EPIDEMIOLOGY UNIT
Population Health

Health Indicators
Tasmania 2008

Department of Health and Human Services

Tasmania
Explore the possibilities

Acknowledgements

This publication has been prepared by the Population Health Epidemiology Unit, Department of Health and Human Services. The Unit wishes to acknowledge the input of staff from the following areas:

Community Health Services, DHHS

Communicable Diseases Prevention Unit

Acute Health Services, DHHS

Information Management Team

External Organisations

Australian Bureau of Statistics
Australian Centre for Burden of Disease and Cost-Effectiveness
Australian Institute of Health and Welfare
Cancer Council of Tasmania
Cancer Registry, Menzies Research Institute, University of Tasmania
Centre for Behavioural Research in Cancer

Please note: Health Indicators Tasmania 2008 should be read in conjunction with the State of Public Health Report 2008.

Enquiries about this publication should be directed to:

The Manager
Epidemiology Unit
Population Health
Department of Health and Human Services
Tasmania 7000

Copies of this publication can be downloaded from the Tasmanian Department of Health and Human Services website: http://www.dhhs.tas.gov.au/agency/chs/pubenviron.php

Foreword

Health Indicators Tasmania 2008 provides a comprehensive and detailed picture of the health of the Tasmanian population. It is a companion document to the *State of Public Health Report 2008*, which is required to be tabled in Parliament every five years in accordance with the Public Health Act 1997.

The purpose of *Health Indicators Tasmania 2008* is to provide a summary of the most salient factors influencing the health status of Tasmanians and to provide guidance on future directions to be taken to improve health and to reduce the burden of disease in Tasmania. The report presents the latest available information on the health of the Tasmanian population and includes data on the leading causes of disease, mortality and health related behaviours, and their trends over time.

The indicators used throughout this report are derived from measures of demographic, health determinants, burden of disease, cancer incidence and mortality, with a strong focus on conditions included in the *Australian National Health Priority Areas* (NHPA) initiative.

Health Indicators Tasmania 2008 represents the continued commitment of the Department of Health and Human Services in providing important epidemiological data concerning the health status of the Tasmanian population. The information provided within the report will provide a useful resource for health planners, researchers, government and non-government agencies, local communities and the general public.

It is anticipated that the evidence presented here will be used to inform strategic and operational directions so that population health efforts in Tasmania reflect best practice in influencing patterns of health service demand and reducing health disadvantage within the Tasmanian population.

It is my intention that the implementation of the Tasmanian Health Plan will strongly focus on improving population health outcomes; and I hope that in five years time the benefits of this approach will already be realised in a number of the measures that are presented here.

David Roberts

Secretary

Department of Health and Human Services

Contents

List of Tables

List of Figures

Summary of Key Findings

Population Demographics

- At the time of the 2006 Census, the Tasmanian population was 476 480 persons. This represents 2.4% of Australia's total population.
- Approximately half of Tasmania's population is located in the south of the state, 28% in the north, and 22% in the north-west.
- Approximately 3.5% of Tasmania's population identify as being of Aboriginal or Torres Strait Islander origin.
- Tasmania's population has grown by 6.7% over the last twenty years. This is largely the result of an increased population flow to Tasmania, more births, fewer deaths, and an increase in life expectancy.
- Projections for the next 45 years show a significant shift in the age structure towards older age groups, with the proportion of those aged 65 years and over expected to double.

Social Indicators

- Social indicators present a mixed picture of progress, with some improvements noted since the last census in 2001, such as lower unemployment, improved education, and higher incomes, offset by some backward steps such as declining workforce participation by sole parents.
- The estimated unemployment rate for Tasmania in 2006 was 6.6%, compared with 5.2% nationally. Tasmania's unemployment rate has been traditionally higher than national averages.
- Tasmania had the lowest median weekly individual income of any State or Territory in 2006, at $398 for those aged 15 years and over. This is compared with a national median weekly income of $466.
- Tasmania had the second lowest proportion of people with undergraduate degrees in 2006 (2.5% less than the national level) and the lowest proportion of people with post graduate qualifications of all states and territories.

Mortality

- Tasmania had the second lowest life expectancy of all states and territories for the period 2002 to 2004. Tasmanian males can expect to live for 76.7 years and females for 81.8 years.
- Life expectancy is predicted to continue to improve. By 2021, the projected life expectancy for Tasmanian males will be 80.1 years and females will be 84 years.
- Aboriginal and Torres Strait Islander peoples have a much lower life expectancy than the general population. In the period 1996 to 2001 the life expectancy at birth for indigenous Australians was estimated to be 59.4 years for males and 64.8 years for females compared with 76.6 years for all males and 82 years for all females in the period 1998 to 2000.
- Tasmania has a lower infant mortality rate than Australia as a whole. In 2005 the Tasmanian infant mortality rate was 3.5 deaths per 1000 live births.
- Avoidable mortality refers to deaths that could potentially be avoided through effective interventions against specific diseases in a population. This measure can be used to assess the overall impact of health interventions. Over the period 1979 to 2005, the potentially avoidable Tasmanian mortality rate fell by approximately 52%.

Causes of Death

- Between 2001 and 2005, the most common causes of death in Tasmania were cancer (29% of all deaths) and ischaemic heart disease (18.5% of all deaths).
- The leading causes of death for Tasmanian children were perinatal and congenital diseases, while transport accidents were the leading causes of death for persons aged 15 to 24 years.
- The most commonly diagnosed cancers over the period 2000 to 2004 (excluding non-melanoma skin cancer) were prostate cancer for males and breast cancer for females. The incidence rates for both these cancer types have increased significantly since 1979.
- Reflecting the substantial reduction in smoking prevalence amongst Tasmanian males between 1979 and 2004, the male lung cancer incidence rate has decreased by approximately 30% in this time period. However the lung cancer incidence rate for Tasmanian females, whilst still significantly lower than for males, has increased by over 50% during the same period.
- The Tasmanian age-standardised mortality rates for ischaemic heart disease and cerebrovascular accident (stroke) have declined by approximately two-thirds for both males and females between 1995 and 2005.
- Tasmania's age standardised mortality rates are higher than the Australian age standardised mortality rates for a number of conditions. These include cancer, diabetes mellitus, ischaemic heart disease, chronic lower respiratory diseases, accidents and intentional self-harm.

Chronic Health Conditions

- The most common cancers diagnosed in Tasmanian males between 2000 and 2004 were prostate, colorectal and lung cancer.
- The most common cancers diagnosed in Tasmanian females between 2000 and 2004 were breast, colorectal cancer and melanoma.
- Over 36% of Tasmania's adult population are affected by arthritis or a musculoskeletal condition. These conditions are a significant cause of disability within the population.
- 1 in 9 Tasmanian adults report that they have a long-term mental or behavioural problem.
- Tasmania has the second highest age-standardised death rate for accidents and intentional self-harm of all states and territories.
- By 2023, type 2 diabetes is predicted to be the leading cause of disease burden in Australia. Already, the prevalence of self-reported diabetes in Tasmania has increased by over 70% during the period 1995 to 2005 and hospitalisation rates for diabetes have more than doubled over this period. Of concern is the sharp increase in mortality for diabetes over the period 1978 to 2005, during which the male mortality rate more than quadrupled, whilst the female rate almost doubled.

Lifestyle Risk Factors

- 25.4% of the Tasmanian adult population are current smokers.
- The proportion of Tasmanian current smokers in 2004/2005 is consistently higher than the Australian equivalent for all age groups.
- Smoking levels have declined significantly over the last 15 years, but there has been no further progress since 1995 and rates appear to be increasing again in males.
- The proportion of Tasmanian adults drinking at high risk for long term harm has almost doubled over the last ten years in Tasmania, with 11.5% of the adult population current consuming alcohol at these levels.
- The proportion of Tasmanian adults drinking at high risk for short term harm has increased between 2001 and 2004 to 14.9% of the adult population.
- Alcohol consumption at risky levels for short term harm has increased among secondary students aged 12 to 15 years from 15% in 1984 to 23% in 2005 but has remained relatively stable in 16 to 17 year old secondary students.
- Tasmanian adults have high levels of physical inactivity, with 69% of the adult population in 2004/2005 not achieving sufficient levels of physical activity for health benefit. Similarly, less than 15% of Tasmanian secondary school students are sufficiently physically active.
- Vegetable consumption at the recommended levels is higher in Tasmania than nationally, however only 20.4% of Tasmanians aged 15 years and over meet the vegetable consumption guidelines. In total, 53.4% of Tasmanians aged 15 years and over meet the fruit consumption guidelines, very similar to the national level.
- The self-reported proportion of Tasmanian adults who were classified as overweight/obese in 2004 was 48.9%. This has risen by almost 4% since 2001 at both the Tasmanian and national levels.
- Tasmanians engage in illicit drug taking at a very similar level to Australia as a whole.

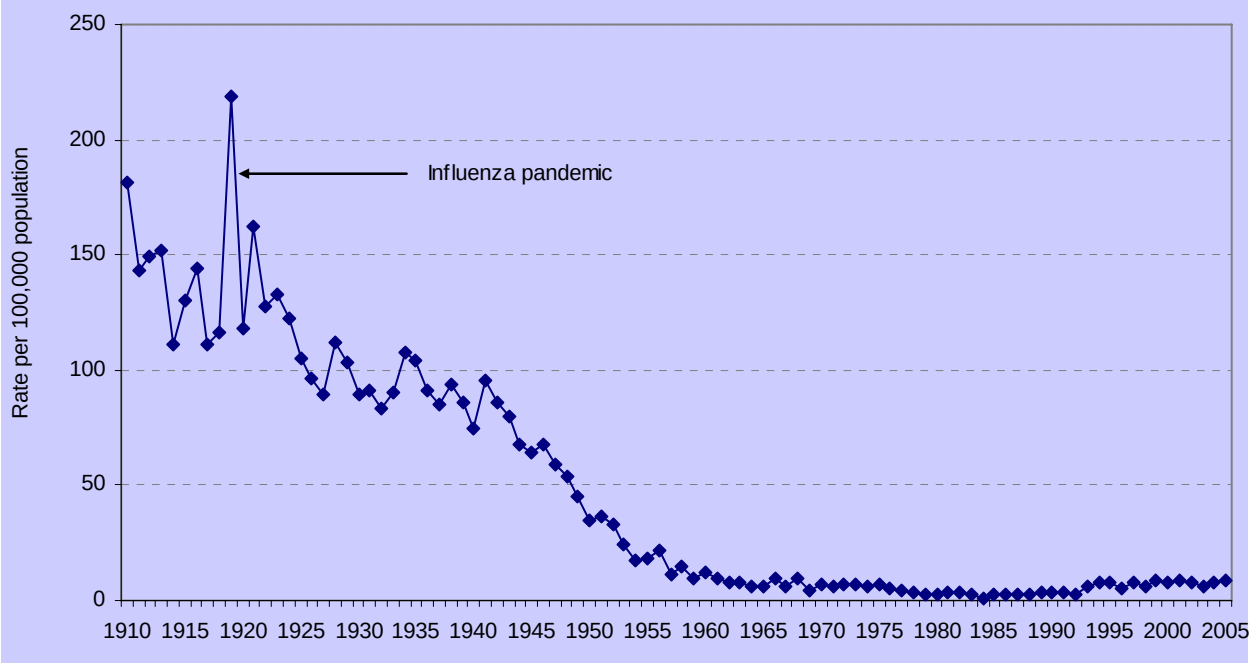
Notifiable Infectious Diseases

- Genital *Chlamydia trachomatis* infection had the highest notification rate of all infectious diseases, representing 31.1% of all notifications between 2002 and 2006.
- Notifications for genital *Chlamydia trachomatis* infection have increased fourfold since 1994.
- Gastroenteritis due to Campylobacter infection had the second highest rate of all infectious diseases, accounting for 27.7% of all notifications over the same period.

Introduction

Over the past 100 years, patterns of disease affecting the population have changed dramatically. Deaths in childhood from diphtheria, tetanus, polio, and (more recently) measles, are no longer occurring in Tasmania or Australia, and there have been dramatic declines in many other communicable diseases such as *Haemophilus influenzae* type B (see Figure 1). Later in the twentieth century, chronic conditions such as cardiovascular disease and cancer overtook infectious diseases as the leading causes of death. Declines in infectious diseases mortality have been due to a range of factors including improved environmental health and sanitation measures, the introduction and more widespread use of antibiotics, and systematic population based vaccination programs.

Figure 1: Crude Mortality Rate for Infectious Diseases, Tasmania 1910 - 2005



Health is not defined as being merely the absence of disease, but is recognised as having physical, mental, and social components. Therefore, the measurement of health still includes, but also goes beyond, such objective measures as morbidity and mortality.

Measuring health status means to examine differentials within and between populations, to monitor trends over time and to assess changes in response to health policy and practice. Population health monitoring provides a valuable tool to evaluate health through comparison with other states and, over time, plays an important role in enabling health professionals to target specific conditions or populations.

This is the second *Health Indicators Tasmania* report, following on from the 2003 inaugural report. *Health Indicators Tasmania 2008* presents updated data on the health of the Tasmanian population. Most of the information provided in this report is focussed on the Tasmanian population, with comparisons to other jurisdictions and Australia as a whole where appropriate. It is important to consider geographical area, time period and diagnostic definitions when making comparisons of the information presented in this report and information presented in other reports of similar nature.

This report is divided into six sections; demography and socio-economic indicators, mortality, chronic health conditions, health risk factors, other measures of health status, and notifiable diseases. The information presented here has been derived from various sources, including mortality and hospitalisation statistics, notifiable disease registers, health survey results, population census data and peer-reviewed articles. Much of the data comes from national data collections, such as the National Health Survey. To allow us to understand Tasmania's health status in relation to the rest of Australia, rates in comparative tables have been standardised in order to remove the influence of age when comparing populations with different age structures.

There is a significant delay between data collection and data processing for many key areas covered in this report. Therefore, although the data used to compile this report are the most up-to-date available, they are not 2008 data. Significant lags exist between making changes in the prevalence of risk factors and chronic diseases at the population level, and seeing the impact these have on important outcomes such as hospitalisations and mortality. It may be some years before data become available to measure the impact of current initiatives on the health of Tasmania's population.

Throughout the report, indigenous-specific data are reported where available. However, in spite of attempts to improve the collection of indigenous –specific data for key indicators in Tasmania, data are still largely insufficient to draw many firm conclusions about the health of indigenous Tasmanians.

Population Profile

This section profiles the demographic characteristics of Tasmania's current and future population and presents a range of socio-economic indicators of significance to population health. Demographic data show the size, composition and expected growth for the Tasmanian population. Socio-economic indicators have been included for employment, income, and education. By drawing on a wide range of Australian Bureau of Statistics (ABS) data, this section describes aspects of Tasmanian society, and how these are changing over time.

Tasmanian Demography

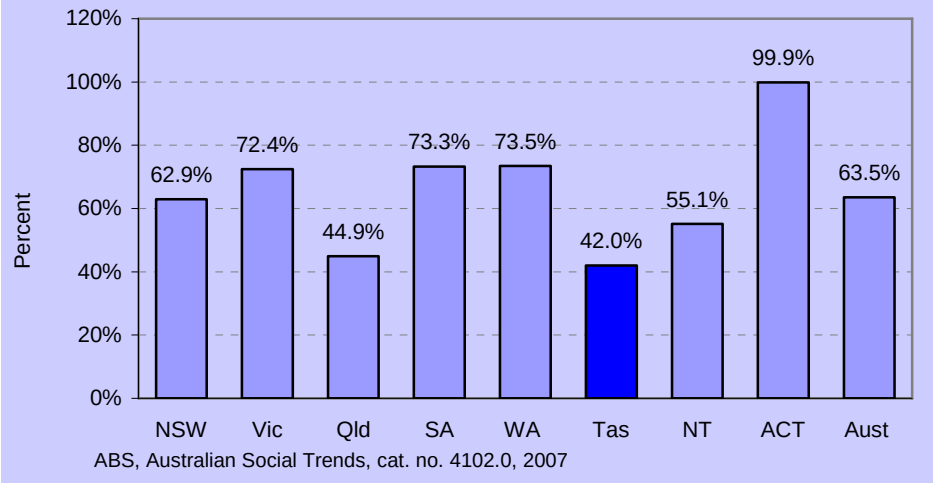
Estimated Resident Population

The ABS conducts a national census every five years. According to the most recent census conducted in 2006, Tasmania's estimated resident population was 476,480 persons. This represented 2.4% of Australia's total population of 19,855,288 people at that time.

Geographical Distribution

Tasmania is a highly decentralised state with almost 60% of the population living outside the 'Greater Hobart' area, including in larger towns such as Launceston, Georgetown, Devonport and similar population centres.

Figure 2: Population Living in Capital Cities by State and Territory, 2006



A total of 49.5% of Tasmania's population are located in the South of the state, 28.2% are located in the North, and 22.3% in the North West.

Table 1: Population by Age and Sex and Region, Tasmania*, Census 2006

	Males			Females			
	0-14 years	15-64 years	65+ years	0-14 years	15-64 years	65+ years	Total
South (persons)	23,453	76,551	15,104	22,004	79,371	18,964	235,447
%	10.0	32.5	6.4	9.3	33.7	8.1	100.0
North (persons)	13,723	42,822	9,031	13,056	44,031	11,276	133,939
%	10.2	32.0	6.7	9.7	32.9	8.4	100.0
North West (persons)	11,175	33,401	7,592	10,507	34,357	9,105	106,137
%	10.5	31.5	7.2	9.9	32.4	8.6	100.0
Tasmania (persons)	48,351	152,774	31,727	45,567	157,759	39,345	475,523
%	10.2	32.1	6.7	9.6	33.2	8.3	100.0

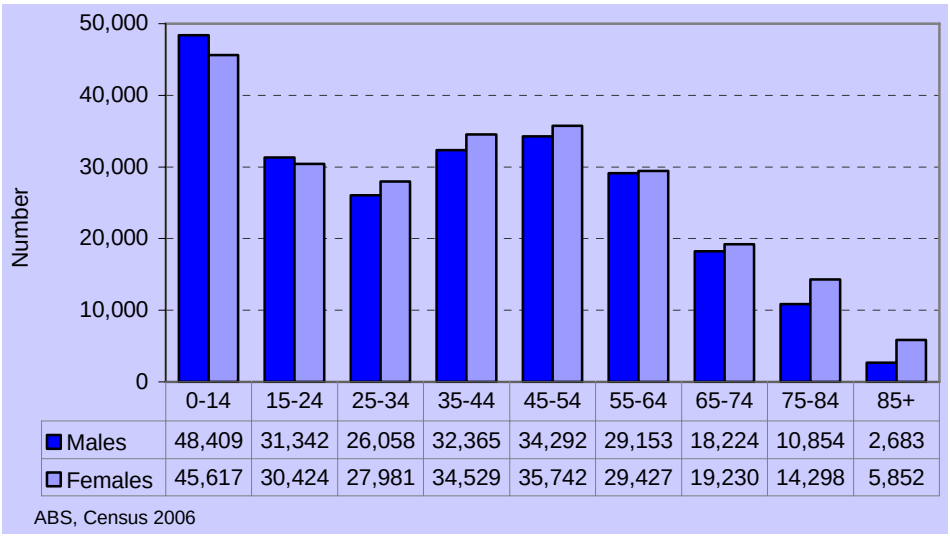
ABS, Census 2006 *excludes offshore areas

Population by Age Group and Sex

Of Tasmania's total population in 2006, 49% were males and 51% were females. The majority of Tasmania's population are of working age, that is, between 15 and 64 years. Within the Tasmanian population:

- 19.7% (94,026 persons) were children aged 0-14 years, similar to the national proportion of 19.8%, but below the 2001 proportion of 21.4%,
- 13% (61,766 persons) were young people aged 15-24 years,
- 14.9% (71,161 persons) were aged 65 years and over, compared with 13.8% in 2001, and 12.8% in 1996. Of these, 8,535 persons were aged 85 years and over.

Figure 3: Population Distribution by Age and Sex, Tasmania, 2006



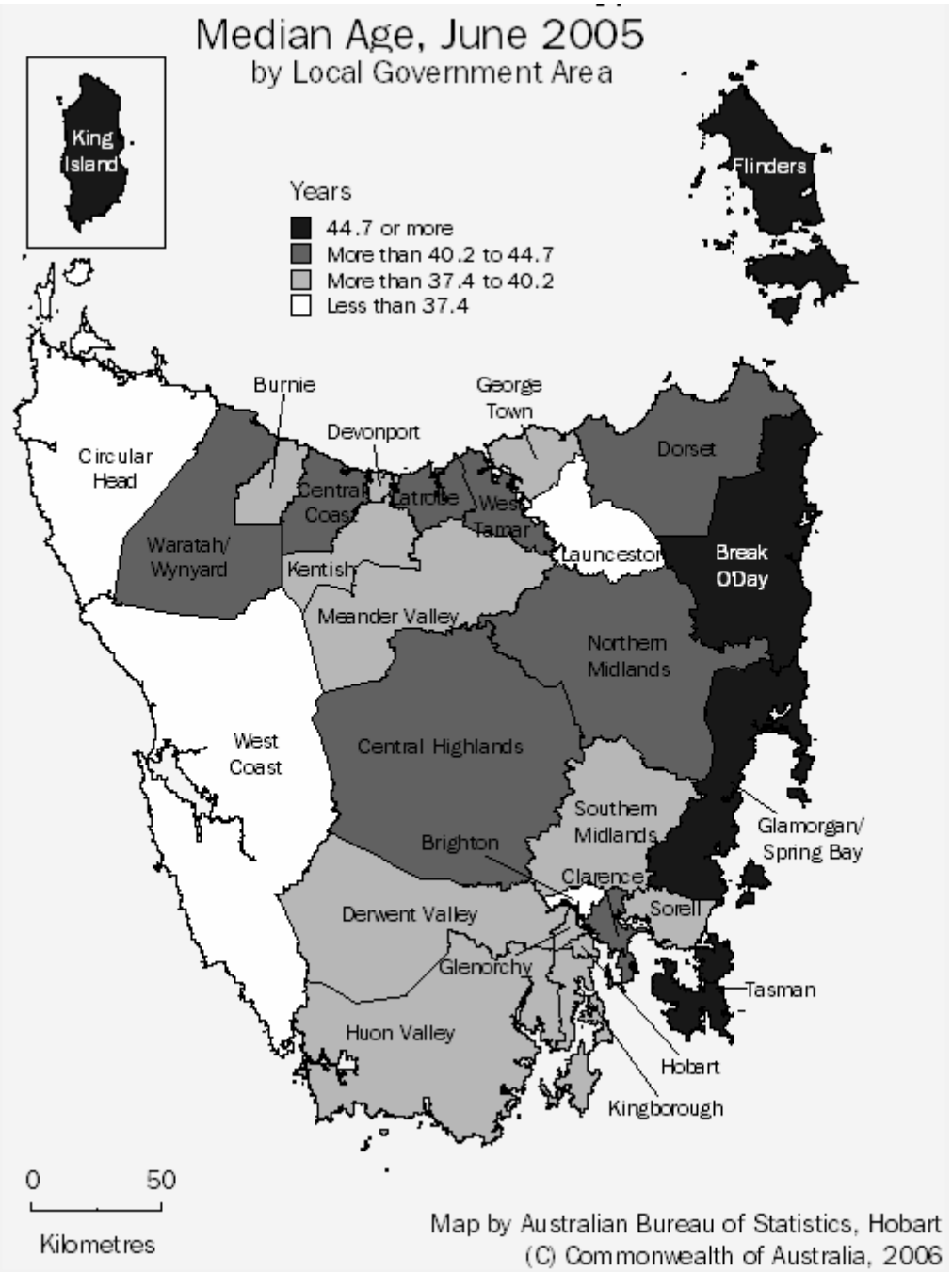
	0-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Males	48,409	31,342	26,058	32,365	34,292	29,153	18,224	10,854	2,683
Females	45,617	30,424	27,981	34,529	35,742	29,427	19,230	14,298	5,852

ABS, Census 2006

At 30 June 2005, the median age[1] of the Tasmanian population was over 38 years, the second highest of all the states and territories. As the thematic map below shows, there were several local government areas with median population ages above 44.7 years, including Glamorgan/Spring Bay, Break O'Day, Tasman, and Flinders and King Islands. The local government area of Brighton continues to have the lowest median age at <37.4 years.[2]

The median age of the indigenous population in Tasmania in 2006 was significantly lower than for the rest of the population at 20.4 years. The trend towards a younger indigenous population is evident in all jurisdictions.

Figure 3: Map of Median Age by Local Government Area, Tasmania, June 2005



[1] the age at which half the population is older and half is younger

[2] Population by Age and Sex, Tasmania - Electronic Delivery (cat. no. 3235.6.55.001)

Indigenous Population

In 2006, 3.5% (16,767 persons) of Tasmania's population identified as being of Aboriginal or Torres Strait Islander origin, slightly above the Australian proportion of 2.3%, but remaining unchanged from the previous census in 2001.

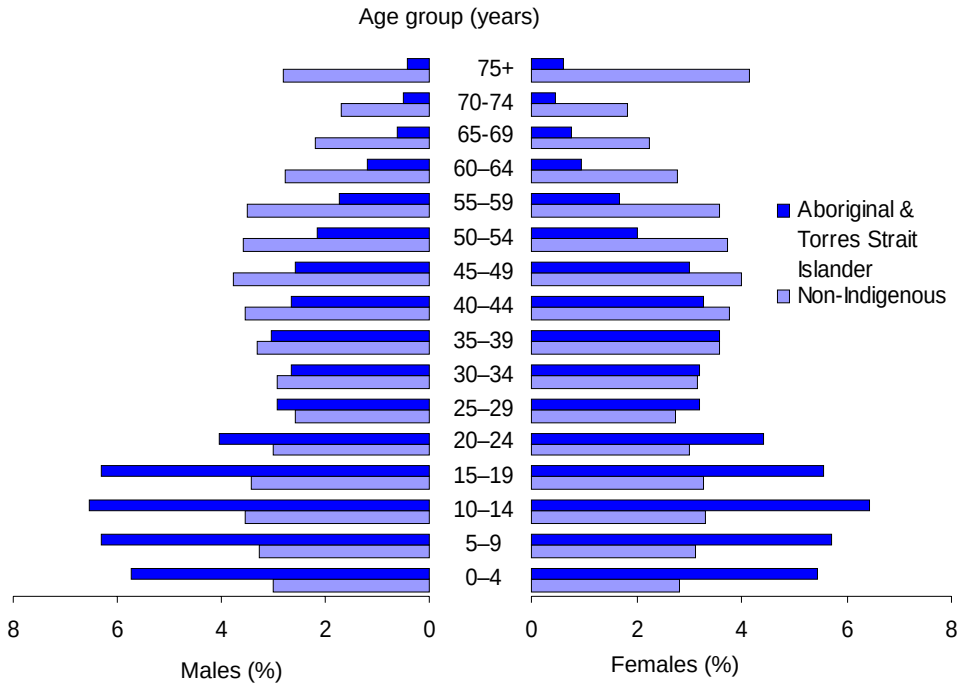
Table 2: Indigenous Population by State and Territory, 2006

NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust
146,200	31,000	139,500	28,100	72,200	16,767	61,200	4,400	501,500
2.1%	0.6%	3.3%	1.7%	3.0%	3.5%	27.8%	1.2%	2.3%

ABS, Census 2006

The population pyramid below shows the age distribution for the Tasmanian indigenous and non-indigenous populations. According to these results, there is a significant difference in the age structure of the indigenous versus the non-indigenous population. Compared to the non-indigenous population, the proportion of the indigenous population who survive beyond 39 years of age, and particularly beyond 64 years of age, is smaller in both males and females.

Figure 4: Population Distribution of Indigenous and Non-Indigenous Populations, Tasmania 2006

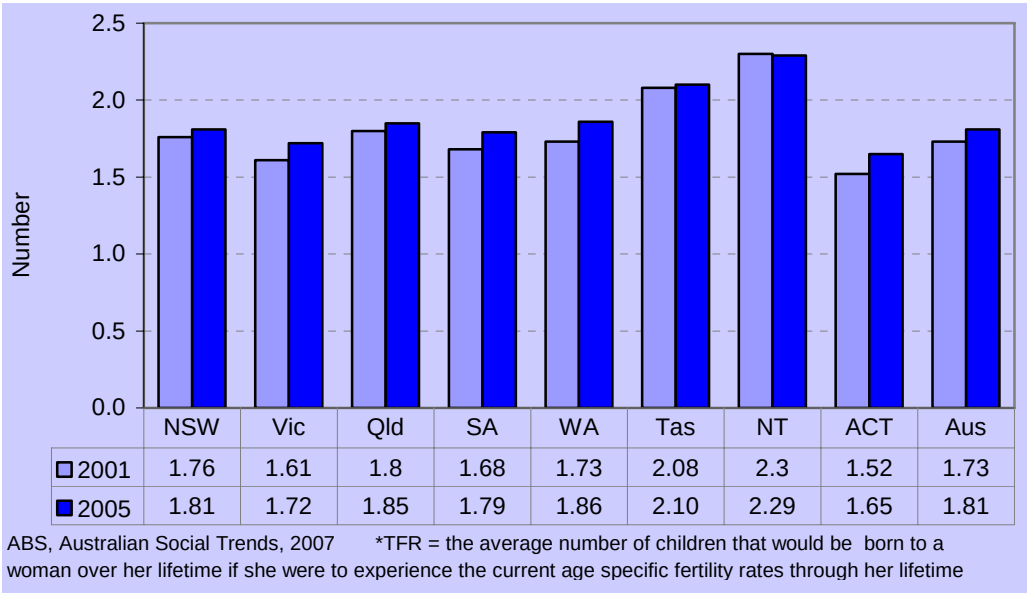


ABS, Census 2006 (unpublished data)

Fertility Rates

According to the United Nations, a fertility rate of 2.1 children per woman is defined as a population replacement level Total Fertility Rate (TFR). Since 2001, the TFR has increased in most Australian states and territories. The Tasmanian TFR was 2.1 children per woman in 2005, compared with the Australian rate of 1.81 children per woman. In 2005, around 44% of Tasmania's TFR was attributed to women aged 30 years or more, compared with 52% for Australia overall.[3]

Figure 5: Total Fertility Rate* by State and Territory, 2001 and 2005



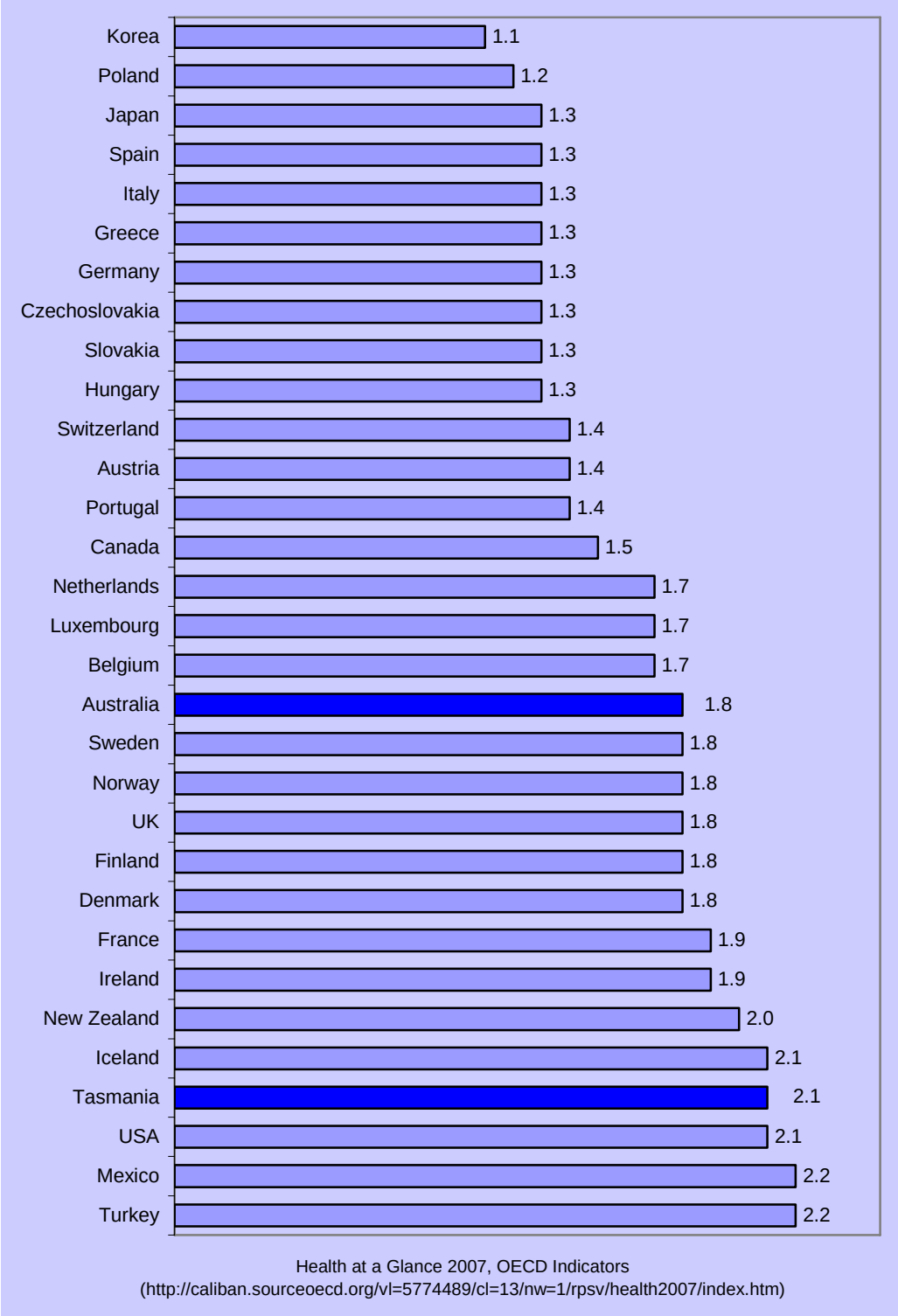
	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aus
2001	1.76	1.61	1.8	1.68	1.73	2.08	2.3	1.52	1.73
2005	1.81	1.72	1.85	1.79	1.86	2.10	2.29	1.65	1.81

ABS, Australian Social Trends, 2007 *TFR = the average number of children that would be born to a woman over her lifetime if she were to experience the current age specific fertility rates through her lifetime

[3] ABS, Australian Social Trends, cat. no. 4102.0, 2007, p.12

Total fertility rates have been falling dramatically over recent decades in OECD countries. However, some countries, including Australia, have shown a mild reversal of the downward trend in recent years. Australia's current fertility rate at 1.8 children per woman is slightly above the OECD average of 1.6. Tasmania's rate is well above this average at 2.1 children per woman.

Figure 6: Total Fertility Rates, OECD Countries and Tasmania, 2005

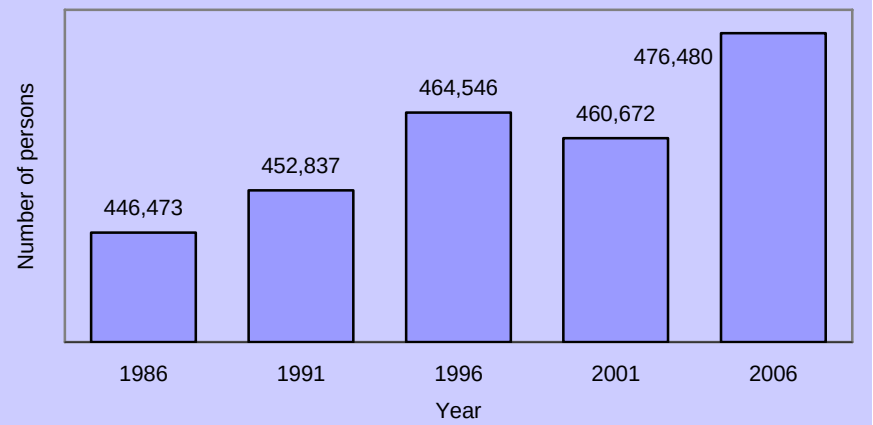


Health at a Glance 2007, OECD Indicators
(http://caliban.sourceoecd.org/vl=5774489/cl=13/nw=1/rpsv/health2007/index.htm)

Population Growth

Census results over the last 20 years show that Tasmania's population has increased by 6.7% since 1986, from 446,473 to 476,480 persons.

Figure 7: Population Growth Tasmania, 1986 to 2006



ABS, Census results 1986-2006

After a period of population decline, Tasmania's population resumed its growth in the early 2000s, with the population growth rate being close to the national average growth rate. Net overseas migration to Tasmania has increased over the last few years, contributing to the population growth observed since 2002.

Table 3: Estimated Resident Population, Components of Change, Tasmania 2000-2006

Year	Natural Increase (total persons)	Net Interstate Migration (total persons)	Net Overseas Migration (total persons)	Total Population Growth (total persons)
2000-01	2,047	-2,136	101	386
2001-02	2,022	-1,512	307	817
2002-03	1,784	1,895	1,014	4,693
2003-04	1,756	2,475	700	4,931
2004-05	2,208	187	1,045	3,440
2005-06	2,520	60	692	3,272

ABS, Australian Demographic Statistics, cat. no. 3101.0, September 2006

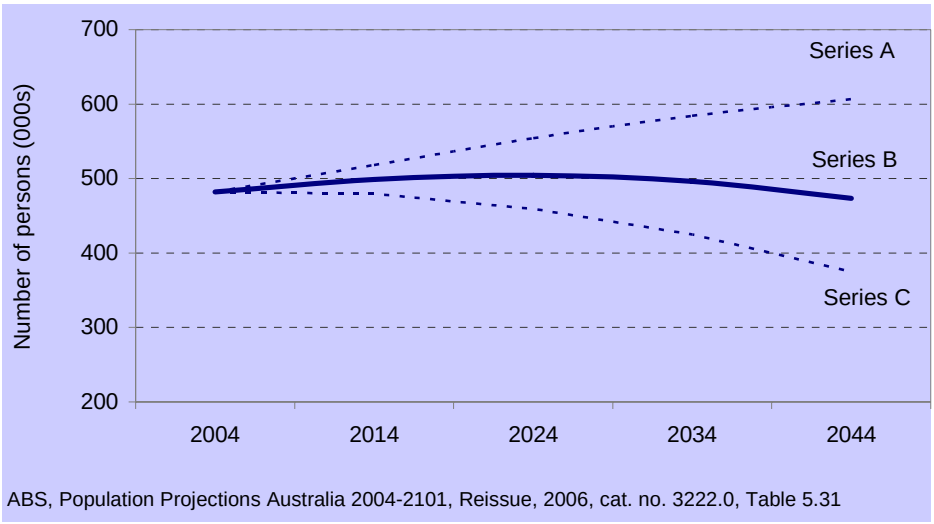
Projected Population

The ABS has published a series of projected populations for the states and territories of Australia over the period 2004 to 2101. These are a projection series based on various assumptions of future births, deaths and migration (interstate and overseas). A range of possible outcomes rather than a single projection give a more realistic view of future population changes. Series B is the most frequently used projection as it is a relatively conservative projection model, and assumes low migration and low fertility rates.

According to these projections, the population of Tasmania is predicted to decline in Series B and C and to increase in Series A. Series A shows a steady increase in population size to 606,600 persons by the year 2044. Series B shows an initial increase in population size to 504,500 persons by 2024 followed by a decrease to 473,500 persons, while Series C shows a significant and continuous decrease in population size. These projections have not accounted for recent population changes that will impact population size over time. The birth rate in Tasmania has increased since the projections were produced, which will have the

effect of increasing population size over time. However, countering the effect of this is the increasing prevalence of obesity, which is expected to reduce life expectancy over time, resulting in a net reduction in population size.

Figure 8: Population Projections, Tasmania, 2004-2044

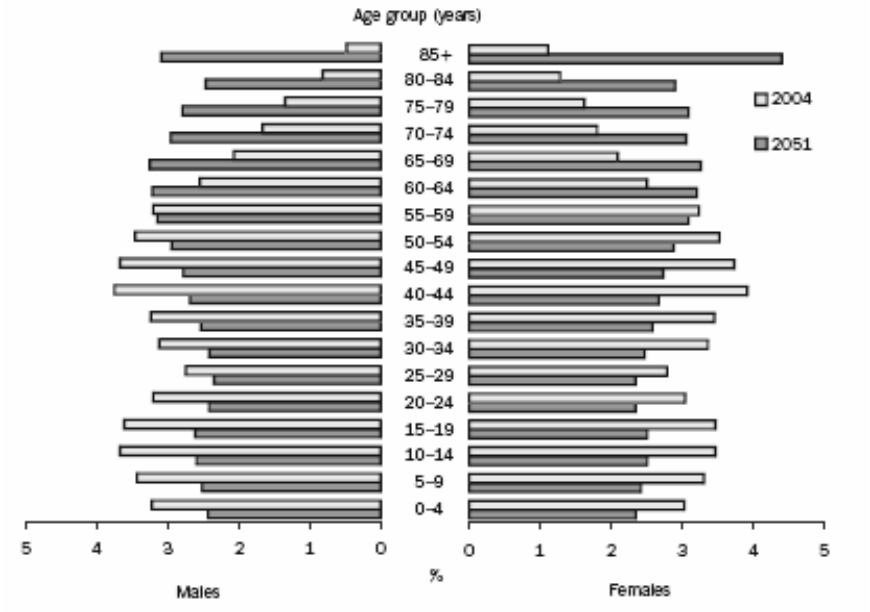


ABS, Population Projections Australia 2004-2101, Reissue, 2006, cat. no. 3222.0, Table 5.31

Projected Population by Age Group and Sex

Population projections by age group and sex between the years 2004 and 2051 show a marked shift in the age structure of the Tasmanian population towards an ageing population.

Figure 9: Projected Population by Age and Sex, Tasmania (Series B)

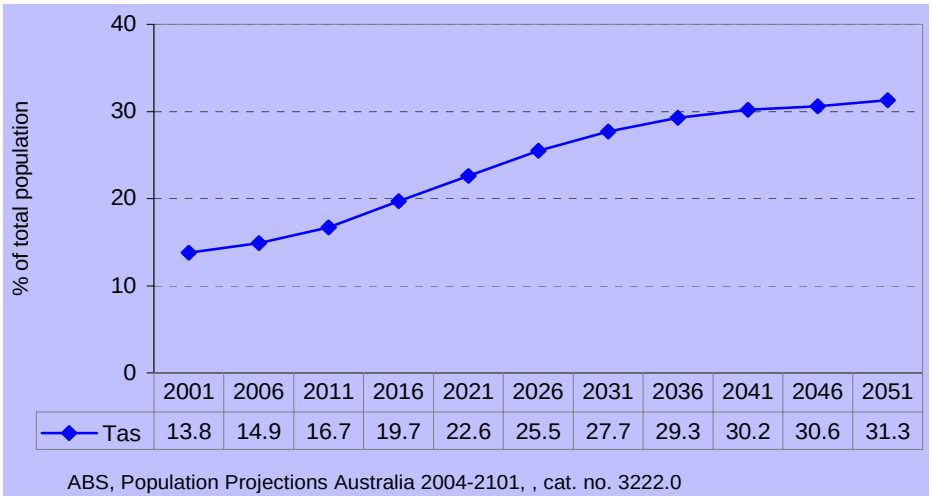


Population Projections Australia, 2004-2101, 2006, Reissue, cat. no. 3222.0, p.72

The proportion of younger people in Tasmania is predicted to decline, and the proportion of older people is predicted to continue to increase. The proportion of Tasmanians aged 65 years and over is projected to double over the next 45 years, from 14.9% of the total population in 2006 to 31.3% by 2051. Similarly, the

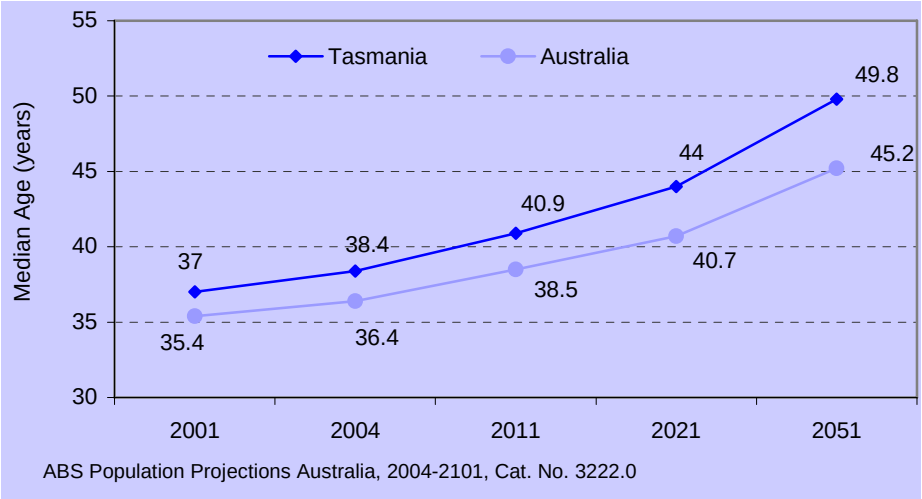
proportion of the population aged 80 years and over is projected to increase to 12.9% of Tasmania's population by 2051.[4]

Figure 10: Proportion of Projected Population Aged 65 Years and Over (Series B), Tasmania, 2011-2051



Tasmania's population is ageing at a rate faster than anywhere else in Australia. In 2006 the populations of Tasmania and South Australia shared the highest median age of approximately 39 years. By 2051, Tasmania's median age is projected to be 49.8 years compared to Australia's median age of 45.2 years.

Figure 11: Projections of Median Age, Tasmania and Australia, 2001-2051



[4] ABS, Australian Social Trends, cat. no. 4102.0, 2007, p. 5; series B projection

Socio-Economic Indicators

Throughout the world, poor people and those from socially disadvantaged groups get sicker and die sooner than people in more privileged social positions. Our health status is therefore socially determined. Research shows us that low socioeconomic status, whether measured by income, educational attainment, or occupation, means poorer health, a higher incidence of chronic conditions and higher levels of health care utilization. The relationship between socio-economic indicators and key risk factors for chronic diseases are presented in the relevant sections throughout this report.

Income

In the 2006 Census, the median weekly *individual* income for persons aged 15 years and over was $398 in Tasmania, compared with $466 in Australia. The median weekly *household* income was $801 in Tasmania, compared with $1,027 in Australia. The median weekly *family* income was $1,032 in Tasmania, compared with $1,171 in Australia. Tasmania continues to be the state with the lowest median weekly gross individual income for persons aged 15 years and over.

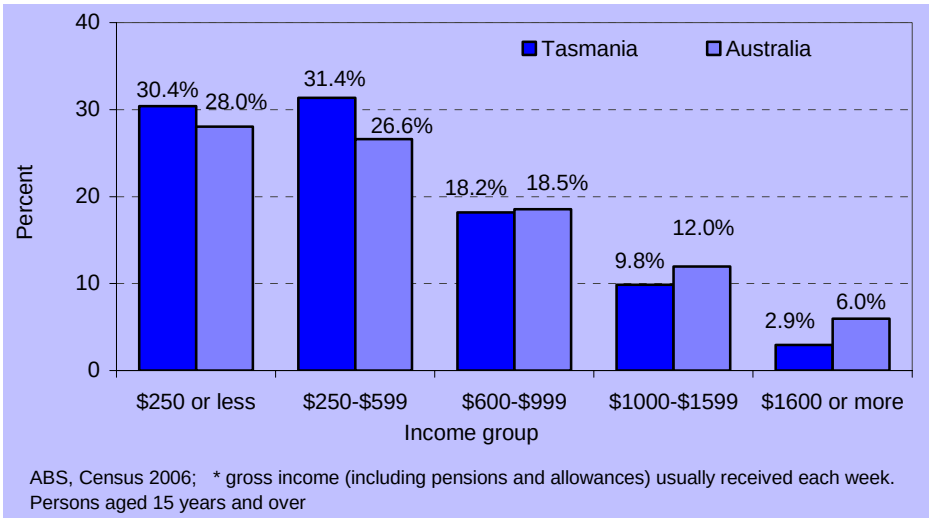
Table 4: Median Weekly Gross Individual Income ($) by State/Territory, 15 Years and Over, 2001 and 2006*

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust
2001	386	380	359	345	374	314	442	543	375
2006	461	456	476	433	500	398	549	722	466
% change	19.4%	20.0%	32,6%	25.5%	33.7%	26.7%	24.2%	33.0%	24.3%

ABS Census 2001 and 2006; *excluding overseas visitors

The graph below shows the income differentials between Tasmania and the national level. Compared to the national level, Tasmania has a greater proportion of the population on lower incomes and smaller proportions on higher weekly incomes.

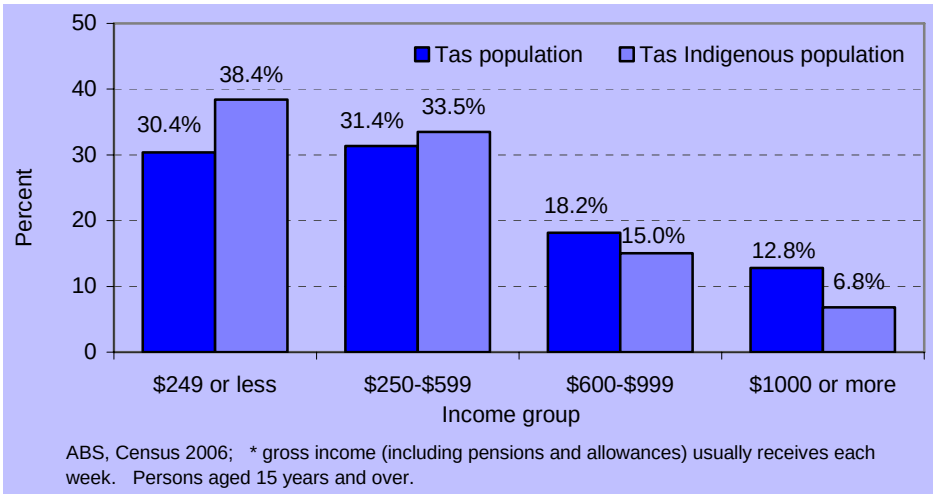
Figure 12: Proportion of Population by Weekly Individual Gross Income*, Tasmania and Australia, 2006



ABS, Census 2006; * gross income (including pensions and allowances) usually received each week. Persons aged 15 years and over

The individual gross income of indigenous Tasmanians is lower than the income of Tasmanians overall. This income differential is particularly pronounced at the upper income level represented by the last two quintiles in the graph below.

Figure 13: Proportion of Indigenous and Total Population by Weekly Individual Gross Income, Tasmania, 2006



ABS, Census 2006; * gross income (including pensions and allowances) usually receives each week. Persons aged 15 years and over.

Median individual income has increased by 26.7% in Tasmania in the last five years. Although income growth is expected to continue, projections by the Tasmanian Department of Treasury and Finance show the rate of economic growth to be constrained by population ageing. Because Tasmania's population is ageing at a faster rate than any other jurisdiction, the growth of the Tasmanian economy is likely to be slower than the national average. According to Treasury and Finance, Tasmania's Gross State Product (GSP) per person is currently around 75% of the national average, and expected to decline in future decades.[5]

Level of Employment

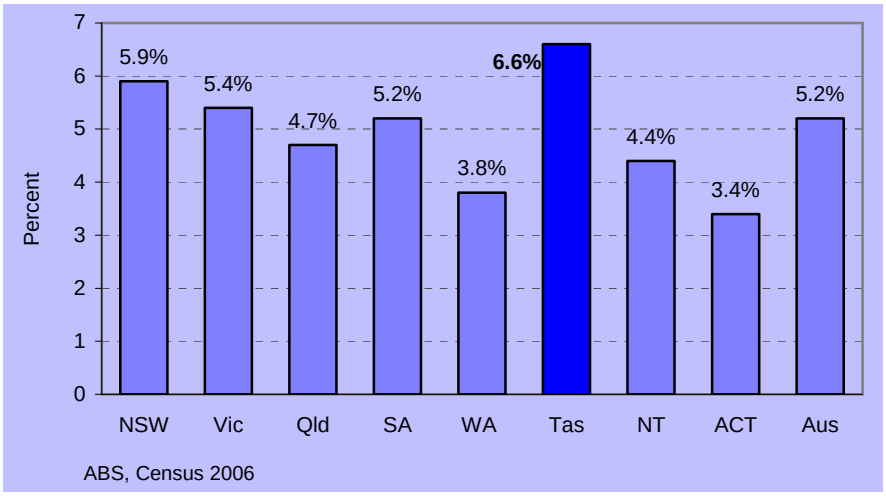
A total of 218, 694 Tasmanians aged 15 years and over were in the labour force at the time of the 2006 Census. Of these, 56% were employed full-time (compared with 60.7% nationally) and 30.7% were employed part-time (compared with 27.9% nationally).

The most common occupational categories for employed persons in Tasmania were professionals (17.5%), technicians and trades workers (14.6%), clerical and administrative workers (14.0%), managers (12.8%) and labourers (12.5%). The most common industries of employment for persons aged 15 years and over in Tasmania were school education (5.4%), cafes, restaurants and takeaway food services (3.6%), state government administration (3.3%), hospitals (2.8%) and supermarket and grocery stores (2.6%).

The unemployment rate is defined as the percentage of unemployed people in the total civilian population aged 15 years and over in the labour force. The Tasmanian unemployment rate has been historically higher than elsewhere and continues to remain so. The estimated unemployment rate for Tasmania in June 2006 was 6.6%. This has decreased from an unemployment rate of 7.9% in June 2003. The figure below shows the situation in 2006, however since then unemployment rates have continued to fall across Australia, with Tasmania's unemployment rate being 4.8% in March 2008 compared with 4% for Australia as a whole.

[5] Department of Treasury and Finance Tasmania, Demographic Change in Tasmania: Challenges and Opportunities, Issues Paper, October 2007.

Figure 14: Unemployment Rate by State and Territory, 15 Years and Over, 2006



The North West region had the highest level of unemployment in Tasmania in 2006, at 7.9%, and the South had the lowest level of unemployment at 6%.

Table 5: Unemployment by Region, 15 Years and Over*, Tasmania, 2006

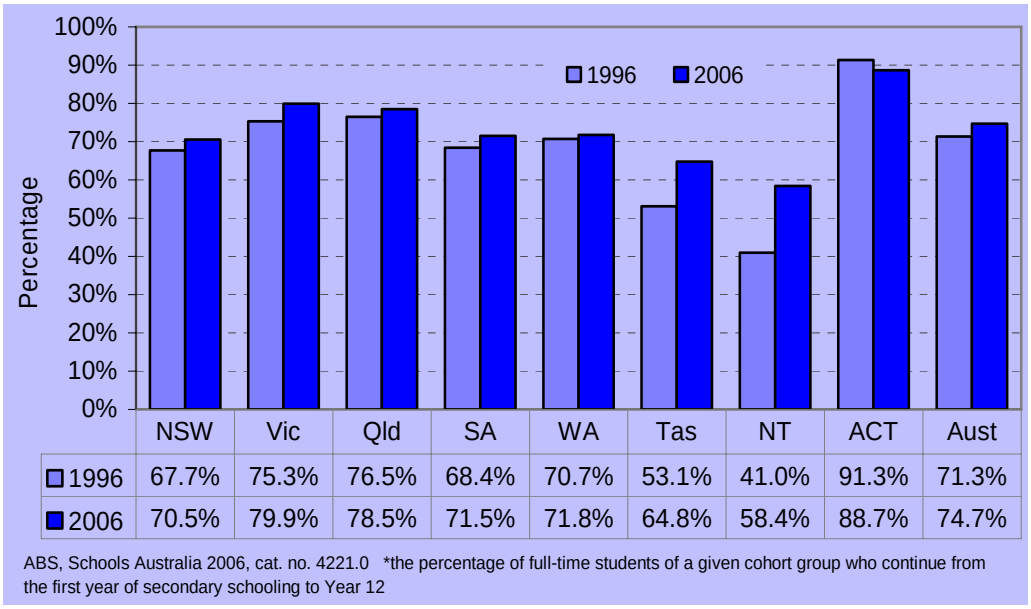
Region	Total Labour Force	Unemployed Persons	Unemployment Rate
South	110,288	6,657	6.0%
North	60,878	3,889	6.4%
North West	47,528	3,750	7.9%
Tasmania	218,694	14,296	6.6%

ABS Census 2006, *excluding overseas visitors

Level of Education

In 2006, the school retention rate (the percentage of full-time students of a given cohort group who continue from the first year of secondary schooling to Year 12) in Tasmania was 64.8%, an increase of 11.7% since 1996. Although the gap between the Tasmanian and the national school retention rate is narrowing, from a difference of 18.2% in 1996 to 9.9% in 2006, Tasmania continues to have the second lowest school retention rate in Australia, after the Northern Territory.

Figure 15: School Retention Rates* by State and Territory, 1996 and 2006



	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust
1996	67.7%	75.3%	76.5%	68.4%	70.7%	53.1%	41.0%	91.3%	71.3%
2006	70.5%	79.9%	78.5%	71.5%	71.8%	64.8%	58.4%	88.7%	74.7%

ABS, Schools Australia 2006, cat. no. 4221.0 *the percentage of full-time students of a given cohort group who continue from the first year of secondary schooling to Year 12

In 2006 Tasmania also had the second lowest proportion of people with undergraduate degrees and the lowest proportion of people with postgraduate qualifications of all states and territories.

Table 6: Level of Education for Persons Aged 15 Years and Over by State and Territory*, 2006

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust
Advanced diploma/certificate	24.2%	22.6%	24.5%	23.7%	25.0%	23.7%	23.1%	21.6%	23.8%
Bachelor degree	12.1%	12.6%	10.0%	9.8%	11.1%	9.1%	8.9%	19.7%	11.6%
Postgraduate/Graduate	4.4%	4.6%	3.1%	3.2%	3.4%	2.8%	3.5%	10.3%	4.0%

ABS Census 2006; *excludes schooling up to Year 12

The South had the highest proportion of people aged 15 years and over with an undergraduate degree or post graduate qualification and the North West had the highest proportion of people with advanced diplomas or certificates.

Table 7: Level of Education* for Persons Aged 15 Years and Over by Region, 2006

	South	North	North West
Advanced diploma/certificate	23.2%	23.9%	24.5%
Bachelor degree	11.0%	8.3%	5.7%
Postgraduate/Graduate	3.8%	2.2%	1.3%

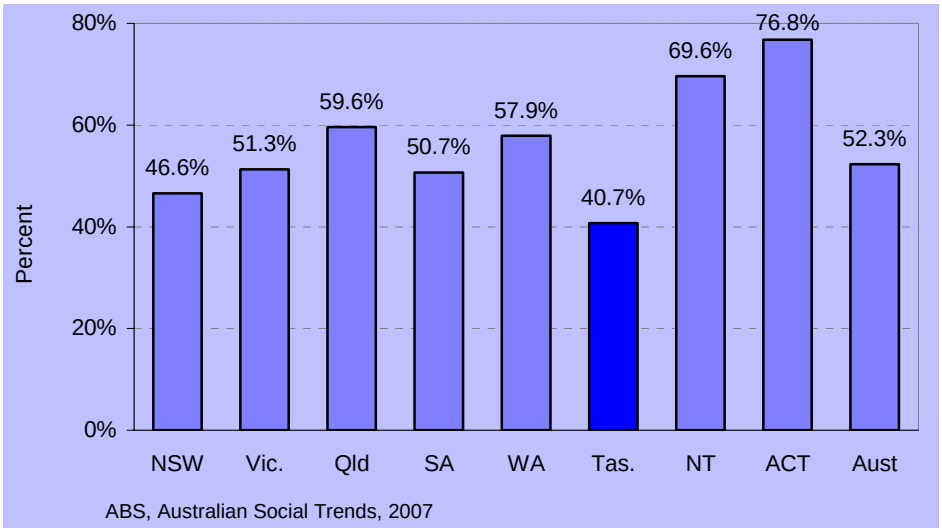
ABS Census 2006; *excludes schooling up to Year 12

Family Characteristics

In the 2006 Census, there were 128,660 families in Tasmania: 41.4% were couple families with children, 40.5% were couple families without children, 16.7% were one parent families and 1.4% were other families.

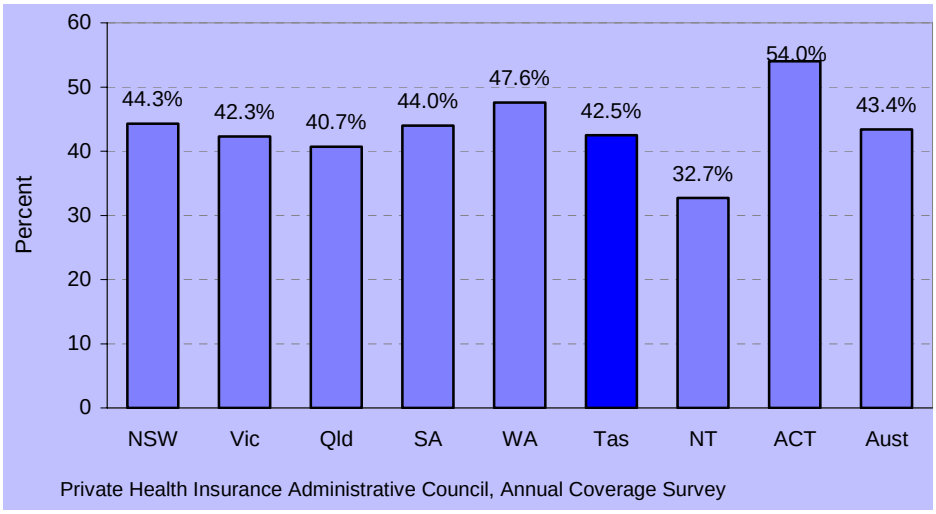
Parents in single parent families with children under 15 years were less likely to be employed in Tasmania than anywhere else in Australia. Between 2001 and 2006 there was little change in the employment rate of parents heading one parent families, from 41.1% in 2001 to 40.7% in 2006.

Figure 16: Parent Employed as a Proportion of all One Parent Families with Children under 15 Years by State and Territory, 2006



Private health insurance provides the insured with access to a broader range of health services than available in the public system alone. In 2006, 42.5% of Tasmanians had private health insurance, slightly below the national average of 43.4%.

Figure 17: Private Health Insurance Participation by State and Territory, 2006



Dwelling Characteristics

In the 2006 Census there were 189,067 occupied private dwellings counted in Tasmania. A total of 36.8% of occupied private dwellings were fully owned, 32.3% were being purchased and 24.6% were rented. Of the occupied private dwellings being rented, 30.8% were rented from a real estate agent, 22.5% were rented from a state housing authority and 42.9% were rented from other landlord type. In comparison, in Australia 50.5% were rented from a real estate agent and 14.9% from a state or territory housing authority.

Table 8: Dwellings Rented from State/Territory Housing Authorities by State and Territory, 2006

NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust
15.6	12.3	10.7	25.9	14.7	22.5	16.7	26.5	14.9

ABS, Census 2006

Rental and mortgage payments are lower in Tasmania than Australia as a whole. The median weekly rent in Tasmania was $135, compared to $190 in Australia and the median monthly housing loan repayment was $867, compared to $1,300 in Australia.

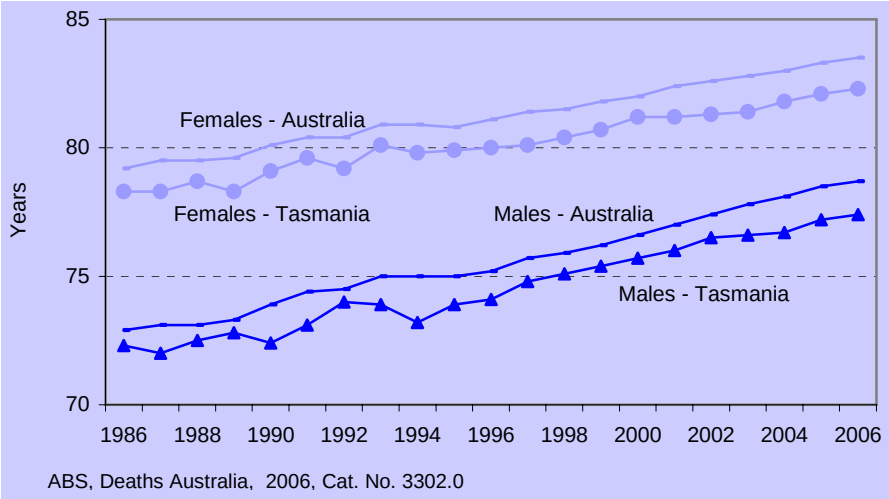
Mortality

Life Expectancy at Birth

Life expectancy at birth refers to the average number of years a newborn baby could expect to live if the current mortality rates remain the same in his or her lifetime. Life expectancy has increased significantly over the past century, reflecting the considerable decline in mortality rates, initially from infectious diseases and, in later years, from cardiovascular disease.

Tasmania has the second lowest life expectancy of all states and territories after the Northern Territory. In 2006, Tasmanian males could expect to live for 77.4 years and females for 82.3 years. Life expectancy in Tasmania continues to be slightly shorter than in Australia overall, with a difference of approximately one year for both males and females. The gap in life expectancy between Tasmania and Australia has not changed significantly since 1986, and has ranged from between 0.5 and 1.4 years in females and between 0.5 and 1.8 years in males.

Figure 18: Life Expectancy at Birth, Tasmania and Australia, 1986-2006



ABS, Deaths Australia, 2006, Cat. No. 3302.0

Indigenous Life Expectancy

Aboriginal and Torres Strait Islander peoples have a much lower life expectancy than the general population. In the period 1996 to 2001 the life expectancy at birth for indigenous Australians was estimated to be 59.4 years for males and 64.8 years for females, compared with 76.6 years for all males and 82 years for all females in the period 1998 to 2000.[6]

Table 9: Indigenous Life Expectancy at Birth, Australia 1996-2001

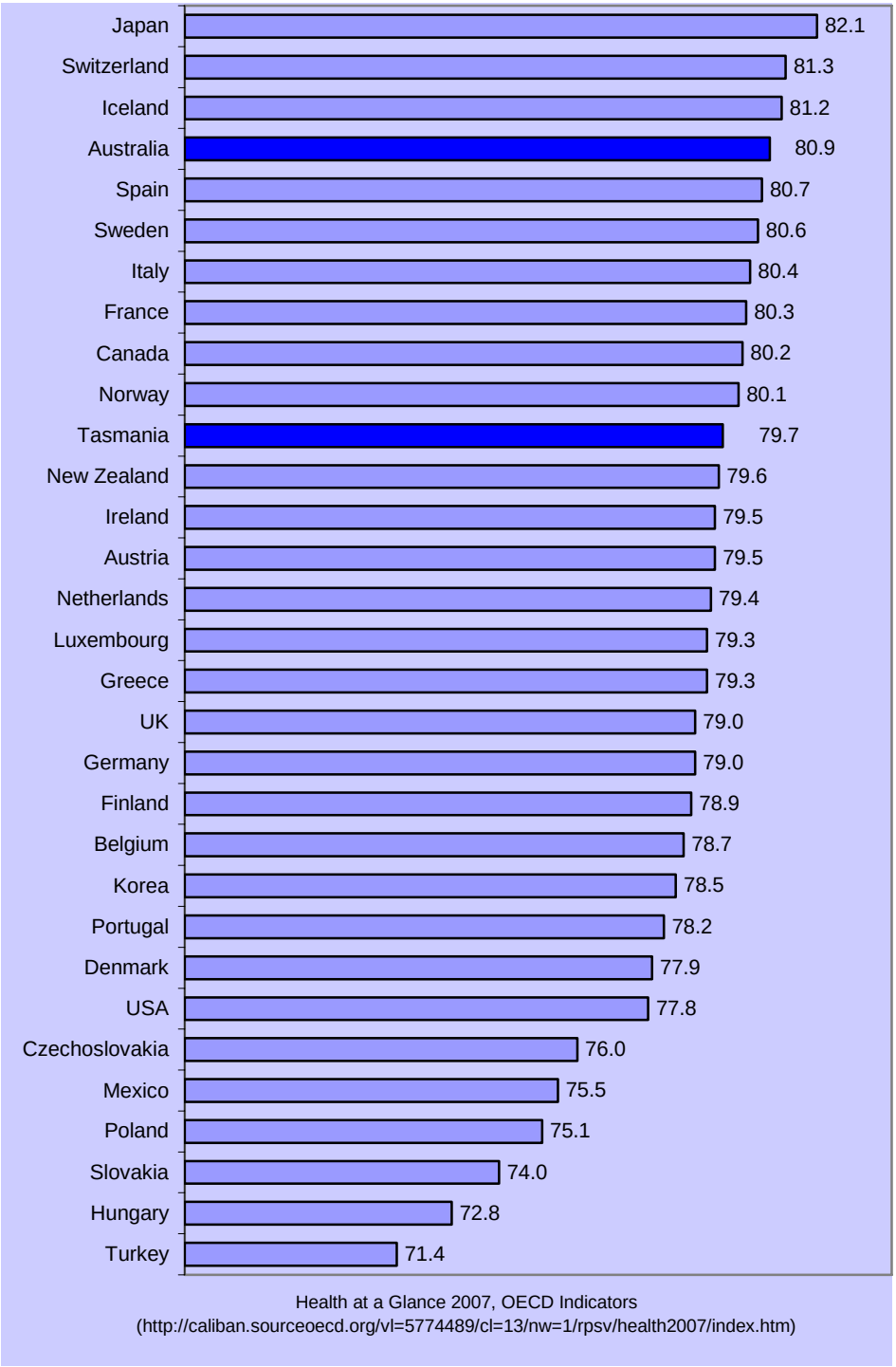
Males	59.4 years
Females	64.8 years

ABS, Deaths, Australia, 2004, cat. no. 3302.0, Table 9.12

[6] Life expectancy data are not available for indigenous populations in individual states and territories.

Australian average life expectancy at birth was the fourth highest of all OECD countries in 2005. Tasmanian average life expectancy at birth was 79.7 years in 2005, slightly less than the Australian average of 80.9 years.

Figure 19: Life Expectancy at Birth in Years, OECD Countries and Tasmania, 2005



Health at a Glance 2007, OECD Indicators
(http://caliban.sourceoecd.org/vl=5774489/cl=13/nw=1/rpsv/health2007/index.htm)

Disability-Free Life Expectancy

Disability-free life expectancy describes the average number of years for which a person might expect to live free from disability. This measure can be contrasted with total life expectancy to indicate the average number of years that a person could expect to live with a disability.

The data show a small improvement in disability free life expectancy for Australian males over the five year period from 1998 to 2003, from 57.9 years to 59.1 years, but little change for females over the same period of time.

Table 10: Disability-Free Life Expectancy at Birth by Sex, Australia 1998 and 2003

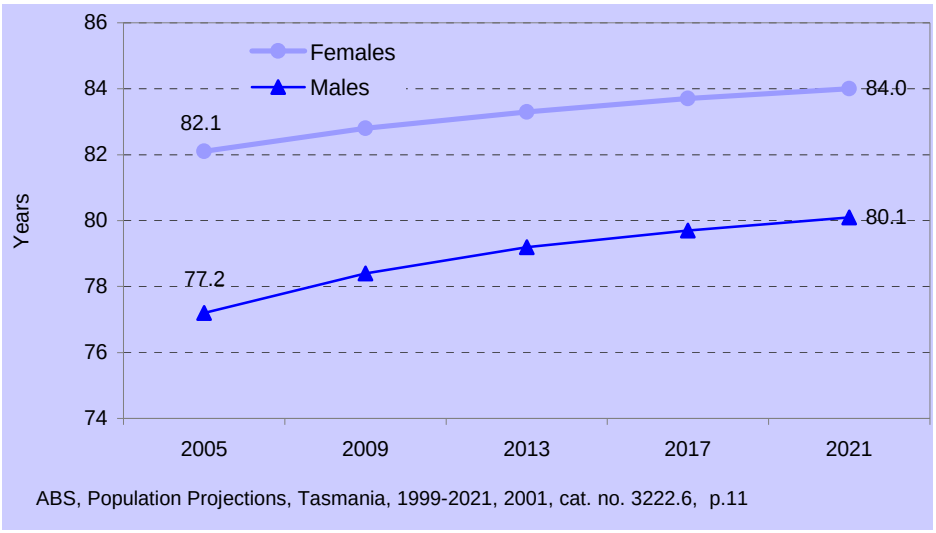
	1998	2003
Males	57.9 years	59.1 years
Females	62.0 years	62.2 years

ABS, Australian Social Trends, 2006

Life Expectancy Projections

Life expectancy assumptions for Tasmania are based on the Australian average annual rate of improvement in life expectancy for 1986-1996. By 2021, life expectancy for Tasmanian females is expected to be 84 years and for males 80.1 years. The gap between male and female life expectancy is expected to close from a difference of 4.9 years in 2005 to 3.9 years in 2021.

Figure 20: Projections of Life Expectancy at Birth, 2005-2021, Tasmania



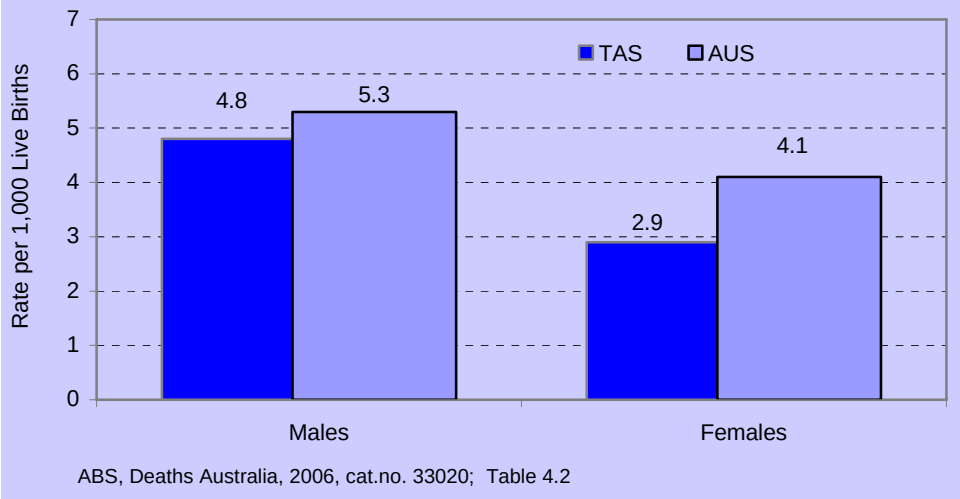
ABS, Population Projections, Tasmania, 1999-2021, 2001, cat. no. 3222.6, p.11

Infant Mortality

Infant mortality is an important indicator of the health status of a community. The Infant Mortality Rate (IMR) refers to the number of deaths of infants (≤ 1 year old) in a given year per 1 000 live births in the same year.

In 2006, Tasmania recorded the second lowest IMR of all jurisdictions at 3.9 deaths per 1,000 live births. Compared with the Australian infant mortality rate, the Tasmanian rate was lower for both males (4.8) and females (2.9).

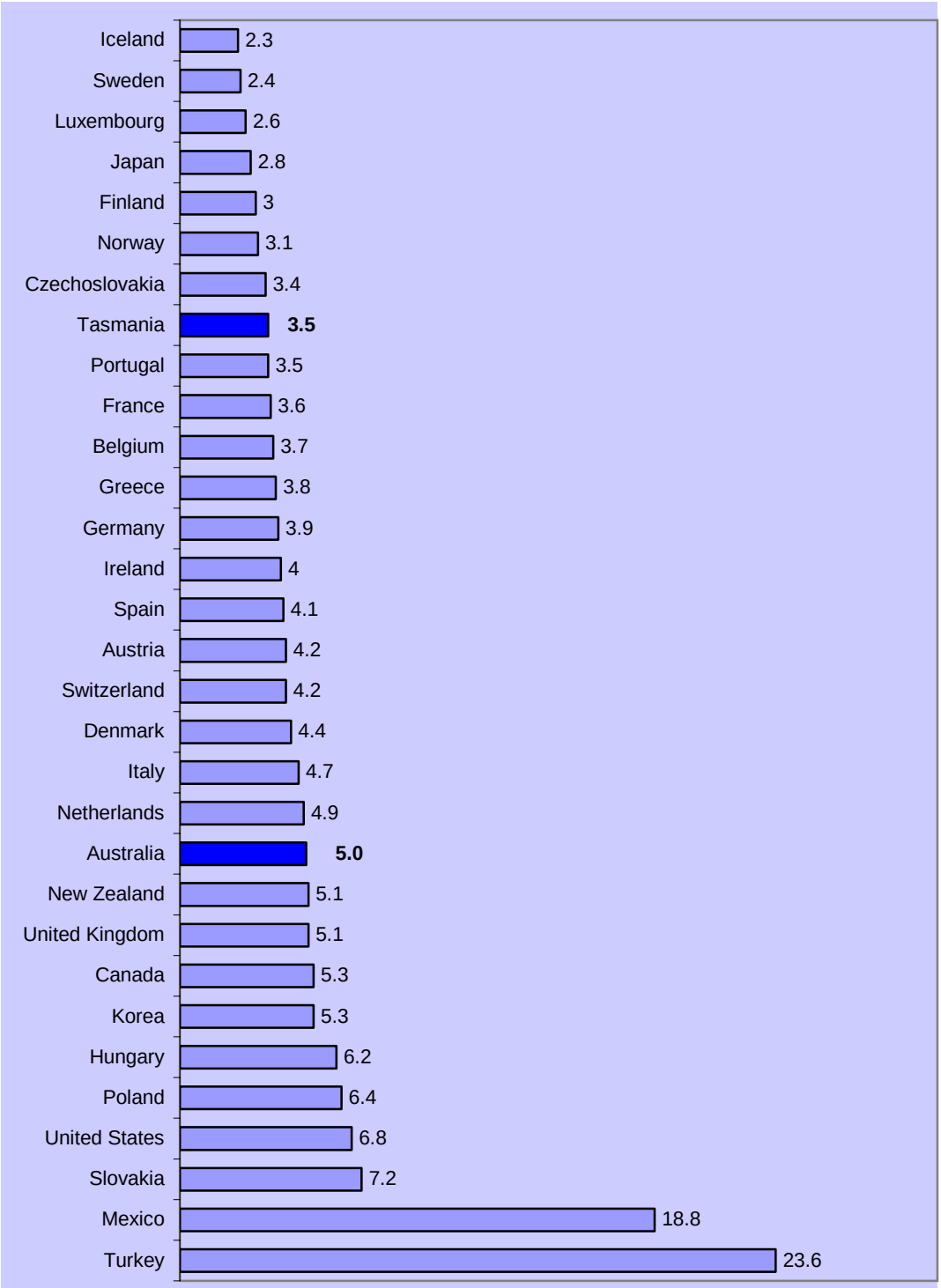
Figure 21: Infant Mortality Rate by Sex, Tasmania and Australia 2006



The IMR in Tasmania and Australia has continued to decline in the last 100 years, reflecting the continuing improvement of sanitation, nutrition and living standards in the community over the last century. In addition, further decreases in infant mortality can be attributed to public health programs such as mass immunization and health education.

Australia's infant mortality rate was slightly below the OECD average of 5.4 per 1,000 live births. Tasmania had the eight lowest infant mortality rate of all OECD countries in 2005 at 3.5 per 1,000 live births. However, caution should be exercised in interpreting Tasmania's results as numbers are small compared with the numbers that OECD countries infant mortality rates are based upon.

Figure 22: Infant Mortality Rates per 1,000 Live Births, OECD Countries and Tasmania, 2005



Health at a Glance 2007, OECD Indicators
(http://caliban.sourceoecd.org/vl=5774489/cl=13/nw=1/rpsv/health2007/index.htm)

Avoidable Mortality

Avoidable mortality refers to deaths that could potentially be avoided through effective interventions against specific diseases in a population. Avoidable mortality is thus a population-based method of determining unnecessary deaths from diseases for which effective public health and medical interventions are available.

Avoidable mortality is classified into primary, secondary and tertiary avoidable mortality, according to the type of intervention that is known to reduce deaths from specific diseases. Primary prevention refers to interventions that result in healthy behaviours and environments across the life-course, secondary prevention refers to activities such as screening, case finding, periodic health examinations, early intervention, control of risk factors including lifestyle and medication, and tertiary prevention to acute and chronic medical care, complications management, and rehabilitation. High avoidable mortality rates in any of these categories suggest shortcomings at the primary, secondary or tertiary level of prevention/intervention warranting investigation.

Tasmania as a whole experiences higher avoidable mortality rates than all other jurisdictions except the Northern Territory.

Table 11: Avoidable Mortality from All-Causes by Area, Australia, 1997-2001*

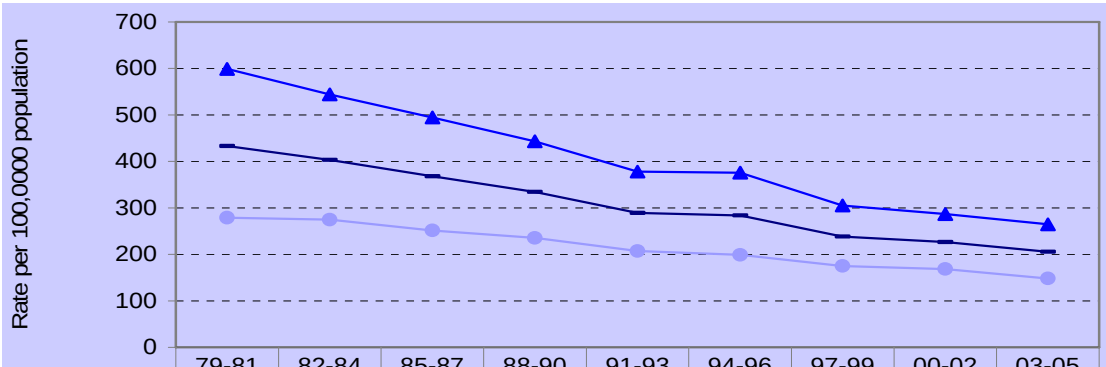
Area	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	All
Capital city	166.4	161.0	176.1	169.1	157.7	200.0	246.9	150.1	166.1
Other major urban	190.8	184.3	171.1	--	--	--	--	--	181.5
Rest of state/territory	195.2	183.7	199.8	190.7	193.8	185.7	492.3	--	195.7
Whole of state/territory	178.2	167.9	184.0	175.5	167.6	192.0	361.3	150.2	176.6

*ASR per 100,000 population

However, avoidable mortality is improving in Tasmania. Between 1979 and 2005, total avoidable death rates for all persons fell by around 52%. As the figure below shows, Tasmania has experienced an average annual percentage decline in potentially avoidable mortality of 3.5% for males and 2.7% for females for the period 1979 to 2005.

This decline in potentially avoidable mortality rates may reflect improvements in the health care system as well as changes in environment and socioeconomic conditions which are known contributors to mortality rates.

Figure 23: Potentially Avoidable Mortality, Population 0- 74 Years, Tasmania, 1979-2005

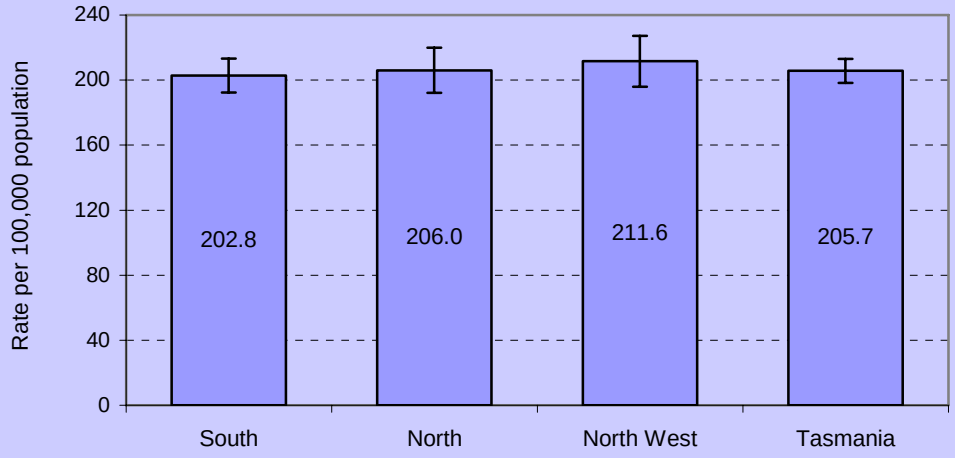


	79-81	82-84	85-87	88-90	91-93	94-96	97-99	00-02	03-05
Males	598.9	544.0	494.3	443.3	377.8	375.4	305.3	286.6	264.8
Females	278.8	274.8	251.5	235.1	207.0	198.8	175.1	168.3	148.4
Persons	433.2	402.9	368.1	334.4	289.1	283.9	238.5	226.3	205.7

Note: 1. Rates are age-standardised to the Australian 2001 population. 2. Avoidable deaths were estimated using disease codes developed by the New South Wales Department of Health (2006). 3. Average annual percentage change for males:-3.5% (P<0.01); for females:-2.7% (P<0.01); for persons:-3.1% (P<0.01).

Avoidable mortality rates across the Tasmanian regions were similar for the period 2003 to 2005.

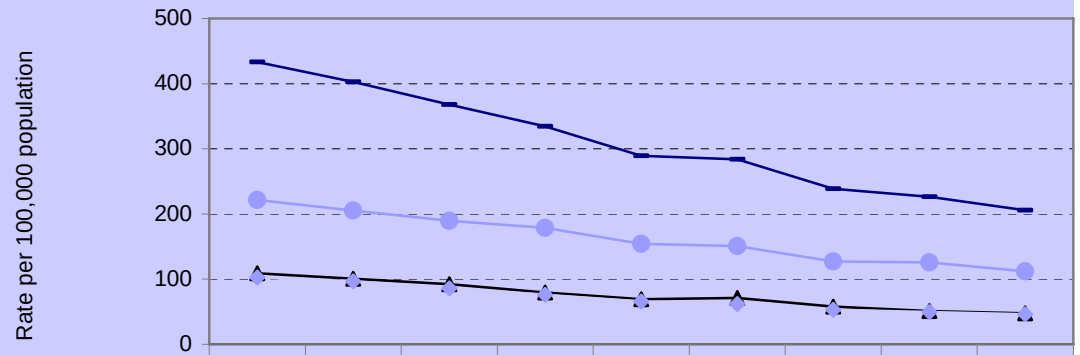
Figure 24: Potentially Avoidable Mortality, Population 0-74 Years, by Region, Tasmania, 2003-05



Note. 1. Rates are age-standardised to the Australian 2001 population. 3. The error bars represent the 95% confidence intervals of the rate. 3. Avoidable deaths were estimated using disease codes developed by the New South Wales Department of Health (2006).

There was a similar relative reduction in potentially avoidable mortality for primary, secondary and tertiary avoidable mortality in Tasmania. However the greatest absolute reduction in avoidable mortality from 1979 to 2005 was as a result of primary prevention.

Figure 25: Potentially Avoidable Mortality by Intervention Level, Population 0-74 Years, Tasmania, 1979-2005

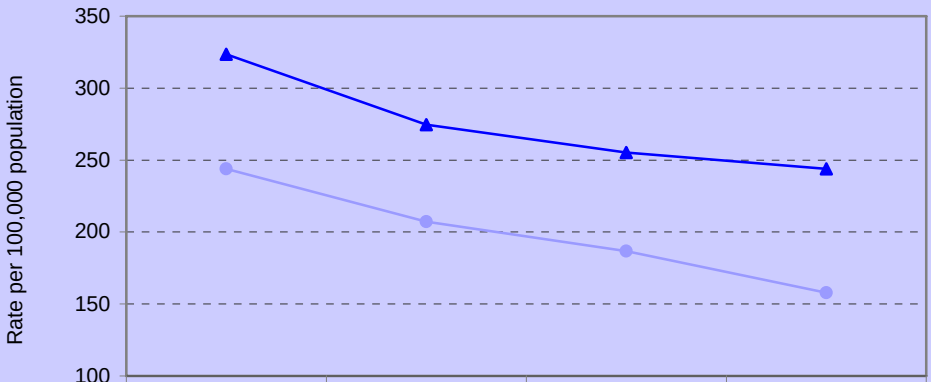


	79-81	82-84	85-87	88-90	91-93	94-96	97-99	00-02	03-05
Primary	221.6	205.4	189.7	178.9	154.0	150.7	127.2	125.6	112.1
Secondary	109.0	100.9	92.4	79.5	69.4	71.2	58.2	51.1	47.6
Tertiary	102.6	96.6	85.9	76.1	65.8	62.0	53.1	49.5	46.1
Total AM	433.2	402.9	368.1	334.4	289.1	283.9	238.5	226.3	205.7

Note: 1. Rates are age-standardised to the Australian 2001 population. 2. Avoidable deaths were estimated using disease codes developed by the New South Wales Department of Health (2006). 3. Average annual percentage change for the primary:-2.8% (P<0.01); for the secondary:-3.5% (P<0.01); for the tertiary:-3.5% (P<0.01).

The burden of potentially avoidable mortality associated with socio-economic status (measured by the SEIFA geographical classification) has decreased across all SES groups in Tasmania between 1994 and 2005. However, the rate of reduction has been higher in the high SES group (-4.6% annual average) than the low SES group (-3.1%).

Figure 26: Potentially Avoidable Mortality by Socio-Economic Status, Population 0-74 Years, Tasmania, 1994-05



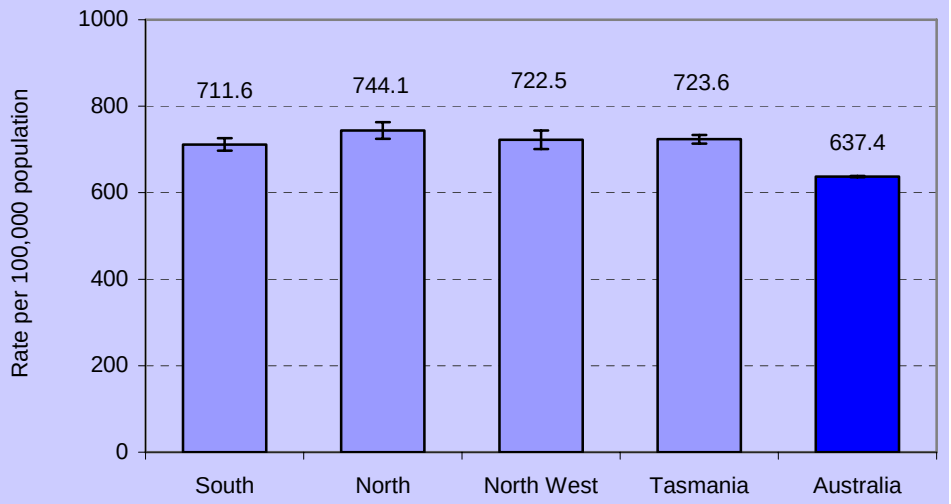
	1994-96	1997-99	2000-02	2003-05
Low	323.5	274.6	255.3	243.8
High	244.0	207.1	186.8	157.9

Note: 1. Rates are age-standardised to the Australian 2001 population. 2. Avoidable deaths were estimated using disease codes developed by the New South Wales Department of Health (2006). 3. Average annual percentage change for the low SES:-3.1% (P<0.01); for the high SES:-4.6% (P<0.01).

Mortality Rates and Causes

Tasmania's age standardised mortality rate for 2001-05 was 723.6 deaths per 100,000 population. The small regional differences in age-standardised mortality rates within Tasmania are not statistically significant, but there is a significant difference between Tasmania and Australia as a whole – consistent with a range of other population health data and Tasmania's overall risk factor profile.

Figure 27: Age-Standardised Mortality Rate, Tasmania and Australia, 2001-05



Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. ABS Mortality Database.

There were a total of 9,972 male deaths and 9,607 female deaths in Tasmania for the period 2001 to 2005. This equates to an annual average death rate of 3916 deaths per year in Tasmania over this time period. ABS mortality data has been used to identify the most common causes of death in Tasmania. For the period 2001 to 2005, the most common causes of death were cancer (28.8%), ischaemic heart disease (18.5%) and cerebrovascular diseases (7.8%).

Table 12: Top Ten Causes of Death in Tasmania, 2001-05

Rank	Disease ICD-10*	Average number of deaths per year	% of all deaths
1	Cancer (all types) C00-C97	1128	28.8
2	Ischaemic heart diseases I20-I25	724	18.5
3	Cerebrovascular diseases I60-I69	305	7.8
4	Injury and poisoning V01-Y98	251	6.4
5	Chronic lower respiratory diseases J40-J47	215	5.5
6	Other forms of heart disease I30-I52	196	5.0
7	Diabetes mellitus E10-E14	137	3.5
8	Diseases of arteries, arterioles and capillaries I70-I79	94	2.4
9	Organic, including symptomatic, mental disorders F00-F09	74	1.9
10	Renal failure N17-N19	59	1.5
	All other causes of death	733	18.7

*International Classification of Diseases, 10th Revision; ABS Mortality Database

The leading causes of death for children in Tasmania were perinatal and congenital diseases in both sexes, while transport accidents and suicide were the leading causes of death in males and females aged 15 to 24 years. Breast cancer was the leading cause of death for females aged 25 to 64 years. Ischaemic heart disease was the leading cause of death for males aged 25 to 64 years and for males and females aged 65 years and over.

Table 13: Leading Causes of Death by Age and Sex, Tasmania, 2001-05

	Males			Females		
Age	Disease ICD-10*	Average number of deaths per year	% of all deaths	Disease ICD-10*	Average number of deaths per year	% of all deaths
0-14	Perinatal P00-P96	8	28.8	Perinatal P00-P96	6	32.3
	Congenital malformations Q00-Q99	6	16.5	Congenital malformations Q00-Q99	<5	22.6
	Ill-defined R95-R99	<5	10.8	Ill-defined R95-R99	<5	8.6
15-24	Transport accidents V01-V99	11	38.0	Transport accidents V01-V99	<5	31.9
	Suicide X6O-X84	6	20.4	Suicide X6O-X84	<5	12.8
	Poisoning by noxious substances X40-X49	<5	4.9	Infectious diseases A00-B99	<5	6.4
25-64	Ischaemic heart diseases I20-I25	69	15.9	Breast cancer C50	34	12.7
	Suicide X6O-X84	43	9.8	Lung cancer C33-C34	27	10.0
	Lung cancer C33-C34	31	7.2	Ischaemic heart diseases I20-I25	16	5.9
65+	Ischaemic heart diseases I20-I25	306	20.4	Ischaemic heart diseases I20-I25	332	20.5
	Lung cancer C33-C34	111	7.4	Cerebrovascular diseases I60-I69	173	10.7
	Cerebrovascular diseases I60-I69	107	7.1	Other forms of heart disease I30-I52	107	6.6

*International Classification of Diseases, 10th Revision; ABS Mortality Database

The table below demonstrates that Tasmania's age standardised mortality rates are significantly higher than the Australian age standardised mortality rates for a number of conditions. These include cancer, diabetes mellitus, chronic lower respiratory diseases, injury and poisoning conditions and other forms of heart disease.

Table 14: Top Ten Causes of Death, Tasmania and Australia, 2005

Rank	Disease ICD-10*	Age-Standardised Mortality Rate (Tasmania)	Age-Standardised Mortality Rate (Australia)
1	Cancer (all types) C00-C97	**205.2**	**177.5**
2	Ischaemic heart diseases I20-I25	114.5	106.3
3	Cerebrovascular diseases I60-I69	**43.5**	**51.6**
4	Injury and poisoning V01-Y98	**52.6**	**38.3**
5	Chronic lower respiratory diseases J40-J47	**32.1**	**24.8**
6	Other forms of heart disease I30-I52	**36.0**	**26.7**
7	Diabetes mellitus E10-E14	**29.1**	**16.1**
8	Diseases of arteries, arterioles and capillaries I70-I79	12.4	10.8
9	Organic, including symptomatic, mental disorders F00-F09	13.3	12.6
10	Renal failure N17-N19	10.7	8.4

*Deaths per 100,000 of the estimated mid-year population; Results in bold represent a significant difference between Tasmanian and Australian in rates ($p<0.05$)

Burden of Disease Estimates and Projections

Burden of disease is a measure of the gap between the current health status in a population and an ideal situation where everyone lives into old age free from illness and disability. It is commonly assessed using the disability adjusted life year (DALY), a measure of healthy years of life lost due to a disability.[7] The table below lists the ten leading causes of burden of disease for Australia and summarises for Tasmania these causes in terms of rank order and percentage of total burden.

Table 15: Differentials in Burden (DALYs) in Tasmania and Australia for the 10 Leading Specific Causes, 2003

	Rank*		% of Total Burden
	Tasmania	Australia	Tasmania
Ischaemic heart disease	1	1	10.7%
Anxiety and depression	2	2	7.3%
Type 2 diabetes	3	3	5.0%
Cerebrovascular accident	4	4	4.4%
Dementia	8	5	2.5%
Lung cancer	6	6	3.8%
Chronic obstructive pulmonary disease (COPD)	5	7	4.0%
Adult-onset hearing loss	9	8	2.4%
Colorectal cancer	7	9	2.7%
Asthma	10	10	2.4%

* Sorted according to the leading specific causes for Australia, 2003; Source: Begg S et al, 2006[8]

[7] Australian Institute of Health and Welfare. Australia's Health 2006. AIHW cat. no. AUS73. Canberra: AIHW
[8] Begg S, et al, The burden of disease and injury in Australia, Australian Centre for Burden of Disease and Cost-Effectiveness. 2006

The burden of disease in Tasmania is similar to the rest of Australia for the ten leading causes of disease, with the exception of COPD, which is greater in Tasmania than the rest of Australia. Tobacco smoking, indoor and outdoor air pollution and occupational exposure to dusts and chemicals are significant risk factors for COPD. Some areas of Tasmania are known to experience poor ambient air quality, in particular Launceston and some suburbs of Hobart, which may contribute to Tasmania's excess burden of disease from COPD.[9]

Table 16 reports leading causes of disease burden (DALYs) in males and projects future disease burden likely to be associated with each cause.

Table 16: Leading Causes of Burden (DALYs) in Males, Australia 1993 to 2023

	Rank*				% of Total Burden			
	1993	2003	2013	2023	1993	2003	2013	2023
Ischaemic heart disease	1	1	1	2	14.7	11.0	8.7	6.9
Type 2 diabetes	6	2	2	1	3.5	5.6	8.2	11.5
Anxiety and depression	2	3	3	3	4.5	4.8	4.7	4.3
Lung cancer	3	4	4	6	4.4	4.0	3.7	3.3
Cerebrovascular accident	5	5	6	7	4.2	3.9	3.5	3.1
COPD	4	6	9	11	4.4	3.6	2.8	2.1
Adult-onset hearing loss	11	7	5	5	2.5	3.1	3.6	4.0
Suicide / self-inflicted injury	8	8	10	10	2.9	2.8	2.8	2.3
Prostate cancer	10	9	8	8	2.5	2.7	2.9	3.0
Colorectal cancer	9	10	11	9	2.6	2.5	2.6	2.3
Dementia	14	11	7	4	1.8	2.5	3.2	4.2

* Sorted according to the leading specific causes for Australia, 2003; Source: Begg S. et al. 2006

Ischaemic heart disease is the leading cause of burden of disease in males across three of the four time periods. Its share of the disease burden has decreased from 14.7% in 1993 to 11.0% in 2003. If this trend continues, ischaemic heart disease will decrease by a further 4.1% to 6.9% of total disease burden in 2023. Type 2 diabetes rose from the sixth to second highest cause of burden of disease in the decade to 2003, and is likely to increase a further 5.9% to 11.5% of total disease burden by 2023. Anxiety and depression will remain the third most significant cause of burden of disease, responsible for 4.3% of total burden in 2023 but lung cancer will drop to sixth place, largely because of a significant decrease in smoking prevalence in males over the last two decades. In its place, dementia, a disease strongly associated with increasing age, will become the fourth most common burden of disease by 2023, up from 11th place in 2003, largely due to the impact of population ageing.

[9] Department of Tourism, Arts and the Environment (DTAE). Tasmanian Air Quality Strategy. 2006

Table 17 reports leading causes of disease burden (DALYs) in females and projects future disease burden likely to be associated with each cause.

Table 17: Leading Causes of Burden (DALYs) in Females, Australia 1993 - 2023

	Rank*				% of total			
	1993	2003	2013	2023	1993	2003	2013	2023
Anxiety and depression	2	1	1	2	9.9	10.0	9.5	8.4
Ischaemic heart disease	1	2	2	4	12.5	8.9	7.4	5.8
Cerebrovascular accident	3	3	5	5	6.0	5.2	4.3	3.6
Dementia	5	4	4	3	3.7	4.8	5.8	7.1
Breast cancer	4	5	6	6	5.1	4.8	4.2	3.4
Type 2 diabetes	8	6	3	1	2.8	4.4	7.2	11.6
COPD	6	7	8	8	3.1	3.0	2.9	2.6
Lung cancer	10	8	7	7	2.4	2.7	3.1	3.3
Asthma	7	9	9	9	3.0	2.7	2.5	2.3
Colorectal cancer	9	10	10	12	2.7	2.3	2.1	1.8
Adult-onset hearing loss	11	11	11	11	1.6	1.8	2.0	2.1

* Sorted according to the leading specific causes for Australia, 2003; Source: Begg S. et al. 2006

Anxiety and depression were the leading causes of burden of disease in females in 2003 and are predicted to continue to be the leading causes in 2013, although in percentage terms its share of total burden will decrease from 10% in the decade to 2003, to 8.4% in 2023. Ischaemic heart disease will remain the second highest cause of burden of disease in females over the next decade, but will fall to number four by 2023. In its place, the burden of disease associated with dementia will increase. This burden has increased by 1% to 4.8% of total burden in the decade to 2003, and, if current predictions about population ageing are correct, will be the third leading cause of burden of disease by 2023, responsible for 7.1% of total burden in females by that date. As with males, the burden of disease associated with type 2 diabetes will increase steadily to be the leading cause of burden of disease in females by 2023, responsible for approximately 11.6% of total burden by that date.

Over time, cardiovascular disease will decrease as a proportion of total burden of disease, primarily due to improved diagnosis and treatment. A major consequence of population ageing will be the steady growth in burden of disease from neurological and sense disorders, because they are experienced later in life. The main contributors are dementia and adult onset hearing loss. The effects of population ageing will also mean that mental disorders, which are largely experienced in early to middle adulthood, will decline over the next decades, although they will remain the leading cause of overall prevalent disability.[10]

[10] Begg S, et al, op.cit.

Chronic Health Conditions

Chronic health conditions refer to long-term conditions (lasting more than six months) that can have a significant impact on a person's life. The chronic conditions data presented in this section are for Australia's national health priority areas, selected by national and state and territory governments due to their health impact and the potential to reduce their disease burden. They include cardiovascular health, cancers, injury prevention and control, mental health, diabetes mellitus, asthma and arthritis and musculoskeletal conditions in 2002. Taken together, these seven national health priority areas account for almost 80% of the total burden of disease and injury in Australia.

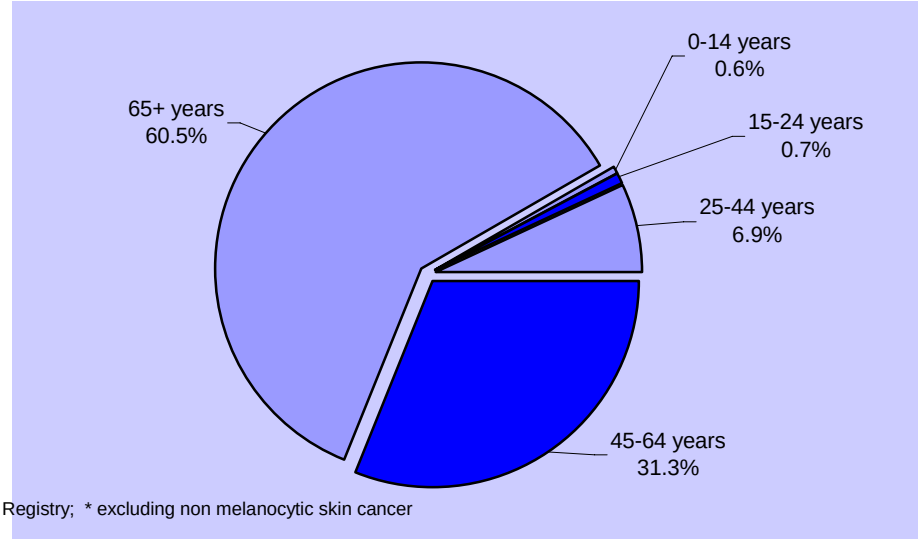
Cancer

Cancer is regarded as a complex set of diseases characterised by the abnormal proliferation of cells that do not respond to normal growth controls.[11] There are eight priority cancers identified in the national health priority areas: lung cancer, colorectal cancer, melanoma, non-melanocytic skin cancer, prostate cancer, breast cancer, cervical cancer and non-Hodgkin's lymphoma. These cancers account for approximately 54% of all cancer deaths in Australia.[12]

In Tasmania, cancer is a notifiable disease. According to the Public Health Act (1997), the Director of Public Health requires any person or class of person, agency or public authority to notify the Director of the presence or occurrence of cancer diagnoses. In reality, the majority of notifications for cancer are made by pathology laboratories once a tissue diagnosis of cancer is made from an appropriate specimen.

The incidence of cancer increases with increasing age. The graph below shows that of all cancers cases from 2000 to 2004 in Tasmania, 60.2% occurred in persons aged 65 years and over.

Figure 28: All Causes Cancer* Incident Cases by Age, Tasmania, 2000-04

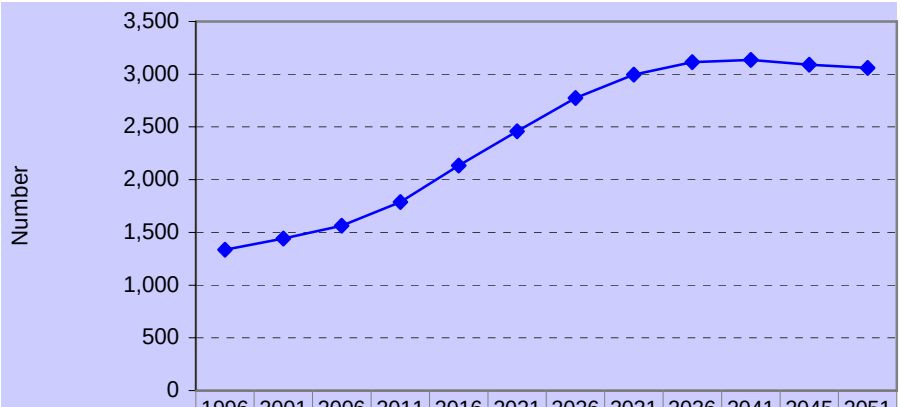


Registry; * excluding non melanocytic skin cancer

[11] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.
[12] http://www.aihw.gov.au/nhpa/cancer/index.cfm

The incidence of cancer in Tasmania is predicted to increase over the next four decades, predominantly because of population ageing. Because the population in Tasmania is ageing at a rate faster than the national rate, the rate of increase in cancer incidence is predicted to be greater in Tasmania than for Australia as a whole.

Figure 29: All Causes Cancer Incident Case Projections, Population 65 Years and Over, Tasmania, 1996-2051

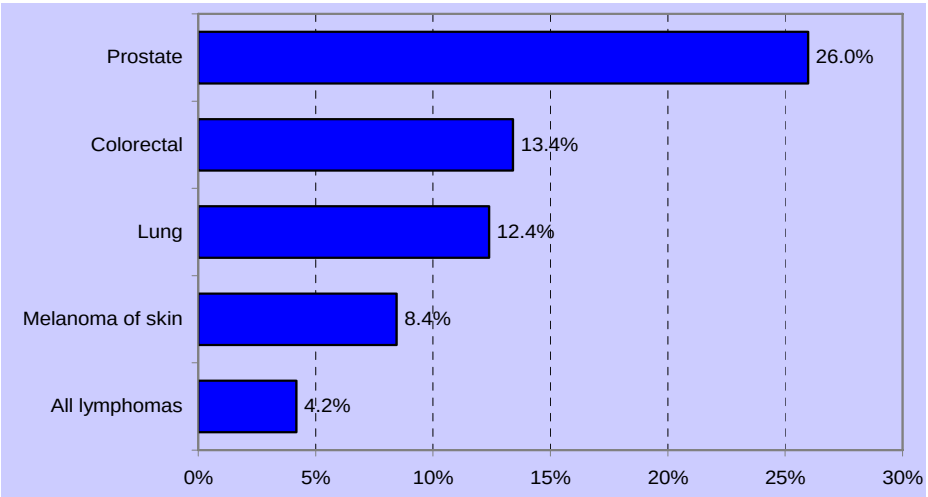


	1996	2001	2006	2011	2016	2021	2026	2031	2036	2041	2045	2051
Cancer all-causes*	1,337	1,443	1,562	1,789	2,135	2,459	2,775	2,995	3,116	3,137	3,089	3,059

*excluding non melanocytic skin cancer; projections use 2004 incident rates derived from the Tasmanian Cancer Registry

The commonest cancer (excluding non-melanoma skin cancer) diagnosed in males in Tasmania between 2000 and 2004 was prostate cancer (26% of all cases). Colorectal cancer (13.4%) and lung cancer (12.4%) were the second and third most commonly diagnosed cancers in males.

Figure 30: Most Common Cancers Diagnosed in Tasmanian Males, 2000-04

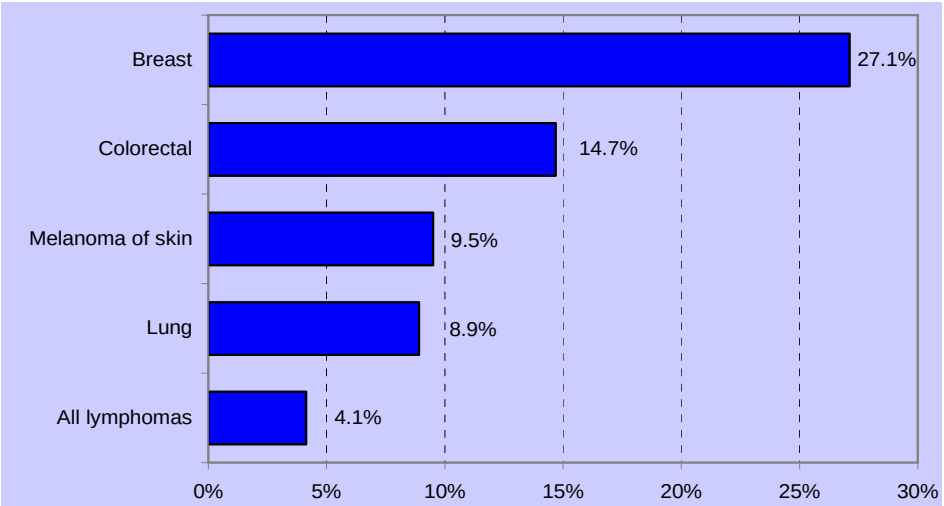


1. % of all new cases
2. There were 6,675 new cases diagnosed during 2000-04 (annual average = 571 cases per 100,000)

The most common causes of cancer-related deaths in males in 2004 were lung cancer (127 deaths), colorectal cancer (88 deaths), prostate cancer (81 deaths), pancreatic cancer (29 cancer deaths) and cancers of the bladder, stomach and lymphoma (26 deaths each).

The most common cancer (excluding non-melanoma skin cancer) diagnosed in females in Tasmania between 2000 and 2004 was breast cancer (27.1% of all cases). Colorectal cancer (14.7%) and melanoma of the skin (9.5%) were the second and third most commonly diagnosed cancers in females.

Figure 31: Most Common Cancers Diagnosed in Tasmanian Females, 2000-04



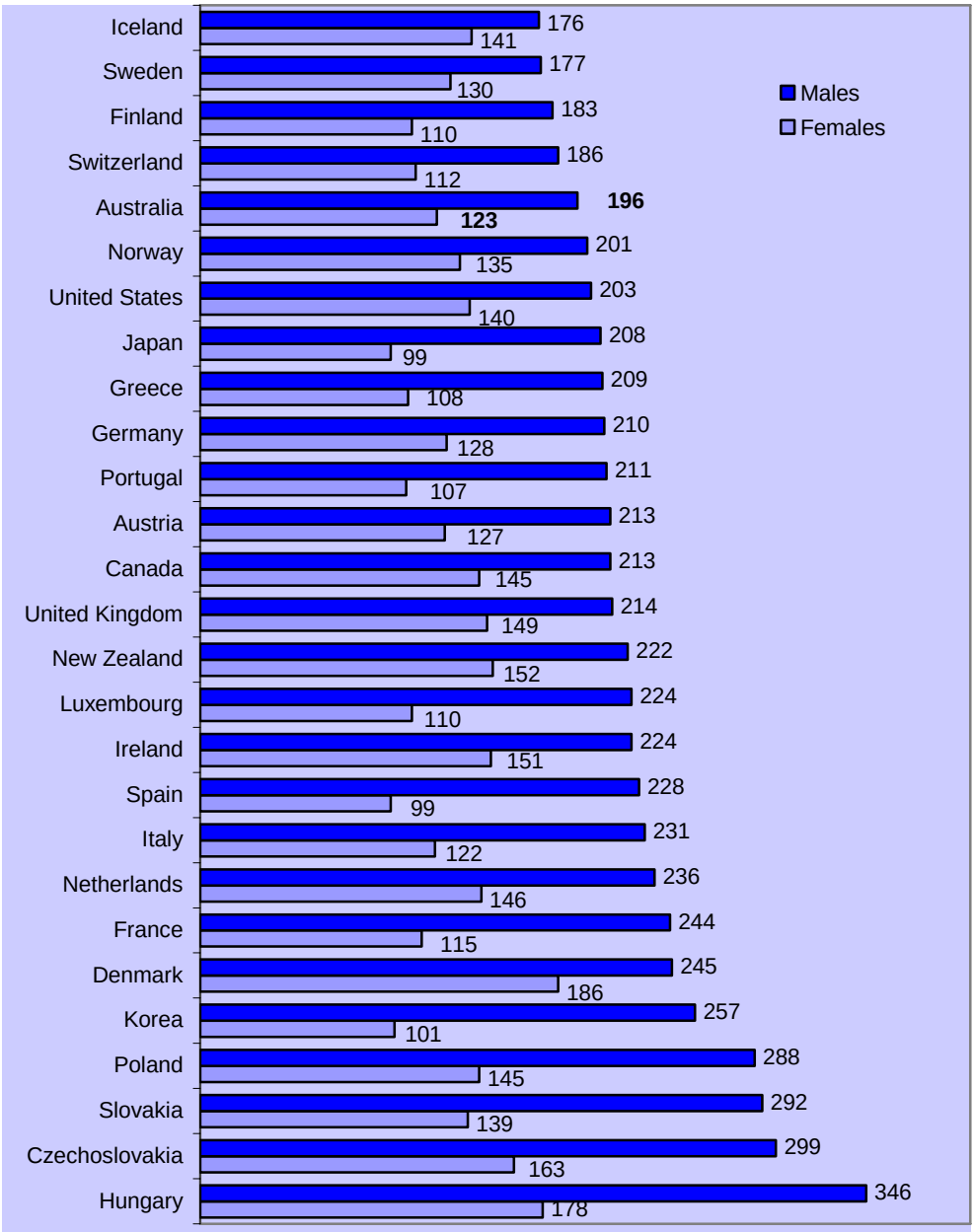
1. % of all new cases
2. There were 5,556 new cases diagnosed during 2000-04 (average annual rate = 461 cases per 100,000)

The most common causes of cancer-related deaths in female Tasmanian residents in 2004 were colorectal cancer (85 deaths), breast cancer (71 deaths), lung cancer (66 deaths), lymphoma (26 deaths) and pancreatic cancer (20 deaths).

The age-standardised death rate for all cancers in 2005 was higher in Tasmania (205.2 deaths per 100,000 population) than for Australia as a whole (177.5 deaths per 100,000 population).

In 2004 age standardised (world population) rates for Australia for all-cause cancers at 196 per 100,000 for males was well below the OECD average of 227 per 100,000 population. For females, the all-cause cancer death rate in Australia was 123 per 100,000 population compared to the OECD average of 132 per 100,000.

Figure 32: Age Standardised Mortality Rate for All-Cancers by Sex, OECD Countries, 2004

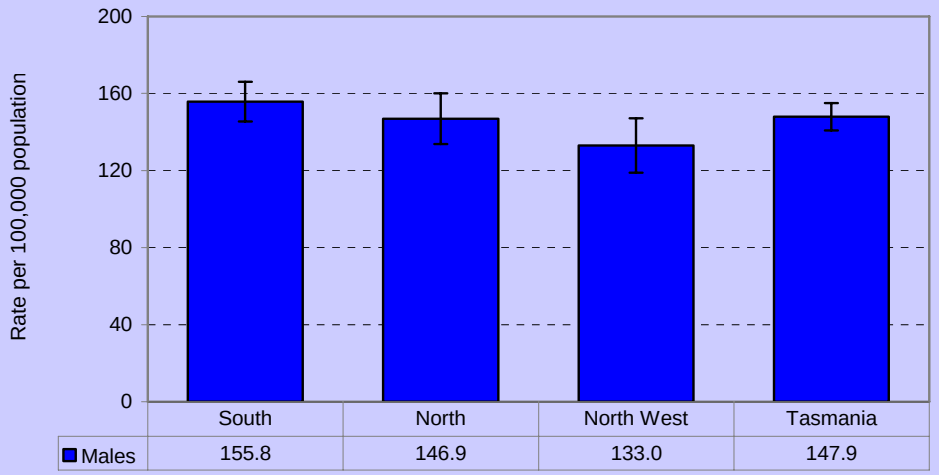


*per 100,000 population; Health at a Glance 2007, OECD Indicators (http://caliban.sourceoecd.org/vl=5774489/cl=13/nw=1/rpsv/health2007/index.htm)

Prostate Cancer

The median age for prostate cancer diagnosis in Australia was 69 years in 2005.[13] The age standardised incidence rate for prostate cancer between 2000 and 2004 was 147.9 cases per 100,000 males in Tasmania, equivalent to the 2003 Australian rate of 144.2 cases per 100,000 males.[14] There was no significant regional difference in age-standardised incidence rates for prostate cancer in Tasmania.

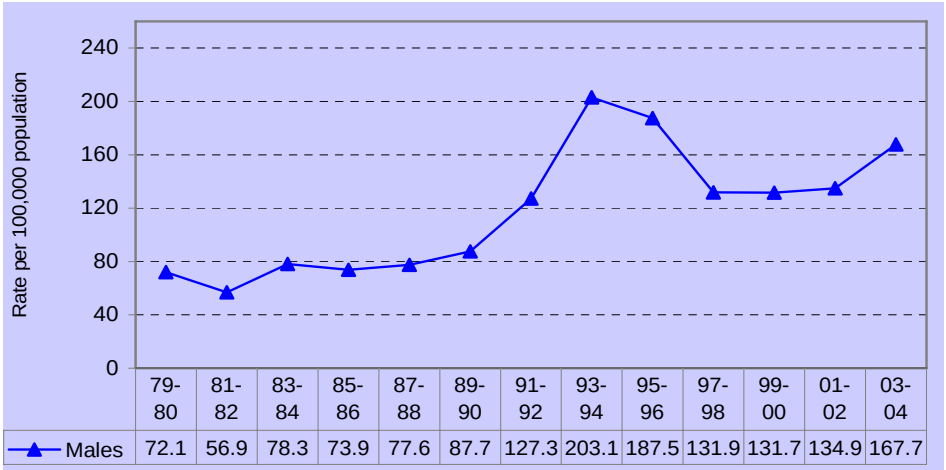
Figure 33: Age-Standardised Incidence Rate for Prostate Cancer by Region (ICD-10 C61), Tasmania, 2000-04



ASR are standardised with the Australian 2001 population; the error bars represent the 95% confidence interval of the rate

The age standardised incidence rate for prostate cancer in Tasmania has more than doubled since 1979-80. The average annual percentage change has been 4% per annum. The increased incidence of prostate cancer has been largely attributed to early detection of this cancer.

Figure 34: Age-Standardised Incidence Rate for Prostate Cancer (ICD-9 185, ICD-10 C61), Tasmania, 1979-2004

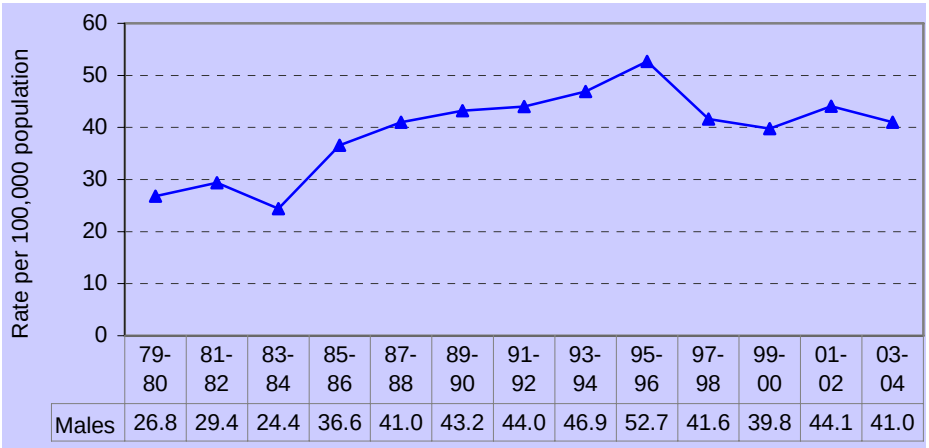


ASR are standardised with the Australian 2001 population
Average annual percentage change: 4.0% (P<0.01)

[13] Medical Journal of Australia, Editorial: Revisiting the Role of Radical Surgery in Early Stage Prostate Cancer, Vol.183, No 6, September 2005
[14] Australian Institute of Health and Welfare, Cancer in Australia: An Overview, 2006, Canberra, 2007

Between 1979-80 and 1995-96 the age-standardised mortality rate for prostate cancer rose, in part due to better detection of the cancer. Since 1997-98 rates have been relatively stable.

Figure 35: Age-Standardised Mortality Rate for Prostate Cancer (ICD-9 185, ICD-10 C61*), Tasmania, 1979-2004



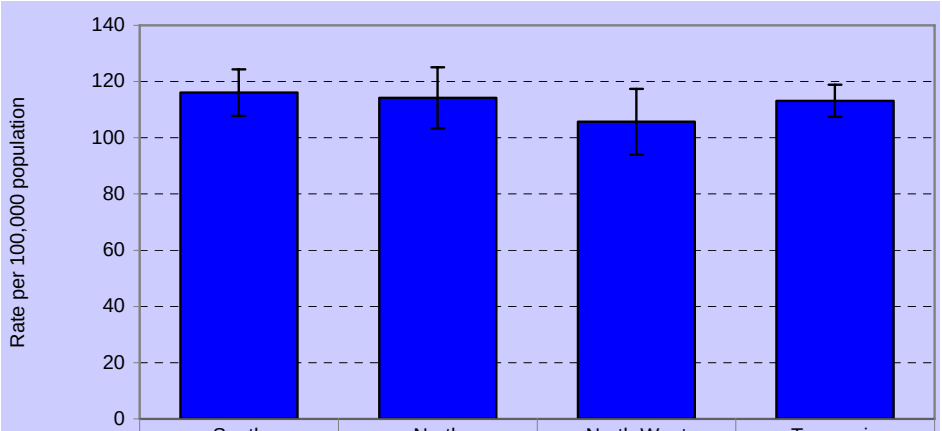
	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Males	26.8	29.4	24.4	36.6	41.0	43.2	44.0	46.9	52.7	41.6	39.8	44.1	41.0

*International Classification of Diseases, 9th and 10th Revisions; ABS, Mortality Database; ASR are age-standardised with the 2001 Australian population.

Breast Cancer

Nationally, the mean age for a first diagnosis of female breast cancer is approximately 60.1 years.[15] The age standardised incidence rate for breast cancer between 2000 and 2004 was 113.1 cases per 100,000 females in Tasmania, equivalent to the 2003 Australian rate of 111.8 cases per 100,000 females.[16] Age standardised incidence rates for breast cancer are similar across the regions of Tasmania.

Figure 36: Age-Standardised Incidence Rate for Breast Cancer by Region (ICD-10 C50), Tasmania, 2000-04



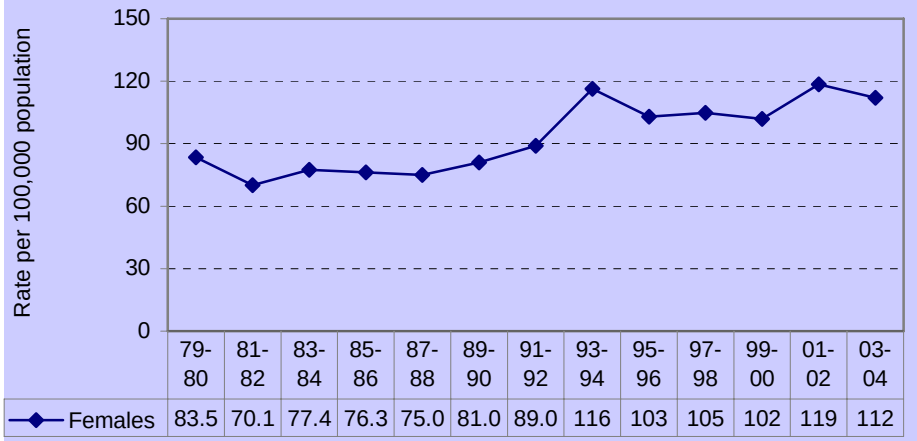
	South	North	North West	Tasmania
Females	116.1	114.2	105.7	113.1

ASR are standardised with the Australian 2001 population; the error bars represent the 95% confidence interval of the rate

Incidence rates for breast cancer have increased since 1979/80 by 2.1% per annum. This increase has in part resulted from the improved detection of breast cancer through the introduction of the BreastScreen Tasmania program which commenced in 1993.

[15] Australian Institute of Health and Welfare, Breast Cancer in Australia: An Overview, 2006, Canberra, 2006
[16] Australian Institute of Health and Welfare, Cancer in Australia: An Overview, 2006, Canberra, 2007

Figure 37: Age-Standardised Incidence Rate for Breast Cancer (ICD-9 174, ICD-10 C50), Tasmania, 1979-2004

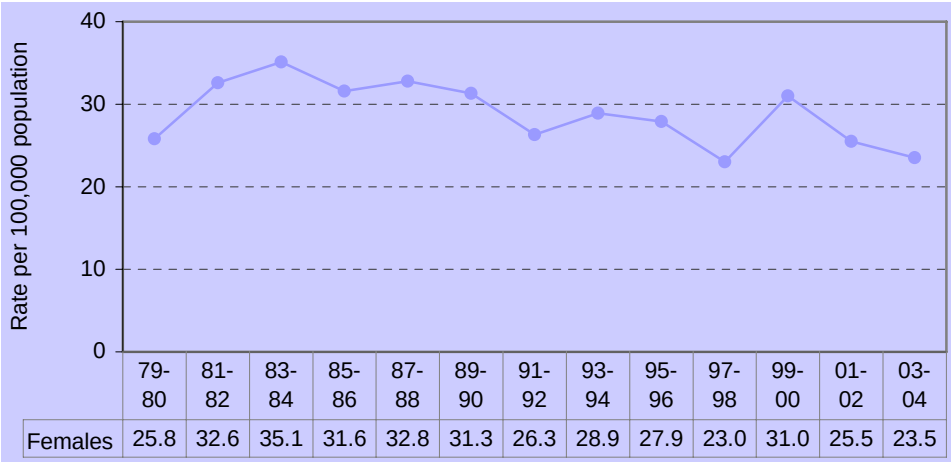


	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Females	83.5	70.1	77.4	76.3	75.0	81.0	89.0	116	103	105	102	119	112

ASR are standardised with the Australian 2001 population
Average annual percentage change: 2.1% (P<0.01)

Although the incidence rate for breast cancer has increased, the age standardised mortality rate has remained relatively constant since 1979-80, at between 23.0 and 35.1 deaths per 100,000 females in Tasmania for the years 1979 to 2004. This is largely attributed to earlier detection of cancers through screening and advances in breast cancer treatment resulting in improved survival.

Figure 38: Age-Standardised Mortality Rate for Breast Cancer (ICD-9 174, ICD-10 C50*), Tasmania, 1979-2004



	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Females	25.8	32.6	35.1	31.6	32.8	31.3	26.3	28.9	27.9	23.0	31.0	25.5	23.5

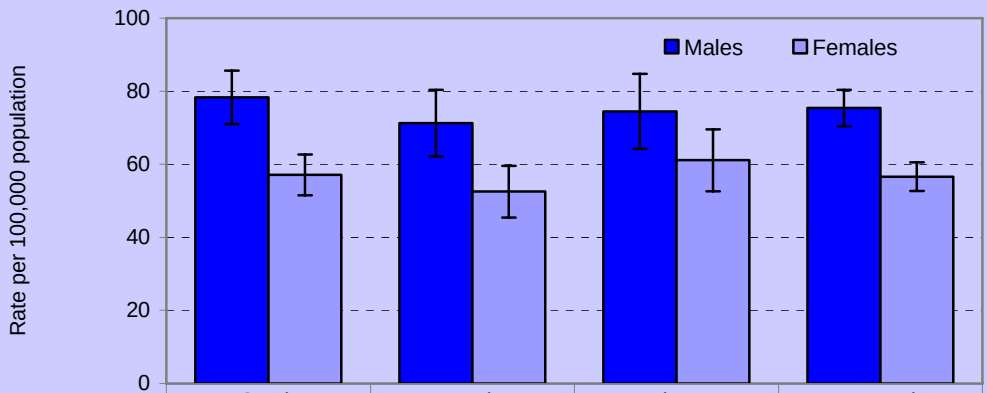
*International Classification of Diseases, 9th and 10th Revisions; ABS, Mortality Database; ASR are age-standardised with the 2001 Australian population.

Colorectal Cancer

Colorectal cancer incidence rates are higher in males than in females. Age standardised colorectal cancer incidence rates between 2000 and 2004 were 75.4 cases per 100,000 males and 56.6 cases per 100,000 females in Tasmania. Rates in both sexes were higher than 2003 Australian rates (males-73.2/100,000; females-51.1/100,000). The difference in rates was statistically significant in females ($p<0.05$)[17]. There were no significant regional differences in rates in Tasmania for this time period.

[17] Ibid

Figure 39: Age-Standardised Incidence Rate for Colorectal Cancer by Region (ICD-10 C18-C21), Tasmania, 2000-04

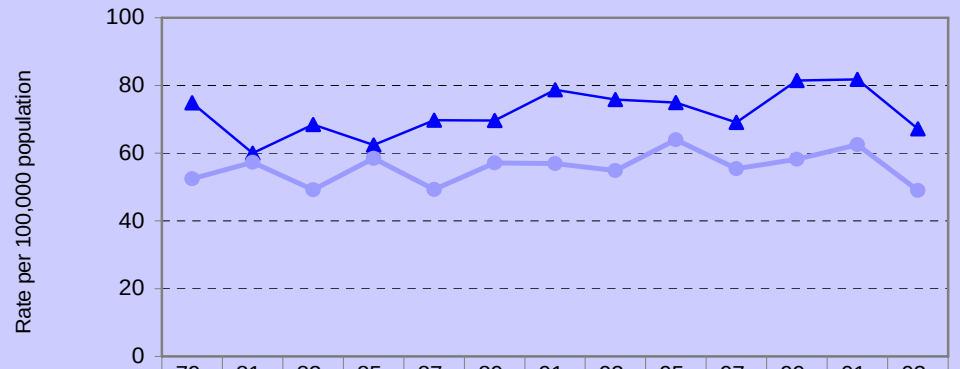


	South	North	North West	Tasmania
Males	78.3	71.3	74.5	75.4
Females	57.1	52.5	61.1	56.6

ASR are standardised with the Australian 2001 population; the error bars represent the 95% confidence interval of the rate

There has been very little change in age standardised incidence rates for colorectal cancer in Tasmania since 1979-80.

Figure 40: Age-Standardised Incidence Rate for Colorectal Cancer by Sex (ICD-9 153-154, ICD-10 C18-C21), Tasmania, 1979-2004



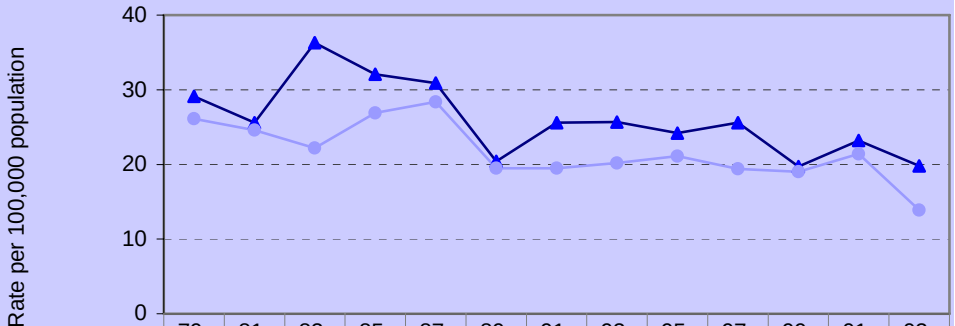
	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Males	74.9	60.0	68.5	62.4	69.7	69.6	78.7	75.9	75.0	69.1	81.4	81.8	67.2
Females	52.4	57.3	49.2	58.5	49.3	57.1	56.9	54.9	64.0	55.4	58.2	62.5	49.0

ASR are standardised with the Australian 2001 population
Average annual percentage change for males: 0.6% (P<0.01) for females: 0.3% (P>0.05)

Mortality rates are reported here separately for colon cancer and for rectal cancer.

Age-standardised mortality rates for colon cancer have decreased between 1979 and 2004, from 29.1 to 19.8 deaths per 100,000 males per year and from 26.1 to 13.9 deaths per 100,000 females per year.

Figure 41: Age-Standardised Mortality Rate for Colon Cancer by Sex (ICD-9 153, ICD-10-C18*), Tasmania, 1979-2004

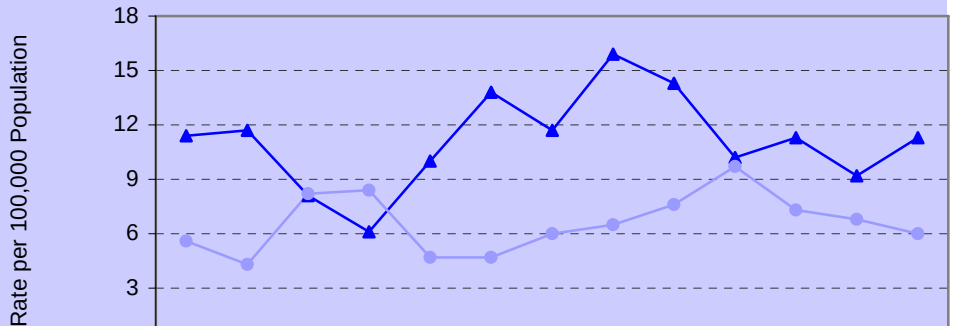


	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Males	29.1	25.6	36.3	32.1	30.9	20.4	25.6	25.7	24.2	25.6	19.7	23.2	19.8
Females	26.1	24.6	22.2	26.9	28.4	19.5	19.5	20.2	21.1	19.4	19.0	21.4	13.9

*International Classification of Diseases, 9th and 10th Revisions; ABS, Mortality Database, ASR are age-standardised with the 2001 Australian population.

For rectal cancer there was significant variation in age-standardised mortality rates between the years 1979 and 2004. Rates ranged from between 6.1 and 15.9 deaths per 100,000 persons per year in males and between 4.3 and 9.7 deaths per 100,000 persons per year in females.

Figure 42: Age-Standardised Mortality Rate for Rectal Cancer by Sex (ICD-9 154, ICD-19- C21*), Tasmania, 1979-2004



	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Males	11.4	11.7	8.1	6.1	10.0	13.8	11.7	15.9	14.3	10.2	11.3	9.2	11.3
Females	5.6	4.3	8.2	8.4	4.7	4.7	6.0	6.5	7.6	9.7	7.3	6.8	6.0

*International Classification of Diseases, 9th and 10th Revisions; ABS, Mortality Database, ASR are age-standardised with the 2001 Australian population.

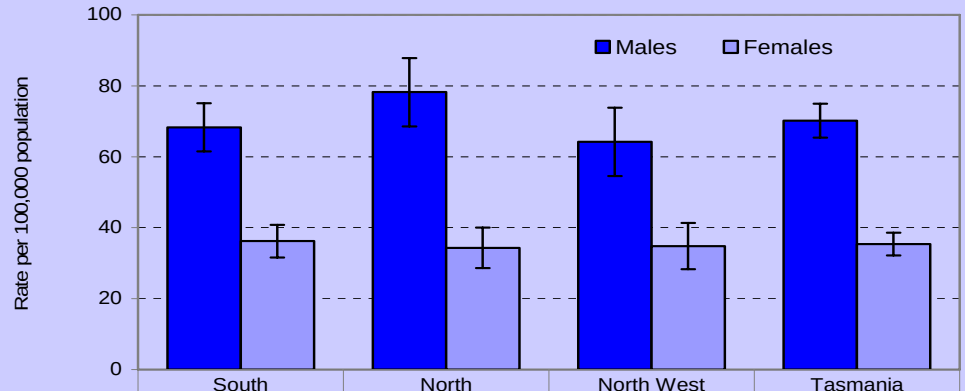
Lung Cancer

The lung cancers comprise cancers of the trachea, bronchus and lung. The primary causes of lung cancer are tobacco smoking and passive exposure to tobacco smoke. [18] Lung cancer was the third most common cancer diagnosis in males (70.2 cases per 100,000 persons) and the fourth most common cancer diagnosis in females (35.4 cases per 100,000 persons) in Tasmania (excluding non-melanoma skin cancers) between

[18] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.

2000 and 2004. The Tasmanian rates were statistically significantly higher ($p<0.05$) than the respective 2003 national rates (males – 57.1 per 100,000; females – 27.1 per 100,000)[19].

Figure 43: Age-Standardised Incidence Rate for Lung Cancer by Region (ICD-10 C33-C34), Tasmania, 2000-04

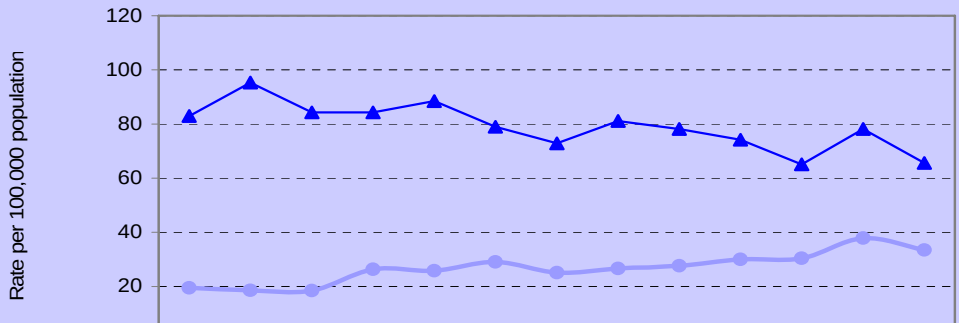


	South	North	North West	Tasmania
Males	68.3	78.2	64.2	70.2
Females	36.2	34.3	34.8	35.4

ASR are standardised with the Australian 2001 population; the error bars represent the 95% confidence interval of the rate

The incidence of lung cancer in males is almost twice the rate for females. The gap between the incidence of lung cancer between males and females is closing, with the incidence declining for males but increasing for females. From 1979/80 to 2001/02 the age-standardised incidence rate of lung cancer decreased by an average of 1.1% per annum in males and rose by 2.5% per annum in females. A similar pattern has been observed nationally.

Figure 44: Age-Standardised Incidence Rate for Lung Cancer by Sex (ICD-9 162, ICD-10 C33-C34), Tasmania, 1979-2004



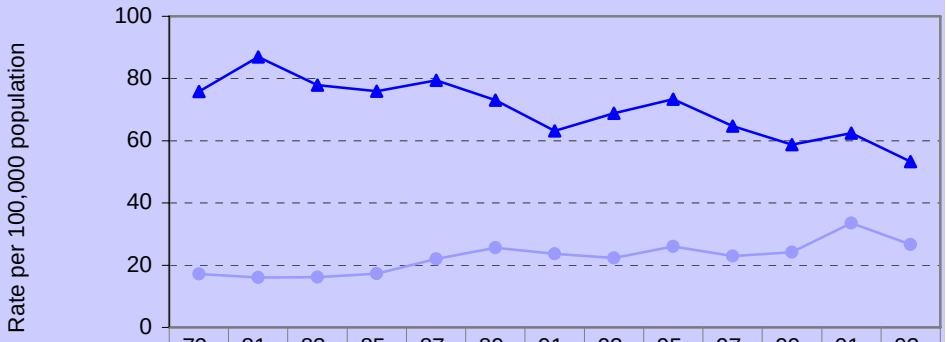
	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	00-01	01-02
Males	83.0	95.3	84.3	84.3	88.5	79.0	72.9	81.1	78.2	74.2	65.1	78.2	65.6
Females	19.5	18.6	18.5	26.3	25.8	29.1	25.1	26.6	27.7	30.0	30.4	37.9	33.5

ASR are standardised with the Australian 2001 population
Average annual percentage change for males: -1.1% (P<0.01); for females: 2.5% (P<0.01)

The age standardised mortality rate for lung cancer in Tasmania decreased significantly between 1979 and 2004 in males but increased for females. In spite of this, the mortality rate for lung cancer remains higher in males than in females, reflecting historically higher smoking rates in males compared with females. There were between 53.3 and 86.9 deaths per 100,000 persons in males and between 16.0 and 35.5 deaths per 100,000 persons in females each year in Tasmania between 1979 and 2004.

[19] Australian Institute of Health and Welfare, Cancer in Australia: An Overview, 2006, Canberra, 2007

Figure 45: Age-Standardised Mortality Rate for Lung Cancer by Sex (ICD-9 162, ICD-10 C33-C34*), Tasmania, 1979-2004



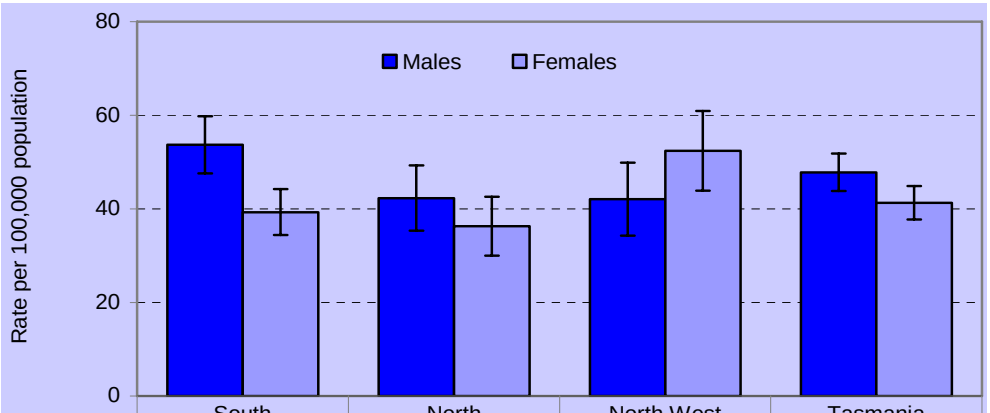
	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Males	75.8	86.9	77.9	75.9	79.4	73.0	63.2	68.8	73.4	64.7	58.7	62.4	53.3
Females	17.2	16.0	16.2	17.3	22.0	25.6	23.7	22.3	26.0	22.9	24.2	33.5	26.6

*International Classification of Diseases, 9th and 10th Revisions; ABS, Mortality Database, ASR are age-standardised with the 2001 Australian population.

Melanoma of the Skin

Excluding non-melanoma skin cancer, melanoma of the skin is the third most common cancer in Tasmanian females (41.3 cases per 100,000 population) and the fourth most common cancer for males (47.8 cases per 100,000 population). The Tasmanian rate in males was statistically significantly lower ($p<0.05$) than the 2003 national rate in males (57.9 per 100,000), whilst the female rate was slightly higher than the corresponding 2003 national rate (37.9 per 100,000)[20]. There were no significant regional differences in incidence rates for melanoma in Tasmania between 2000 and 2004.

Figure 46: Age-Standardised Incidence Rate for Melanoma of Skin by Region (ICD-10 C43), Tasmania, 2000-04



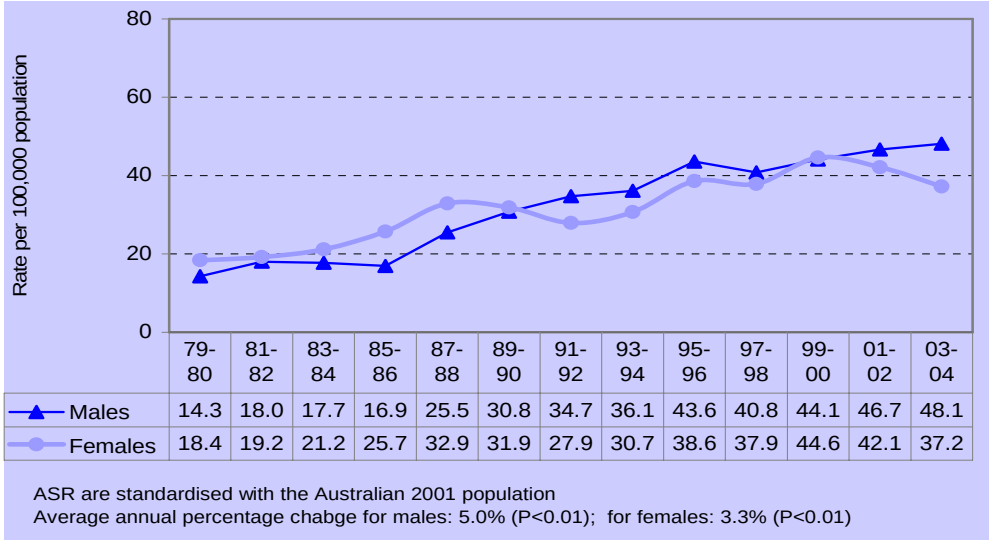
	South	North	North West	Tasmania
Males	53.7	42.3	42.1	47.8
Females	39.3	36.3	52.4	41.3

ASR are standardised with the Australian 2001 population; the error bars represent the 95% confidence interval of the rate

The incidence rate for melanoma has increased an average of 5% per annum for males and by 3.3% per annum for females since 1979/80. This increase may be in part explained by improvements in the registration of this type of cancer.

[20] Australian Institute of Health and Welfare, Cancer in Australia: An Overview, 2006, Canberra, 2007

Figure 47: Age-Standardised Incidence Rate for Melanoma of Skin by Sex (ICD-9 172, ICD-10 C43), Tasmania, 1979-2004

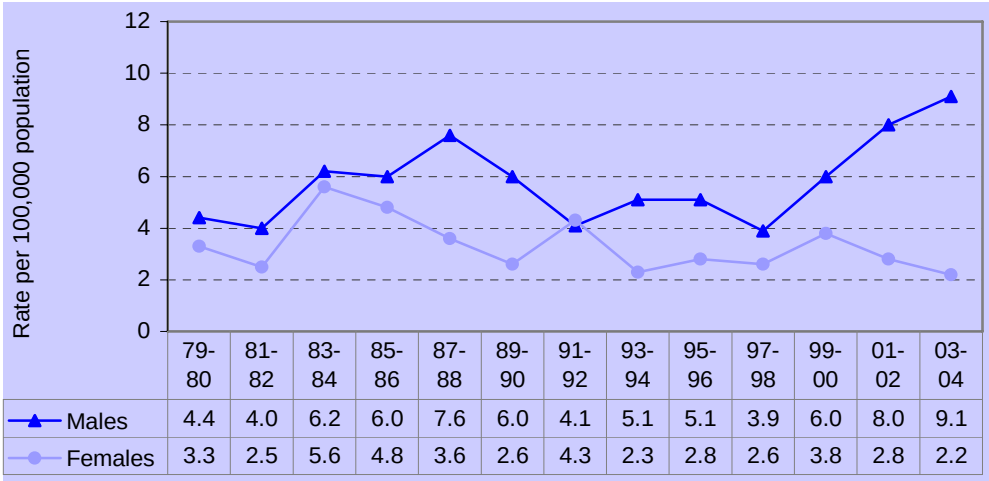


	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Males	14.3	18.0	17.7	16.9	25.5	30.8	34.7	36.1	43.6	40.8	44.1	46.7	48.1
Females	18.4	19.2	21.2	25.7	32.9	31.9	27.9	30.7	38.6	37.9	44.6	42.1	37.2

ASR are standardised with the Australian 2001 population
Average annual percentage chabge for males: 5.0% (P<0.01); for females: 3.3% (P<0.01)

The age-standardised mortality rate for melanoma has varied between 4.0 and 9.1 deaths per 100,000 persons per year in males and between 2.2 and 5.6 deaths per 100,000 persons per year in females.

Figure 48: Age-Standardised Mortality Rate for Melanoma by Sex (ICD-9 172, ICD-10 C43*), Tasmania, 1979-2004



	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Males	4.4	4.0	6.2	6.0	7.6	6.0	4.1	5.1	5.1	3.9	6.0	8.0	9.1
Females	3.3	2.5	5.6	4.8	3.6	2.6	4.3	2.3	2.8	2.6	3.8	2.8	2.2

*International Classification of Diseases, 9th and 10th Revisions; ABS, Mortality Database, ASR are age-standardised with the 2001 Australian population.

Lymphomas

Lymphoma refers to a type of cancer that produces solid tumours of the immune system. There are many different types of lymphoma. The statistics reported here are for the main categories of lymphoma: Hodgkins' disease, non-Hodgkin's lymphomas, including peripheral and cutaneous T-cell lymphomas.

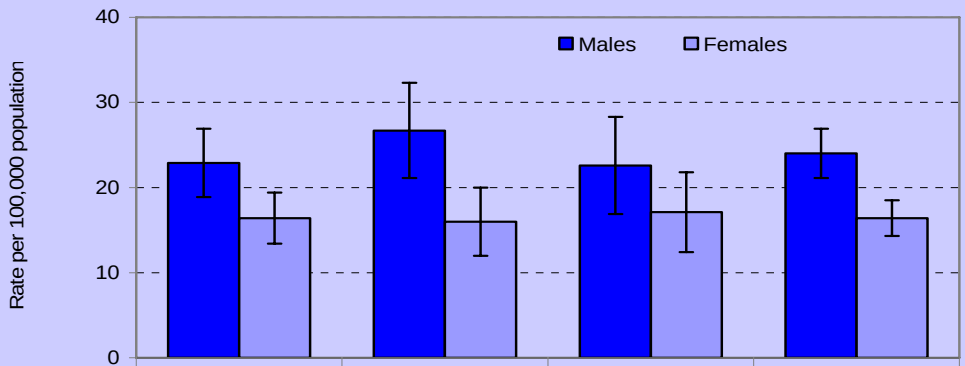
Hodgkins disease is less common than non-Hodgkin's lymphoma. The incidence of Hodgkin's disease appears stable. A bimodal distribution of age at diagnosis has been observed, with one peak in incidence occurring in patients in their 20s and the other in those in their 80s.

The Non-Hodgkin's lymphomas are a highly variable group of lymphoma types. They are more common than Hodgkin's disease and their prevalence is increasing nationally. The reasons for this increase are largely

unknown, however similar increases have been observed in a number of countries worldwide. Non-Hodgkin's lymphomas are more frequent in the elderly and more frequent in males. [21]

Within Tasmania, the incidence rate for lymphomas is higher in males than females. There are no significant differences in lymphoma incidence by region. Between 2000 and 2004 the Tasmanian rates (males-24.0 per 100,000 persons; females-16.4 per 100,000 persons) were very similar to the 2003 Australian rates (males-24.1 per 100,000 persons; females-16.9 per 100,000 persons)[22].

Figure 49: Age-Standardised Incidence Rate for all Lymphomas by Region (ICD-10 C81-C85), Tasmania, 2000-04

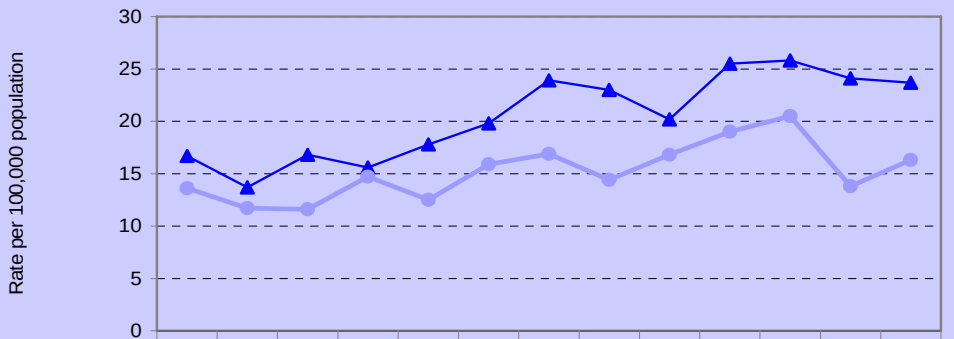


	South	North	North West	Tasmania
Males	22.9	26.7	22.6	24.0
Females	16.4	16.0	17.1	16.4

ASR are standardised with the Australian 2001 population; the error bars represent the 95% confidence interval of the rate

The incidence rate for lymphomas in Tasmania has increased by 2.2% per annum for males and by 1.5% for females between 1979/80 and 2003/4.

Figure 50: Age-Standardised Incidence Rate for all Lymphomas by Sex (ICD-9 200-2002, ICD-10 C81-C85), Tasmania, 1979-2004



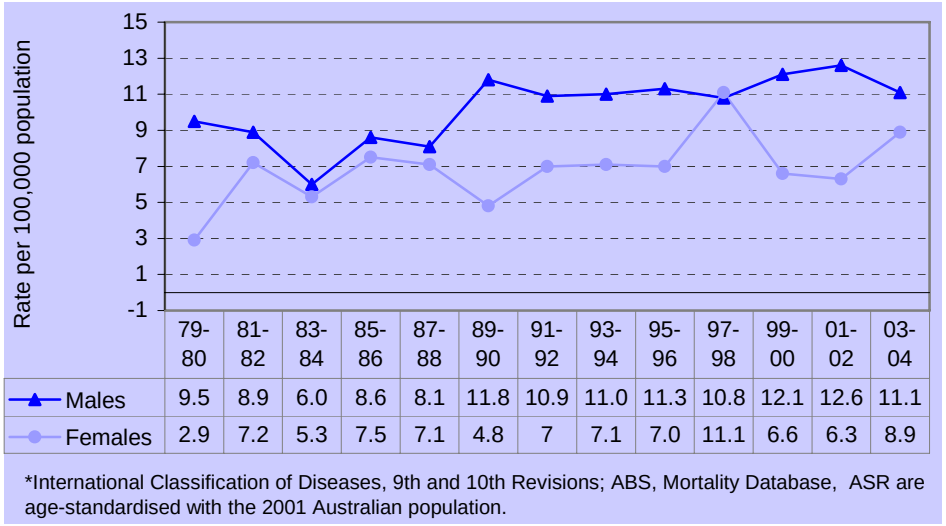
	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Males	16.7	13.7	16.8	15.6	17.8	19.8	23.9	23.0	20.2	25.5	25.8	24.1	23.7
Females	13.6	11.7	11.6	14.7	12.5	15.9	16.9	14.4	16.8	19.0	20.5	13.8	16.3

ASR are standardised with the Australian 2001 population
Average annual percentage change for males: 2.2% (P<0.01); for females: 1.5% (P<0.01)

The age-standardised mortality rate for lymphoma has increased over time in both sexes. Between 1979 and 2004 mortality rates in males have varied from 6.0 to 12.6 deaths per 100,000 persons and in females rates have ranged from 2.9 to 11.1 deaths per 100,000 persons.

[21] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.
[22] Australian Institute of Health and Welfare, Cancer in Australia: An Overview, 2006, Canberra, 2007

Figure 51: Age-Standardised Mortality Rate for Lymphoma (ICD-9 200-202, ICD-10 C81-C85*) by Year and Sex, Tasmania, 1979-2004



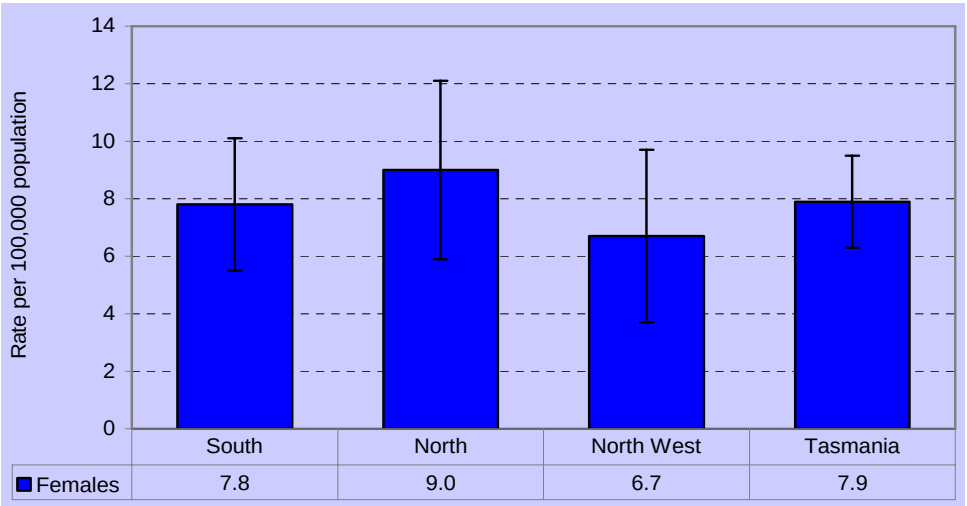
	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Males	9.5	8.9	6.0	8.6	8.1	11.8	10.9	11.0	11.3	10.8	12.1	12.6	11.1
Females	2.9	7.2	5.3	7.5	7.1	4.8	7	7.1	7.0	11.1	6.6	6.3	8.9

*International Classification of Diseases, 9th and 10th Revisions; ABS, Mortality Database, ASR are age-standardised with the 2001 Australian population.

Cervical Cancer

Cervical cancer was once the most common cause of cancer death in women, but over the past 30 years, the mortality rate has decreased significantly due to widespread screening of the sexually active female population with the Papanicolau (Pap) smear. Between 2000 and 2004 the age-standardised incidence rate for cervical cancer was 7.9 cases per 100,000 females in Tasmania, very similar to the 2003 national rate of 7.0 per 100,000[23]. There was no significant regional variation in incidence rates.

Figure 52: Age Standardised Incidence Rate for Cervical Cancer by Region (ICD-10 C53), Tasmania 2000-04



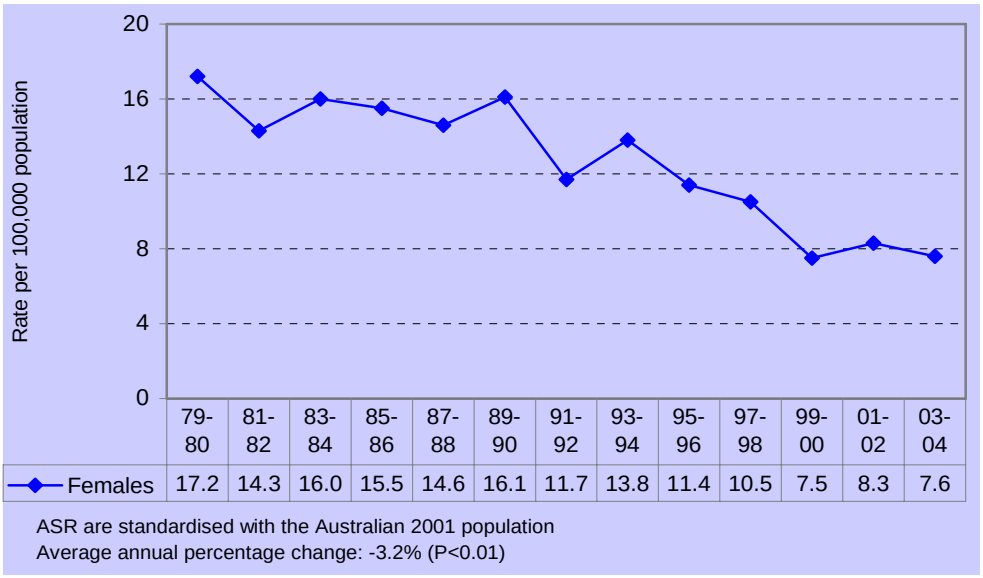
	South	North	North West	Tasmania
Females	7.8	9.0	6.7	7.9

ASR are standardised with the Australian 2001 population; the error bars represent the 95% confidence interval of the rate

[23] Australian Institute of Health and Welfare, Cancer in Australia: An Overview, 2006, Canberra, 2007

The incidence of cervical cancer in Tasmanian females is decreasing by approximately 3.2% per annum.

Figure 53: Age-Standardised Incidence Rate for Cervical Cancer (ICD-9 180, ICD-10 C53), Tasmania, 1979-2004



	79-80	81-82	83-84	85-86	87-88	89-90	91-92	93-94	95-96	97-98	99-00	01-02	03-04
Females	17.2	14.3	16.0	15.5	14.6	16.1	11.7	13.8	11.4	10.5	7.5	8.3	7.6

ASR are standardised with the Australian 2001 population
Average annual percentage change: -3.2% (P<0.01)

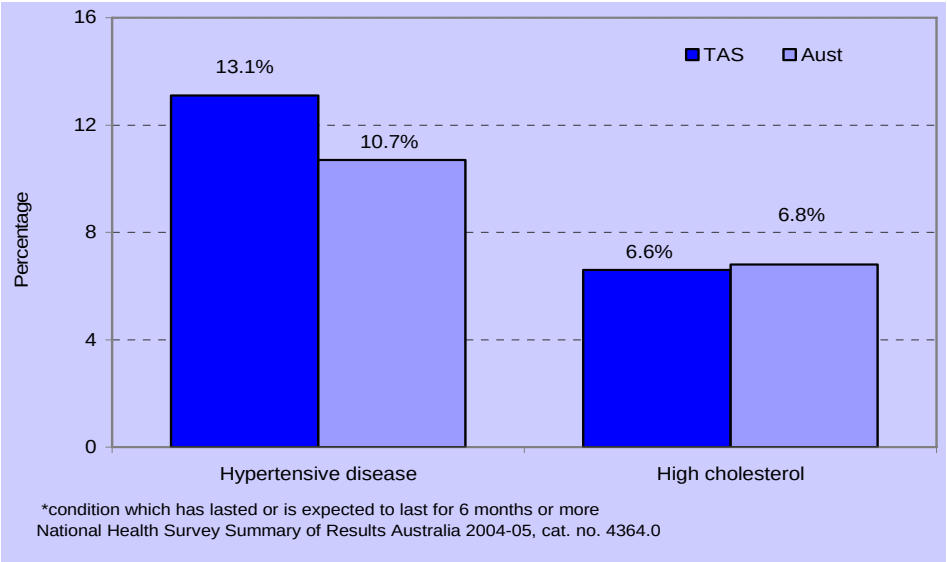
Cardiovascular Disease

Cardiovascular disease (CVD) is a leading cause of mortality and a significant cause of morbidity and disability in the Tasmanian community. CVD includes diseases affecting the blood vessels of the heart, brain and peripheral blood vessels. The major modifiable risk factors for CVD are tobacco smoking, physical inactivity, a high-fat and energy rich diet, obesity, high blood glucose, high cholesterol, and hypertension (high blood pressure). A high dietary salt intake may also influence risk of CVD in some individuals. [24] In addition, research evidence indicates a consistent socioeconomic gradient in mortality and hospitalisation rates for cardiovascular with the most disadvantaged people experiencing the highest rates of CVD.[25]

Hypertension

Hypertension is a condition of elevated arterial pressure. It is a significant public health problem as it is a significant contributor to cardiovascular mortality. According to the 2004-05 NHS, 62,100 Tasmanians (13.1%) report that they have hypertension. This rate is 2.4% higher than the national level ($p<0.01$). The prevalence of self-reported hypertensive disease has not increased significantly since 1995.

Figure 54: Prevalence of Hypertensive Disease and High Cholesterol*, Tasmania and Australia, 2004/5



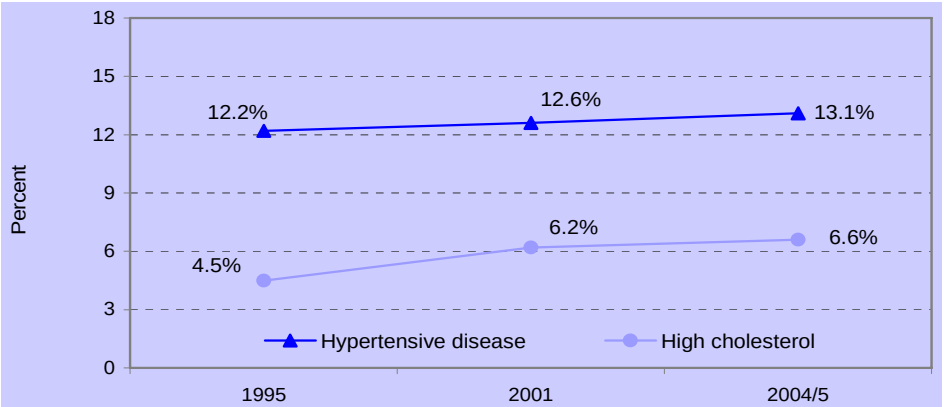
[24] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.

[25] AIHW, Socioeconomic Inequalities in Cardiovascular Disease in Australia: Current Picture and Trends Since 1992, Bulletin, Issue 37, 2006, pp. 10-12

High Cholesterol

Tasmania's proportion of the adult population reporting high cholesterol in 2004/5 was 6.6%, not significantly different to the national level. The prevalence of self-reported high cholesterol in Tasmania has increased by an average of 2.1% per year since 1995 ($p<0.01$).

Figure 55: Prevalence of Hypertensive Disease and High Cholesterol*, Tasmania 1995-2004

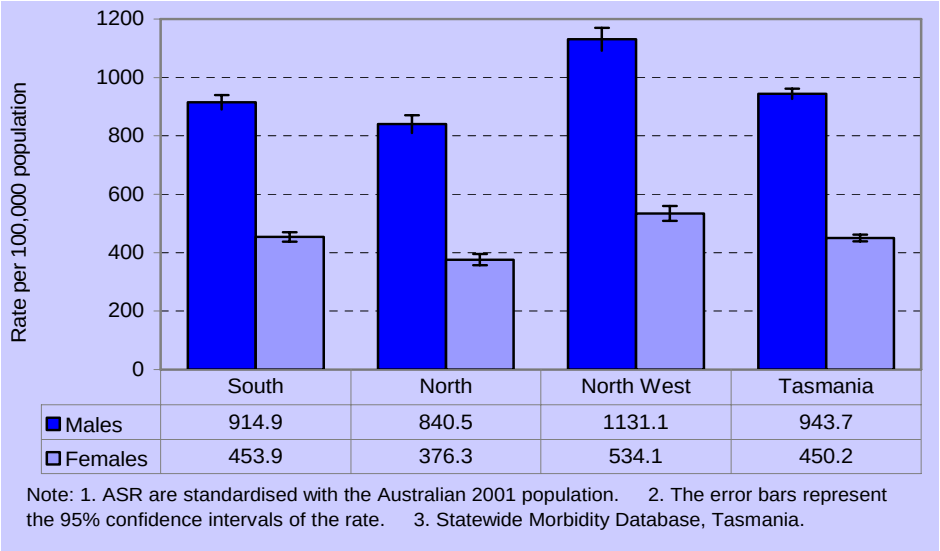


* condition has lasted or is expected to last for 6 months or more;
National Health Survey Summary of Results Australia 2004-05, cat. no. 4364.0
National Health Survey 2001 cat. no. 4364.0 - Companion Data;
National Health Survey Summary of Results Australian States and Territories 1995, cat. no. 4368.0
National Health Survey Summary of Results Australia 2001, cat. no. 4364.0

Ischaemic Heart Disease

Ischaemic heart disease refers to a condition of inadequate oxygen supply to the muscle of the heart, most commonly due to obstruction of the coronary arteries.[26] The age-standardised hospitalisation rate for ischaemic heart disease in Tasmania between 2001 and 2005 was higher in males (943.7 cases per 100,000 persons) than in females (450.2 cases per 100,000 persons). Hospitalisation rates were significantly higher in the North West of the State however, there were no significant regional differences in mortality due to ischaemic heart disease.

Figure 56: Age-Standardised Hospital Separation Rate for Ischaemic Heart Disease by Region (ICD-10-AM I20-I25), Tasmania, 2001-05



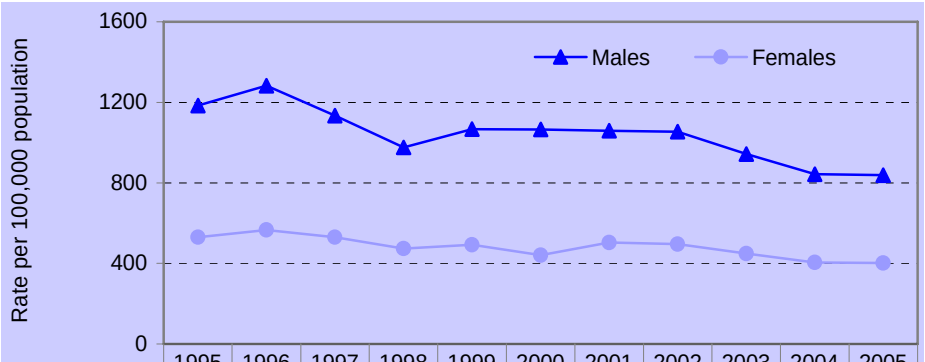
	South	North	North West	Tasmania
Males	914.9	840.5	1131.1	943.7
Females	453.9	376.3	534.1	450.2

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

[26] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.

Age standardised hospitalisation rates for ischaemic heart disease have decreased in both males (3.4% per annum) and females (2.8% per annum) in Tasmania between 1995 and 2005. Rather than reflecting a decrease in the prevalence of ischaemic heart disease, this trend is a reflection of better outpatient management of the condition and an older age at which ischaemic heart disease resulted in hospitalisations in Tasmania. The total number of hospitalisations for ischaemic heart disease in Tasmania has remained relatively constant between 3395 and 3896 hospitalisations per year between 2001 and 2005. Valid comparisons cannot be made between Tasmanian and Australian hospitalisation rates as data are not comparable.

Figure 57: Age-Standardised Hospital Separation Rate for Ischaemic Heart Disease by Sex (ICD-9-CM 410-414, ICD-10-AM I20-I25), Tasmania, 1995-2005

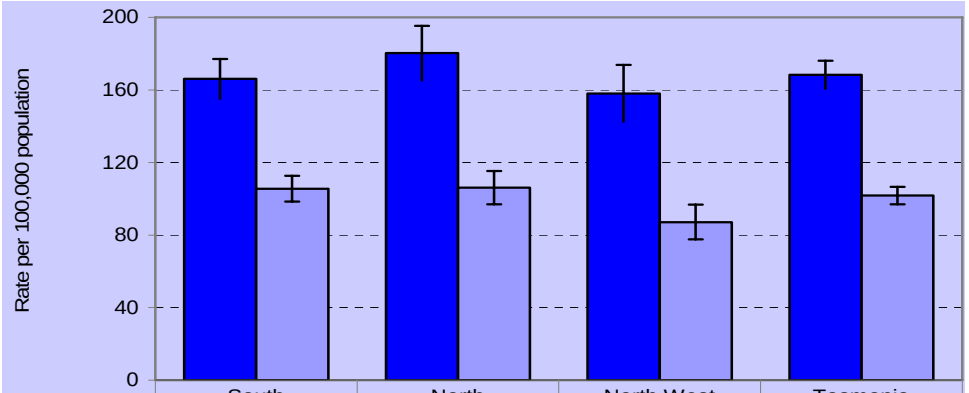


	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	1184	1283	1135	975.8	1066	1065	1060	1053	943.7	842.3	838.2
Females	530.4	565.6	530.7	473.6	493.1	441.5	503.9	496.1	448.1	405.7	402.1

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database, Tasmania.
3. Average annual percentage change for males:-3.4% (P<0.01); for females: -2.8% (P<0.01)

Tasmania's age standardised mortality rate for ischaemic heart disease (114.5 deaths per 100,000 persons in 2005) is significantly higher than the Australian rate (106.3 deaths per 100,000 persons in 2005). The age-standardised mortality rate for ischaemic heart disease was significantly higher for males than females for each region, and for Tasmania as a whole between 2001 and 2005.

Figure 58: Age-Standardised Mortality Rate for Ischaemic Heart Disease by Region (ICD-10-AM I20-I25), Tasmania, 2001-05



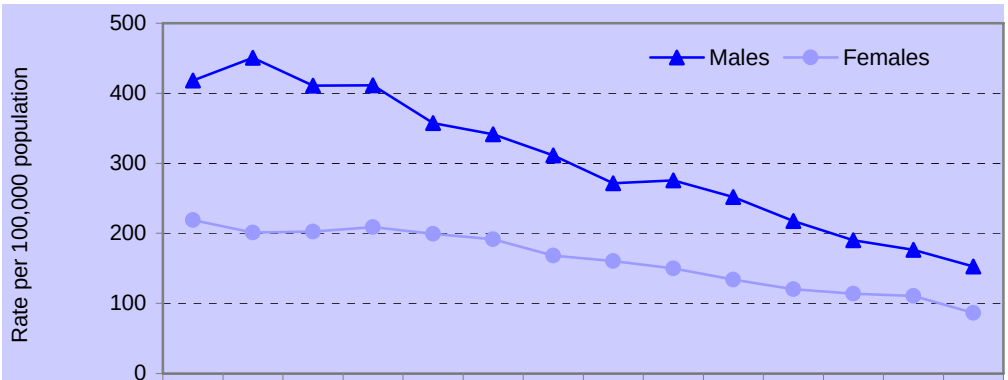
	South	North	North West	Tasmania
Males	166.1	180.3	158.1	168.4
Females	105.6	106.2	87.2	101.8

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. ABS Mortality Database

The age-standardised mortality rate for ischaemic heart disease has decreased significantly in Tasmania between 1978 and 2005 for both males and females. This has been attributed to improvements in medical treatment and follow-up care, rather than a reduction in the prevalence of ischaemic heart disease. The

mortality rate continues to be higher in males than females, however, the differential in ischaemic heart disease mortality between males and females has narrowed considerably over this period.

Figure 59: Age-Standardised Mortality Rate for Ischaemic Heart Disease by Sex (ICD-9-CM 410-414, ICD-10-AM I20-I25), Tasmania, 1978-2005

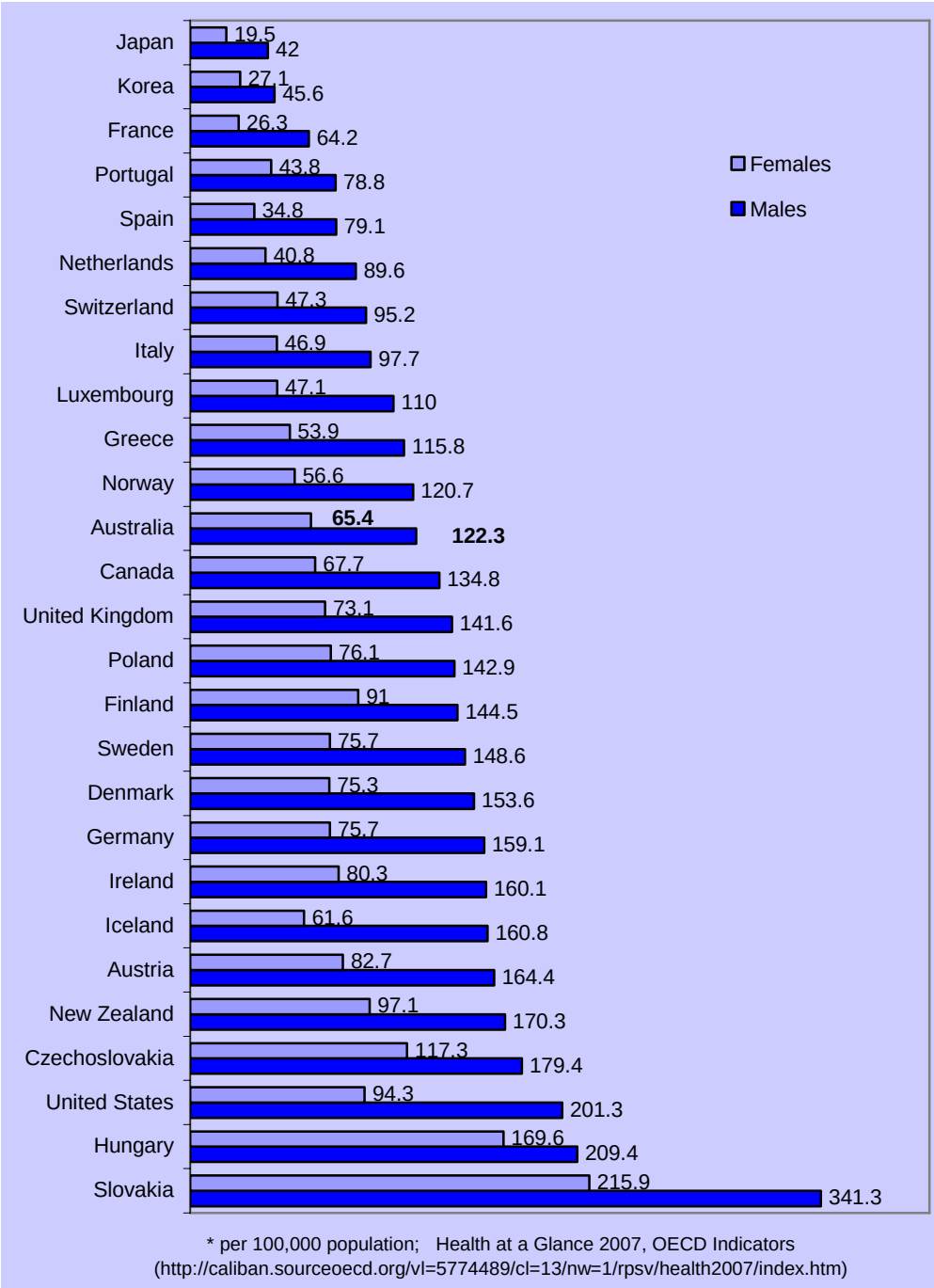


	78-79	80-81	82-83	84-85	86-87	88-89	90-91	92-93	94-95	96-97	98-99	00-01	02-03	04-05
Males	418.1	450.6	410.7	411.2	357.4	341.3	311.4	271.4	275.7	252.0	217.6	190.0	176.3	152.8
Females	219.0	200.9	202.6	208.7	199.4	191.3	168.4	160.2	149.9	133.9	120.0	113.7	110.8	86.3

Note: 1. ASR are standardised with the Australian 2001 population. 2. ABS Mortality Database.
3. Average annual percentage change for males:-3.9% (P<0.01); for females: -3.1% (P<0.01).

Across OECD countries, ischaemic heart disease is significantly more prevalent among males than females. Rates for males in 2004 ranged from 42 per 100,000 persons in Japan to over 200 per 100,000 persons in the United States. Australia's rates for males (122.3) and females (65.4) were below the OECD averages of 141.6 and 72.7 per 100,000 persons respectively.

Figure 60: Age Standardised Mortality Rate for Ischaemic Heart Disease, OECD Countries, 2004



* per 100,000 population; Health at a Glance 2007, OECD Indicators
(http://caliban.sourceoecd.org/vl=5774489/cl=13/nw=1/rpsv/health2007/index.htm)

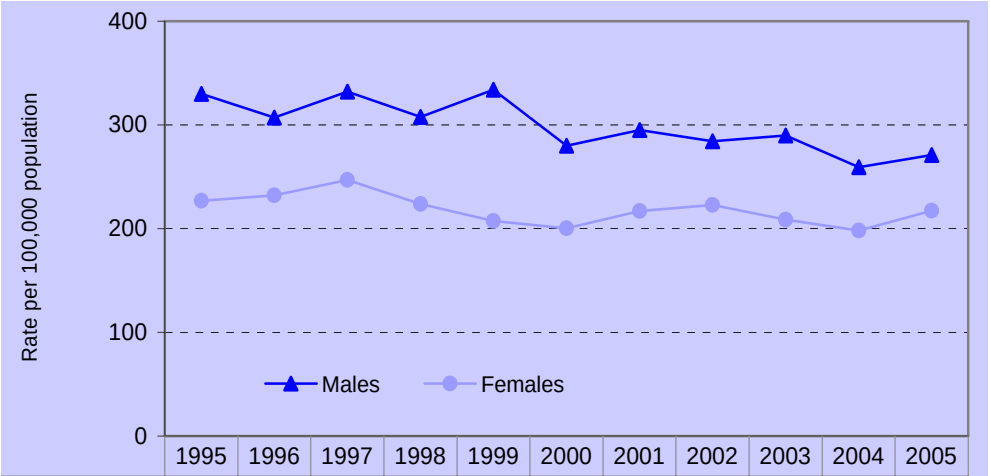
Cerebrovascular Accident

Cerebrovascular accident (stroke) refers to a condition of abrupt onset of a neurologic deficit attributable to either a focal interruption to the blood flow of the brain, or from haemorrhage into the brain. The incidence of cerebrovascular accident increases with age. Major modifiable risk factors for cerebrovascular accident are the same as for other cardiovascular diseases, and include tobacco smoking, physical inactivity, a high-fat and energy rich diet, obesity, high blood glucose, high cholesterol, and hypertension (high blood pressure). [27]

Cerebrovascular accident is an important contributor to hospital costs, and the average length of hospital stay for persons who experience cerebrovascular accident is around twice that for other cardiovascular diseases.[28] This is in part due to the disability that is often associated with cerebrovascular accident, and the need for rehabilitation that this entails.

In Tasmania, the age standardised hospitalisation rate for cerebrovascular accident is 217.3 hospitalisations per 100,000 persons in females and 271.1 hospitalisations per 100,000 persons in males. There has been a downward trend in hospitalisation rates for cerebrovascular accident over the last 10 years. The hospitalisation rate has decreased on average by 2.1% annually for males and 1.2% for females. The gap in the rate of hospitalisations between males and females appears to be narrowing. Valid comparisons cannot be made between Tasmanian and Australian hospitalisation rates as data are not comparable.

Figure 61: Age-Standardised Hospital Separation Rate for Cerebrovascular Accident by Sex (ICD-9-CM 430-438, ICD-10-AM I60-I69), Tasmania, 1995-2005



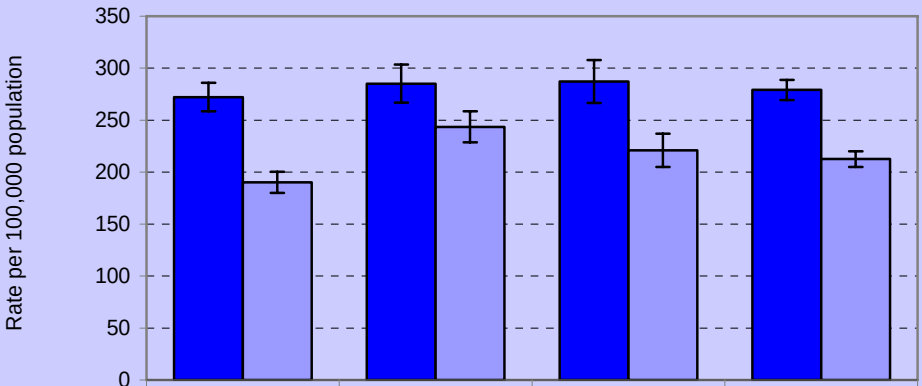
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	329.9	307	332.1	307.8	334.1	279.8	295.2	284.4	289.7	259.2	271.1
Females	226.8	232.1	246.9	223.8	207.5	200.4	216.9	222.8	208.5	198.2	217.3

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database, Tasmania.; 3. Average annual percentage change for males:-2.1% (P<0.01); for females: -1.2% (P<0.01).

[27] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005
[28] AIHW, Australia's Health 2004, Canberra, 2004, p.61

In males, there are no significant differences in regional hospitalisation rates for cerebrovascular accident. However, in females, the hospitalisation rate for cerebrovascular accident is significantly lower in the South.

Figure 62: Age-Standardised Hospital Separation Rate for Cerebrovascular Accident by Region (ICD-10-AM I60-I69, G45-G46), Tasmania, 2001-05

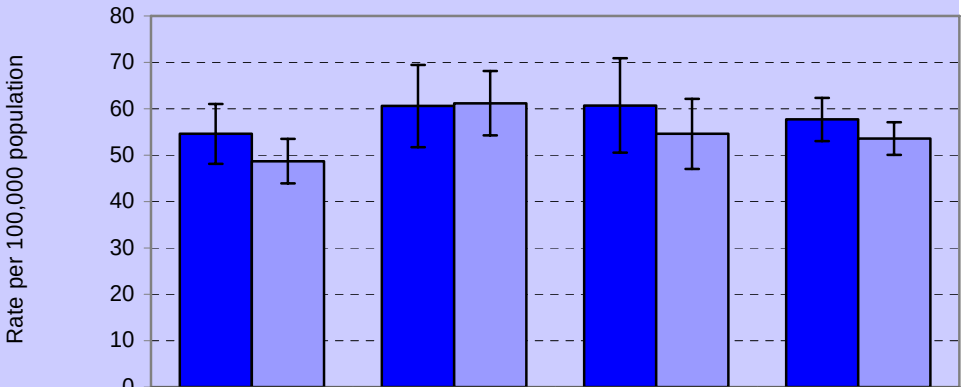


	South	North	North West	Tasmania
Males	272.2	285.2	287.2	279.1
Females	190.3	243.5	221	212.6

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

Cerebrovascular accident is a major cause of mortality amongst adults[29]. The Tasmanian age-standardised mortality rate for cerebrovascular accident in 2005 was 43.5 deaths per 100,000 persons, lower than the Australian rate of 51.6 deaths per 100,000 persons. Over the period 2001 to 2005, the age-standardised mortality rates for cerebrovascular accident in Tasmania were 57.7 deaths per 100,000 persons in males and 53.6 deaths per 100,000 persons in females. Rates did not vary significantly by region.

Figure 63: Age-Standardised Mortality Rate for Cerebrovascular Accident by Region (ICD-10-AM I60-I69, G45-G46), Tasmania, 2001-05



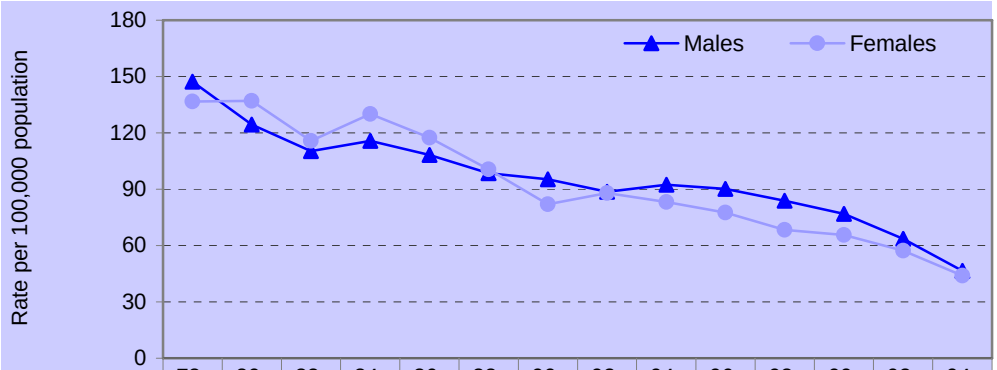
	South	North	North West	Tasmania
Males	54.6	60.6	60.7	57.7
Females	48.7	61.2	54.6	53.6

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. ABS Mortality Database.

[29] National Stroke Foundation, http://www.strokefoundation.com.au/

There has been a downward trend in the age-standardised mortality rates for cerebrovascular accident in Tasmania for both males and females over the period 1978 to 2005.

Figure 64: Age-Standardised Mortality Rate for Cerebrovascular Accident by Sex (ICD-9-CM 430-438, ICD-10-AM I60-I69, G45-G46), Tasmania, 1978-2005



	78-79	80-81	82-83	84-85	86-87	88-89	90-91	92-93	94-95	96-97	98-99	00-01	02-03	04-05
Males	147.3	124.4	110.2	115.8	108.2	98.5	95.3	88.7	92.4	90.1	83.9	76.8	63.6	46.5
Females	136.7	137.0	115.7	130.1	117.4	100.5	82.0	87.9	83.1	77.6	68.4	65.7	57.3	43.9

Note: 1. ASR are standardised with the Australian 2001 population. 2. ABS Mortality Database.
3. Average annual percentage change for males:-2.6% (P<0.01); for females: -3.7% (P<0.01).

Diabetes Mellitus

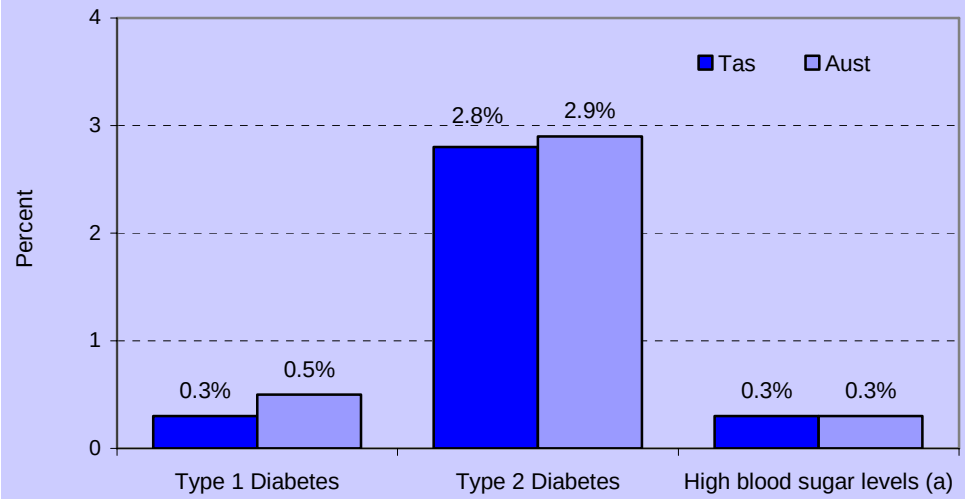
Diabetes mellitus is a metabolic condition of insufficient insulin production to meet the body's requirements. Several distinct types of diabetes mellitus exist and are caused by a complex interaction of genetics, environmental factors and lifestyle factors. The metabolic consequences of diabetes mellitus on the body include damage to blood vessels, kidneys, nervous system and retina. Diabetes mellitus is a leading cause of end-stage renal disease, non-traumatic lower limb amputations, and adult blindness. Approximately 75% of people with diabetes will die from cardiovascular disease.

Diabetes mellitus is broadly categorised into type 1 and type 2 diabetes, based on the mechanism of insulin deficiency. Most patients with type 1 diabetes develop insulin deficiency as a result of autoimmune destruction of the pancreatic cells which produce insulin. In type 2 diabetes, insulin deficiency results from a combination of insulin resistance, impaired insulin secretion and increased glucose production. This is the type more commonly associated with obesity. Although the prevalence of both type 1 and 2 diabetes is increasing worldwide, the prevalence of type 2 diabetes is expected to rise more rapidly in the future because of increasing population levels of obesity, population ageing and reduced population physical activity levels. [30]

Within Tasmania, the self-reported prevalence of diabetes is 3.1%. Of these, 2.8% have type 2 diabetes.

[30] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.

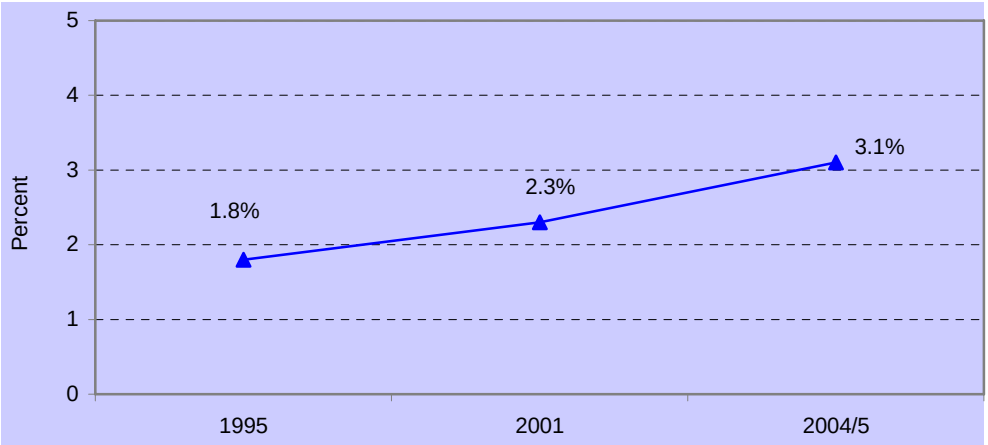
Figure 65: Prevalence of Self-Reported Diabetes Mellitus by Diabetes Type*, Tasmania and Australia, 2004/5



*condition which has lasted or is expected to last for 6 months or more; (a) high blood sugar but not diabetic; National Health Survey, Summary of Results Australia 2004-05, cat. no. 4364.0

Consistent with worldwide trends, the prevalence of self-reported diabetes mellitus in Tasmania has increased over the last 10 years ($p<0.01$). Within Tasmania, this has been by a factor of 72%. However, a limitation of self-reported diabetes data is that many people who are affected by diabetes are unaware that they have the condition. According to the Australian Diabetes, Obesity and Lifestyle Study (AusDIAB) 2000 data, the prevalence of diabetes mellitus in the Tasmanian population is 8.7%. As only 3.1% Tasmanians self-report that they have diabetes, this implies that more than 1 in 2 diabetics in Tasmania remain unaware that they have the condition.[31] Therefore, it is not possible to interpret the increase in self-reported prevalence as a positive change (i.e. due to improved detection of diabetes by clinicians) or a negative change (i.e. due to the increasing prevalence of the condition).

Figure 66: Prevalence of Self-Reported Diabetes Mellitus*, Tasmania 1995-2004/5



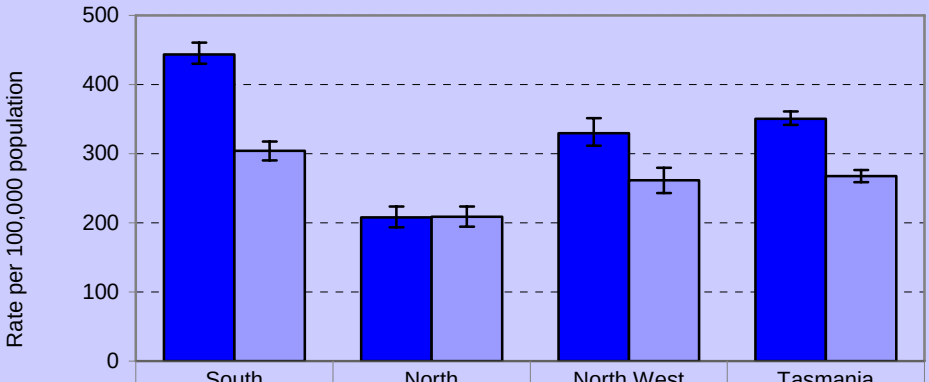
* condition has lasted or is expected to last for 6 months or more;
National Health Survey Summary of Results Australia 2004-05, 4364.0, Table 8
National Health Survey 2001, 4364.0 - Companion Data; Table 5
National Health Survey Summary of Results Australian States and Territories 1995, 4368.0, Table 9

People with diabetes, particularly those with complications, are likely to experience episodes of hospitalisation. Hospital services account for the largest proportion of direct health care expenditure on diabetes in Australia. Approximately 80% of this hospital expenditure is for admitted patient services.[32]

[31] AIHW, Costs of Diabetes in Australia 2000-01, Bulletin, Issue 26, April 2005, p.1
[32] AIHW, Cost of Diabetes in Australia 2000-01, Bulletin, Issue 26, April 2005, p.8

The age-standardised hospitalisation rate for diabetes in Tasmania is 350.6 hospitalisations per 100,000 persons in males and 267.6 hospitalisations per 100,000 persons in females. There is significant regional and gender variation in the age-standardised hospital separation rate for diabetes in Tasmania with a significantly higher rate reported in the South of the state for both males and females, and with a higher rate for males than for females in the South and North West regions, and for Tasmania as a whole. Valid comparisons cannot be made between Tasmanian and Australian hospitalisation rates as data are not comparable.

Figure 67: Age-Standardised Hospital Separation Rate for Diabetes by Region (ICD-10-AM E10-E14), Tasmania, 2001-05

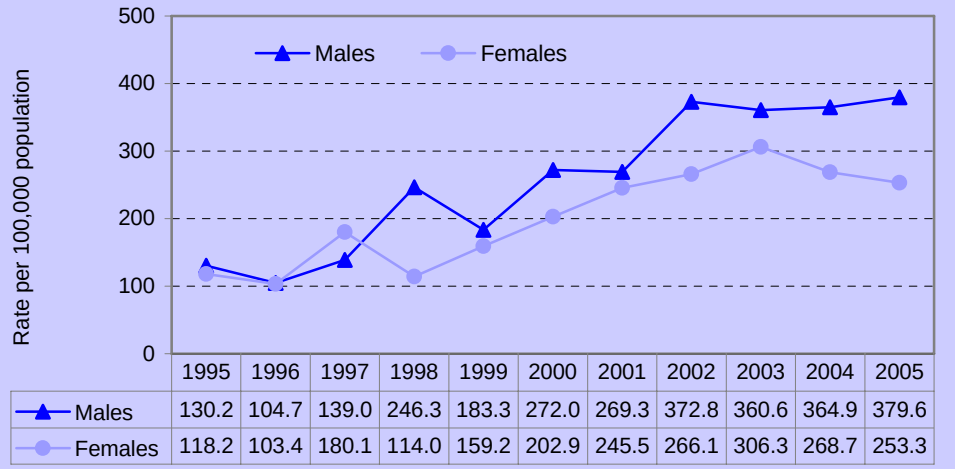


	South	North	North West	Tasmania
Males	443.7	208.0	329.8	350.6
Females	304.0	209.0	261.5	267.6

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

Hospital separation rates for diabetes in Tasmania have increased since 1995 by an average of 12.7% per annum for males and 10.1% per annum for females. This increase is likely to continue because of population ageing and the increasing prevalence of risk factors such as obesity.

Figure 68: Age-Standardised Hospital Separation Rate for Diabetes by Sex (ICD-9-CM 250, ICD-10-AM E10-E14), Tasmania, 1995-2005

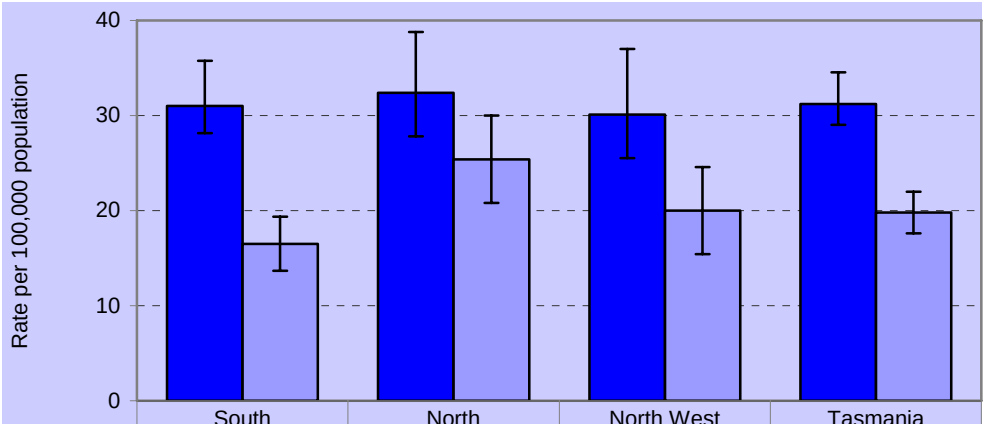


	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	130.2	104.7	139.0	246.3	183.3	272.0	269.3	372.8	360.6	364.9	379.6
Females	118.2	103.4	180.1	114.0	159.2	202.9	245.5	266.1	306.3	268.7	253.3

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database, Tasmania.: 3. Average annual percentage change for males:12.7% (P<0.01): for females: 10.1%

The age-standardised mortality rate for diabetes in Tasmania is 31.2 deaths per 100,000 persons in males and 19.8 deaths per 100,000 persons in females annually. This rate is significantly higher in males than females in both the South and North West regions and for Tasmania as a whole. The Tasmanian age-standardised death rate for diabetes mellitus in 2005 was 29.1 deaths per 100,000 persons, significantly higher than the Australian rate of 16.1 deaths per 100,000 persons.

Figure 69: Age-Standardised Mortality Rate for Diabetes by Region (ICD-10-AM E10-E14), Tasmania, 2001-05

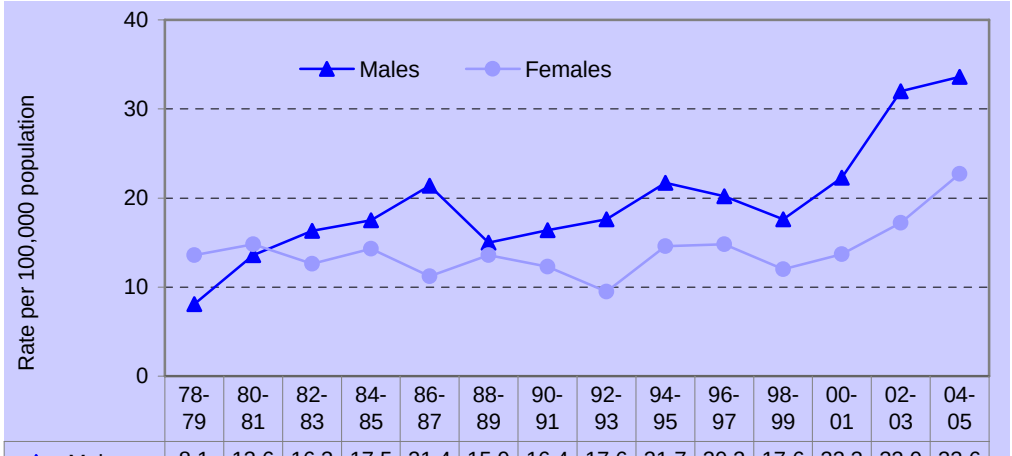


	South	North	North West	Tasmania
Males	31.0	32.4	30.1	31.2
Females	16.5	25.4	20.0	19.8

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. ABS Mortality Database.

In general, the annual age-standardised diabetes mortality rates showed an increasing trend over the period 1978 to 2005 for both males and females, increasing from 8.1 to 33.6 deaths per 100,000 persons in males and from 13.6 to 22.7 deaths per 100,000 persons in females.

Figure 70: Age-Standardised Mortality Rate for Diabetes by Sex (ICD-9-CM 250, ICD-10-AM E10-E14), Tasmania, 1978-2005



	78-79	80-81	82-83	84-85	86-87	88-89	90-91	92-93	94-95	96-97	98-99	00-01	02-03	04-05
Males	8.1	13.6	16.3	17.5	21.4	15.0	16.4	17.6	21.7	20.2	17.6	22.3	32.0	33.6
Females	13.6	14.8	12.6	14.3	11.2	13.6	12.3	9.5	14.6	14.8	12.0	13.7	17.2	22.7

Note: 1. ASR are standardised with the Australian 2001 population. 2. ABS Mortality Database.
3. Average annual percentage change for males:3.5% (P<0.01); for females: 1.3% (P<0.01).

Injury

Injury is defined as damage inflicted upon oneself or by an external agent, which may be accidental or intentional in nature. Injury can occur as a result of many types of exposure, including physical, chemical, mechanical, thermal or electrical forces. [33]

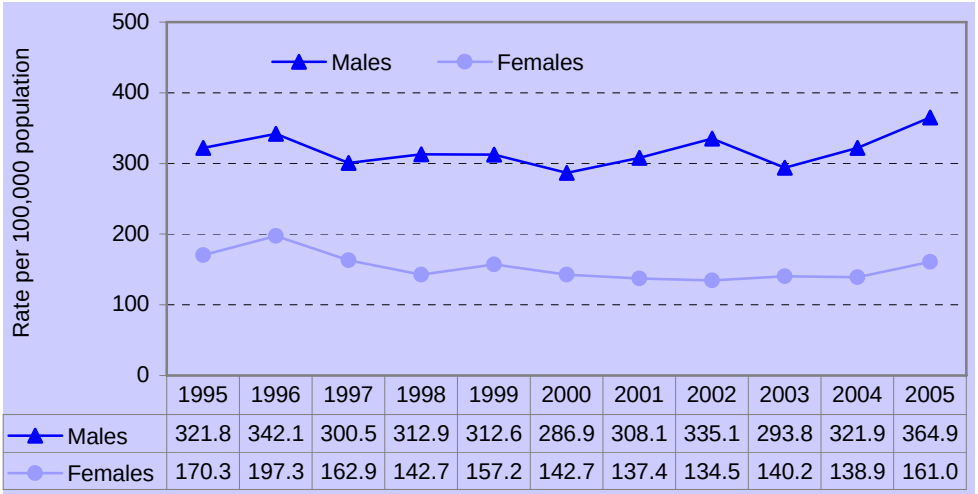
Over the period 2001to 2005 there were in excess of 45,000 hospitalisations for injury in Tasmania and 1,131 deaths. The main reasons for hospitalisation relating to injury were: accidental falls (12,977 hospitalisations), transportation (5,391 hospitalisations), intentional self-harm (3,605 hospitalisations), intentional harm inflicted by another (1,958 hospitalisations), poisoning by pharmaceuticals (793 hospitalisations), fires, flame and scalds (623 hospitalisations), poisoning by other substances (288 hospitalisations) and drowning (37 hospitalisations). The main causes of death relating to injury were: suicide and self-inflicted injury (328 deaths), transport related accidents (267 deaths), accidental falls (137 deaths), accidental poisoning (94 deaths), accidents due to submersion, suffocation and foreign bodies (59 deaths), homicide and injury purposely inflicted by another person (33 deaths), and fires, flame and scalds (25 deaths).

Two major preventable causes of injury, transport injuries and accidental falls, will be considered in detail below. Data relating to suicide and self-inflicted injury are discussed in the next section (Mental Health).

Transport Injuries

Transport injuries are the second most common cause of injury deaths, after suicide and self-inflicted injury, and the third most common reason for injury-related hospitalisations, after falls and other unintentional injuries in Tasmania. The age-standardised hospitalisation rates for transport injuries in Tasmania were 324.9 hospitalisations per 100,000 persons in males and 142.2 hospitalisations per 100,000 persons in females between 2001 and 2005. Rates vary significantly according to gender and region. Males experienced significantly higher rates of transport-related hospitalisation than females.

Figure 71: Age-Standardised Hospital Separation Rate for Transport Injuries by Sex (ICD-9-CM E800-E848, ICD-10-AM V01-V99), Tasmania, 1995-2005



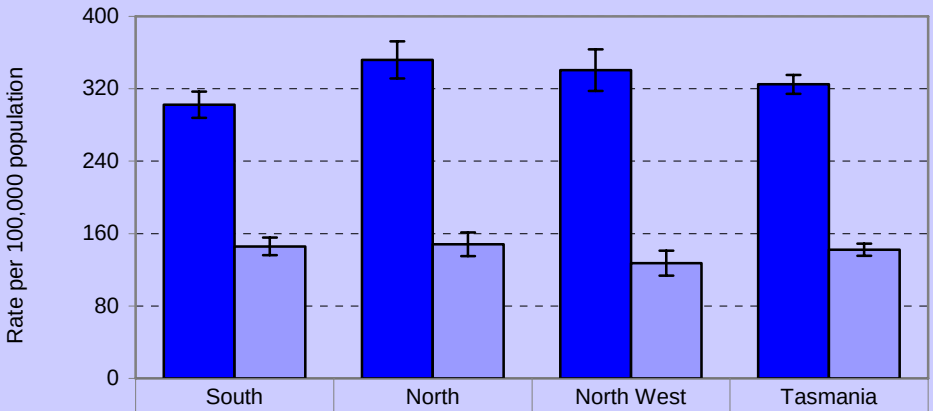
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	321.8	342.1	300.5	312.9	312.6	286.9	308.1	335.1	293.8	321.9	364.9
Females	170.3	197.3	162.9	142.7	157.2	142.7	137.4	134.5	140.2	138.9	161.0

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database, Tasmania.; 3. Average annual percentage change for males:0.5% (P>0.05); for females: -2.2%

[33] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.

While males in the North and North West regions experience significantly higher rates of transport-related hospitalisation than those in the South, rates in females are similar across all three regions.

Figure 72: Age-Standardised Hospital Separation Rate for Transport Injuries by Region (ICD-10-AM V01-V99), Tasmania, 2001-05

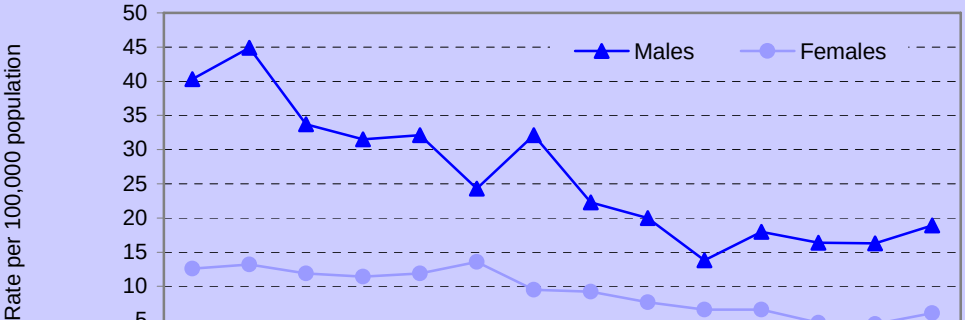


	South	North	North West	Tasmania
Males	302.4	352	340.7	324.9
Females	145.8	148.1	127.4	142.2

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

Between 1978 and 2005, there have been significant decreases in the age-standardised mortality rates for transport injury in both males and females. The decrease was greater in males than in females. However, the male transport injury mortality rate remains approximately three times the female rate. Tasmania's age-standardised mortality rate for transport injuries in 2005 was 11.1 deaths per 100,000 persons, higher than the Australian rate of 8.0 deaths per 100,000 persons.

Figure 73: Age Standardised Mortality Rate for Transport Injuries (ICD-9-CM E800-E848, ICD-10-AM V01-V99), Tasmania, 1978-2005

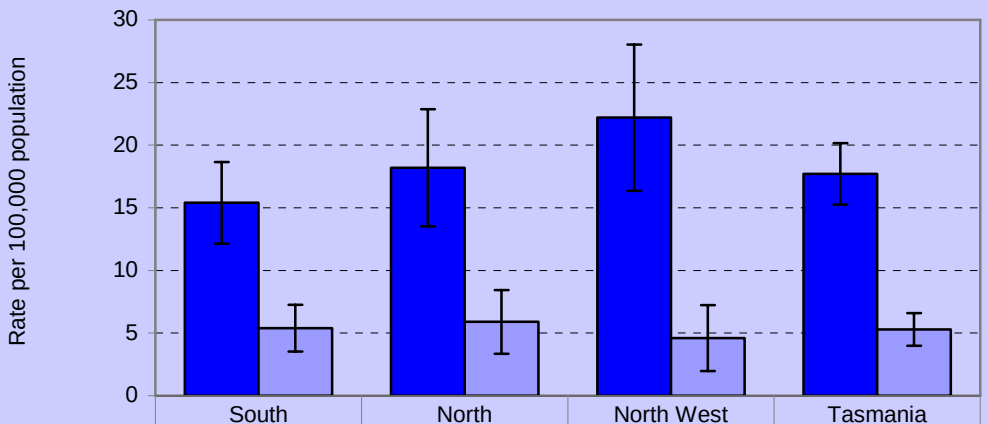


	78-79	80-81	82-83	84-85	86-87	88-89	90-91	92-93	94-95	96-97	98-99	00-01	02-03	04-05
Males	40.3	44.9	33.7	31.5	32.1	24.3	32.1	22.3	20.0	13.8	18.0	16.4	16.3	18.9
Females	12.6	13.2	11.9	11.4	11.9	13.6	9.5	9.2	7.7	6.6	6.6	4.7	4.5	6.1

Note: 1. ASR are standardised with the Australian 2001 population. 2. ABS Mortality Database.
3. Average annual percentage change for males:-4.0% (P<0.01); for females: -3.9% (P<0.01).

For the period 2001 to 2005, transport injury mortality rates varied according to gender and region. The mortality rate for transport injury was significantly higher in males than in females. Although there was no statistically significant difference in mortality rates according to region, in males there was a trend towards a higher transport injury-related mortality rate in the North West region.

Figure 74: Age-Standardised Mortality Rate for Transport Injuries by Region (ICD-10-AM V01-V99), Tasmania, 2001-05



	South	North	North West	Tasmania
Males	15.4	18.2	22.2	17.7
Females	5.4	5.9	4.6	5.3

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. ABS Mortality Database.

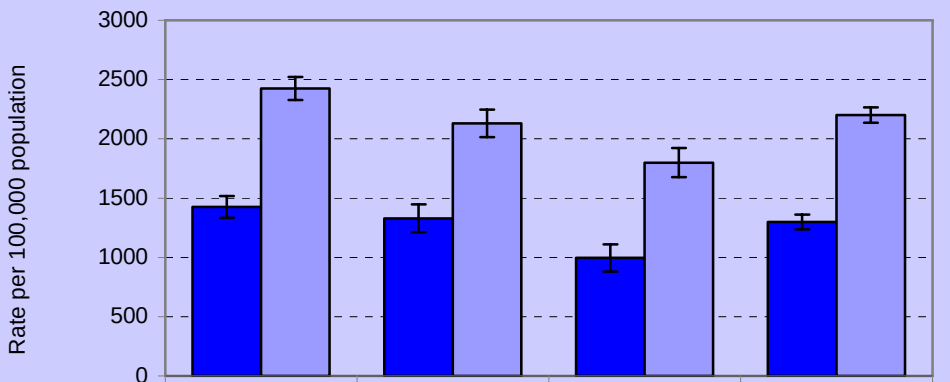
Accidental Falls

Accidental falls are the most common reason for hospitalisation relating to injury, and the third most common cause of injury-related deaths, after suicide and self-inflicted injury, and transport accidents, in Tasmania. Most hospitalisations and deaths associated with accidental falls occur in persons aged 65 years and over.

For the period 2001 to 2005, the age-standardised hospitalisation rates for accidental falls were 1299.6 hospitalisations per 100,000 persons in males aged 65 years and over and 2201.1 hospitalisations per 100,000 persons in females aged 65 years and over. Rates were significantly higher in females compared with males. This is partly due to the more frequent occurrence of fractures associated with falls in females as females have higher rates of osteoporosis. The female prevalence of osteoporosis, a condition whereby there is a progressive loss of bone density and decrease in the strength of the skeleton with a resultant risk of fracture, is approximately 4 times the prevalence compared with males aged 65 years and over.

Females in the South region were significantly more likely to be hospitalised as a result of accidental falls than females in other regions, and males in the South and North regions were significantly more likely to be hospitalised than males in the North West.

Figure 75: Age-Standardised Hospital Separation Rate for Accidental Falls by Region (ICD-10-AM W00-W19), Population 65 Years and Over, Tasmania, 2001-05

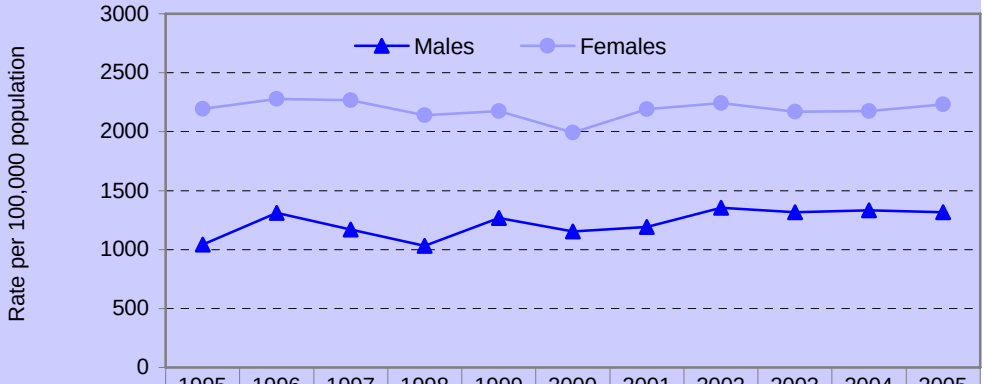


	South	North	North West	Tasmania
Males	1425.8	1329.8	995.4	1299.6
Females	2425	2130.5	1799.7	2201.1

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

Age-standardised hospitalisation rates for accidental falls in persons 65 years and over have remained relatively stable between 1995 and 2005.

Figure 76: Age-Standardised Hospital Separation Rate for Accidental Falls by Sex (ICD-9-CM E880-E888, ICD-10-AM W00-W19), 65 Years and Over, Tasmania, 1995-2005

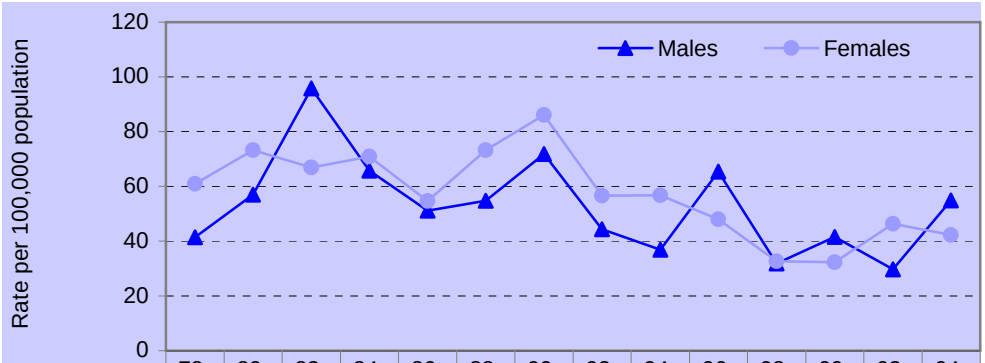


	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	1041.2	1310.5	1170.8	1030.9	1267.3	1152.8	1193.1	1354.1	1316.6	1332.3	1316.3
Females	2194.9	2279.1	2266.3	2139.9	2174.7	1992.2	2190.7	2241.8	2168.4	2175.2	2232.9

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database, Tasmania.; 3. Average annual percentage change for males:1.8% (P<0.01); for females: -0.1% (P>0.05).

There has been a downward trend in the age-standardised mortality rates for accidental falls in persons aged 65 years and over between 1978 and 2005. In spite of higher hospitalisation rates for accidental falls in females, mortality rates for falls in males and females are similar.

Figure 77: Age-Standardised Mortality Rate for Accidental Falls (ICD-9-CM E880-E888, ICD-10-AM W00-W19), 65 Years and Over, Tasmania, 1978-2005

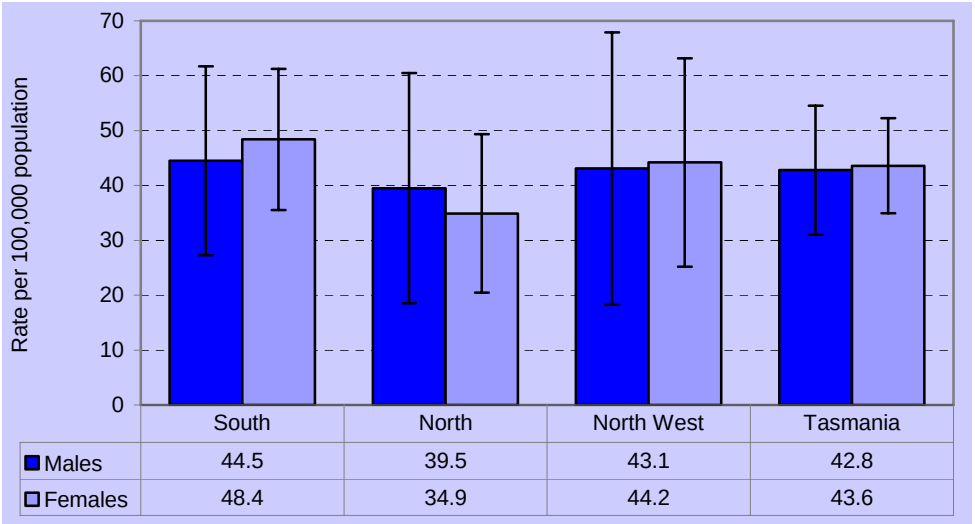


	78-79	80-81	82-83	84-85	86-87	88-89	90-91	92-93	94-95	96-97	98-99	00-01	02-03	04-05
Males	41.4	57.0	95.8	65.7	51.1	54.7	71.8	44.3	36.9	65.4	31.8	41.5	29.7	54.8
Females	60.9	73.2	66.9	70.9	54.6	73.2	86.1	56.6	56.7	48.0	32.6	32.3	46.3	42.2

Note: 1. ASR are standardised with the Australian 2001 population. 2. ABS Mortality Database.
3. Average annual percentage change for males:-1.9% (P<0.01); for females: -2.6% (P<0.01).

There is no consistent regional or gender variation in the age-standardised mortality rates for accidental falls across Tasmania.

Figure 78: Age-Standardised Mortality Rate for Accidental Falls (ICD-10-AM W00-W19), Age 65 Years and Over, Tasmania, 2001-05



	South	North	North West	Tasmania
Males	44.5	39.5	43.1	42.8
Females	48.4	34.9	44.2	43.6

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. ABS Mortality Database.

Mental Health

Mental health problems are a group of health conditions which include a wide range of behavioural and psychological conditions. The most commonly diagnosed mental health problems are anxiety and depression. The high prevalence of mental health problems, combined with the significant disability associated with them, results in substantial disease burden attributable to mental health problems. It is estimated that mental health problems caused about one eighth of the total Australian disease burden in 2003, exceeded only by cancer and cardiovascular disease. [34]

Prevalence of Mental Health Problems

The 2004/5 National Health Survey (NHS) provides the latest estimates of the prevalence of mental health problems in Australia and Tasmania. According to this survey, approximately 1 in 10 (equivalent to 2.1 million) Australians report a long-term mental or behavioural problem. Anxiety-related problems and mood (affective) problems are the most commonly reported conditions. The age group most affected is 18 to 64 year olds, with a total of 12.4% of this age group reporting the presence of a long-term mental or behavioural problem.

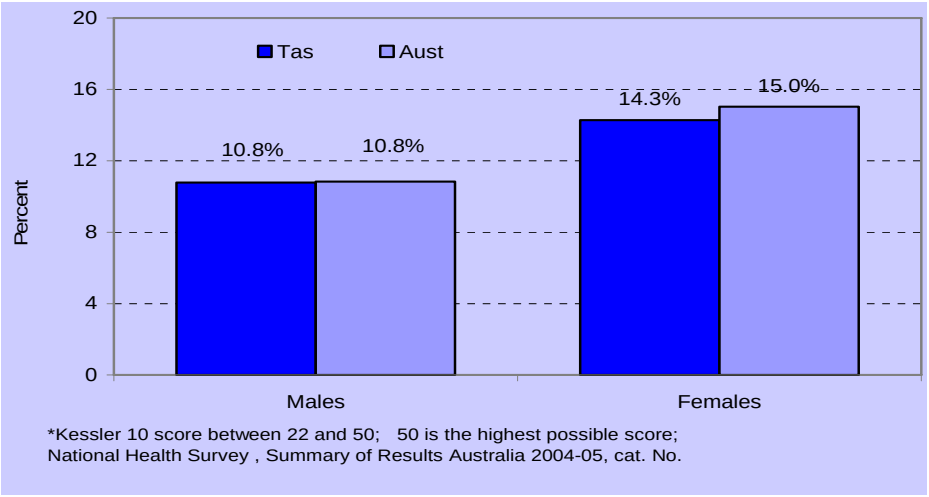
Within Tasmania, 1 in 9 (equivalent to 55 500 persons) report a long-term mental or behavioural problem. More females (29,700 persons) than males (25,900 persons) in Tasmania report they are affected by long-term mental or behavioural problems.

Prevalence of Self-Reported Psychological Distress

The prevalence of reported psychological distress is another indicator of the mental health of Australians. The 2004/5 NHS measured psychological distress using the Kessler 10 (K10) scale of psychological distress. This consists of ten questions about non-specific psychological distress and seeks to measure the level of anxiety and depressive symptoms a person experienced in the 4 weeks before the interview. Various cut-off scores define low, moderate, high and very high levels of psychological distress.

According to the 2004/5 NHS, a significant proportion of the Australian and Tasmanian population experience high or very high levels of psychological distress. In Tasmania, a total of 10.8% of males and 14.3% of females report high or very high levels of psychological distress. These proportions are not significantly different to Australian estimates.

Figure 79: Prevalence of High/Very High Psychological Distress* by Gender, Tasmania and Australia 2004/5

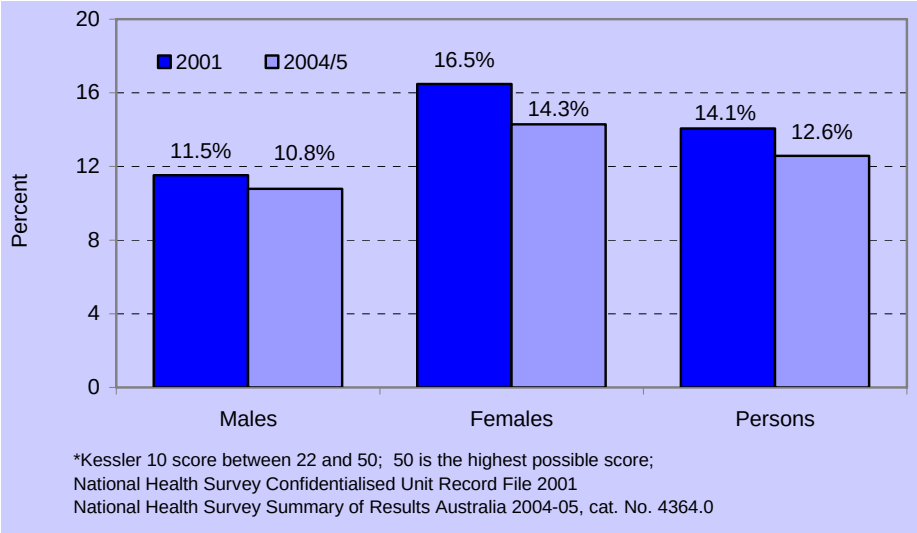


*Kessler 10 score between 22 and 50; 50 is the highest possible score;
National Health Survey , Summary of Results Australia 2004-05, cat. No.

[34] Begg S, Vos T, Goss J, Barker B, Stevenson C, Stanley L, Lopez A. The burden of disease and injury in Australia. Australian Centre for Burden of Disease and Cost-Effectiveness. 2006

Levels of high and very high psychological distress in the Tasmanian population have not changed significantly since the last NHS, conducted in 2001. Levels remain higher in females than males.

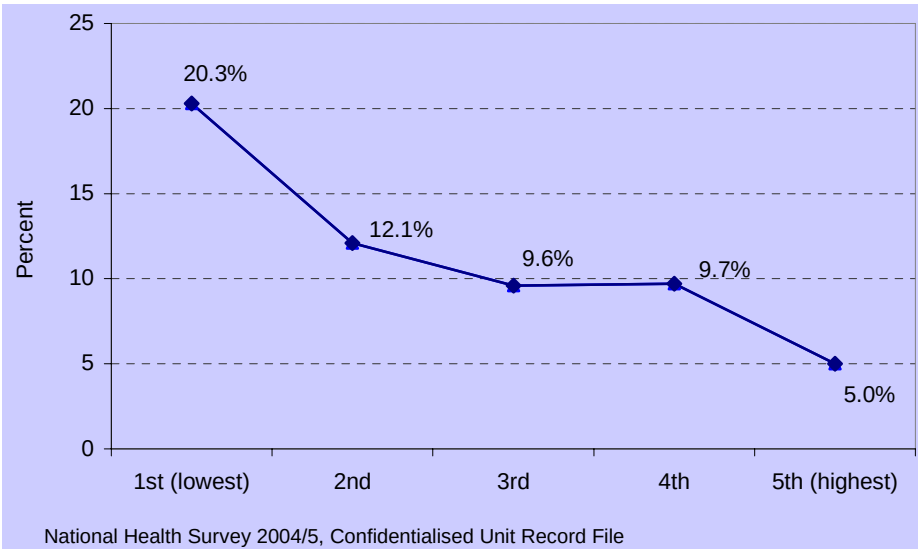
Figure 80: Prevalence of High/Very High Psychological Distress* by Gender, Tasmania 2001 and 2004/5



*Kessler 10 score between 22 and 50; 50 is the highest possible score;
National Health Survey Confidentialised Unit Record File 2001
National Health Survey Summary of Results Australia 2004-05, cat. No. 4364.0

High and very high levels of psychological distress are associated with socio-economic status and are more prevalent in the lowest income group (20.3%) compared to the highest income group (5%).

Figure 81: High/Very High Level of Psychological Distress by Household Income Quintile, Tasmania 2004/5



National Health Survey 2004/5, Confidentialised Unit Record File

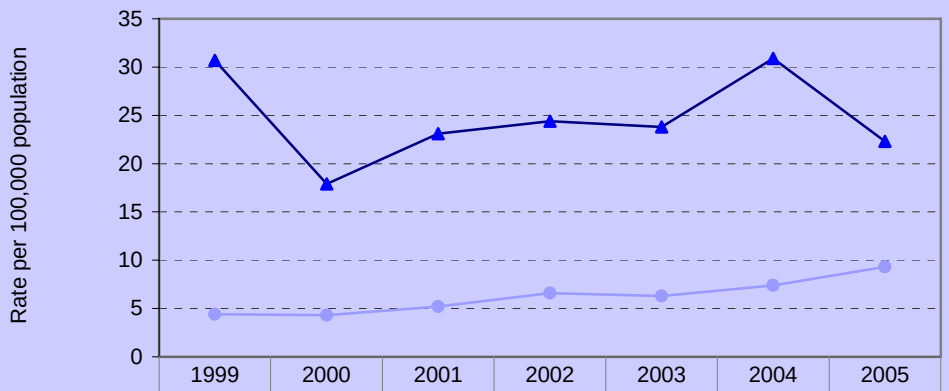
Mortality

Suicide is a complex cause of mortality which results most often from an accumulation of risk factors which includes mental health problems, but also includes drug and alcohol abuse, family issues, unemployment, cultural identity, law enforcement and criminal justice issues, low educational attainment and poverty.[35] Suicide and self-inflicted injury were recorded as the underlying cause of death for 492 persons in Tasmania between 1999 and 2005. Over this time period, the average annual percentage change was 0.3% for males and 13.6% for females. The Tasmanian age-standardised mortality rate for deaths due to intentional self-

[35] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.

harm (including suicide) in 2005 was 15.6 deaths per 100,000 persons, higher than the Australian rate of 10.3 deaths per 100,000 persons.

Figure 82: Age Standardised Mortality Rate for Suicide and Self-Inflicted Injury by Sex, Tasmania, 1999-2003



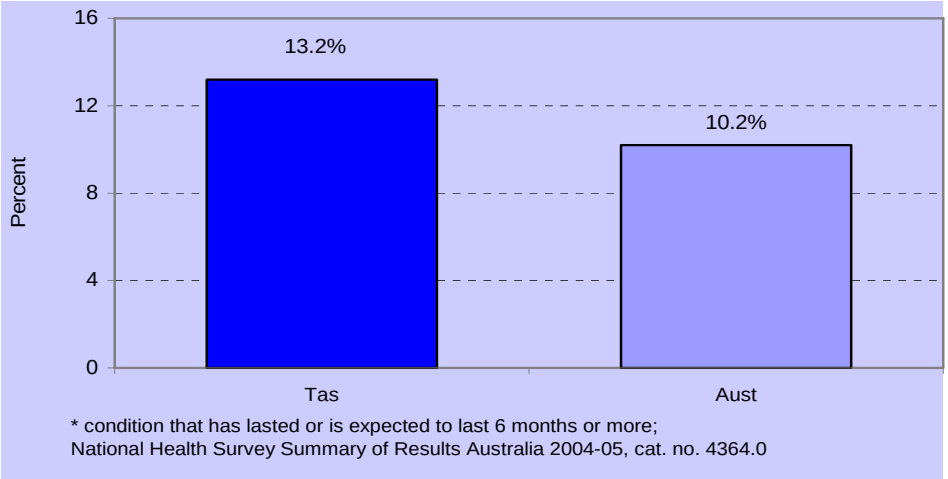
	1999	2000	2001	2002	2003	2004	2005
Males	30.7	17.9	23.1	24.4	23.8	30.9	22.3
Females	4.4	4.3	5.2	6.6	6.3	7.4	9.3

ASR are standardised with the Australian 2001 population.
Average annual percentage change for males : 0.3% (P>0.05), females 13.6% (P<0.05)

Asthma

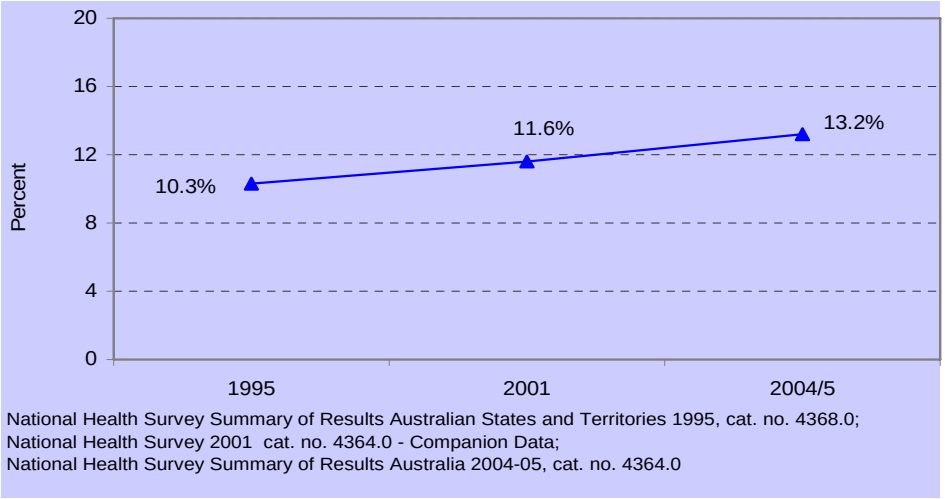
Asthma is a common chronic condition affecting people of all ages. It is characterised by reversible narrowing of the airways in the lungs, resulting in symptoms which include wheezing, coughing, tightness of the chest, breathing difficulty and shortness of breath. [36] Asthma prevalence estimates from the National Health Survey (2004/5) are based on participants' self-reports of having been diagnosed with asthma by a doctor or nurse. According to this survey approximately 62,500 Tasmanians report that they have asthma. Tasmania had a higher proportion of people with asthma (13.2%) than Australia as a whole (10.2%). ($p<0.05$).

Figure 83: Prevalence of Self-Reported Current Asthma*, Tasmania and Australia, 2004/5



Between 1995 and 2004/05 the prevalence of self-reported current asthma in Tasmania increased by 2.7% ($p<0.01$). Among children aged 0-14 years, the prevalence of asthma is higher for males than females, but for people aged 15 years and over, asthma is more prevalent in females.[37]

Figure 84: Prevalence of Self-Reported Current Asthma, Tasmania 1995-2004/5

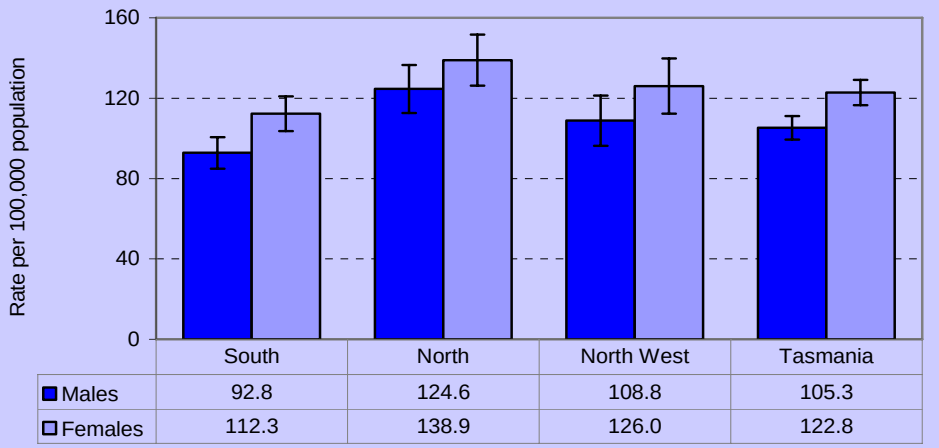


There is regional variation in asthma hospitalisation rates for the period 2001to 2005. The lowest hospitalisation rates were in the South region and the highest rates in the North for both males and females. This may be linked to regional air quality, which is poor in some areas within the Northern region. It may also be associated with differences in smoking rates between the regions; however as regional

[36] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.
[37] ABS, Asthma in Australia: A Snapshot, 2004-05, 2006

smoking data are not available it is not possible to assess the effect of this risk factor on asthma hospitalisation rates between regions. In all regions, females had higher asthma hospitalisation rates than males. Valid comparisons cannot be made between Tasmanian and Australian hospitalisation rates as data are not comparable.

Figure 85: Age-Standardised Hospital Separation Rate for Asthma by Region (ICD-10-AM J45-J46), Tasmania, 2001-05

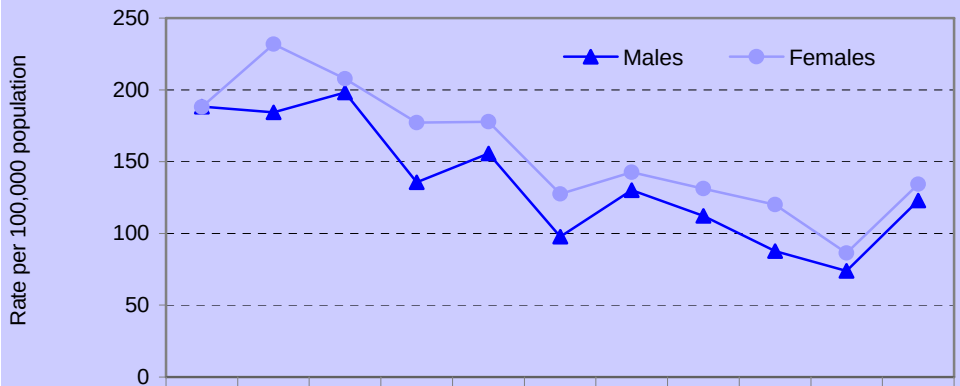


	South	North	North West	Tasmania
Males	92.8	124.6	108.8	105.3
Females	112.3	138.9	126.0	122.8

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

Asthma hospitalisation rates in Tasmania have continued to decrease since 1995. This may be in part due to better outpatient management of the condition. The use of asthma management plans has increased in this time period. In 2007 the AIHW reported that the national proportion of asthma sufferers who had been issued with a written asthma action plan grew from 17% in 2001 to 23% in 2004/5.[38]

Figure 86: Age-Standardised Hospital Separation Rate for Asthma by Sex (ICD-9-CM 493, ICD-10-AM J45-J46), Tasmania, 1995-2005



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	188.4	184.4	198.1	135.5	155.7	97.7	130.2	112.3	87.8	73.9	123.0
Females	188.2	231.8	207.7	177.2	177.8	127.5	142.6	131.3	120.0	86.3	134.3

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database, Tasmania.

[38] Australian Institute of Health and Welfare, Asthma in Australia: Findings from the 2004-05 National Health Survey, Canberra, 2007

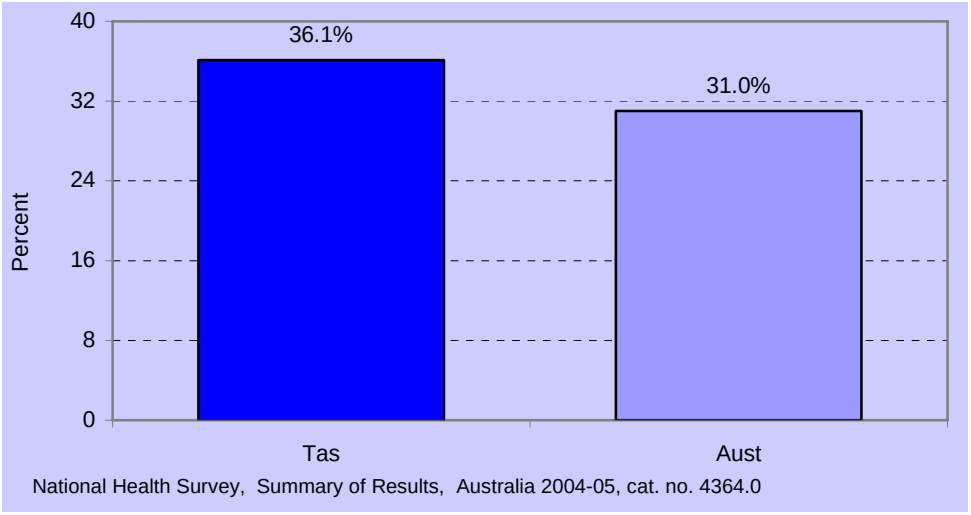
Arthritis and Musculoskeletal Conditions

Arthritis and musculoskeletal conditions are defined as conditions of the bones, muscles and their attachments, and include joint problems such as arthritis. Although there are more than one hundred musculoskeletal conditions, the most common are osteoarthritis, rheumatoid arthritis, osteoporosis and back pain. Arthritis is characterised by inflammation of the joints, often resulting in pain, stiffness, disability and deformity. The two most common types of arthritis are osteoarthritis and rheumatoid arthritis. Osteoarthritis is a degenerative joint condition predominantly affecting the weight-bearing joints such as the hips, knees and ankles as well as the hands and spine. Rheumatoid arthritis is an auto-immune disease causing chronic inflammation of the joints and often leading to deformity. Osteoporosis is a condition whereby there is a progressive loss of bone density and decrease in the strength of the skeleton with a resultant risk of fracture. [39]

Arthritis and musculoskeletal conditions are highly prevalent and significantly disabling group of health conditions. Nationally, arthritis and musculoskeletal conditions affect 31% of the population.

Within Tasmania, a total of 96,600 persons report that they have been diagnosed with arthritis, and 12,600 report the diagnosis of osteoporosis. However, as both conditions are under-diagnosed, the true prevalence of each is likely to be greater. The prevalence of musculoskeletal conditions is significantly higher ($p<0.01$) in Tasmania (36.1%) than for Australia as a whole (31%). This is in part because the prevalence of musculoskeletal conditions as a whole increases with increasing age, and Tasmania has an older population than Australia as a whole.

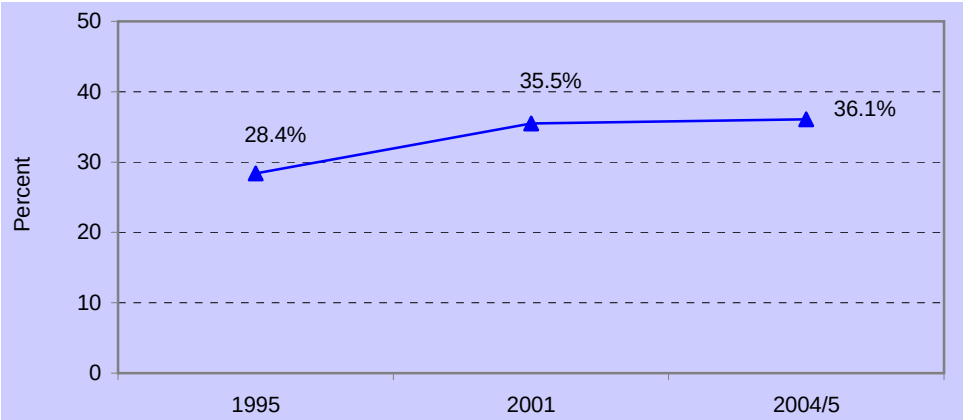
Figure 87: Musculoskeletal Conditions Prevalence, Tasmania and Australia 2004/5



[39] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.

There has been a significant increase in the prevalence of musculoskeletal conditions in Tasmanians between 1995 and 2004/5 ($p<0.01$). Most of this increase occurred between 1995 and 2001.

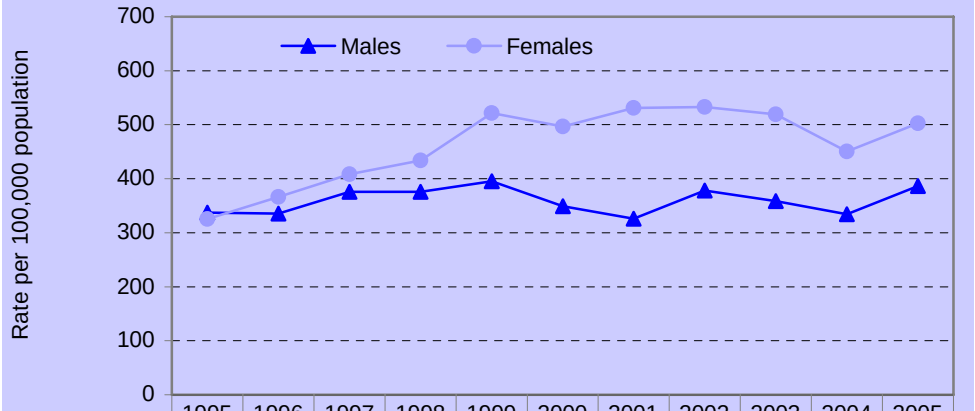
Figure 88: Musculoskeletal Conditions Prevalence, Tasmania 1995-2004/5



* condition has lasted or is expected to last for 6 months or more;
National Health Survey Summary of Results Australia 2004-05, cat. no. 4364.0
National Health Survey 2001 cat. no. 4364.0 - Companion Data;
National Health Survey Summary of Results Australian States and Territories 1995, cat. no. 4368.0

Between 2001 and 2005, there were between 2,208 and 2,477 hospitalisations for arthritis and musculoskeletal conditions each year in Tasmania. Age-standardised hospitalisation rates for arthritis and musculoskeletal conditions in Tasmania have increased in females since 1995, but have remained relatively stable in males.

Figure 89: Age-Standardised Hospital Separation Rate for Arthritis and Musculoskeletal Conditions by Sex (ICD-9-CM 714-716, 733, ICD-10-AM M05-M06, M15-M19, M80-M82), Tasmania, 1995-2005

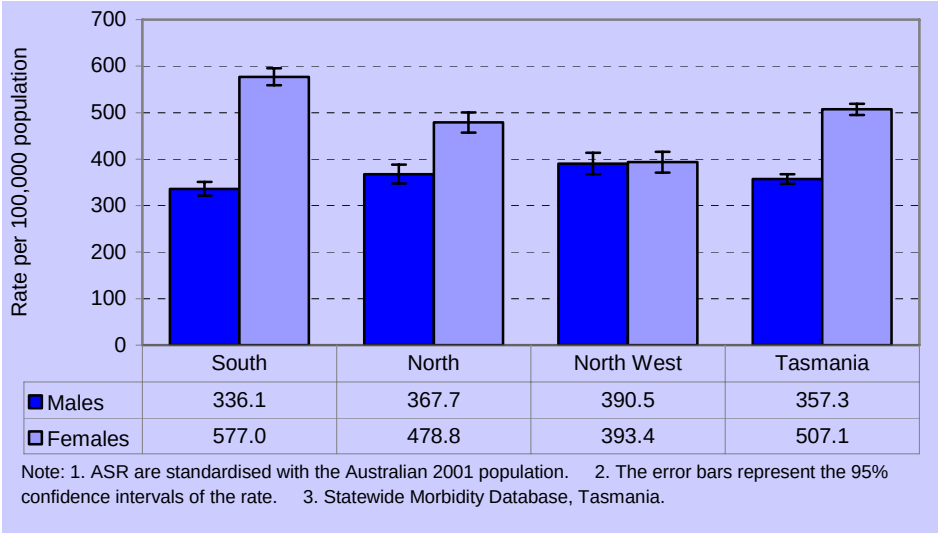


	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	337.5	335.4	375.9	375.6	395.5	348.9	326.1	377.9	358.8	334.3	386.4
Females	325.6	366.2	408.1	433.6	521.5	496.9	531.1	532.7	519.1	450.7	502.7

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database, Tasmania.; 3. Average annual percentage change for males:3.1% (P<0.01); for females: 3.5% (P<0.01).

In males, hospitalisation rates were highest in the North-West and North of the State. However, in females hospitalisation rates were highest in the South.

Figure 90: Age-Standardised Hospital Separation Rate for Arthritis and Musculoskeletal Conditions by Region (ICD-10-AM M05-M06, M15-M19, M80-M82), Tasmania, 2001-05



	South	North	North West	Tasmania
Males	336.1	367.7	390.5	357.3
Females	577.0	478.8	393.4	507.1

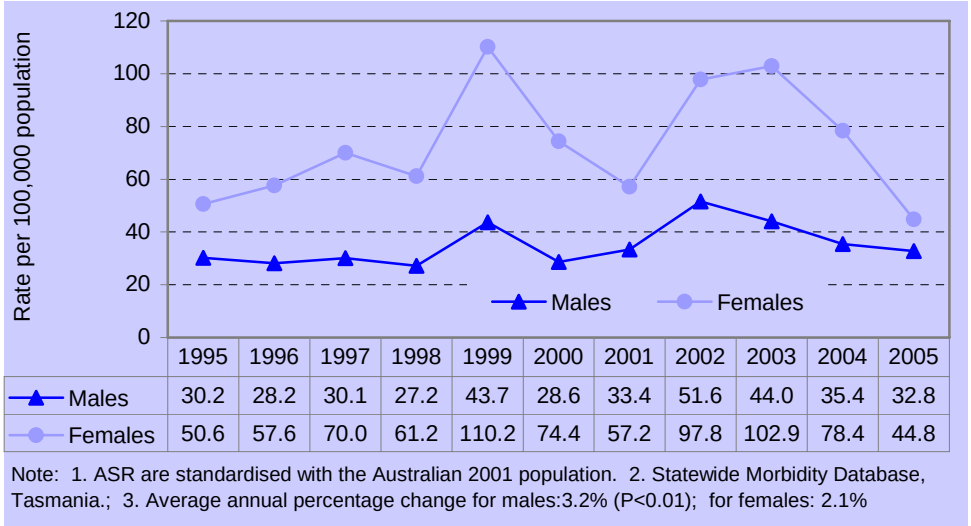
Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

Rheumatoid Arthritis

Rheumatoid arthritis is an auto-immune disease causing chronic inflammation of the joints and often leading to deformity. According to international studies the prevalence of rheumatoid arthritis is between 0.3% and 2.1% of the population. Women are affected approximately three times more often than men. Approximately 80% of all patients develop the disease between ages 35 and 50 years. [40]

Between 1995 and 2005 the age-standardised hospitalisation rate for rheumatoid arthritis fluctuated widely in Tasmania but has not changed significantly in males or females.

Figure 91: Age-Standardised Hospital Separation Rate for Rheumatoid Arthritis by Sex (ICD-9-CM 714, ICD-10-AM M05-M06), Tasmania, 1995-2005



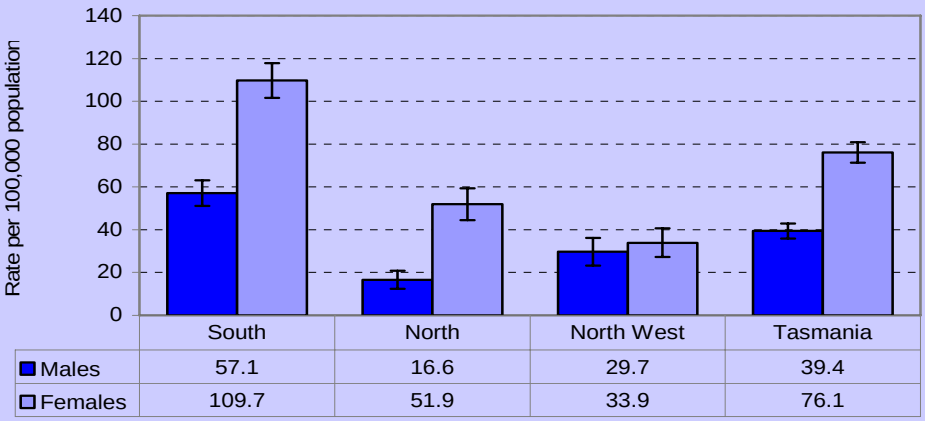
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	30.2	28.2	30.1	27.2	43.7	28.6	33.4	51.6	44.0	35.4	32.8
Females	50.6	57.6	70.0	61.2	110.2	74.4	57.2	97.8	102.9	78.4	44.8

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database, Tasmania.; 3. Average annual percentage change for males:3.2% (P<0.01); for females: 2.1%

[40] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.

Hospitalisation rates were significantly higher in the South of the State. The reasons for this are largely unknown. The presence of more widely available specialist rheumatology services in the South of the State compared with the north and North West may be a contributing factor.

Figure 92: Age-Standardised Hospital Separation Rate for Rheumatoid Arthritis by Region (ICD-10-AM M05-M06), Tasmania, 2001-05



	South	North	North West	Tasmania
Males	57.1	16.6	29.7	39.4
Females	109.7	51.9	33.9	76.1

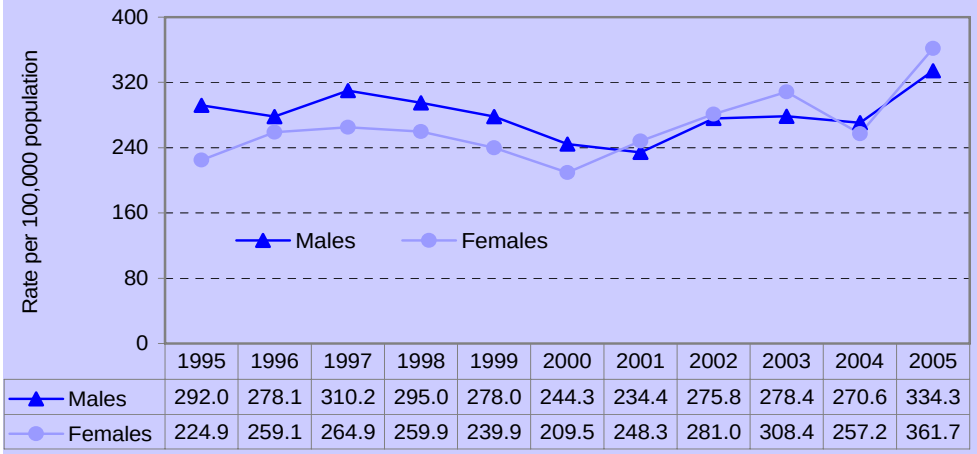
Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

Osteoarthritis

Osteoarthritis is a degenerative joint condition affecting the weight-bearing joints such as the hips, knees and ankles as well as the hands and spine. Osteoarthritis is the most common joint disease of humans. Among older adults, knee osteoarthritis is the leading cause of chronic disability in developed countries. Age is the most significant risk factor for osteoarthritis. The prevalence increases rapidly from approximately 2% of persons aged < 45 years to 68% of persons aged > 65 years. [41]

Between 1995 and 2005, the age-standardised hospitalisation rate for osteoarthritis was between 234.4 and 334.3 hospitalisations per 100,000 persons in males and between 209.5 and 361.7 hospitalisations per 100,000 persons in females.

Figure 93: Age-Standardised Hospital Separation Rate for Osteoarthritis by Sex (ICD-9-CM 715-716, ICD-10-AM M15-M19), Tasmania, 1995-2005



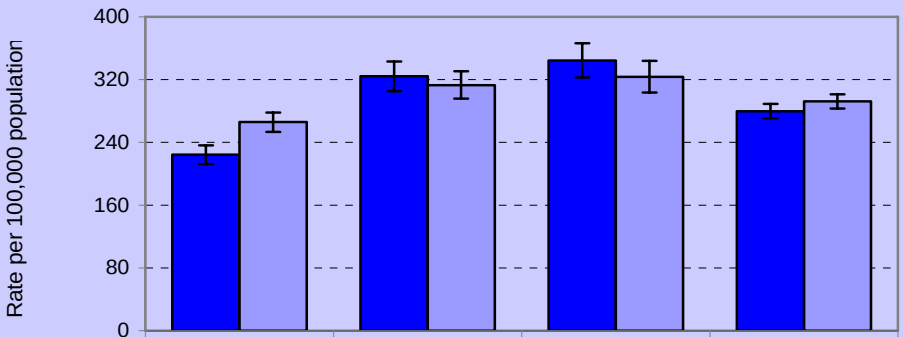
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	292.0	278.1	310.2	295.0	278.0	244.3	234.4	275.8	278.4	270.6	334.3
Females	224.9	259.1	264.9	259.9	239.9	209.5	248.3	281.0	308.4	257.2	361.7

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database, Tasmania.; 3. Average annual percentage change for males:0.0% (P>0.05); for females: 3.0% (P<0.01).

[41] Kasper, Dennis, Harrison's Principles of Internal Medicine, 16th Edition, McGraw-Hill, 2005

In both males and females, hospitalisation rates were highest in the North-West and the North.

Figure 94: Age-Standardised Hospital Separation Rate for Osteoarthritis by Region (ICD-10-AM M15-M19), Tasmania, 2001-05



	South	North	North West	Tasmania
Males	224.3	324.2	344.5	279.9
Females	265.9	313.2	323.8	292.2

Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

Osteoporosis

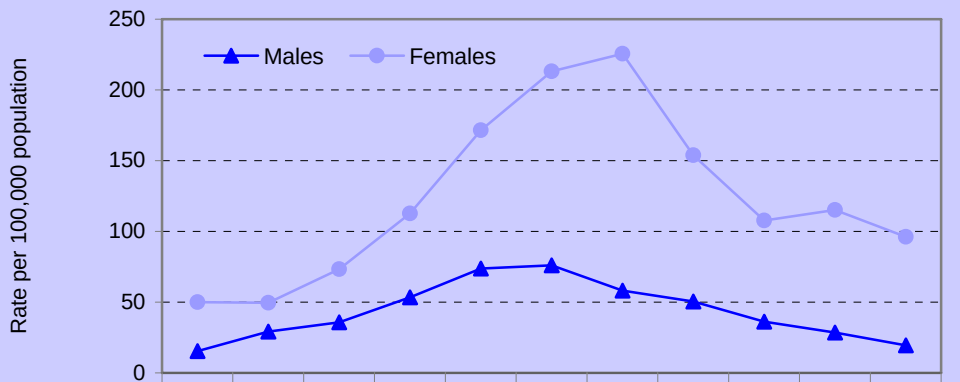
Osteoporosis is a condition whereby there is a progressive loss of bone density and decrease in the strength of the skeleton, with a resultant risk of fracture.[42] Nearly 300,000 (1.6%) Australians reported having osteoporosis in the 2001 National Health Survey. However, these data based on self-reports are likely to underestimate the true prevalence of the condition as osteoporosis is often not diagnosed until a fracture (a consequence of osteoporosis) occurs.

The prevalence of self-reported osteoporosis is associated with gender and age. The prevalence in females is 2.5%, compared with a prevalence of 0.6% in males. Between ages 65 and 74 years, the self-reported prevalence of osteoporosis is 10.2% in females and 2.0% in males. In persons aged 75 years and over, this increases to 15.1% in females and 3.2% in males.

Between 1995 and 2005, the age-standardised hospitalisation rates for osteoporosis were between 50.1 and 225.6 hospitalisations per 100,000 persons per year in females and between 15.3 and 76.0 hospitalisations per 100,000 persons per year in males.

[42] Kasper, Dennis. Harrison's Principles of Internal Medicine, 16th Edition. McGraw-Hill. 2005.

Figure 95: Age-Standardised Hospital Separation Rate for Osteoporosis by Sex (ICD-9-CM 733, ICD-10-AM M80-M82), Tasmania, 1995-2005

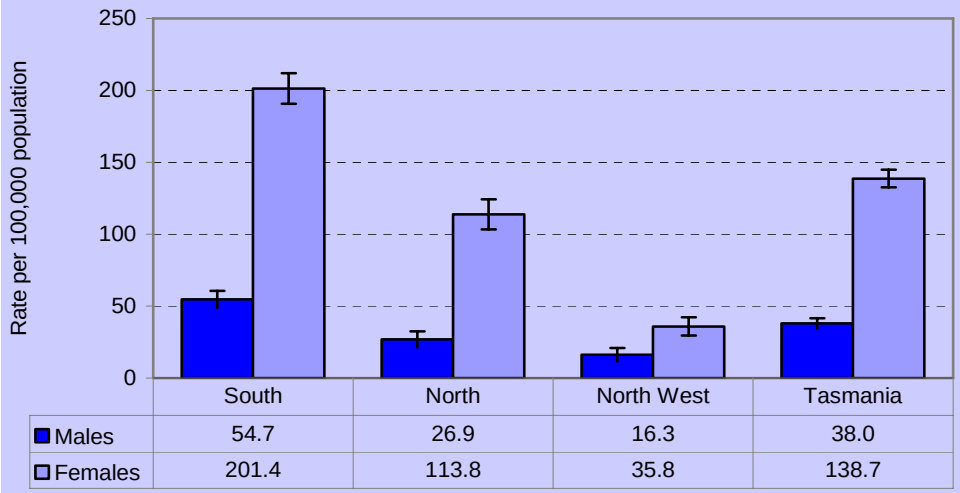


	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	15.3	29.1	35.7	53.5	73.8	76.0	58.2	50.4	36.3	28.4	19.4
Females	50.1	49.6	73.2	112.6	171.4	213.1	225.6	153.9	107.7	115.1	96.2

Note: 1. ASR are standardised with the Australian 2001 population. 2. Statewide Morbidity Database,; Tasmania.; 3. Average annual percentage change for males:-0.1% (P>0.05); for females: 5.4% (P<0.01).

In both males and females, hospitalisation rates were highest in the South of the State. This is in part due to the higher risk of fracture associated with osteoporosis for people living in urban compared with rural settings.

Figure 96: Age-Standardised Hospital Separation Rate for Osteoporosis by Region (ICD-10-AM M80-M82), Tasmania, 2001-05



	South	North	North West	Tasmania
Males	54.7	26.9	16.3	38.0
Females	201.4	113.8	35.8	138.7

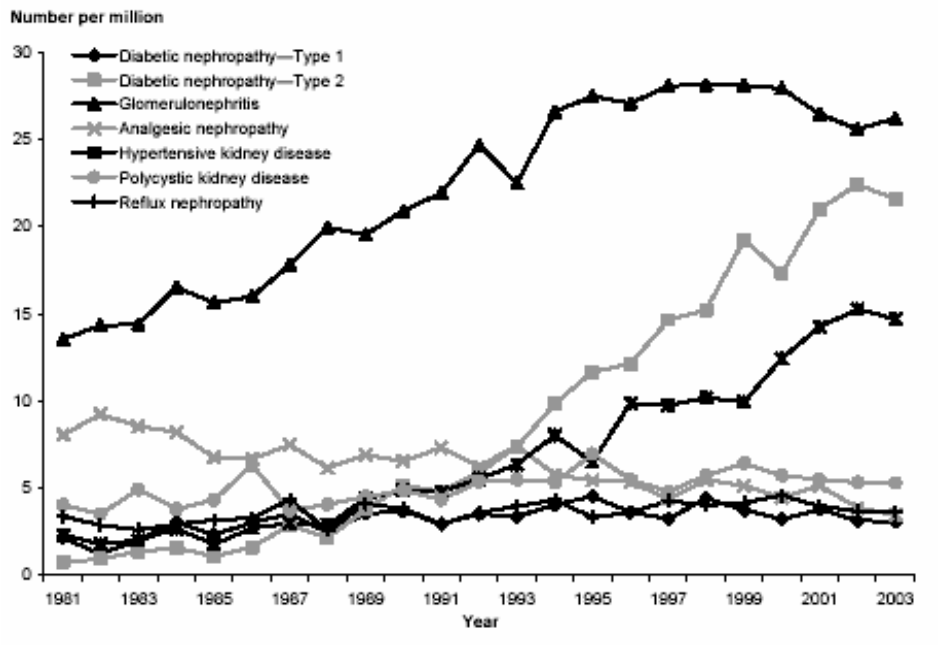
Note: 1. ASR are standardised with the Australian 2001 population. 2. The error bars represent the 95% confidence intervals of the rate. 3. Statewide Morbidity Database, Tasmania.

Chronic Kidney Disease

Although not a national health priority area, chronic kidney disease (CKD) is a significant public health problem which is associated with the national health priority areas of diabetes mellitus and cardiovascular disease. In Australia, the major causes of CKD are glomerulonephritis (inflammation within the filter units of the kidney) and diabetes. The prevalence of both of these conditions is increasing.

The major risk factors for CKD overall include hypertension, diabetes mellitus, hyperlipidaemia, smoking and obesity. Early detection and management of CKD improves outcomes for those affected and reduces the costs to the health care system associated with the management of CKD, including dialysis and renal transplantation.

Figure 97: Incidence of Treated End-Stage Kidney Disease, Selected Causes, Australia, 1981 to 2003

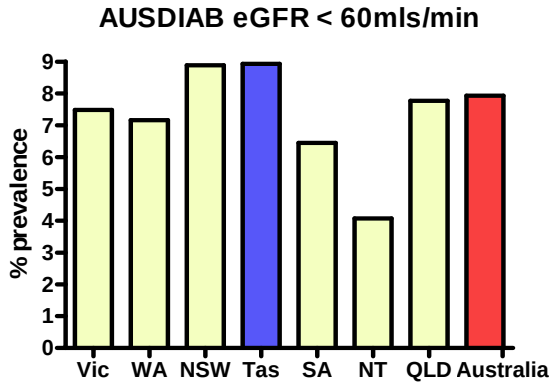


AIHW, Analysis of ANZDATA registry data

Glomerulonephritis is a group of kidney diseases characterised by inflammation of the glomeruli, which can lead to gradual, progressive destruction of the internal kidney structure. Outcomes for people with glomerulonephritis range from complete recovery to end-stage kidney disease. The causes of glomerulonephritis are complex and not completely understood. Many factors may contribute to its occurrence; including autoimmune diseases, cancer, structural abnormalities of the kidney, and infection. There have been large and rapid increases in the incidence of glomerulonephritis until 1995, but the incidence appears to have stabilised, and may be decreasing.

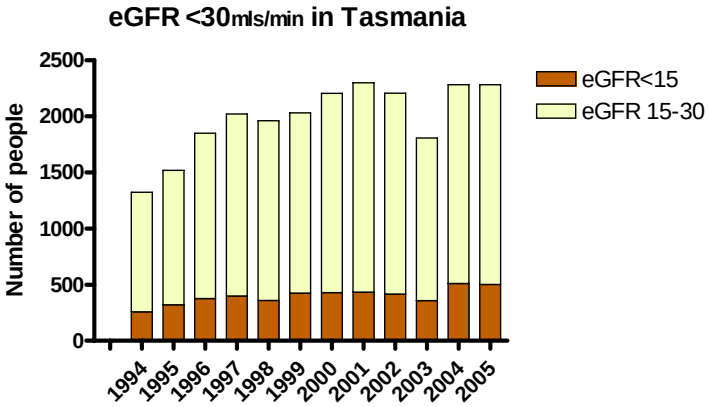
Chronic Kidney Disease in Tasmania

National data assessing chronic kidney disease prevalence in Tasmania were collected by the Australian Diabetes and Lifestyle Study (AUSDIAB study). This study assessed the renal function of over 10,000 people across Australia in 1999 and again in 2005. Results demonstrate that Tasmania has the highest prevalence of significantly reduced kidney function (eGFR<60mls/min) of all States and Territories. Approximately 8.9% of the Tasmanian population is affected by low kidney function. In addition, the presence of blood (haematuria) or protein in the urine (proteinuria), both markers of kidney disease, was also highly prevalent in Tasmanians, second only to South Australia.

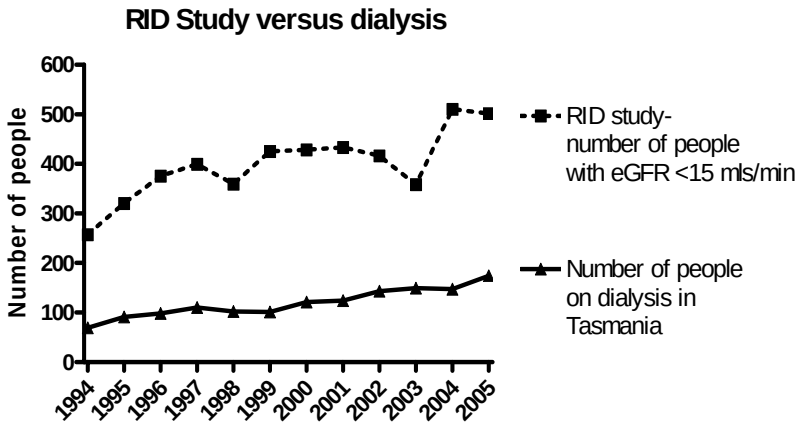


*eGFR<60 mls/min=significantly reduced kidney function

Tasmanian chronic kidney disease data are also collected by the Renal Impairment Database (RID) project. The RID project is a retrospective database collection of all results of serum creatinine tested by Hobart Pathology (and associated laboratories) between 1993 and 2006 and captures between 20 and 25% of the Tasmanian population in any one year. According to the results of this study, there are a significant number of people with severely reduced and end stage CKD that are undiagnosed and/or untreated.



*RID Study 2006: eGFR 15-30 mls/min=severely reduced kidney function; eGFR<15mls/min=end stage CKD and require kidney replacement therapy



*RID Study 2006

Chronic kidney disease is a significant cause of mortality and hospitalisations in the State. Between 1993 and 2003, acute and chronic renal failure resulted in between 43 and 58 deaths per year in Tasmania. The age-standardised mortality rates for acute and chronic renal failure were between 4.4 and 6.1 deaths per 100,000 persons in males, and between 2.2 and 3.7 deaths per 100,000 persons in females.

Renal dialysis is the most common reason for hospitalisation associated with acute and chronic kidney disease. Renal dialysis resulted in 23.6 hospital separations per 1000 population in Tasmania for the period 2004/2005. There was significant variation in the hospitalisation rate according to region. In the South, renal dialysis resulted in 6.8 hospital separations per 1000 population, in the North 39.0 hospital separations per 1000 population and in the North West 52.3 hospital separations per 1000 population for the period 2004/2005.

Health Risk Factors

Health risk factors are health characteristics that are associated with an increased risk of developing a particular disease or condition. In this section, the major preventable behavioural risk factors for disease are discussed. These are smoking, inadequate physical activity, poor diet and nutrition, excess alcohol intake and overweight and obesity.

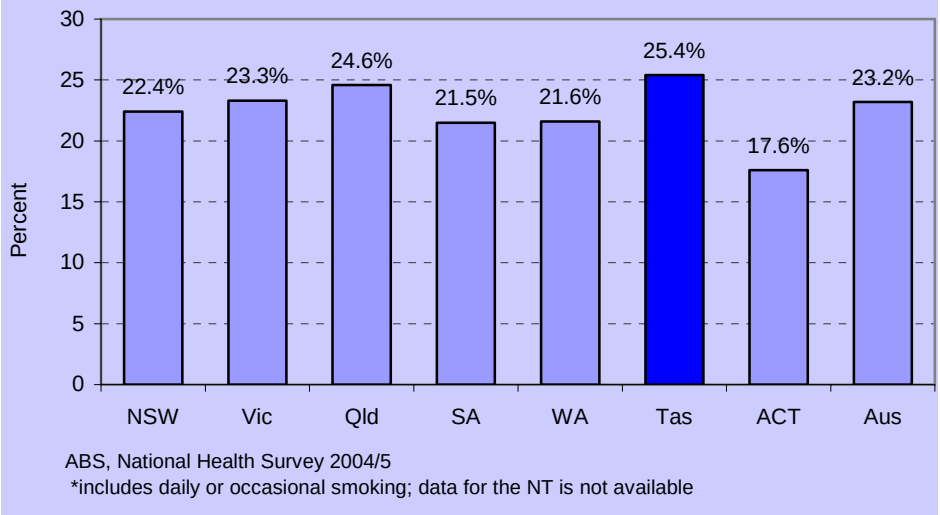
Smoking

Tobacco smoking is the leading cause of preventable disease and death in Australia. Tobacco was responsible for 7.8% of the total burden of disease in Australia in 2003, with lung cancer, chronic obstructive pulmonary disease and ischaemic heart disease accounting for more than three-quarters of this disease burden.[43] While the relationships between smoking and diseases such as chronic obstructive pulmonary disease, lung cancer, and cardiovascular disease have long been established, a substantial number of other disease are now known to be associated with smoking including: cancers of the stomach, bladder, cervix, uterus, oesophagus, mouth, larynx, pancreas, and kidney; leukaemia; respiratory effects in utero and infancy, childhood, adolescence and adulthood; foetal death and stillbirths; problems with fertility; low birthweight; complications in pregnancy; cataract; hip fractures and low bone density; peptic ulcers in persons with *Helicobacter pylori*; and periodontitis.[44]

Exposure to environmental tobacco smoke (passive smoking) is a significant cause of preventable mortality and morbidity in Tasmania. Passive smoking is associated with lung, nasal and sinus cancer; cerebrovascular accident and ischaemic heart disease; lower respiratory infections (including croup, bronchitis, bronchiolitis and pneumonia); onset and worsening of asthma, middle ear disease, reduced birth weight and sudden infant death syndrome in infants.[45]

Tasmania had the highest proportion of smokers of all states and territories in 2004/5, with 25.4% of Tasmanians 18 years and over reporting they currently smoke tobacco.

Table 18: Current Smokers* 18 Years and Over by Jurisdiction, 2004/5

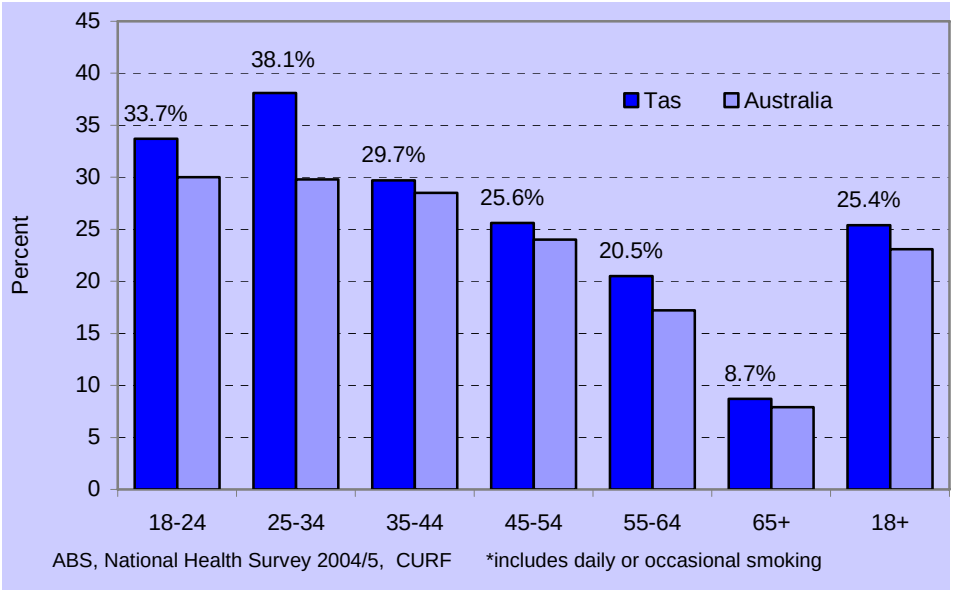


ABS, National Health Survey 2004/5
*includes daily or occasional smoking; data for the NT is not available

According to the 2004/5 NHS, Tasmania has a higher proportion of current smokers (daily or occasional smokers) than Australia as a whole for all age groups.

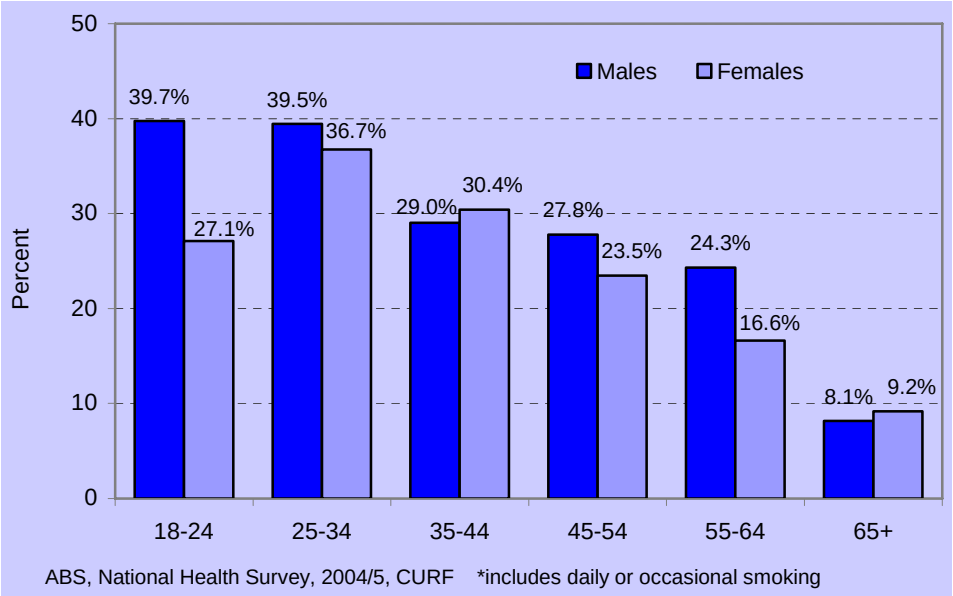
[43] Begg S, Vos T, Goss J, Barker B, Stevenson C, Stanley L, Lopez A. The burden of disease and injury in Australia. Australian Centre for Burden of Disease and Cost-Effectiveness. 2006
[44] United Stated Department of Health and Human Services. The Health Consequences of Smoking: A report of the Surgeon General. Atlanta: CDC, 2004.
[45] Commonwealth Department of Health and Ageing and the National Drug Strategy. Environmental Tobacco Smoke in Australia. Canberra: Commonwealth Department of Health and Ageing, 2002.

Figure 98: Current Smokers* by Age, Tasmania and Australia, 2004/5



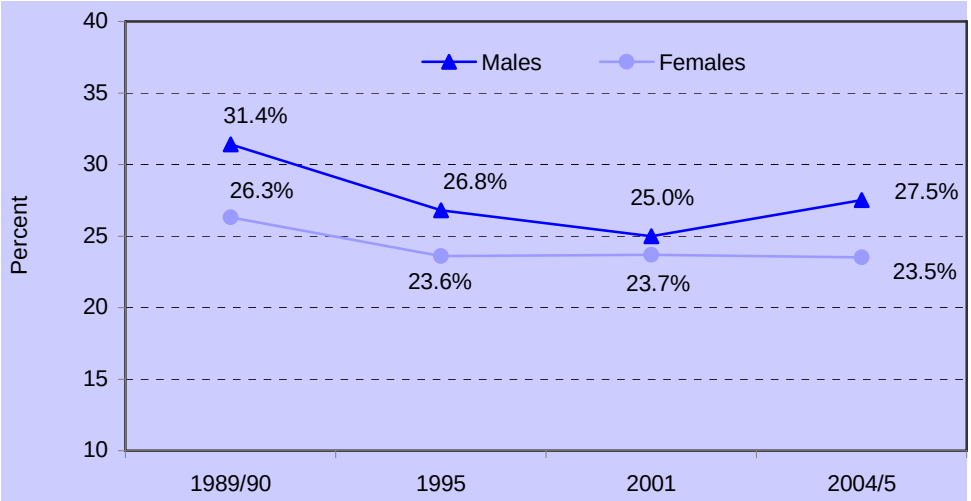
Males are generally more likely to smoke than females, with the exception of the 35 to 44 year old and 65 years and over age-groups, where there were no statistically significant differences between smoking rates.

Figure 99: Current Smokers* by Age and Sex, Tasmania, 2004/5



Between 1989/90 and 2004/5, the proportion of males and females who were current smokers decreased significantly. However, since 2001, the smoking prevalence amongst Tasmanian males has begun to increase again.

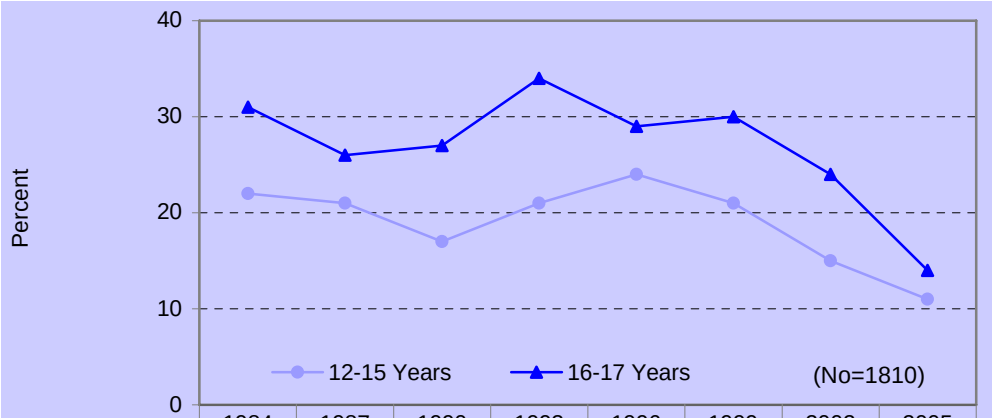
Figure 100: Current Smokers* Aged 18 and Over by Sex, Tasmania, 1995-2004



ABS, National Health Survey, 2004/5, CURF *includes daily or occasional smoking

Smoking among young people is much less common now than it was 20 years ago. In 1984, 22% of secondary students aged 12 to 15 years and 31% of those aged 16 to 17 years reported they had smoked in the seven days preceding the survey. In 2005, these percentages had decreased to 11% of those aged 12 to 15 years and 14% of those aged 16 to 17 years.

Figure 101: Proportion of Tasmanian Secondary Students who Smoked Tobacco within Seven Days Preceding the Survey, 1984-2005

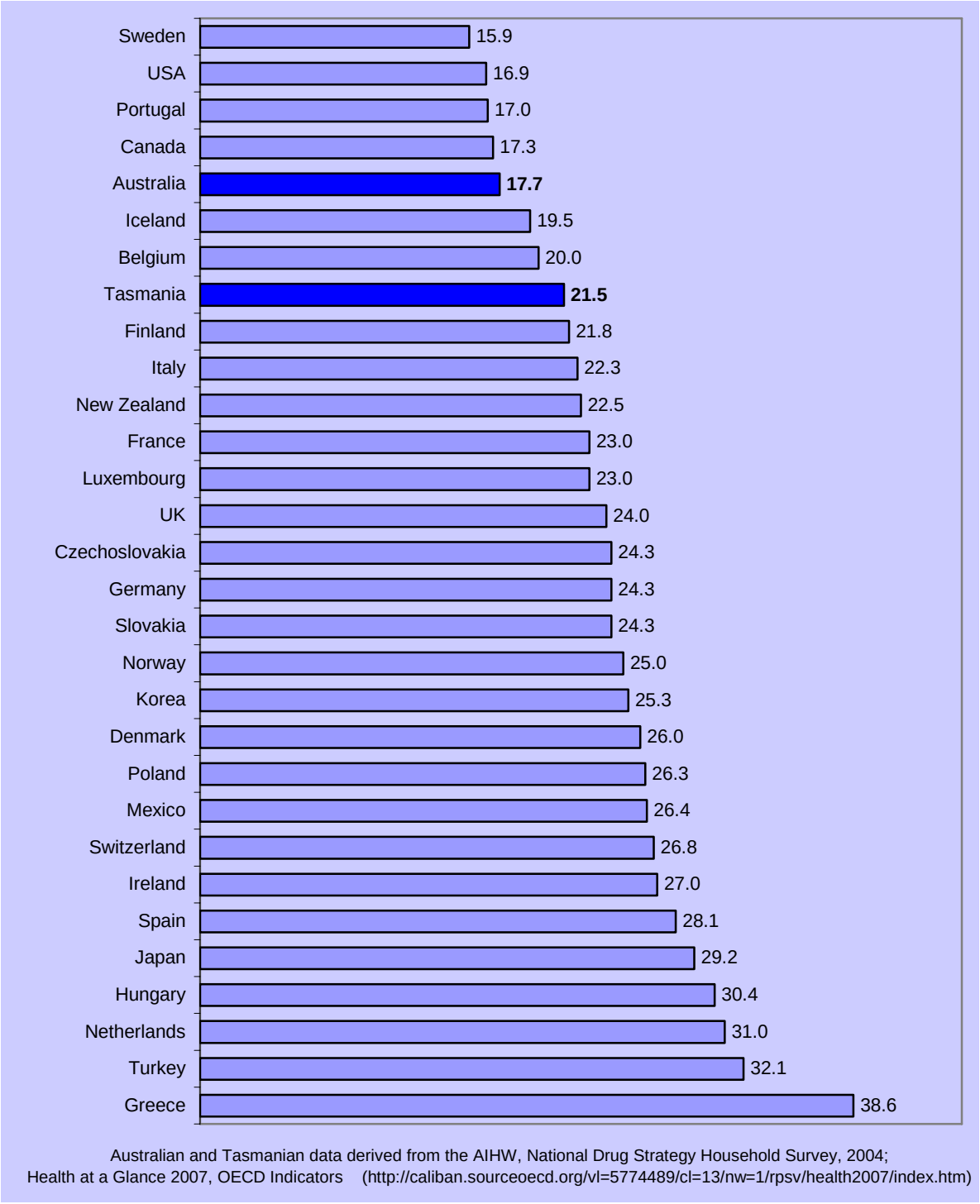


	1984	1987	1990	1993	1996	1999	2002	2005
12-15 Years	22	21	17	21	24	21	15	11
16-17 Years	31	26	27	34	29	30	24	14

Centre for Behavioural Research in Cancer, Prevalence of Cigarette Smoking among Tasmanian Secondary Students in 2005 and Trends over Time, September 2006 (ASSAD Survey), Tables 9, 10

The proportion of daily smokers among the population aged 15 years and over varies greatly between OECD countries. Australia has the fifth lowest smoking rate among OECD countries overall, but Tasmania records the equivalent of the eighth lowest rate, at 21.5% of the population aged 15 years and over.

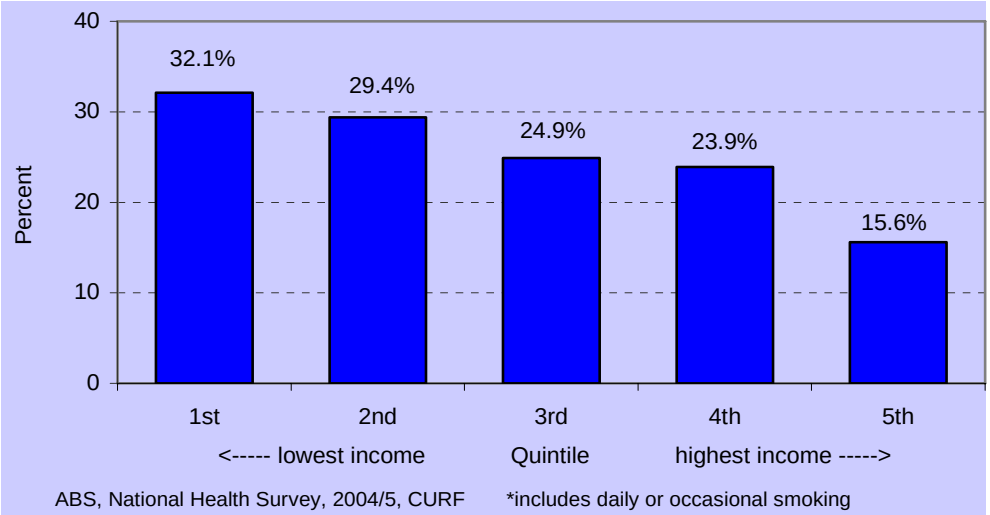
Figure 102: Proportion of Daily Smokers, 15 Years and Over, Tasmania and OECD Countries, 2005



Australian and Tasmanian data derived from the AIHW, National Drug Strategy Household Survey, 2004;
Health at a Glance 2007, OECD Indicators (http://caliban.sourceoecd.org/vl=5774489/cl=13/nw=1/rpsv/health2007/index.htm)

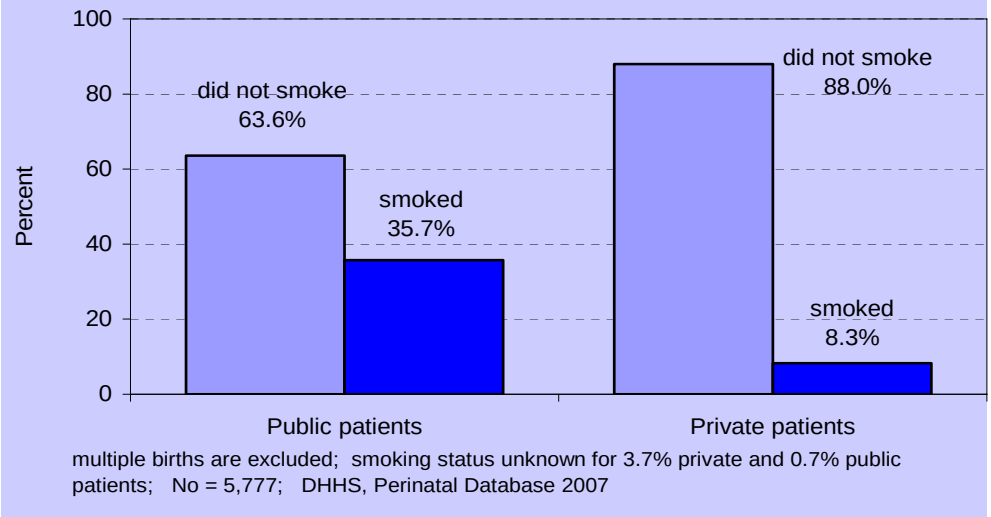
Smoking rates are associated with household income. The prevalence of smoking declines with rising household income levels, from 32.1% in the lowest income quintile to 15.6% in the highest income quintile.

Figure 103: Current Smokers* by Household Income Quintiles, Tasmania 2004/5



Smoking during pregnancy is a significant public health problem in Tasmania. A total of 35.7% of all public patients who were pregnant in 2005 reported that they smoked. In contrast, 8.3% of private patients who were pregnant in 2005 reported that they smoked. This reflects pregnant women accessing public hospital services are likely to be younger and of lower socio-economic status than those accessing private hospital services.

Figure 104: Self-Reported Smoking Status during Pregnancy for Public and Private Patients, Tasmania 2005



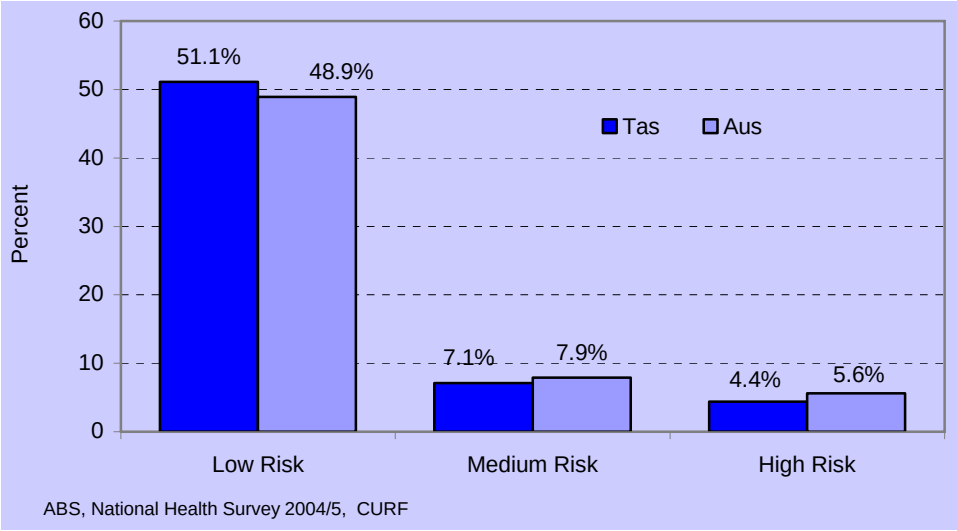
Alcohol

Excess alcohol consumption is associated with a variety of short term adverse health consequences, including road injuries, suicide and violence, as well as long term adverse health consequences, such as liver cirrhosis, mental health problems, pancreatitis, foetal growth retardation and several types of cancer. In 2003, alcohol-related harm was responsible for 3.2% of total burden of disease in Australia, while alcohol also prevented 0.9% of total burden of disease (heart disease) in Australia. This results in a net impact of alcohol on disease burden of 2.3%.[46]

The National Health Survey uses measures of consumption to quantify alcohol consumption levels associated with short and long term harm. These categories are based on the average daily consumption of alcohol in the week preceding the survey.

In 2004/05 the proportion of Tasmanians consuming alcohol at medium and high risk levels were lower than for Australia as a whole ($p<0.01$).

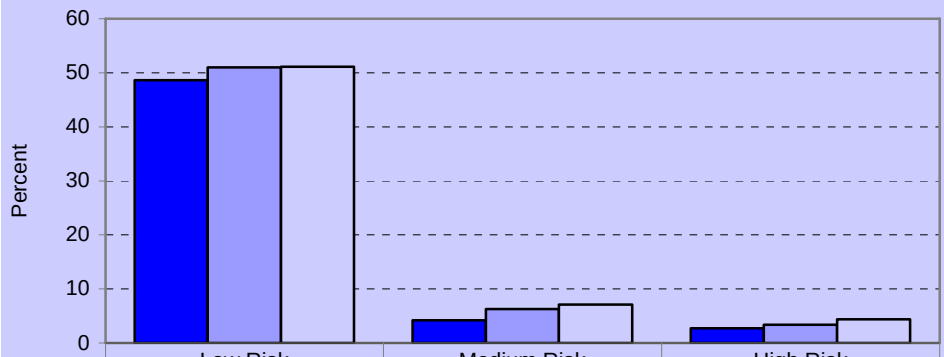
Figure 105: Alcohol Risk Levels for Long Term Harm, 18 years and Over, Tasmania and Australia, 2004/5



However, since 1995, the proportion of Tasmanian adults drinking at medium and high risk levels has increased from 4.2% to 7.1% of adults drinking at medium risk levels and from 2.7% to 4.4% of adults drinking at high risk levels ($p<0.01$).

[46] Begg S, Vos T, Goss J, Barker B, Stevenson C, Stanley L, Lopez A. The burden of disease and injury in Australia. Australian Centre for Burden of Disease and Cost-Effectiveness. 2006

Figure 106: Alcohol Risk Levels for Long Term Harm, 18 Years and Over, Tasmania, 1995-2004/5

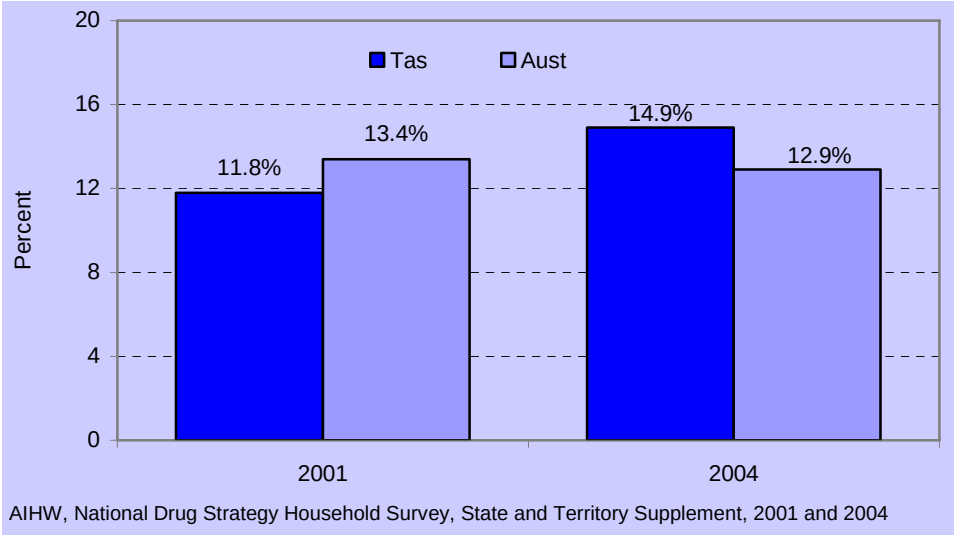


	Low Risk	Medium Risk	High Risk
1995	48.6	4.2	2.7
2001	51	6.3	3.4
2004/5	51.1	7.1	4.4

ABS, National Health Survey, 2004/5, CURF

According to the *Australian Alcohol Guidelines: Health Risks and Benefits, 2001*[47], the consumption of five or seven or more standard drinks on any one day for females and males respectively is defined as an 'episode of potential short term harm'. According to this definition, the proportion of Tasmanians at risk for short term alcohol-related harm has risen from 11.8% in 2001 to 14.9% in 2004. This is in contrast to the decrease in the Australian levels, from 13.4% in 2001 to 12.9% in 2004. The draft revised Australian Alcohol Guidelines for Low Risk Drinking are currently under review by the National Health and Medical Research Council (NHMRC). The guideline for low risk drinking for adults is proposed to be changed to state that, for low risk of both immediate and long-term harm from drinking, adults should consume two standard drinks or less in any one day. This proposed change would effectively increase the proportion of Tasmanian adults estimated to be at risk of short and long term harm from alcohol consumption.

Figure 107: Proportion of Population Aged 14 Years and Over at High Risk of Short term Alcohol Related Harm at Least Monthly, Tasmania and Australia, 2001 and 2004



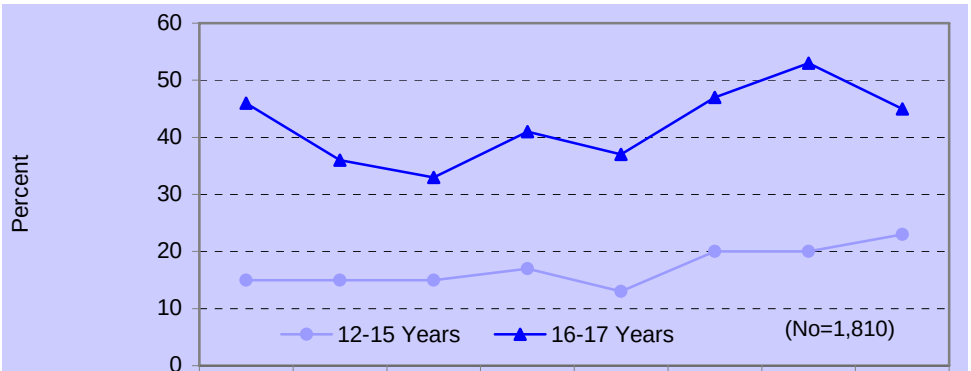
AIHW, National Drug Strategy Household Survey, State and Territory Supplement, 2001 and 2004

The 2001 Australian Alcohol Guidelines also recommend that young people up to the age of 18 years should not drink beyond the levels set for low risk drinking by adults. For young males this means no more than four standard drinks a day on average and no more than six standard drinks on any one day, and for females it means no more than two drinks on average and no more than four drinks at any one time.

[47] NHMRC Australian Alcohol Guidelines: Health Risks and Benefits 2001

According to these guidelines, the proportion of Tasmanian students at risk of short term harm from alcohol consumption has increased for students aged 12 to 15 years, but has remained relatively unchanged for 16 to 17 year old students. The draft revised guidelines currently under review by the NHMRC would effectively increase the proportion of Tasmanian students estimated to be at risk of short term harm from alcohol consumption.

Figure 108: Proportion of Tasmanian Secondary School Students who are Current Drinkers and at Risk of Short Term Alcohol-Related Harm, 1984 - 2005



	1984	1987	1990	1993	1996	1999	2002	2005
12-15 Years	15	15	15	17	13	20	20	23
16-17 Years	46	36	33	41	37	47	53	45

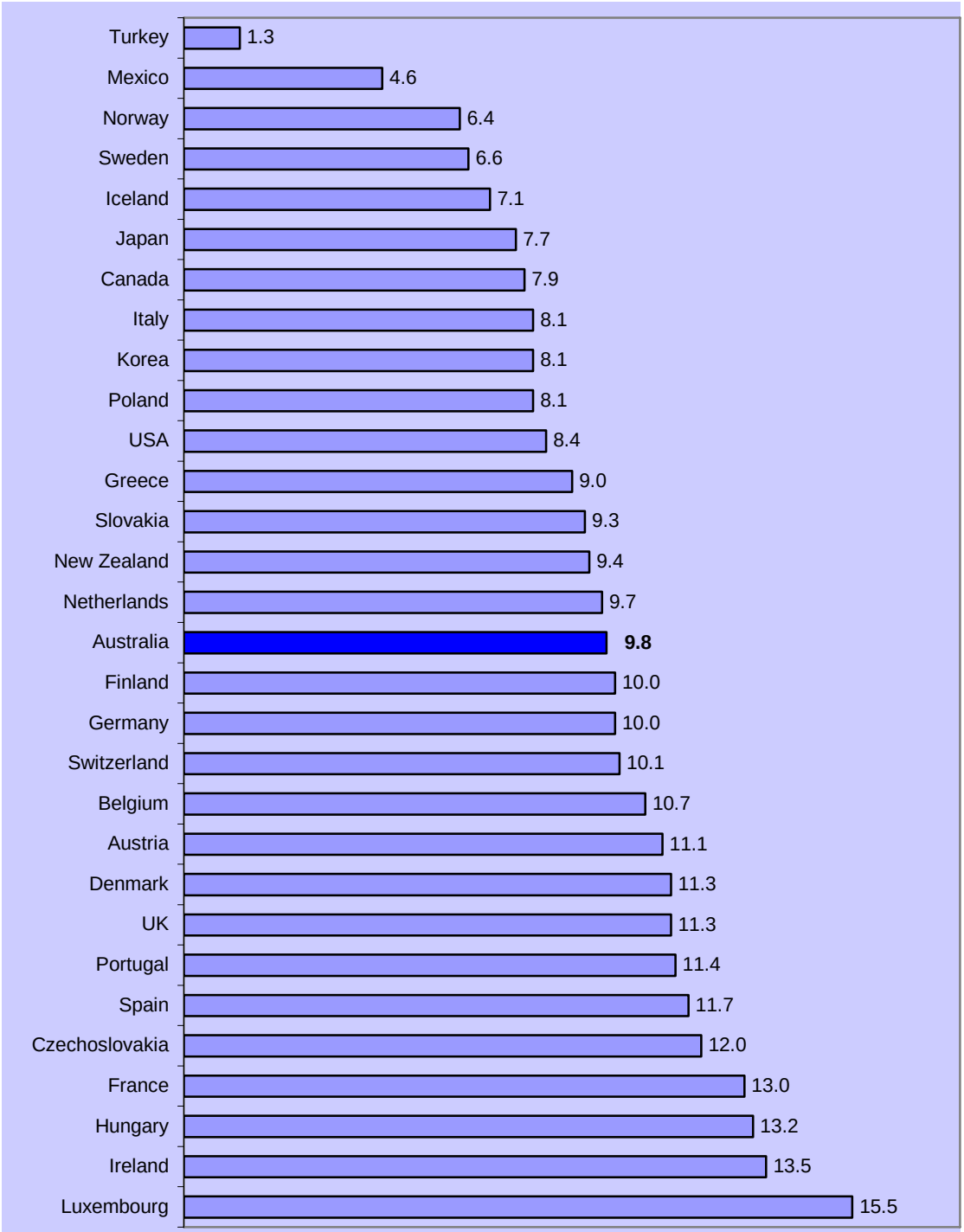
Centre for Behavioural Research in Cancer, The Use of Alcohol, Over the Counter Substances and Illicit Substances among Tasmanian Secondary School Students in 2005 and Trends over Time, 2006, (ASSAD Survey) Tables 7 and 8

Alcohol consumption can also be measured by annual sales of pure alcohol and expressed as consumption per person. In Australia, the per capita consumption of alcohol has increased slightly (0.1%) from 9.83 litres in 2005 to 9.84 litres in 2006.[48] Alcohol consumption data is not collected for Tasmania.

The graph below shows that Australia's alcohol consumption was 9.8 litres per capita in 2005, slightly above the OECD average of 9.5 litres per person per capita for persons aged 15 years and over.

[48] ABS, Apparent Consumption of Alcohol, Australia, 2005-06

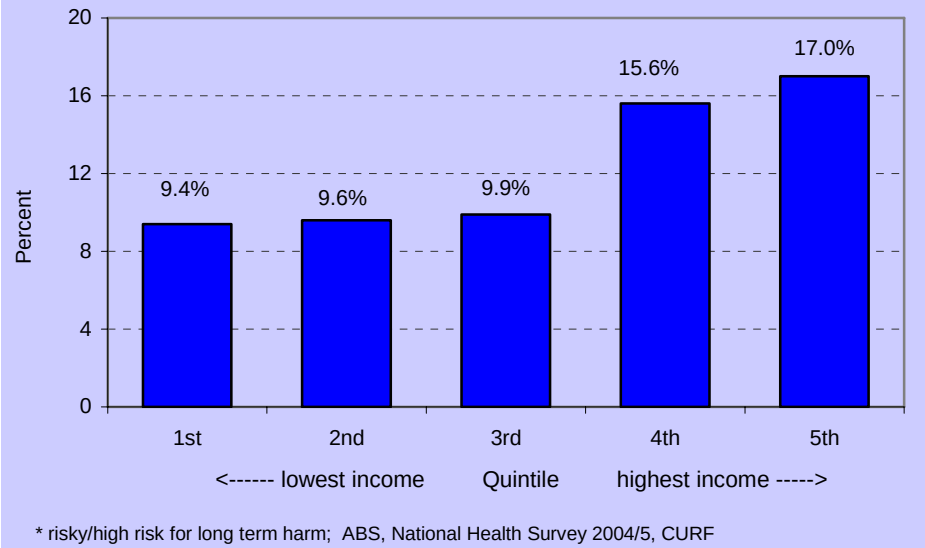
Figure 109: Alcohol Consumption in Litres per Capita, 15 Years and Over, OECD, 2005



Health at a Glance 2007, OECD Indicators
(http://caliban.sourceoecd.org/vl=5774489/cl=13/nw=1/rpsv/health2007/index.htm)

High risk alcohol consumption is more prevalent among higher rather than lower income groups, as shown in the graph below. Of all Tasmanians in the 5th household income quintile, 17% consume alcohol at risky or high risk levels, compared to 9.4% of Tasmanians in the lowest income quintile.

Figure 110: Risky/High Risk* Alcohol Consumption, 18 Years and Over, by Household Income Quintiles, Tasmania 2004/5



Physical Activity

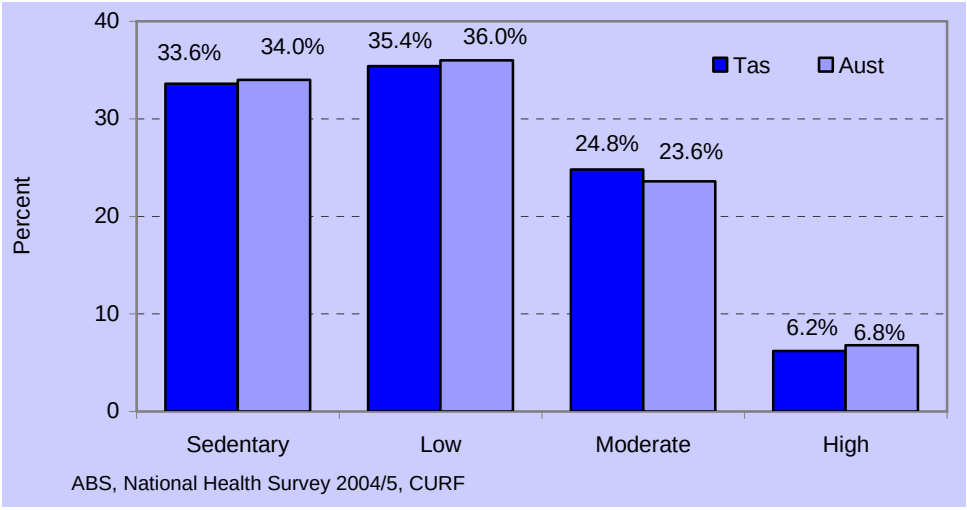
Sufficient physical activity is important for maintaining good health. People who have sufficient levels of physical activity have lower rates of numerous diseases including cardiovascular disease, mental health problems, type 2 diabetes and some cancers. The National Physical Activity Guidelines for Adults stat that the minimum amount of physical activity required for health benefit is at least 30 minutes of moderate activity on most, and preferably all, days of the week.[49]

Physical inactivity was responsible for 6.6% of Australia's total burden of disease in 2003, with ischaemic heart disease, type 2 diabetes and cerebrovascular accident accounting for more than four-fifths of this burden. [50]

A total of 69% of Tasmanians aged 15 years and over do not have physical activity levels sufficient for health benefit. This is not significantly different to Australia as a whole (70%).

[49] Australian Government Department of Health and Ageing. National Physical Activity Guidelines for Australians. Canberra: Australian Government Department of Health and Ageing 2005.
[50] Begg S, Vos T, Goss J, Barker B, Stevenson C, Stanley L, Lopez A. The burden of disease and injury in Australia. Australian Centre for Burden of Disease and Cost-Effectiveness. 2006

Figure 111: Physical Activity Levels 15 Years and Over, Tasmania and Australia 2004/5



Physical activity levels decrease with increasing age. A total of 40.1% of Tasmanians aged between 15 and 24 years had physical activity levels sufficient for health benefit in 2004/05. This percentage decreased in older age groups, to 21.7% of those aged 65 years and over. Physical activity levels overall have not changed significantly since the National Health Survey conducted in 1995 for any age group.

Table 19: Physical Activity Levels by Age, Tasmania 1995-2004/5

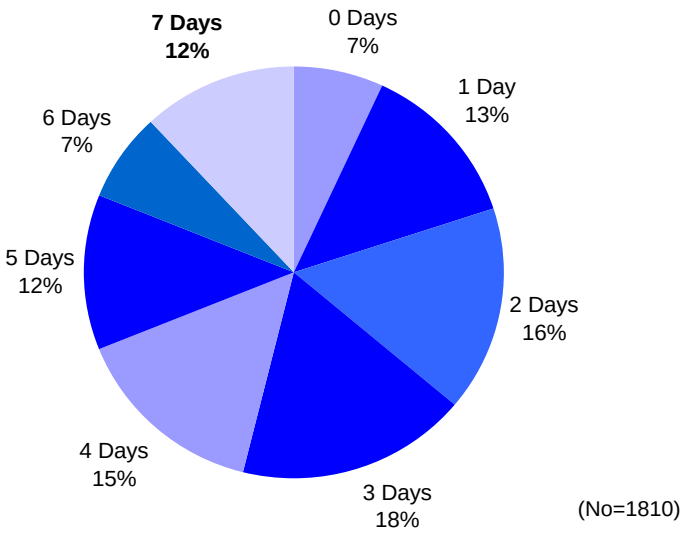
Age	Year	Sedentary %	Low %	Moderate %	High %
15-24	1995	20.9	34.1	29.3	15.7
	2001	24.2	32.8	24.6	18.4
	2004	26.8	33.1	29.4	10.7
25-44	1995	31.7	39.1	22.2	7.0
	2001	30.0	39.7	22.6	7.6
	2004	29.2	39.3	24.2	7.4
45-54	1995	34.0	37.5	25.2	**3.3**
	2001	31.0	49.4	17.3	**2.3**
	2004	31.5	33.5	30.7	4.3
55-64	1995	45.0	26.7	26.0	**2.3**
	2001	32.8	37.7	26.6	**2.9**
	2004	40.8	33.9	20.4	4.9
65 +	1995	51.9	28.3	19.5	**0.2**
	2001	43.2	30.8	25.4	**0.5**
	2004	45.0	33.3	19.2	**2.5**

*RSE >25%, **RSE >50%; ABS, National Health Surveys, 1995-2001, CURFS

Australia's physical activity recommendation for children and adolescents up to the age of 18 years is to engage for at least 60 minutes in moderate to vigorous activity seven days a week.[51] Results from the 2005 Australian Secondary Students' Alcohol and Drug (ASSAD) Survey show that most Tasmanian secondary school students have insufficient daily physical activity levels.

[51] Department of Health and Ageing, Australia's Physical Activity Recommendations for 5-12 year olds and 12-18 year olds, 2004

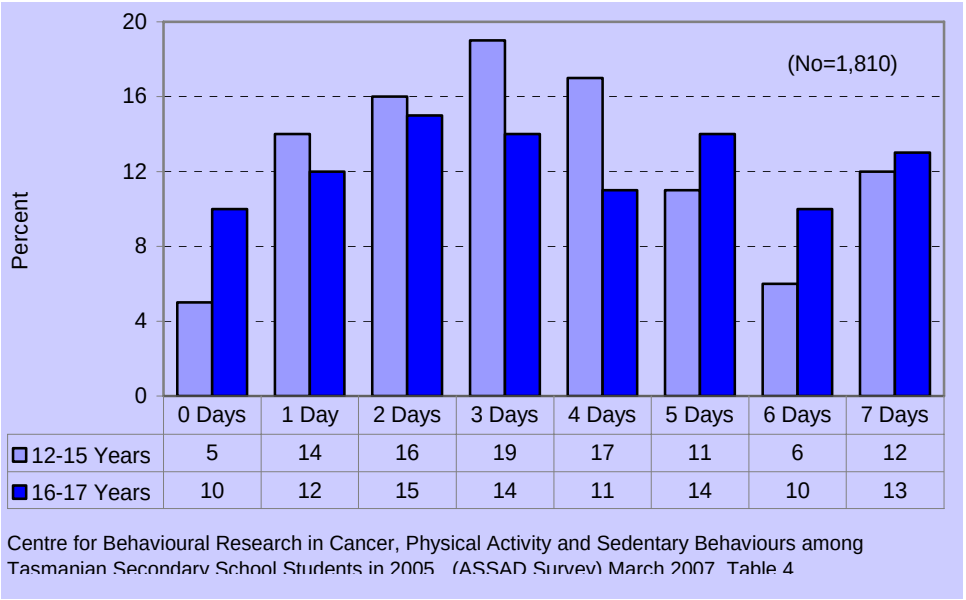
Figure 112: Frequency of Moderate or Vigorous Activity for at Least One Hour in the Past Week by Secondary School Students Aged 12-17 Years, Tasmania, 2005



Centre for Behavioural Research in Cancer, Physical Activity and Sedentary Behaviours among Tasmanian Secondary School Students in 2005, (ASSAD Survey) March 2007,

Of those surveyed, only 12% of students aged 12-15 years and 13% of those aged 16-17 years met Australia's physical activity guidelines. There are no recent data available regarding physical activity levels in children aged less than 12 years. Overall, there was very little difference between physical activity levels in younger and older students who participated in the ASSAD survey. Moderate to vigorous activity for at least one hour on 4 days or more during the week preceding the survey was reported to be achieved by 46% (12-15 year) and 48% (16-17 years) respectively.

Figure 113: Frequency of Moderate or Vigorous Activity for at least One Hour in the Past Week by Secondary School Students Aged 12-15 Years and 16-17 Years, Tasmania, 2005

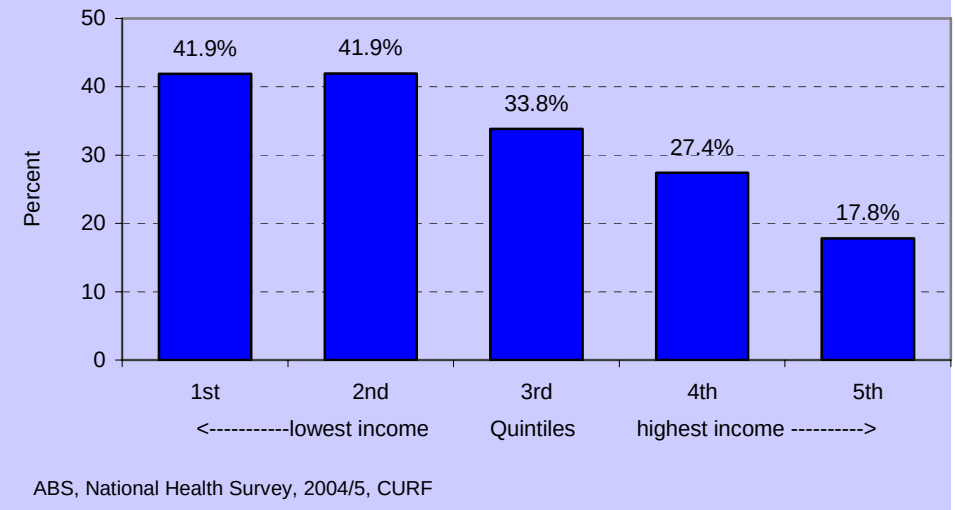


	0 Days	1 Day	2 Days	3 Days	4 Days	5 Days	6 Days	7 Days
12-15 Years	5	14	16	19	17	11	6	12
16-17 Years	10	12	15	14	11	14	10	13

Centre for Behavioural Research in Cancer, Physical Activity and Sedentary Behaviours among Tasmanian Secondary School Students in 2005 (ASSAD Survey) March 2007 Table 4

Physical activity levels are associated with socio-economic status. Tasmanians in the lowest income households are more likely to lead sedentary lifestyles (41.9%) than Tasmanians living in the highest income households (17.8%). A person is classified as sedentary if that person does not regularly engage in low level, moderate or vigorous exercise, including walking. Sedentary activity level therefore includes "no exercise" as well as very little exercise. The National Health Survey only collects data on structured exercise activity (i.e. does not include work-related exercise, gardening, etc.) and while it is therefore an imperfect measure, the trends the survey reveals are still valid.

Figure 114: Sedentary Activity Levels by Household Income Quintiles, 15 Years and Over, Tasmania, 2004/5

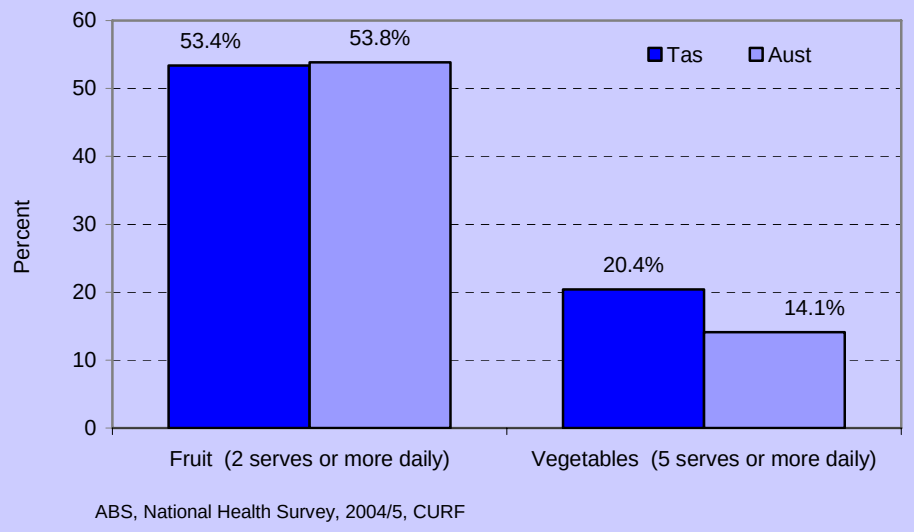


Nutrition

Dietary factors are linked to health and disease, either as protective influences or risk factors. Some of the diseases and conditions to which diet contributes substantially include cardiovascular disease, some cancers, type 2 diabetes, overweight and obesity, osteoporosis, dental caries, gall bladder disease and diverticular disease. In 2003, low fruit and vegetable consumption was responsible for 2.1% of Australia's total disease burden.

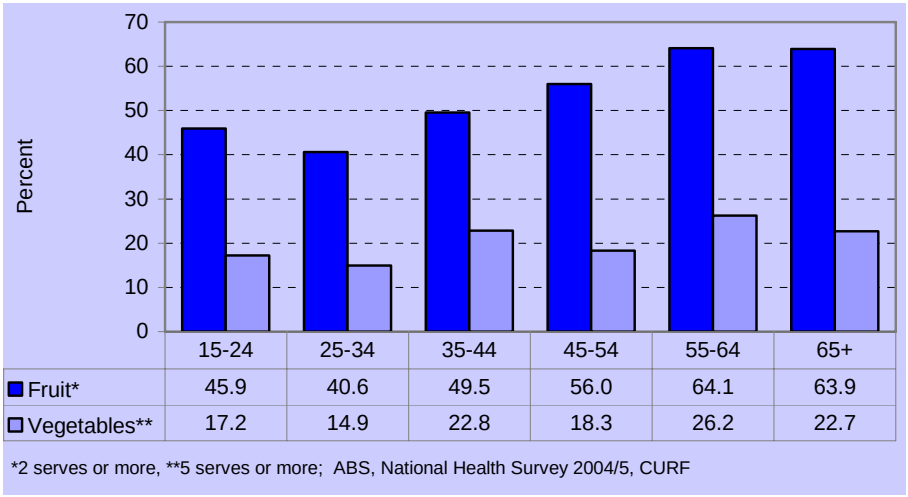
The NHMRC recommend a minimum daily intake of five or more serves of vegetables and two or more serves of fruit each day. In 2004/05, the proportion of Tasmanians aged 15 years and over who consumed the daily recommended serves of fruit was 53.4%, similar to that of Australia as a whole (53.8%). The proportion who consumed the daily recommended serves of vegetable was (20.4%), higher than the national vegetable consumption rate (14.1%) ($p<0.01$). A limitation of this data is that potatoes, including chips, are included as a vegetable serve.

Figure 115: Recommended Fruit and Vegetable Consumption, 15 Years and Over, Tasmania and Australia, 2004/5



The proportion of Tasmanians who consume the daily recommended serves of *fruit* generally increases with increasing age, from 45.9% of persons aged 15 to 24 years, to 63.9% of persons aged 65 years and over. In contrast, the proportion of Tasmanians who consume the recommended serves of *vegetables* does not increase significantly with increasing age. However, the difference in required vegetable consumption proportions between the 25 to 34 year age group, which recorded the lowest value, and the 55 to 64 year age group, which recorded the highest value, was statistically significant ($p<0.01$).

Figure 116: Proportion of Population Consuming Recommended Daily Serves of Fruit and Vegetables by Age, Tasmania 2004/5



	15-24	25-34	35-44	45-54	55-64	65+
Fruit*	45.9	40.6	49.5	56.0	64.1	63.9
Vegetables**	17.2	14.9	22.8	18.3	26.2	22.7

*2 serves or more, **5 serves or more; ABS, National Health Survey 2004/5, CURF

The proportion of Tasmanians adolescents who consume four or more serves of vegetables a day is 22.9% of 12 to 15 year olds and 22% of 16 to 17 year olds, and the proportion consuming 2 or more serves of fruit is 69.4% of 12 to 15 year olds and 60.2% of 16 to 17 year olds. There was a significant increase in the consumption of four or more serves of vegetables a day by Tasmanian secondary students between 2002 and 2005. Fruit consumption increased for students aged 12-15 years from 2002 to 2005, but fell slightly for those aged 16-17 years. There are no recent data available regarding fruit or vegetable consumption in children less than 12 years of age.

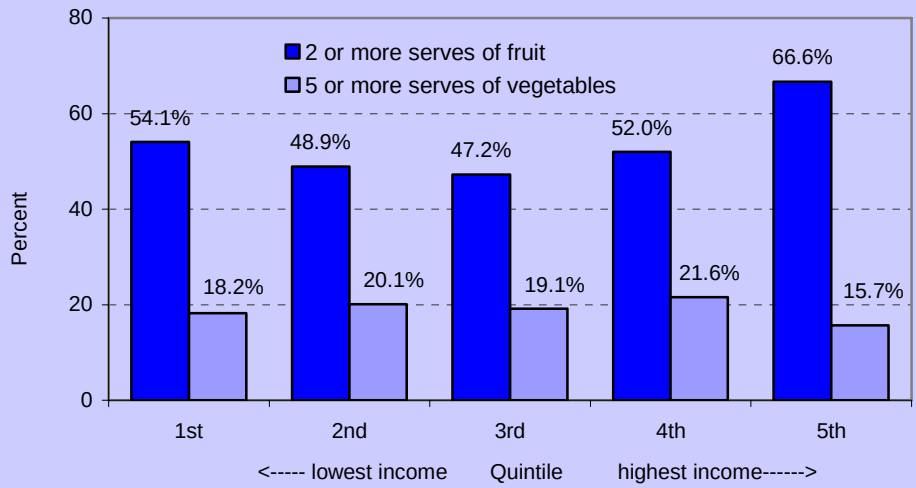
Table 20: Proportion of Secondary Students Consuming the Minimum Daily Recommended Serves of Fruit and Vegetables, Tasmania, 2002 and 2005

	12-15 Years		16-17 Years	
	2002	2005	2002	2005
4 or more serves of vegetables				
	17.8%	22.9%	17.5%	22%
2 or more serves of fruit				
	61.1%	69.4%	63.7%	60.2%

Centre for Behavioural Research in Cancer, Prevalence of Diet Related Behaviours among Tasmanian Secondary School Students in 2005 and Trends over Time, 2006, Table 10

Around half of Tasmanians in low to medium income households reported to consume two or more pieces of fruit daily in 2004/5, compared with two-thirds of Tasmanians in high income households.

Figure 117: Consumption of Recommended Daily Serves of Fruit and Vegetables by Household Income Quintiles, 15 Years and Over, Tasmania 2004/5



ABS, National Health Survey, 2004/5, CURF

Body Mass Index

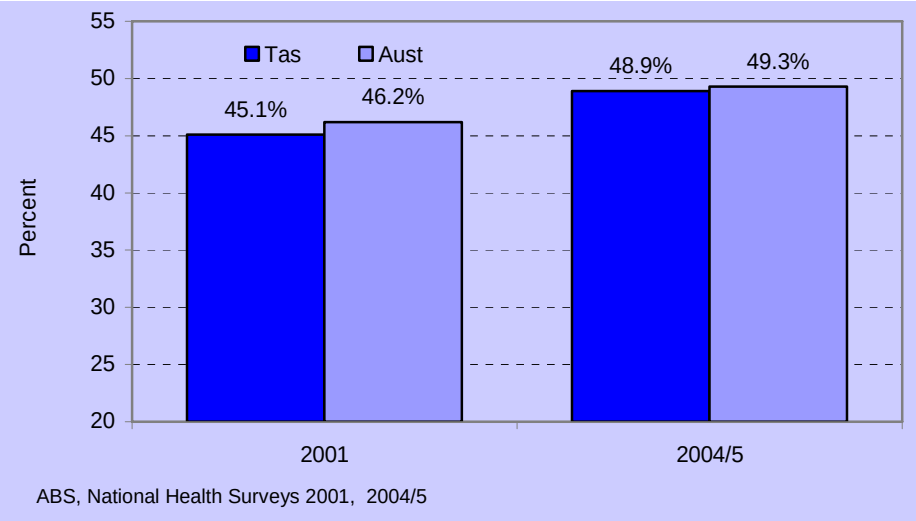
Throughout Australia and internationally, the prevalence of overweight and obesity is increasing. Being overweight or obese increases the risk of a wide range of health problems, including cardiovascular disease, type 2 diabetes, some cancers, degenerative joint disease, obstructive sleep apnoea, and impaired psychosocial functioning. The World Health Organisation (WHO) defines weight status according to the Body Mass Index (BMI) which is the ratio of weight (in kilograms) divided by height (in metres squared). A BMI of between 25 and 30 indicates overweight and a BMI greater than 30 indicates obesity. [52]

The National Health Survey provides estimates of BMI based on participants' self-reported height and weight. Self-reported height and weight are considered less reliable than objectively measured data because people tend to overestimate their height and underestimate their weight. [53] In spite of this, self-reported BMI is still a useful measure for ongoing surveillance of population health.

The percentage of Tasmanians aged 18 years and over who self-reported overweight or obesity in 2004/05 was 48.9%. This is similar to the national percentage of 49.3%. This percentage has increased slightly since 2001 for both Tasmania and Australia as a whole. However, these figures are likely to be an underestimate of the true population prevalence of overweight and obesity in adults. The last objectively measured survey of BMI in Australians was the Australian Diabetes, Obesity and Lifestyle (AusDIAB) study in 2000. According to this survey, 68.2% of males and 56.3% of females aged 25 years and over in Tasmania were overweight or obese. [54]

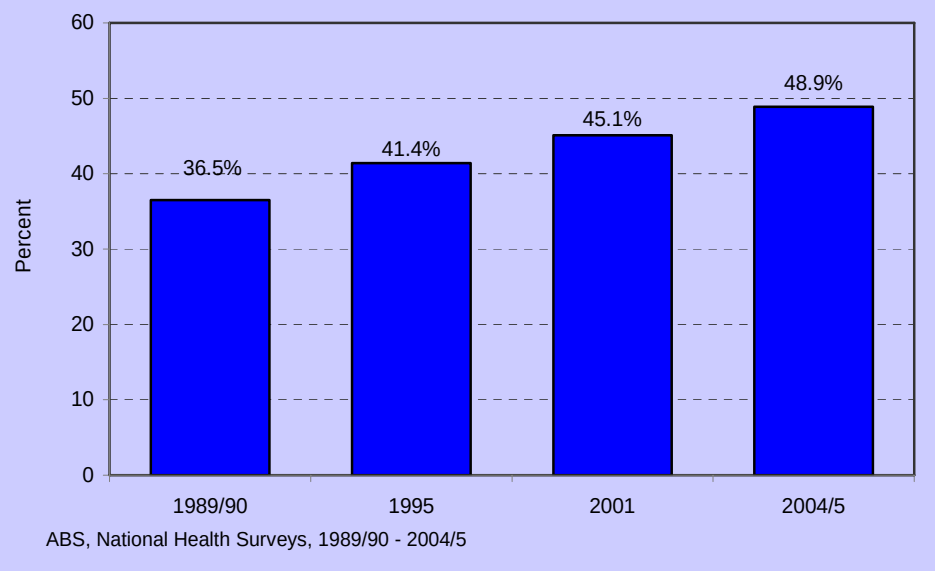
[52] WHO. Obesity: Preventing and managing the global epidemic. Report of a WHO consultation. WHO Technical Report 894, 2004.
[53] Flood V et al., Use of self-report to monitor overweight and obesity in populations: Some issues for consideration, Aust NZJ Public Health, 2000; 24: 96-99.
[54] Dunstan D et al., The Australian diabetes, obesity and lifestyle study: data report. Tasmania, 2000

Figure 118: Overweight and Obese, 18 Years and Over, Tasmania and Australia, 2001 and 2004/5



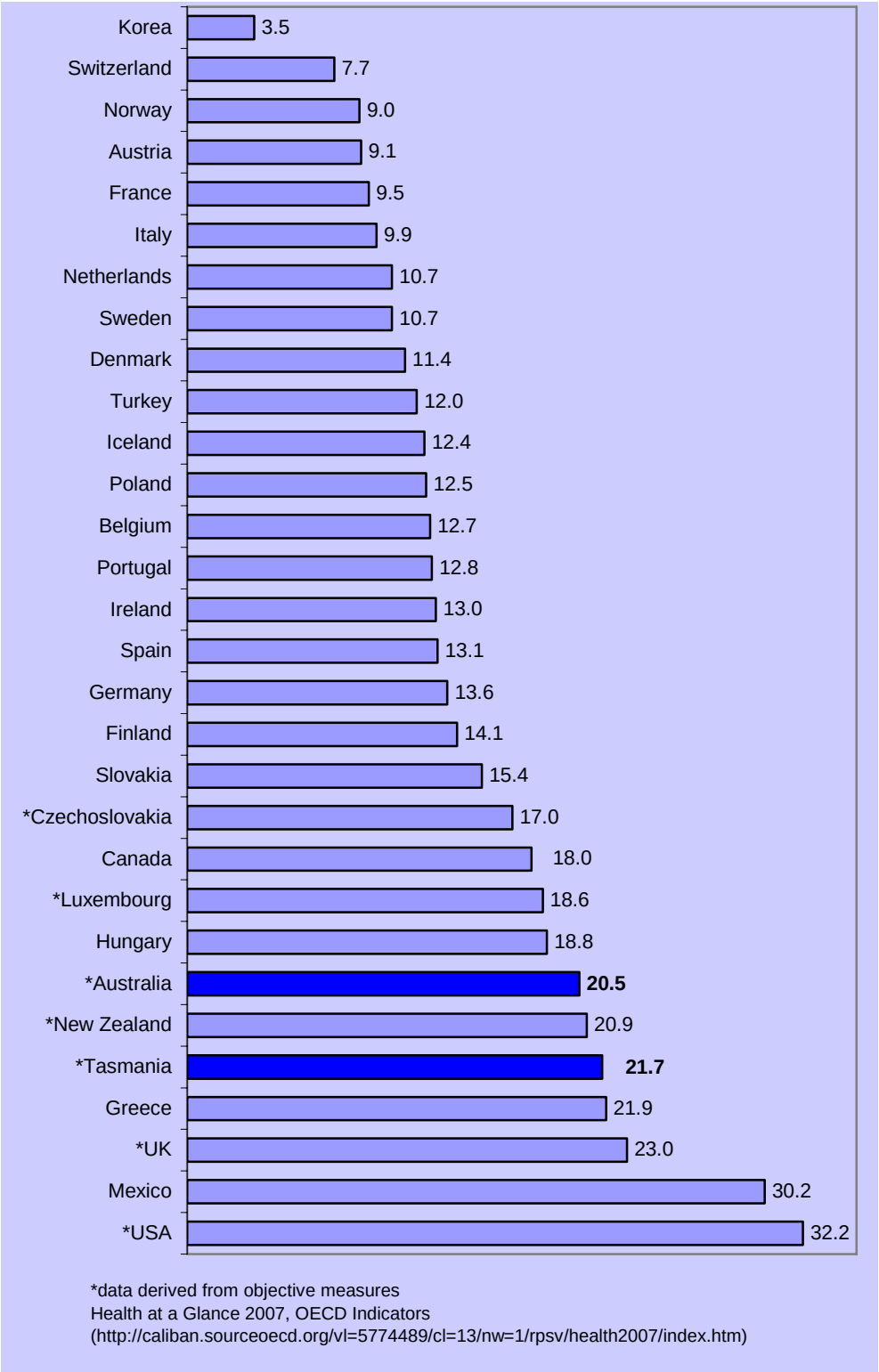
The proportion of Tasmanians who self-report overweight and obesity has continued to increase significantly since 1989/90 ($p<0.01$).

Figure 119: Overweight and Obese, 18 Years and Over, Tasmania 1989/90- 2004/5



The prevalence of obesity varies tenfold among OECD countries. The prevalence of obesity in Australian adults recorded in the AusDIAB study is one of the highest of all OECD countries. The prevalence of obesity in Tasmania was higher than for Australia as a whole in the AusDIAB study, as reflected in the figure below.

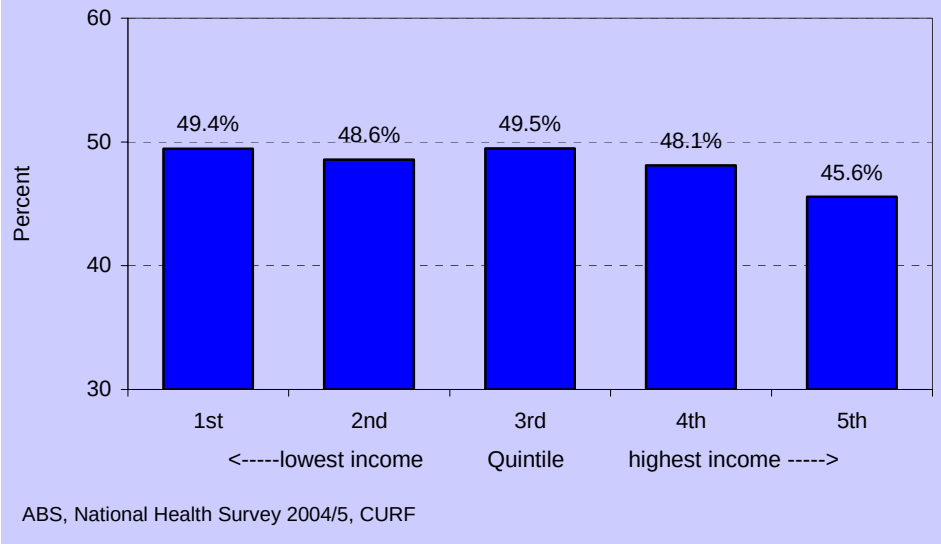
Figure 120: Proportion of Population Obese (BMI=≥30), OECD, 2005



*data derived from objective measures
Health at a Glance 2007, OECD Indicators
(http://caliban.sourceoecd.org/vl=5774489/cl=13/nw=1/rpsv/health2007/index.htm)

Tasmanians in low income households are more likely to be overweight or obese. In 2004/05, 49.4% of Tasmanians aged 15 years and over in the lowest income quintile were overweight or obese, compared to 45.6% of Tasmanians in the highest income quintile.

Figure 121: Overweight and Obese, 15 Years and Over, by Household Income Quintiles, Tasmania 2004/5



Illicit Drugs

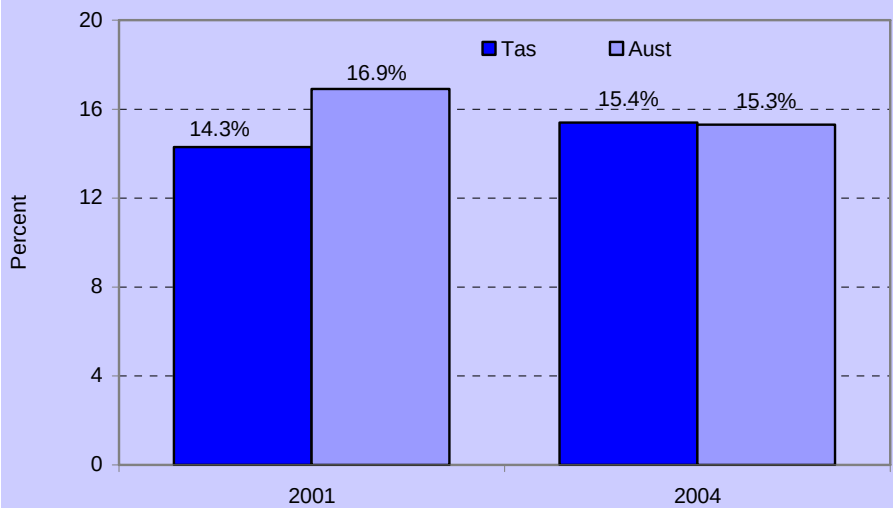
Illicit drug use is a significant public health problem associated with increased risk of chronic health conditions, including blood borne viruses, chronic liver disease, cardiovascular disease, mental health problems, and premature death. Illicit drug use includes use of cannabis, amphetamines, opiates, hallucinogens, as well as the non-prescribed use of prescription drugs such as benzodiazepines and opioid analgesics. In addition to being a direct cause of death and chronic disease, illicit drug use is a risk factor for conditions such as poisoning, suicide, injury, crime, violence and family breakdown.

In 2003, an estimated 2% of Australia's total disease burden was attributed to the use of illicit drugs. Almost three-quarters of the burden from illicit drugs is experienced by males because males are more likely to both use illicit drugs, and to adopt drug habits that place them at risk of dying from illicit drug use. [55],[56]

Between 2001 and 2004 the proportion of Tasmanians aged 14 years and over who reported illicit drug use increased from 14.3% to 15.4%. In contrast, the proportion of the Australian population reporting use of illicit drugs decreased from 16.9% to 15.3% of the population over this time.

[55] Begg S, Vos T, Goss J, Barker B, Stevenson C, Stanley L, Lopez A. The burden of disease and injury in Australia. Australian Centre for Burden of Disease and Cost-Effectiveness. 2006
[56] AIHW, Statistics on Drug Use in Australia 2006, p.37

Figure 122: Proportion of Population Aged 14 Years and Over Using Illicit Drugs (except cannabis) in last 12 Months, Tasmania and Australia, 2001 and 2004

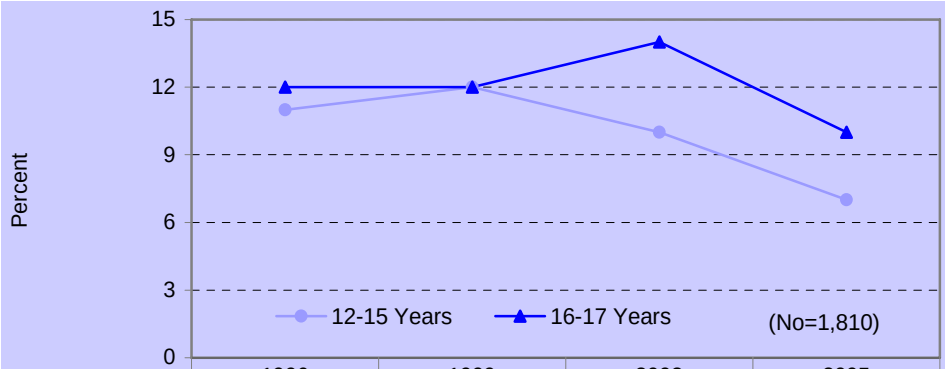


AIHW, National Drug Strategy Household Survey, State and Territory Supplement, 2001, 2004

Cannabis is the most used illicit drug in all states and territories. In 2004, 10.9% of all Tasmanians aged 14 years and over reported having used cannabis in the past 12 months, compared to 11.3% nationally. The use of cannabis has declined since 2001, when the proportions were 11.9% for Tasmania and 12.9% nationally.[57]

The proportion of students 12 to 15 years who had used an illicit substance other than cannabis in their lifetime was 7% of 12 to 15 year olds and 10% of 16 to 17 year olds in 2005. These percentages have decreased since 1996.

Figure 123: Lifetime Use of Illicit Substances by Tasmanian Secondary School Students, 1996-2005



	1996	1999	2002	2005
12-15 Years	11	12	10	7
16-17 Years	12	12	14	10

Centre for Behavioural Research in Cancer, The Use of Alcohol, Over the Counter Substances and Illicit Substances among Tasmanian Secondary School Students in 2005 and Trends over Time, 2006, (ASSAD Survey), Table 12 *excl cannabis

[57] AIHW, National Drug Strategy Household Survey, 2001 and 2004

Other Measures of Health Status

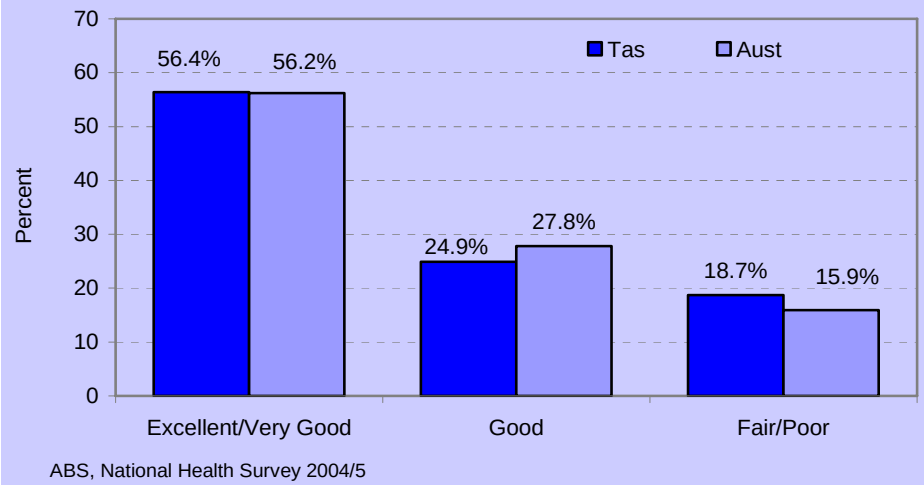
Health status may be measured using a diverse range of indicators. A number of these have been described above, and include life expectancy, infant mortality, prevalence of chronic diseases and associated key risk factors, as well as avoidable mortality. However, a number of other indicators of health status are also commonly assessed when measuring the health of populations. These include self-assessed health, all-cause hospitalisation rates, and oral health. These indicators will be described below.

Self-Assessed Health Status

Self-assessed health status is among the most frequently assessed health perceptions in epidemiological research. A large number of empirical studies have demonstrated how a person's appraisal of his or her general health is a powerful predictor of future chronic disease and mortality. [58],[59] Self-assessed health status is believed to principally reflect physical health problems (acute and chronic conditions and physical function) and, to a lesser extent, health behaviours and mental health problems. Although self-assessed health status is a reasonably good predictor of morbidity and mortality at the population level, some response instability has been reported in the literature.[60]

In 2004/5, the percentage of Tasmanians aged 15 years and over who reported their health was good or very good / excellent was 81.3%. This was similar to the Australian percentage of 84.0%.

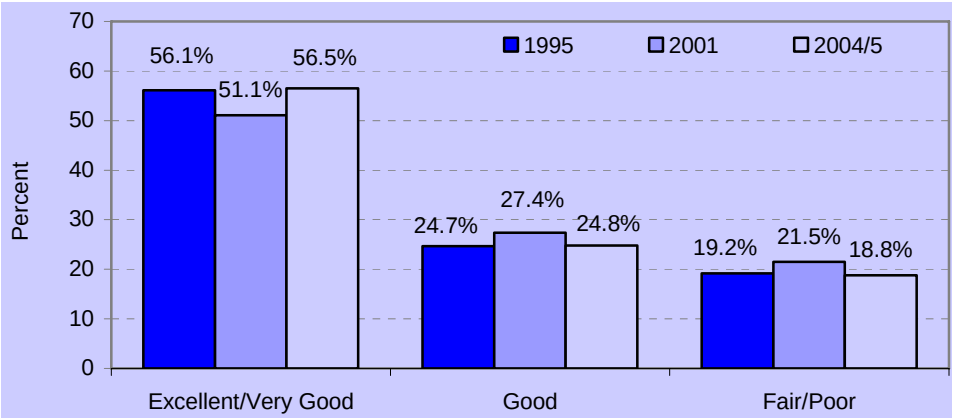
Figure 124: Self Assessed Health Status, 15 Years and Over, Tasmania and Australia, 2004/5



Self-assessed health status has remained relatively stable over the last ten years with similar proportions of Tasmanians assessing their health as excellent/very good, good or fair and poor between 1995 and 2004/05.

[58] Eriksson I et al. Self-rated health. Comparisons between three different measures. Results from a population study. International Journal of Epidemiology 2001; 30: 326-333.
[59] Krause N and Jay G. What do global self-rated health items measure: Journal of Medical Care 1994; 32: 930-942.
[60] Crossley T.F. and Kennedy S., The Stability of Self Assessed Health Status, Centre for Economic Policy Research, ANU, 2000

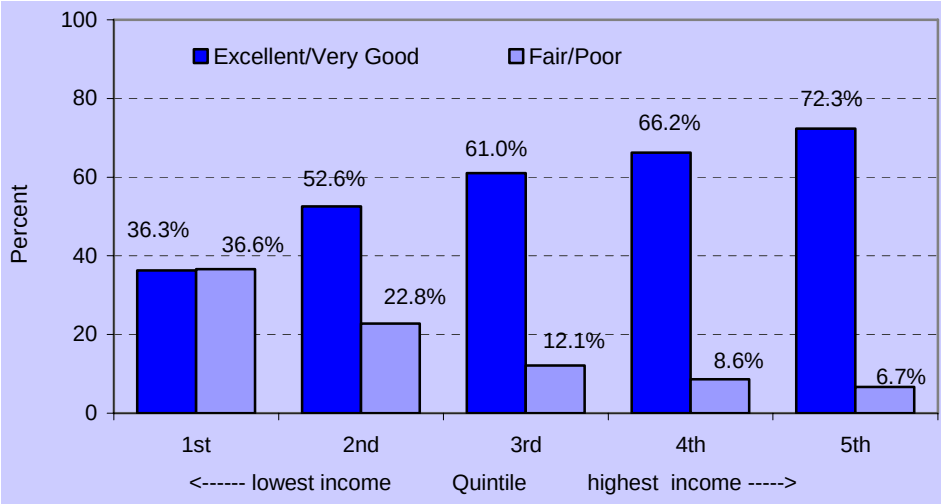
Figure 125: Self Assessed Health Status by Year, Tasmania, 1995, 2001, 2004/5



National Health Survey 2004-5: Summary of Results, State Tables Tasmania (cat. no 4362.6), table 3;
National Health Survey 2001 - Companion Data, Tasmania (cat. no 4364.0), table 3;
National Health Survey Summary Results Australian States and Territories 1995, cat. no. 4368.0

Self-assessed health status is associated with socio-economic status. Persons of low socio-economic status (household income quintile 1) report higher levels of fair or poor health (36.6%) compared with those of high socio-economic status (household income quintile 5) (6.7%).

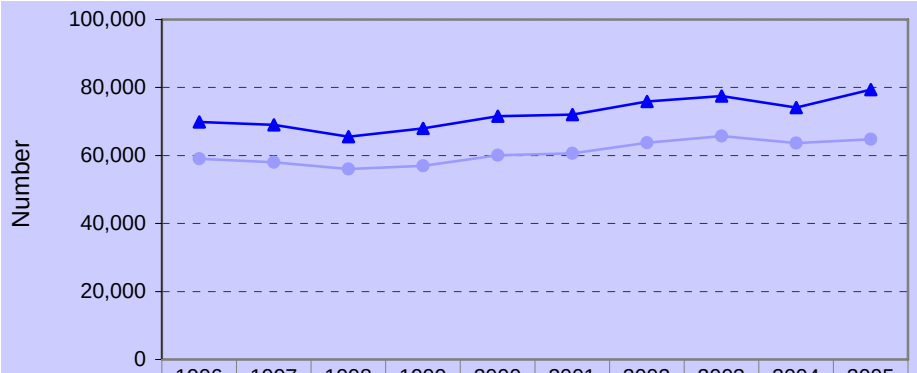
Figure 126: Self-Assessed Health, 15 Years and Over, by Household Income Quintiles, Tasmania 2004/5



All Cause Hospitalisations

In 2005 there were approximately 144,143 hospital admissions to Tasmanian hospitals. The number of patients being treated in both public and private hospitals each year continues to rise. From 1996 to 2005, hospitalisations due to all causes have increased by 5,787 separations (9.8%) for males, and by 9,465 separations (13.5%) for females. Hospitalisation rates in females were higher than in males between 1996 and 2005.

Figure 127: All-Cause Hospitalisations by Sex, Tasmania, 1996-2005

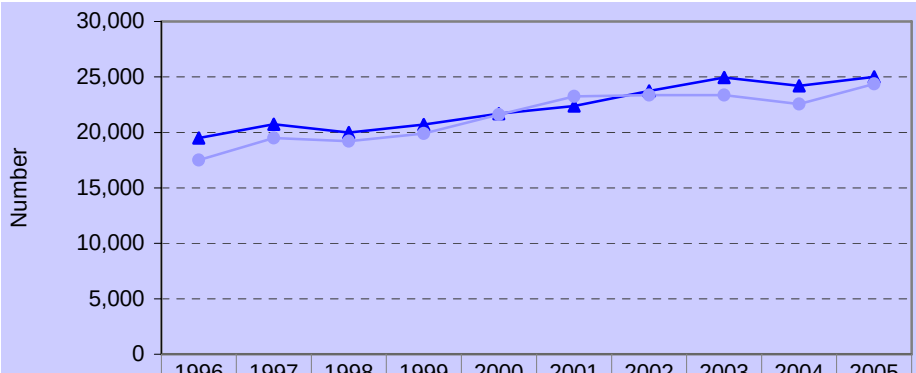


	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	59,011	58,000	56,000	57,000	60,092	60633	63,788	65,704	63,684	64,798
Females	69,880	69,000	65,500	68,000	71,536	71,992	75,859	77,479	74,093	79,345

Statewide Morbidity Database, Tasmania (data <2001 estimates

A significant number of hospitalisations occur in persons aged 65 years and over. In this age group, all-cause hospitalisations have increased by a total of 5,524 hospitalisations in males (28.3%) and 6,878 hospitalisations (39.3%) in females between 1996 and 2005.

Figure 128: All-Cause Hospitalisations by Sex, 65 Years and Over, Tasmania 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males	19,500	20,750	20,000	20,700	21,700	22,393	23,740	24,947	24,193	25,024
Females	17,500	19,500	19,200	19,900	21,600	23,247	23,379	23,359	22,565	24,378

Statewide Morbidity Database, Tasmania (data <2001 estimates only)

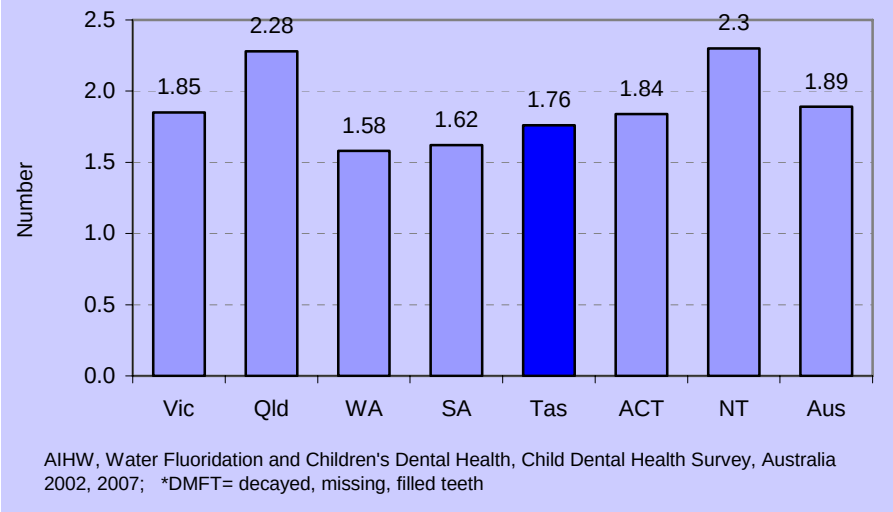
These increases are significantly higher than the percentage increases observed for the Tasmanian population overall during this time period. The likely impact of Tasmania's ageing population on hospitalisations is that demand for hospitalisation in Tasmania will continue to increase.

Oral Health

Australians enjoy a high standard of oral health. Factors known to be associated with poor oral health include low socio-economic status, living in a rural or remote area, indigenous status, being born overseas, and being from an older generation. Access to fluoridated drinking water and dental services also have a direct impact on oral health. Regular visits to a dental professional, at least once every 2 years, have a significant and positive effect on dental health. [61]

The Child Dental Health Survey monitors the dental health of children enrolled in school dental services operated by health departments. School children aged 5 and 6 years are an important age group in relation to school dental services since they represent the dental health status of children new to these services. Of all jurisdictions, Tasmania had the third lowest rate of decayed, missing, and filled teeth (DMFT) of all jurisdictions, at 1.76 per person aged 5 to 6 years.

Figure 129: Oral Health (DMFT*) of Children Aged 5-6 Years by State and Territory, 2002



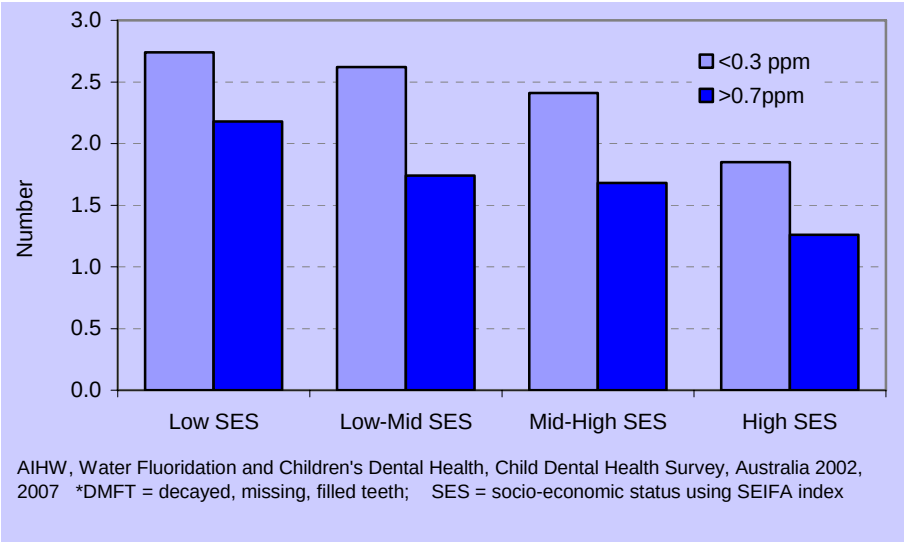
AIHW, Water Fluoridation and Children's Dental Health, Child Dental Health Survey, Australia 2002, 2007; *DMFT= decayed, missing, filled teeth

Children from areas with higher concentrations of fluoride in drinking water had less dental decay than children from areas with low concentrations of fluoride. The Report compared the average DMFT of 5 to 6 year old children between areas with lower and higher concentrations of fluoride in drinking water for each state and territory. Within each jurisdiction, children from areas with fluoride concentrations at or above 0.7 parts per million (ppm) had fewer DMFT per child than areas with low fluoride concentration. In Tasmania, 83% of the population has access to fluoridated drinking water.

Children from low fluoride concentration areas had more decay than children from high fluoride concentration areas across all socio-economic categories. However, children from low socio-economic areas have more decay than children from high socio-economic areas regardless of fluoride. This means that both fluoride concentration in drinking water and socio-economic status affect oral health.

[61] Kay E. Do regular attenders have better oral health? British Dental Journal 2002; 193: 697-702.

Figure 130: Oral Health (DMFT*) of Children Aged 5-6 Years by Fluoride Levels and Socio-Economic Status, 2002



AIHW, Water Fluoridation and Children's Dental Health, Child Dental Health Survey, Australia 2002, 2007 *DMFT = decayed, missing, filled teeth; SES = socio-economic status using SEIFA index

Notifiable Diseases

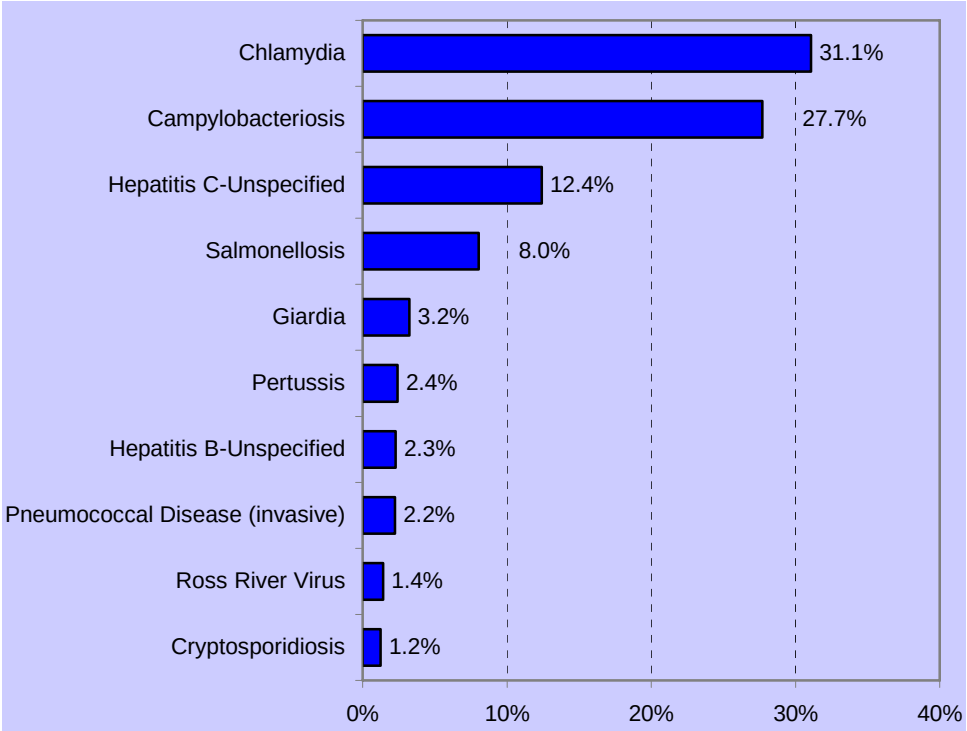
Prompt notification of infectious diseases is an integral component of responsive public health action. This section of the report details the results of the communicable disease surveillance and investigations conducted by the Communicable Diseases Prevention Unit (CDPU), Department of Health and Human Services (DHHS), Tasmania, in collaboration with health professionals throughout Tasmania, regional public health officers, local government environmental health officers, Tasmanian public and private pathology laboratories, the Melbourne Diagnostic Unit and the Victorian Infectious Diseases Reference Laboratory.

According to the Public Health Act (1997) the Director of Public Health may require any person or class of person, agency or public authority to notify the Director of the presence or occurrence of any notifiable disease. The notifiable diseases in Tasmania are:

Anthrax	Meningococcal infection
Arboviruses – Ross River virus	Mumps
Botulism	Mycobacterial infection
Brucellosis	Ornithosis (psittacosis)
Campylobacteriosis	Paratyphoidosis
Chancroid	Pertussis
Chlamydia trachomatis genital infection	Plague
Cholera	Pneumococcal infection (invasive disease)
Creutzfeldt – Jakob Disease (all variants)	Poliomyelitis
Cryptosporidiosis	Q Fever
Diphtheria	Rabies
Donovanosis	Rickettsial infection [including Flinders Island spotted fever and others (details to be specified)]
Gastroenteritis in an institution (residential, educational or child care facility)	Rubella (including congenital rubella)
Giardia infection	Salmonellosis
Gonococcal infection	Severe Acute Respiratory Syndrome (SARS)
Haemolytic uraemic syndrome (HUS)	Shiga toxin producing E.coli (both VTEC and STEC)
Haemophilus influenzae type b infection (invasive only)	Shigellosis
Hepatitis A, B, C, D, E and other	Smallpox
HIV infection	Suspected cases of food or water borne illness
Diagnosis of an AIDS defining illness (as per ANCA case definition 1994)	Syphilis (including congenital syphilis)
Hydatid infection	Taeniasis
Influenza infection (Added 2005)	Tetanus
Lead [Demonstration of blood level in excess of 15 μg/dL/ (0.72 μmol/L) in any person not known to be occupationally exposed to lead.	Tuberculosis
Legionellosis	Tularaemia
Leprosy	Typhoid
Leptospirosis	Typhus
Listeriosis	Vancomycin resistant enterococci (VRE)
Lymphogranuloma venereum	Varicella (Added 2006)
Lyssavirus [including Australian Bat Lyssavirus and others (details to be specified)]	Vibrio infection
Malaria	Viral haemorrhagic fever
Measles	Yellow fever

The data presented below generally relate to the reporting period 2002 – 2006 (with the exception of Chlamydia and meningococcal infections). Between 2002 and 2006 there were notifications received for 11,273 confirmed or probable cases of notifiable infectious disease in Tasmania. The top ten notifiable diseases in Tasmania between 2002 and 2006 were as follows:

Figure 131: Top Ten Notified Infectious Diseases in Tasmania, 2002-06



Note: 1. Include Tasmanian residents only. 2. Unspecified means duration of infection unknown. 3. There were 11,273 notified cases for the years 2002-06 (average annual 469 notified cases per 100,000); Tas Notifiable Diseases Surveillance Database

Notifiable diseases can be categorised into sexually transmissible infections, blood borne viruses, enteric diseases, vaccine preventable diseases, zoonoses, and other notifiable diseases. Each of these categories will be discussed below.

A number of diseases are rare and not commonly notified. There have been no confirmed cases of botulism, leprosy, plague, poliomyelitis, rabies, smallpox, tularaemia, viral haemorrhagic fevers or yellow fever in Tasmania since 1991. Between 2001 and 2008 there have been no cases of anthrax, Japanese encephalitis, Australian bat lyssa virus or Murray Valley encephalitis, three cases of tetanus and five cases of rubella notified to public health.

Sexually Transmissible Infections

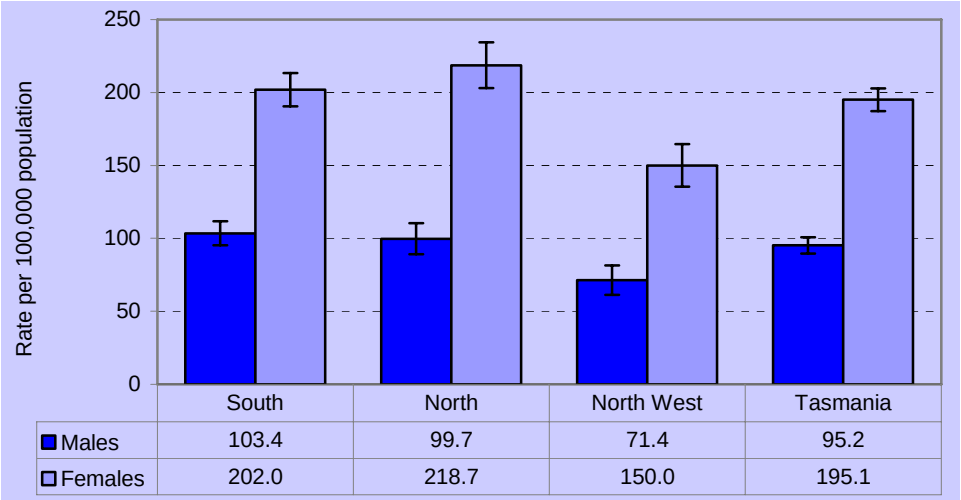
Notifications due to sexually transmissible infections accounted for approximately 33% of all disease notifications in Tasmania between 2002 and 2006. Notifiable sexually transmissible infections include Chlamydia, gonorrhoea, syphilis, lymphogranuloma venereum, chancroid and donovanosis (Granuloma inguinale). Hepatitis B and HIV, also sexually transmissible infections, are described in the blood borne viruses section. There have been no notifications for lymphogranuloma venereum, donovanosis or chancroid between 2002 and 2006. A number of common sexually transmissible infections, including genital herpes and human papillomavirus, are not notifiable diseases. Therefore there are no notifications data available to inform trends in these infections.

Genital Chlamydia Infection

Between 2002 and 2006 the total number of disease notifications due to Chlamydia (genital infection) has increased from 472 to 1,033 cases. Disease notifications due to Chlamydia (genital infection) accounted for 31.1% of all communicable disease notifications between 2002 and 2006, and 94.4% of all sexually transmissible infection disease notifications in the same period.

Female cases of Chlamydia (genital infection) are more commonly notified than in males as females are more likely to be opportunistically screened when presenting to primary health care providers. The lowest notification rates were recorded in the North-West of the state in both males and females.

Figure 132: Notification Rate for Chlamydia, Tasmania, 2002-06

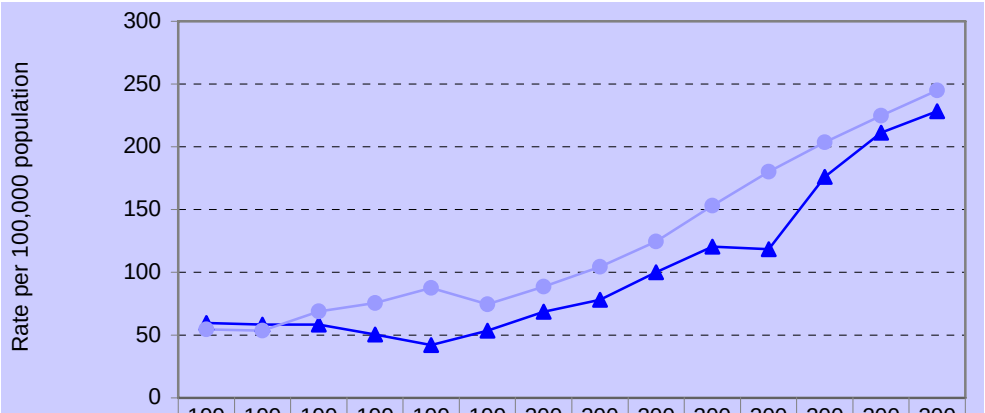


	South	North	North West	Tasmania
Males	103.4	99.7	71.4	95.2
Females	202.0	218.7	150.0	195.1

Note: 1. The error bars represent the 95% confidence intervals of the rate. 2. Tas. Notifiable Diseases Surveillance Database.

The notification rate for Chlamydia in Tasmania has risen significantly during the last 10 years, following the national trend, with rates increasing from 56.4 per 100,000 population in 1994 to 228.2 per 100,000 population in 2007. During the 5 year period 2002 to 2006, the male rate of disease notification due to Chlamydia (genital infection) increased significantly ($p < 0.01$). The average annual percentage change in the rate was 20.7%. For females the rate of disease notification due to Chlamydia (genital infection) also increased significantly ($p < 0.01$). The average annual percentage change in the rate was 22.6%. Tasmania's notification rate for Chlamydia has been consistently lower than the Australian notification rate since 1997.

Figure 133: Notification Rate for Chlamydia, Tasmania and Australia, 1994-2007

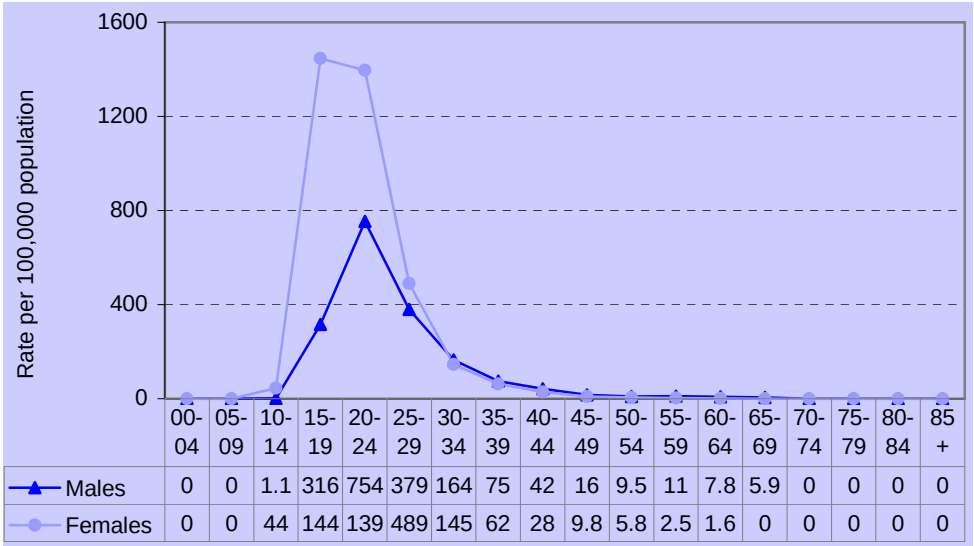


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Tasmania	59.8	58.3	58.4	50.5	42.0	53.5	68.7	78.0	99.9	120	118	176.	211	228.
Australia	54.5	53.6	69.0	75.4	87.5	74.4	88.5	104	125	153	180	204	225	245

Tas. Notifiable Diseases Surveillance Database; National Notifiable Diseases Surveillance System.
Average annual percentage change: 13.9% for Tasmania (P<0.01); 15.2% for Australia (P<0.01).

The age group most affected by Chlamydia (genital infection) is 15 to 24 year old persons. Chlamydia occurs more frequently among females than males.

Figure 134: Notification Rate for Chlamydial Infection by Age and Sex, Tasmania, 2003-07



	00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Males	0	0	1.1	316	754	379	164	75	42	16	9.5	11	7.8	5.9	0	0	0	0
Females	0	0	44	144	139	489	145	62	28	9.8	5.8	2.5	1.6	0	0	0	0	0

Tas Notifiable Diseases Surveillance Database

Chlamydia is commonly an asymptomatic infection in both sexes. The reason notified cases were tested for Chlamydia was predominantly for screening purposes in females and because of the presence of clinical symptoms in males.

Table 21: Reason for Testing for Chlamydia by Sex, 2002–06

Reason for testing	Female	Male
Clinical symptoms	35%	49.5%
Contact tracing	11%	34%
Screening	54%	16.5%

The reported sexual preference of people testing positive for Chlamydia is mainly opposite sex partners:

Table 22: Sexual Preference of Persons Infected with Chlamydia by Sex, 2002–06

Sexual preference	Female	Male
Opposite sex partner	94%	84%
Same sex partner	3%	7%
Sexual partners of both sexes	0%	2%
Unknown	3%	7%

Gonococcal Infection

Disease notifications due to gonorrhoea accounted for 3.0% all sexually transmissible infections notified in Tasmania between 2002 and 2006. There have been between 14 and 29 notifications a year in males and between 1 and 4 notifications a year in females.

Table 23: Number of Disease Notifications due to Gonorrhoea by Sex (2002 – 2006)

Males	Females	Total
96	16	112

The age group most affected by gonorrhoea is 15 to 24 year old persons. Approximately 65% of notifications in Tasmania are reported to be associated with heterosexual activity and 35% reported to be associated with male-to-male sexual contact. A national increase in gonorrhoea notifications has been observed since 2002, predominantly in men who have sex with men.

Syphilis

Disease notifications due to syphilis accounted for 2.5% of all sexually transmissible infections notified in Tasmania between 2002 and 2006. There have been between 8 and 18 notifications a year in males and between 4 and 11 notifications a year in females.

Table 24: Number of Disease Notifications due to Syphilis by Sex (2002 – 2006)

Males	Females	Total
61	33	94

The age group most affected by syphilis is the 25 to 44 year old persons. Syphilis notifications occur more commonly in gay and other homosexually active men than in men who are not gay or homosexually active. There has been a national increase in syphilis notifications since 2002, predominantly in men who have sex with men.

Some of the increase in syphilis notifications observed in Tasmania has occurred as a result of screening migrants to Tasmania from high risk overseas countries in recent years. In these persons, syphilis infection is likely to have been longstanding, has usually been detected through routine screening, and as it is treated on detection is not considered to be of public health significance to the wider community.

Blood Borne Viruses

Notifications due to blood borne viruses accounted for approximately 16% of all disease notifications in Tasmania between 2002 and 2006. Notifiable blood borne viruses include HIV, hepatitis B and hepatitis C infection. The majority of notifications are for hepatitis C infection.

Human Immunodeficiency Virus (HIV)

Within Tasmania, rates of HIV diagnoses have remained stable since 2001. Transmission of HIV within Tasmania and nationally continues to be mainly through sexual contact between men, which was reported in more than 86% of cases of newly acquired infection diagnosed between 2002 and 2006.

Table 25: Number of Disease Notifications due to HIV, 2002-07

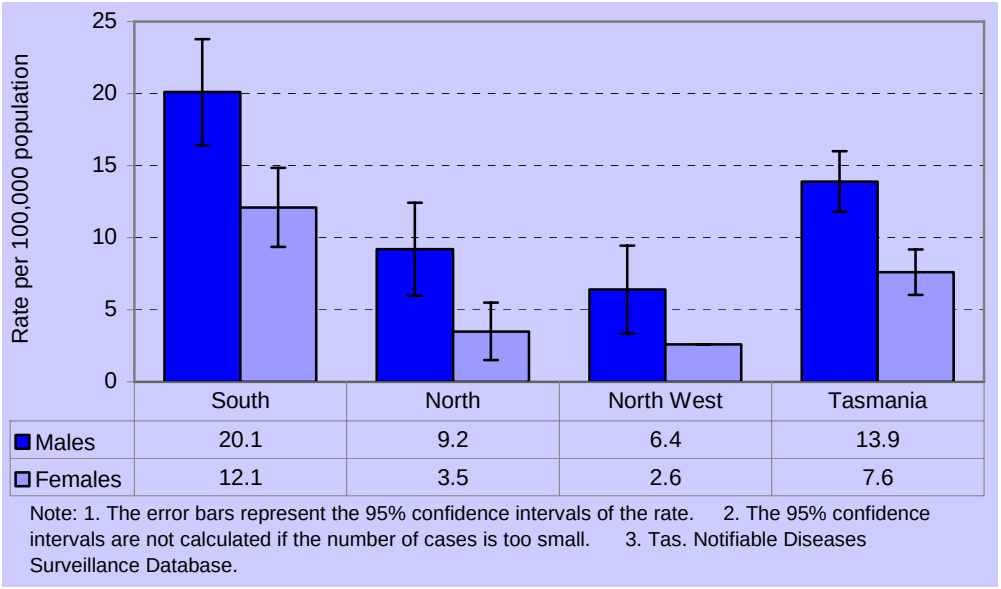
Number of Notifications					
2002	2003	2004	2005	2006	2007
3	2	9	6	5	6

Hepatitis B

When a hepatitis B notification is known to be the result of a recent infection it is classified as an incident case. All other cases are regarded as unspecified hepatitis B. For Tasmania, disease notifications due to hepatitis B (unspecified) accounted for 2.3% of all disease notifications between 2002 and 2006. The age group most affected by hepatitis B (unspecified) is 25 to 44 year old persons.

Notification rates for hepatitis B unspecified are higher for males than females and much higher in the South of the state compared with other areas of the state.

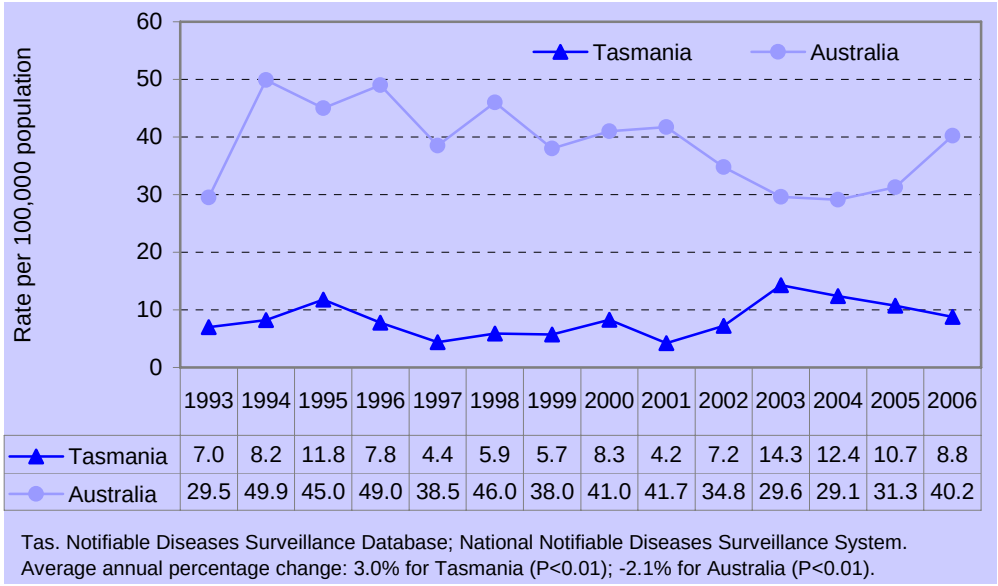
Figure 135: Notification Rate for Hepatitis B-Unspecified, Tasmania 2002-06



Note: 1. The error bars represent the 95% confidence intervals of the rate. 2. The 95% confidence intervals are not calculated if the number of cases is too small. 3. Tas. Notifiable Diseases Surveillance Database.

Tasmania's notification rate for hepatitis B (unspecified) has been consistently and significantly below the national rate since 1993.

Figure 136: Notification Rate for Hepatitis B-Unspecified, Tasmania and Australia, 1993-2006



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Tasmania	7.0	8.2	11.8	7.8	4.4	5.9	5.7	8.3	4.2	7.2	14.3	12.4	10.7	8.8
Australia	29.5	49.9	45.0	49.0	38.5	46.0	38.0	41.0	41.7	34.8	29.6	29.1	31.3	40.2

Tas. Notifiable Diseases Surveillance Database; National Notifiable Diseases Surveillance System.
Average annual percentage change: 3.0% for Tasmania (P<0.01); -2.1% for Australia (P<0.01).

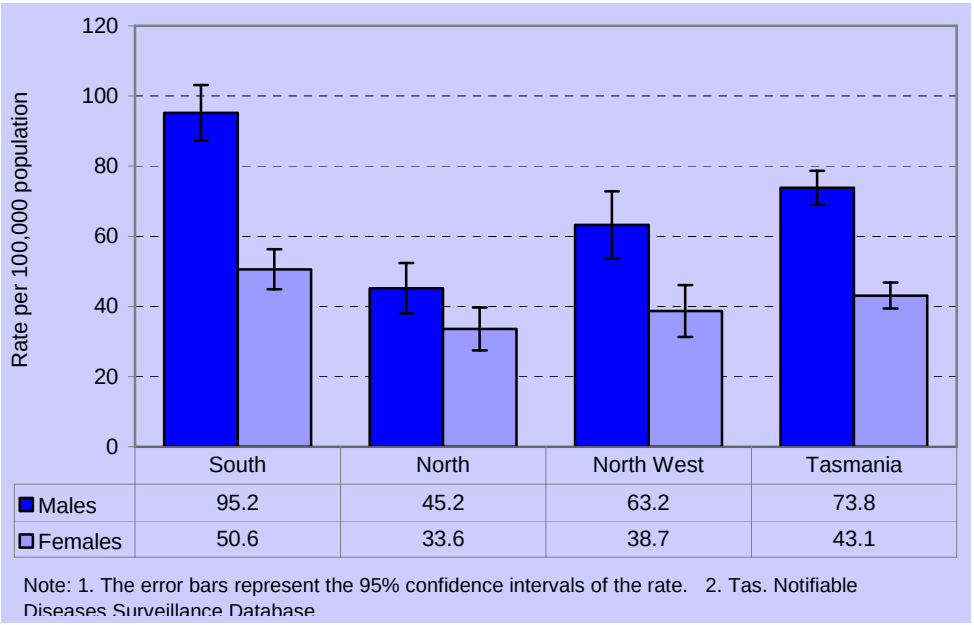
Information on the source of exposure to hepatitis B infection indicates that the percentage of diagnoses of newly acquired hepatitis B infection attributed to injecting drug use is stable at around 45% in 2002 to 2006. The percentage of diagnoses attributed to sexual contact has increased from 25.3% in 2002 to 33.7% in 2006 and the percentage of diagnoses with an undetermined source of exposure has declined from 22.7% in 2002 to 15.3% in 2006.

Hepatitis C

When a hepatitis notification is known to be the result of a recent infection it is classified as an incident case, all other cases are regarded as unspecified. For Tasmania, disease notifications due to hepatitis C (unspecified) accounted for 12.4% of all disease notifications between 2002 and 2006.

The South had the highest notification rate of all regions. Notification rates for the North are significantly below the Tasmanian rate. The age group most affected by hepatitis C (unspecified) is the 25-44 year olds, with more males than females acquiring this infection. Nationally, 80% of hepatitis C infections are associated with injecting drug use.

Figure 137: Notification Rate for Hepatitis C - Unspecified, Tasmania, 2002-06

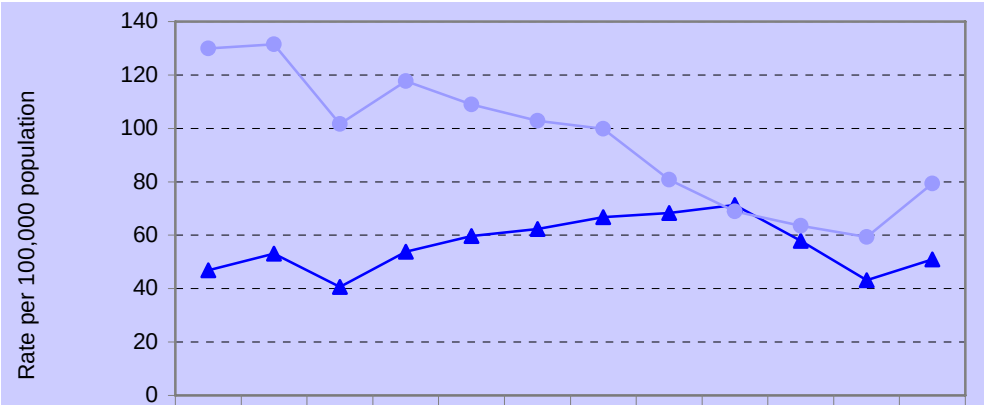


	South	North	North West	Tasmania
Males	95.2	45.2	63.2	73.8
Females	50.6	33.6	38.7	43.1

Note: 1. The error bars represent the 95% confidence intervals of the rate. 2. Tas. Notifiable Diseases Surveillance Database

Except for 2003, Tasmania's notification rate for hepatitis C (unspecified) has been lower than the national rate. However, the gap between the Tasmanian and Australian rate has steadily closed over the last few years as a result of falling hepatitis C notification rates nationally.

Figure 138: Notification Rate for Hepatitis C-Unspecified, Tasmania and Australia, 1995-2006



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Tasmania	46.9	53.1	40.6	53.8	59.7	62.3	66.8	68.3	71.3	57.9	43.1	50.9
Australia	129.9	131.5	101.6	117.7	108.9	102.9	99.9	80.8	68.9	63.5	59.3	79.3

Tas. Notifiable Diseases Surveillance Database; National Notifiable Diseases Surveillance System.
Average annual percentage change: 1.2% for Tasmania (P<0.05); -6.5% for Australia (P<0.01).

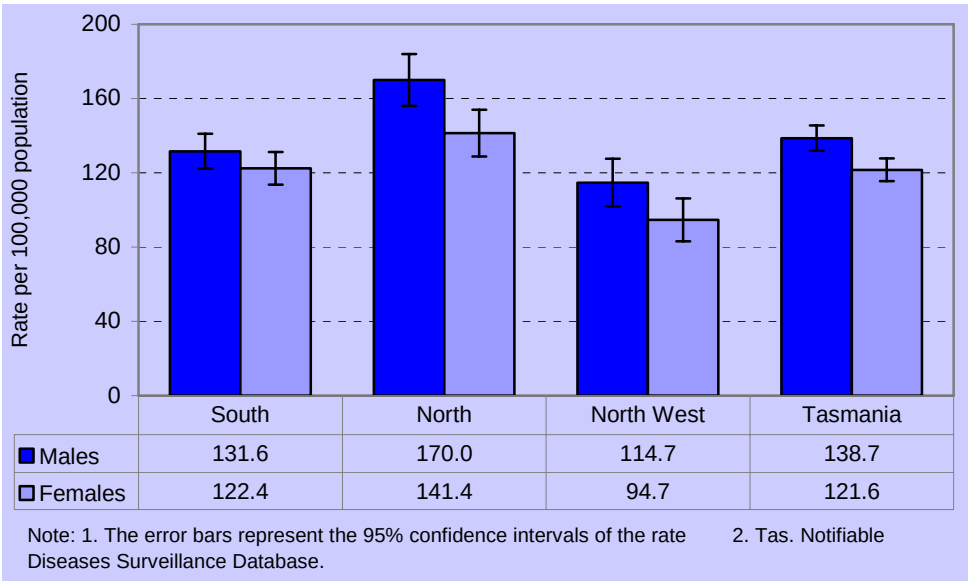
Enteric Diseases

Notifications due to enteric diseases account for approximately 41% of all disease notifications. Notifiable enteric diseases include but are not limited to infections due to species of Cholera, Campylobacter, Salmonella, Shigella, Giardia, Cryptosporidium, Listeria, Hepatitis A and E, Typhoid, Paratyphoid and Yersinia. There were two notifications of cases of Yersinia infection between 2002 and 2006.

Campylobacteriosis

For Tasmania, disease notifications due to campylobacter accounted for 27.7% of all communicable disease notifications between 2002 and 2006. The age group most affected by campylobacter is the 0 to 4 years and 20 to 29 year age groups. More notifications due to campylobacter were received for males than females during 2002-2006. The North had the highest notification rate for this period, with the lowest rate of notifications from the North West of the state.

Figure 139: Notification Rate for Campylobacteriosis, Tasmania, 2002-06

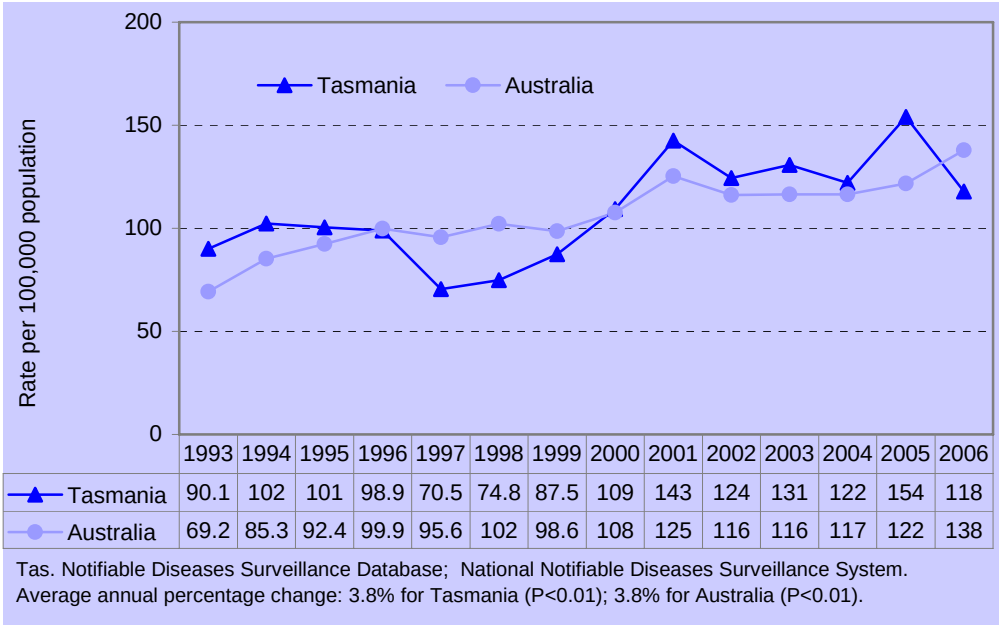


	South	North	North West	Tasmania
Males	131.6	170.0	114.7	138.7
Females	122.4	141.4	94.7	121.6

Note: 1. The error bars represent the 95% confidence intervals of the rate 2. Tas. Notifiable Diseases Surveillance Database.

The notification rate for campylobacteriosis has increased since 1993, and for the last six years has been consistently above a rate of 100 per 100,000 persons. Since 1993, Tasmania's notification rate for campylobacteriosis has frequently been higher than the national rate. No outbreaks of campylobacter infection were identified during the period from 2002 to 2006 and investigations into affected individuals have revealed that the occurrence of this disease is mainly sporadic in nature. As such the definitive cause of the increased notification numbers between 2002 and 2006 remains a mystery.

Figure 140: Notification Rate for Campylobacteriosis, Tasmania and Australia, 1993-2006



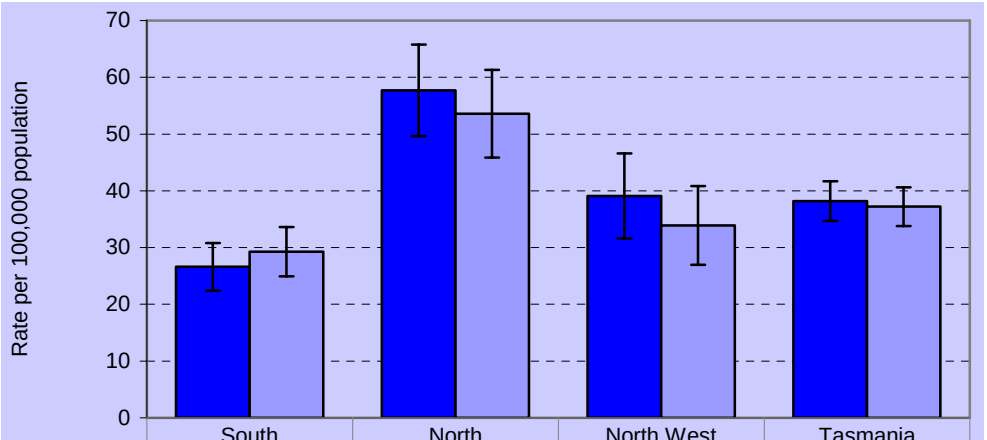
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Tasmania	90.1	102	101	98.9	70.5	74.8	87.5	109	143	124	131	122	154	118
Australia	69.2	85.3	92.4	99.9	95.6	102	98.6	108	125	116	116	117	122	138

Tas. Notifiable Diseases Surveillance Database; National Notifiable Diseases Surveillance System.
Average annual percentage change: 3.8% for Tasmania (P<0.01); 3.8% for Australia (P<0.01).

Salmonellosis

For Tasmania, disease notifications due to salmonella accounted for 8.0% of all disease notifications between 2002 and 2006. The notification rate for salmonellosis was well above Tasmania's rate in the North of the state during 2002 to 2006. The age group most affected by salmonella is 25 to 44 year old persons.

Figure 141: Notification Rate for Salmonellosis, Tasmania, 2002-06

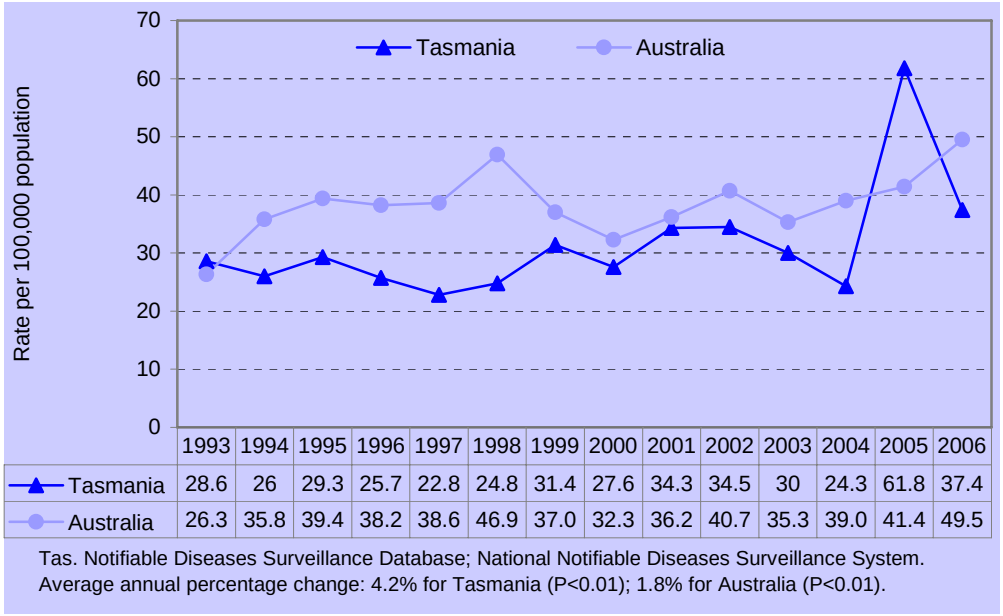


	South	North	North West	Tasmania
Males	26.6	57.7	39.1	38.2
Females	29.3	53.6	33.9	37.2

Note: 1. The error bars represent the 95% confidence intervals of the rate. 2. Tas. Notifiable Diseases Surveillance Database.

Salmonella notifications have remained relatively constant since 1993 with the exception of an increased number of notifications since 2005. This is due to a number of significant outbreaks of salmonella infection. The average annual percentage increase has been 4.2% in Tasmania ($p<0.01$) and 1.8% for Australia as a whole in that period ($p<0.01$).

Figure 142: Notification Rate for Salmonellosis, Tasmania and Australia, 1993-2006



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Tasmania	28.6	26	29.3	25.7	22.8	24.8	31.4	27.6	34.3	34.5	30	24.3	61.8	37.4
Australia	26.3	35.8	39.4	38.2	38.6	46.9	37.0	32.3	36.2	40.7	35.3	39.0	41.4	49.5

Tas. Notifiable Diseases Surveillance Database; National Notifiable Diseases Surveillance System.
Average annual percentage change: 4.2% for Tasmania (P<0.01); 1.8% for Australia (P<0.01).

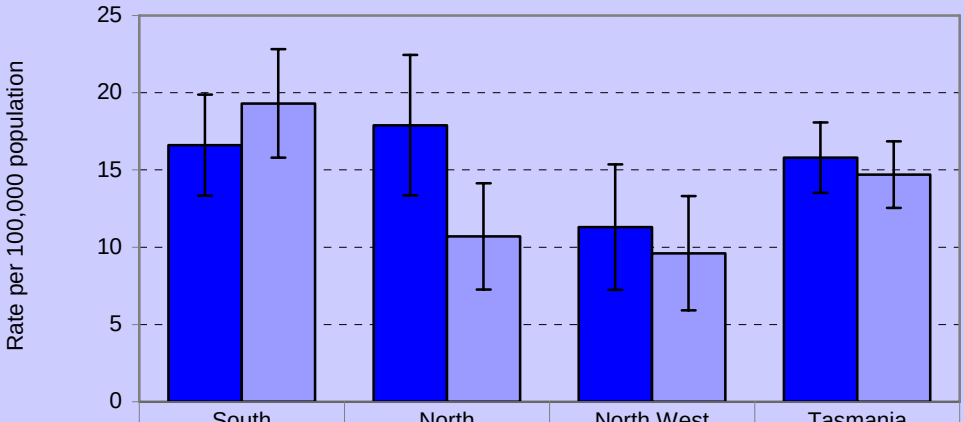
Laboratory specimens collected from cases of salmonella infection are further analysed in order to determine which sub-type of salmonella had caused the infection. There are over 2000 known types of salmonella (serovars) that can cause illness and by comparing the exposures (e.g. foods consumed) of individuals with infections of the same serovar, potential sources of infection can be more readily identified. Between the years 2002 and 2006, *Salmonella mississippi* was the most common salmonella serovar to cause illness in Tasmania, accounting for 36% of all salmonella infections over that period. Previous epidemiological studies have shown that the risk factors for acquiring a *Salmonella mississippi* infection in Tasmania are of an environmental rather than food nature and include the consumption of untreated drinking water and contact with a native animal environment (e.g. bushwalking). *Salmonella mississippi* infections follow a seasonal pattern with more infections reported over the warmer summer months.

Giardiasis

Giardiasis is a form of gastroenteritis caused by the *Giardia lamblia* parasite. For Tasmania, disease notifications due to giardiasis accounted for 3.2% of all disease notifications between 2002 and 2006.

The North West had the lowest notification rate for giardiasis between 2002 and 2006. The notification rate for females was particularly high in the South. The age group most affected by giardiasis is 25 to 44 year old persons.

Figure 143: Notification Rate for Giardiasis, Tasmania, 2002-06

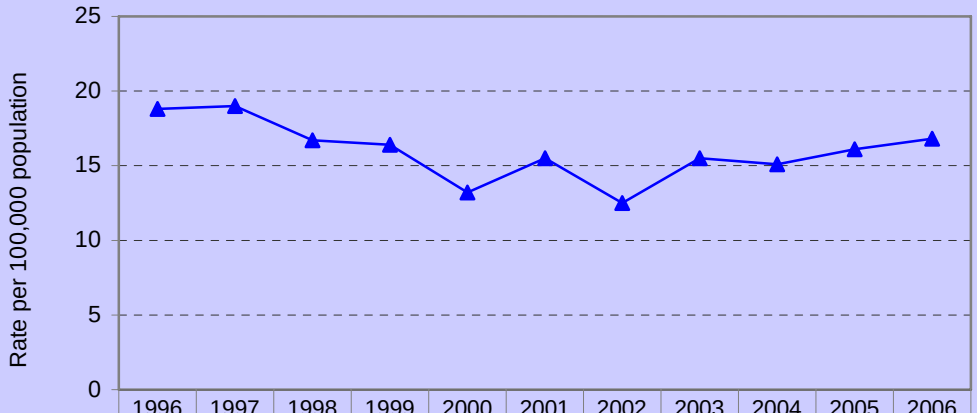


	South	North	North West	Tasmania
Males	16.6	17.9	11.3	15.8
Females	19.3	10.7	9.6	14.7

Note: 1. The error bars represent the 95% confidence intervals of the rate. 2. Tas. Notifiable Diseases Surveillance Database.

The notification rate for giardiasis has been relatively constant since 1996. Giardiasis is not a notifiable disease in all states and territories therefore Australian comparisons in rates are unavailable.

Figure 144: Notification Rate for Giardiasis, Tasmania, 1996-2006



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Series1	18.8	19	16.7	16.4	13.2	15.5	12.5	15.5	15.1	16.1	16.8

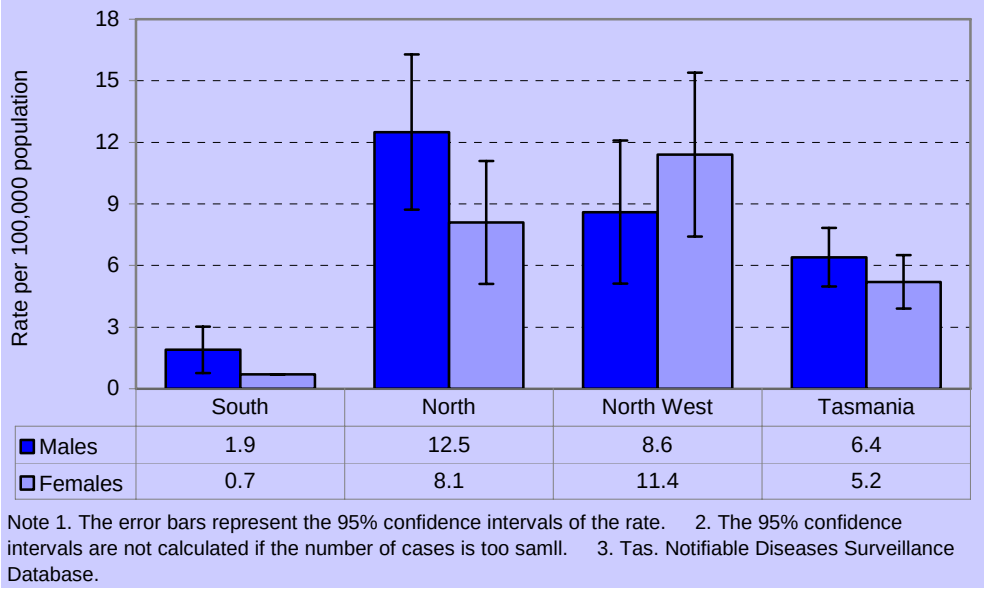
Tas. Notifiable Diseases Surveillance Database. Average annual percentage change: -1.6% for Tasmania (P>0.05).

Cryptosporidiosis

Cryptosporidiosis is a type of gastroenteritis caused by the parasite *Cryptosporidium parvum*. In Tasmania, disease notifications of cryptosporidiosis accounted for 1.2% of all notifications between 2002 and 2006.

The North and North-West had the highest notification rates for cryptosporidiosis for the period 2002 to 2006, with the lowest rate being recorded for the South.

Figure 145: Notification Rate for Cryptosporidiosis, Tasmania, 2002-06

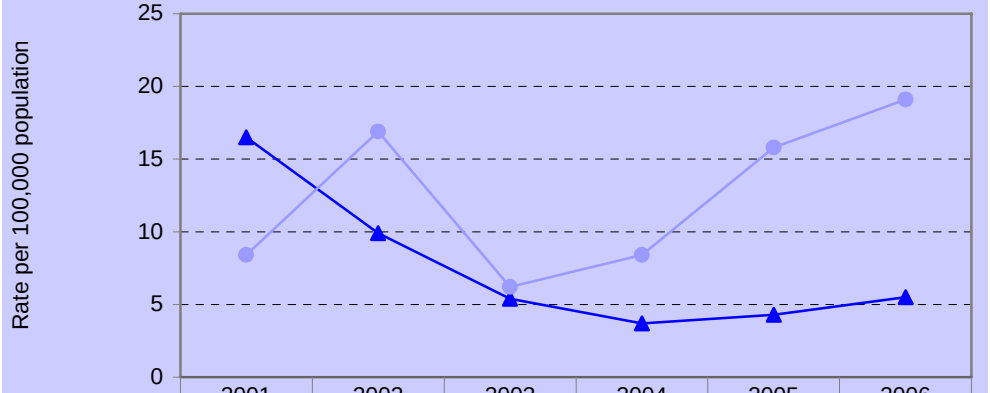


	South	North	North West	Tasmania
Males	1.9	12.5	8.6	6.4
Females	0.7	8.1	11.4	5.2

Note 1. The error bars represent the 95% confidence intervals of the rate. 2. The 95% confidence intervals are not calculated if the number of cases is too samll. 3. Tas. Notifiable Diseases Surveillance Database.

The Tasmanian notification rate for cryptosporidiosis has been below the Australian rate since 2002. The age group most affected are very young children aged 0 to 4 years.

Figure 146: Notification Rate for Cryptosporidiosis, Tasmania and Australia, 2001-06



	2001	2002	2003	2004	2005	2006
Tasmania	16.5	9.9	5.4	3.7	4.3	5.5
Australia	8.4	16.9	6.2	8.4	15.8	19.1

Tas. Notifiable Diseases Surveillance Database; National Notifiable Diseases Surveillance System.
Average annual percentage change: -25.2% for Tasmania (P<0.01); 13.1% for Australia (P<0.01).

Vaccine Preventable Diseases

Notifications due to vaccine preventable diseases accounted for approximately 6% of all disease notifications in Tasmania between 2002 and 2006. Notifiable vaccine preventable diseases include measles, mumps, rubella, diphtheria, tetanus, pertussis, *Haemophilus influenzae* type B, influenza, meningococcal infection, invasive pneumococcal disease and poliomyelitis. Hepatitis B, also a vaccine preventable disease, is described in the blood borne viruses section.

Tasmania records consistently high immunisation coverage rates for childhood immunisations across target age groups. As a consequence, relatively few notifications for diseases covered by childhood immunisations are recorded in Tasmania and there were no notifications for diphtheria or poliomyelitis, and only one notification for tetanus in Tasmania between 2002 and 2006.

Table 26: Australian Childhood Immunisation Register - % of Children* Fully Immunised

	Age			
	12-15 months	24-27 months	60-63 months	72-75 months
Tasmania	93.5%	95.7%	86.8%	88.2%
Australia	91.5%	93.0%	86.8%	88.7%

*age group calculated as at 30 September 2007

Varicella infection was made a notifiable disease in 2006. Laboratory confirmed cases of varicella infection (chickenpox and shingles) are notified to public health. A national varicella vaccination program was commenced in November 2005 for children at 18 months of age. A catch-up program for children aged 13 years was also commenced. No cases of varicella notified since 2006 have had a history of varicella vaccination.

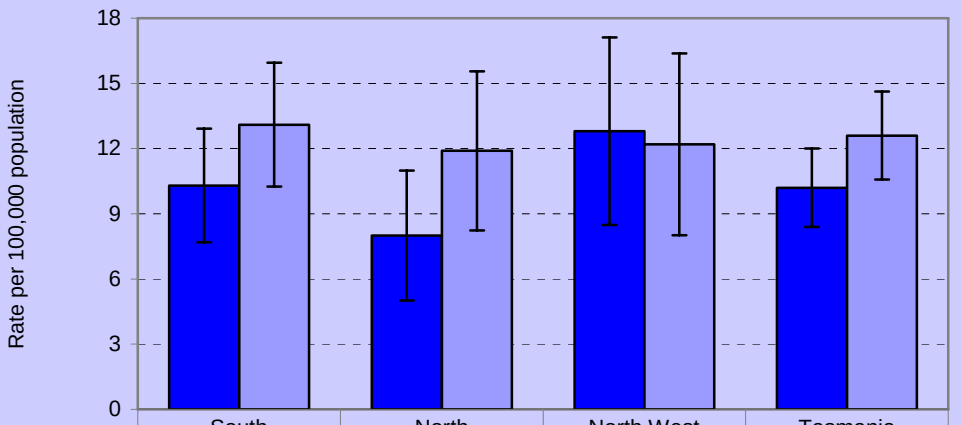
Influenza infection was made a notifiable disease in 2005. Laboratory confirmed cases of influenza infection are notified to public health. During 2006, 46 cases were notified of which 36 were influenza A and 10 were influenza B. No cases of influenza C were notified.

Haemophilus influenzae type B infection is notified on laboratory confirmation of diagnosis. The last paediatric case notified occurred in 1998.

Pertussis

Disease notifications in Tasmania due to pertussis/whooping cough accounted for 2.4% of all disease notifications between 2002 and 2006. Notifications were slightly higher for females than males. The highest notification rate for pertussis came from the North West region. Between 2002 and 2006, pertussis has been notified in all age groups.

Figure 147: Notification Rate for Pertussis, Tasmania, 2002-06

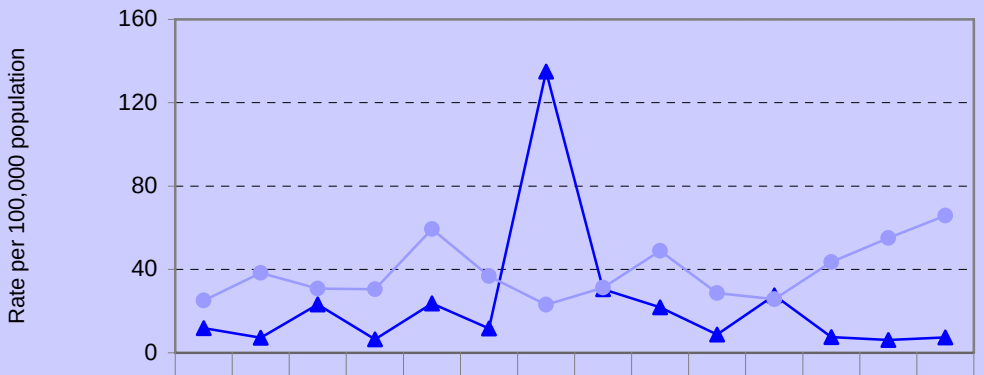


	South	North	North West	Tasmania
Males	10.3	8.0	12.8	10.2
Females	13.1	11.9	12.2	12.6

Note: 1. The error bars represent the 95% confidence intervals of the rate. 2. Tas. Notifiable Diseases Surveillance Database.

A significant increase in pertussis notifications occurred in 1999 (see graph below). This was associated with a large outbreak of pertussis infection. This community-wide outbreak of pertussis occurred in southern Tasmania and primarily affected adolescents. No notifications occurred in infants or neonates during this outbreak. With the introduction of adolescent pertussis vaccination in 2004, it is expected that further outbreaks in this age cohort will be avoided.

Figure 148: Notification Rate for Pertussis, Tasmania and Australia, 1993-2006



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Tasmania	11.9	7.2	23.2	6.5	23.7	11.7	135	30.4	21.8	8.7	27.5	7.5	6.2	7.4
Australia	25.0	38.3	30.8	30.4	59.4	36.8	23.0	31.2	48.8	28.6	25.6	43.5	55.1	65.8

Tas. Notifiable Diseases Surveillance Database; National Notifiable Diseases Surveillance System.
Average annual percentage change: -2.1% for Tasmania (P<0.01); 4.1% for Australia (P<0.01).

Measles

Disease notifications due to measles accounted for 0.1% of all disease notifications between 2002 and 2006 in Tasmania. The average number of measles-related disease notifications in the State was 2 persons per year between 2002 and 2006 inclusive. The age group most affected by measles is the 5 to 14 year olds.

An outbreak of measles occurred nationally in mid 2006 affecting 11 Tasmanians. The outbreak originated within an organisation where measles vaccine coverage was lower than in the general community. The index case was a visitor to the community from India. As a result of the outbreak within this organisation measles subsequently spread into the wider Tasmanian community, affecting unvaccinated people.

Mumps

Disease notifications due to mumps accounted for 0.1% of all disease notifications between 2002 and 2006. The average number of mumps related disease notifications in the State was 2 persons per year between 2002 and 2006 inclusive. The age group most affected by mumps is the 15 to 24 year olds.

Rubella

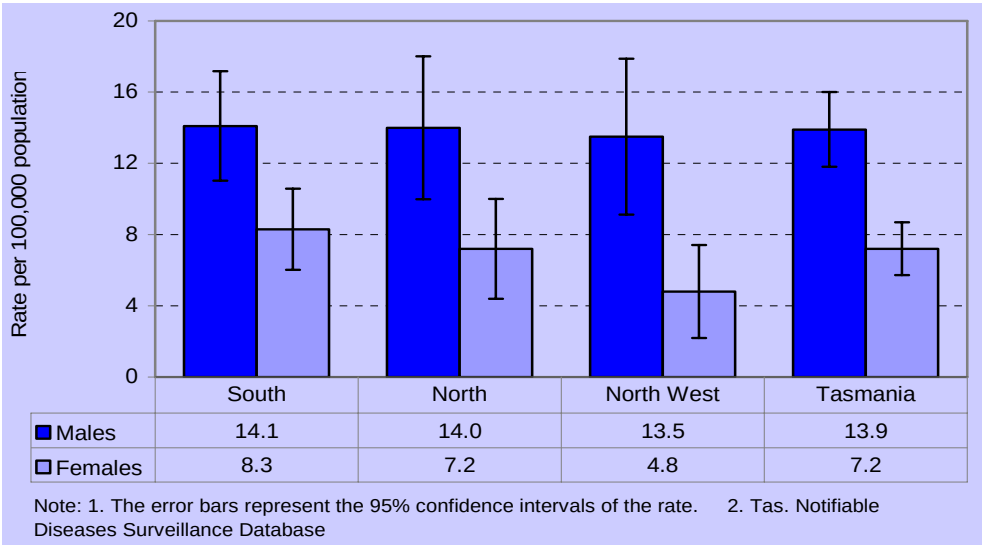
Disease notifications due to rubella accounted for 0.1% of all disease notifications between 2002 and 2006. The average number of rubella related disease notifications in the State was 2 persons per year between 2002 and 2006 inclusive. The age group most affected by rubella is the 0 to 4 year olds.

Pneumococcal Disease (Invasive)

Invasive pneumococcal disease is an important cause of death in infants, the elderly and the immunocompromised. In Tasmania, disease notifications due to pneumococcal infection (invasive) accounted for 2.2% of all disease notifications between 2002 and 2006. The age group most affected by pneumococcal infection (invasive) is persons aged 65 years and over.

Although between 2002 and 2006, the male rate of disease notifications decreased significantly ($p = 0.01$), the male notification rate continued to be much higher than the female rate. Apart from a lower notification rate for females in the North West, regional differences were not observed.

Figure 149: Notification Rate for Pneumococcal Disease (Invasive), Tasmania, 2002-06

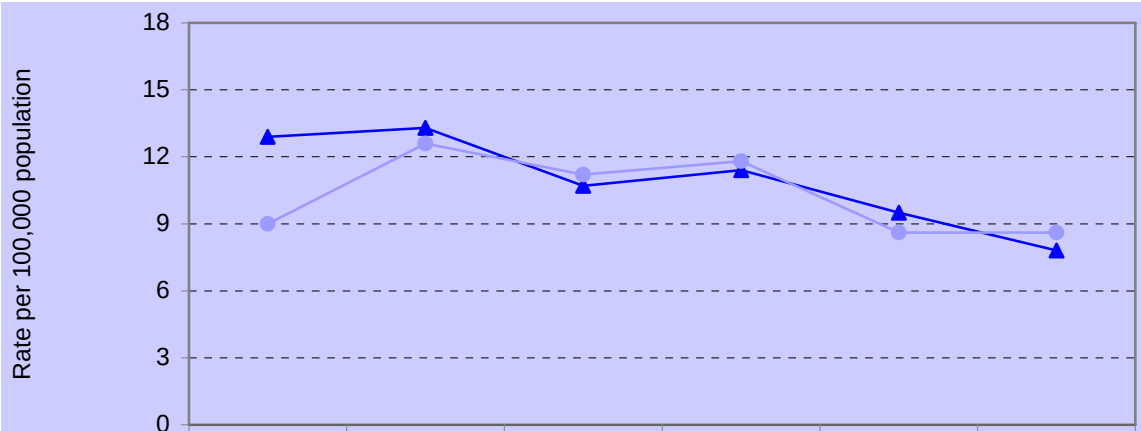


	South	North	North West	Tasmania
Males	14.1	14.0	13.5	13.9
Females	8.3	7.2	4.8	7.2

Note: 1. The error bars represent the 95% confidence intervals of the rate. 2. Tas. Notifiable Diseases Surveillance Database

Invasive pneumococcal disease became a nationally notifiable disease in 2001. Tasmanian notification rates for invasive pneumococcal disease during 2001 to 2006 are comparable to the Australian rates. Tasmania's rate has declined since 2001.

Figure 150: Notification Rate for Pneumococcal Disease (Invasive), Tasmania and Australia, 2001-06



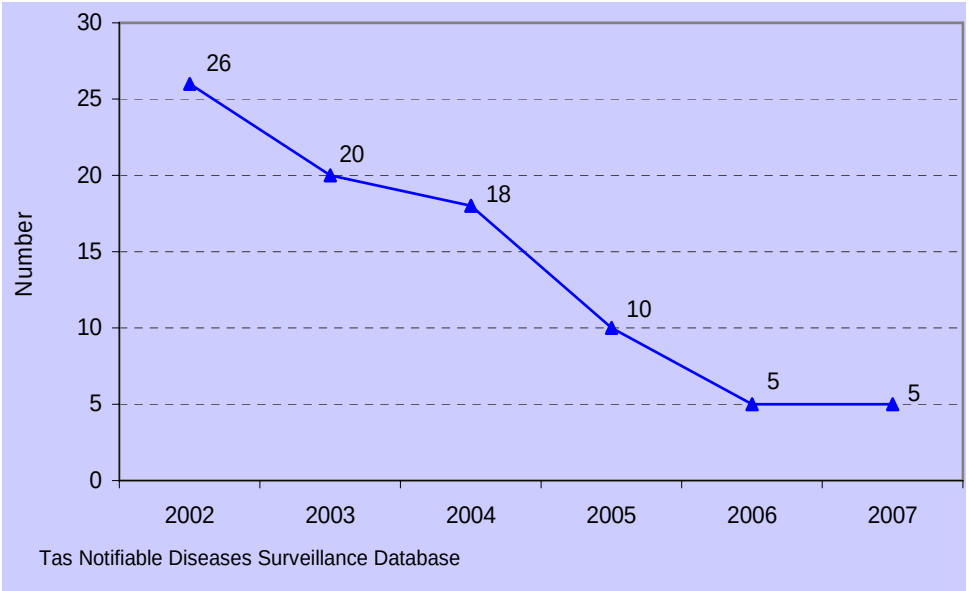
	2001	2002	2003	2004	2005	2006
Tasmania	12.9	13.3	10.7	11.4	9.5	7.8
Australia	9.0	12.6	11.2	11.8	8.6	8.6

Tas. Notifiable Diseases Surveillance Database; National Notifiable Diseases Surveillance System. Average annual percentage change: -9.2% for Tasmania (P<0.01); -3.8% for Australia (P<0.01).

Meningococcal Infection

Disease notifications due to meningococcal infection accounted for 0.7% of all notifications between 2002 and 2007 in Tasmania. There were between 5 and 26 notifications a year for meningococcal infection in this time period. Meningococcal infection is more commonly notified in males than in females. The age group most affected is 0 to 4 year olds.

Figure 151: Meningococcal Case Notifications, Tasmania, 2002-07



An increase in notifications of meningococcal infection was observed in 2002 to 2003 as a result of a hyper endemic state of invasive group C serogroup meningococcal disease within the Tasmanian community. Increased disease activity occurred across the state; however a disproportionate number of cases occurred in southern Tasmania. In response to the increased disease activity, the Tasmanian Government funded a polysaccharide meningococcal vaccination program. This was superseded by a national conjugate meningococcal vaccination program which commenced in January 2003. As a result, notifications for group C serogroup meningococcal disease have decreased significantly.

Vector Borne Diseases

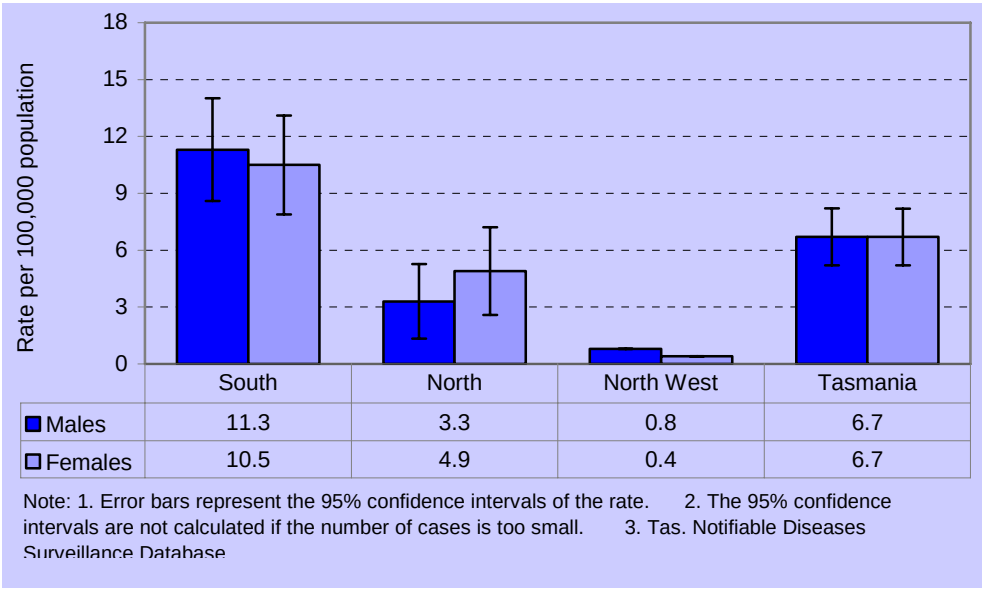
Notifications due to vector borne diseases account for approximately 2% of all disease notifications. Notifiable vector borne diseases include arboviruses (Ross River virus, Barmah Forest virus, Dengue, Japanese encephalitis, Murray Valley encephalitis, Kunjin virus), malaria, viral haemorrhagic fever and yellow fever. There have been no notifications for Japanese encephalitis, Murray Valley encephalitis, Kunjin virus, viral haemorrhagic fever or yellow fever between 2002 and 2006. There have been two notifications for Barmah Forest Virus in Tasmania between 2002 and 2006.

Ross River Virus

Ross River virus is a viral disease transmitted by some species of mosquitoes occurring in Tasmania. In Tasmania, disease notifications due to Ross River virus accounted for 1.4% of all disease notifications between 2002 and 2006.

The South region had the highest notification rate for the Ross River virus due to the increased mosquito activity in the climate of the south and southeast coast of Tasmania.

Figure 152: Notification Rate for Ross River Virus Infection, Tasmania, 2002-06

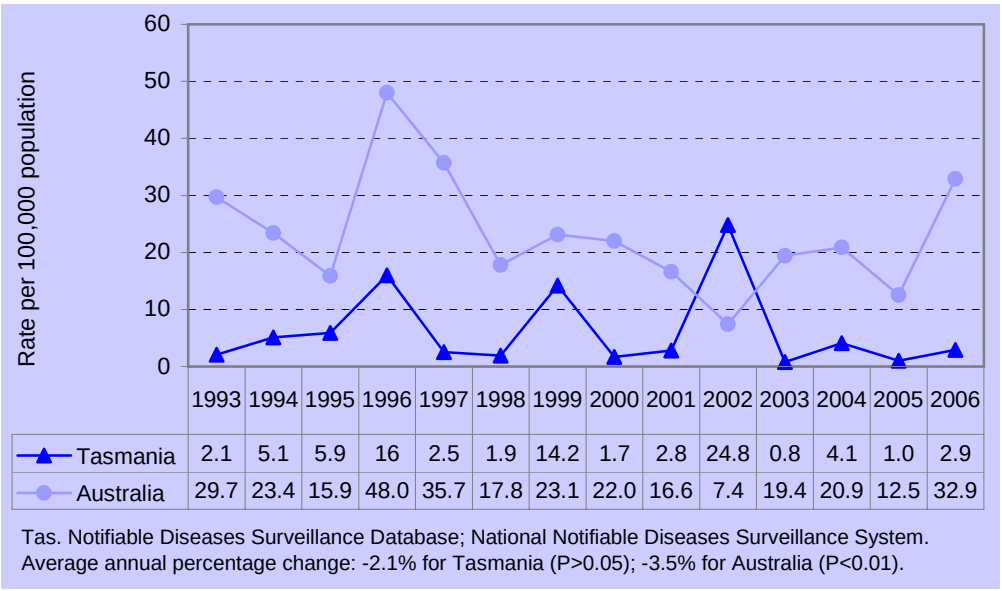


	South	North	North West	Tasmania
Males	11.3	3.3	0.8	6.7
Females	10.5	4.9	0.4	6.7

Note: 1. Error bars represent the 95% confidence intervals of the rate. 2. The 95% confidence intervals are not calculated if the number of cases is too small. 3. Tas. Notifiable Diseases Surveillance Database

The age group most affected by Ross River Virus infection is 45 to 64 year old persons. Tasmania's notification rate for the Ross River virus infection has been consistently lower than the national notification rate since 1993, with an average annual percentage change of 2.1% for Tasmania. Ross River virus notifications increase periodically due to increased activity of the mosquito vector. Increases in notifications were observed in 1996, 1999 and 2002. In years where no increased activity occurred, the average number of Ross River virus related disease notifications in the State was less than 10 persons per year.

Figure 153: Notification Rate for Ross River Virus Infection, Tasmania and Australia, 1993-2006



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Tasmania	2.1	5.1	5.9	16	2.5	1.9	14.2	1.7	2.8	24.8	0.8	4.1	1.0	2.9
Australia	29.7	23.4	15.9	48.0	35.7	17.8	23.1	22.0	16.6	7.4	19.4	20.9	12.5	32.9

Tas. Notifiable Diseases Surveillance Database; National Notifiable Diseases Surveillance System.
Average annual percentage change: -2.1% for Tasmania (P>0.05); -3.5% for Australia (P<0.01).

Malaria

For the State, disease notifications due to malaria accounted for 0.9% of all disease notifications between 2002 and 2006. Since 2000, the total number of disease notifications due to malaria has been increasing. This is due to increased detection of *Plasmodium falciparum* malaria as a result of increased screening of migrants to Tasmania from high risk overseas countries in recent years. The age group most affected by malaria is the 5 to 14 year olds. As the vectors for malaria transmission are not endemic in Tasmania this does not pose a public health risk to the wider community.

Zoonoses

Notifications due to zoonotic diseases account for approximately 0.1% of all disease notifications. Many zoonotic diseases are also gastrointestinal infections (e.g. Campylobacter) or vector-borne diseases (e.g. rickettsial infections). Notifiable zoonotic diseases not discussed above include Q fever, anthrax, brucellosis, hydatid infection, leptospirosis, lyssavirus, psittacosis, plague, rabies, tularaemia and typhus. There have been no notifications of anthrax, brucellosis, lyssavirus, plague, rabies, tularaemia or typhus between 2002 and 2006. There have been three notifications for leptospirosis and one notification for Q fever between 2002 and 2006. All cases of leptospirosis and Q fever were acquired within Tasmania.

Other Notifiable Diseases

Other notifiable infectious diseases include tuberculosis, legionellosis, typhoid, non TB mycobacteria, rickettsial infection, taeniasis, Vancomycin-resistant enterococcus and vibrio infection. For the State, disease notifications due to other notifiable diseases accounted for 2.4% of all disease notifications between 2002 and 2006.

Tuberculosis

Disease notifications due to tuberculosis accounted for 0.4% of all disease notifications between 2002 and 2006. Between 4 and 13 cases a year are notified in Tasmania. Tuberculosis is more commonly notified in males. The age group most affected by tuberculosis is persons aged 65 years and over. The total number of tuberculosis notifications is decreasing over time.

Table 27: Number of Disease Notifications due to Tuberculosis by Sex, 2002 - 2006

Males	Females	Total
28	14	42

Legionellosis

Disease notifications due to legionellosis accounted for 0.1% of all disease notifications between 2002 and 2006. The average number of legionellosis related disease notifications in the State was 2 persons per year between 2002 and 2006 inclusive. The age group most affected by legionellosis is the 25 to 44 year olds. Males are more commonly affected than females. Over time, the rate of notification of legionellosis has decreased.

Table 28: Number of Disease Notifications due to Legionellosis by Sex, 2002 - 2006)

Males	Females	Total
10	2	12

Appendix 1 – Data Sources

Population data

The estimated resident population data of Tasmania was obtained from the ABS. These population estimates comprise the basic information on sex and five-year age groupings. Estimated resident populations of Tasmania and Australia are used as denominators for calculating age-specific morbidity and mortality rates in this Report.

Tasmanian population data has an additional field of statistical division that may be used to classify Tasmania into three regions, such as South, North and North West. The South includes Greater Hobart and Southern statistical divisions, the North region is equivalent to the Northern statistical division and the North West region is equivalent to Mersey-Lyell statistical division.

Notifiable infectious diseases

In Tasmania, medical practitioners and persons in charge of hospitals and laboratories are required by law to report certain specified diseases to the Director of Public Health. This surveillance system allows for the detection of infectious diseases, and for the Public and Environmental Health Service to monitor their trends and to evaluate the effectiveness of intervention programs.

The notifications of infectious diseases in Tasmania from 1990-2001 were extracted from the surveillance database managed by the Public and Environmental Health Service.

Infectious disease surveillance relies on reporting by medical practitioners, hospitals and pathology laboratories. The reliability of the routine reporting system includes the accurate diagnosis and completeness of notification forms of infectious diseases. Sometimes people with infections which are notifiable do not seek medical attention for their condition, and so are not captured in the data collections.

Cancer incidence

Cancer is a notifiable disease in Tasmania, as it is elsewhere in Australia. New cases of cancer diagnosed in Tasmania are reported to the Tasmanian Cancer Registry, which is located at the Menzies Research Institute, University of Tasmania.

The cancer incidence data were obtained from the Tasmanian Cancer Registry. Incident cancers are classified using the International Classification of Diseases.

Hospital admissions

The Tasmanian Statewide Morbidity Database is a collection of the inpatient information for those who were admitted to the public and private hospitals as a result of acute or chronic medical condition. The hospital data consist of details of demographic information of the patient, diagnoses, procedures and separations (discharge, transfer, death or absconding).

In Tasmania, the diagnoses of hospital admissions were coded according to the International Classification of Diseases, 9th Revision, Clinical modification (ICD-9-CM) before June 1999. Since July 1999, the International Classification of Diseases, 10 Revision, Australian modification (ICD-10-AM) has been introduced. The hospital database has been coordinated and managed by the Hospital and Ambulance Division, Department of Health and Human Services, Tasmania.

This Report used available computerized hospital data to estimate morbidity for selected diseases in Tasmanian residents. This estimate was made according to principal diagnosis of the hospital admission, that is, the medical condition chiefly responsible for patient's episode of care in hospital. However, the hospital morbidity for injury and poisoning caused by external causes was estimated using any additional diagnosis in the external cause field, where the principal diagnosis code was in the range ICD-CM-9 800-999 (Chapter 17 'Injury and Poisoning') and ICD-10-AM S00-T98. The selection criteria for injury cases caused by external causes are consistent with national injury publications.

The data analysis of hospital morbidity was based on the patient's place of usual residence. Persons who came from interstate or overseas were excluded from hospital morbidity statistics.

The reliability of the Statewide Morbidity Database managed by the Hospital and Ambulance Division mainly depends on the discharge summary supplied by the doctor in charge of the patient. This information is the key for accurately coding and determining the principal diagnosis.

Mortality data

In all States and Territories of Australia, a medical practitioner or a coroner is required to certify the causes and date for all deaths. The causes of death were coded by the ABS on the basis of the International Classification of Diseases 9th Revision or 10th Revision.

The mortality unit record file for Tasmania and Australia as a whole was provided by the ABS, which contains sex, date of birth, date of death, place of usual residence, country of birth, cause of death, etc. For estimating the mortality rates for Tasmanians in this Report, persons whose place of usual residence was interstate or overseas were excluded.

The reliability of the mortality data is affected by the primary diagnosis of the underlying cause of death if there are multiple causes contributing to the death.

National Health Surveys (NHS)

The ABS conducts three-yearly national health surveys that aim to provide benchmarks of diseases, injury and health risk factors experienced by Australians.

The National Health Survey is based on self-reported data collected in face to face interviews. The results may reflect the respondents' knowledge about health and understanding of the diagnosis made by health professionals. Therefore, care should be taken in interpreting the results.

Survey of Disability, Ageing and Carers

The ABS has conducted regular surveys for data collection of people with a disability since 1981. It is important to note that the information gathered from the survey was based on self-reported questionnaires. The reliability of the results from the survey may be related to the respondents' knowledge about a disability and particularly to persons with intellectual disability.

ASSAD Survey of Tasmanian secondary students

The Australian Secondary School Alcohol and Drug (ASSAD) has conducted every three years since 1984 throughout Australia. In Tasmania, the survey is administered by the Tasmanian Cancer Council.

Appendix 2 - Methods

Age-specific rate

The age-specific rate is calculated by dividing the number of cases by the number of estimated population in a specific age group. The rate is expressed as "per 100,000 population".

Age-standardised rates

Age-standardised rates are estimated by the direct standardisation method (Boyle and Parkin 1991). This method applies the age-specific rates from the study population to the standard population in order to calculate the number of events or deaths that would be expected in the standard population. The expected events or deaths are then summed and divided by the size of the standard population.

For this report, the 2001 Australian population was used as a standard population. Age-standardised rate is expressed as "per 100,000 population".

An important aim was to determine whether there was a statistical difference in the age-standardised mortality rates between Tasmania and Australia as a whole. Statistical significance was determined by calculating the standardised rate ratio of two directly age-standardised mortality rates and the confidence intervals of the ratio (Boyle and Parkin 1991). If the estimated confidence intervals for the ratio do not include one (unity), then the rate for Tasmania is statistically significant (at the 5% level or at the 1% level) from the rate for Australia as a whole.

Avoidable mortality

Avoidable mortality refers to deaths that could potentially be avoided through effective interventions against specific diseases in a population. Avoidable mortality is thus a population-based method of determining unnecessary deaths from diseases for which effective public health and medical interventions are available.

Modelling of trends

The Poisson regression model was used to model age-standardised cancer incidence rates and age-standardised mortality rates for Tasmania and Australia as a whole from 1979-80 to 1999-2000 on the assumption that the number of expected events have a Poisson distribution. In the Poisson regression model, the data were modelled with a log link function and the natural log of population treated as an "offset".

The methods in modelling data, calculating annual rate of change and testing of trends for statistical significance are described in detail in the publication titled "Mortality Surveillance, Australia, 1981-1992" (Bennett et al. 1994).

Notification rate

The notification rate for infectious diseases is calculated by dividing the number of notified cases by the estimated population at a specified year. The rate is expressed as "per 100,000 population".

Relative standard error

The relative standard error (RSE) was calculated for the estimates obtained from the Healthy Communities Survey, Tasmania, 1998. The relative standard error (RSE) is a measure of the reliability or precision of a survey statistic on a percentage scale (ABS 1999b). The RSE is defined as the standard error of a survey estimate, divided by the survey estimate, then multiplied by 100.

The 95% or 99% confidence intervals were estimated using the standard errors of survey estimates. If the confidence intervals for two proportions do not overlap, the proportions are considered to be significantly different at the 95% level or 99% level in this Report.

Standardised mortality ratio (SMR)

The indirect method of age standardisation has been used for comparing the mortality by local government area (LGA) to the mortality in Tasmania as a whole. This method is relatively reliable for the small number of deaths involved when the mortality data are aggregated into a small area (Armitage 1971).

The Standardised Mortality Ratio (SMR) was calculated by the indirect method of age standardisation (Boyle and Parkin 1991). SMR is the ratio of the number of observed deaths in a study population (LGA) to the number of expected deaths that are calculated according to the age-specific rates in the reference population (Tasmania as a whole). SMR is usually expressed as a percentage (multiples by 100).

Exact Poisson confidence intervals were calculated for each estimated SMR as described in Breslow and Day 1987. Confidence intervals for the SMR were set at 99% in this Report. The statistical significance of a SMR was determined based on confidence intervals. If the SMR for a local government area is above 100 and its lower confidence interval is also above 100, the SMR is considered to be significantly high at the 1% level, compared to the reference population (Tasmania as a whole).

Standardised incidence ratio (SIR)

The calculation of the Standardised Incidence Ratio is the same as the SMR.

Socio-economic status

The socio-economic status methodology applied to avoidable mortality is the Socio Economic Indexes for Areas (SEIFA), developed by the ABS. The index represents a single measure of socio-economic status derived from the latest Census data. Variables such as education, income, occupation and housing are accounted for in calculating the SEIFA. Index scores are applied to geographic areas. Areas with a low index score have high proportions of low income families, high unemployment and low educational qualifications, while the least disadvantaged areas have high proportions of high income earners and high index scores.

Appendix 3 - Glossary

Additional Diagnosis	A condition or complaint either coexisting with the principal diagnosis or arising during the episode of care or attendance at a health care facility (AIHW 1998).
Age/Sex-Specific Incidence Rate	(Number of new cases in a specific age and sex group in a year) x (100,000/mid-year population of the same age and sex group).
Age-Standardisation	A procedure for adjusting rates, e.g. death rates, designed to minimize the effects of differences in age composition when comparing rates for different populations (Last 1988).
Average Length of Stay	For a group of patients by dividing the total number of bed days accumulated by patients separating during the study period by the number of separations occurring during that period (AIHW 1996).
Disability	Restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being (Lwanga et al. 1999).
Fertility Rate	The fertility rate is the total number of children that would be born to each woman if she were to live to the end of her childbearing years (from 15 to 49) and give birth to children over that period at the prevailing age-specific fertility rates. A fertility rate of 2.1 children per woman ensures broad stability of the population on the assumption of no net migration flows and no change in mortality rates.
Handicap	A disadvantage for a given individual, resulting from impairment or a disability, that limits or prevents the fulfilment of a role that is normal for that individual (Lwanga et al. 1999).
Hospital Admission	An admission is the process by which an admitted patient commences an episode of care (AIHW 1998). In this report, the number of separation has been taken as the number of admission.
Illicit Drugs	The following drugs when used for non-medical purposes: speed, cocaine, sleeping pills/tranquillisers, marijuana, analgesics, heroin, petrol sniffing, other inhalants, hallucinogens, designer drugs, and injecting of any illegal drugs (ABS 1999c).
Impairment	Any loss or abnormality of psychological or anatomical structure or function (Lwanga et al. 1999).
Incidence	Occurrence of new cases of a specified disease in a specified community during a specified period of time (Lwanga et al. 1999).
Indigenous population	People who identify as Aboriginal or Torres Strait Islander origin or both (ABS, Australian Social Trends, 2007, p.6)
Infant Mortality Rate	(Number of deaths under one year of age in a year x 1000)/total number of live births in the same year (Lwanga et al. 1999).

Life Expectancy	Refers to the average number of additional years a person of a given age and sex might expect to live if the age-specific death rates of the given period continued throughout his or her lifetime (ABS 2001).
Long-Term Conditions	Refers to medical conditions (illness, injury or disability) which have lasted at least six months, or which the respondent expects to last for six months (ABS 1997b).
Natural Increase	The excess of births over deaths (ABS 2002c).
Morbidity	Any departure, subjective or objective, from a state of physiological or mental well-being, whether due to disease, injury or impairment (WHO 1959).
P Value	The probability of obtaining a given statistical result by chance alone (Morton et al. 1996).
Principal Diagnosis	The diagnosis established after study to be chiefly responsible for he patient's episode of care in hospital (or attendance at the health are facility (AIHW 1998).
Recent Condition	Medical conditions (illness, injury or disability) experienced in the two weeks prior to interview. May include long-term conditions experienced in the period (ABS 1997b).
Self-Assessed Health Status	Refers to a respondent's perception of his or her general health status. In the National Health Survey and the National Aboriginal and Torres Strait Islander Survey, respondents were asked to rate their health as excellent, very good, good, fair or poor (ABS 1997b).
Separation	The formal process by which a hospital records the completion of treatment/care for an admitted patient. This occurs when an admitted patient leaves hospital to return home, transfers to another institution, or dies (AIHW 1997).
Standardised Mortality (Incidence) Ratio	The ratio of the number of events observed in the study group or population to the number that would be expected if the study population had the same specific rates as the standard population, multiplied by 100 (Last 1988).
Statistical Significance	Implies that the observed result was unlikely to have occurred by chance alone (Morton et al. 1996).
Unemployed	Persons aged 15 and over who were not employed during the reference week (ABS 2002e).

References

ABS, Apparent Consumption of Alcohol, Australia, 2005-06

ABS, Asthma in Australia: A Snapshot, 2004-05, 2006

ABS, Australian Demographic Statistics, September 2006, cat. no. 3101.0

ABS, Australian Social Trends, 2006, cat. no. 4102.0

ABS, Australian Social Trends, 2007, cat. no. 4102.0

ABS, Deaths Australia, 2004, cat. no. 3302.0

ABS, Deaths Australia, 2005, cat. no. 33020

ABS, Deaths Australia, 2006, Cat. No. 3302.0

ABS, Divorces, Australia, 2006, cat. no. 3307.0.55.001

ABS, Mortality Database

ABS, National Health Survey Summary of Results Australian States and Territories 1995, cat. no. 4368.0

ABS, National Health Survey Summary of Results Australia 2001, cat. no. 4364.0

ABS, National Health Survey 2001 - Companion Data, cat. no. 4364.0

ABS, National Health Survey 2001, Confidentialised Unit Record File

ABS, National Health Survey Summary of Results Australia 2004-05, cat. no. 4364.0

ABS, National Health Survey, 2004/5, Confidentialised Unit Record File

ABS, Population Projections, Australia, 2004-2101, 2006, Reissue, cat. no. 3222.0

ABS, Population Projections Australia 2004-2101, Reissue, 2006, cat. no. 3222.0

ABS, Schools Australia 2006, cat. no. 4221.0

AIHW, Analysis of ANZDATA registry data

AIHW, Asthma in Australia: Findings from the 2004-05 National Health Survey, Canberra, 2007

AIHW, Australia's Health 2004, Canberra, 2004

AIHW, Australia's Health 2006. Canberra, cat. no. AUS73

AIHW, Breast Cancer in Australia: An Overview, Canberra, 2006

AIHW, Cancer in Australia 2001, Canberra, December 2004

AIHW, Cancer in Australia: An Overview, 2006, Canberra, 2007

AIHW, Costs of Diabetes in Australia 2000-01, Bulletin, Issue 26, April 2005

AIHW, National Drug Strategy Household Survey, State and Territory Supplement, 2001

AIHW, National Drug Strategy Household Survey, State and Territory Supplement, 2004

AIHW, Socioeconomic Inequalities in Cardiovascular Disease in Australia: Current Picture and Trends since 1992, Bulletin, Issue 37, 2006

AIHW, Statistics on Drug Use in Australia 2006

Begg S, Vos T, Goss J, Barker B, Stevenson C, Stanley L, Lopez A. The burden of disease and injury in Australia. Australian Centre for Burden of Disease and Cost-Effectiveness. 2006

AIHW, Water fluoridation and children's dental health, Child Dental Health Survey, Australia 2002, 2007

Centre for Behavioural Research in Cancer, Prevalence of Cigarette Smoking among Tasmanian Secondary Students in 2005 and Trends over Time, September 2006

Centre for Behavioural Research in Cancer, The Use of Alcohol, Over the Counter Substances and Illicit Substances among Tasmanian Secondary School Students in 2005 and Trends over Time, 2006

Centre for Behavioural Research in Cancer, Prevalence of Diet Related Behaviours among Tasmanian Secondary School Students in 2005 and Trends over Time, 2006

Centre for Behavioural Research in Cancer, Physical Activity and Sedentary Behaviours among Tasmanian Secondary School Students in 2005, March 2007

Crossley T.F. and Kennedy S., The Stability of Self Assessed Health Status, Centre for Economic Policy Research, ANU, 2000

Department of Health and Ageing, Australia's Physical Activity Recommendations for 5-12 year olds and 12-18 year olds, 2004

Department of Health and Ageing and the National Drug Strategy, Environmental Tobacco Smoke in Australia. Canberra, 2002

Department of Health and Ageing. National Physical Activity Guidelines for Australians. Canberra: Australian Government Department of Health and Ageing 2005.

Department of Health and Human Services, Tasmanian Notifiable Disease Surveillance Database

Department of Health and Human Services, Tasmanian Perinatal Database, 2007

Department of Health and Human Services, Tasmanian Statewide Morbidity Database

Department of Tourism, Arts and the Environment, Tasmanian Air Quality Strategy, 2006

Department of Treasury and Finance Tasmania, Demographic Change in Tasmania: Challenges and Opportunities, Issues Paper, October 2007

Dunstan D et al., The Australian diabetes, obesity and lifestyle study: data report. Tasmania, 2000

Eriksson I et al. Self-rated health. Comparisons between three different measures. Results from a population study. International Journal of Epidemiology 2001; 30: 326-333

Flood V et al., Use of self-report to monitor overweight and obesity in populations: Some issues for consideration, Aust NZJ Public Health, 2000, No 24, pp 96-99

Health at a Glance 2007, OECD Indicators,
http://caliban.sourceoecd.org/vl=5774489/cl=13/nw=1/rpsv/health2007/index.htm

HIA-Commonwealth Bank Affordability Report, 2007

Kasper Dennis, Harrison's Principles of Internal Medicine, 16th Edition, McGraw-Hill, 2005

Kay E. Do regular attenders have better oral health? British Dental Journal 2002

Krause N and Jay G. What do global self-rated health items measure: Journal of Medical Care 1994; 32: 930-942

Medical Journal of Australia, Editorial: Revisiting the Role of Radical Surgery in Early Stage Prostate Cancer, Vol.183, No 6, September 2005

National Notifiable Disease Surveillance System

National Stroke Foundation, http://www.strokefoundation.com.au/

NHMRC Australian Alcohol Guidelines: Health Risks and Benefits 2001

Private Health Insurance Administrative Council Annual Coverage Survey 2006

RID Study 2006

United Stated Department of Health and Human Services, The Health Consequences of Smoking: A report of the Surgeon General, Atlanta, CDC, 2004

World Health Organisation, Obesity: Preventing and managing the global epidemic. Report of a WHO consultation, WHO Technical Report No 894, 2004

For further information contact:
Manager Epidemiology Unit
Population Health
25 Argyle Street
Hobart TAS 7000
Phone: 6222 7729