrs+ | |
|---|---|---|---|---|
| | % | 95%CI | % | 95%CI |
| **Nutrition** | | | | |
| At least 5 serves of vegetables daily[(a)] | 9.3 | (7.6 - 11.0) | 17.6 | (11.5 - 23.7) |
| At least 2 serves of fruit daily[(a)] | 48.8 | (45.8 - 51.8) | 65.5 | (57.8 - 73.2) |
| Usually use low fat milk | 54.8 | (51.7 - 57.9) | 65.7 | (57.8 - 73.6) |
| **Physical Activity** | | | | |
| Sufficent activity[(b)] | 57.4 | (54.4 - 60.4) | 39.9 | (32.0 - 47.8) |
| Sedentary[(c)] | 8.6 | (6.9 - 10.3) | 26.4 | (19.3 - 33.5) |
| **BMI** | | | | |
| Overweight 25 - 29.9 | 32.6 | (29.7 - 35.5) | 34.5 | (26.7 - 42.3) |
| Obese 30+ | 15.1 | (12.9 - 17.3) | 16.2 | (10.1 - 22.3) |
| **Alcohol Consumption** | | | | |
| Daily drinker | 8.0 | (6.4 - 9.6) | 30.2 | (22.8 - 37.6) |
| Average no. standard drinks consumed by daily drinkers | 3.1 | (2.5 - 3.7) | 2.1 | (1.6 - 2.6) |
| **Smoking** | | | | |
| Daily smoker | 15.9 | (13.7 - 18.1) | 6.8* | (2.7 - 10.9) |

Data source: 2004 ACT SNAPS Survey, confidential unit record file.

(a) Recommended daily serves as per NHMRC (2003) *Dietary Guidelines for Australian Adults.*
(b) Sufficient activity to meet the DoHAC (2003) *National physical activity guidelines for Australians*. Data presented under heading 'sufficient activity' includes respondents who reported undertaking at least 150 minutes moderate activity in the week before the survey, on at least 5 occasions.
(c) No reported physical activity in the week before the survey.
* Estimate has a relative standard error between 25-50% and should be used with caution.

The results of the 2004 ACT SNAPS survey suggest that about two thirds of people aged 65 years or more usually consumed at least two serves of fruit daily and usually consumed low fat milk, as recommended in the dietary guidelines. Significance testing of survey estimates suggests that although only 17.6% (95% CI: 11.5 – 23.7) of people aged 65 years or more reported consuming at least five serves of vegetables daily, this was higher than the proportion reported for people aged 18-64 years (9.3%, 95% CI: 7.6 – 11.0).

People aged 65 years or more were more likely to report being less active than their younger counterparts. Only 39.9% (95% CI: 32.0 – 47.8) of people aged 65 years or more reported undertaking sufficient physical activity in the week prior to the survey to meet national guidelines. Significance testing of estimates suggests this was lower than the proportion of people aged 18-64 years (57.4% 95% CI: 54.4 – 60.4). Similarly, 26.4% (95% CI: 19.3 – 33.5) of people aged 65 years or more reported being inactive or sedentary in the week prior to survey, and significance testing suggests that this was higher than the proportion of people aged 18-64 years (8.6%, 95% CI: 6.9 – 10.3) reporting inactivity.

About half (50.7%, 95% CI: 42.5 – 58.9) of all respondents aged 65 years or more reported being overweight or obese. Significance testing of survey estimates suggests that the proportion of respondents from this age group was consistent with the proportion of respondents aged 18-64 years (47.8%, 95% CI: 44.7 – 50.9) reporting overweight and obesity.

Although the majority did not consume alcohol daily, a higher proportion (30.2%, 95% CI: 22.8 – 37.6) of respondents aged 65 years or more reported drinking daily compared to respondents aged 18 to 64 years (8.0%, 95% CI: 6.4 – 9.6). On average, however, respondents aged 65 years or more reported that on occasions when they did drink they would consume about 2.1 standard drinks. In comparison, respondents aged 18-64 years reported consuming an average of 3.1 drinks on occasions when they drank alcohol.

The results of the survey suggest that about 6.8% (95% CI: 2.7 – 10.9) respondents aged 65 years or more were daily smokers in 2004. Significance testing suggests that this proportion was less than for respondents aged 18-64 years (15.9%, 95% CI: 13.7 – 18.1).

## 16.4 The health response to the demographic shift

ACT Government has developed a range of strategic documentation aimed at meeting the future health needs of the population. In 2003, the ACT Ministerial Advisory Council on Ageing released a strategic plan through the Office for Ageing. The plan identifies health and meaningful ageing as key issues affecting older people in the ACT and identifies a series of actions aimed at healthy ageing, including health promotion and illness prevention.

The ACT Clinical Services Plan, the ACT Primary Health Care Strategy and the ACT Health Workforce Plan describe a series of initiatives that will benefit older people in the ACT (ACT Health 2005a, 2005b, 2005c). ACT Health is also planning to develop a plan for aged care and rehabilitation services in the Territory. Collectively existing plans identify service gaps and future needs for this section of the population and they set out the strategic direction for the future of older people's health care in the ACT.

ACT Health is currently in the process of implementing an Aged Care and Rehabilitation Service aimed at improving patient outcomes by providing a continuum of coordinated care across the aged care and rehabilitation service spectrum. Existing services to be incorporated within this wider service span the impatient, outpatient and community health sectors.

ACT Health also funds a number of non-government organizations to provide aged care services targeting post hospitalisation and respite care. The Home and Community Care Program, for example, is jointly funded by the Australian and ACT governments and targets frail older people and young peoples with disabilities who require support in their homes. This program currently provides the largest proportion of community-based services to older people in the ACT.

In terms of preventing injury and disease, ACT Health has a range of initiatives targeting older people in the ACT. For instance, the Falls and Balance Clinic, operated by the Department of Geriatric Medicine, at The Canberra Hospital, uses an integrated approach to reducing falls and fall-related injuries in older people, focusing simultaneously on both fall risk assessment/prevention and improving bone quality and muscle strength. A significant decrease in the number of falls and fractures has been observed with this program.

In 2003, ACT Health Community Care, in collaboration with the Australian government and the ACT Ambulance Service, implemented the ACT Falls Prevention Community Outreach and Assessment Program. The initiative targets people at high risk of falling due to frailty and disability, and other older adults within the community. The initiative provides a co-ordinated falls multi-factorial risk-screening and intervention program, aimed at early intervention and prevention.

The Australian government funds long term residential aged care places in the ACT. As with other jurisdictions, access to aged care places is a major issue for the ACT. In 2003, there were 1,930 operational places, with 264 provisional places allocated to the ACT (see Chapter 6 on Health Services and their Use for further information). Once the allocated places become fully operational, the ACT will meet Australian Government targets for the population. However, demand for aged care placements may exceed preset targets.

ACT Health has begun implementing a number of initiatives to better manage demand for placements. For example, older people admitted to hospital often require a placement before they can be discharged. In 2003, ACT Health appointed a Residential Aged Care Liaison Nurse to assist in improving the management of older people in hospital awaiting placements (see Chapter 6 on Health Services and their Use for further information).

In addition, ACT Health is finalising plans for a 60-bed Subacute Service that will be developed on the Calvary Hospital site. The facility is expected to be completed by the end of 2006 and will assist with the future management of older people who might otherwise require an aged-care placement. The service will accommodate the needs of older people who require psycho-geriatric care and people who no longer require acute care, but are in need of relatively short-term rehabilitation, including the restoration of daily living skills.

The recently implemented Intermittent Care Service will further assist in the management of older people who might otherwise require an aged-care placement. The service provides a short period of support to older people who are currently in hospital, so that they can return home. It also assists in preventing older people from being admitted to hospital, by providing a short period of additional support in the home to avoid admission.

One of the initiatives currently being implemented by ACT Health to meet expected workforce issues in the aged care and rehabilitation sector involves the training of nurse practitioners. These nurses will be the first in Australia with specialised training that will allow them to undertake a higher level of responsibility for providing health care in the aged care and rehabilitation sector.

**Emerging Issues**

- Over time, the projected shifts in age structure will generate changes to the health profile of the population and concomitant changes in health priorities. Age-related health issues are a key concern for the ACT. Projections suggest that the number of people with age-related conditions such as falls injury, dementia, diseases of the circulatory system and cancer, will increase markedly with time.
- Encouraging prevention measures will contribute significantly to the health and wellbeing of the future population.

# References


ABS (Australian Bureau of Statistics) 2002a, *2001 National health survey: summary of results*, cat. no. 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002b, *2001 National health survey: summary of results, tables 27-41, Australian Capital Territory*, cat. no. 4364.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002c, *2001 National health survey: Australian Capital Territory*, special request.

ABS 2005, *2003 Disability, Ageing and Carers Survey, state tables for Australian Capital Territory*, ABS, Canberra.

Access Economics 2005, *Dementia estimates and projections: Australian states and territories*, Alzheimer's Australia, Canberra.

ACT Health 2005a, *Workforce plan 2005 – 2010*, ACT Health, Canberra.

ACT Health 2005b, *ACT primary health care strategy 2005 - 2008*, ACT Health, Canberra.

ACT Health 2005c, *ACT clinical services plan 2005 - 2011*, ACT Health, Canberra.

ACT Government 2003, *A social and demographic profile of multicultural Canberra*, ACT Government, Canberra.

ACT Government 2005, *ACT population projections 2005 - 2035*, unpublished tables.

ACT Ministerial Advisory Council on Ageing 2003, *Strategic plan 2003 – 2005*, ACT Government, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004, *Diversity among older Australians in capital cities 1996-2011*, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005a, *Australian hospital statistics 2003-04,* health services series no. 23, AIHW cat. no. HSE-37, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005b, *Cancer incidence projections Australia 2002 to 2011*, *supplementary report: states and territories*, unpublished tables.

Cripps R & Carman J 2001, *Falls by the elderly in Australia: Trends and data for 1998*, Australian Institute of Health and Welfare, Canberra.

DoHAC (Department of Health and Aged Care) 1999, *National physical activity guidelines for adults*, DoHAC, Canberra.

Kreisfeld R, Newson R & Harrison J 2004, *Injury deaths, Australia 2002*, AIHW cat. no. INJCAT 65, AIHW, Canberra.

Moller J 2004, *Projected costs of fall related injury to older persons due to demographic change in Australia*, Department of Health and Ageing, Canberra.

NARI (National Ageing Research Institute) 2004, *An analysis of research on preventing falls and falls injury in older people: Community, residential care and hospital settings (2004 update)*, DoHAC (Department of Health and Aged Care), Canberra.

NHMRC (National Health and Medical Research Council) 2003, *Dietary guidelines for Australian adults,* AusInfo, Canberra.

# 17 THE HEALTH RESPONSE TO THE ACT BUSHFIRES OF JANUARY 2003

**At a Glance**

- There were 501 homes destroyed in the ACT, with many more damaged as a result of the January 2003 bushfires. There were losses to the local infrastructure – including the ACT Health Protection Service building at Holder, and almost 70 per cent of the forests and parkland areas of the ACT were burnt out. Four people lost their lives.
- A State of Emergency was declared by the Chief Minister on 18 January and remained in place until 28 January 2003. In accord with legislation, the ACT Chief Health Officer assumed the role of Territory Health Controller during this period, with responsibility for management and co-ordination of the health response to the Emergency.
- Hospitals in the region were placed on alert and all elective surgery in the ACT was suspended for two days following the firestorm. There were a total of 441 bushfire-related emergency department presentations and 49 admissions to public hospitals during the State of Emergency. The majority of these presentations and admissions occurred 18 - 19 January 2003.
- A Mental Health Control Centre Team was set-up to co-ordinate the mental health response to the fires. Counseling services were provided to residents in affected areas, as well as emergency services staff, volunteers and others in need.
- A number of public health issues arose as a result of the fires including water quality, sanitation, toxic substance, infectious disease and air quality issues. Public health services in the ACT responded promptly to these issues, liaising with other agencies to effect timely responses to environmental hazards, performing onsite inspections and tests in the interests of public safety, preparing evacuation plans, and collating and disseminating public health information and advice to residents.
- Although the health response to the emergency was effective, the Health Emergency Management Sub-Plan was later revised with a series of minor amendments made in the wake of the bushfire experience.

## 17.1 Introduction

On 8 January 2003 a series of lightening strikes in the Brindabella ranges, to the west of Canberra, ignited a number of small fires. Initial efforts to extinguish the fires were unsuccessful and containment of the fires in the ensuing days proved difficult. The vegetation in the ranges and surrounds to the west and south west of Canberra was extremely dry following an extended period of drought. Flammable fuel loads were high as a result, and the hot, dry, windy conditions that prevailed caused the fires to spread. On 18 January, a strong westerly wind brought the fire front into a pine forest on the boundary of the residential area of Canberra and a firestorm erupted causing widespread damage (McLeod 2003).

There were four deaths and many injuries and burns sustained as a result of the January 2003 bushfires. There were 501 homes destroyed, with many more damaged, and there were losses to the local infrastructure and facilities, including significant damage to the ACT Health Protection Service (HPS) building based at Holder. Almost 70 per cent of the forests and parkland areas of the ACT were burnt out by the fires. This included all of the government pine forest west of the Murrumbidgee River and the Stromlo pine forest, the Tidbinbilla Nature Reserve and the Namadgi National Park. In addition, a further 100,000 hectares were burnt out in NSW (McLeod 2003).

## 17.2 The Health Response

A State of Emergency was declared at 2:45pm on 18 January 2003 by the Chief Minister and remained in place until 28 January, when it became evident that the threat to Canberra had passed. The ACT Chief Health Officer became the Territory Health Controller during this period, assuming responsibility for management of the health response to the Emergency (Dugdale & Guest 2003).

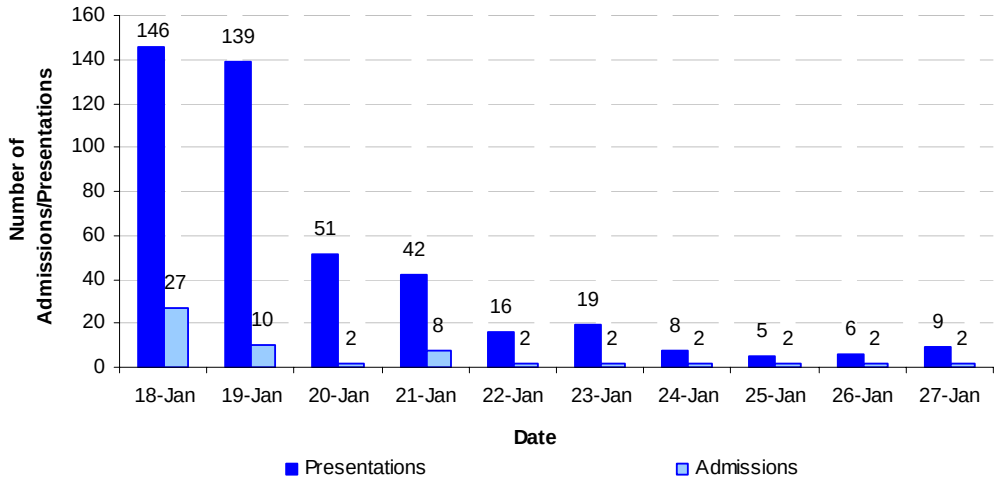
The health response was guided by the ACT Health Emergency Management Sub-Committee to the ACT Emergency Management Committee. Matters relating to the State of Emergency were discussed at meetings of the Sub-Committee on 22 January and 29 January, which was chaired by the Territory Health Controller, and information was communicated to the various agencies involved (ACT Health 2004).

### 17.2.1 Hospital services

Following the declaration of a State of Emergency, all hospitals in the ACT and surrounding region were placed on alert. Hospital beds were available at all times for those needing hospital care and in order to maintain capacity, elective surgery was suspended between 19 - 21 January 2003 across the Territory.

There were a total of 441 bushfire-related Emergency Department presentations and 49 admissions to public hospitals during the State of Emergency. The majority of these presentations and admissions occurred 18 - 19 January 2003 (Figure 17.1). There were 260 presentations to The Canberra Hospital Emergency Department on 18 January 2003 alone, almost twice as many presentations as might normally be expected (Dugdale & Guest 2003).

**Figure 17.1: Daily hospital[(a)] emergency department fire-related presentations[(b)] and admissions[(c)] during the ACT bushfire State of Emergency (18-28 January 2003).**




Data Source: Dugdale, P & Guest, C 2003.

(a) Includes admissions and presentations for The Canberra Hospital (ACT), Calvary Hospital (ACT) and Queanbeyan Hospital (NSW).
(b)&(c) All values <5 have been rounded to '2'.

Calvary Hospital was potentially under threat from the fires at one stage during the State of Emergency. An evacuation was planned, but proved unnecessary. However, one residential care facility was evacuated and residents were transferred to hospitals and evacuation centres in the ACT (Dugdale & Guest 2003).

Private hospitals also played an important part in the health response by providing support to the public system, including the provision of care for patients evacuated from residential care facilities during the Emergency (ACT Health 2003a).

### 17.2.2 Mental health services

A Mental Health Control Centre Team was established, once the State of Emergency had been declared, to co-ordinate relevant activities, including:

- identification of core services to be maintained during the Emergency
- drawing-up lists and co-ordinating available staff to provide counselling services to those affected by the fires
- consideration of evacuation plans for bed-based services and group homes
- identification of vehicles, drivers and other staff to assist in the event of an evacuation, and arrangements for alternative accommodation
  (Dugdale & Guest 2003)

A number of Mental Health ACT staff worked their normal hours and continued working after-hours to provide counselling services and support to residents affected by the fires, including those who had lost their homes, emergency services staff, volunteers and others in need. Outreach teams travelled to affected areas to provide services and some clinically trained staff were redeployed from administrative areas to provide counselling and post-traumatic stress support. (Dugdale & Guest 2003; ACT Health 2003a).

Private psychologists volunteered their time to provide counselling and 24 hour counselling and support was provided by Lifeline and the Health First Bushfire Counselling Service (Dugdale 2003a). In addition, visiting mental health and disaster experts from Queensland and NSW assisted in the planning of the short and long-term response to the fires. A medium-longer term recovery strategy was developed and implemented, with their support. This included hiring additional staff to assist with an expected medium-longer term increase in demand for adult, child and adolescent mental health services in the wake of the fires.

### 17.2.3 Community Care services

Most of ACT Health's Community Care services continued to operate as usual during the emergency. However, some non-government community care services were disrupted, with a number directly affected, losing offices and equipment to the fires. Staff from ACT Health's Community Care services contributed to the counselling services made available at the evacuation centres and the Lyons Recovery Centre (Dugdale & Guest 2003; ACT Health 2003a).

### 17.2.4 Public health services

A wide variety of public health issues arose as a result of the fires and in spite of fire damage to the HPS building at Holder, public health services in the Territory managed to meet the challenges that arose as a result of the fires.

The timely dissemination of information to the community was an important part of the public health response to the Emergency. Several different means were used to communicate a wide range of public health information before, during and after the State of Emergency (McLeod 2003). A media conference was conducted on 22 January 2003 (Dugdale & Guest 2003) and a number of public health-related media releases (Dugdale 2003b, 2003c; Guest 2003a) were issued to communicate concerns and safety messages to residents. Information provided during the media conference and the content of the media releases was relayed to residents through key websites on the Internet (Canberra Connect; ACT Health website), local newspapers, newsletters, TV and radio. Public health information sheets (ACT Health 2003b, 2003c, 2003d; Dugdale 2003d)**,** covering a variety of topics, were issued to residents through similar channels. Information sheets also appeared on community notice boards and were made available to residents at evacuation centres, at counselling services and via the Canberra Connect Call Centre. In some cases, information sheets were issued directly to health professionals and relevant organisations in the Territory (ACT Health 2003e; Guest 2003b, 2003c).

In addition to the dissemination of information, public health services in the Territory responded to a number of environmental issues that arose as a result of the fires (McLeod 2003). Public Health Officers carried out inspections of fire damaged areas, including rural

settlements, to identify public health issues and assess environmental hazards throughout the Emergency period and during the clean up that followed. The HPS worked with other government agencies and organisations such as Environment ACT, the Department of Urban Services, WorkCover and ACtEW AGL to address issues as they arose (ACT BRT 2003a).

Environmental issues identified included the risk of exposure to toxic substances in burnt treated timber, dust and ash at fire-damaged sites and the risk of exposure to asbestos both in the air and during the clean-up of fire damaged sites (ACT BRT 2003b; ACT Health 2003f). Dust masks were made available to residents and they were provided with safety advice relating to the clean up of sites (ACT BRT 2003c). The Director of ACTGAL has advised that fire-damaged areas of the ACT were monitored for asbestos in the air and all results were below the level of the Work Safe Exposure Standard of 0.1 fibres/millilitre (I Fox 2005, pers. comm., 25 May).

Water quality in the Territory was of concern, both during and following the State of Emergency. The water supply remained drinkable throughout the Emergency, except in Duffy and Chapman for several days, when residents were advised to boil water for drinking (Dugdale & Guest 2003). Advice was also issued in response to concerns about contamination of private drinking water supplies, including domestic rainwater tanks in rural areas of the ACT (ACT BRT 2003d; Woollard 2003).

The HPS undertook a risk assessment of the ACT water supply following the fires. The assessment considered water quality and quantity in the catchment, the run-off of ash and fire fighting chemicals, and increased soil erosion following the fires. The manager, Environmental Health at the HPS has advised that the water supplied to the ACT both during and after the bushfires of January 2003 has remained in accordance with all health requirements in the National Health and Medical Research Council Drinking Water Guidelines (NHMRC & NRMMC 2003; M Langhorne 2005, pers. comm., 8 April).

The health risks associated with recreational waters in the wake of the fires were also an issue. In particular, there were concerns about rain and run-off in areas with dead and decaying animal carcasses. The HPS liaised with staff from the Murrumbidgee River Corridor Management over an emergency plan to close the river corridor in the event of rain (Dugdale & Guest 2003). The Murrumbidgee corridor was closed to swimming on 21 February as a result (ACT Health 2004).

Advice was also issued to residents in response to concerns about suburban swimming pool care following the fires. Residents were advised to ensure fire-damaged fences surrounding suburban swimming pools were either repaired or temporary fences erected. Residents were also advised on how to prevent water stagnation in pools in order to prevent mosquito breeding (ACT BRT 2003e).

Finally, the integrity of the sewer system was compromised during the Emergency. The Lower Molonglo Sewerage Treatment Plant was damaged by fire and remained inoperative for several days. As part of the public health response, ActewAGL encouraged residents to report all sewer or drainage issues to authorities for investigation (ACT BRT 2003f).

### 17.2.5 Primary care services

There was a prompt response to the fires by general practitioners in the ACT and in other jurisdictions affected by the fires (Robinson 2003). In addition to the many fire-affected patients they treated and counselled in their own practices, volunteer general practitioners in the ACT provided medical assistance at evacuation centres and volunteered to assist in hospital Emergency Departments if required (ACT Health 2003a).

Local pharmacists played an important role, providing first aid assistance and medications to those in need. There was a reported increase in the sale of asthma medications and eye drops and an increase in the number of people presenting to pharmacies with insect bites and rashes as a result of the fires (ACT Health 2003a).

### 17.2.6 Ambulance services

Once the State of Emergency had been declared on 18 January 2003, the Territory Health Controller and the ACT Ambulance Service set-up the Health Emergency Control Centre (HECC) in Curtin, in accord with the Health Emergency Management Sub-Plan (McLeod 2003). Officers from both the ACT Ambulance Service and the Ambulance Service of NSW staffed the Emergency Centre. The ACT Ambulance Service experienced its busiest day on record on 18 January 2003, with medical emergencies and an evacuation of a residential care facility in the ACT. There were 15 ambulance crews on duty on the day, almost twice the normal daily shift. In the days that followed, personnel at the HECC became involved in developing evacuation plans for the Calvary Hospital and residential care facilities and hostels in the Belconnen area (McLeod 2003).

In addition to providing essential emergency medical services to the ACT during the Emergency, the ACT Ambulance Service was also involved in fire-fighting activities. The ACT Snowy Hydro Southcare helicopter assisted in water bombing efforts and ambulance teams supported fire-fighting crews in the mountains during the Emergency (McLeod 2003).

The St John Ambulance supported the emergency medical service effort by deploying volunteers to evacuation centres where they provided first aid to those in need during the Emergency (Dugdale & Guest 2003).

### 17.2.7 Other jurisdictions

ACT Health received many offers of assistance from the Commonwealth Department of Health and Ageing and interstate health departments, such as the NSW Southern Area Health Service, which provided valuable liaison during the response (Dugdale & Guest 2003).

## 17.3 The health impacts

There is a growing body of literature documenting the health impacts of bushfires in Australia. In the ACT, research efforts have focussed on the immediate, medium and long-term health effects of the bushfires of January 2003.

### 17.3.1 Immediate health impacts

There were four deaths in the ACT that were attributed to the bushfires of January 2003. They were due to the effects of the fire and included: smoke inhalation, thermal injury and heart attack.

Richardson and Kumar (2004) have described the immediate health impacts of the fires and the response of The Canberra Hospital Emergency Department during the State of Emergency in January 2003. They explain that in addition to the extra workload generated by the fires there was a continuation of the normal Canberra Hospital Emergency Department workload, as the hospital is the major tertiary and trauma referral centre for the region. They report that a “Code Brown” (external disaster) alert was activated at the hospital at 17:00 on 18 January, and between 18:00 and 22:00 on that day, The Canberra Hospital Emergency Department treated 139 patients - three quarters were treated for fire-related health problems. These problems included smoke inhalation, eye irritations, burns and other trauma, including injuries resulting from falls or sustained while fire fighting, and the supply of usual medications required by people unable to return home because of the fires.

### 17.3.2 Medium term health impacts

The Population Health Research Centre, ACT Health and the National Centre for Epidemiology and Population Health, Australian National University (2005) have explored the medium term health impacts of bushfire smoke exposure in the ACT, during the period December 2002 to February 2003. The results of the research undertaken show that the concentration of airborne particulates ($PM_{10}$), indicating the level of air pollution from bushfire smoke, was extremely high on 18 January 2003 (see Chapter 5, Section 5.2.1 and Figure 5.1 for further information). There was an increase in ACT hospital Emergency Department presentations for respiratory disease, the toxic effect of substances (smoke inhalation) and burns on 18 January 2003. However, no increase in hospital Emergency Department presentations for traffic accident injury and cardiovascular disease, or emergency hospital admissions for cardiovascular disease and respiratory disease was observed.

### 17.3.3 Longer term health impacts

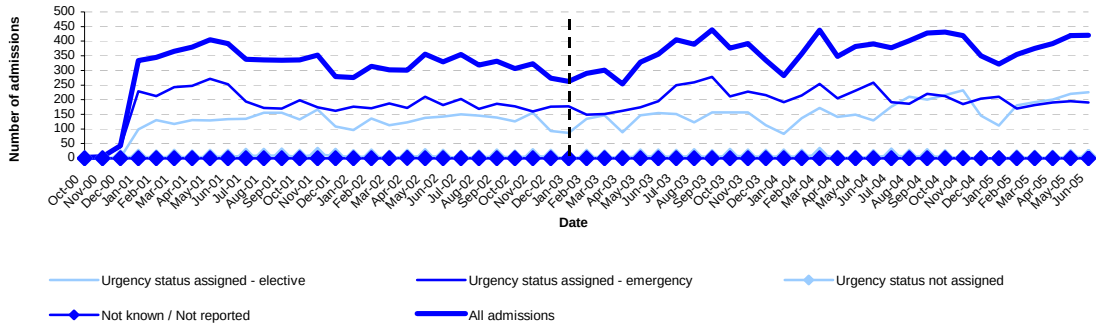
ACT Health has also reviewed hospital admissions in the Territory in an attempt to better understand the long-term health impacts of the bushfires. Records of hospital admissions are useful for identifying changes in patterns of service use at the population-level. They can also provide insights, at the more severe end of the disease spectrum, into areas for further investigation and are useful in identifying health issues to better focus future monitoring activities.

The study undertaken involved a review of all ACT hospital admissions, by month, for the period 1 January 2000 to 30 June 2005. The conditions included in the study were cardiovascular disease, respiratory disease, burns, smoke inhalation, mental health disorder, falls injury and other injury caused by exposure to smoke, fire and flame. Although there were more hospital admissions for burns and other injury caused by exposure to smoke, fire and flame in January 2003, compared to previous months, there was no observed increase in admissions for other conditions in January 2003.

The results of the review also showed that there was no long-term increase in admissions for the majority of fire-related conditions included in the study. However, there was an ongoing, gradual increase in hospital admissions for anxiety disorders and stress-related disorders, including panic disorder, post-traumatic stress disorder and adjustment disorder from December 2003, around the time of the first anniversary of the January 2003 bushfires.

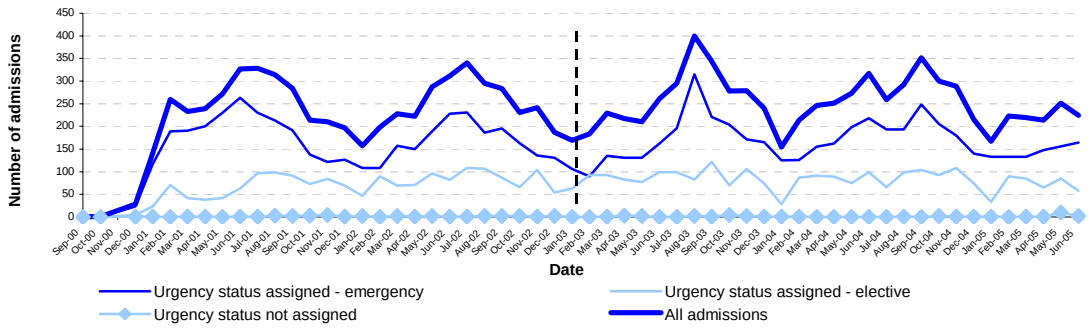
A research project has been funded by ACT Health and Emergency Management Australia to explore the dynamics of individual and community recovery after the bushfires. The Bushfire Recovery Research Project involves conducting a postal survey in 2006 to follow-up with residents affected by the fires, assessing their progress with recovery and determining what has helped and hindered in the recovery process. The survey will include questions on mental health and well-being and will also provide respondents with necessary contact details for ongoing support services.

**Figure 17.2: ACT resident admissions to ACT hospitals for CVD, by month, October 2000-June 2005.**



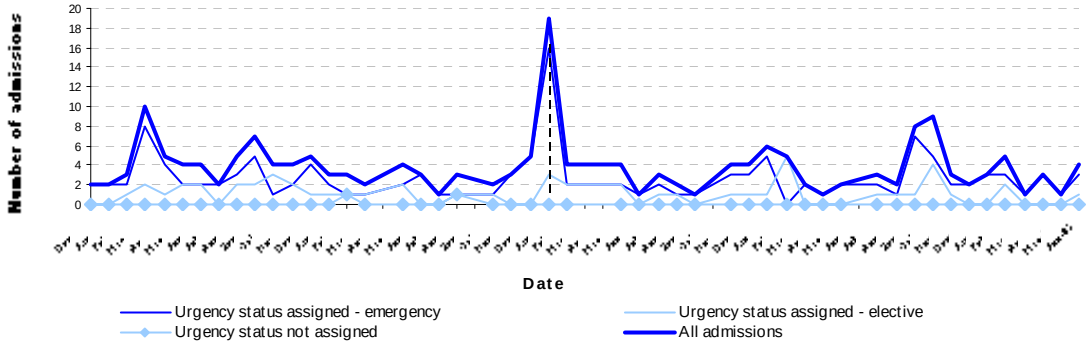

Comments: There was no observed increase in emergency admissions for CVD in January 2003. However, there was a gradual increase in emergency admissions during the winter months of 2003.
Data source: ACT Admitted Patient Care collection 2000-2001 to 2004-2005, confidential unit record file.

**Figure 17.3:ACT resident admissions to ACT hospitals for respiratory disease, by month, September 2000-June 2005.**



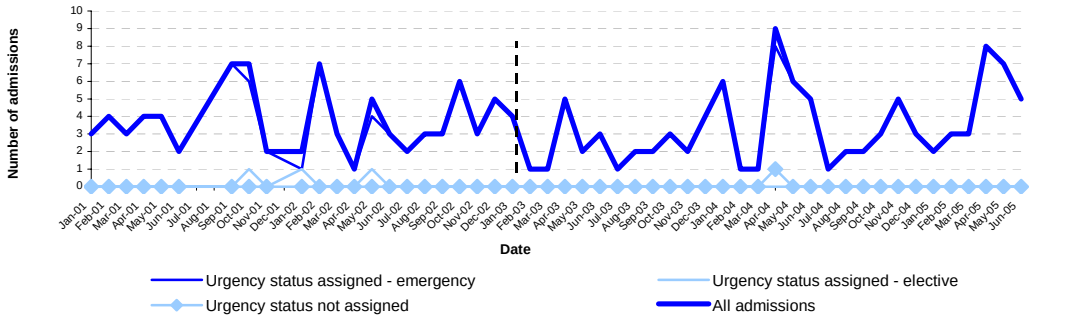

Comments: There was no observed increase in emergency admissions for respiratory disease in January 2003. However, there was an increase in emergency admissions during the winter months of 2003.
Data source: ACT Admitted Patient Care collection 2000-2001 to 2004-2005, confidential unit record file.

**Figure 17.4: ACT resident admissions to ACT hospitals for burns, by month, December 2000-June 2005.**



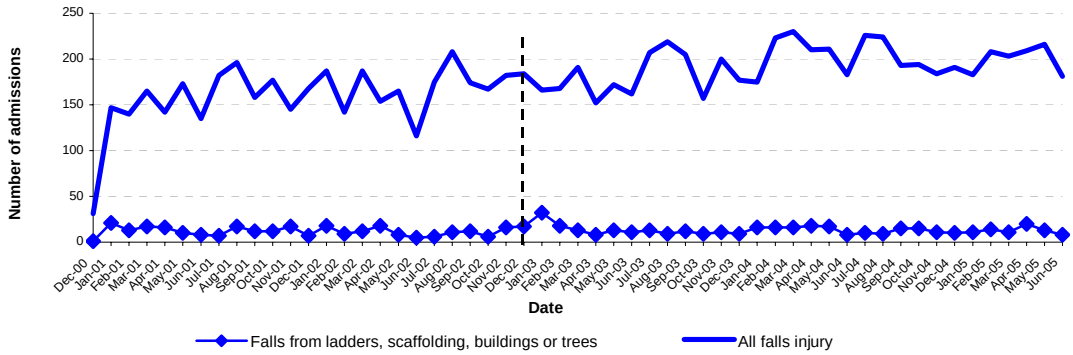

Comments: There was an increase in emergency admissions for burns in January 2003.
Data source: ACT Admitted Patient Care collection 2000-2001 to 2004-2005, confidential unit record file.

**Figure 17.5: ACT resident admissions to ACT hospitals for toxic effect of substances, by month, January 2001-June 2005**



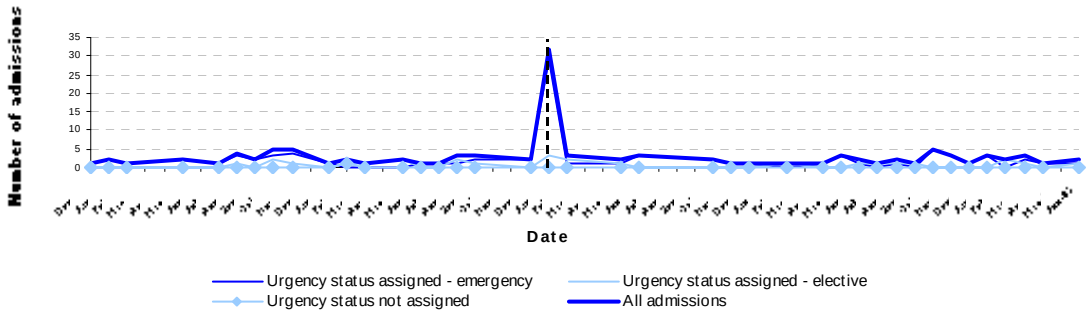

Comments: There was no observed increase in emergency admissions for toxic effects in January 2003.
Data source: ACT Admitted Patient Care collection 2000-2001 to 2004-2005, confidential unit record file.

**Figure 17.6: ACT resident admissions to ACT hospitals for falls injury, by month, December 2000-June 2005**



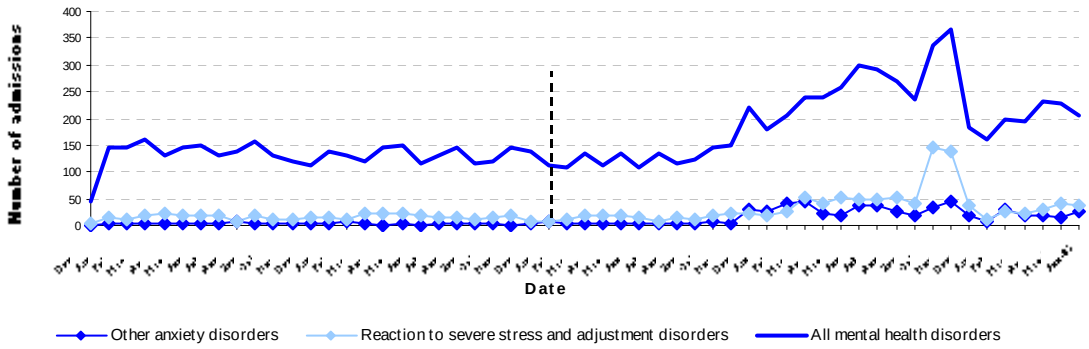

Comments: There were 32 admissions to ACT hospitals with a diagnosis of a fall from a ladder, scaffolding, building or tree in January 2003.
Data source: ACT Admitted Patient Care collection 2000-2001 to 2004-2005, confidential unit record file.

**Figure 17.7: ACT resident admissions to ACT hospitals for other injuries caused by exposure to smoke, fire and flames, by month, December 2000-June 2005**




Comments: There was an increase in emergency admissions for other injury caused by exposure to smoke, fire and flames in January 2003.
Data source: ACT Admitted Patient Care collection 2000-2001 to 2004-2005, confidential unit record file.

**Figure 17.8: ACT resident admissions to ACT hospitals for mental health disorders, by month, December 2000-June 2005**




Comments: There was no observed increase in admissions for mental health disorders in January 2003. However, there was an increase in anxiety, stress-related and adjustment disorder admissions from October-December 2003 onwards. The increase coincides with the start of the next bushfire season following the 2003 bushfires.
Data source: ACT Admitted Patient Care collection 2000-2001 to 2004-2005, confidential unit record file.

## 17.4 Lessons learned

In February 2003, an inquiry was commissioned by ACT Government to seek a better understanding of the lessons that could be learnt from the January 2003 bushfires and to identify areas for improvement in capacity building and risk management. A series of findings and recommendations from the inquiry were presented to Government in a report in August 2003 (McLeod 2003). The ACT Government response to the report has included improvements to emergency response capabilities, fire mitigation practices, communications and the dissemination of public information, operational procedures and policy and organisational and legislative changes (ACT Government 2003). The ACT Coroner's Court began an inquiry into the cause, origin and circumstances of the 2003 bushfires in June 2003 (ACT Government 2006). At the time of writing, the Coronial inquiry was ongoing.

The lessons learnt by ACT Health include insights into emergency management planning. While there was a detailed Health Emergency Management Sub-Plan in place, operations during the January 2003 State of Emergency demonstrated that the Health Sub-Plan required refinement.

In July 2004 ACT Health conducted a major exercise of the revised Health Emergency Sub-Plan entitled 'Exercise Acton'. Participants in Exercise Acton included ACT Policing, the newly created ACT Emergency Services Authority, the Southern Area Health Service and agencies from across the ACT health sector. The exercise focused on examining command, control and communications in response to a major health emergency. An exercise report was generated and key lessons learned from the exercise were used to further revise the Health Emergency Sub-Plan. Amendments to the Sub-Plan as a result of the exercise included improved incident notification and communication procedures between agencies, enhanced co-ordination of the entire health sector and enhanced co-ordination of mass casualty transport procedures (ACT Health 2004).

The Sub-Plan was amended to include recent changes in ACT emergency legislation, inter-agency policy, and to include newly established, relevant, organisations and services as a result of the January 2003 State of Emergency. The Sub-Plan was also amended to identify linkages of the ACT health sector to newly developed national health emergency plans.
Finally, the experience of the January 2003 bushfires highlighted the importance of linkages and ongoing communications between Government agencies. A liaison group consisting of representatives from various agencies has since formed and meets regularly to discuss items of common interest, in an attempt to facilitate the flow of information and to maintain and build upon existing relationships (ACT BRT 2003a).

**Emerging Issues**

- In recent years, public health issues such as bio-terrorism, the risk of an influenza pandemic (SARS, Asian Bird Flu), the bushfire experience in the ACT and the tsunami which hit Indonesia, have all emerged as leading health issues, highlighting the importance of emergency planning and preparedness.

# References


ACT BRT (ACT Bushfire Recovery Taskforce) 2003a, *The report of the Bushfire Recovery Taskforce Australian Capital Territory October 2003,* Publishing Services, Canberra.

ACT BRT (ACT Bushfire Recovery Taskforce) 2003b, 'Ash from treated timber', *ACT Bushfire Recovery Taskforce Newsletter Community Update,* issue 2*,* 21 February, p4.

ACT BRT (ACT Bushfire Recovery Taskforce) 2003c, 'Public health advice about dust and asbestos on fire damaged properties', *ACT Bushfire Recovery Taskforce Newsletter Community Update,* issue 1*,* 14 February, p4.

ACT BRT (ACT Bushfire Recovery Taskforce) 2003d, 'Private drinking water supplies', *ACT Bushfire Recovery Taskforce Newsletter Community Update,* issue 2*,* 21 February, p2.

ACT BRT (ACT Bushfire Recovery Taskforce) 2003e, 'Swimming pools and fences', *ACT Bushfire Recovery Taskforce Newsletter Community Update,* issue 2*,* 21 February, p3.

ACT BRT (ACT Bushfire Recovery Taskforce) 2003f, 'Closing access to the sewer main a top priority', *ACT Bushfire Recovery Taskforce Newsletter Community Update,* issue 2*,* 21 February, p3.

ACT Government 2003, *Government Response: Report of the Inquiry into the Operational Response to the January 2003 Bushfires in the ACT*, ACT Government, Canberra.

ACT Government 2006, The Supreme Court of the Australian Capital Territory, Canberra, viewed 22 March 2006, <http://www.courts.act.gov.au/BushfireInquiry/bushfireinquiry.htm>.

ACT Health 2003a, 'Health system responds to bushfires', *Healthy Territory*, no.5, pp.1-3.

ACT Health 2003b, *Food hygiene,* information sheet, ACT Health, Canberra, 13 February.

ACT Health 2003c, *Basic hygiene,* information sheet, ACT Health, Canberra, 13 February.

ACT Health 2003d, *Gastroenteritis,* information sheet, ACT Health, Canberra, 13 February.

ACT Health 2003e, *Evacuations of nursing homes and hostels, a*dvisory notice, ACT Health, Canberra, 20 January.

ACT Health 2003f, *Asbestos monitoring in the bushfire affected suburbs,* information sheet, ACT Health, Canberra, 14 February.

ACT Health 2004, 'Revision of the ACT Health Emergency Management Sub Plan to the ACT Emergency Plan 2004'*,* unpublished report.

Dugdale P (ACT Territory Health Controller 22-28 January 2003) 2003a, *Counselling services for fire victims,* media release, ACT Health, Canberra, 23 January.

Dugdale P (ACT Chief Health Officer) 2003b, *Health warning for high smoke levels,* media release, ACT Health, Canberra, 14 January.

Dugdale P (ACT Territory Health Controller 22-28 January 2003) 2003c, *Public safety in fire damaged areas,* media release, ACT Health, Canberra, 24 January.

Dugdale P (ACT Territory Health Controller 22-28 January 2003) 2003d, *Mask information sheet,* information sheet, ACT Health, Canberra, 27 January.

Dugdale P (ACT Chief Health Officer) 2003e, *Rain threat to ACT recreational waters,* media release, ACT Health, Canberra, 20 February.

Dugdale P (ACT Chief Health Officer) & Plovits, J (Occupational Health & Safety Commissioner) 2003, *Limiting exposure to dust from fire-damaged sites,* letter to schools, ACT Health, Canberra, February.

Dugdale P & Guest, C 2003, *ACT State of Emergency 18th to 28th January 2003 health and medical aspects: Report of the Territory Health Controller*, unpublished report.

Guest C (ACT Territory Health Controller 18-22 January 2003) 2003a, *Health and medical aspects of the bushfire disaster in the ACT,* media release, ACT Health, Canberra, 19 January.

Guest C (ACT Territory Health Controller 18-22 January 2003) 2003b, *Important disease control information for GPs,* information sheet, ACT Health, Canberra, 20 January.

Guest C (ACT Territory Health Controller 18-22 January 2003) 2003c, *Important immunisation information for GPs,* information sheet, ACT Health, Canberra, 20 January.

McLeod R 2003, *Inquiry into the operational response to the January 2003 bushfires in the ACT,* ACT Government, Canberra.

NHMRC (National Health Medical Research Council) & NRMMC (National Resource Management Ministerial Council) 2003, *National water quality management strategy: Australian drinking water guidelines 6, 2004,* National Health Medical Research Council, Canberra.

Population Health Research Centre, ACT Health & National Centre for Epidemiology and Population Health, Australian National University, 2005, 'The health impacts of smoke from the Canberra bushfires of January 2003', unpublished report.

Richardson DB & Kumar S 2004, 'Emergency response to the Canberra bushfires', *Med Journal of Australia,* vol.181, pp.40-2.

Robinson M 2003, 'Bushfires 2003: A rural GP's perspective', *Aust Fam Phys,* December, vol.32, pp 985-8.

Woollard J (General Manager, ACT Health Protection Service) 2003, *Rural residents warned of water tank risks from fires*, media release, ACT Health, Canberra, 7 February.

# 18 THE HEALTH OF ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES

**At a Glance**

Although information on Aboriginal and Torres Strait Islander peoples living in the ACT is limited, survey and administrative data indicate that:

- The Aboriginal and Torres Strait Islander community has a much younger age structure than the total ACT population.
- Aboriginal and Torres Strait Islander women have a higher fertility rate than other women.
- Aboriginal and Torres Strait Islander people have a lower life expectancy than their non-Aboriginal counterparts.
- They are highly mobile, with almost one third of Aboriginal and Torres Strait Islander people in Canberra moving house and one in ten moving three times in a one-year period.
- Of the estimated 60% of Aboriginal and Torres Strait Islander children who are identified on records, over 80% are fully immunised.
- Aboriginal and Torres Strait Islander people were diagnosed with major diseases such as cardiovascular disease, cancer and diabetes mellitus at a younger age than their non-Aboriginal counterparts.
- They are over-represented in hospital statistics for mental health and behavioural disorders.
- However, when compared with national Aboriginal statistics, they compare favourably against social indicators of income, labour force participation, education levels, access to transport and community involvement.
- ACT Health continues to pursue improved data collections on the health of Aboriginal and Torres Strait Islander people to inform policy developments for service delivery.
- ACT Health has instigated and is continuing to develop initiatives to enhance the health and well-being of its Aboriginal and Torres Strait Islander population.

Comprehensive information on the health status of Aboriginal and Torres Strait Islander peoples in the ACT is difficult to obtain, due to the small population size, a high degree of population mobility and issues concerning the recording of Aboriginality in existing health data collections. National level survey data provide some information (eg from the Census and the National Aboriginal and Torres Strait Islander Social Survey).

Most of the information relating to health conditions is obtained from ACT hospital admission data (ACT Admitted Patient Collection 2002/03 – 2003/04) and emergency department presentation data (Emergency Department Information System 2002/03 – 2003/04). However, Aboriginality is substantially under-recorded in hospital data collections, so the information presented must be interpreted with caution.

The ACT Maternal-Perinatal Data Collection (MPDC) is an exception, as validation studies have shown there is a high degree of accuracy in the identification of Aboriginal and Torres Strait Islander mothers in this data collection. Academic research such as the “I want to be heard” research on Aboriginal and Torres Strait Islander people who use substances, can also be used to give a local context.

Information about health events that are not serious enough to require hospitalisation is currently unavailable. ACT Health is working with Winnunga Nimmityjah Aboriginal Health Service Inc., the only ACT Aboriginal community controlled primary health care service, to improve data collections.

Current initiatives aimed at improving the quality and availability of Aboriginal and Torres Strait Islander health data in the ACT include:

- A study to accurately determine the level of under-identification of Aboriginal and Torres Strait Islander public hospital patients.
- A follow-up study to identify the causes behind the under-identification of hospital patients.
- Proposed amendments to the ACT death regulations to require Aboriginal status on death certificates and death registration forms.
- A project to introduce an Aboriginal identifier to pathology request forms is being investigated by the National Advisory Group on Aboriginal and Torres Strait Islander Health Information and Data (NAGATSIHID).
- Tracking of Aboriginal and Torres Strait Islander child immunisation histories.

Despite the limitations of local data relating to Aboriginal and Torres Strait Islander people, it is possible to make inferences about the health status and health needs of the population from understanding the demographic and epidemiological transitions of the population. Note that in some sections of this chapter the term “Aboriginal” has been used to refer to Aboriginal and Torres Strait Islander People, as a contraction to improve readability and interpretation.

## 18.1 Demographic transitions

The estimated resident Aboriginal and Torres Strait Islander population for the ACT in 2001 was 3,900, accounting for 1.2% of the total ACT population (ABS 2004a). The Australian Bureau of Statistics (ABS) estimates this population would have increased to between 4,204 and 4,607 persons by July 2004 (ABS 2004a). This population growth is thought to be due to a number of factors, including natural increase (the positive balance of births over deaths), net interstate migration and a greater propensity for people to identify as either ‘Aboriginal’ and/or ‘Torres Strait Islander’ (ACT Government, 2004).

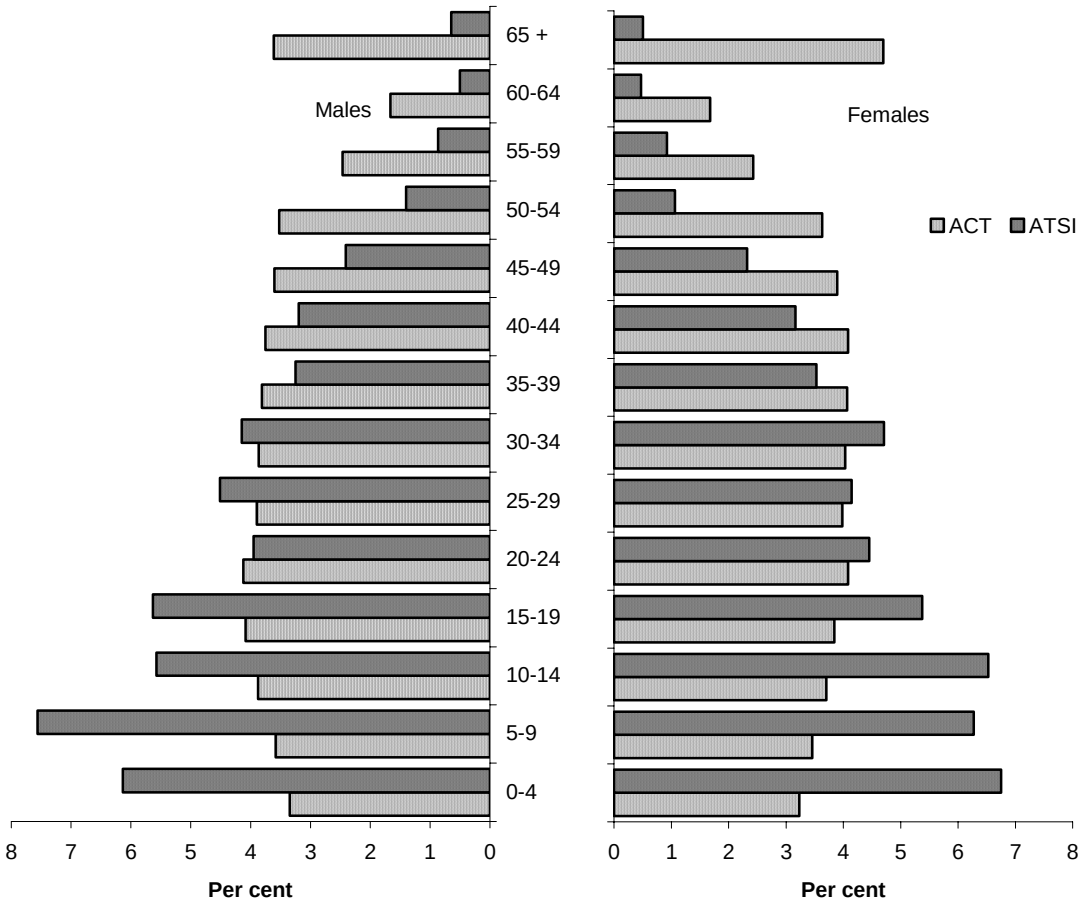
Like all populations, the Australian Aboriginal population has undergone a series of demographic transitions over time, with fluctuations in fertility and mortality (Taylor 2000). During the early period of European settlement in Australia, the Aboriginal and Torres Strait Islander population declined markedly with reduced fertility and high levels of mortality. Then in the post-war era of the 1940s and 1950s, the birth rate began to increase and the mortality rate declined, resulting in a rapid increase in population (Taylor, 2000).

More recently the focus has been on a transition based on lower population growth characterised by reductions in both fertility and mortality (Taylor, 2000). Nationally, the Total Fertility Rate (TFR) for Aboriginal women reduced rapidly during the 1970s from around 6.0 in 1970 to 3.2 in 1981 (Caldwell, 2002). The reduction then slowed and the rate was 2.7 in 1996 (ABS, 1999). In 2004, the TFR for Aboriginal women remains higher at 2.15 babies, than for all Australian women (1.76 babies) (ABS, 2004b).

Life expectancy remains significantly lower for Aboriginal and Torres Strait Islander people than for the total population. For example, the life expectancy for Aboriginal males in the ACT and NSW is 60 years (All Australian males 77 years) and for Aboriginal females is 65 years (All Australian females 82 years) (ABS, 2004c).

The higher fertility rate and lower life expectancy is reflected in the age distribution of the ACT Aboriginal and Torres Strait Islander population. The ACT Aboriginal population has a much younger age structure than the total population in the ACT (Figure 18.1), with an estimated 38% of the Aboriginal population aged 15 years or less (ABS 2002a), compared to 19% for the same age group in the non-Aboriginal population. Approximately four per cent of Aboriginal and Torres Strait Islander people in the ACT were aged over 55 years in 2001, and less than 0.5% were aged 75 years or more. In contrast, 17% of the non-Aboriginal population in the ACT were aged over 55 years, with almost four per cent aged 75 years or more in 2001.

**Figure 18.1: Age distribution of the ACT Aboriginal and Torres Strait Islander & total population, 2001**




Source: ABS, 2001 census Community Profile series: Indigenous Profile 2002.0

Aboriginal people in the ACT are highly mobile. In 2002, almost one third of Aboriginal people in Canberra had moved house in the previous year and one in ten had moved three times in a one-year period (ACT Government 2004).

The majority of Aboriginal people who moved to the ACT in 2001, moved from New South Wales (59%). Of these, 19% moved to the ACT from the immediate surrounds (Queanbeyan, the Southern Tablelands or the Lower South Coast); 25% moved from Sydney; 15% from the Murrumbidgee area and approximately 7% moved from North West NSW, Central West NSW or Illawarra (ACT Government 2004).

## 18.2 Health transitions

Associated with changes in the demographic profile of a population are transitions in health status. The epidemiological transition refers to a change in the predominant cause of morbidity and mortality from communicable or infectious diseases to non-communicable diseases. As mortality, particularly of infants and children reduces, more people survive to adulthood and the disease patterns of adults, most frequently non-communicable diseases such as cardiovascular disease, diabetes and cancer predominate (Wahdan, 1996).

The following sections present available information relating to the health of infants and children, communicable diseases, non-communicable disease patterns and lifestyle and environmental factors for Aboriginal people in the ACT.

### 18.2.1 Infant & child health

During the period 1997 to 2001, 285 Aboriginal and Torres Strait Islander women gave birth to 290 babies in the ACT. Nine per cent of babies born to Aboriginal women who were ACT residents were underweight at birth, weighing less than 2,500 grams. This rate was not significantly different from babies of non-Aboriginal ACT resident women (5.9%) (ACT Health 2004).

Nationally, Aboriginal and Torres Strait Islander children experience worse health, poorer developmental outcomes and reduced wellbeing compared to other Australian children. Research shows they have a higher prevalence of many chronic conditions, including mental health disorder, and experience higher rates of modifiable risk factors such as obesity. While evidence suggests infant mortality has declined in recent years, outcomes for Aboriginal children remain poor against key health indicators (AIHW 2005a).

In the ACT between July 2002 and June 2004, there were 160 hospital separations for ACT resident children aged 0–12 years who were identified as Aboriginal and/or Torres Strait Islanders. The average age of patients was two years. The most common causes of hospitalisation were: diseases of the respiratory system (20.0%); birth (15.6%); conditions arising in the perinatal period (13.8%); and infectious and parasitic diseases (9.4%).

During the same period, there were 741 presentations to an ACT hospital emergency department by ACT resident Aboriginal children aged 0–12 years. Over half of these presentations were children between 0–3 years of age. The most common conditions were injury and poisoning (22.3%), respiratory conditions (17.7%), and infectious diseases (16.5%).

### 18.2.2 Communicable disease

Currently, the National Notifiable Diseases Surveillance System reports communicable disease notification rates for Aboriginal Australians that are significantly higher than those reported for non-Aboriginal Australians. The highest rates in 2003 were for intestinal disease and sexually transmitted infections (ABS 2005). Communicable disease rates are generally 5-10 times higher for Aboriginal Australians compared to non-Aboriginal Australians. Nationally, hospital separation rates for communicable diseases are also several times higher among Aboriginal and Torres Strait Islander people compared to non-Aboriginal people (ABS 2005). The ACT currently does not record Aboriginal and or Torres Strait Islander status on communicable disease notifications.

In the two years from July 2002 to June 2004, there were 24 hospital separations for communicable disease in the ACT among residents who identified as Aboriginal and/or Torres Strait Islanders. The average age of persons admitted to hospital with a communicable disease diagnosis was 12 years. The median age of patients was 2 years, meaning that 50% of separations were for children aged 2 years or less.

Nationally notification rates of vaccine preventable diseases indicate that the rate ratio of Aboriginal to non-Aboriginal people's disease incidence was highest for *Haemophilus influenzae* type b (Hib) disease (9.7 times higher), followed by pneumococcal disease (4.5) and hepatitis B (4.4) (2000-02; SCRGSP, 2005).

The reliability of information on immunisation coverage in the Aboriginal and Torres Strait Islander 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 Australian Child Immunisation Register (ACIR) are identified as Aboriginal. Of those children identified, the following proportions were fully immunised in 2003:

| | |
|---|---|
| 12 – 15 months | 87% |
| 24 – 27 months | 79% |
| 72 – 75 months | 80% |

### 18.2.3 Non-communicable disease patterns

Nationally, mortality data reflects the epidemiological transition from the predominance of communicable to non-communicable diseases. The leading causes of death for Aboriginal people during 1999-2003 were diseases of the circulatory system, external causes of morbidity and mortality (accidents, intentional self harm and assault) and neoplasms (cancer) (ABS, 2005). 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.

The following sections cover conditions such as cardiovascular health, cancer, mental health, injury, respiratory disease and diabetes.

#### Cardiovascular health

According to the 2001 National Health Survey results, about one in five Aboriginal and Torres Strait Islander respondents in Australia reported a long-term health condition associated with cardiovascular disease (CVD; ABS 2002b). While the survey estimates of prevalence for CVD were not significantly different for non-Aboriginal people, Aboriginal people are hospitalised for these conditions at younger ages than other Australians. In 2001, 59% of Aboriginal people hospitalised for CVD were aged 65 years or less, compared with around 23% for other Australians. Age-specific hospital separation rates peaked in the 35–54 year-old age group, where rates were three times as high as those of other Australians (AIHW 2004a).

In the two years from July 2002 to June 2004, there were 53 hospital separations (30 male, 23 female) for CVD in the ACT for residents who identified as Aboriginal and Torres Strait Islander. The average age of Aboriginal people admitted to hospital for CVD was 56 years compared with an average age of 65 years for non-Aboriginal people. The most common condition was angina (32.1% of patients).

#### Cancer

Cancer is a leading cause of mortality for both Aboriginal and non-Aboriginal Australians. Aboriginal cancer incidence rates are reportedly lower than non-Aboriginal rates in several jurisdictions. However, due to incomplete identification of Aboriginal and Torres Strait Islander people in cancer registries, legitimate rates of cancer incidence in this population remain unclear. In contrast, mortality data from 1999-2001 indicates that deaths from cancer for Aboriginal and Torres Strait Islanders are higher than would be expected if they occurred at the same rates as for the total population (AIHW, 2004b).

In the two years from July 2002 to June 2004, there were 45 hospital separations for cancer in the ACT for residents who identified as Aboriginal and/or Torres Strait Islanders. The average age of Aboriginal persons admitted to hospital with a primary diagnosis of cancer was 49 years, compared with an average age of 59 years for non-Aboriginal people. No particular type of cancer occurred more frequently than others.

### Mental health

Detailed information about the incidence or prevalence of mental disorder among Aboriginal and Torres Strait Islander people is currently unavailable, although Aboriginal and Torres Strait Islander people are overrepresented in hospital statistics for mental and behavioural disorders (ABS 2001). This lack of information is partly due to the need for a culturally specific means of reporting mental health issues that encompasses a holistic view of health.

In the two years from July 2002 to June 2004, there were 102 hospital separations for mental health conditions in the ACT among residents who identified as Aboriginal and/or Torres Strait Islanders. Over 40% of these admissions were due to repeat admissions (more than 10 admissions for one person during the period). The average age of these persons admitted to hospital was 34 years, ranging from 15–52 years. The most common conditions identified were mood disorders (49%), stress (12%), and disorders attributable to substance abuse (11%), with some people experiencing more than one condition.

### Injury and poisoning

Nationally, injury and poisoning are leading causes of morbidity and mortality in the Aboriginal and Torres Strait Islander population, and in 2001 the hospital separation rate was more than double the non-Aboriginal population. Aboriginal men (45.7 per 1,000 population) were more likely to be hospitalised for injury or poisoning than women (33.5 per 1,000) (SIMC 2004).

In the two years from July 2002 to June 2004, there were 102 hospital separations for injury or poisoning in the ACT among residents who identified as Aboriginal and/or Torres Strait Islanders. Almost half of these hospital separations were for people aged between 15 and 34 years (44.1%), and the average age was 33 years. The most common causes of injury and poisoning were falls, intentional self-harm, complications of care, and transport accidents.

### Diabetes mellitus

After adjusting for age differences, Aboriginal and Torres Strait Islanders in Australia are about three times more likely than the non-Aboriginal population to report some form of diabetes, with the condition almost twice as prevalent in remote areas compared to non-remote areas of the country. The incidence of diabetes increases markedly with age. Aboriginal people are reporting diabetes at younger ages (35 to 44 years) than non-Aboriginal people (55 years or more) (ABS 2002b).

In the two years from July 2002 to June 2004, there were 108 hospital separations for diabetes (primary or associated diagnosis of diabetes, excluding dialysis) in the ACT for residents who identified as Aboriginal and/or Torres Strait Islanders. The average age of persons admitted to hospital with a primary diagnosis of was 57 years, similar to the average age for non-Aboriginal people (59 years).

### Respiratory Disease

Respiratory conditions (mostly upper respiratory tract conditions and asthma) were the most common problem managed at General Practitioner consultations with Aboriginal and Torres Strait Islander people nationally between 1998 and 2003(ABS, 2005).

Nationally, Aboriginal and Torres Strait Islander people reported similar rates of respiratory disease to non-Aboriginal people (ABS, 2005). However, Aboriginal people were more likely to report asthma as a long-term health condition across all age groups. According to the 2001 National Health Survey results, the prevalence of asthma in the national Aboriginal population was higher in older age groups (aged 55 years or more) (ABS 2002b).

In the two years from July 2002 to June 2004, there were 68 hospital separations for respiratory disease in the ACT among residents who identified as Aboriginal and/or Torres Strait Islanders. Almost half of the hospital admissions (42.5%) were for children aged less than five years.

## 18.2.4 Lifestyle and Environmental Factors

Lifestyle factors influence the health status and health-risk profile of individuals. Tobacco smoking, for example, increases the risk of a range of diseases including cardiovascular disease and certain types of cancer. Other factors that have been linked to health outcomes include income, employment and access to transport (ABS, 2005). The 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) provides information on the prevalence of health risk and protective factors and environmental factors (see Appendix 1: Methods for more information on this survey).

Table 18.1 presents health behaviours for adult (15 years or more) Aboriginal and Torres Strait Islander people from the ACT and Australia in 2002.

**Table 18.1: Selected health status indicators, Aboriginal and Torres Strait Islander persons aged 15 years or more, ACT & Australia, 2002**

| Health Status Indicator | ACT | Australia |
|---|---|---|
| **Health risk behaviours** | | |
| Daily smoker | 43.1% | 48.6% |
| Risky/high risk alcohol consumption in last 12 months[(a)] | 14.2% | 15.1% |
| Participated in sport/physical recreation in last 12 months[#] | 64.1% | 49.3% |

Data source: ABS 2004d.

(a) NHMRC 2001.
# There was a statistically significant difference between estimates for the ACT and Australia.

ACT respondents (64.1%) were more likely to report having participated in sport or physical recreation in the 12 months prior to the study than their national counterparts (49.3%).

Social factors have previously been linked to health status, service access and service utilisation in the ACT (Glover et al 1999). The interaction between the social environment and health is not always clear and many of the factors affecting health are outside the realm of medical intervention, however, they are an important consideration in health assessment and health planning as they provide insights into opportunities for health gain.

Differences in the distribution of social factors for Aboriginal peoples in the ACT and Australia are evident (Table 18.2). While the NATSISS suggests social indicators for the Aboriginal and Torres Strait Islander population in the ACT compare favourably against national indicators, comparisons against a survey of the non-Aboriginal ACT population (2002 General Social Survey) reveal a range of inequities including an average weekly household income of $631 for ACT Aboriginal respondents aged 18 years or more, compared to $865 for non-Aboriginal respondents in the ACT (ABS 2004e).

**Table 18.2: Selected social factors influencing health, Aboriginal and Torres Strait Islander persons aged 15 years or more, ACT &Australia, 2002**

| Social Factor | ACT | Australia |
|---|---|---|
| **Income** | | |
| Mean equivalised gross household income#(a) | $619 | $387 |
| Wages and salaries main source of income | 52.4% | - |
| Government pensions and allowances main source of income | 34.8% | - |
| **Labour force** | | |
| Employed (full or part time)# | 62.8% | 46.2% |
| Unemployed# | 5.6% | 13.8% |
| **Education** | | |
| Non-school qualification#(b) | 44.8% | 26.1% |
| Completed Year 12 | 12.5% | 9.9% |
| **Transport** | | |
| Access to motor vehicle(s) to drive# | 71.1% | 54.6% |
| Cannot, or often has difficulty, getting to the places needed# | 5.3% | 11.7% |
| **Community involvement** | | |
| Had undertaken voluntary work in last 12 months# | 47.4% | 27.6% |
| Attended a cultural event in the last 12 months | 73.3% | 68.1% |

Data source: ABS 2004d.

(a) Adjusted for differences in household size and composition.
(b) Includes university degree, certificate or diploma etc.
(c) Proportion of households surveyed with an owner in residence.
- Figure not available from published data sources.
#There was a statistically significant ($p<0.05$) difference between estimates for the ACT and Australia.

Results from the 2002 NATSISS suggest that Aboriginal and Torres Strait Islander peoples in the ACT have higher income levels than their counterparts nationally (Table 18.2). Estimates from the 2002 survey suggest that, on average, Aboriginal people (aged 15 years or more) in the ACT earned about 60% more than their national counterparts each week, after adjusting for differences in household size and composition.

Aboriginal people in the ACT were less likely to report being unemployed and are more likely to be employed either part or full time than Aboriginal people nationally (Table 18.2).

Significantly higher levels of educational attainment were reported by Aboriginal people in the ACT compared with Aboriginal people nationally (Table 18.2). According to the 2002 NATSISS, Aboriginal people from the ACT (aged 15 years or more) were more likely to report having a non-school qualification, such as a university degree, certificate or diploma (44.8%), than their national counterparts (26.1%) in 2002.

Aboriginal people in the ACT reported having better access to transport than Aboriginal people nationally (Table 18.2). They reported being more likely to have access to a motor vehicle to drive (71.1%) and less likely to experience difficulty in getting places when needed (5.3%), compared to their national counterparts (54.6% and 11.7%, respectively) in 2002.

A high level of participation in the community was also reported, with almost half of the ACT Aboriginal respondents having undertaken voluntary work and almost three quarters having attended at least one cultural event during the 12 months prior to the survey (Table 18.2).

## 18.3 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 (refer section 4.6.1 for further information on alcohol and drug use services), 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.

Improving the accessibility of mainstream health services for Aboriginal and Torres Strait Islander people in the ACT is also a current priority. ACT Health will be implementing a series of initiatives in 2006 to increase cultural awareness and understanding in mainstream health service provision, and to ensure that the needs of the Aboriginal and Torres Strait Islander community are taken into consideration in the development and delivery of government health services. These initiatives include cultural awareness training for all ACT Health personnel, the introduction of an Aboriginal Health Impact Statement to accompany all major strategies and policy proposals, and improved coordination between mainstream and community-controlled stakeholders in Aboriginal and Torres Strait Islander health and wellbeing.

A new Aboriginal and Torres Strait Islander Health and Family Wellbeing Plan for the ACT will be 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.

# References


ACT Government 2004, *A social and cultural profile of Aboriginal and Torres Strait Islander People in Canberra*, ACT Government, Canberra.

ACT Health 2004, *Maternal and perinatal health in the ACT 1997-2001*, health series no. 36, ACT Government, Canberra.

ABS (Australian Bureau of Statistics) 1999, *Births, Australia, 1998*, cat. no. 3301.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2001, *The health and welfare of* Australia's *Aboriginal and Torres Strait Islander peoples,* cat. no. 4704.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2002a, *2001 Census indigenous profile, Australian Capital Territory (state 8),* viewed 31 October 2005, <http://www.abs.gov.au>.

ABS (Australian Bureau of Statistics) 2002c, 2001 *National health survey: Aboriginal and Torres Strait Islander results, Australia*, cat. no. 4715.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004a, *Australian demographic statistics: June quarter 2004*, cat. no. 3101.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004b, *Births, Australia, 2003*, cat. no. 3301.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004c, *Deaths, Australia, 2003*, cat. no. 3302.0, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004d, *2002 National Aboriginal & Torres Strait Islander social survey, Australian Capital Territory*, cat. no. 4714.8.55.001, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2004e, *2002 General social survey*, cat. no. 4159.8.55.001, ABS, Canberra.

ABS (Australian Bureau of Statistics) 2005, *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples,* cat. no. 4704.0, ABS, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004a, *Heart, stroke and vascular diseases, Australian facts 2004,* cat. no. CVD 27, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2004b, *Ill Health Conditions*, <http://www.aihw.gov.au/indigenous/health/health_conditions.cfm#cancer>.

AIHW (Australian Institute of Health and Welfare) 2005a, *Selected highlights from a picture of Australia's children*, cat. no. PHE 65, AIHW, Canberra.

AIHW (Australian Institute of Health and Welfare) 2005b, *Living dangerously: Australians with multiple risk factors for cardiovascular disease,* AIHW Bulletin, issue 24, AIHW, Canberra.

Caldwell J C 2002, Aboriginal society and the global demographic transition, In Briscoe G & Smith L (Eds.), *The Aboriginal Population Revisited: 70,000 years to the present*, *Aboriginal History Monograph 10*, Aboriginal History Inc., Canberra.

Chin G & Segasothy M 2000, 'Gouty arthritis in Australian Aborigines', *Australia and New Zealand Journal of Medicine*, vol. 30, no. 5, pp. 639–640.

Glover J, Watts V & Tennant S 1999, *A social health atlas of Australia, volume 9: Australian Capital Territory*, Public Health Information Development Unit, Adelaide.

NHMRC (National Health and Medical Research Council) 2001, *Australian alcohol guidelines: Health risks and benefits,* AusInfo, Canberra.

Statistical Information Management Committee (SIMC) 2004, *National summary of the 2001 and 2002 jurisdictional reports against the Aboriginal and Torres Strait Islander health performance indicators*, cat. no. AIHW 12, Australian Institute of Health and Welfare, Canberra.

Steering Committee for the Review of Government Service Provision (SCRGSP) 2005, *Overcoming indigenous disadvantage, key indicators 2005*, Productivity Commission, Canberra.

Taylor J 2000, *Transformations of the indigenous population: recent and future trends*, Discussion paper no. 194/2000, Centre for Economic Policy Research, ANU, Canberra, viewed May 2006 at http://www.anu.edu.au/caepr/Publications/DP/2000_DP194.pdf.

Wahdan M. H. (1996), The epidemiological transition, *Eastern Mediterranean Health Journal,* vol. 2, Issue 1, pp. 8-20. Viewed 30 May 2006 at http://www.emro.who.int/Publications/EMHF/0201/02.htm.

# 19 OPPORTUNITIES FOR HEALTH GAIN IN THE ACT

The ACT population is a highly mobile, relatively young, affluent population in comparison to other jurisdictions and the health profile, health needs and issues identified in this report largely reflect these population differentials. This report has attempted to identify where the greatest gains in health could be made in the ACT.

The majority of health indicators for the ACT are consistent with indicators for Australia, suggesting health status in the Territory compares favourably to the national average. However, there are inequities in health outcomes between population groups and health issues and trends of concern specific to the ACT. In particular, the health of our Aboriginal and Torres Strait Islander population and the health of older people, in conjunction with the ageing of the population, are issues outlined in this report. The ageing of the population is a key factor that will continue to impact on health gains in the Territory over time. ACT Health has an ongoing plan of action to meet the health needs associated with the expected demographic shift in age structure. The Health of Older People in the ACT (Chapter 16), provides an outline of the strategic approach to the planning and implementation of health care initiatives that will assist in maintaining existing levels of health in the Territory for this section of the population.

Over recent decades, advances in clinical practice, treatment and medical technologies have yielded considerable health gain. In particular, there have been significant advances in the treatment of cardiovascular disease and cancer (both leading contributors to the disease burden), resulting in significant reductions in mortality (AIHW 2002). Initiatives such as the Stroke Unit, which opened at The Canberra Hospital in 2004, are expected to yield further reductions in mortality and the level of disability following stroke in the Territory. In addition, a recent report released by ACT Health (2003) suggests that health gain has also been achieved through the implementation of the Quality and Safety Program which seeks to improve patient safety, service effectiveness, appropriateness, accessibility and efficiency.

Disease prevention and health promotion activities are a mainstay for future health gain. Major health gains are still possible by addressing the prevalence of modifiable chronic disease risk factors like tobacco smoking, which accounts for an estimated 9.7% of the total disease burden in Australia alone (Mathers et al 1999). Similarly, obesity accounts for an estimated 4.3% of the total disease burden in Australia. Obesity is a risk factor for a range of chronic diseases, including cancer and cardiovascular disease - the leading causes of mortality in the ACT, diabetes - which is increasing in prevalence, and musculoskeletal disorders - which affect about a third of the population at any one time.

This report highlights a number of disturbing trends: for instance, exposure to solar UVR is a risk factor for skin cancer, one of the most common cancers in the ACT. Yet, studies reveal an emerging trend among young people who are increasingly avoiding protecting their skin from exposure to the sun. Similarly, maintaining high levels of immunisation coverage in at risk populations is critical to future health gain. However, immunisation coverage levels in young children have declined since the last reporting period and the incidence of vaccine preventable disease has increased. In 2003, there were outbreaks of pertussis and meningococcal disease in the ACT.

Early detection of disease and early intervention can also yield health gain. Significant gains through early detection have already been made with cancer screening programs. This report points out that there are also potential gains to be made with early intervention in areas such as mental health.

This report identifies emerging issues that are challenging global health systems such as the threat of terrorism and naturally occurring disasters, including the threat of an influenza pandemic. The ACT is working with other jurisdictions to provide a nationally coordinated all hazards approach to the health aspects of disaster management. Since the ACT bushfires, the ACT has made considerable progress in reviewing disaster management plans and this will continue to be a focus for future health planning.

Ongoing research is critical to building and maintaining health gain in the ACT. The ACT Health and Medical Research Council (AHMRC), established in September 2003, is a high level advisory body providing strategic advice to the Minister and ACT Health on development of the ACT health and medical research sector. A key component of the work undertaken by the Council includes overseeing the development and implementation of the Health and Medical Research Support Program. The Program aims to encourage leading health care workers in the ACT to become part of the research community, it supports research leaders to attract new funds to the ACT and promotes Canberra as a national and international research hub in the region (see Appendix 4 for further information).

Future health gain in the ACT is dependant on the sustainability of the health system. Sustainability can be described as providing for the needs of today while maintaining sufficient resource to provide for the needs of tomorrow. Health and wellbeing have been identified by Government as core dimensions of sustainability and will be monitored and reported on regularly over time as part of a wider commitment to surveillance of progress towards sustainability in the ACT (ACT Government 2003, 2004a, 2004b, 2004c). Issues such as building and maintaining a skilled health workforce is critical to future health gain in the Territory.

In the final analysis, this report shows that people in the Territory enjoy good health, and although there are many encouraging trends, there are also areas of concern and emerging issues with the potential to restrict future health gain. By deconstructing the burden of disease for leading causes of ill health, understanding the relative contribution of mortality and disability to the total burden and the associated drivers of ill health, this report attempts to identify points for intervention along the disease continuum with the greatest potential for health gain. In the process, this report also outlines the strategic approach adopted by ACT Health to address these issues and the relevant actions implemented during the reporting period.

# References

ACT Government, Office of Sustainability 2003, *People place prosperity: a policy for sustainability in the ACT*, ACT Government, Canberra.

ACT Government, Office of Sustainability 2004a, *Measuring our progress, Canberra's journey to sustainability: volume 1 our story*, ACT Government, Canberra.

ACT Government, Office of Sustainability 2004b, *Measuring our progress, Canberra's journey to sustainability: volume 2 our core dimensions*, ACT Government, Canberra.

ACT Government, Office of Sustainability 2004c, *Measuring our progress, Canberra's journey to sustainability: volume 3 our ecological footprint*, ACT Government, Canberra.

ACT Health 2003, *Quality and safety in health care: Report on progress*, ACT Health, Canberra.

AIHW (Australian Institute of Health and Welfare) 2002, *Trends in deaths: Analysis of Australia data 1987–1998 with updates to 2000*, cat. no. PHE 40, AIHW, Canberra.

Mathers C, Vos T, & Stevenson C 1999, *The burden of disease and injury in Australia,* AIHW, Canberra.

National Obesity Taskforce (2003), *Healthy weight 2008: the national action agenda for children and young people and their families,* DoHA, Canberra.

# APPENDICES

# Appendix 1: Methods

This report includes data from a range of different sources. This section provides a brief description of the major data sources and statistical methods used to produce the information presented in this report. SPSS version 11.5 was used for the analysis of hospital separation data (ACT Admitted Patient Care Collection), deaths data (Australian Bureau of Statistics Deaths Data) and maternal and infant data (Maternal Perinatal Data Collection).

# ACT Data Collections

## ACT ADMITTED PATIENT CARE COLLECTION 1992/93 – 2003/04

The data sets in this collection used to produce information for the report contain details of all ACT hospital inpatient records between July 1992 to June 2004. 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 10$^{th}$ 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 9$^{th}$ 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 - 2003

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 resident's death registrations between January 1993 and December 2003. The collection includes deaths data for ACT residents registered anywhere in Australia. The deaths data from the ABS has 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 10$^{th}$ Revision of the International Classification of Diseases (ICD-10). Deaths registered prior to 1999 are coded according to the 9$^{th}$ 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 - 2003

The ACT Maternal Perinatal Data Collection is a population based collection covering all births in ACT hospitals (public and private) and home births in the ACT, between 1994 and 2000. It does not include interstate births where the mother is usually resident in the ACT. Each data set includes all live births and 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.

The birth-related data obtained from the collection and presented in this report have been accessed using SPSS version 11.5.

Some of the maternal, infant and birth-related data presented in this report have been obtained from various reports produced by the Australian Bureau of Statistics. These reports are referenced accordingly in the text.

### ACT CANCER REGISTRY DATA

The ACT Cancer Registry was established in 1994, when cancer reporting became mandatory in the ACT. Four hospitals, three day surgeries, seven nursing homes and four pathology laboratories notify cancer diagnoses to the registry.

The Cancer registry data presented in this report cover the period 1999 to 2003 and were accessed using SPSS version 11.5.

### ACT EMERGENCY DEPARTMENT INFORMATION SYSTEM

The ACT Emergency Department Information System (EDIS) contains records of patient presentations to The Canberra Hospital and Calvary Hospital Emergency Departments. The EDIS data 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

### 2001 NATIONAL HEALTH SURVEY

The 2001 National Health Survey conducted by the Australian Bureau of Statistics collected information on illness and injury, health care use and health-risk factors from respondents of all ages across Australia. The final survey sample from the ACT included 2,219 respondents.

For this report, data were obtained from tabulated summary tables produced by the Australian Bureau of Statistics and from published reports.

### ACT CHILD HEALTH SURVEY 2001

In 2001 the NSW Department of Health conducted a survey on the health of children in NSW and the ACT, via computer assisted telephone interview. The ACT sample was funded by ACT Health. The survey questionnaire covered topics including the use of health services, chronic disease, health-risk behaviours, social support, social capital, family functioning, emotional and behavioural problems. The ACT sample comprised 505 ACT children aged between 0-12 years.

For this report, data were obtained from tabulated summary tables produced by the NSW Department of Health and from a copy of the data set, accessed using SPSS version 11.5.

### 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.

### 2002 GENERAL SOCIAL SURVEY

The 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 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 in 2002.

The survey collected information on the following:

- Demographic/core characteristics – age, sex, mobility etc.
- 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 - including dwelling characteristics; tenure type; housing costs; and household facilities
- Education - including educational attendance; attainment; and experience
- Employment - including labour force status; employment details; precariousness; unemployment details
- Income - including level of income; and sources of income
- Financial stress - including cash flow problems
- Information technology - including access to a working telephone; computer use; and Internet use
- Transport - including transport use; access; and perceived difficulties in usage
- Law and justice - including victimisation; contact with police; and use of legal services

## 2002 AUSTRALIAN SECONDARY STUDENTS ALCOHOL AND DRUG SURVEY

In 2002, ACT Health and the Cancer Council ACT conducted the ACT Secondary Students Alcohol and Drug (ASSAD) survey. The survey 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 2002 survey was also designed to collect information about sun protective behaviours, nutrition, physical and leisure-time activities.

The target population for the 2002 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.

Previous ASSAD surveys were conducted in the ACT in 1996 and 1999.

## 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 respondent 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.

# Other Data Sources

## COMMUNICABLE DISEASE NETWORK AUSTRALIA

The Communicable Disease Network Australia (CDNA) was established in 1989 (as the Communicable Diseases Control Network), as a joint initiative of the National Health and Medical Research Council and Australian Health Ministers' Advisory Council. The network oversees the co-ordination of national communicable disease surveillance, responds to communicable disease outbreaks of national importance and oversees the field training of communicable disease epidemiologists.

Since 1995, the Network has overseen the implementation and development of the National Communicable Diseases Surveillance Strategy. The strategy aims to develop the infrastructure and systems for effective national surveillance, preparedness and responses to communicable disease risks.

Notifiable communicable diseases in the ACT are recorded by the ACT Communicable Disease Control Section within ACT Health. Disease notification records are regularly forwarded to the CDNA as part of their disease surveillance effort. Annual numbers of disease notifications have been made available by the CDNA on the internet and the communicable disease data that has been presented in this report has been obtained from the 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' estimates. 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). 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 in this report has been obtained from Australian Bureau of Statistics 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 Australian Bureau of Statistics 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.

## 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.

# Appendix 2: ICD-10-AM Diagnostic and 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** |
| **Congenital malformations/deformations etc** | **Q00-Q99** |
| **Symptoms/signs/abnormal clinical and laboratory findings** | **R00-R99** |

| Diagnostic description | ICD-10-AM code |
|---|---|
| **External causes of mortality and morbidity** | **V01-Y98** |
| Transport accidents | V01-V99 |
| Falls | W00-W19 |
| Drowning | W65-W74 |
| Poisoning by pharmeceuticals | X40-X44 |
| 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 |
| 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 |

# Appendix 3: Special Acknowledgements

Lorraine Anderson
Cathy Baker
Carolyn Banks
Kylie Begg
Sarah Bellinger
Dr Andrew Black
Maureen Bourne
Prof Frank Bowden
Peter Brady (CMD)
Graham Brice
Richard Bromhead
Dr Peggy Brown
Prof Mark Budge
Ian Bull
Julie Burke (CMD)
Jean Butler (DUS)
Megan Cahill
Janet Chapman (GSAHS)
Ronis Chapman
Sue Chicchio
Karen Ciszek
Judith Colquhoun
Dianne Compton
Michael Conroy
Mark Cormack
Vicki Crispe
Helene Delaney
Linda De Ridder
Dr Paul Dugdale
Prof David Ellwood
Adrian Farrant
Dr Alex Fisher
Jodie Fishi (Winnunga)
Margaret Flaherty
Margaret Foley
Iain Fox
Louise Freebairn
Bill Ganas
Prof Nick Glasgow (PHCI)
Dr John Glover (PHIDU)
Michael Goiser
Margo Goodin
Alison Graham
Dr Charles Guest
Jorge Guillen
Linda Halliday
Riemke Hampen
Steve Hartnett
Kim Holden
Kerryn Hunter
Dr Mark Hurwitz
Angela Imbriano
Dr Geetha Isaac-Toua
Brian Jacobs
Carol Kee
Christopher Kelly
Liza Kelsall
Dr Alison Kent
Solen Kernais
Dr George Koperski
Denise Lamb
Melissa Langhorne
Moira Lye
Dr Sandra Lilburn (ACTCOSS)
Dr Elspeth MacDonald
David McDonald
Katherine Mackay
Vicki Mahood
Sam Moskwa
Erin O'Connell
Irene Passaris
Dennis Pianca
David Power (Environment ACT)
Lisa Rawle
Jenelle Reading
Prof Drew Richardson
Craig Ritchie
Simon Rockliff
Dr Marielle Ruigrok
Krys Sadkowsky (AIHW)
Velda Schubert
Tim Sealey
Julie Searle
Rosalind Sexton
Catherine Shands
Mohan Singh
Prof Gary Slade (AU)
Michael Sparks
Patrick Stakelum (CMD)
Bill Stone
Jane Strang
Prof Robyn Stuart-Harris
Kathy Tager (NDSS)
Nicola Tatham
Ian Thompson
Linda Trompf
Kate Turner
Robert Van Der Hoek (AIHW)
Larry Vaughan
Christine Waller
Robyn Wentworth
Dr Ian White
Alanna Williamson
John Woollard
Erica Wright
Jennie Yaxley
Katyoon Yazdani

# Appendix 4: The ACT Health and Medical Research Council

The ACT Health and Medical Research Council (AHMRC), established in September 2003, is a high level advisory body providing strategic advice to the Minister and ACT Health on development of the ACT health and medical research sector. A key component of the work undertaken by the Council includes overseeing the development and implementation of the Health and Medical Research Support Program. The Program aims include:

- providing practical support to research leaders in the ACT to attract new research funds to the ACT;
- promoting Canberra as a national and international research hub; and,
- encouraging leading ACT health care workers to become part of the research community.

In 2004-05, a total of $201,632 was allocated to proposals under the program. Grants were made available under the following three categories:

- Large Project Development Grants, designed to support the development and documentation of large research project proposals;
- Journal Editorialships/Hosting Research Meetings, designed to support the ACT research fraternity in its research community building activities, including hosting national and international research meetings in Canberra, and editing academic journals; and,
- Short-term fellowships.

## ACT HEALTH AND MEDICAL RESEARCH COUNCIL MEMBERSHIP

| | |
|---|---|
| Chair: Professor Scott Henderson, Professor Emeritus, ANU. | Australian National University |
| Professor Paul Gatenby | Dean of the ANU Medical School |
| Professor David Ellwood | Associate Dean of the Canberra Clinical School |
| Professor Tony McMichael | Director, National Centre for Epidemiology and Population Health (representing JCSMR, NCEPH, RSBS & NIMH) |
| Professor Roger Dean | Vice Chancellor, University of Canberra |
| Ms Elizabeth Grant | Chair of the ACT Health Ethics Committee |
| Dr Lyndal Thorburn | Managing Director, Advance Consulting and Evaluation |
| Dr Paul Dugdale | ACT Chief Health Officer |
| Dr Gordon Waddington | Associate Professor of Physiotherapy at the University of Canberra |
| Professor Richard Head | Director CSIRO P-Health Flagship |

Further information on the activities of the AHMRC can be found on the ACT Health website < http://health.act.gov.au>.

# GLOSSARY

**Age-sex standardisation** is a demographic technique for adjusting for the effects of age and sex between populations, which allows comparisons between those populations.

**Age-specific rate** refers to a number of events within an age group, of a specific age group in the population. Unless otherwise stipulated, rates are expressed per 100,000 population in this report.

**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 disease** (CVD) is a disease relating to the heart and blood vessels. CVD is also called 'circulatory disease'. CVD includes 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.

**Co-morbidity** refers to a co-existing disease or disorder.

**COPD** refers to chronic obstructive pulmonary disease, a respiratory disease.

**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.

**Endemic** refers to a disease that occurs frequently in a population.

**Epidemic** refers to a sudden outbreak of disease that spreads rapidly through a population.

**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.

**Herd immunity** is a term applied when sufficient numbers of people in a population are immune (immunity may be acquired through vaccination) to a virus that they inhibit its spread in the population.

**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 a respondent's levels of anxiety and depressive disorder in the last four weeks.

**Labour force** in employment refers to those persons employed and those unemployed seeking employment.

**Live birth** is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta attached, each product of such a birth is considered live born (WHO definition). The ACT definition for a livebirth differs from the WHO definition however, 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.

**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.

**Nulliparity** - never having given birth to a live infant.

**Oocyst** refers to a thick-walled structure in which the spore of a parasite, such as *Cryptosporidium parvum*, develop.

**Overconsumption** occurs when the energy consumed through diet exceeds energy needs.

**Pandemic** refers to an epidemic that is so widely spread that people in different countries are affected; a global epidemic.

**Parenteral inoculation** refers to non-oral inoculation into the body.

**Perinatal** refers to the period from 20 weeks gestation to within 28 days after birth.

**Perinatal death** refers to a stillbirth or a neonatal death.

**Pertussis** (whooping cough) is a childhood communicable disease.

**Postneonatal 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.

**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.

**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.

**Years of life lost** (YLL) reflects the burden of premature mortality in a population.