

# **Cancer in Australia: an overview, 2008**

The Australian Institute of Health and Welfare (AIHW) is Australia's national health and welfare statistics and information agency. The Institute's mission is *better information and statistics for better health and wellbeing*.

The Australasian Association of Cancer Registries (AACR) is a collaborative body representing state and territory cancer registries in Australia and the cancer registries of New Zealand and Tonga. Most are members of the International Association of Cancer Registries (IACR). The AACR was formed in November 1982 to provide a formal mechanism for promoting uniformity of collection, classification and collation of cancer data.

The objectives of the AACR are to:

- Achieve national agreement on cancer-specific data definitions and coding and to encourage compliance with such agreements. As far as possible, data definitions and coding should be consistent with existing international IACR protocols and conventions.
- Facilitate the production of Australian state and territory and national statistical publications on cancer that are comparable with each other and with international statistical publications.
- Improve the operational efficiency and data completeness and quality of member cancer registries through collaborative sharing of information.
- Contribute to national cancer control development in member countries through the regular and timely publication of local and national cancer statistics and the provision of data for cancer control research and health promotion.
- Contribute national data to international publications of the IACR.
- Contribute to international cancer coding and statistical analysis developments via members' involvement with the IACR.
- Facilitate national epidemiological research projects on cancer (given appropriate local and AIHW ethics committee approvals).

Please note that as with all statistical reports there is the potential for minor revisions of data in this report over its life. Please refer to the online version at <[www.aihw.gov.au](http://www.aihw.gov.au)>.

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# **Cancer in Australia: an overview, 2008**

**Australian Institute of Health and Welfare  
Australasian Association of Cancer Registries**

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### **Australian Institute of Health and Welfare**

Board Chair

Hon. Peter Collins, AM, QC

Director

Penny Allbon

Any enquiries about or comments on this publication should be directed to:

Dr Mark Short

Health Registers and Cancer Monitoring Unit

Australian Institute of Health and Welfare

GPO Box 570

Canberra ACT 2601

Phone: (02) 6244 1063

Email: [cancer@aihw.gov.au](mailto:cancer@aihw.gov.au)

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# Contributors

This report was prepared by the staff of the Health Registers and Cancer Monitoring Unit of the Australian Institute of Health and Welfare (AIHW). Cancer incidence data are provided to the National Cancer Statistics Clearing House at the AIHW by all state and territory cancer registries who, with the AIHW and some Oceania cancer registries, are members of the Australasian Association of Cancer Registries (AACR). The AACR assists the AIHW in the production of *Cancer in Australia* through provision of data, resolution of coding and tabulation issues, checking of the tabulated data and reviewing the draft.

Incidence information provided by state and territory cancer registries is sourced predominantly from hospitals, pathologists and departments of radiation oncology, with supplementary information provided by medical practitioners in private practice. The main contributors of information on cancer deaths are the state and territory Registrars of Births, Deaths and Marriages and the Australian Bureau of Statistics.

Funding and support of cancer registries in Australia is undertaken by state and territory governments and non-government bodies. We recognise the support of the state and territory governments, the Cancer Institute NSW, the Cancer Council Victoria, the Cancer Council Queensland, the Cancer Council Western Australia, the Cancer Council Northern Territory and the Cancer Council Australia. Finally, the contributions of the staff and volunteers who work with the state and territory cancer registries are acknowledged. Contact details for the state and territory cancer registries are provided in Appendix H.

<b>AIHW</b>	Ms Helen Farrugia	<b>Tasmania</b>
Ms Chris Sturrock	Mrs Vicky Thursfield	Assoc Prof Alison Venn
Dr Alison Budd		Ms Marita Dalton
Ms Edith Christensen	<b>Queensland</b>	
Ms Melissa Goodwin	Dr Joanne Aitken	<b>Australian Capital Territory</b>
Mr David Meere	Ms Kerrie Dennison	Ms Linda Halliday
Dr Mark Short	Ms Marilla Fraser	Ms Janet Li
Ms Shubhada Shukla		Ms Rosalind Sexton
Ms Kathy Southgate	<b>Western Australia</b>	
Ms Kun Zhao	Dr Tim Threlfall	<b>Northern Territory</b>
	Mr John Langley	Ms Karen Dempsey
<b>New South Wales</b>	Dr Judy Thompson	Ms Lindy Garling
Mrs Maria Arcorace		Ms Lesley Milliken
Ms Deborah Baker	<b>South Australia</b>	
Ms Narelle Grayson	Dr Ron Somers	
	Ms Elaine Morton	
<b>Victoria</b>	Mr Kevin Priest	
Prof Graham Giles		

# Summary

*Cancer in Australia: an overview, 2008* is a joint report by the Australian Institute of Health and Welfare (AIHW) and the state and territory members of the Australasian Association of Cancer Registries (AACR). It presents the numbers of new cases of cancer and cancer deaths in 2005 as well as projections for 2006 to 2010. A wealth of other topics are covered, such as incidence of lymphohaematopoietic cancers using a modern classification scheme, cancers attributed to smoking and excessive alcohol consumption, incidence in the states and territories, incidence rates over the life span, cancer survival, cancer prevalence, cancer-related hospitalisations, the cancer screening programs and the burden of cancer. It is complemented by substantial online cancer data resources on the AIHW website.

## Main findings

In 2005, for the first time, there were over 100,000 new cases of cancer diagnosed in Australia. This number is projected to grow by over 3,000 extra cases per year in 2006–2010. The growth is due mainly to the ageing of Australia's population but there is also projected to be a small increase in the underlying cancer incidence rate.

The major cancer affecting males is prostate cancer, which accounted for over 29% of all diagnoses in 2005. For females the major cancer is breast cancer, which accounted for over 27% of all diagnoses in 2005. Each of these cancers had over double the number of diagnoses of the second most common cancer, which is colorectal cancer in both sexes. The next three most common cancers in both sexes are melanoma of the skin, lung cancer and lymphoma.

In 2005 there were over 39,000 deaths from cancer in Australia. The death rate from cancer is projected to decrease slightly during 2006–2010. Despite this, the actual number of deaths from cancer is projected to grow by over 800 extra deaths per year. This increase is due to the ageing of the population.

In both sexes the five biggest killers, in order, are lung cancer, prostate cancer (males)/breast cancer (females), colorectal cancer, cancer of unknown primary site and pancreatic cancer. For females, lung cancer overtook breast cancer in 2005 to become the biggest cancer killer of females for the first time. It is projected that lung cancer deaths in females will accelerate away from breast cancer deaths. This trend is caused by the increasing rates of smoking observed in women in the 1970s and 1980s. By contrast, male smoking rates were decreasing during this period and their lung cancer incidence and death rates today are also declining.

When analysed by age, cancer incidence rates were about the same for males and females until age 30. For ages 30 to 53 females had a higher rate than males, peaking at around 1.8 times higher at age 41. From age 55 onwards males had a higher rate, peaking at double the female rate at age 84.

The most common cancers faced by males over the life span are neuroblastoma as infants, lymphoid leukaemia from age 1 to 15, testicular cancer and melanoma of the skin from 16 to 29, melanoma of the skin from 30 to 51 and finally prostate cancer for the remainder of life. For females the most common cancers are neuroblastoma as infants, lymphoid leukaemia from age 1 to 14, Hodgkin lymphoma from 15 to 16, melanoma of the skin from 17 to 33, breast cancer from 34 to 75 and colorectal cancer from 76 onwards.

Survival from cancer was analysed in a recent separate report which is summarised in Chapter 10. It was found that cancers with the highest 5-year relative survival were testicular cancer (97% of cases still alive 5 years after diagnosis), thyroid cancer (93%) and melanoma of the skin (92%), whereas cancers with the lowest 5-year relative survival were pancreatic cancer (4.6%), cancer of unknown primary site (9.1%) and lung cancer (12%). Survival was also compared over time and found to be steadily improving for almost all cancers.

Increasing survival leads to increasing prevalence. At the end of 2004, over 650,000 living persons had been diagnosed with cancer at some time in the previous 23 years (when national data collection began). This represented about 1 in every 31 Australians.

Australia has three national cancer screening programs: for breast cancer, cervical cancer and colorectal cancer. These programs aim to detect disease early because, in most cases, the earlier a cancer or pre-cancerous disease is treated the better the chances of survival. Since the introduction of the National Cervical Screening Program deaths from cervical cancer have halved from 4.0 deaths per 100,000 women in 1991 to 1.9 deaths per 100,000 women in 2006. Since the introduction of BreastScreen Australia, deaths from breast cancer have decreased from 31 per 100,000 in 1991 to 22 per 100,000 in 2006. The National Bowel Cancer Screening Program is still in its early stages, but it is expected that it will also decrease mortality rates.

Cancer has a significant impact on the health system. A major report on the burden of disease in Australia, summarised in Chapter 14, found that the largest contributor to the total burden of disease in 2003 was cancer, accounting for 19% of the total.

One aspect of the burden of disease is hospital utilisation. In the financial year 2006–07 there were over 775,000 cancer-related separations from hospitals around the nation, which accounted for about 10% of all hospital separations in that year. Over 300,000 of these separations were due to chemotherapy sessions. The next four largest numbers of separations were due to non-melanoma skin cancer, special screening examinations, secondary cancers and follow-up after surgery for cancer. The number of hospital separations looks set to increase. For each year from 2002–03 to 2006–07 there was an increase of over 23,000 separations per year.

Due mainly to the aging of Australia's population, the number of people being diagnosed with cancer is projected to increase by over 3,000 extra cases per year, the number of hospital separations is projected to increase by over 23,000 extra separations per year and, despite the fact that the cancer death rate is expected to decrease, the actual number of deaths due to cancer is expected to increase by over 800 extra deaths per year. Cancer already has a major impact on individuals, families and the health system. Fuelled by Australia's ageing population, this situation looks set to continue.

# 1 Introduction

Cancer, except for basal cell and squamous cell carcinoma of the skin, is a notifiable disease in all states and territories of Australia. It is a major cause of morbidity and mortality and is a major component of the total burden of disease. Good information on the incidence and mortality rates of different types of cancer, the characteristics of patients and survival proportions facilitates the monitoring of trends and the effects of interventions. It also provides a sound basis for epidemiological studies and the initiation of prevention and treatment programs.

## 1.1 What is cancer?

Cancer is a group of several hundred diseases in which abnormal cells are not destroyed by normal metabolic processes but instead proliferate and spread out of control. Cancers are distinguished from each other by the specific type of cell involved and the place in the body in which the disease begins.

Normally, cells grow and multiply in an orderly way to form tissues and organs that have a specific function in the body. Occasionally, however, cells multiply in an uncontrolled way after being affected by a carcinogen, or after developing from a random genetic mutation, and form a mass which is called a tumour or neoplasm. Tumours can be benign (not a cancer) or malignant (a cancer). Benign tumours do not invade other tissues or spread to other parts of the body, although they can expand to interfere with healthy structures. In 2006 there were 128 registered deaths from benign tumours (ICD-10 codes D10-D36).

The main features of a malignant tumour (cancer) are its ability to grow in an uncontrolled way and to invade and spread to other parts of the body (metastasise). Invasion occurs when cancer cells push between and break through other surrounding cells and structures. Cancer can spread to other parts of the body when some cancer cells are carried by the bloodstream or the lymphatic system and lodge some distance away. They can then start a new tumour (a secondary cancer) and begin invading again. Cancer can be fatal because the tumour(s) interfere with the normal functions of the organ(s) affected.

Cancer can develop from most types of cells in different parts of the body, and each cancer has its own pattern of growth and spread. Some cancers remain in the body for years without showing any symptoms. Others can grow, invade and spread rapidly, and are fatal in a short period of time. Apart from the cancer's natural behaviour, its effects can also depend on how much room it has before it damages nearby structures, and whether it starts in or near a vital organ.

For most cancers the causes are not fully known but various risk factors have been identified. Some cancers occur as a direct result of smoking, dietary influences, infectious agents or exposure to radiation (for example, ultraviolet radiation), while others may be a result of inherited genetic faults. While some of the causes are modifiable through lifestyle changes, others are inherited and cannot be avoided through personal action. However, the risk of death due to particular cancers may be reduced through intensive monitoring of individuals at high risk, reducing external risk factors, detecting and treating cancers early in their development, and treating them in accordance with the best available evidence.

Many cancers can be serious and even fatal. However, medical treatment is often successful if the cancer is detected early. The aim is to destroy the cancer cells and stop them from returning. This can be done by surgery to remove the growth or by other methods such as chemotherapy (cancer-destroying drugs) or radiation therapy. The growth of some cancers can also be controlled through hormone therapy.

Treatment often combines a number of these methods and uses them in stages. The first line of treatment aims to remove as many cancer cells as possible; the second line, which may go on for a long time, aims to ensure that the cancer does not recur.

## **1.2 Cancer surveillance in Australia**

National data on cancer deaths have been available since the early 1900s, based on information in medical certificates of cause of death, as provided to the Registrar of Births, Deaths and Marriages in each state and territory. The Australian Institute of Health and Welfare (AIHW) and the Australian Bureau of Statistics (ABS) use these data to report national cause of death statistics. Information concerning cancer deaths and non-cancer deaths of people with cancer is also collected by state and territory cancer registries, based on death certificates and other diagnostic information.

The only effective method of obtaining cancer incidence data is through universal registration of cancer diagnoses. In Australia registration of cancer, except for basal cell and squamous cell carcinoma of the skin, is required under state and territory legislation. The cancer registrations are collated by cancer registries that are supported by a mix of state and territory government and non-government organisations. The registries obtain their information from hospital, pathology, radiotherapy and physicians' records (Appendix A). The earliest cancer registries have been operating since 1972 but it was not until 1982 that cancer registration was nearly universal in Australia, the only jurisdictions missing being the Northern Territory (NT) and the Australian Capital Territory (ACT). These two territories were registering cancers from before 1982 but the legislation making notification compulsory was not enacted until later, so that NT registrations are considered complete from 1991 and ACT from 1994.

## **1.3 National Cancer Statistics Clearing House**

In June 1984 the National Health and Medical Research Council endorsed the concept of a national collection of cancer statistics. In April 1985 the National Committee on Health and Vital Statistics agreed that the National Cancer Statistics Clearing House (NCSCH) should be operated by the then Australian Institute of Health under the supervision of the Australasian Association of Cancer Registries (AACR).

Following the enactment of Commonwealth legislation establishing the then Australian Institute of Health as a statutory body in 1987, and subsequent legislation providing for the protection of confidentiality of records supplied to it, the Institute and the AACR established the NCSCH. This provides an ongoing facility for compiling data produced by individual state and territory registries and identifying cross-border duplicate registrations.

The aim of the NCSCH is to foster the development and dissemination of national cancer statistics for Australia and specifically to:

- enable computation and publication of national statistics on cancer
- allow tracking of interstate movement of cancer cases via record linkage so that the same cancer case is not counted more than once
- facilitate exchange of scientific and technical information between cancer registries and promote standardisation in the collection and classification of cancer data
- facilitate cancer research both nationally and internationally.

The NCSCCH primarily produces reports of national incidence and mortality data.

Periodically, other analyses are undertaken, for example, of specific cancer sites, cancer histology, differentials in cancer rates by country of birth, geographical variation, trends over time and survival.

The NCSCCH is able to make available a broad range of statistical data. Unit record data that does or might identify individuals may only be released to bona fide researchers after a strict scientific and ethical review process which involves the AACR Executive, the AIHW Ethics Committee and the state and territory cancer registries. General database enquiries and enquiries about the release of statistical data should be addressed to:

Head, Health Registers and Cancer Monitoring Unit  
Australian Institute of Health and Welfare  
GPO Box 570  
Canberra ACT 2601  
Phone: (02) 6244 1118  
Email: [cancer@aihw.gov.au](mailto:cancer@aihw.gov.au)

## 2 Incidence in 2005

### 2.1 Main findings

#### Males

There were 56,158 new cases of cancer diagnosed in males in 2005. By far the most common was prostate cancer (16,349 cases), which made up over 29% of all diagnoses and had well over double the number of cases of the second most common cancer, colorectal cancer (7,181 cases). The next three most common cancers were melanoma of the skin (6,044 cases), lung cancer (5,738) and lymphoma (2,373). The top five cancers accounted for over 67% of all diagnoses.

Based on 2005 data, the risk for a male of being diagnosed with cancer before age 75 was 1 in 3, and before age 85 was 1 in 2 (see Appendix D for an explanation of how these risks were calculated).

#### Females

There were 44,356 new cases of cancer diagnosed in females in 2005. By far the most common was breast cancer (12,170 cases), which made up over 27% of all diagnoses and had over double the number of cases of the second most common cancer, colorectal cancer (5,895 cases). The next three most common cancers were melanoma of the skin (4,640 cases), lung cancer (3,444) and lymphoma (2,057). The top five cancers accounted for over 63% of all diagnoses.

Based on 2005 data, the risk for a female of being diagnosed with cancer before age 75 was 1 in 4 and before age 85 was 1 in 3.

#### Sexes combined and compared

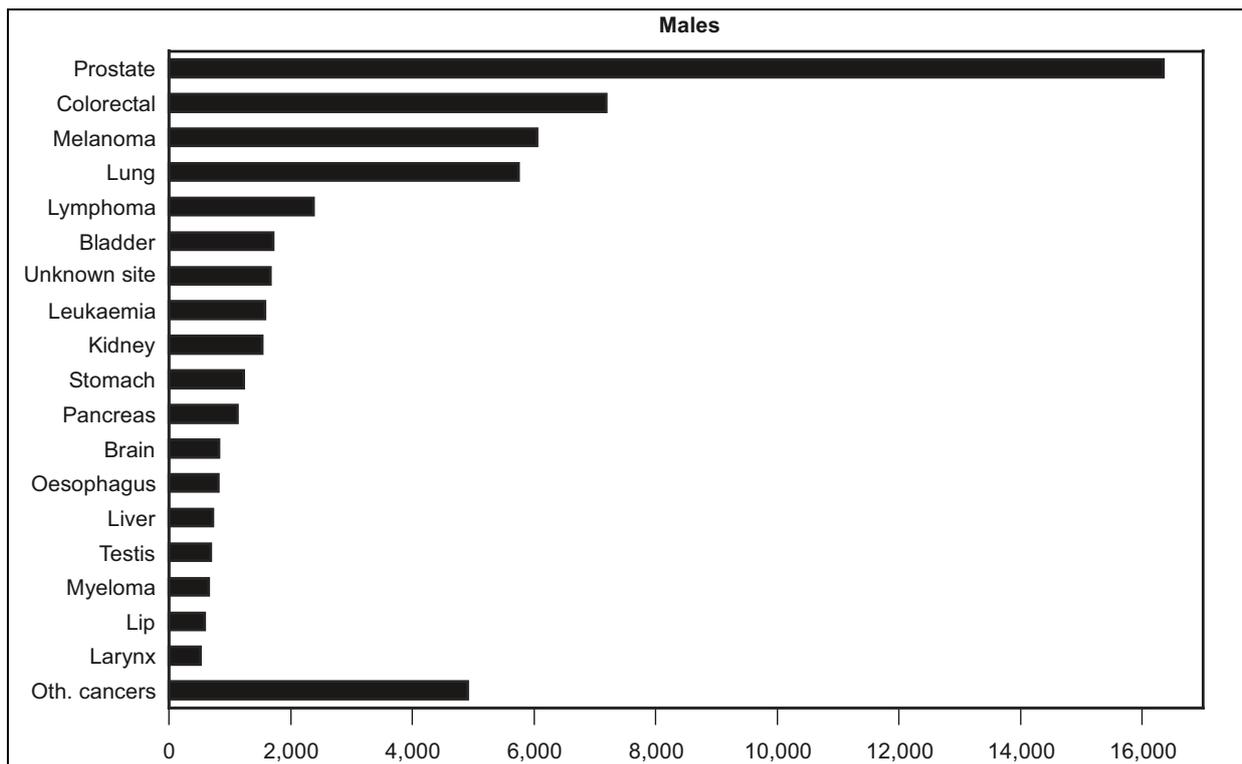
There were 100,514 new cases of cancer diagnosed in 2005, the first time this number has reached six figures. The five most common cancers were prostate cancer (16,349 cases), colorectal cancer (13,076), breast cancer (12,265), melanoma of the skin (10,684) and lung cancer (9,182). These five cancers accounted for over 61% of all diagnoses.

Based on 2005 data, the risk of being diagnosed with cancer before age 75 was 1 in 3 and before age 85 was 1 in 2.

The most common cancers for males and females are largely the same, and occur in mostly the same order, except for the sex-specific cancers. For males the only sex-specific cancer to show in the top 10 is prostate cancer and it is by far the most common. In females this role is taken by breast cancer (which can occur in males but is rare). However, females also have two other sex-specific cancers in the top 10, namely uterine cancer and ovarian cancer.

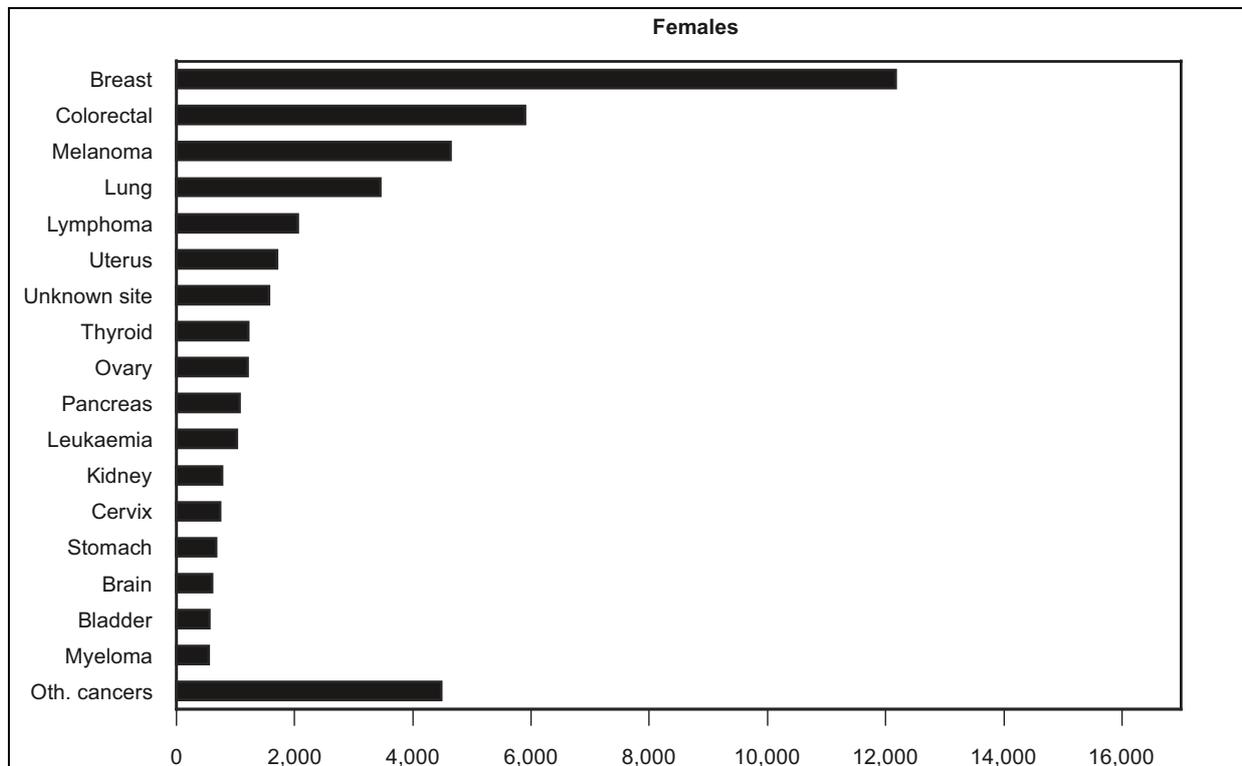
Almost all cancers occur at higher rates in males than females, with an overall male-to-female ratio of 1.4, that is, the male rate is 1.4 times the female rate (final column of Table

2.4). The most extreme imbalances in this ratio occur for laryngeal cancer (male-to-female ratio of 9.3), Kaposi sarcoma (7.5), hypopharyngeal cancer (5.5) and mesothelioma (5.2). The only cancers that have consistently higher rates in females are breast cancer (female-to-male ratio of 111), cancer of the peritoneum and retroperitoneum (4.0) and thyroid cancer (3.0).



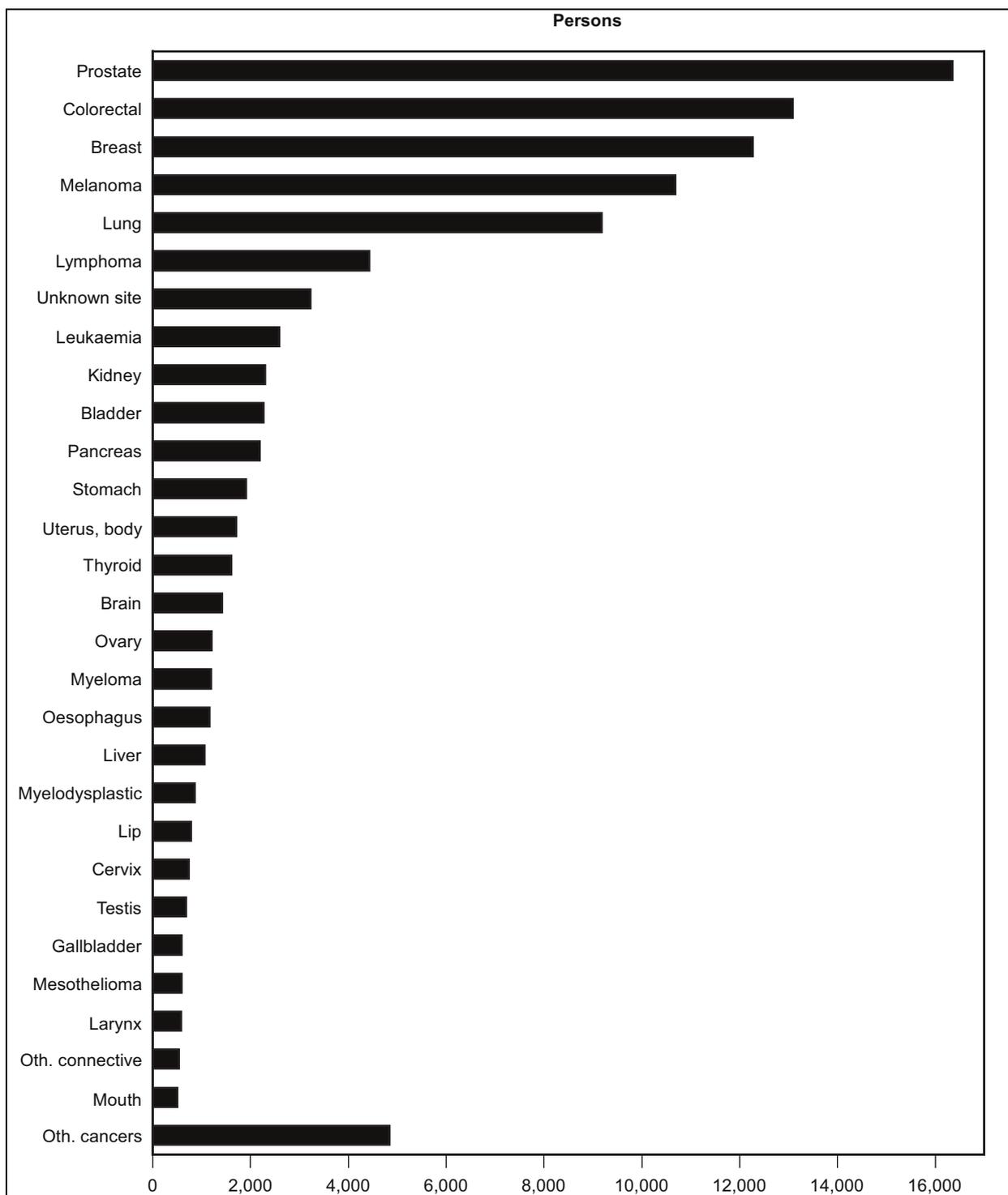
Source: National Cancer Statistics Clearing House, AIHW.

**Figure 2.1: Cancers with at least 500 new cases, males, Australia, 2005**



Source: National Cancer Statistics Clearing House, AIHW.

**Figure 2.2: Cancers with at least 500 new cases, females, Australia, 2005**



Source: National Cancer Statistics Clearing House, AIHW.

**Figure 2.3: Cancers with at least 500 new cases, persons, Australia, 2005**

**Table 2.1: The 10 most common<sup>(a)</sup> cancers, Australia, 2005**

Cancer type	Number	Per cent of total	ASR(A) <sup>(b)</sup>	ASR(W) <sup>(c)</sup>	Risk to age 75	Risk to age 85
<b>Males</b>						
Prostate	16,349	29.1	164.4	117.5	1 in 8	1 in 5
Colorectal	7,181	12.8	73.2	51.6	1 in 19	1 in 10
Melanoma	6,044	10.8	60.9	46.1	1 in 23	1 in 14
Lung	5,738	10.2	59.1	40.5	1 in 24	1 in 12
Lymphoma	2,373	4.2	24.0	18.5	1 in 56	1 in 34
Bladder	1,707	3.0	18.1	11.8	1 in 95	1 in 39
Unknown site	1,658	3.0	17.6	11.6	1 in 98	1 in 42
Leukaemia	1,568	2.8	16.1	12.4	1 in 89	1 in 50
Kidney	1,528	2.7	15.3	11.5	1 in 85	1 in 52
Stomach	1,228	2.2	12.7	8.7	1 in 113	1 in 55
<i>All cancers<sup>(a)</sup></i>	<i>56,158</i>	<i>100.0</i>	<i>570.9</i>	<i>412.3</i>	<i>1 in 3</i>	<i>1 in 2</i>
<b>Females</b>						
Breast	12,170	27.4	110.9	88.3	1 in 11	1 in 9
Colorectal	5,895	13.3	50.8	35.7	1 in 28	1 in 15
Melanoma	4,640	10.5	42.5	34.6	1 in 31	1 in 22
Lung	3,444	7.8	30.2	21.7	1 in 42	1 in 24
Lymphoma	2,057	4.6	18.3	14.2	1 in 75	1 in 44
Uterus	1,706	3.8	15.3	11.8	1 in 75	1 in 53
Unknown site	1,568	3.5	13.0	8.5	1 in 135	1 in 59
Thyroid	1,216	2.7	11.6	10.2	1 in 112	1 in 98
Ovary	1,205	2.7	10.7	8.2	1 in 120	1 in 77
Pancreas	1,062	2.4	8.9	5.9	1 in 184	1 in 80
<i>All cancers<sup>(a)</sup></i>	<i>44,356</i>	<i>100.0</i>	<i>394.6</i>	<i>300.7</i>	<i>1 in 4</i>	<i>1 in 3</i>
<b>Persons</b>						
Prostate	16,349	16.3	—	—	—	—
Colorectal	13,076	13.0	61.3	43.2	1 in 23	1 in 12
Breast	12,265	12.2	—	—	—	—
Melanoma	10,684	10.6	50.6	39.8	1 in 26	1 in 17
Lung	9,182	9.1	43.1	30.3	1 in 30	1 in 16
Lymphoma	4,430	4.4	21.0	16.3	1 in 64	1 in 39
Unknown site	3,226	3.2	15.0	9.9	1 in 114	1 in 50
Leukaemia	2,591	2.6	12.3	9.6	1 in 114	1 in 66
Kidney	2,297	2.3	10.8	8.2	1 in 117	1 in 74
Bladder	2,262	2.3	10.6	7.0	1 in 149	1 in 66
<i>All cancers<sup>(a)</sup></i>	<i>100,514</i>	<i>100.0</i>	<i>472.7</i>	<i>351.3</i>	<i>1 in 3</i>	<i>1 in 2</i>

(a) Excluding non-melanocytic skin cancer.

(b) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 males/females/persons.

(c) Age-standardised incidence rate using the WHO 2000 World Standard Population, and expressed per 100,000 males/females/persons.

Source: National Cancer Statistics Clearing House, AIHW.

**Table 2.2: Cancer incidence in males, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	Risk to age 75	Risk to age 85
Lip (C00)	576	1.0	5.8	4.5	1 in 234	1 in 149
Tongue (C01–C02)	309	0.6	3.0	2.4	1 in 384	1 in 282
Mouth (C03–C06)	324	0.6	3.1	2.5	1 in 355	1 in 259
Major salivary glands (C07–C08)	144	0.3	1.5	1.0	1 in 1,006	1 in 495
Oropharynx (C09–C10)	264	0.5	2.5	2.0	1 in 438	1 in 361
Nasopharynx (C11)	88	0.2	0.9	0.7	1 in 1,442	1 in 1,168
Hypopharynx (C12–C13)	114	0.2	1.1	0.8	1 in 987	1 in 643
Pharynx, unspecified (C14)	72	0.1	0.7	0.5	1 in 1,693	1 in 1,113
Nasal cavity, middle ear & sinuses (C30–C31)	109	0.2	1.1	0.8	1 in 1,234	1 in 703
Larynx (C32)	516	0.9	5.1	3.8	1 in 234	1 in 143
<i>Head and neck (C01–C14, C30–C32)</i>	<i>1,940</i>	<i>3.5</i>	<i>19.1</i>	<i>14.6</i>	<i>1 in 63</i>	<i>1 in 42</i>
Oesophagus (C15)	808	1.4	8.3	5.8	1 in 170	1 in 87
Stomach (C16)	1,228	2.2	12.7	8.7	1 in 113	1 in 55
Small intestine (C17)	185	0.3	1.9	1.4	1 in 687	1 in 440
Colon (C18)	4,400	7.8	45.3	31.2	1 in 31	1 in 16
Rectum (C19–C20)	2,781	5.0	27.9	20.3	1 in 45	1 in 27
<i>Colorectal (C18–C20)</i>	<i>7,181</i>	<i>12.8</i>	<i>73.2</i>	<i>51.6</i>	<i>1 in 19</i>	<i>1 in 10</i>
Anus (C21)	149	0.3	1.5	1.1	1 in 861	1 in 558
Liver (C22)	718	1.3	7.2	5.3	1 in 177	1 in 107
Gallbladder (C23–C24)	275	0.5	2.8	1.9	1 in 547	1 in 250
Pancreas (C25)	1,119	2.0	11.6	7.9	1 in 125	1 in 63
Lung, bronchus & trachea (C33–C34)	5,738	10.2	59.1	40.5	1 in 24	1 in 12
Other thoracic organs (C37–C38)	58	0.1	0.6	0.5	1 in 2,316	1 in 1,448
Bone & articular cartilage (C40–C41)	110	0.2	1.1	1.0	1 in 1,259	1 in 885
Melanoma of skin (C43)	6,044	10.8	60.9	46.1	1 in 23	1 in 14
Mesothelioma (C45)	485	0.9	5.0	3.4	1 in 277	1 in 134
Kaposi sarcoma (C46)	50	0.1	0.5	0.4	1 in 3,466	1 in 1,827
Peritoneum & retroperitoneum (C48)	32	0.1	0.3	0.3	1 in 3,367	1 in 2,967
Other connective and soft tissue (C47, C49)	284	0.5	2.9	2.3	1 in 482	1 in 300
Breast (C50)	95	0.2	1.0	0.7	1 in 1,339	1 in 747
Penis (C60)	69	0.1	0.7	0.5	1 in 2,225	1 in 1,071
Prostate (C61)	16,349	29.1	164.4	117.5	1 in 8	1 in 5
Testis (C62)	677	1.2	6.7	6.7	1 in 212	1 in 210
Other male genital organs (C63)	14	0.0	0.1	0.1	1 in 8,660	1 in 5,049
Kidney (C64)	1,528	2.7	15.3	11.5	1 in 85	1 in 52
Bladder (C67)	1,707	3.0	18.1	11.8	1 in 95	1 in 39
Other urinary organs (C65–C66, C68)	185	0.3	1.9	1.3	1 in 812	1 in 349
Eye (C69)	156	0.3	1.6	1.2	1 in 934	1 in 497

(continued)

**Table 2.2 (continued): Cancer incidence in males, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	Risk to age 75	Risk to age 85
Brain (C71)	812	1.4	8.0	6.6	1 in 153	1 in 105
Other central nervous system (C70, C72)	33	0.1	0.3	0.3	1 in 3,517	1 in 3,083
Thyroid (C73)	396	0.7	3.9	3.3	1 in 314	1 in 261
Other endocrine organs (C74–C75)	45	0.1	0.4	0.4	1 in 3,137	1 in 2,373
Hodgkin lymphoma (C81)	279	0.5	2.8	2.7	1 in 489	1 in 406
Non-Hodgkin lymphoma (C82–C85, C96)	2,094	3.7	21.2	15.9	1 in 63	1 in 37
<i>All lymphomas (C81–C85, C96)</i>	<i>2,373</i>	<i>4.2</i>	<i>24.0</i>	<i>18.5</i>	<i>1 in 56</i>	<i>1 in 34</i>
Immunoproliferative cancers (C88)	53	0.1	0.6	0.4	1 in 3,594	1 in 1,102
Myeloma (C90)	652	1.2	6.8	4.6	1 in 217	1 in 111
Lymphoid leukaemia (C91)	787	1.4	8.0	6.4	1 in 169	1 in 102
Myeloid leukaemia (C92–C94)	753	1.3	7.8	5.8	1 in 192	1 in 101
Leukaemia, unspecified (C95)	28	0.0	0.3	0.2	1 in 6,577	1 in 2,651
<i>All leukaemias (C91–C95)</i>	<i>1,568</i>	<i>2.8</i>	<i>16.1</i>	<i>12.4</i>	<i>1 in 89</i>	<i>1 in 50</i>
Polycythaemia vera (D45)	171	0.3	1.7	1.3	1 in 799	1 in 431
Myelodysplastic syndromes (D46)	490	0.9	5.5	3.2	1 in 466	1 in 129
Other chronic myeloproliferative diseases (D47 <sup>(c)</sup> )	147	0.3	1.5	1.0	1 in 1,103	1 in 436
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(c)</sup>)</i>	<i>5,454</i>	<i>9.7</i>	<i>56.1</i>	<i>41.5</i>	<i>1 in 26</i>	<i>1 in 14</i>
Unknown primary site (C26, C39, C76, C80)	1,658	3.0	17.6	11.6	1 in 98	1 in 42
<b>All cancers (C00–C96<sup>(d)</sup>, D45–D47<sup>(c)</sup>)</b>	<b>56,158</b>	<b>100.0</b>	<b>570.9</b>	<b>412.3</b>	<b>1 in 3</b>	<b>1 in 2</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 males.

(b) Age-standardised incidence rate using the WHO World 2000 Standard Population, and expressed per 100,000 males.

(c) Only includes D47.1 and D47.3.

(d) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 2.3: Cancer incidence in females, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	Risk to age 75	Risk to age 85
Lip (C00)	210	0.5	1.8	1.3	1 in 801	1 in 437
Tongue (C01–C02)	170	0.4	1.5	1.2	1 in 828	1 in 579
Mouth (C03–C06)	176	0.4	1.5	1.1	1 in 841	1 in 528
Major salivary glands (C07–C08)	114	0.3	1.0	0.8	1 in 1,507	1 in 940
Oropharynx (C09–C10)	70	0.2	0.6	0.5	1 in 1,717	1 in 1,168
Nasopharynx (C11)	33	0.1	0.3	0.3	1 in 4,161	1 in 3,291
Hypopharynx (C12–C13)	23	0.1	0.2	0.2	1 in 6,518	1 in 4,451
Pharynx, unspecified (C14)	17	0.0	0.1	0.1	1 in 7,880	1 in 6,069
Nasal cavity, middle ear & sinuses (C30–C31)	67	0.2	0.6	0.4	1 in 2,429	1 in 1,442
Larynx (C32)	62	0.1	0.6	0.4	1 in 1,924	1 in 1,274
<i>Head and neck (C01–C14, C30–C32)</i>	<i>732</i>	<i>1.7</i>	<i>6.5</i>	<i>5.0</i>	<i>1 in 197</i>	<i>1 in 130</i>
Oesophagus (C15)	357	0.8	2.9	1.9	1 in 568	1 in 233
Stomach (C16)	676	1.5	5.8	4.0	1 in 257	1 in 130
Small intestine (C17)	175	0.4	1.5	1.1	1 in 787	1 in 500
Colon (C18)	4,184	9.4	35.8	24.8	1 in 41	1 in 20
Rectum (C19–C20)	1,711	3.9	15.0	10.9	1 in 87	1 in 50
<i>Colorectal (C18–C20)</i>	<i>5,895</i>	<i>13.3</i>	<i>50.8</i>	<i>35.7</i>	<i>1 in 28</i>	<i>1 in 15</i>
Anus (C21)	176	0.4	1.6	1.2	1 in 788	1 in 541
Liver (C22)	342	0.8	2.9	2.0	1 in 579	1 in 238
Gallbladder (C23–C24)	324	0.7	2.7	1.9	1 in 558	1 in 259
Pancreas (C25)	1,062	2.4	8.9	5.9	1 in 184	1 in 80
Lung, bronchus & trachea (C33–C34)	3,444	7.8	30.2	21.7	1 in 42	1 in 24
Other thoracic organs (C37–C38)	29	0.1	0.3	0.2	1 in 3,950	1 in 3,706
Bone & articular cartilage (C40–C41)	87	0.2	0.8	0.8	1 in 1,719	1 in 1,318
Melanoma of skin (C43)	4,640	10.5	42.5	34.6	1 in 31	1 in 22
Mesothelioma (C45)	112	0.3	1.0	0.7	1 in 1,344	1 in 706
Kaposi sarcoma (C46)	8	0.0	0.1	0.0	1 in 25,132	1 in 10,597
Peritoneum & retroperitoneum (C48)	135	0.3	1.2	1.0	1 in 912	1 in 666
Other connective and soft tissue (C47, C49)	252	0.6	2.3	2.0	1 in 562	1 in 393
Breast (C50)	12,170	27.4	110.9	88.3	1 in 11	1 in 9
Vulva (C51)	264	0.6	2.3	1.6	1 in 704	1 in 340
Vagina (C52)	76	0.2	0.7	0.5	1 in 2,549	1 in 1,055
Cervix (C53)	734	1.7	6.9	5.9	1 in 198	1 in 157
Uterus, body (C54)	1,706	3.8	15.3	11.8	1 in 75	1 in 53
Uterus, unspecified (C55)	124	0.3	1.1	0.8	1 in 1,492	1 in 803
Ovary (C56)	1,205	2.7	10.7	8.2	1 in 120	1 in 77
Other female genital organs (C57)	69	0.2	0.6	0.5	1 in 1,814	1 in 1,350
Placenta (C58)	15	0.0	0.1	0.1	1 in 9,865	1 in 9,865

(continued)

**Table 2.3 (continued): Cancer incidence in females, Australia, 2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>Number</b>	<b>Per cent of total</b>	<b>ASR(A)<sup>(a)</sup></b>	<b>ASR(W)<sup>(b)</sup></b>	<b>Risk to age 75</b>	<b>Risk to age 85</b>
<i>Gynaecological (C51–C58)</i>	4,193	9.5	37.7	29.4	1 in 34	1 in 23
Kidney (C64)	769	1.7	6.8	5.2	1 in 185	1 in 116
Bladder (C67)	555	1.3	4.6	3.1	1 in 337	1 in 149
Other urinary organs (C65–C66, C68)	157	0.4	1.3	0.8	1 in 1,287	1 in 460
Eye (C69)	122	0.3	1.1	0.9	1 in 1,156	1 in 801
Brain (C71)	610	1.4	5.6	4.6	1 in 235	1 in 156
Other central nervous system (C70, C72)	44	0.1	0.4	0.4	1 in 3,275	1 in 2,319
Thyroid (C73)	1,216	2.7	11.6	10.2	1 in 112	1 in 98
Other endocrine organs (C74–C75)	30	0.1	0.3	0.3	1 in 4,150	1 in 3,250
Hodgkin lymphoma (C81)	248	0.6	2.4	2.4	1 in 573	1 in 480
Non-Hodgkin lymphoma (C82–C85, C96)	1,809	4.1	15.9	11.8	1 in 85	1 in 48
<i>All lymphomas (C81–C85, C96)</i>	<i>2,057</i>	<i>4.6</i>	<i>18.3</i>	<i>14.2</i>	<i>1 in 75</i>	<i>1 in 44</i>
Immunoproliferative cancers (C88)	32	0.1	0.3	0.2	1 in 5,156	1 in 2,445
Myeloma (C90)	544	1.2	4.7	3.3	1 in 317	1 in 156
Lymphoid leukaemia (C91)	427	1.0	3.8	3.1	1 in 363	1 in 215
Myeloid leukaemia (C92–C94)	557	1.3	4.9	3.8	1 in 290	1 in 167
Leukaemia, unspecified (C95)	39	0.1	0.3	0.2	1 in 6,605	1 in 3,043
<i>All leukaemias (C91–C95)</i>	<i>1,023</i>	<i>2.3</i>	<i>9.0</i>	<i>7.1</i>	<i>1 in 158</i>	<i>1 in 91</i>
Polycythaemia vera (D45)	102	0.2	0.9	0.6	1 in 1,560	1 in 923
Myelodysplastic syndromes (D46)	367	0.8	3.0	1.9	1 in 759	1 in 235
Other chronic myeloproliferative diseases (D47 <sup>(c)</sup> )	141	0.3	1.2	0.9	1 in 1,140	1 in 618
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(c)</sup>)</i>	<i>4,266</i>	<i>9.6</i>	<i>37.4</i>	<i>28.2</i>	<i>1 in 39</i>	<i>1 in 21</i>
Unknown primary site (C26, C39, C76, C80)	1,568	3.5	13.0	8.5	1 in 135	1 in 59
<b>All cancers (C00–C96<sup>(d)</sup>, D45–D47<sup>(c)</sup>)</b>	<b>44,356</b>	<b>100.0</b>	<b>394.6</b>	<b>300.7</b>	<b>1 in 4</b>	<b>1 in 3</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 females.

(b) Age-standardised incidence rate using the WHO World 2000 Standard Population, and expressed per 100,000 females.

(c) Only includes D47.1 and D47.3.

(d) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 2.4: Cancer incidence in persons, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	Risk to age 75	Risk to age 85	M:F ratio <sup>(c)</sup>
Lip (C00)	786	0.8	3.7	2.8	1 in 364	1 in 228	3.2
Tongue (C01–C02)	479	0.5	2.2	1.8	1 in 526	1 in 385	2.0
Mouth (C03–C06)	500	0.5	2.3	1.8	1 in 502	1 in 352	2.0
Major salivary glands (C07–C08)	258	0.3	1.2	0.9	1 in 1,214	1 in 673	1.5
Oropharynx (C09–C10)	334	0.3	1.6	1.3	1 in 701	1 in 556	4.0
Nasopharynx (C11)	121	0.1	0.6	0.5	1 in 2,151	1 in 1,743	2.8
Hypopharynx (C12–C13)	137	0.1	0.6	0.5	1 in 1,735	1 in 1,179	5.5
Pharynx, unspecified (C14)	89	0.1	0.4	0.3	1 in 2,819	1 in 1,973	4.9
Nasal cavity, middle ear & sinuses (C30–C31)	176	0.2	0.8	0.6	1 in 1,643	1 in 969	1.9
Larynx (C32)	578	0.6	2.7	2.0	1 in 421	1 in 271	9.3
<i>Head and neck (C01–C14, C30–C32)</i>	<i>2,672</i>	<i>2.7</i>	<i>12.5</i>	<i>9.6</i>	<i>1 in 95</i>	<i>1 in 65</i>	<i>2.9</i>
Oesophagus (C15)	1,165	1.2	5.4	3.7	1 in 264	1 in 131	2.8
Stomach (C16)	1,904	1.9	9.0	6.2	1 in 158	1 in 81	2.2
Small intestine (C17)	360	0.4	1.7	1.3	1 in 733	1 in 469	1.2
Colon (C18)	8,584	8.5	40.2	27.8	1 in 36	1 in 18	1.3
Rectum (C19–C20)	4,492	4.5	21.1	15.4	1 in 60	1 in 36	1.9
<i>Colorectal (C18–C20)</i>	<i>13,076</i>	<i>13.0</i>	<i>61.3</i>	<i>43.2</i>	<i>1 in 23</i>	<i>1 in 12</i>	<i>1.4</i>
Anus (C21)	325	0.3	1.5	1.2	1 in 825	1 in 549	1.0
Liver (C22)	1,060	1.1	5.0	3.6	1 in 273	1 in 150	2.5
Gallbladder (C23–C24)	599	0.6	2.8	1.9	1 in 552	1 in 255	1.0
Pancreas (C25)	2,181	2.2	10.2	6.9	1 in 149	1 in 71	1.3
Lung, bronchus & trachea (C33–C34)	9,182	9.1	43.1	30.3	1 in 30	1 in 16	2.0
Other thoracic organs (C37–C38)	87	0.1	0.4	0.4	1 in 2,913	1 in 2,179	2.1
Bone & articular cartilage (C40–C41)	197	0.2	0.9	0.9	1 in 1,457	1 in 1,070	1.3
Melanoma of skin (C43)	10,684	10.6	50.6	39.8	1 in 26	1 in 17	1.4
Mesothelioma (C45)	597	0.6	2.8	1.9	1 in 465	1 in 240	5.2
Kaposi sarcoma (C46)	58	0.1	0.3	0.2	1 in 6,140	1 in 3,330	7.5
Peritoneum & retroperitoneum (C48)	167	0.2	0.8	0.6	1 in 1,427	1 in 1,057	0.3
Other connective and soft tissue (C47, C49)	536	0.5	2.6	2.1	1 in 520	1 in 344	1.2
Breast (C50)	12,265	12.2	—	—	—	—	0.01
Vulva (C51)	264	0.3	—	—	—	—	—
Vagina (C52)	76	0.1	—	—	—	—	—
Cervix (C53)	734	0.7	—	—	—	—	—
Uterus, body (C54)	1,706	1.7	—	—	—	—	—
Uterus, unspecified (C55)	124	0.1	—	—	—	—	—

(continued)

**Table 2.4 (continued): Cancer incidence in persons, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	Risk to age 75	Risk to age 85	M:F ratio <sup>(c)</sup>
Ovary (C56)	1,205	1.2	—	—	—	—	—
Other female genital organs (C57)	69	0.1	—	—	—	—	—
Placenta (C58)	15	0.0	—	—	—	—	—
<i>Gynaecological (C51–C58)</i>	<i>4,193</i>	<i>4.2</i>	—	—	—	—	—
Penis (C60)	69	0.1	—	—	—	—	—
Prostate (C61)	16,349	16.3	—	—	—	—	—
Testis (C62)	677	0.7	—	—	—	—	—
Other male genital organs (C63)	14	0.0	—	—	—	—	—
Kidney (C64)	2,297	2.3	10.8	8.2	1 in 117	1 in 74	2.2
Bladder (C67)	2,262	2.3	10.6	7.0	1 in 149	1 in 66	3.9
Other urinary organs (C65–C66, C68)	342	0.3	1.6	1.1	1 in 998	1 in 400	1.5
Eye (C69)	278	0.3	1.3	1.0	1 in 1,034	1 in 629	1.4
Brain (C71)	1,422	1.4	6.8	5.6	1 in 186	1 in 126	1.4
Other central nervous system (C70, C72)	77	0.1	0.4	0.3	1 in 3,388	1 in 2,604	0.8
Thyroid (C73)	1,612	1.6	7.8	6.8	1 in 165	1 in 141	0.3
Other endocrine organs (C74–C75)	75	0.1	0.4	0.3	1 in 3,554	1 in 2,768	1.5
Hodgkin lymphoma (C81)	527	0.5	2.6	2.5	1 in 528	1 in 441	1.2
Non-Hodgkin lymphoma (C82–C85, C96)	3,903	3.9	18.4	13.8	1 in 73	1 in 42	1.3
<i>All lymphomas (C81–C85, C96)</i>	<i>4,430</i>	<i>4.4</i>	<i>21.0</i>	<i>16.3</i>	<i>1 in 64</i>	<i>1 in 39</i>	<i>1.3</i>
Immunoproliferative cancers (C88)	85	0.1	0.4	0.3	1 in 4,246	1 in 1,606	2.1
Myeloma (C90)	1,196	1.2	5.6	3.9	1 in 259	1 in 131	1.5
Lymphoid leukaemia (C91)	1,214	1.2	5.8	4.7	1 in 231	1 in 141	2.1
Myeloid leukaemia (C92–C94)	1,310	1.3	6.2	4.7	1 in 232	1 in 129	1.6
Leukaemia, unspecified (C95)	67	0.1	0.3	0.2	1 in 6,566	1 in 2,845	0.9
<i>All leukaemias (C91–C95)</i>	<i>2,591</i>	<i>2.6</i>	<i>12.3</i>	<i>9.6</i>	<i>1 in 114</i>	<i>1 in 66</i>	<i>1.8</i>
Polycythaemia vera (D45)	273	0.3	1.3	0.9	1 in 1,060	1 in 603	2.0
Myelodysplastic syndromes (D46)	857	0.9	4.0	2.4	1 in 582	1 in 173	1.9
Other chronic myeloproliferative diseases (D47 <sup>(d)</sup> )	288	0.3	1.4	0.9	1 in 1,124	1 in 523	1.3
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(d)</sup>)</i>	<i>9,720</i>	<i>9.7</i>	<i>45.9</i>	<i>34.4</i>	<i>1 in 32</i>	<i>1 in 17</i>	<i>1.5</i>
Unknown primary site (C26, C39, C76, C80)	3,226	3.2	15.0	9.9	1 in 114	1 in 50	1.4
<b>All cancers (C00–C96<sup>(e)</sup>, D45–D47<sup>(d)</sup>)</b>	<b>100,514</b>	<b>100.0</b>	<b>472.7</b>	<b>351.3</b>	<b>1 in 3</b>	<b>1 in 2</b>	<b>1.4</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 persons.

(b) Age-standardised incidence rate using the WHO World 2000 Standard Population, and expressed per 100,000 persons.

(c) Male-to-female ratio: ASR(A) for males divided by ASR(A) for females.

(d) Only includes D47.1 and D47.3.

(e) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

## 3 Incidence projections for 2006–2010

### 3.1 Main assumption

The main assumption behind the projections presented in this chapter is that statistically significant age-, sex- and cancer-specific trends observed over the past 10 years will continue for the next 5 years. The complete methodology is explained in Appendix D.

### 3.2 Main findings

#### Males

The age-standardised rate of cancer in males is projected to grow by 1.2 cases per 100,000 males per year. The cancers with increasing rates are prostate cancer (a growth of 3.1 per year), melanoma of the skin (0.7), liver cancer (0.2), lymphoma (0.1), testicular cancer (0.1) and thyroid cancer (0.1). Decreasing rates are occurring for lung cancer (-1.1), cancer of unknown primary site (-0.4), colorectal cancer (-0.4), stomach cancer (-0.3), bladder cancer (-0.2), laryngeal cancer (-0.1) and myelodysplastic syndromes (-0.1). The apparently decreasing rate for lip cancer (-0.5) is believed to be mostly an artefact of changing coding practices in the cancer registries: until recently many cancers on or very close to the lip were coded as lip cancers but these cancers are now being coded as skin cancers.

The number of new cases of cancer in males is expected to grow by 1,916 cases per year. This is a consequence of the increasing rate noted above, the ageing of Australia's population and the general increase in the population. The five cancers that are expected to experience the greatest growth are prostate cancer (939 extra cases per year), melanoma of the skin (248), colorectal cancer (189), lymphoma (75) and leukaemia (51). As noted above, the apparent large decrease for lip cancer (38 fewer cases per year) is probably mostly an artefact.

#### Females

The age-standardised rate of cancer in females is projected to grow by 0.5 cases per 100,000 females per year. The cancers with increasing rates are thyroid cancer (a growth of 0.5 per year), lung cancer (0.4), melanoma of the skin (0.3), liver cancer (0.1), breast cancer (0.1) and cancer of the uterus unspecified (that is, not stated whether the cervix or body) (0.1). Decreasing rates are occurring for cervical cancer (-0.3), colorectal cancer (-0.2), stomach cancer (-0.1), cancer of unknown primary site (-0.1) and bladder cancer (-0.1).

The number of new cases of cancer in females is expected to grow by 1,174 cases per year. The five cancers that are projected to experience the greatest growth are breast cancer (311 extra cases per year), melanoma of the skin (144), lung cancer (140), colorectal cancer (130) and thyroid cancer (77). It is projected that there will be 25 fewer cases of cervical cancer per year.

## Sexes combined and compared

The number of new cases of cancer is expected to grow by 3,090 cases per year. The greatest growth is projected for prostate cancer (939 extra cases per year) followed by melanoma of the skin (392), colorectal cancer (319), breast cancer (314) and lung cancer (190). Cervical cancer is expected to decrease by 25 cases per year.

Both sexes are projected to have increasing rates of cancer overall: an extra 1.2 cases per 100,000 males per year and an extra 0.5 cases per 100,000 females per year. The larger increase for males is mostly due to a large increase expected for prostate cancer (3.1). The rates for both sexes are expected to increase for melanoma of the skin (0.7 for males, 0.3 for females), thyroid cancer (0.1 for males, 0.5 for females) and liver cancer (0.2 for males, 0.1 for females) while both are expected to decrease for colorectal cancer (-0.4 for males, -0.2 for females), cancer of unknown primary site (-0.4 for males, -0.1 for females), stomach cancer (-0.3 for males, -0.1 for females) and bladder cancer (-0.2 for males, -0.1 for females).

Lung cancer stands out as having the strongest opposite trend between the sexes: the rate for females is expected to grow by 0.4 per year whereas for males it is expected to drop by 1.1. Lung cancer in both sexes is strongly associated with smoking, and there is a lag of 20 to 30 years between taking up regular smoking and developing lung cancer. The smoking rate for males was on the decline in the 1970s and 1980s whereas it was still increasing for females during that time. This difference in past trends in smoking rates explains the difference in the trends of lung cancer rates observed today.

Other cancers for which the sex-specific trends in rates are opposite are laryngeal cancer (down 0.1 for males, stable for females), breast cancer (stable for males, up 0.1 for females), lymphoma (up 0.1 for males, stable for females) and myelodysplastic syndromes (down 0.1 for males, stable for females).

**Table 3.1: Cancer incidence projections, number of new cases, males, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Lip (C00)	572	538	501	462	420	-38
Tongue (C01–C02)	352	362	373	383	394	11
Mouth (C03–C06)	304	308	313	317	322	4
Major salivary glands (C07–C08)	149	153	157	160	164	4
Oropharynx (C09–C10)	259	267	275	284	292	8
Nasopharynx (C11)	90	92	94	96	98	2
Hypopharynx (C12–C13)	115	112	108	107	105	-2
Pharynx, unspecified (C14)	67	69	70	72	74	2
Nasal cavity, middle ear & sinuses (C30–C31)	99	102	105	108	111	3
Larynx (C32)	510	510	508	506	502	-2
<i>Head and neck (C01–C14, C30–C32)</i>	<i>1,944</i>	<i>1,974</i>	<i>2,003</i>	<i>2,033</i>	<i>2,062</i>	<i>30</i>
Oesophagus (C15)	828	855	880	906	933	26
Stomach (C16)	1,274	1,283	1,288	1,293	1,297	6
Small intestine (C17)	193	202	212	221	232	10
Colon (C18)	4,596	4,728	4,852	4,979	5,112	128
Rectum (C19–C20)	2,852	2,916	2,976	3,036	3,097	61
<i>Colorectal (C18–C20)</i>	<i>7,448</i>	<i>7,644</i>	<i>7,827</i>	<i>8,015</i>	<i>8,209</i>	<i>189</i>
Anus (C21)	126	130	134	137	141	4
Liver (C22)	746	785	823	863	904	39
Gallbladder (C23–C24)	281	286	290	294	299	4
Pancreas (C25)	1,114	1,150	1,185	1,221	1,258	36
Lung, bronchus & trachea (C33–C34)	5,761	5,825	5,873	5,920	5,965	50
Other thoracic organs (C37–C38)	52	53	54	55	56	1
Bone & articular cartilage (C40–C41)	113	116	119	121	124	3
Melanoma of skin (C43)	6,143	6,383	6,625	6,875	7,135	248
Mesothelioma (C45)	523	543	563	584	605	20
Kaposi sarcoma (C46)	41	41	41	42	43	1
Peritoneum & retroperitoneum (C48)	36	37	38	39	40	1
Other connective and soft tissue (C47, C49)	318	326	334	342	349	8
Breast (C50)	99	101	104	106	109	2
Penis (C60)	77	79	82	84	86	2
Prostate (C61)	16,011	16,923	17,835	18,784	19,775	939
Testis (C62)	674	690	707	724	742	17
Other male genital organs (C63)	24	25	25	26	27	1
Kidney (C64)	1,459	1,503	1,546	1,590	1,636	44
Bladder (C67)	1,831	1,875	1,913	1,950	1,988	39
Other urinary organs (C65–C66, C68)	214	220	226	232	240	6
Eye (C69)	166	170	174	178	183	4

*(continued)*

**Table 3.1 (continued): Cancer incidence projections, number of new cases, males, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Brain (C71)	840	860	879	899	920	20
Other central nervous system (C70, C72)	38	39	40	41	42	1
Thyroid (C73)	370	385	401	417	434	16
Other endocrine organs (C74–C75)	47	48	48	49	50	1
Hodgkin lymphoma (C81)	270	278	285	293	302	8
Non-Hodgkin lymphoma (C82–C85, C96)	2,201	2,269	2,334	2,402	2,472	68
<i>All lymphomas (C81–C85, C96)</i>	<i>2,471</i>	<i>2,546</i>	<i>2,620</i>	<i>2,696</i>	<i>2,774</i>	<i>75</i>
Immunoproliferative neoplasms (C88)	57	59	61	63	65	2
Myeloma (C90)	716	739	761	784	808	23
Lymphoid leukaemia (C91)	842	867	892	917	943	25
Myeloid leukaemia (C92–C94)	802	827	851	876	902	25
Leukaemia, unspecified (C95)	46	47	48	49	51	1
<i>All leukaemias (C91–C95)</i>	<i>1,691</i>	<i>1,742</i>	<i>1,792</i>	<i>1,843</i>	<i>1,896</i>	<i>51</i>
Polycythaemia vera (D45)	189	192	195	198	201	3
Myelodysplastic syndromes (D46)	613	632	649	665	682	17
Other chronic myeloproliferative diseases (D47 <sup>(b)</sup> )	177	183	188	193	197	5
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(b)</sup>)</i>	<i>5,915</i>	<i>6,094</i>	<i>6,265</i>	<i>6,441</i>	<i>6,623</i>	<i>176</i>
Unknown primary site (C26, C39, C76, C80)	1,682	1,698	1,708	1,717	1,726	11
<b>All cancers (C00–C96<sup>(c)</sup>, D45–D47<sup>(b)</sup>)</b>	<b>56,961</b>	<b>58,881</b>	<b>60,741</b>	<b>62,662</b>	<b>64,652</b>	<b>1,916</b>

(a) Predicted average annual change in number of cases, based on the gradient of the line that best fits the 1996–2005 data.

(b) Only includes D47.1 and D47.3.

(c) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 3.2: Cancer incidence projections, age-standardised rates<sup>(a)</sup>, males, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Lip (C00)	5.6	5.2	4.7	4.3	3.8	-0.5
Tongue (C01–C02)	3.4	3.4	3.4	3.4	3.4	
Mouth (C03–C06)	2.9	2.9	2.8	2.8	2.8	
Major salivary glands (C07–C08)	1.5	1.5	1.5	1.5	1.5	
Oropharynx (C09–C10)	2.5	2.5	2.5	2.5	2.5	
Nasopharynx (C11)	0.9	0.9	0.9	0.9	0.9	
Hypopharynx (C12–C13)	1.1	1.0	1.0	1.0	0.9	
Pharynx, unspecified (C14)	0.6	0.6	0.6	0.6	0.6	
Nasal cavity, middle ear & sinuses (C30–C31)	1.0	1.0	1.0	1.0	1.0	
Larynx (C32)	4.9	4.8	4.6	4.5	4.4	-0.1
<i>Head and neck (C01–C14, C30–C32)</i>	<i>18.7</i>	<i>18.5</i>	<i>18.3</i>	<i>18.1</i>	<i>18.0</i>	<i>-0.2</i>
Oesophagus (C15)	8.3	8.3	8.3	8.3	8.3	
Stomach (C16)	12.9	12.6	12.3	12.0	11.7	-0.3
Small intestine (C17)	1.9	1.9	2.0	2.0	2.0	
Colon (C18)	46.2	46.0	45.9	45.7	45.6	-0.2
Rectum (C19–C20)	27.9	27.7	27.5	27.3	27.1	-0.2
<i>Colorectal (C18–C20)</i>	<i>74.1</i>	<i>73.8</i>	<i>73.4</i>	<i>73.0</i>	<i>72.7</i>	<i>-0.4</i>
Anus (C21)	1.2	1.2	1.2	1.2	1.2	
Liver (C22)	7.4	7.5	7.7	7.9	8.1	0.2
Gallbladder (C23–C24)	2.8	2.8	2.8	2.7	2.7	
Pancreas (C25)	11.2	11.2	11.2	11.2	11.2	
Lung, bronchus & trachea (C33–C34)	58.1	57.0	55.9	54.9	53.8	-1.1
Other thoracic organs (C37–C38)	0.5	0.5	0.5	0.5	0.5	
Bone & articular cartilage (C40–C41)	1.1	1.1	1.1	1.1	1.1	
Melanoma of skin (C43)	60.3	61.1	61.8	62.6	63.3	0.7
Mesothelioma (C45)	5.3	5.3	5.4	5.4	5.4	
Kaposi sarcoma (C46)	0.4	0.4	0.4	0.4	0.4	
Peritoneum & retroperitoneum (C48)	0.4	0.4	0.4	0.4	0.4	
Other connective and soft tissue (C47, C49)	3.2	3.2	3.1	3.1	3.1	
Breast (C50)	1.0	1.0	1.0	1.0	1.0	
Penis (C60)	0.8	0.8	0.8	0.8	0.8	
Prostate (C61)	156.5	159.6	162.7	165.8	168.9	3.1
Testis (C62)	6.7	6.7	6.8	6.9	6.9	0.1
Other male genital organs (C63)	0.2	0.2	0.2	0.2	0.2	
Kidney (C64)	14.2	14.3	14.3	14.3	14.3	
Bladder (C67)	18.8	18.6	18.4	18.2	18.0	-0.2
Other urinary organs (C65–C66, C68)	2.2	2.2	2.2	2.2	2.2	
Eye (C69)	1.6	1.6	1.6	1.6	1.6	

(continued)

**Table 3.2 (continued): Cancer incidence projections, age-standardised rates<sup>(a)</sup>, males, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Brain (C71)	8.2	8.2	8.2	8.1	8.1	
Other central nervous system (C70, C72)	0.4	0.4	0.4	0.4	0.4	
Thyroid (C73)	3.5	3.6	3.7	3.7	3.8	0.1
Other endocrine organs (C74–C75)	0.5	0.5	0.5	0.5	0.5	
Hodgkin lymphoma (C81)	2.6	2.7	2.7	2.7	2.7	
Non-Hodgkin lymphoma (C82–C85, C96)	21.7	21.8	21.8	21.9	21.9	0.1
<i>All lymphomas (C81–C85, C96)</i>	<i>24.4</i>	<i>24.4</i>	<i>24.5</i>	<i>24.6</i>	<i>24.7</i>	<i>0.1</i>
Immunoproliferative neoplasms (C88)	0.6	0.6	0.6	0.6	0.6	
Myeloma (C90)	7.2	7.2	7.2	7.2	7.2	
Lymphoid leukaemia (C91)	8.4	8.4	8.4	8.4	8.4	
Myeloid leukaemia (C92–C94)	8.1	8.1	8.1	8.2	8.2	
Leukaemia, unspecified (C95)	0.5	0.5	0.5	0.5	0.5	
<i>All leukaemias (C91–C95)</i>	<i>17.0</i>	<i>17.0</i>	<i>17.0</i>	<i>17.0</i>	<i>17.1</i>	
Polycythaemia vera (D45)	1.9	1.8	1.8	1.8	1.8	
Myelodysplastic syndromes (D46)	6.6	6.6	6.5	6.5	6.4	–0.1
Other chronic myeloproliferative diseases (D47 <sup>(c)</sup> )	1.8	1.8	1.8	1.8	1.8	
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(c)</sup>)</i>	<i>59.4</i>	<i>59.5</i>	<i>59.5</i>	<i>59.5</i>	<i>59.6</i>	
Unknown primary site (C26, C39, C76, C80)	17.3	16.9	16.5	16.1	15.7	–0.4
<b>All cancers (C00–C96<sup>(d)</sup>, D45–D47<sup>(c)</sup>)</b>	<b>564.7</b>	<b>565.9</b>	<b>567.1</b>	<b>568.4</b>	<b>569.6</b>	<b>1.2</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 males.

(b) Predicted average annual change in age-standardised rate, derived from the projections for the age-specific incidence rates, based on the 1996–2005 data. Change is rounded to one decimal place and not shown when it rounds to 0.0.

(c) Only includes D47.1 and D47.3.

(d) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 3.3: Cancer incidence projections, number of new cases, females, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Lip (C00)	253	248	242	236	230	-6
Tongue (C01–C02)	170	173	177	180	184	3
Mouth (C03–C06)	194	199	203	208	212	5
Major salivary glands (C07–C08)	103	106	109	112	115	3
Oropharynx (C09–C10)	71	72	74	76	78	2
Nasopharynx (C11)	34	35	36	37	38	1
Hypopharynx (C12–C13)	26	27	28	28	29	1
Pharynx, unspecified (C14)	17	18	18	18	19	0
Nasal cavity, middle ear & sinuses (C30–C31)	57	59	62	64	66	2
Larynx (C32)	59	58	58	57	58	0
<i>Head and neck (C01–C14, C30–C32)</i>	<i>732</i>	<i>748</i>	<i>764</i>	<i>781</i>	<i>799</i>	<i>17</i>
Oesophagus (C15)	398	405	411	417	422	6
Stomach (C16)	678	676	672	667	662	-4
Small intestine (C17)	140	143	147	150	154	3
Colon (C18)	4,266	4,359	4,449	4,543	4,641	93
Rectum (C19–C20)	1,783	1,819	1,855	1,892	1,930	37
<i>Colorectal (C18–C20)</i>	<i>6,049</i>	<i>6,179</i>	<i>6,305</i>	<i>6,435</i>	<i>6,571</i>	<i>130</i>
Anus (C21)	158	163	169	175	181	6
Liver (C22)	355	383	412	441	472	29
Gallbladder (C23–C24)	374	380	385	391	397	6
Pancreas (C25)	1,070	1,099	1,126	1,155	1,185	29
Lung, bronchus & trachea (C33–C34)	3,478	3,613	3,750	3,891	4,038	140
Other thoracic organs (C37–C38)	29	29	30	31	31	1
Bone & articular cartilage (C40–C41)	85	86	87	89	90	1
Melanoma of skin (C43)	4,541	4,678	4,819	4,966	5,119	144
Mesothelioma (C45)	114	119	125	131	138	6
Kaposi sarcoma (C46)	11	11	11	12	12	0
Peritoneum & retroperitoneum (C48)	132	139	146	153	161	7
Other connective and soft tissue (C47, C49)	242	247	252	258	263	5
Breast (C50)	12,773	13,076	13,384	13,698	14,017	311
Vulva (C51)	253	259	265	271	278	6
Vagina (C52)	78	81	83	86	89	3
Cervix (C53)	672	649	624	599	571	-25
Uterus, body (C54)	1,718	1,764	1,812	1,860	1,909	48
Uterus, unspecified (C55)	110	120	131	141	152	10
Ovary (C56)	1,271	1,298	1,324	1,351	1,378	27
Other female genital organs (C57)	65	67	69	71	72	2
Placenta (C58)	7	7	7	7	7	0

(continued)

**Table 3.3 (continued): Cancer incidence projections, number of new cases, females, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
<i>Gynaecological (C51–C58)</i>	4,174	4,245	4,315	4,385	4,457	71
Kidney (C64)	824	846	869	893	917	23
Bladder (C67)	611	622	631	640	650	9
Other urinary organs (C65–C66, C68)	180	179	178	177	176	–1
Eye (C69)	116	120	123	127	130	3
Brain (C71)	609	622	635	649	663	13
Other central nervous system (C70, C72)	39	40	40	41	42	1
Thyroid (C73)	1,239	1,312	1,389	1,467	1,547	77
Other endocrine organs (C74–C75)	39	40	40	41	42	1
Hodgkin lymphoma (C81)	210	213	217	220	224	3
Non-Hodgkin lymphoma (C82–C85, C96)	1,792	1,835	1,879	1,924	1,971	45
<i>All lymphomas (C81–C85, C96)</i>	<i>2,002</i>	<i>2,048</i>	<i>2,095</i>	<i>2,144</i>	<i>2,194</i>	<i>48</i>
Immunoproliferative neoplasms (C88)	35	36	37	38	39	1
Myeloma (C90)	554	568	582	596	611	14
Lymphoid leukaemia (C91)	537	550	563	576	589	13
Myeloid leukaemia (C92–C94)	582	597	611	625	640	14
Leukaemia, unspecified (C95)	41	42	43	44	45	1
<i>All leukaemias (C91–C95)</i>	<i>1,161</i>	<i>1,189</i>	<i>1,216</i>	<i>1,245</i>	<i>1,274</i>	<i>28</i>
Polycythaemia vera (D45)	130	133	136	139	143	3
Myelodysplastic syndromes (D46)	443	455	467	479	491	12
Other chronic myeloproliferative diseases (D47 <sup>(b)</sup> )	163	164	164	164	169	1
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(b)</sup>)</i>	<i>4,488</i>	<i>4,593</i>	<i>4,698</i>	<i>4,805</i>	<i>4,922</i>	<i>108</i>
Unknown primary site (C26, C39, C76, C80)	1,704	1,743	1,778	1,814	1,851	37
<b>All cancers (C00–C96<sup>(c)</sup>, D45–D47<sup>(b)</sup>)</b>	<b>45,636</b>	<b>46,783</b>	<b>47,935</b>	<b>49,115</b>	<b>50,338</b>	<b>1,174</b>

(a) Predicted average annual change in number of cases, based on the gradient of the line that best fits the 1996–2005 data.

(b) Only includes D47.1 and D47.3.

(c) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 3.4: Cancer incidence projections, age-standardised rates<sup>(a)</sup>, females, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Lip (C00)	2.2	2.1	2.0	1.9	1.8	-0.1
Tongue (C01–C02)	1.5	1.5	1.5	1.5	1.5	
Mouth (C03–C06)	1.7	1.7	1.7	1.7	1.6	
Major salivary glands (C07–C08)	0.9	0.9	0.9	0.9	0.9	
Oropharynx (C09–C10)	0.6	0.6	0.6	0.6	0.6	
Nasopharynx (C11)	0.3	0.3	0.3	0.3	0.3	
Hypopharynx (C12–C13)	0.2	0.2	0.2	0.2	0.2	
Pharynx, unspecified (C14)	0.1	0.1	0.1	0.1	0.1	
Nasal cavity, middle ear & sinuses (C30–C31)	0.5	0.5	0.5	0.5	0.5	
Larynx (C32)	0.5	0.5	0.5	0.5	0.5	
<i>Head and neck (C01–C14, C30–C32)</i>	<i>6.4</i>	<i>6.4</i>	<i>6.4</i>	<i>6.3</i>	<i>6.3</i>	
Oesophagus (C15)	3.2	3.2	3.1	3.1	3.1	
Stomach (C16)	5.7	5.6	5.4	5.3	5.2	-0.1
Small intestine (C17)	1.2	1.2	1.2	1.2	1.2	
Colon (C18)	35.9	35.7	35.5	35.4	35.2	-0.2
Rectum (C19–C20)	15.3	15.2	15.2	15.1	15.1	-0.1
<i>Colorectal (C18–C20)</i>	<i>51.2</i>	<i>50.9</i>	<i>50.7</i>	<i>50.5</i>	<i>50.3</i>	<i>-0.2</i>
Anus (C21)	1.4	1.4	1.4	1.4	1.4	
Liver (C22)	3.0	3.1	3.3	3.4	3.6	0.1
Gallbladder (C23–C24)	3.1	3.0	3.0	3.0	2.9	
Pancreas (C25)	8.8	8.8	8.8	8.8	8.8	
Lung, bronchus & trachea (C33–C34)	29.8	30.1	30.5	30.9	31.2	0.4
Other thoracic organs (C37–C38)	0.3	0.3	0.3	0.3	0.3	
Bone & articular cartilage (C40–C41)	0.8	0.8	0.8	0.8	0.8	
Melanoma of skin (C43)	40.7	41.0	41.3	41.6	41.9	0.3
Mesothelioma (C45)	0.9	1.0	1.0	1.0	1.0	
Kaposi sarcoma (C46)	0.1	0.1	0.1	0.1	0.1	
Peritoneum & retroperitoneum (C48)	1.2	1.2	1.2	1.2	1.3	
Other connective and soft tissue (C47, C49)	2.2	2.2	2.2	2.2	2.2	
Breast (C50)	113.8	113.9	114.0	114.0	114.1	0.1
Vulva (C51)	2.1	2.1	2.1	2.1	2.1	
Vagina (C52)	0.7	0.7	0.7	0.7	0.7	
Cervix (C53)	6.2	5.9	5.6	5.3	5.0	-0.3
Uterus, body (C54)	15.0	15.1	15.1	15.1	15.1	
Uterus, unspecified (C55)	0.9	1.0	1.0	1.1	1.1	0.1
Ovary (C56)	11.1	11.0	11.0	11.0	10.9	
Other female genital organs (C57)	0.6	0.6	0.6	0.6	0.6	
Placenta (C58)	0.1	0.1	0.1	0.1	0.1	

(continued)

**Table 3.4 (continued): Cancer incidence projections, age-standardised rates<sup>(a)</sup>, females, Australia, 2006 to 2010**

Cancer site/type (ICD-10 codes)	2006	2007	2008	2009	2010	Annual change <sup>(b)</sup>
<i>Gynaecological (C51–C58)</i>	36.7	36.4	36.1	35.9	35.6	–0.3
Kidney (C64)	7.2	7.3	7.3	7.3	7.4	
Bladder (C67)	5.0	4.9	4.9	4.8	4.8	–0.1
Other urinary organs (C65–C66, C68)	1.5	1.5	1.4	1.4	1.3	
Eye (C69)	1.0	1.0	1.0	1.1	1.1	
Brain (C71)	5.5	5.5	5.5	5.5	5.5	
Other central nervous system (C70, C72)	0.4	0.4	0.4	0.4	0.4	
Thyroid (C73)	11.6	12.1	12.6	13.1	13.6	0.5
Other endocrine organs (C74–C75)	0.4	0.4	0.4	0.4	0.4	
Hodgkin lymphoma (C81)	2.0	2.0	2.0	2.0	2.0	
Non-Hodgkin lymphoma (C82–C85, C96)	15.5	15.5	15.5	15.5	15.5	
<i>All lymphomas (C81–C85, C96)</i>	17.5	17.5	17.5	17.5	17.5	
Immunoproliferative neoplasms (C88)	0.3	0.3	0.3	0.3	0.3	
Myeloma (C90)	4.6	4.6	4.6	4.6	4.6	
Lymphoid leukaemia (C91)	4.7	4.7	4.7	4.7	4.7	
Myeloid leukaemia (C92–C94)	5.0	5.0	5.0	5.0	5.0	
Leukaemia, unspecified (C95)	0.3	0.3	0.3	0.3	0.3	
<i>All leukaemias (C91–C95)</i>	10.0	10.0	10.0	10.0	10.0	
Polycythaemia vera (D45)	1.1	1.1	1.1	1.1	1.1	
Myelodysplastic syndromes (D46)	3.5	3.5	3.5	3.5	3.5	
Other chronic myeloproliferative diseases (D47 <sup>(c)</sup> )	1.4	1.4	1.4	1.4	1.4	
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(c)</sup>)</i>	38.4	38.4	38.4	38.4	38.4	
Unknown primary site (C26, C39, C76, C80)	13.7	13.6	13.6	13.5	13.4	–0.1
<b>All cancers (C00–C96<sup>(d)</sup>, D45–D47<sup>(c)</sup>)</b>	<b>397.2</b>	<b>397.7</b>	<b>398.2</b>	<b>398.7</b>	<b>399.2</b>	<b>0.5</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 females.

(b) Predicted average annual change in age-standardised rate, derived from the projections for the age-specific incidence rates, based on the 1996–2005 data. Change is rounded to one decimal place and not shown when it rounds to 0.0.

(c) Only includes D47.1 and D47.3.

(d) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 3.5: Cancer incidence projections, number of new cases, persons, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Lip (C00)	826	786	744	698	649	-44
Tongue (C01–C02)	522	536	550	564	578	14
Mouth (C03–C06)	498	507	516	525	534	9
Major salivary glands (C07–C08)	252	259	266	272	279	7
Oropharynx (C09–C10)	329	339	349	360	370	10
Nasopharynx (C11)	124	127	130	133	136	3
Hypopharynx (C12–C13)	141	139	136	135	134	-2
Pharynx, unspecified (C14)	84	86	88	91	93	2
Nasal cavity, middle ear & sinuses (C30–C31)	156	161	166	172	177	5
Larynx (C32)	569	568	566	563	560	-2
<i>Head and neck (C01–C14, C30–C32)</i>	<i>2,676</i>	<i>2,722</i>	<i>2,767</i>	<i>2,813</i>	<i>2,861</i>	<i>46</i>
Oesophagus (C15)	1,226	1,260	1,291	1,323	1,355	32
Stomach (C16)	1,953	1,959	1,960	1,960	1,958	1
Small intestine (C17)	332	345	358	372	385	13
Colon (C18)	8,862	9,088	9,301	9,522	9,753	221
Rectum (C19–C20)	4,635	4,735	4,831	4,928	5,027	98
<i>Colorectal (C18–C20)</i>	<i>13,497</i>	<i>13,823</i>	<i>14,132</i>	<i>14,450</i>	<i>14,779</i>	<i>319</i>
Anus (C21)	284	293	303	312	322	9
Liver (C22)	1,101	1,168	1,235	1,304	1,376	69
Gallbladder (C23–C24)	654	665	675	685	696	10
Pancreas (C25)	2,184	2,249	2,311	2,376	2,443	65
Lung, bronchus & trachea (C33–C34)	9,240	9,438	9,623	9,811	10,004	190
Other thoracic organs (C37–C38)	81	82	84	85	87	2
Bone & articular cartilage (C40–C41)	198	202	206	210	214	4
Melanoma of skin (C43)	10,684	11,061	11,444	11,841	12,254	392
Mesothelioma (C45)	637	663	688	715	743	27
Kaposi sarcoma (C46)	52	52	52	54	55	1
Peritoneum & retroperitoneum (C48)	168	176	184	192	201	8
Other connective and soft tissue (C47, C49)	561	574	586	599	613	13
Breast (C50)	12,872	13,177	13,488	13,805	14,126	314
Vulva (C51)	253	259	265	271	278	6
Vagina (C52)	78	81	83	86	89	3
Cervix (C53)	672	649	624	599	571	-25
Uterus, body (C54)	1,718	1,764	1,812	1,860	1,909	48
Uterus, unspecified (C55)	110	120	131	141	152	10
Ovary (C56)	1,271	1,298	1,324	1,351	1,378	27
Other female genital organs (C57)	65	67	69	71	72	2
Placenta (C58)	7	7	7	7	7	0

(continued)

**Table 3.5 (continued): Cancer incidence projections, number of new cases, persons, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
<i>Gynaecological (C51–C58)</i>	4,174	4,245	4,315	4,385	4,457	71
Penis (C60)	77	79	82	84	86	2
Prostate (C61)	16,011	16,923	17,835	18,784	19,775	939
Testis (C62)	674	690	707	724	742	17
Other male genital organs (C63)	24	25	25	26	27	1
Kidney (C64)	2,283	2,349	2,415	2,483	2,553	67
Bladder (C67)	2,442	2,496	2,543	2,590	2,637	48
Other urinary organs (C65–C66, C68)	395	400	404	409	415	5
Eye (C69)	282	289	297	305	313	8
Brain (C71)	1,449	1,482	1,514	1,548	1,583	33
Other central nervous system (C70, C72)	77	78	80	82	84	2
Thyroid (C73)	1,608	1,698	1,789	1,884	1,981	93
Other endocrine organs (C74–C75)	86	87	89	90	92	2
Hodgkin lymphoma (C81)	480	491	502	513	525	11
Non-Hodgkin lymphoma (C82–C85, C96)	3,993	4,104	4,213	4,326	4,443	112
<i>All lymphomas (C81–C85, C96)</i>	<i>4,473</i>	<i>4,595</i>	<i>4,715</i>	<i>4,840</i>	<i>4,968</i>	<i>123</i>
Immunoproliferative neoplasms (C88)	93	95	98	101	103	3
Myeloma (C90)	1,269	1,307	1,343	1,380	1,419	37
Lymphoid leukaemia (C91)	1,379	1,417	1,455	1,493	1,532	38
Myeloid leukaemia (C92–C94)	1,385	1,424	1,462	1,501	1,542	39
Leukaemia, unspecified (C95)	88	90	92	94	96	2
<i>All leukaemias (C91–C95)</i>	<i>2,852</i>	<i>2,931</i>	<i>3,008</i>	<i>3,088</i>	<i>3,170</i>	<i>79</i>
Polycythaemia vera (D45)	319	325	331	337	344	6
Myelodysplastic syndromes (D46)	1,056	1,087	1,116	1,144	1,173	29
Other chronic myeloproliferative diseases (D47 <sup>(b)</sup> )	340	346	352	357	367	6
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(b)</sup>)</i>	<i>10,403</i>	<i>10,687</i>	<i>10,963</i>	<i>11,246</i>	<i>11,544</i>	<i>284</i>
Unknown primary site (C26, C39, C76, C80)	3,386	3,441	3,486	3,531	3,577	47
<b>All cancers (C00–C96<sup>(c)</sup>, D45–D47<sup>(b)</sup>)</b>	<b>102,598</b>	<b>105,664</b>	<b>108,676</b>	<b>111,777</b>	<b>114,990</b>	<b>3,090</b>

(a) Predicted average annual change in number of cases, based on the sum of the male and female projections.

(b) Only includes D47.1 and D47.3.

(c) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 3.6: Cancer incidence projections, age-standardised rates<sup>(a)</sup>, persons, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Lip (C00)	3.8	3.6	3.3	3.1	2.8	-0.3
Tongue (C01–C02)	2.4	2.4	2.4	2.4	2.4	
Mouth (C03–C06)	2.3	2.3	2.2	2.2	2.2	
Major salivary glands (C07–C08)	1.2	1.2	1.2	1.2	1.2	
Oropharynx (C09–C10)	1.5	1.5	1.5	1.6	1.6	
Nasopharynx (C11)	0.6	0.6	0.6	0.6	0.6	
Hypopharynx (C12–C13)	0.6	0.6	0.6	0.6	0.6	
Pharynx, unspecified (C14)	0.4	0.4	0.4	0.4	0.4	
Nasal cavity, middle ear & sinuses (C30–C31)	0.7	0.7	0.7	0.7	0.7	
Larynx (C32)	2.6	2.5	2.5	2.4	2.3	-0.1
<i>Head and neck (C01–C14, C30–C32)</i>	<i>12.3</i>	<i>12.2</i>	<i>12.1</i>	<i>12.0</i>	<i>11.9</i>	<i>-0.1</i>
Oesophagus (C15)	5.6	5.6	5.6	5.5	5.5	
Stomach (C16)	8.9	8.7	8.5	8.3	8.1	-0.2
Small intestine (C17)	1.5	1.5	1.6	1.6	1.6	
Colon (C18)	40.6	40.4	40.3	40.1	40.0	-0.2
Rectum (C19–C20)	21.2	21.1	21.0	20.9	20.8	-0.1
<i>Colorectal (C18–C20)</i>	<i>61.8</i>	<i>61.6</i>	<i>61.3</i>	<i>61.0</i>	<i>60.8</i>	<i>-0.3</i>
Anus (C21)	1.3	1.3	1.3	1.3	1.3	
Liver (C22)	5.1	5.2	5.4	5.6	5.7	0.2
Gallbladder (C23–C24)	3.0	2.9	2.9	2.9	2.8	
Pancreas (C25)	9.9	9.9	9.9	10.0	10.0	
Lung, bronchus & trachea (C33–C34)	42.4	42.2	41.9	41.6	41.3	-0.3
Other thoracic organs (C37–C38)	0.4	0.4	0.4	0.4	0.4	
Bone & articular cartilage (C40–C41)	0.9	0.9	0.9	1.0	1.0	
Melanoma of skin (C43)	49.5	50.1	50.6	51.1	51.6	0.5
Mesothelioma (C45)	2.9	2.9	3.0	3.0	3.0	
Kaposi sarcoma (C46)	0.2	0.2	0.2	0.2	0.2	
Peritoneum & retroperitoneum (C48)	0.8	0.8	0.8	0.8	0.8	
Other connective and soft tissue (C47, C49)	2.6	2.6	2.6	2.6	2.6	
Kidney (C64)	10.5	10.6	10.6	10.6	10.7	
Bladder (C67)	11.1	11.0	10.9	10.8	10.7	-0.1
Other urinary organs (C65–C66, C68)	1.8	1.8	1.8	1.7	1.7	
Eye (C69)	1.3	1.3	1.3	1.3	1.3	
Brain (C71)	6.8	6.8	6.8	6.8	6.8	
Other central nervous system (C70, C72)	0.4	0.4	0.4	0.4	0.4	
Thyroid (C73)	7.6	7.9	8.2	8.5	8.8	0.3
Other endocrine organs (C74–C75)	0.4	0.4	0.4	0.4	0.4	
Hodgkin lymphoma (C81)	2.3	2.3	2.3	2.4	2.4	

(continued)

**Table 3.6 (continued): Cancer incidence projections, age-standardised rates<sup>(a)</sup>, persons, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Non-Hodgkin lymphoma (C82–C85, C96)	18.4	18.4	18.5	18.5	18.5	
<i>All lymphomas (C81–C85, C96)</i>	20.7	20.7	20.8	20.8	20.9	0.1
Immunoproliferative neoplasms (C88)	0.4	0.4	0.4	0.4	0.4	
Myeloma (C90)	5.8	5.8	5.8	5.8	5.8	
Lymphoid leukaemia (C91)	6.4	6.4	6.4	6.4	6.5	
Myeloid leukaemia (C92–C94)	6.4	6.4	6.4	6.4	6.5	
Leukaemia, unspecified (C95)	0.4	0.4	0.4	0.4	0.4	
<i>All leukaemias (C91–C95)</i>	13.2	13.2	13.3	13.3	13.3	
Polycythaemia vera (D45)	1.5	1.5	1.4	1.4	1.4	
Myelodysplastic syndromes (D46)	4.8	4.8	4.7	4.7	4.7	
Other chronic myeloproliferative diseases (D47 <sup>(c)</sup> )	1.6	1.6	1.5	1.5	1.5	
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(c)</sup>)</i>	47.9	48.0	48.0	48.0	48.1	
Unknown primary site (C26, C39, C76, C80)	15.4	15.1	14.9	14.7	14.4	–0.2
<b>All cancers (C00–C96<sup>(d)</sup>, D45–D47<sup>(c)</sup>)</b>	<b>471.3</b>	<b>472.6</b>	<b>473.9</b>	<b>475.1</b>	<b>476.4</b>	<b>1.3</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 persons.

(b) Predicted average annual change in age-standardised rate, based on the sum of the male and female age-specific projections. Change is rounded to one decimal place and not shown when it rounds to 0.0.

(c) Only includes D47.1 and D47.3.

(d) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

## 4 Mortality in 2005

### 4.1 Main findings

#### Males

There were 22,017 deaths from cancer in males in 2005. The five most common cancer deaths were from lung cancer (4,711 deaths), prostate cancer (2,949), colorectal cancer (2,322), cancer of unknown primary site (1,829) and pancreatic cancer (964). These five cancers accounted for 58% of all deaths from cancer in males.

Based on 2005 data, the risk for males of dying from cancer before age 75 was 1 in 8 and before age 85 was 1 in 4. The highest risk was for lung cancer with a 1 in 31 chance before age 75 and a 1 in 14 chance before age 85.

In 2005 males lost 139,773 person-years of life to age 75 and 293,873 years to age 85 due to premature death from cancer. The greatest contributor to this total was lung cancer, with 26,810 years lost to age 75 and 62,275 years lost to age 85.

#### Females

In 2005 there were 17,080 cancer deaths in females. Lung cancer (2,716 deaths) overtook breast cancer (2,707) for the first time to be the most common cancer death. The next three most common cancer deaths were from colorectal cancer (1,843), cancer of unknown primary site (1,616) and pancreatic cancer (1,062). These five cancers accounted for 58% of all deaths from cancer in females.

The risk for females of dying from cancer before age 75 was 1 in 11 and before age 85 was 1 in 6. The highest risk to age 75 was for breast cancer (1 in 59) and to age 85 was for lung cancer (1 in 29).

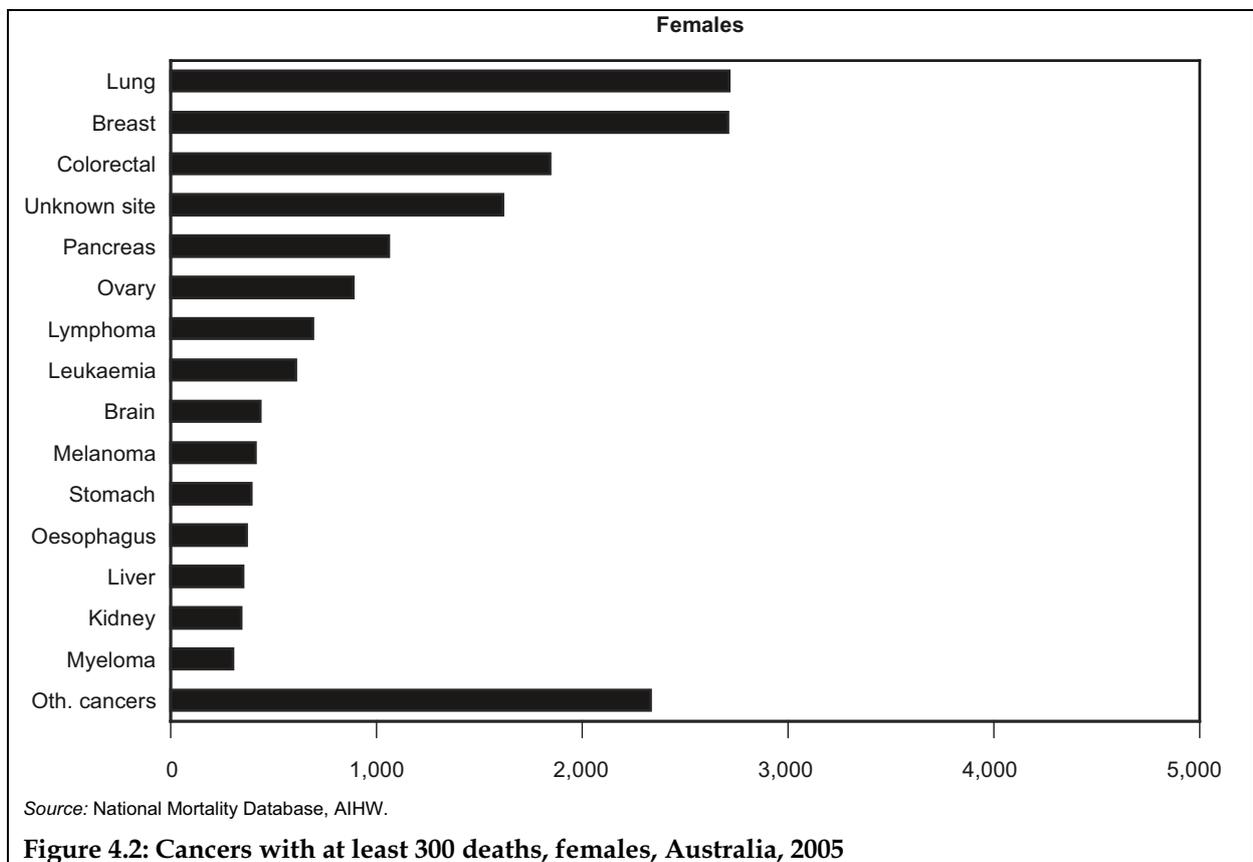
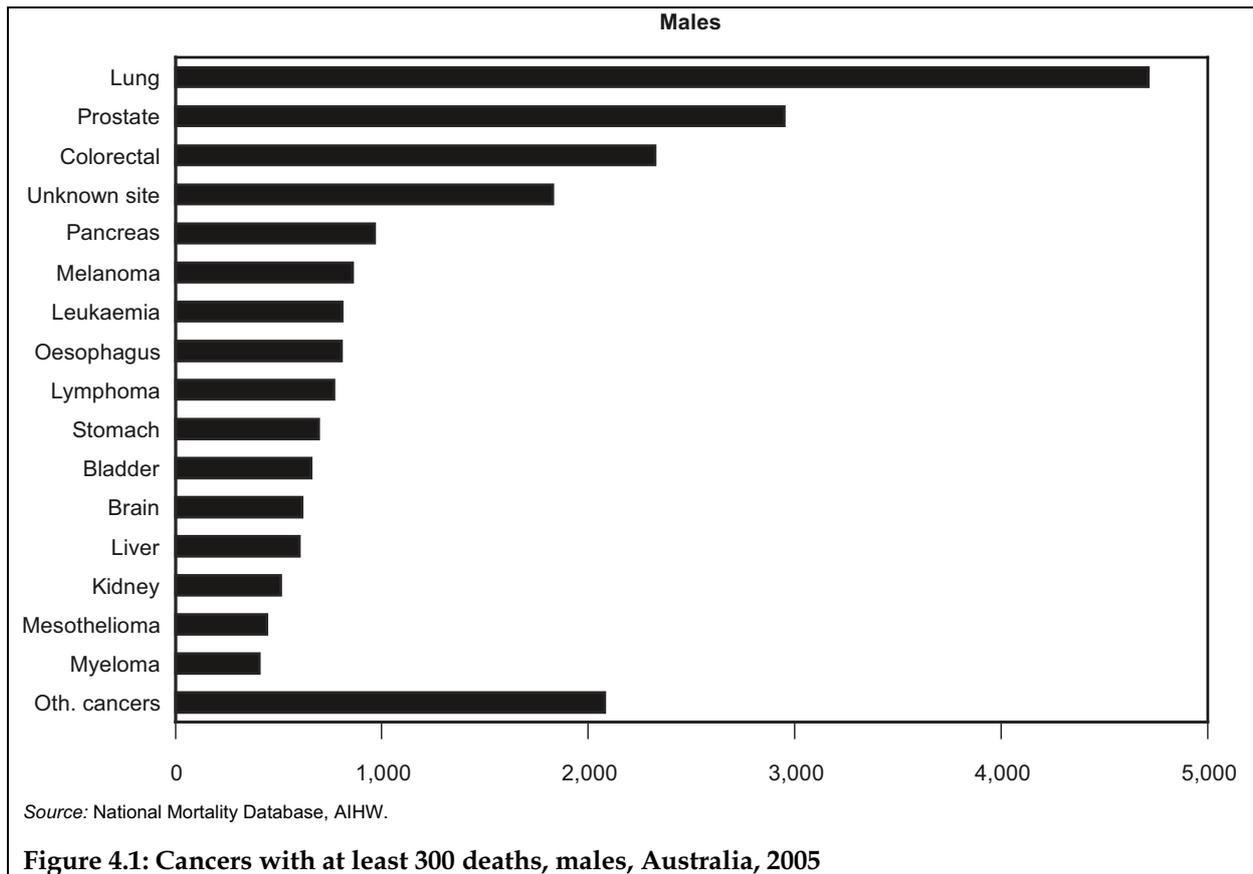
In 2005 females lost 118,423 person-years of life to age 75 and 229,018 years to age 85 due to premature death from cancer. The greatest contributor to this total was breast cancer, with 30,075 years lost to age 75 and 50,430 years lost to age 85.

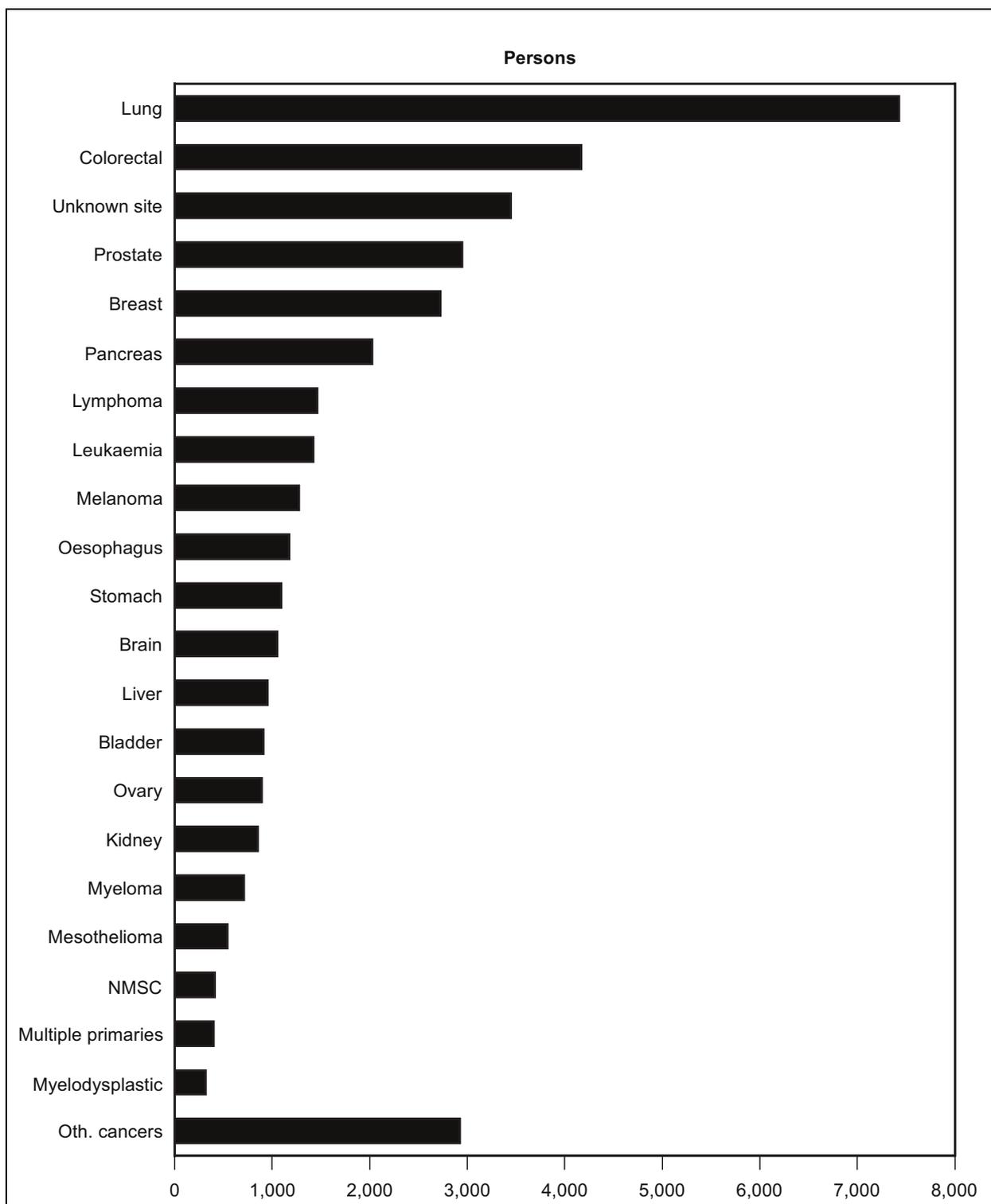
#### Sexes combined and compared

In 2005 there were 39,097 deaths from cancer in Australia. Overall, the five most common cancer deaths were from lung cancer (7,427 deaths), colorectal cancer (4,165), cancer of unknown primary site (3,445), prostate cancer (2,949) and breast cancer (2,726). These five cancers accounted for 53% of all deaths from cancer.

In both sexes the five biggest killers are almost the same and are ranked in the same order: lung cancer, prostate cancer (males)/breast cancer (females), colorectal cancer, cancer of unknown primary site and pancreatic cancer.

In 2005 Australians lost 258,195 person-years of life to age 75 and 522,890 years to age 85 due to premature death from cancer. The greatest contributor to this total was lung cancer, with 43,560 years lost to age 75 and 98,555 years lost to age 85.





Note: NMSC refers to non-melanocytic skin cancer.

Source: National Mortality Database, AIHW.

**Figure 4.3: Cancers with at least 300 deaths, persons, Australia, 2005**

**Table 4.1: The 10 most common causes of death from cancer, Australia, 2005**

<b>Cancer site/type</b>	<b>Number</b>	<b>Per cent of all deaths</b>	<b>ASR(A)<sup>(a)</sup></b>	<b>ASR(W)<sup>(b)</sup></b>	<b>PYLL to age 75<sup>(c)</sup></b>	<b>PYLL to age 85<sup>(c)</sup></b>
<b>Males</b>						
Lung	4,711	21.4	49.1	32.8	26,810	62,275
Prostate	2,949	13.4	33.5	19.2	5,853	20,753
Colorectal	2,322	10.5	24.4	16.3	15,240	32,255
Unknown site	1,829	8.3	19.6	12.7	10,858	23,123
Pancreas	964	4.4	10.0	6.8	7,135	14,415
Melanoma	859	3.9	8.9	6.2	8,355	14,795
Leukaemia	807	3.7	8.6	5.8	6,955	12,643
Oesophagus	805	3.7	8.3	5.7	5,828	12,023
Lymphoma	767	3.5	8.1	5.4	5,800	11,260
Stomach	695	3.2	7.4	4.8	4,525	9,460
<i>All cancers</i>	<i>22,017</i>	<i>100.0</i>	<i>233.9</i>	<i>153.4</i>	<i>139,773</i>	<i>293,873</i>
<b>Females</b>						
Lung	2,716	15.9	23.4	16.2	16,750	36,280
Breast	2,707	15.8	23.6	17.4	30,075	50,430
Colorectal	1,843	10.8	15.3	10.0	9,598	20,428
Unknown site	1,616	9.5	13.1	8.4	7,580	16,235
Pancreas	1,062	6.2	8.9	5.8	4,793	11,298
Ovary	888	5.2	7.6	5.3	6,713	12,938
Lymphoma	692	4.1	5.8	3.8	3,890	7,985
Leukaemia	610	3.6	5.1	3.5	4,700	8,405
Brain	436	2.6	3.9	3.1	6,365	9,990
Melanoma	413	2.4	3.5	2.5	4,013	6,843
<i>All cancers</i>	<i>17,080</i>	<i>100.0</i>	<i>144.2</i>	<i>98.5</i>	<i>118,423</i>	<i>229,018</i>
<b>Persons</b>						
Lung	7,427	19.0	34.8	23.7	43,560	98,555
Colorectal	4,165	10.7	19.4	12.9	24,838	52,683
Unknown site	3,445	8.8	16.0	10.4	18,438	39,358
Prostate	2,949	7.5	—	—	—	—
Breast	2,726	7.0	—	—	—	—
Pancreas	2,026	5.2	9.4	6.3	11,928	25,713
Lymphoma	1,459	3.7	6.8	4.5	9,690	19,245
Leukaemia	1,417	3.6	6.6	4.5	11,655	21,048
Melanoma	1,272	3.3	5.9	4.2	12,368	21,638
Oesophagus	1,176	3.0	5.5	3.7	7,285	15,525
<i>All cancers</i>	<i>39,097</i>	<i>100.0</i>	<i>182.5</i>	<i>122.6</i>	<i>258,195</i>	<i>522,890</i>

(a) Age-standardised mortality rate using the Australian 2001 Standard Population, and expressed per 100,000 males/females/persons.

(b) Age-standardised mortality rate using the WHO 2000 World Standard Population, and expressed per 100,000 males/females/persons.

(c) Total person-years of life lost due to death before age 75 years, or 85 years.

Source: National Mortality Database, AIHW.

**Table 4.2: Cancer mortality in males, Australia, 2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>Number</b>	<b>Per cent of total</b>	<b>ASR(A)<sup>(a)</sup></b>	<b>ASR(W)<sup>(b)</sup></b>	<b>PYLL to age 75<sup>(c)</sup></b>	<b>PYLL to age 85<sup>(d)</sup></b>
Lip (C00)	8	0.0	0.1	0.1	100	148
Tongue (C01–C02)	103	0.5	1.0	0.8	1,310	2,263
Mouth (C03–C06)	63	0.3	0.6	0.5	718	1,233
Major salivary glands (C07–C08)	58	0.3	0.7	0.4	265	585
Oropharynx (C09–C10)	95	0.4	0.9	0.7	1,115	2,013
Nasopharynx (C11)	41	0.2	0.4	0.3	553	930
Hypopharynx (C12–C13)	41	0.2	0.4	0.3	510	875
Pharynx, unspecified (C14)	59	0.3	0.6	0.4	448	933
Nasal cavity, middle ear & sinuses (C30–C31)	28	0.1	0.3	0.2	358	568
Larynx (C32)	189	0.9	1.9	1.3	1,413	2,953
<i>Head and neck (C01–C14, C30–C32)</i>	<i>677</i>	<i>3.1</i>	<i>6.8</i>	<i>4.9</i>	<i>6,688</i>	<i>12,350</i>
Oesophagus (C15)	805	3.7	8.3	5.7	5,828	12,023
Stomach (C16)	695	3.2	7.4	4.8	4,525	9,460
Small intestine (C17)	44	0.2	0.5	0.3	413	775
Colon (C18)	1,413	6.4	15.0	9.8	8,485	18,318
Rectum (C19–C20)	909	4.1	9.4	6.5	6,755	13,938
<i>Colorectal (C18–C20)</i>	<i>2,322</i>	<i>10.5</i>	<i>24.4</i>	<i>16.3</i>	<i>15,240</i>	<i>32,255</i>
Anus (C21)	24	0.1	0.2	0.2	258	473
Liver (C22)	600	2.7	6.2	4.3	5,350	10,145
Gallbladder (C23–C24)	88	0.4	0.9	0.6	433	998
Pancreas (C25)	964	4.4	10.0	6.8	7,135	14,415
Lung, bronchus & trachea (C33–C34)	4,711	21.4	49.1	32.8	26,810	62,275
Other thoracic organs (C37–C38)	24	0.1	0.3	0.2	393	575
Bone & articular cartilage (C40–C41)	63	0.3	0.6	0.5	1,385	1,943
Melanoma of skin (C43)	859	3.9	8.9	6.2	8,355	14,795
Non-melanoma of skin (C44)	279	1.3	3.2	1.9	1,208	2,730
Mesothelioma (C45)	444	2.0	4.6	3.1	2,503	5,763
Kaposi sarcoma (C46)	3	0.0	0.0	0.0	50	73
Peritoneum & retroperitoneum (C48)	15	0.1	0.2	0.1	130	250
Other connective and soft tissue (C47, C49)	131	0.6	1.4	1.0	1,685	2,698
Breast (C50)	19	0.1	0.2	0.1	160	285
Penis (C60)	13	0.1	0.1	0.1	110	198
Prostate (C61)	2,949	13.4	33.5	19.2	5,853	20,753
Testis (C62)	22	0.1	0.2	0.2	678	875
Other male genital organs (C63)	3	0.0	0.0	0.0	40	63
Kidney (C64)	509	2.3	5.4	3.6	4,095	7,805
Bladder (C67)	658	3.0	7.2	4.4	2,478	6,370
Other urinary organs (C65–C66, C68)	47	0.2	0.5	0.3	153	458

(continued)

**Table 4.2 (continued): Cancer mortality in males, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	PYLL to age 75 <sup>(c)</sup>	PYLL to age 85 <sup>(d)</sup>
Eye (C69)	10	0.0	0.1	0.1	275	358
Brain (C71)	614	2.8	6.1	4.7	9,168	14,593
Other central nervous system (C70, C72)	16	0.1	0.2	0.1	210	340
Thyroid (C73)	37	0.2	0.4	0.3	305	623
Other endocrine organs (C74–C75)	27	0.1	0.3	0.2	590	805
Hodgkin lymphoma (C81)	34	0.2	0.4	0.2	375	648
Non-Hodgkin lymphoma (C82–C85, C96)	733	3.3	7.8	5.2	5,425	10,613
<i>All lymphomas (C81–C85, C96)</i>	<i>767</i>	<i>3.5</i>	<i>8.1</i>	<i>5.4</i>	<i>5,800</i>	<i>11,260</i>
Immunoproliferative cancers (C88)	21	0.1	0.2	0.1	73	210
Myeloma (C90)	405	1.8	4.3	2.8	1,860	4,610
Lymphoid leukaemia (C91)	271	1.2	2.9	2.0	3,210	5,173
Myeloid leukaemia (C92–C94)	487	2.2	5.2	3.4	3,565	7,043
Leukaemia, unspecified (C95)	49	0.2	0.6	0.3	180	428
<i>All leukaemias (C91–C95)</i>	<i>807</i>	<i>3.7</i>	<i>8.6</i>	<i>5.8</i>	<i>6,955</i>	<i>12,643</i>
Polycythaemia vera (D45)	8	0.0	0.1	0.1	13	48
Myelodysplastic syndromes (D46)	177	0.8	2.1	1.2	410	1,205
Other chronic myeloproliferative diseases (D47 <sup>(e)</sup> )	64	0.3	0.7	0.4	135	473
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(e)</sup>)</i>	<i>2,249</i>	<i>10.2</i>	<i>24.2</i>	<i>15.7</i>	<i>15,245</i>	<i>30,448</i>
Multiple primary cancers (C97)	259	1.2	2.9	1.7	1,073	2,640
Unknown primary site (C26, C39, C76–C80)	1,829	8.3	19.6	12.7	10,858	23,123
<b>All cancers (C00–C97, D45–D47<sup>(e)</sup>)</b>	<b>22,017</b>	<b>100.0</b>	<b>233.9</b>	<b>153.4</b>	<b>139,773</b>	<b>293,873</b>

(a) Age-standardised mortality rate using the Australian 2001 Standard Population, and expressed per 100,000 males.

(b) Age-standardised mortality rate using the WHO 2000 World Standard Population, and expressed per 100,000 males.

(c) Total person-years of life lost due to death before age 75 years.

(d) Total person-years of life lost due to death before age 85 years.

(e) Only includes D47.1 and D47.3.

Source: National Mortality Database, AIHW.

**Table 4.3: Cancer mortality in females, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	PYLL to age 75 <sup>(c)</sup>	PYLL to age 85 <sup>(d)</sup>
Lip (C00)	2	0.0	0.0	0.0	0	10
Tongue (C01–C02)	45	0.3	0.4	0.3	608	963
Mouth (C03–C06)	47	0.3	0.4	0.3	213	488
Major salivary glands (C07–C08)	23	0.1	0.2	0.1	168	293
Oropharynx (C09–C10)	22	0.1	0.2	0.1	180	350
Nasopharynx (C11)	16	0.1	0.1	0.1	263	400
Hypopharynx (C12–C13)	10	0.1	0.1	0.1	55	103
Pharynx, unspecified (C14)	18	0.1	0.2	0.1	80	205
Nasal cavity, middle ear & sinuses (C30–C31)	7	0.0	0.1	0.0	20	80
Larynx (C32)	24	0.1	0.2	0.1	108	290
<i>Head and neck (C01–C14, C30–C32)</i>	<i>212</i>	<i>1.2</i>	<i>1.8</i>	<i>1.3</i>	<i>1,693</i>	<i>3,170</i>
Oesophagus (C15)	371	2.2	3.0	1.9	1,458	3,503
Stomach (C16)	394	2.3	3.2	2.1	2,300	4,565
Small intestine (C17)	37	0.2	0.3	0.2	345	635
Colon (C18)	1,262	7.4	10.3	6.7	5,888	12,943
Rectum (C19–C20)	581	3.4	4.9	3.3	3,710	7,485
<i>Colorectal (C18–C20)</i>	<i>1,843</i>	<i>10.8</i>	<i>15.3</i>	<i>10.0</i>	<i>9,598</i>	<i>20,428</i>
Anus (C21)	30	0.2	0.2	0.2	160	313
Liver (C22)	352	2.1	2.9	1.9	1,918	4,070
Gallbladder (C23–C24)	185	1.1	1.5	1.0	698	1,743
Pancreas (C25)	1,062	6.2	8.9	5.8	4,793	11,298
Lung, bronchus & trachea (C33–C34)	2,716	15.9	23.4	16.2	16,750	36,280
Other thoracic organs (C37–C38)	15	0.1	0.1	0.1	105	195
Bone & articular cartilage (C40–C41)	32	0.2	0.3	0.3	738	1,025
Melanoma of skin (C43)	413	2.4	3.5	2.5	4,013	6,843
Non-melanoma of skin (C44)	132	0.8	1.0	0.6	278	755
Mesothelioma (C45)	93	0.5	0.8	0.5	605	1,250
Kaposi sarcoma (C46)	0	0.0	0.0	0.0	0	0
Peritoneum & retroperitoneum (C48)	61	0.4	0.5	0.4	383	848
Other connective and soft tissue (C47, C49)	107	0.6	0.9	0.7	1,555	2,360
Breast (C50)	2,707	15.8	23.6	17.4	30,075	50,430
Vulva (C51)	63	0.4	0.5	0.3	170	408
Vagina (C52)	21	0.1	0.2	0.1	40	150
Cervix (C53)	221	1.3	2.0	1.5	3,208	4,930
Uterus, body (C54)	225	1.3	1.9	1.4	1,545	3,135
Uterus, unspecified (C55)	121	0.7	1.0	0.7	785	1,535
Ovary (C56)	888	5.2	7.6	5.3	6,713	12,938
Other female genital organs (C57)	20	0.1	0.2	0.1	103	245

(continued)

**Table 4.3 (continued): Cancer mortality in females, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	PYLL to age 75 <sup>(c)</sup>	PYLL to age 85 <sup>(d)</sup>
Placenta (C58)	3	0.0	0.0	0.0	103	133
<i>Gynaecological (C51–C58)</i>	1,562	9.1	13.4	9.4	12,665	23,473
Kidney (C64)	343	2.0	2.9	1.9	1,740	3,788
Bladder (C67)	251	1.5	2.0	1.2	640	1,755
Other urinary organs (C65–C66, C68)	41	0.2	0.3	0.2	75	265
Eye (C69)	10	0.1	0.1	0.0	60	100
Brain (C71)	436	2.6	3.9	3.1	6,365	9,990
Other central nervous system (C70, C72)	5	0.0	0.0	0.0	35	70
Thyroid (C73)	54	0.3	0.4	0.3	163	443
Other endocrine organs (C74–C75)	24	0.1	0.2	0.2	720	918
Hodgkin lymphoma (C81)	31	0.2	0.3	0.2	283	478
Non-Hodgkin lymphoma (C82–C85, C96)	661	3.9	5.5	3.6	3,608	7,508
<i>All lymphomas (C81–C85, C96)</i>	692	4.1	5.8	3.8	3,890	7,985
Immunoproliferative cancers (C88)	17	0.1	0.1	0.1	28	120
Myeloma (C90)	304	1.8	2.6	1.7	1,353	3,308
Lymphoid leukaemia (C91)	164	1.0	1.4	0.9	1,390	2,353
Myeloid leukaemia (C92–C94)	379	2.2	3.2	2.2	3,010	5,425
Leukaemia, unspecified (C95)	67	0.4	0.5	0.3	300	628
<i>All leukaemias (C91–C95)</i>	610	3.6	5.1	3.5	4,700	8,405
Polycythaemia vera (D45)	13	0.1	0.1	0.0	3	35
Myelodysplastic syndromes (D46)	136	0.8	1.0	0.5	113	510
Other chronic myeloproliferative diseases (D47 <sup>(e)</sup> )	61	0.4	0.5	0.3	115	358
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(e)</sup>)</i>	1,833	10.7	15.2	9.9	10,200	20,720
Multiple primary cancers (C97)	141	0.8	1.2	0.8	720	1,545
Unknown primary site (C26, C39, C76–C80)	1,616	9.5	13.1	8.4	7,580	16,235
<b>All cancers (C00–C97, D45–D47<sup>(e)</sup>)</b>	<b>17,080</b>	<b>100.0</b>	<b>144.2</b>	<b>98.5</b>	<b>118,423</b>	<b>229,018</b>

(a) Age-standardised mortality rate using the Australian 2001 Standard Population, and expressed per 100,000 females.

(b) Age-standardised mortality rate using the WHO 2000 World Standard Population, and expressed per 100,000 females.

(c) Total person-years of life lost due to death before age 75 years.

(d) Total person-years of life lost due to death before age 85 years.

(e) Only includes D47.1 and D47.3.

Source: National Mortality Database, AIHW.

**Table 4.4: Cancer mortality in persons, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	PYLL to age 75 <sup>(c)</sup>	PYLL to age 85 <sup>(d)</sup>	M:F ratio <sup>(e)</sup>
Lip (C00)	10	0.0	0.0	0.0	100	158	5.8
Tongue (C01–C02)	148	0.4	0.7	0.5	1,918	3,225	2.5
Mouth (C03–C06)	110	0.3	0.5	0.4	930	1,720	1.7
Major salivary glands (C07–C08)	81	0.2	0.4	0.2	433	878	3.6
Oropharynx (C09–C10)	117	0.3	0.5	0.4	1,295	2,363	4.7
Nasopharynx (C11)	57	0.1	0.3	0.2	815	1,330	2.8
Hypopharynx (C12–C13)	51	0.1	0.2	0.2	565	978	5.1
Pharynx, unspecified (C14)	77	0.2	0.4	0.3	528	1,138	3.9
Nasal cavity, middle ear & sinuses (C30–C31)	35	0.1	0.2	0.1	378	648	4.3
Larynx (C32)	213	0.5	1.0	0.7	1,520	3,243	9.0
<i>Head and neck (C01–C14, C30–C32)</i>	<i>889</i>	<i>2.3</i>	<i>4.2</i>	<i>3.0</i>	<i>8,380</i>	<i>15,520</i>	<i>3.7</i>
Oesophagus (C15)	1,176	3.0	5.5	3.7	7,285	15,525	2.7
Stomach (C16)	1,089	2.8	5.1	3.4	6,825	14,025	2.3
Small intestine (C17)	81	0.2	0.4	0.3	758	1,410	1.4
Colon (C18)	2,675	6.8	12.4	8.1	14,373	31,260	1.4
Rectum (C19–C20)	1,490	3.8	7.0	4.8	10,465	21,423	1.9
<i>Colorectal (C18–C20)</i>	<i>4,165</i>	<i>10.7</i>	<i>19.4</i>	<i>12.9</i>	<i>24,838</i>	<i>52,683</i>	<i>1.6</i>
Anus (C21)	54	0.1	0.3	0.2	418	785	1.0
Liver (C22)	952	2.4	4.5	3.1	7,268	14,215	2.1
Gallbladder (C23–C24)	273	0.7	1.3	0.8	1,130	2,740	0.6
Pancreas (C25)	2,026	5.2	9.4	6.3	11,928	25,713	1.1
Lung, bronchus & trachea (C33–C34)	7,427	19.0	34.8	23.7	43,560	98,555	2.1
Other thoracic organs (C37–C38)	39	0.1	0.2	0.1	498	770	2.1
Bone & articular cartilage (C40–C41)	95	0.2	0.5	0.4	2,123	2,968	2.1
Melanoma of skin (C43)	1,272	3.3	5.9	4.2	12,368	21,638	2.5
Non-melanoma of skin (C44)	411	1.1	1.9	1.1	1,485	3,485	3.1
Mesothelioma (C45)	537	1.4	2.5	1.7	3,108	7,013	5.8
Kaposi sarcoma (C46)	3	0.0	0.0	0.0	50	73	—
Peritoneum & retroperitoneum (C48)	76	0.2	0.4	0.3	513	1,098	0.3
Other connective and soft tissue (C47, C49)	238	0.6	1.1	0.8	3,240	5,058	1.4
Breast (C50)	2,726	7.0	—	—	—	—	0.01
Vulva (C51)	63	0.2	—	—	—	—	—
Vagina (C52)	21	0.1	—	—	—	—	—
Cervix (C53)	221	0.6	—	—	—	—	—
Uterus, body (C54)	225	0.6	—	—	—	—	—
Uterus, unspecified (C55)	121	0.3	—	—	—	—	—
Ovary (C56)	888	2.3	—	—	—	—	—
Other female genital organs (C57)	20	0.1	—	—	—	—	—

(continued)

**Table 4.4 (continued): Cancer mortality in persons, Australia, 2005**

Cancer site/type (ICD-10 codes)	Number	Per cent of total	ASR(A) <sup>(a)</sup>	ASR(W) <sup>(b)</sup>	PYLL to age 75 <sup>(c)</sup>	PYLL to age 85 <sup>(d)</sup>	M:F ratio <sup>(e)</sup>
Placenta (C58)	3	0.0	—	—	—	—	—
<i>Gynaecological (C51–C58)</i>	<i>1,562</i>	<i>4.0</i>	—	—	—	—	—
Penis (C60)	13	0.0	—	—	—	—	—
Prostate (C61)	2,949	7.5	—	—	—	—	—
Testis (C62)	22	0.1	—	—	—	—	—
Other male genital organs (C63)	3	0.0	—	—	—	—	—
Kidney (C64)	852	2.2	4.0	2.7	5,835	11,593	1.9
Bladder (C67)	909	2.3	4.2	2.6	3,118	8,125	3.7
Other urinary organs (C65–C66, C68)	88	0.2	0.4	0.3	228	723	1.6
Eye (C69)	20	0.1	0.1	0.1	335	458	1.3
Brain (C71)	1,050	2.7	5.0	3.9	15,533	24,583	1.5
Other central nervous system (C70, C72)	21	0.1	0.1	0.1	245	410	3.7
Thyroid (C73)	91	0.2	0.4	0.3	468	1,065	0.9
Other endocrine organs (C74–C75)	51	0.1	0.2	0.2	1,310	1,723	1.3
Hodgkin lymphoma (C81)	65	0.2	0.3	0.2	658	1,125	1.3
Non-Hodgkin lymphoma (C82–C85, C96)	1,394	3.6	6.5	4.3	9,033	18,120	1.4
<i>All lymphomas (C81–C85, C96)</i>	<i>1,459</i>	<i>3.7</i>	<i>6.8</i>	<i>4.5</i>	<i>9,690</i>	<i>19,245</i>	<i>1.4</i>
Immunoproliferative cancers (C88)	38	0.1	0.2	0.1	100	330	1.6
Myeloma (C90)	709	1.8	3.3	2.2	3,213	7,918	1.7
Lymphoid leukaemia (C91)	435	1.1	2.0	1.4	4,600	7,525	2.1
Myeloid leukaemia (C92–C94)	866	2.2	4.1	2.8	6,575	12,468	1.6
Leukaemia, unspecified (C95)	116	0.3	0.5	0.3	480	1,055	1.0
<i>All leukaemias (C91–C95)</i>	<i>1,417</i>	<i>3.6</i>	<i>6.6</i>	<i>4.5</i>	<i>11,655</i>	<i>21,048</i>	<i>1.7</i>
Polycythaemia vera (D45)	21	0.1	0.1	0.1	15	83	1.0
Myelodysplastic syndromes (D46)	313	0.8	1.4	0.8	523	1,715	2.0
Other chronic myeloproliferative diseases (D47 <sup>(f)</sup> )	125	0.3	0.6	0.3	250	830	1.5
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(f)</sup>)</i>	<i>4,082</i>	<i>10.4</i>	<i>19.1</i>	<i>12.5</i>	<i>25,445</i>	<i>51,168</i>	<i>1.6</i>
Multiple primary cancers (C97)	400	1.0	1.9	1.2	1,793	4,185	2.4
Unknown primary site (C26, C39, C76–C80)	3,445	8.8	16.0	10.4	18,438	39,358	1.5
<b>All cancers (C00–C97, D45–D47<sup>(f)</sup>)</b>	<b>39,097</b>	<b>100.0</b>	<b>182.5</b>	<b>122.6</b>	<b>258,195</b>	<b>522,890</b>	<b>1.6</b>

(a) Age-standardised mortality rate using the Australian 2001 Standard Population, and expressed per 100,000 persons.

(b) Age-standardised mortality rate using the WHO 2000 World Standard Population, and expressed per 100,000 persons.

(c) Total person-years of life lost due to death before age 75 years.

(d) Total person-years of life lost due to death before age 85 years.

(e) Male-to-female ratio: ASR(A) for males divided by ASR(A) for females.

(f) Only includes D47.1 and D47.3.

Source: National Mortality Database, AIHW.

# 5 Mortality projections for 2006–2010

## 5.1 Main assumption

The main assumption behind the projections presented in this chapter is that statistically significant age-, sex- and cancer-specific trends observed over the past 9 years will continue for the next 5 years. The complete methodology is explained in Appendix D.

## 5.2 Main findings

### Males

The age-standardised death rate from cancer in males is projected to decrease by 2.8 deaths per 100,000 males per year. The decreasing rates are occurring for lung cancer (-1.3 per year), colon cancer (-1.2), prostate cancer (-0.4), stomach cancer (-0.4) and lymphoma (-0.2). The increasing rates are occurring for cancer of unknown primary site (0.4), melanoma of the skin (0.1), liver cancer (0.1) and rectal cancer (0.1). It is interesting to note the opposite trends projected for death rates from colon (-1.2) and rectal (0.1) cancer.

Despite the substantial drop projected for cancer death rates, the number of deaths from cancer in males is expected to grow by 454 deaths per year. This is a consequence of both the ageing of Australia's population and the general increase in the population. The five cancers that are expected to experience the greatest growth in number of deaths per year are cancer of unknown primary site (111 extra deaths per year), prostate cancer (84), pancreatic cancer (41), melanoma of the skin (39), and rectal cancer (34). The two cancers that are expected to show a decrease in the number of deaths per year are colon cancer (86 fewer deaths per year) and stomach cancer (19).

### Females

The age-standardised death rate from cancer in females is projected to decrease by 0.8 deaths per 100,000 females per year. The decreasing rates are occurring for colon cancer (-0.8 per year), breast cancer (-0.3), lymphoma (-0.2), cancer of the gallbladder (-0.1), cervical cancer (-0.1) and stomach cancer (-0.1). The increasing rates are occurring for lung cancer (0.3), cancer of unknown primary site (0.3), cancer of the uterus unspecified (that is, not stated whether cervix or body) (0.1) and liver cancer (0.1).

The number of deaths from cancer in females is expected to grow by 382 deaths per year. The five cancers that are projected to experience the greatest growth in number of deaths per year are lung cancer (115 extra deaths per year), cancer of unknown primary site (89), breast cancer (38), pancreatic cancer (27) and ovarian cancer (23). The only cancer expected to show a considerable decrease in the number of deaths per year is colon cancer (67 fewer deaths per year).

## Sexes combined and compared

The number of deaths from cancer is expected to grow by 836 deaths per year. The five cancers with the greatest expected growth in deaths are cancer of unknown primary site (200 extra deaths per year), lung cancer (114), prostate cancer (84), pancreatic cancer (68) and rectal cancer (50). The two cancers expected to decrease noticeably in number are colon cancer (153 fewer cases per year) and stomach cancer (17).

Both sexes are projected to have decreasing overall rates of death from cancer, -2.8 per year for males and -0.8 for females. The death rates for both sexes are expected to decrease for colon cancer (-1.2 for males, -0.8 for females), stomach cancer (-0.4 for males, -0.1 for females) and lymphoma (-0.2 for each sex), while both are projected to increase for cancer of unknown primary site (0.4 for males, 0.3 for females) and liver cancer (0.1 for each sex).

Just as for the incidence projections, lung cancer stands out as having the strongest opposite trend between the sexes: the death rate for females is expected to grow by 0.3 per year whereas for males it is expected to drop by 1.3. The reason for this difference is the same as was given in Chapter 3 on incidence projections, namely the difference in smoking trends in the 1970s and 1980s.

Other cancers for which the sex-specific trends in death rates are opposite are breast cancer (stable for males, down 0.3 per year for females), melanoma of the skin (up 0.1 for males, stable for females), rectal cancer (up 0.1 for males, stable for females) and cancer of the gallbladder (stable for males, down 0.1 for females).

**Table 5.1: Cancer mortality projections, number of deaths, males, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Lip (C00)	11	11	11	12	12	0
Tongue (C01–C02)	124	128	131	135	138	3
Mouth (C03–C06)	76	77	80	82	85	2
Major salivary glands (C07–C08)	58	62	65	69	74	4
Oropharynx (C09–C10)	94	95	97	100	102	2
Nasopharynx (C11)	41	42	43	44	45	1
Hypopharynx (C12–C13)	52	52	52	52	54	1
Pharynx, unspecified (C14)	49	50	52	53	55	2
Nasal cavity, middle ear & sinuses (C30–C31)	30	31	32	33	34	1
Larynx (C32)	217	221	224	227	233	4
<i>Head and neck (C01–C14, C30–C32)</i>	<i>740</i>	<i>758</i>	<i>776</i>	<i>796</i>	<i>820</i>	<i>20</i>
Oesophagus (C15)	816	843	869	895	922	26
Stomach (C16)	679	664	645	625	603	–19
Small intestine (C17)	57	59	61	63	65	2
Colon (C18)	1,352	1,280	1,196	1,106	1,010	–86
Rectum (C19–C20)	911	945	977	1,011	1,047	34
<i>Colorectal (C18–C20)</i>	<i>2,263</i>	<i>2,224</i>	<i>2,173</i>	<i>2,117</i>	<i>2,056</i>	<i>–52</i>
Anus (C21)	28	29	30	31	32	1
Liver (C22)	636	664	692	721	751	29
Gallbladder (C23–C24)	118	116	115	116	117	0
Pancreas (C25)	1,062	1,103	1,142	1,183	1,225	41
Lung, bronchus & trachea (C33–C34)	4,685	4,700	4,700	4,695	4,687	0
Other thoracic organs (C37–C38)	31	32	33	34	35	1
Bone & articular cartilage (C40–C41)	59	60	62	63	65	1
Melanoma of skin (C43)	844	883	920	959	1,000	39
Non-melanoma of skin (C44)	299	310	321	331	341	10
Mesothelioma (C45)	476	495	515	535	555	20
Kaposi sarcoma (C46)	2	2	3	3	3	0
Peritoneum & retroperitoneum (C48)	19	20	20	21	21	1
Other connective and soft tissue (C47, C49)	127	131	136	141	147	5
Breast (C50)	19	19	19	20	20	0
Penis (C60)	13	14	14	14	15	0
Prostate (C61)	3,028	3,124	3,203	3,283	3,366	84
Testis (C62)	23	24	24	25	25	0
Other male genital organs (C63)	4	4	4	4	4	0
Kidney (C64)	542	557	571	584	598	14
Bladder (C67)	703	731	757	784	812	27
Other urinary organs (C65–C66, C68)	41	43	45	46	48	2

(continued)

**Table 5.1 (continued): Cancer mortality projections, number of deaths, males, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Eye (C69)	21	22	22	23	24	1
Brain (C71)	687	704	720	737	754	17
Other central nervous system (C70, C72)	12	12	13	13	14	1
Thyroid (C73)	42	44	45	47	48	1
Other endocrine organs (C74–C75)	27	28	28	29	30	1
Hodgkin lymphoma (C81)	38	38	39	40	41	1
Non-Hodgkin lymphoma (C82–C85, C96)	818	827	833	839	846	7
<i>All lymphomas (C81–C85, C96)</i>	<i>856</i>	<i>865</i>	<i>872</i>	<i>879</i>	<i>888</i>	<i>8</i>
Immunoproliferative neoplasms (C88)	25	26	27	28	29	1
Myeloma (C90)	427	442	455	468	482	14
Lymphoid leukaemia (C91)	291	301	310	319	328	9
Myeloid leukaemia (C92–C94)	561	579	596	614	632	18
Leukaemia, unspecified (C95)	53	55	56	58	60	2
<i>All leukaemias (C91–C95)</i>	<i>904</i>	<i>934</i>	<i>962</i>	<i>991</i>	<i>1,021</i>	<i>29</i>
Polycythaemia vera (D45)	9	9	10	10	10	0
Myelodysplastic syndromes (D46)	224	235	244	253	263	10
Other chronic myeloproliferative diseases (D47 <sup>(b)</sup> )	73	75	76	77	78	1
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(b)</sup>)</i>	<i>2,519</i>	<i>2,586</i>	<i>2,645</i>	<i>2,706</i>	<i>2,771</i>	<i>62</i>
Multiple primary cancers (C97)	228	237	245	253	262	8
Unknown primary site (C26, C39, C76–C80)	1,825	1,934	2,041	2,152	2,270	111
<b>All cancers (C00–C97, D45–D47<sup>(b)</sup>)</b>	<b>22,687</b>	<b>23,186</b>	<b>23,619</b>	<b>24,060</b>	<b>24,520</b>	<b>454</b>

(a) Predicted average annual change in number of deaths, based on the gradient of the line that best fits the 1997–2005 data.

(b) Only includes D47.1 and D47.3.

Source: National Mortality Database, AIHW.

**Table 5.2: Cancer mortality projections, age-standardised rates<sup>(a)</sup>, males, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Lip (C00)	0.1	0.1	0.1	0.1	0.1	
Tongue (C01–C02)	1.2	1.2	1.2	1.2	1.2	
Mouth (C03–C06)	0.7	0.7	0.7	0.7	0.7	
Major salivary glands (C07–C08)	0.6	0.6	0.7	0.7	0.7	
Oropharynx (C09–C10)	0.9	0.9	0.9	0.9	0.9	
Nasopharynx (C11)	0.4	0.4	0.4	0.4	0.4	
Hypopharynx (C12–C13)	0.5	0.5	0.5	0.5	0.5	
Pharynx, unspecified (C14)	0.5	0.5	0.5	0.5	0.5	
Nasal cavity, middle ear & sinuses (C30–C31)	0.3	0.3	0.3	0.3	0.3	
Larynx (C32)	2.2	2.1	2.1	2.1	2.1	
<i>Head and neck (C01–C14, C30–C32)</i>	<i>7.3</i>	<i>7.3</i>	<i>7.2</i>	<i>7.2</i>	<i>7.2</i>	
Oesophagus (C15)	8.2	8.2	8.2	8.2	8.2	
Stomach (C16)	7.0	6.6	6.3	5.9	5.5	–0.4
Small intestine (C17)	0.6	0.6	0.6	0.6	0.6	
Colon (C18)	14.0	12.8	11.7	10.5	9.3	–1.2
Rectum (C19–C20)	9.2	9.2	9.3	9.3	9.4	0.1
<i>Colorectal (C18–C20)</i>	<i>23.2</i>	<i>22.1</i>	<i>21.0</i>	<i>19.8</i>	<i>18.7</i>	<i>–1.1</i>
Anus (C21)	0.3	0.3	0.3	0.3	0.3	
Liver (C22)	6.3	6.4	6.5	6.6	6.7	0.1
Gallbladder (C23–C24)	1.2	1.2	1.1	1.1	1.1	
Pancreas (C25)	10.7	10.7	10.8	10.8	10.9	
Lung, bronchus & trachea (C33–C34)	47.6	46.3	45.0	43.7	42.4	–1.3
Other thoracic organs (C37–C38)	0.3	0.3	0.3	0.3	0.3	
Bone & articular cartilage (C40–C41)	0.6	0.6	0.6	0.6	0.6	
Melanoma of skin (C43)	8.6	8.7	8.8	9.0	9.1	0.1
Non-melanoma of skin (C44)	3.2	3.2	3.2	3.2	3.2	
Mesothelioma (C45)	4.8	4.8	4.9	4.9	4.9	
Kaposi sarcoma (C46)	0.0	0.0	0.0	0.0	0.0	
Peritoneum & retroperitoneum (C48)	0.2	0.2	0.2	0.2	0.2	
Other connective and soft tissue (C47, C49)	1.3	1.3	1.3	1.3	1.3	
Breast (C50)	0.2	0.2	0.2	0.2	0.2	
Penis (C60)	0.1	0.1	0.1	0.1	0.1	
Prostate (C61)	33.2	32.8	32.4	32.0	31.6	–0.4
Testis (C62)	0.2	0.2	0.2	0.2	0.2	
Other male genital organs (C63)	0.0	0.0	0.0	0.0	0.0	
Kidney (C64)	5.5	5.5	5.4	5.4	5.4	
Bladder (C67)	7.6	7.6	7.5	7.5	7.5	
Other urinary organs (C65–C66, C68)	0.4	0.4	0.4	0.4	0.4	

(continued)

**Table 5.2 (continued): Cancer mortality projections, age-standardised rates<sup>(a)</sup>, males, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Eye (C69)	0.2	0.2	0.2	0.2	0.2	
Brain (C71)	6.7	6.7	6.7	6.6	6.6	
Other central nervous system (C70, C72)	0.1	0.1	0.1	0.1	0.1	
Thyroid (C73)	0.4	0.4	0.4	0.4	0.4	
Other endocrine organs (C74–C75)	0.3	0.3	0.3	0.3	0.3	
Hodgkin lymphoma (C81)	0.4	0.4	0.4	0.4	0.4	
Non-Hodgkin lymphoma (C82–C85, C96)	8.4	8.2	8.1	7.9	7.7	–0.2
<i>All lymphomas (C81–C85, C96)</i>	8.8	8.6	8.4	8.2	8.1	–0.2
Immunoproliferative neoplasms (C88)	0.3	0.3	0.3	0.3	0.3	
Myeloma (C90)	4.4	4.4	4.4	4.4	4.4	
Lymphoid leukaemia (C91)	3.0	3.0	3.0	3.0	3.0	
Myeloid leukaemia (C92–C94)	5.8	5.8	5.8	5.8	5.8	
Leukaemia, unspecified (C95)	0.6	0.6	0.6	0.6	0.6	
<i>All leukaemias (C91–C95)</i>	9.3	9.3	9.3	9.3	9.3	
Polycythaemia vera (D45)	0.1	0.1	0.1	0.1	0.1	
Myelodysplastic syndromes (D46)	2.5	2.5	2.5	2.5	2.5	
Other chronic myeloproliferative diseases (D47 <sup>(c)</sup> )	0.8	0.8	0.8	0.8	0.7	
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(c)</sup>)</i>	26.2	26.0	25.8	25.6	25.4	–0.2
Multiple primary cancers (C97)	2.4	2.4	2.4	2.4	2.4	
Unknown primary site (C26, C39, C76–C80)	19.0	19.4	19.8	20.2	20.7	0.4
<b>All cancers (C00–C97, D45–D47<sup>(c)</sup>)</b>	<b>233.9</b>	<b>231.1</b>	<b>228.3</b>	<b>225.6</b>	<b>222.9</b>	<b>–2.8</b>

(a) Age-standardised mortality rate using the Australian 2001 Standard Population, and expressed per 100,000 males.

(b) Predicted average annual change in age-standardised rate, derived from the projections for the age-specific mortality rates, based on the 1997–2005 data. Change is rounded to one decimal place and not shown when it rounds to 0.0.

(c) Only includes D47.1 and D47.3.

Source: National Mortality Database, AIHW.

**Table 5.3: Cancer mortality projections, number of deaths, females, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Lip (C00)	5	5	5	5	6	0
Tongue (C01–C02)	56	57	58	59	60	1
Mouth (C03–C06)	56	58	59	61	63	2
Major salivary glands (C07–C08)	24	25	25	26	27	1
Oropharynx (C09–C10)	31	31	32	33	34	1
Nasopharynx (C11)	16	16	16	16	17	0
Hypopharynx (C12–C13)	9	9	9	10	10	0
Pharynx, unspecified (C14)	13	13	14	14	15	0
Nasal cavity, middle ear & sinuses (C30–C31)	15	16	17	18	19	1
Larynx (C32)	32	33	34	35	36	1
<i>Head and neck (C01–C14, C30–C32)</i>	<i>252</i>	<i>258</i>	<i>265</i>	<i>272</i>	<i>280</i>	<i>7</i>
Oesophagus (C15)	365	375	385	396	406	10
Stomach (C16)	459	462	464	465	466	2
Small intestine (C17)	41	41	42	43	44	1
Colon (C18)	1,267	1,206	1,138	1,065	1,002	–67
Rectum (C19–C20)	585	601	617	633	650	16
<i>Colorectal (C18–C20)</i>	<i>1,852</i>	<i>1,807</i>	<i>1,755</i>	<i>1,698</i>	<i>1,652</i>	<i>–51</i>
Anus (C21)	33	34	35	36	37	1
Liver (C22)	351	371	392	413	436	21
Gallbladder (C23–C24)	180	177	174	170	168	–3
Pancreas (C25)	1,008	1,035	1,061	1,089	1,117	27
Lung, bronchus & trachea (C33–C34)	2,818	2,928	3,039	3,155	3,277	115
Other thoracic organs (C37–C38)	18	18	19	19	20	0
Bone & articular cartilage (C40–C41)	39	40	41	42	43	1
Melanoma of skin (C43)	409	419	430	440	452	11
Non-melanoma of skin (C44)	138	142	147	151	156	4
Mesothelioma (C45)	90	94	98	102	106	4
Kaposi sarcoma (C46)	1	1	1	1	1	0
Peritoneum & retroperitoneum (C48)	60	62	65	67	70	2
Other connective and soft tissue (C47, C49)	105	108	111	115	118	3
Breast (C50)	2,779	2,818	2,856	2,892	2,930	38
Vulva (C51)	62	64	66	67	69	2
Vagina (C52)	31	32	32	33	34	1
Cervix (C53)	237	235	233	231	229	–2
Uterus, body (C54)	255	260	265	269	274	5
Uterus, unspecified (C55)	120	134	149	164	181	15
Ovary (C56)	895	918	940	963	987	23
Other female genital organs (C57)	22	22	23	23	24	1

(continued)

**Table 5.3 (continued): Cancer mortality projections, number of deaths, females, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Placenta (C58)	1	1	1	1	1	0
<i>Gynaecological (C51–C58)</i>	<i>1,622</i>	<i>1,665</i>	<i>1,708</i>	<i>1,753</i>	<i>1,800</i>	<i>44</i>
Kidney (C64)	362	371	381	390	401	10
Bladder (C67)	277	280	282	284	287	2
Other urinary organs (C65–C66, C68)	40	41	42	43	44	1
Eye (C69)	16	17	17	18	18	0
Brain (C71)	485	494	503	513	523	9
Other central nervous system (C70, C72)	9	10	10	10	10	0
Thyroid (C73)	53	54	55	57	58	1
Other endocrine organs (C74–C75)	26	26	27	28	28	1
Hodgkin lymphoma (C81)	30	31	32	32	33	1
Non-Hodgkin lymphoma (C82–C85, C96)	671	662	653	646	640	–8
<i>All lymphomas (C81–C85, C96)</i>	<i>701</i>	<i>693</i>	<i>684</i>	<i>678</i>	<i>673</i>	<i>–7</i>
Immunoproliferative neoplasms (C88)	16	16	17	17	17	0
Myeloma (C90)	347	356	365	374	384	9
Lymphoid leukaemia (C91)	186	189	193	196	201	4
Myeloid leukaemia (C92–C94)	412	422	433	443	454	11
Leukaemia, unspecified (C95)	45	46	47	48	50	1
<i>All leukaemias (C91–C95)</i>	<i>643</i>	<i>658</i>	<i>673</i>	<i>688</i>	<i>705</i>	<i>16</i>
Polycythaemia vera (D45)	14	15	15	15	16	0
Myelodysplastic syndromes (D46)	140	143	146	149	152	3
Other chronic myeloproliferative diseases (D47 <sup>(b)</sup> )	65	67	69	71	73	2
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(b)</sup>)</i>	<i>1,925</i>	<i>1,948</i>	<i>1,968</i>	<i>1,993</i>	<i>2,021</i>	<i>24</i>
Multiple primary cancers (C97)	138	143	149	156	162	6
Unknown primary site (C26, C39, C76–C80)	1,732	1,818	1,905	1,993	2,088	89
<b>All cancers (C00–C97, D45–D47<sup>(b)</sup>)</b>	<b>17,684</b>	<b>18,065</b>	<b>18,432</b>	<b>18,810</b>	<b>19,223</b>	<b>382</b>

(a) Predicted average annual change in number of deaths, based on the gradient of the line that best fits the 1997–2005 data.

(b) Only includes D47.1 and D47.3.

Source: National Mortality Database, AIHW.

**Table 5.4: Cancer mortality projections, age-standardised rates<sup>(a)</sup>, females, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Lip (C00)	0.0	0.0	0.0	0.0	0.0	
Tongue (C01–C02)	0.5	0.5	0.5	0.4	0.4	
Mouth (C03–C06)	0.5	0.5	0.5	0.5	0.5	
Major salivary glands (C07–C08)	0.2	0.2	0.2	0.2	0.2	
Oropharynx (C09–C10)	0.3	0.3	0.3	0.3	0.3	
Nasopharynx (C11)	0.1	0.1	0.1	0.1	0.1	
Hypopharynx (C12–C13)	0.1	0.1	0.1	0.1	0.1	
Pharynx, unspecified (C14)	0.1	0.1	0.1	0.1	0.1	
Nasal cavity, middle ear & sinuses (C30–C31)	0.1	0.1	0.1	0.1	0.1	
Larynx (C32)	0.3	0.3	0.3	0.3	0.3	
<i>Head and neck (C01–C14, C30–C32)</i>	<i>2.1</i>	<i>2.1</i>	<i>2.1</i>	<i>2.1</i>	<i>2.1</i>	
Oesophagus (C15)	2.9	2.9	2.9	2.9	2.9	
Stomach (C16)	3.8	3.7	3.6	3.6	3.5	–0.1
Small intestine (C17)	0.3	0.3	0.3	0.3	0.3	
Colon (C18)	10.1	9.4	8.6	7.8	7.1	–0.8
Rectum (C19–C20)	4.8	4.8	4.8	4.8	4.9	
<i>Colorectal (C18–C20)</i>	<i>15.0</i>	<i>14.2</i>	<i>13.4</i>	<i>12.6</i>	<i>11.9</i>	<i>–0.8</i>
Anus (C21)	0.3	0.3	0.3	0.3	0.3	
Liver (C22)	2.9	3.0	3.1	3.1	3.2	0.1
Gallbladder (C23–C24)	1.4	1.4	1.3	1.2	1.2	–0.1
Pancreas (C25)	8.2	8.2	8.2	8.2	8.2	
Lung, bronchus & trachea (C33–C34)	23.8	24.1	24.4	24.7	25.0	0.3
Other thoracic organs (C37–C38)	0.2	0.1	0.1	0.1	0.1	
Bone & articular cartilage (C40–C41)	0.3	0.3	0.4	0.4	0.4	
Melanoma of skin (C43)	3.5	3.5	3.5	3.5	3.5	
Non-melanoma of skin (C44)	1.0	1.0	1.0	1.0	1.0	
Mesothelioma (C45)	0.7	0.8	0.8	0.8	0.8	
Kaposi sarcoma (C46)	0.0	0.0	0.0	0.0	0.0	
Peritoneum & retroperitoneum (C48)	0.5	0.5	0.5	0.5	0.5	
Other connective and soft tissue (C47, C49)	0.9	0.9	0.9	0.9	0.9	
Breast (C50)	23.5	23.2	22.9	22.6	22.3	–0.3
Vulva (C51)	0.5	0.5	0.5	0.5	0.5	
Vagina (C52)	0.2	0.2	0.2	0.2	0.2	
Cervix (C53)	2.0	2.0	1.9	1.8	1.8	–0.1
Uterus, body (C54)	2.1	2.1	2.1	2.1	2.1	
Uterus, unspecified (C55)	1.0	1.1	1.1	1.2	1.3	0.1
Ovary (C56)	7.6	7.6	7.6	7.6	7.6	
Other female genital organs (C57)	0.2	0.2	0.2	0.2	0.2	

(continued)

**Table 5.4 (continued): Cancer mortality projections, age-standardised rates<sup>(a)</sup>, females, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Placenta (C58)	0.0	0.0	0.0	0.0	0.0	
<i>Gynaecological (C51–C58)</i>	13.6	13.7	13.7	13.7	13.7	
Kidney (C64)	3.0	3.0	3.0	3.0	3.0	
Bladder (C67)	2.1	2.1	2.0	2.0	2.0	
Other urinary organs (C65–C66, C68)	0.3	0.3	0.3	0.3	0.3	
Eye (C69)	0.1	0.1	0.1	0.1	0.1	
Brain (C71)	4.3	4.3	4.3	4.3	4.2	
Other central nervous system (C70, C72)	0.1	0.1	0.1	0.1	0.1	
Thyroid (C73)	0.4	0.4	0.4	0.4	0.4	
Other endocrine organs (C74–C75)	0.2	0.2	0.2	0.2	0.2	
Hodgkin lymphoma (C81)	0.3	0.3	0.3	0.3	0.3	
Non-Hodgkin lymphoma (C82–C85, C96)	5.4	5.2	5.0	4.8	4.6	–0.2
<i>All lymphomas (C81–C85, C96)</i>	5.7	5.4	5.2	5.0	4.8	–0.2
Immunoproliferative neoplasms (C88)	0.1	0.1	0.1	0.1	0.1	
Myeloma (C90)	2.8	2.8	2.8	2.8	2.8	
Lymphoid leukaemia (C91)	1.5	1.5	1.5	1.5	1.5	
Myeloid leukaemia (C92–C94)	3.4	3.4	3.4	3.4	3.5	
Leukaemia, unspecified (C95)	0.3	0.3	0.3	0.3	0.3	
<i>All leukaemias (C91–C95)</i>	5.3	5.3	5.3	5.3	5.3	
Polycythaemia vera (D45)	0.1	0.1	0.1	0.1	0.1	
Myelodysplastic syndromes (D46)	1.0	1.0	1.0	1.0	1.0	
Other chronic myeloproliferative diseases (D47 <sup>(c)</sup> )	0.5	0.5	0.5	0.5	0.5	
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(c)</sup>)</i>	15.5	15.3	15.0	14.8	14.6	–0.2
Multiple primary cancers (C97)	1.1	1.1	1.1	1.1	1.2	
Unknown primary site (C26, C39, C76–C80)	13.7	14.0	14.2	14.5	14.7	0.3
<b>All cancers (C00–C97, D45–D47<sup>(c)</sup>)</b>	<b>146.0</b>	<b>145.1</b>	<b>144.3</b>	<b>143.5</b>	<b>142.9</b>	<b>–0.8</b>

(a) Age-standardised mortality rate using the Australian 2001 Standard Population, and expressed per 100,000 females.

(b) Predicted average annual change in age-standardised rate, derived from the projections for the age-specific mortality rates, based on the 1997–2005 data. Change is rounded to one decimal place and not shown when it rounds to 0.0.

(c) Only includes D47.1 and D47.3.

Source: National Mortality Database, AIHW.

**Table 5.5: Cancer mortality projections, number of deaths, persons, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Lip (C00)	16	16	17	17	18	1
Tongue (C01–C02)	181	185	189	194	199	4
Mouth (C03–C06)	132	135	139	144	148	4
Major salivary glands (C07–C08)	82	86	91	95	100	5
Oropharynx (C09–C10)	125	126	129	133	136	3
Nasopharynx (C11)	57	58	59	61	62	1
Hypopharynx (C12–C13)	61	61	61	62	64	1
Pharynx, unspecified (C14)	62	64	66	68	70	2
Nasal cavity, middle ear & sinuses (C30–C31)	45	47	49	51	53	2
Larynx (C32)	249	254	258	262	269	5
<i>Head and neck (C01–C14, C30–C32)</i>	<i>992</i>	<i>1,016</i>	<i>1,041</i>	<i>1,068</i>	<i>1,100</i>	<i>27</i>
Oesophagus (C15)	1,181	1,218	1,254	1,291	1,329	37
Stomach (C16)	1,138	1,126	1,109	1,090	1,069	–17
Small intestine (C17)	98	100	103	106	109	3
Colon (C18)	2,619	2,486	2,334	2,171	2,011	–153
Rectum (C19–C20)	1,495	1,546	1,594	1,644	1,697	50
<i>Colorectal (C18–C20)</i>	<i>4,114</i>	<i>4,031</i>	<i>3,928</i>	<i>3,815</i>	<i>3,708</i>	<i>–103</i>
Anus (C21)	61	63	65	67	68	2
Liver (C22)	986	1,035	1,084	1,134	1,187	50
Gallbladder (C23–C24)	297	294	289	286	284	–3
Pancreas (C25)	2,069	2,138	2,204	2,272	2,342	68
Lung, bronchus & trachea (C33–C34)	7,503	7,628	7,739	7,851	7,963	114
Other thoracic organs (C37–C38)	49	50	52	53	55	2
Bone & articular cartilage (C40–C41)	98	100	103	105	108	3
Melanoma of skin (C43)	1,253	1,302	1,350	1,399	1,452	50
Non-melanoma of skin (C44)	437	453	467	482	497	15
Mesothelioma (C45)	566	589	612	636	661	24
Kaposi sarcoma (C46)	3	3	3	3	3	0
Peritoneum & retroperitoneum (C48)	79	82	85	88	92	3
Other connective and soft tissue (C47, C49)	232	240	247	256	265	8
Breast (C50)	2,798	2,838	2,875	2,912	2,950	38
Vulva (C51)	62	64	66	67	69	2
Vagina (C52)	31	32	32	33	34	1
Cervix (C53)	237	235	233	231	229	–2
Uterus, body (C54)	255	260	265	269	274	5
Uterus, unspecified (C55)	120	134	149	164	181	15
Ovary (C56)	895	918	940	963	987	23
Other female genital organs (C57)	22	22	23	23	24	1

(continued)

**Table 5.5 (continued): Cancer mortality projections, number of deaths, persons, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(a)</sup></b>
Placenta (C58)	1	1	1	1	1	0
<i>Gynaecological (C51–C58)</i>	<i>1,622</i>	<i>1,665</i>	<i>1,708</i>	<i>1,753</i>	<i>1,800</i>	<i>44</i>
Penis (C60)	13	14	14	14	15	0
Prostate (C61)	3,028	3,124	3,203	3,283	3,366	84
Testis (C62)	23	24	24	25	25	0
Other male genital organs (C63)	4	4	4	4	4	0
Kidney (C64)	904	928	951	975	999	24
Bladder (C67)	979	1,011	1,039	1,068	1,099	30
Other urinary organs (C65–C66, C68)	81	84	87	90	93	3
Eye (C69)	37	39	40	41	42	1
Brain (C71)	1,172	1,198	1,223	1,250	1,277	26
Other central nervous system (C70, C72)	21	22	23	23	24	1
Thyroid (C73)	95	98	101	104	107	3
Other endocrine organs (C74–C75)	53	54	55	57	58	1
Hodgkin lymphoma (C81)	68	69	71	73	74	2
Non-Hodgkin lymphoma (C82–C85, C96)	1,489	1,489	1,485	1,484	1,487	–1
<i>All lymphomas (C81–C85, C96)</i>	<i>1,557</i>	<i>1,559</i>	<i>1,556</i>	<i>1,557</i>	<i>1,561</i>	<i>1</i>
Immunoproliferative neoplasms (C88)	41	43	44	45	47	1
Myeloma (C90)	774	798	820	842	866	23
Lymphoid leukaemia (C91)	477	490	502	515	529	13
Myeloid leukaemia (C92–C94)	973	1,001	1,029	1,057	1,087	28
Leukaemia, unspecified (C95)	97	101	104	107	110	3
<i>All leukaemias (C91–C95)</i>	<i>1,547</i>	<i>1,592</i>	<i>1,635</i>	<i>1,679</i>	<i>1,726</i>	<i>45</i>
Polycythaemia vera (D45)	23	24	25	25	26	1
Myelodysplastic syndromes (D46)	364	378	390	402	416	13
Other chronic myeloproliferative diseases (D47 <sup>(b)</sup> )	138	142	145	148	151	3
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(b)</sup>)</i>	<i>4,445</i>	<i>4,534</i>	<i>4,614</i>	<i>4,699</i>	<i>4,792</i>	<i>86</i>
Multiple primary cancers (C97)	366	380	394	409	424	14
Unknown primary site (C26, C39, C76–C80)	3,557	3,752	3,945	4,146	4,358	200
<b>All cancers (C00–C97, D45–D47<sup>(b)</sup>)</b>	<b>40,371</b>	<b>41,251</b>	<b>42,050</b>	<b>42,870</b>	<b>43,743</b>	<b>836</b>

(a) Predicted average annual change in number of deaths, based on the sum of the male and female projections.

(b) Only includes D47.1 and D47.3.

Source: National Mortality Database, AIHW.

**Table 5.6: Cancer mortality projections, age-standardised rates<sup>(a)</sup>, persons, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Lip (C00)	0.1	0.1	0.1	0.1	0.1	
Tongue (C01–C02)	0.8	0.8	0.8	0.8	0.8	
Mouth (C03–C06)	0.6	0.6	0.6	0.6	0.6	
Major salivary glands (C07–C08)	0.4	0.4	0.4	0.4	0.4	
Oropharynx (C09–C10)	0.6	0.6	0.6	0.6	0.6	
Nasopharynx (C11)	0.3	0.3	0.3	0.3	0.3	
Hypopharynx (C12–C13)	0.3	0.3	0.3	0.3	0.3	
Pharynx, unspecified (C14)	0.3	0.3	0.3	0.3	0.3	
Nasal cavity, middle ear & sinuses (C30–C31)	0.2	0.2	0.2	0.2	0.2	
Larynx (C32)	1.1	1.1	1.1	1.1	1.1	
<i>Head and neck (C01–C14, C30–C32)</i>	<i>4.5</i>	<i>4.5</i>	<i>4.5</i>	<i>4.5</i>	<i>4.5</i>	
Oesophagus (C15)	5.4	5.4	5.4	5.4	5.4	
Stomach (C16)	5.2	5.0	4.8	4.6	4.4	–0.2
Small intestine (C17)	0.4	0.4	0.4	0.4	0.4	
Colon (C18)	11.9	10.9	10.0	9.0	8.1	–0.9
Rectum (C19–C20)	6.9	6.9	6.9	7.0	7.0	
<i>Colorectal (C18–C20)</i>	<i>18.8</i>	<i>17.8</i>	<i>16.9</i>	<i>16.0</i>	<i>15.2</i>	<i>–0.9</i>
Anus (C21)	0.3	0.3	0.3	0.3	0.3	
Liver (C22)	4.5	4.6	4.7	4.8	4.9	0.1
Gallbladder (C23–C24)	1.3	1.3	1.2	1.2	1.1	–0.1
Pancreas (C25)	9.4	9.4	9.4	9.5	9.5	
Lung, bronchus & trachea (C33–C34)	34.4	34.0	33.6	33.2	32.8	–0.4
Other thoracic organs (C37–C38)	0.2	0.2	0.2	0.2	0.2	
Bone & articular cartilage (C40–C41)	0.5	0.5	0.5	0.5	0.5	
Melanoma of skin (C43)	5.7	5.8	5.9	5.9	6.0	0.1
Non-melanoma of skin (C44)	2.0	2.0	2.0	1.9	1.9	
Mesothelioma (C45)	2.6	2.6	2.6	2.7	2.7	
Kaposi sarcoma (C46)	0.0	0.0	0.0	0.0	0.0	
Peritoneum & retroperitoneum (C48)	0.4	0.4	0.4	0.4	0.4	
Other connective and soft tissue (C47, C49)	1.1	1.1	1.1	1.1	1.1	
Kidney (C64)	4.1	4.1	4.1	4.1	4.1	
Bladder (C67)	4.4	4.4	4.4	4.4	4.4	
Other urinary organs (C65–C66, C68)	0.4	0.4	0.4	0.4	0.4	
Eye (C69)	0.2	0.2	0.2	0.2	0.2	
Brain (C71)	5.4	5.4	5.4	5.4	5.4	
Other central nervous system (C70, C72)	0.1	0.1	0.1	0.1	0.1	
Thyroid (C73)	0.4	0.4	0.4	0.4	0.4	
Other endocrine organs (C74–C75)	0.3	0.3	0.3	0.3	0.3	

(continued)

**Table 5.6 (continued): Cancer mortality projections, age-standardised rates<sup>(a)</sup>, persons, Australia, 2006 to 2010**

<b>Cancer site/type (ICD-10 codes)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Annual change<sup>(b)</sup></b>
Hodgkin lymphoma (C81)	0.3	0.3	0.3	0.3	0.3	
Non-Hodgkin lymphoma (C82–C85, C96)	6.8	6.6	6.4	6.2	6.0	–0.2
<i>All lymphomas (C81–C85, C96)</i>	<i>7.1</i>	<i>6.9</i>	<i>6.7</i>	<i>6.5</i>	<i>6.3</i>	<i>–0.2</i>
Immunoproliferative neoplasms (C88)	0.2	0.2	0.2	0.2	0.2	
Myeloma (C90)	3.5	3.5	3.5	3.5	3.5	
Lymphoid leukaemia (C91)	2.2	2.2	2.2	2.2	2.2	
Myeloid leukaemia (C92–C94)	4.5	4.5	4.5	4.5	4.5	
Leukaemia, unspecified (C95)	0.4	0.4	0.4	0.4	0.4	
<i>All leukaemias (C91–C95)</i>	<i>7.1</i>	<i>7.1</i>	<i>7.1</i>	<i>7.1</i>	<i>7.1</i>	
Polycythaemia vera (D45)	0.1	0.1	0.1	0.1	0.1	
Myelodysplastic syndromes (D46)	1.6	1.6	1.6	1.6	1.6	
Other chronic myeloproliferative diseases (D47 <sup>(c)</sup> )	0.6	0.6	0.6	0.6	0.6	
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(c)</sup>)</i>	<i>20.2</i>	<i>20.0</i>	<i>19.8</i>	<i>19.6</i>	<i>19.4</i>	<i>–0.2</i>
Multiple primary cancers (C97)	1.7	1.7	1.7	1.7	1.7	
Unknown primary site (C26, C39, C76–C80)	16.1	16.4	16.8	17.1	17.5	0.3
<b>All cancers (C00–C97, D45–D47<sup>(c)</sup>)</b>	<b>183.8</b>	<b>182.4</b>	<b>180.8</b>	<b>179.4</b>	<b>178.0</b>	<b>–1.5</b>

(a) Age-standardised mortality rate using the Australian 2001 Standard Population, and expressed per 100,000 persons.

(b) Predicted average annual change in age-standardised rate, based on the sum of the male and female age-specific projections. Change is rounded to one decimal place and not shown when it rounds to 0.0.

(c) Only includes D47.1 and D47.3.

Source: National Mortality Database, AIHW.

## **6 Incidence of lymphohaematopoietic cancers in 2005**

Lymphohaematopoietic cancers (LHCs) are cancers of the blood and lymphatic systems of the body, the best-known examples of which are leukaemia and lymphoma. Ongoing research into the LHCs has led to an increased understanding of how they are related to each other. The ICD-10 classification scheme for these cancers is now considered out of date (WHO 2000, p. 13) and much effort has been directed towards a new classification scheme, based on the WHO (2001) classification. The table below gives the 2005 incidence of LHCs using a WHO-based classification scheme agreed upon by the Australasian Association of Cancer Registries and the Australian Blood Cancer Registry. See Appendix F for the list of ICD-O-3 morphology codes that correspond to each group. Note that mortality numbers are not available for these groups because cause of death is coded in the ICD-10 scheme only.

**Table 6.1: Incidence of lymphohaematopoietic cancers, Australia, 2005**

Group	Males			Females			Persons		
	Cases	ASR (A) <sup>(a)</sup>	ASR (W) <sup>(b)</sup>	Cases	ASR (A) <sup>(a)</sup>	ASR (W) <sup>(b)</sup>	Cases	ASR (A) <sup>(a)</sup>	ASR (W) <sup>(b)</sup>
<i>Lymphoid cancers</i>	3,855	39.2	29.8	3,053	27.0	20.7	6,908	32.6	25.0
Hodgkin lymphomas	279	2.8	2.7	248	2.4	2.4	527	2.6	2.5
<i>Mature B-cell cancers</i>	2,853	29.0	21.1	2,229	19.5	14.2	5,082	23.9	17.5
Chronic lymphocytic leukaemia / Small lymphocytic lymphoma	619	6.3	4.5	350	3.0	2.1	969	4.5	3.2
Diffuse large B-cell lymphoma	699	7.1	5.2	687	6.0	4.4	1,386	6.5	4.8
Follicular lymphoma	483	4.7	3.8	420	3.8	3.0	903	4.3	3.3
Plasma cell disorders	652	6.8	4.6	544	4.7	3.3	1,196	5.6	3.9
Other mature B-cell cancers	400	4.1	3.1	228	2.0	1.5	628	3.0	2.2
Mature T- and NK-cell cancers	179	1.8	1.4	138	1.3	1.0	317	1.5	1.2
Acute lymphoblastic leukaemia	182	1.8	2.1	122	1.2	1.3	304	1.5	1.7
Non-Hodgkin lymphomas, NOS	231	2.4	1.7	190	1.6	1.1	421	2.0	1.4
Lymphoid cancers, NOS	131	1.4	0.9	126	1.0	0.7	257	1.2	0.8
<i>Myeloid cancers</i>	1,568	16.6	11.4	1,170	10.0	7.2	2,738	12.9	9.1
Acute myeloid leukaemias	490	5.0	3.8	375	3.4	2.7	865	4.1	3.2
Chronic myeloid leukaemia	149	1.6	1.2	93	0.8	0.6	242	1.2	0.9
Other chronic myeloproliferative diseases	324	3.3	2.4	250	2.2	1.6	574	2.7	1.9
Myelodysplastic syndromes	490	5.5	3.2	367	3.0	1.9	857	4.0	2.4
Myelodysplastic / myeloproliferative diseases	109	1.2	0.8	78	0.7	0.4	187	0.9	0.6
Myeloid cancers, NOS	6	0.1	0.0	7	0.1	0.0	13	0.1	0.0
Lymphoid / myeloid cancers, NOS	19	0.2	0.1	36	0.3	0.2	55	0.3	0.2
Other lymphohaematopoietic cancers	12	0.1	0.1	7	0.1	0.1	19	0.1	0.1
<b>Total</b>	<b>5,454</b>	<b>56.1</b>	<b>41.5</b>	<b>4,266</b>	<b>37.4</b>	<b>28.2</b>	<b>9,720</b>	<b>45.9</b>	<b>34.4</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 males/females/persons.

(b) Age-standardised incidence rate using the WHO 2000 World Standard Population, and expressed per 100,000 males/females/persons.

Source: National Cancer Statistics Clearing House, AIHW.

# 7 Cancers attributed to smoking and excessive alcohol consumption in 2005

Data on cancers attributed to smoking and excessive alcohol consumption are derived from a series of age- and sex-specific aetiological fractions developed by Ridolfo and Stevenson (2001) and are summarised in Appendix E. These fractions are based on an analysis of international and Australian studies and estimate the probability that a specific agent (tobacco or excessive alcohol) causes a specific disease (cancer).

While tobacco and alcohol have each been associated with cancer in their own right, they often occur together and may interact to produce higher or lower risks. To the extent possible, the estimates of the aetiological fractions have been derived to represent the independent contribution of each risk factor. However, it is not possible to allow for all the complexities of the interactions between risk factors using this methodology. Hence the fractions for tobacco and alcohol cannot be summed to give a combined effect of the two risk factors.

## 7.1 Main findings

In 2005 there were an estimated 11,308 new cases of cancer and 8,155 deaths from cancer that can be attributed to smoking. This represents over 11% of cases and nearly 21% of cancer deaths.

There were an estimated 2,997 new cases of cancer and 1,376 deaths from cancer attributed to excessive alcohol consumption. This represents 3.0% of cases and 3.5% of cancer deaths.

**Table 7.1: Cancer incidence and mortality attributed to smoking, Australia, 2005**

	Number <sup>(a)</sup>	Per cent of total	ASR(A) <sup>(b)</sup>	ASR(W) <sup>(c)</sup>
<b>Incidence</b>				
Males	7,874	14.0	80.9	55.7
Females	3,435	7.7	30.0	21.2
Persons	11,308	11.3	53.0	37.2
<b>Mortality</b>				
Males	5,637	25.6	58.8	39.2
Females	2,518	14.7	21.6	14.7
Persons	8,155	20.9	38.2	25.9

(a) Rounded to nearest whole number.

(b) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 males/females/persons.

(c) Age-standardised incidence rate using the WHO 2000 World Standard Population, and expressed per 100,000 males/females/persons.

Sources: National Cancer Statistics Clearing House and National Mortality Database, AIHW.

**Table 7.2: Cancer incidence and mortality attributed to excessive consumption of alcohol, Australia, 2005**

<b>Sex</b>	<b>Number<sup>(a)</sup></b>	<b>Per cent of total</b>	<b>ASR(A)<sup>(b)</sup></b>	<b>ASR(W)<sup>(c)</sup></b>
<b>Incidence</b>				
Males	1,299	2.3	12.9	9.6
Females	1,697	3.8	15.3	12.1
Persons	2,997	3.0	14.1	10.8
<b>Mortality</b>				
Males	813	3.7	8.3	5.8
Females	564	3.3	4.8	3.4
Persons	1,376	3.5	6.4	4.6

(a) Rounded to nearest whole number.

(b) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 males/females/persons.

(c) Age-standardised incidence rate using the WHO 2000 World Standard Population, and expressed per 100,000 males/females/persons.

Sources: National Cancer Statistics Clearing House and National Mortality Database, AIHW.

## **8 Incidence in the states and territories, 2001–2005**

Cancer registration is based on the patient's state or territory of residence at the time of diagnosis. Differences in age-standardised rates between the states and territories may be explained by variations in underlying cancer risk, the availability and utilisation of diagnostic procedures, reporting and coding differences, and normal incidence rate fluctuations.

Incidence rates for many types of cancer are considerably lower or higher for the Northern Territory than for other states and territories. These differences are mainly due to low or high incidence of these cancers in Aboriginal and Torres Strait Islander peoples, who comprise 29% of the Northern Territory population (d'Espaignet et al. 1996; Condon et al. 2001).

Care should be taken when interpreting incidence rates, especially for less common cancers and for states and territories with small populations. To reduce the problems of statistical variation due to small numbers of cases, the numbers and rates presented for the states and territories are annual averages over the 5-year period 2001–2005. For annual sex- and cancer-specific data or data cross-classified by other variables, such as age, the state and territory cancer registries should be contacted directly.

### **8.1 All cancers combined (excluding non-melanocytic skin cancer)**

For all cancers combined, the highest age-standardised incidence rate occurred in Queensland (494.4 cases per 100,000 persons), followed by Tasmania (479.4), New South Wales (471.3), Western Australia (466.6), South Australia (457.6), the Australian Capital Territory (453.5), Victoria (448.9) and the Northern Territory (425.4).

### **8.2 Melanoma of the skin**

The age-standardised rates for all forms of skin cancer are correlated with exposure to ultraviolet radiation (Jelfs et al. 1994). Therefore one would expect to see higher rates in the more northern states and territories, and lower rates in the more southern ones. However, the rates will also be affected by sun-protection behaviour and the percentage of the Indigenous population (which has a lower rate of skin cancer than the non-Indigenous population).

For melanoma of the skin, the highest age-standardised incidence rate occurred in Queensland (65.3 cases per 100,000 persons), followed by Western Australia (53.0), New South Wales (47.8), Tasmania (45.5), the Australian Capital Territory (45.2), South Australia (40.0), Victoria (37.4) and the Northern Territory (32.5).

## 8.3 All cancers, excluding all skin cancers

Given that rates of skin cancer have a geographic component, it is useful to compare the 'all-cancer' rates with the effect of skin cancer removed.

For all cancers, excluding all skin cancers, the age-standardised incidence rates become more similar and the ranking of the states and territories changes somewhat. The highest age-standardised incidence rate occurred in Tasmania (433.9 cases per 100,000 persons), followed by Queensland (429.1), New South Wales (423.6), South Australia (417.5), Western Australia (413.6), Victoria (411.5), the Australian Capital Territory (408.3) and the Northern Territory (392.9).

## 8.4 Prostate cancer

For prostate cancer, the highest age-standardised incidence rate occurred in Tasmania (157.8 cases per 100,000 males), followed by the Australian Capital Territory (154.1), New South Wales (150.9), Western Australia and Victoria (both 148.7), South Australia (146.9), Queensland (143.9) and the Northern Territory (120.3).

## 8.5 Colorectal cancer

For colorectal cancer, the highest age-standardised incidence rate occurred in Queensland (64.9 cases per 100,000 persons), followed by Victoria (64.6), South Australia (64.5), Tasmania (63.5), the Australian Capital Territory (61.9), New South Wales (61.0), Western Australia (58.7) and the Northern Territory (46.8).

## 8.6 Breast cancer in females

For breast cancer in females, the highest age-standardised incidence rate occurred in the Australian Capital Territory (129.2 cases per 100,000 females), followed by Tasmania (115.9), Western Australia (115.3), Queensland (115.1), South Australia (114.2), New South Wales (114.1), Victoria (112.2) and the Northern Territory (88.6).

## 8.7 Lung cancer

For lung cancer, the highest age-standardised incidence rate occurred in the Northern Territory (53.6 cases per 100,000 persons), followed by Tasmania (50.5), Western Australia (46.1), Queensland (45.0), Victoria (42.4), South Australia (42.0), New South Wales (41.6) and the Australian Capital Territory (31.8).

**Table 8.1: Average annual number of new cases of cancer, males, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
Lip (C00)	166	162	155	67	91	30	3	5	679
Tongue (C01–C02)	110	69	73	27	24	10	3	6	321
Mouth (C03–C06)	92	65	56	30	21	6	3	4	278
Major salivary glands (C07–C08)	53	23	32	12	14	2	1	1	138
Oropharynx (C09–C10)	69	53	53	25	20	6	4	7	238
Nasopharynx (C11)	36	24	10	6	5	1	0	1	83
Hypopharynx (C12–C13)	39	28	28	10	6	2	1	3	117
Pharynx, unspecified (C14)	21	12	16	6	4	1	0	2	62
Nasal cavity, middle ear & sinuses (C30–C31)	32	22	14	10	6	6	1	1	92
Larynx (C32)	178	125	104	40	37	13	5	8	510
<i>Head and neck (C01–C14, C30–C32)</i>	<i>630</i>	<i>420</i>	<i>388</i>	<i>167</i>	<i>136</i>	<i>47</i>	<i>18</i>	<i>33</i>	<i>1,840</i>
Oesophagus (C15)	249	189	142	80	62	26	9	7	764
Stomach (C16)	418	332	219	100	107	34	12	4	1,228
Small intestine (C17)	63	37	33	17	16	4	3	1	175
Colon (C18)	1,420	1,093	840	363	394	105	56	20	4,290
Rectum (C19–C20)	904	726	500	236	223	76	37	14	2,715
<i>Colorectal (C18–C20)</i>	<i>2,324</i>	<i>1,818</i>	<i>1,340</i>	<i>599</i>	<i>617</i>	<i>181</i>	<i>93</i>	<i>34</i>	<i>7,006</i>
Anus (C21)	44	30	26	8	6	3	1	1	121
Liver (C22)	250	183	99	54	52	12	7	4	662
Gallbladder (C23–C24)	81	67	49	27	21	8	2	1	257
Pancreas (C25)	358	265	183	91	88	27	9	5	1,025
Lung, bronchus & trachea (C33–C34)	1,858	1,382	1,085	537	473	169	50	37	5,591
Other thoracic organs (C37–C38)	18	10	10	4	4	1	1	0	48
Bone & articular cartilage (C40–C41)	40	21	21	9	8	3	1	1	105
Melanoma of skin (C43)	1,918	1,030	1,414	597	372	120	69	29	5,550
Mesothelioma (C45)	161	108	89	67	47	12	4	2	488
Kaposi sarcoma (C46)	23	12	4	3	3	0	0	0	45
Peritoneum & retroperitoneum (C48)	14	7	7	2	2	0	0	0	33
Other connective and soft tissue (C47, C49)	94	82	53	24	31	7	6	3	300
Breast (C50)	33	24	18	9	7	2	1	1	96
Penis (C60)	25	15	13	6	5	2	1	1	69
Prostate (C61)	4,842	3,445	2,505	1,289	1,171	386	185	56	13,880
Testis (C62)	221	158	119	68	46	17	13	5	648
Other male genital organs (C63)	7	5	4	1	3	2	0	1	22
Kidney (C64)	462	348	248	120	132	40	20	5	1,376
Bladder (C67)	586	259	518	140	134	50	19	6	1,712
Other urinary organs (C65–C66, C68)	65	44	36	19	14	3	2	1	183
Eye (C69)	51	31	35	16	13	3	3	1	151
Brain (C71)	269	205	145	72	66	20	11	7	796

(continued)

**Table 8.1 (continued): Average annual number of new cases of cancer, males, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
Other central nervous system (C70, C72)	13	9	6	2	4	1	1	0	36
Thyroid (C73)	127	68	76	34	24	6	5	3	344
Other endocrine organs (C74–C75)	18	11	7	3	2	1	1	0	44
Hodgkin lymphoma (C81)	85	74	39	21	22	5	4	2	252
Non-Hodgkin lymphoma (C82–C85, C96)	687	542	348	185	194	49	29	11	2,045
<i>All lymphomas (C81–C85, C96)</i>	<i>772</i>	<i>616</i>	<i>388</i>	<i>206</i>	<i>215</i>	<i>54</i>	<i>33</i>	<i>13</i>	<i>2,297</i>
Immunoproliferative cancers (C88)	16	19	9	6	4	2	2	0	57
Myeloma (C90)	252	165	110	53	56	19	6	3	664
Lymphoid leukaemia (C91)	271	156	151	75	92	27	12	3	787
Myeloid leukaemia (C92–C94)	263	177	136	55	79	16	11	4	741
Leukaemia, unspecified (C95)	21	9	2	3	2	1	0	0	40
<i>All leukaemias (C91–C95)</i>	<i>554</i>	<i>342</i>	<i>290</i>	<i>134</i>	<i>174</i>	<i>44</i>	<i>23</i>	<i>7</i>	<i>1,568</i>
Polycythaemia vera (D45) <sup>(a)</sup>	96	30	39	9	5	2	2	0	183
Myelodysplastic syndromes (D46) <sup>(a)</sup>	234	131	120	57	13	9	7	0	571
Other chronic myeloproliferative diseases (D47) <sup>(a)(b)</sup>	60	38	36	17	6	2	2	0	162
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47)<sup>(a)(b)</sup></i>	<i>1,985</i>	<i>1,341</i>	<i>991</i>	<i>482</i>	<i>474</i>	<i>130</i>	<i>76</i>	<i>23</i>	<i>5,502</i>
Unknown primary site (C26, C39, C76, C80)	702	341	288	123	135	44	22	14	1,669
<b>All cancers (C00–C96<sup>(c)</sup>, D45–D47<sup>(a)(b)</sup>)</b>	<b>18,116</b>	<b>12,460</b>	<b>10,326</b>	<b>4,838</b>	<b>4,368</b>	<b>1,393</b>	<b>651</b>	<b>290</b>	<b>52,443</b>

(a) Due to ICD-O-3 coding changes, D45–D47 were not recorded as malignant until 2002 to 2004, depending on the state or territory. Therefore the averages given are under-representative of the true averages.

(b) Only includes D47.1 and D47.3.

(c) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 8.2: Average annual number of new cases of cancer, females, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
Lip (C00)	65	66	58	28	29	11	1	1	259
Tongue (C01–C02)	58	38	30	14	13	2	1	2	159
Mouth (C03–C06)	61	40	34	16	10	6	2	2	170
Major salivary glands (C07–C08)	34	21	19	10	9	3	2	1	97
Oropharynx (C09–C10)	22	16	14	6	6	1	1	1	65
Nasopharynx (C11)	15	8	3	1	1	1	0	0	30
Hypopharynx (C12–C13)	6	7	6	2	1	0	0	0	22
Pharynx, unspecified (C14)	5	4	3	1	1	0	0	0	15
Nasal cavity, middle ear & sinuses (C30–C31)	19	13	7	4	3	1	1	0	47
Larynx (C32)	23	16	10	5	5	2	0	0	62
<i>Head and neck (C01–C14, C30–C32)</i>	<i>242</i>	<i>162</i>	<i>125</i>	<i>59</i>	<i>48</i>	<i>17</i>	<i>7</i>	<i>7</i>	<i>667</i>
Oesophagus (C15)	130	107	62	32	31	11	3	3	378
Stomach (C16)	233	197	106	52	60	17	10	3	679
Small intestine (C17)	49	32	29	12	15	4	2	1	144
Colon (C18)	1,392	1,045	766	334	367	111	49	14	4,078
Rectum (C19–C20)	558	457	298	147	159	47	22	5	1,693
<i>Colorectal (C18–C20)</i>	<i>1,949</i>	<i>1,502</i>	<i>1,064</i>	<i>481</i>	<i>526</i>	<i>159</i>	<i>70</i>	<i>19</i>	<i>5,771</i>
Anus (C21)	50	33	32	13	9	6	1	2	146
Liver (C22)	113	77	44	20	19	6	3	2	286
Gallbladder (C23–C24)	107	89	58	30	36	12	4	2	339
Pancreas (C25)	346	266	170	91	88	27	9	2	1,000
Lung, bronchus & trachea (C33–C34)	1,055	798	581	303	275	102	32	16	3,161
Other thoracic organs (C37–C38)	9	5	6	3	2	1	0	0	27
Bone & articular cartilage (C40–C41)	30	19	19	8	5	2	1	0	84
Melanoma of skin (C43)	1,376	865	1,045	413	298	110	62	21	4,189
Mesothelioma (C45)	36	23	20	13	10	2	1	0	106
Kaposi sarcoma (C46)	3	4	1	1	1	0	0	0	10
Peritoneum & retroperitoneum (C48)	41	23	28	11	12	2	3	0	121
Other connective and soft tissue (C47, C49)	71	61	41	16	22	7	3	1	223
Breast (C50)	4,073	2,969	2,240	1,139	1,009	314	200	61	12,005
Vulva (C51)	81	61	39	22	21	7	3	3	237
Vagina (C52)	25	11	12	10	5	2	1	0	67
Cervix (C53)	238	158	155	84	47	21	11	9	723
Uterus, body (C54)	503	439	317	134	161	36	21	8	1,619
Uterus, unspecified (C55)	41	29	12	3	0	4	1	0	90
Ovary (C56)	402	314	209	119	88	28	19	7	1,186
Other female genital organs (C57)	23	16	12	5	6	2	0	0	64
Placenta (C58)	3	2	2	0	1	0	0	0	8

(continued)

**Table 8.2 (continued): Average annual number of new cases of cancer, females, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
<i>Gynaecological (C51–C58)</i>	1,315	1,029	758	378	329	100	58	27	3,994
Kidney (C64)	268	202	134	66	64	26	12	2	774
Bladder (C67)	211	101	154	46	49	14	5	1	582
Other urinary organs (C65–C66, C68)	74	30	43	15	15	4	2	1	184
Eye (C69)	37	25	24	7	11	1	3	1	109
Brain (C71)	193	162	101	54	51	16	10	2	589
Other central nervous system (C70, C72)	17	9	4	3	1	1	1	0	36
Thyroid (C73)	419	202	220	95	70	19	14	6	1,045
Other endocrine organs (C74–C75)	11	8	8	5	2	0	1	0	35
Hodgkin lymphoma (C81)	79	59	33	17	16	4	3	2	212
Non-Hodgkin lymphoma (C82–C85, C96)	558	455	281	157	168	40	20	5	1,683
<i>All lymphomas (C81–C85, C96)</i>	637	514	314	174	183	45	22	6	1,895
Immunoproliferative cancers (C88)	12	10	6	3	2	1	1	0	35
Myeloma (C90)	179	137	86	47	46	14	6	1	517
Lymphoid leukaemia (C91)	174	107	104	42	58	15	7	2	509
Myeloid leukaemia (C92–C94)	188	141	94	45	53	10	8	3	544
Leukaemia, unspecified (C95)	17	7	3	2	2	2	0	0	34
<i>All leukaemias (C91–C95)</i>	379	256	201	90	113	27	15	5	1,086
Polycythaemia vera (D45) <sup>(a)</sup>	59	28	23	4	4	1	2	0	122
Myelodysplastic syndromes (D46) <sup>(a)</sup>	182	93	81	38	7	8	3	0	412
Other chronic myeloproliferative diseases (D47) <sup>(a)(b)</sup>	64	38	32	17	5	1	2	0	160
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47)<sup>(a)(b)</sup></i>	1,513	1,076	743	373	361	97	52	13	4,227
Unknown primary site (C26, C39, C76, C80)	656	361	238	112	137	49	21	9	1,584
<b>All cancers (C00–C96)<sup>(c)</sup>, D45–D47<sup>(a)(b)</sup></b>	<b>14,695</b>	<b>10,505</b>	<b>8,156</b>	<b>3,881</b>	<b>3,586</b>	<b>1,137</b>	<b>592</b>	<b>202</b>	<b>42,755</b>

(a) Due to ICD-O-3 coding changes, D45–D47 were not recorded as malignant until 2002 to 2004, depending on the state or territory. Therefore the averages given are under-representative of the true averages.

(b) Only includes D47.1 and D47.3.

(c) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 8.3: Average annual number of new cases of cancer, persons, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
Lip (C00)	232	228	213	95	120	41	4	6	939
Tongue (C01–C02)	168	108	103	42	36	12	5	7	480
Mouth (C03–C06)	153	104	90	46	32	12	5	6	449
Major salivary glands (C07–C08)	87	43	51	22	22	5	3	2	236
Oropharynx (C09–C10)	90	69	67	31	26	7	5	8	303
Nasopharynx (C11)	51	32	13	7	6	1	0	1	113
Hypopharynx (C12–C13)	45	35	33	12	7	2	1	4	138
Pharynx, unspecified (C14)	26	15	20	7	5	2	0	2	76
Nasal cavity, middle ear & sinuses (C30–C31)	51	35	22	14	9	7	2	1	140
Larynx (C32)	202	140	114	45	41	16	5	8	572
<i>Head and neck (C01–C14, C30–C32)</i>	<i>872</i>	<i>582</i>	<i>513</i>	<i>227</i>	<i>185</i>	<i>64</i>	<i>26</i>	<i>40</i>	<i>2,507</i>
Oesophagus (C15)	379	295	203	112	93	38	13	9	1,142
Stomach (C16)	652	530	325	152	168	52	22	7	1,907
Small intestine (C17)	113	70	62	29	32	8	5	2	319
Colon (C18)	2,811	2,138	1,606	697	761	217	105	34	8,368
Rectum (C19–C20)	1,462	1,183	798	383	382	123	59	19	4,408
<i>Colorectal (C18–C20)</i>	<i>4,273</i>	<i>3,321</i>	<i>2,404</i>	<i>1,080</i>	<i>1,143</i>	<i>340</i>	<i>163</i>	<i>53</i>	<i>12,776</i>
Anus (C21)	94	63	58	22	15	9	2	3	266
Liver (C22)	363	260	143	74	71	19	11	7	947
Gallbladder (C23–C24)	188	156	107	57	57	20	7	3	596
Pancreas (C25)	704	531	353	182	176	53	19	7	2,025
Lung, bronchus & trachea (C33–C34)	2,913	2,180	1,667	840	748	271	81	53	8,752
Other thoracic organs (C37–C38)	27	16	16	7	6	2	1	1	75
Bone & articular cartilage (C40–C41)	70	40	39	18	13	5	2	1	189
Melanoma of skin (C43)	3,294	1,895	2,458	1,010	670	230	131	50	9,739
Mesothelioma (C45)	198	131	109	79	56	14	5	2	595
Kaposi sarcoma (C46)	26	16	5	4	4	0	1	0	55
Peritoneum & retroperitoneum (C48)	56	30	35	12	14	3	3	0	154
Other connective and soft tissue (C47, C49)	165	143	93	40	53	15	9	4	523
Breast (C50)	4,106	2,993	2,259	1,148	1,016	317	201	62	12,101
Vulva (C51)	81	61	39	22	21	7	3	3	237
Vagina (C52)	25	11	12	10	5	2	1	0	67
Cervix (C53)	238	158	155	84	47	21	11	9	723
Uterus, body (C54)	503	439	317	134	161	36	21	8	1,619
Uterus, unspecified (C55)	41	29	12	3	0	4	1	0	90
Ovary (C56)	402	314	209	119	88	28	19	7	1,186
Other female genital organs (C57)	23	16	12	5	6	2	0	0	64
Placenta (C58)	3	2	2	0	1	0	0	0	8
<i>Gynaecological (C51–C58)</i>	<i>1,315</i>	<i>1,029</i>	<i>758</i>	<i>378</i>	<i>329</i>	<i>100</i>	<i>58</i>	<i>27</i>	<i>3,994</i>

*(continued)*

**Table 8.3 (continued): Average annual number of new cases of cancer, persons, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
Penis (C60)	25	15	13	6	5	2	1	1	69
Prostate (C61)	4,842	3,445	2,505	1,289	1,171	386	185	56	13,880
Testis (C62)	221	158	119	68	46	17	13	5	648
Other male genital organs (C63)	7	5	4	1	3	2	0	1	22
Kidney (C64)	730	551	382	186	196	66	32	7	2,150
Bladder (C67)	797	360	672	186	182	64	25	7	2,293
Other urinary organs (C65–C66, C68)	139	74	79	34	29	7	4	1	367
Eye (C69)	88	56	58	23	24	5	6	1	260
Brain (C71)	462	367	247	126	118	36	21	9	1,385
Other central nervous system (C70, C72)	30	18	10	5	5	2	2	0	72
Thyroid (C73)	546	271	296	128	95	25	19	9	1,389
Other endocrine organs (C74–C75)	29	19	15	9	4	1	1	0	78
Hodgkin lymphoma (C81)	164	133	72	38	37	9	7	4	464
Non-Hodgkin lymphoma (C82–C85, C96)	1,245	997	629	342	361	89	49	16	3,729
<i>All lymphomas (C81–C85, C96)</i>	<i>1,409</i>	<i>1,130</i>	<i>702</i>	<i>380</i>	<i>399</i>	<i>98</i>	<i>56</i>	<i>19</i>	<i>4,192</i>
Immunoproliferative cancers (C88)	29	28	15	9	6	2	2	0	91
Myeloma (C90)	431	302	195	100	102	33	13	4	1,181
Lymphoid leukaemia (C91)	444	263	255	117	151	41	18	5	1,296
Myeloid leukaemia (C92–C94)	451	319	230	101	132	26	20	7	1,285
Leukaemia, unspecified (C95)	38	16	6	5	4	4	0	0	74
<i>All leukaemias (C91–C95)</i>	<i>933</i>	<i>598</i>	<i>491</i>	<i>224</i>	<i>287</i>	<i>71</i>	<i>38</i>	<i>12</i>	<i>2,655</i>
Polycythaemia vera (D45) <sup>(a)</sup>	155	59	62	13	9	2	4	0	305
Myelodysplastic syndromes (D46) <sup>(a)</sup>	416	224	201	95	20	16	10	0	983
Other chronic myeloproliferative diseases (D47) <sup>(a)(b)</sup>	125	76	68	34	12	3	4	0	322
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47)<sup>(a)(b)</sup></i>	<i>3,497</i>	<i>2,417</i>	<i>1,734</i>	<i>855</i>	<i>835</i>	<i>227</i>	<i>128</i>	<i>36</i>	<i>9,729</i>
Unknown primary site (C26, C39, C76, C80)	1,358	702	527	236	272	93	43	23	3,254
<b>All cancers (C00–C96<sup>(c)</sup>, D45–D47<sup>(a)(b)</sup>)</b>	<b>32,810</b>	<b>22,965</b>	<b>18,483</b>	<b>8,719</b>	<b>7,955</b>	<b>2,530</b>	<b>1,244</b>	<b>492</b>	<b>95,198</b>

(a) Due to ICD-O-3 coding changes, D45–D47 were not recorded as malignant until 2002 to 2004, depending on the state or territory. Therefore the averages given are under-representative of the true averages.

(b) Only includes D47.1 and D47.3.

(c) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 8.4: Age-standardised incidence rates<sup>(a)</sup>, males, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
Lip (C00)	5.1	6.9	8.6	7.4	11.6	12.6	2.2	7.3	7.1
Tongue (C01–C02)	3.3	2.9	3.9	2.9	2.9	3.9	2.3	6.7	3.3
Mouth (C03–C06)	2.8	2.7	3.0	3.2	2.7	2.5	2.4	4.9	2.9
Major salivary glands (C07–C08)	1.7	1.0	1.9	1.4	1.8	0.8	1.0	3.0	1.5
Oropharynx (C09–C10)	2.1	2.2	2.8	2.6	2.6	2.2	2.6	8.0	2.4
Nasopharynx (C11)	1.1	1.0	0.5	0.7	0.6	0.3	0.0	2.2	0.8
Hypopharynx (C12–C13)	1.2	1.2	1.5	1.1	0.8	0.6	0.5	5.3	1.2
Pharynx, unspecified (C14)	0.7	0.5	0.9	0.7	0.4	0.6	0.3	3.7	0.6
Nasal cavity, middle ear & sinuses (C30–C31)	1.0	1.0	0.8	1.1	0.8	2.5	0.9	1.3	1.0
Larynx (C32)	5.5	5.3	5.7	4.5	4.5	5.2	3.9	12.6	5.3
<i>Head and neck (C01–C14, C30–C32)</i>	<i>19.2</i>	<i>17.6</i>	<i>21.1</i>	<i>18.1</i>	<i>17.0</i>	<i>18.7</i>	<i>14.0</i>	<i>47.7</i>	<i>19.0</i>
Oesophagus (C15)	7.9	8.2	8.2	9.2	7.8	10.8	8.0	11.2	8.2
Stomach (C16)	13.2	14.5	12.9	12.1	13.7	14.2	11.0	9.4	13.4
Small intestine (C17)	2.0	1.6	1.9	1.9	2.1	1.8	2.7	1.4	1.9
Colon (C18)	44.8	47.5	49.1	43.4	49.9	44.0	47.1	34.0	46.6
Rectum (C19–C20)	27.9	30.9	28.0	27.0	27.9	30.8	29.0	23.4	28.7
<i>Colorectal (C18–C20)</i>	<i>72.7</i>	<i>78.4</i>	<i>77.1</i>	<i>70.4</i>	<i>77.8</i>	<i>74.8</i>	<i>76.1</i>	<i>57.4</i>	<i>75.2</i>
Anus (C21)	1.4	1.3	1.5	0.9	0.7	1.2	0.7	1.6	1.3
Liver (C22)	7.8	7.8	5.6	6.2	6.5	5.1	5.8	7.4	7.0
Gallbladder (C23–C24)	2.6	2.9	2.9	3.3	2.7	3.6	2.3	2.8	2.8
Pancreas (C25)	11.4	11.6	10.6	10.7	11.2	11.1	8.4	9.4	11.2
Lung, bronchus & trachea (C33–C34)	58.5	60.1	62.9	64.9	59.6	69.8	44.1	74.2	60.6
Other thoracic organs (C37–C38)	0.6	0.4	0.5	0.5	0.5	0.2	0.6	0.4	0.5
Bone & articular cartilage (C40–C41)	1.2	0.9	1.1	0.9	1.1	1.2	0.9	1.3	1.1
Melanoma of skin (C43)	59.6	43.6	78.7	66.0	47.4	49.8	52.1	38.3	58.4
Mesothelioma (C45)	5.1	4.7	5.2	8.0	5.8	4.6	3.2	4.2	5.3
Kaposi sarcoma (C46)	0.7	0.5	0.2	0.4	0.4	0.1	0.2	0.0	0.5
Peritoneum & retroperitoneum (C48)	0.4	0.3	0.4	0.2	0.3	0.1	0.1	0.0	0.3
Other connective and soft tissue (C47, C49)	2.9	3.6	2.9	2.6	4.0	3.0	4.4	3.1	3.2
Breast (C50)	1.0	1.0	1.0	1.1	0.9	1.0	0.7	1.1	1.0
Penis (C60)	0.8	0.7	0.8	0.7	0.7	0.9	0.6	0.9	0.7
Prostate (C61)	150.9	148.7	143.9	148.7	146.9	157.8	154.1	120.3	148.7
Testis (C62)	6.7	6.5	6.4	6.9	6.2	7.9	7.7	4.2	6.6
Other male genital organs (C63)	0.2	0.2	0.2	0.2	0.3	0.7	0.2	0.7	0.2
Kidney (C64)	14.2	14.8	13.7	13.6	16.7	16.2	15.7	7.1	14.4
Bladder (C67)	19.1	11.6	30.8	17.8	17.2	21.1	17.7	14.4	19.1
Other urinary organs (C65–C66, C68)	2.1	1.9	2.1	2.4	1.8	1.2	1.8	1.0	2.0
Eye (C69)	1.6	1.3	2.0	1.7	1.6	1.3	2.3	0.6	1.6
Brain (C71)	8.2	8.6	7.9	7.8	8.4	8.0	8.3	7.8	8.2

(continued)

**Table 8.4 (continued): Age-standardised incidence rates<sup>(a)</sup>, males, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
Other central nervous system (C70, C72)	0.4	0.4	0.3	0.2	0.5	0.4	0.6	0.2	0.4
Thyroid (C73)	3.8	2.8	4.1	3.5	3.1	2.5	3.2	2.9	3.5
Other endocrine organs (C74–C75)	0.5	0.5	0.4	0.4	0.3	0.4	0.4	0.0	0.4
Hodgkin lymphoma (C81)	2.6	3.0	2.1	2.2	2.9	2.3	2.3	2.3	2.6
Non-Hodgkin lymphoma (C82–C85, C96)	21.4	23.2	19.6	21.1	24.6	20.2	23.4	16.1	21.7
<i>All lymphomas (C81–C85, C96)</i>	<i>23.9</i>	<i>26.2</i>	<i>21.7</i>	<i>23.3</i>	<i>27.5</i>	<i>22.5</i>	<i>25.7</i>	<i>18.4</i>	<i>24.3</i>
Immunoproliferative cancers (C88)	0.5	0.8	0.5	0.7	0.5	0.6	1.4	0.0	0.6
Myeloma (C90)	8.0	7.2	6.5	6.5	7.2	7.8	5.2	7.3	7.3
Lymphoid leukaemia (C91)	8.5	6.8	8.5	8.5	11.8	11.0	9.4	7.2	8.4
Myeloid leukaemia (C92–C94)	8.3	7.8	8.0	6.5	10.1	7.0	9.8	4.7	8.1
Leukaemia, unspecified (C95)	0.7	0.4	0.1	0.4	0.3	0.6	0.4	0.0	0.4
<i>All leukaemias (C91–C95)</i>	<i>17.5</i>	<i>14.9</i>	<i>16.6</i>	<i>15.4</i>	<i>22.2</i>	<i>18.7</i>	<i>19.6</i>	<i>11.9</i>	<i>16.9</i>
Polycythaemia vera (D45) <sup>(b)</sup>	3.0	1.3	2.2	0.9	0.6	0.7	1.7	0.0	1.9
Myelodysplastic syndromes (D46) <sup>(b)</sup>	8.0	6.2	7.7	7.7	1.7	3.9	7.3	0.0	6.8
Other chronic myeloproliferative diseases (D47) <sup>(b)(c)</sup>	1.9	1.7	2.1	2.2	0.8	0.7	1.7	0.0	1.8
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47)<sup>(b)(c)</sup></i>	<i>62.9</i>	<i>58.4</i>	<i>57.3</i>	<i>56.6</i>	<i>60.6</i>	<i>54.8</i>	<i>62.7</i>	<i>37.6</i>	<i>59.6</i>
Unknown primary site (C26, C39, C76, C80)	22.8	15.2	17.3	15.6	17.3	19.2	20.7	32.7	18.7
<b>All cancers (C00–C96<sup>(d)</sup>, D45–D47<sup>(b)(c)</sup>)</b>	<b>567.6</b>	<b>537.4</b>	<b>590.8</b>	<b>560.9</b>	<b>552.8</b>	<b>576.3</b>	<b>533.7</b>	<b>508.7</b>	<b>562.3</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 males.

(b) Due to ICD-O-3 coding changes, D45–D47 were not recorded as malignant until 2002 to 2004, depending on the state or territory. Therefore the rates given are under-representative of the true rates.

(c) Only includes D47.1 and D47.3.

(d) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 8.5: Age-standardised incidence rates<sup>(a)</sup>, females, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
Lip (C00)	1.7	2.4	2.9	2.8	2.9	3.8	1.0	0.6	2.4
Tongue (C01–C02)	1.6	1.4	1.5	1.5	1.4	0.8	0.9	3.1	1.5
Mouth (C03–C06)	1.6	1.4	1.7	1.6	1.1	2.0	1.4	4.5	1.6
Major salivary glands (C07–C08)	0.9	0.8	1.0	1.1	0.9	1.1	1.1	0.7	0.9
Oropharynx (C09–C10)	0.6	0.6	0.7	0.6	0.6	0.5	0.5	1.4	0.6
Nasopharynx (C11)	0.4	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.3
Hypopharynx (C12–C13)	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.5	0.2
Pharynx, unspecified (C14)	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.8	0.1
Nasal cavity, middle ear & sinuses (C30–C31)	0.5	0.4	0.4	0.4	0.3	0.3	0.4	1.5	0.4
Larynx (C32)	0.6	0.6	0.5	0.6	0.5	0.9	0.3	0.7	0.6
<i>Head and neck (C01–C14, C30–C32)</i>	<i>6.6</i>	<i>5.9</i>	<i>6.4</i>	<i>6.0</i>	<i>5.2</i>	<i>5.9</i>	<i>4.9</i>	<i>13.4</i>	<i>6.2</i>
Oesophagus (C15)	3.3	3.6	3.1	3.2	3.0	3.6	2.5	6.5	3.3
Stomach (C16)	6.0	6.9	5.3	5.2	6.1	5.9	6.8	4.2	6.0
Small intestine (C17)	1.3	1.2	1.5	1.2	1.6	1.4	1.6	2.1	1.3
Colon (C18)	36.2	36.6	38.7	33.6	36.8	37.7	34.2	27.4	36.6
Rectum (C19–C20)	14.8	16.4	15.2	15.0	16.5	16.4	15.3	8.6	15.5
<i>Colorectal (C18–C20)</i>	<i>51.0</i>	<i>53.0</i>	<i>53.9</i>	<i>48.6</i>	<i>53.3</i>	<i>54.1</i>	<i>49.6</i>	<i>35.9</i>	<i>52.0</i>
Anus (C21)	1.3	1.2	1.6	1.3	1.0	2.1	0.5	2.5	1.4
Liver (C22)	2.9	2.7	2.2	2.1	1.9	2.0	2.3	3.8	2.6
Gallbladder (C23–C24)	2.8	3.1	2.9	3.0	3.4	3.8	2.9	5.7	3.0
Pancreas (C25)	8.8	9.1	8.4	9.1	8.6	8.9	6.6	6.1	8.8
Lung, bronchus & trachea (C33–C34)	28.1	28.5	29.8	31.0	28.6	35.7	22.4	31.2	28.9
Other thoracic organs (C37–C38)	0.3	0.2	0.3	0.3	0.2	0.5	0.3	0.5	0.3
Bone & articular cartilage (C40–C41)	0.9	0.7	1.0	0.9	0.6	0.7	0.6	0.2	0.8
Melanoma of skin (C43)	38.4	32.7	53.9	41.9	34.4	42.2	39.8	25.6	39.9
Mesothelioma (C45)	0.9	0.8	1.0	1.3	1.0	0.8	0.3	0.4	1.0
Kaposi sarcoma (C46)	0.1	0.1	0.0	0.1	0.1	0.0	0.3	0.0	0.1
Peritoneum & retroperitoneum (C48)	1.2	0.9	1.5	1.1	1.3	0.8	2.2	0.4	1.1
Other connective and soft tissue (C47, C49)	2.0	2.3	2.1	1.6	2.6	2.7	2.1	1.0	2.1
Breast (C50)	114.1	112.2	115.1	115.3	114.2	115.9	129.2	88.6	114.0
Vulva (C51)	2.1	2.2	2.0	2.1	2.1	2.6	2.0	4.9	2.1
Vagina (C52)	0.7	0.4	0.6	1.0	0.6	0.5	1.0	0.8	0.6
Cervix (C53)	6.8	6.0	8.1	8.6	5.7	8.2	7.0	12.1	7.0
Uterus, body (C54)	13.8	16.4	16.3	13.7	17.7	13.0	14.7	13.7	15.2
Uterus, unspecified (C55)	1.1	1.0	0.6	0.3	0.0	1.5	0.9	0.0	0.8
Ovary (C56)	10.9	11.5	10.7	12.1	9.5	9.9	12.5	10.4	11.0
Other female genital organs (C57)	0.6	0.6	0.6	0.5	0.6	0.9	0.3	0.2	0.6
Placenta (C58)	0.1	0.1	0.1	0.0	0.1	0.0	0.2	0.0	0.1

*(continued)*

**Table 8.5 (continued): Age-standardised incidence rates<sup>(a)</sup>, females, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
<i>Gynaecological (C51–C58)</i>	36.1	38.2	38.9	38.4	36.2	36.6	38.6	42.0	37.5
Kidney (C64)	7.2	7.5	6.9	6.7	6.8	9.7	8.1	3.5	7.2
Bladder (C67)	5.3	3.4	7.8	4.6	4.6	4.7	3.8	2.7	5.1
Other urinary organs (C65–C66, C68)	1.9	1.1	2.2	1.5	1.5	1.2	1.4	2.3	1.6
Eye (C69)	1.0	0.9	1.2	0.7	1.3	0.5	1.8	0.8	1.0
Brain (C71)	5.4	6.1	5.3	5.4	5.9	6.1	6.3	3.7	5.6
Other central nervous system (C70, C72)	0.5	0.4	0.2	0.3	0.2	0.2	0.5	0.2	0.3
Thyroid (C73)	12.3	7.9	11.5	9.6	8.7	7.4	8.3	6.6	10.3
Other endocrine organs (C74–C75)	0.3	0.3	0.4	0.6	0.2	0.1	0.5	0.0	0.3
Hodgkin lymphoma (C81)	2.3	2.3	1.7	1.8	2.0	1.7	1.6	2.1	2.1
Non-Hodgkin lymphoma (C82–C85, C96)	15.0	16.5	14.2	15.9	17.9	14.2	13.3	8.7	15.5
<i>All lymphomas (C81–C85, C96)</i>	<i>17.3</i>	<i>18.8</i>	<i>16.0</i>	<i>17.7</i>	<i>19.9</i>	<i>15.9</i>	<i>14.9</i>	<i>10.8</i>	<i>17.6</i>
Immunoproliferative cancers (C88)	0.3	0.3	0.3	0.3	0.2	0.3	0.7	0.0	0.3
Myeloma (C90)	4.6	4.8	4.3	4.7	4.7	4.7	4.4	3.6	4.6
Lymphoid leukaemia (C91)	4.6	3.9	5.3	4.3	6.3	5.3	4.6	3.0	4.7
Myeloid leukaemia (C92–C94)	5.0	5.1	4.8	4.6	5.6	3.6	5.5	6.8	5.0
Leukaemia, unspecified (C95)	0.4	0.2	0.2	0.2	0.1	0.7	0.0	0.2	0.3
<i>All leukaemias (C91–C95)</i>	<i>10.1</i>	<i>9.3</i>	<i>10.2</i>	<i>9.1</i>	<i>12.1</i>	<i>9.7</i>	<i>10.2</i>	<i>10.0</i>	<i>10.0</i>
Polycythaemia vera (D45) <sup>(b)</sup>	1.6	1.0	1.2	0.4	0.5	0.2	1.5	0.0	1.1
Myelodysplastic syndromes (D46) <sup>(b)</sup>	4.4	3.0	4.0	3.7	0.7	2.4	2.3	0.0	3.5
Other chronic myeloproliferative diseases (D47) <sup>(b)(c)</sup>	1.7	1.3	1.6	1.7	0.5	0.5	1.5	0.0	1.4
<i>All LHCs (C81–C96, D45–D47)<sup>(b)(c)</sup></i>	<i>40.0</i>	<i>38.4</i>	<i>37.5</i>	<i>37.6</i>	<i>38.5</i>	<i>33.7</i>	<i>35.4</i>	<i>24.4</i>	<i>38.5</i>
Unknown primary site (C26, C39, C76, C80)	16.5	12.1	11.7	11.0	13.2	16.2	14.6	22.2	13.7
<b>All cancers (C00–C96<sup>(d)</sup>, D45–D47<sup>(b)(e)</sup>)</b>	<b>398.1</b>	<b>383.8</b>	<b>416.3</b>	<b>392.6</b>	<b>387.1</b>	<b>407.1</b>	<b>395.3</b>	<b>337.0</b>	<b>396.4</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 females.

(b) Due to ICD-O-3 coding changes, D45–D47 were not recorded as malignant until 2002 to 2004, depending on the state or territory. Therefore the rates given are under-representative of the true rates.

(c) Only includes D47.1 and D47.3.

(d) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Table 8.6: Age-standardised incidence rates<sup>(a)</sup>, persons, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
Lip (C00)	3.4	4.5	5.7	5.0	7.0	8.0	1.5	4.0	4.6
Tongue (C01–C02)	2.4	2.1	2.7	2.2	2.1	2.2	1.6	5.2	2.4
Mouth (C03–C06)	2.2	2.0	2.4	2.4	1.8	2.3	1.9	4.6	2.2
Major salivary glands (C07–C08)	1.3	0.9	1.4	1.2	1.3	0.9	1.0	1.7	1.2
Oropharynx (C09–C10)	1.3	1.4	1.8	1.6	1.6	1.3	1.5	5.0	1.5
Nasopharynx (C11)	0.8	0.6	0.3	0.4	0.4	0.3	0.1	1.2	0.6
Hypopharynx (C12–C13)	0.6	0.7	0.9	0.6	0.4	0.4	0.3	3.1	0.7
Pharynx, unspecified (C14)	0.4	0.3	0.5	0.4	0.3	0.3	0.1	2.4	0.4
Nasal cavity, middle ear & sinuses (C30–C31)	0.7	0.7	0.6	0.7	0.5	1.3	0.6	1.4	0.7
Larynx (C32)	2.9	2.7	3.0	2.4	2.4	2.9	1.9	7.0	2.8
<i>Head and neck (C01–C14, C30–C32)</i>	<i>12.6</i>	<i>11.4</i>	<i>13.5</i>	<i>11.9</i>	<i>10.8</i>	<i>12.0</i>	<i>9.1</i>	<i>31.7</i>	<i>12.3</i>
Oesophagus (C15)	5.4	5.7	5.5	6.1	5.2	7.0	4.9	9.1	5.6
Stomach (C16)	9.3	10.3	8.8	8.3	9.4	9.7	8.6	6.6	9.4
Small intestine (C17)	1.6	1.4	1.7	1.5	1.8	1.6	2.1	1.8	1.6
Colon (C18)	40.1	41.5	43.5	38.1	42.7	40.5	40.1	30.8	41.1
Rectum (C19–C20)	20.9	23.1	21.3	20.6	21.8	23.0	21.8	16.0	21.6
<i>Colorectal (C18–C20)</i>	<i>61.0</i>	<i>64.6</i>	<i>64.9</i>	<i>58.7</i>	<i>64.5</i>	<i>63.5</i>	<i>61.9</i>	<i>46.8</i>	<i>62.7</i>
Anus (C21)	1.4	1.2	1.6	1.1	0.9	1.7	0.6	2.0	1.3
Liver (C22)	5.2	5.1	3.8	4.0	4.1	3.5	3.9	5.4	4.7
Gallbladder (C23–C24)	2.7	3.0	2.9	3.1	3.1	3.7	2.6	4.4	2.9
Pancreas (C25)	10.0	10.3	9.5	9.9	9.9	9.9	7.4	7.8	9.9
Lung, bronchus & trachea (C33–C34)	41.6	42.4	45.0	46.1	42.0	50.5	31.8	53.6	43.0
Other thoracic organs (C37–C38)	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bone & articular cartilage (C40–C41)	1.0	0.8	1.0	0.9	0.8	1.0	0.7	0.8	0.9
Melanoma of skin (C43)	47.8	37.4	65.3	53.0	40.0	45.5	45.2	32.5	48.1
Mesothelioma (C45)	2.8	2.5	2.9	4.3	3.1	2.6	1.7	2.3	2.9
Kaposi sarcoma (C46)	0.4	0.3	0.1	0.2	0.2	0.0	0.3	0.0	0.3
Peritoneum & retroperitoneum (C48)	0.8	0.6	0.9	0.7	0.8	0.5	1.2	0.2	0.8
Other connective and soft tissue (C47, C49)	2.4	2.8	2.5	2.1	3.2	2.8	3.1	2.1	2.6
Kidney (C64)	10.5	10.8	10.2	10.0	11.4	12.7	11.6	5.7	10.6
Bladder (C67)	11.3	6.9	18.3	10.3	10.0	11.9	9.9	8.7	11.3
Other urinary organs (C65–C66, C68)	2.0	1.4	2.2	1.9	1.6	1.2	1.5	1.6	1.8
Eye (C69)	1.3	1.1	1.6	1.2	1.4	0.9	2.1	0.7	1.3
Brain (C71)	6.7	7.3	6.6	6.6	7.0	7.0	7.3	5.9	6.9
Other central nervous system (C70, C72)	0.4	0.4	0.3	0.3	0.3	0.3	0.6	0.2	0.4
Thyroid (C73)	8.1	5.4	7.8	6.6	5.9	5.0	5.8	4.7	6.9
Other endocrine organs (C74–C75)	0.4	0.4	0.4	0.5	0.3	0.2	0.4	0.0	0.4
Hodgkin lymphoma (C81)	2.4	2.7	1.9	2.0	2.4	2.0	2.0	2.4	2.3
Non-Hodgkin lymphoma (C82–C85, C96)	17.9	19.5	16.8	18.3	20.9	16.9	17.9	12.8	18.4

(continued)

**Table 8.6 (continued): Age-standardised incidence rates<sup>(a)</sup>, persons, states and territories, 2001–2005**

<b>Cancer site/type (ICD-10 codes)</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>	<b>Aust</b>
<i>All lymphomas (C81–C85, C96)</i>	20.4	22.2	18.7	20.3	23.4	18.8	19.9	15.2	20.7
Immunoproliferative cancers (C88)	0.4	0.5	0.4	0.5	0.4	0.5	1.0	0.0	0.4
Myeloma (C90)	6.2	5.8	5.3	5.5	5.8	6.2	4.8	5.3	5.8
Lymphoid leukaemia (C91)	6.4	5.2	6.8	6.3	8.8	7.9	6.7	4.9	6.4
Myeloid leukaemia (C92–C94)	6.5	6.2	6.2	5.4	7.6	5.0	7.3	5.9	6.3
Leukaemia, unspecified (C95)	0.5	0.3	0.2	0.3	0.2	0.7	0.2	0.1	0.4
<i>All leukaemias (C91–C95)</i>	13.5	11.8	13.1	12.0	16.6	13.6	14.1	10.9	13.1
Polycythaemia vera (D45) <sup>(b)</sup>	2.2	1.1	1.7	0.7	0.5	0.4	1.6	0.0	1.5
Myelodysplastic syndromes (D46) <sup>(b)</sup>	5.8	4.3	5.5	5.3	1.1	3.0	4.3	0.0	4.8
Other chronic myeloproliferative diseases (D47) <sup>(b)(c)</sup>	1.8	1.5	1.8	1.9	0.6	0.6	1.5	0.0	1.6
<i>All LHCs (C81–C96, D45–D47<sup>(b)(c)</sup>)</i>	50.3	47.2	46.5	46.1	48.4	43.1	47.1	31.4	47.9
Unknown primary site (C26, C39, C76, C80)	19.3	13.5	14.3	13.0	15.1	17.3	17.0	27.0	15.9
<b>All cancers (C00–C96<sup>(d)</sup>, D45–D47<sup>(b)(c)</sup>)</b>	<b>471.3</b>	<b>448.9</b>	<b>494.4</b>	<b>466.6</b>	<b>457.6</b>	<b>479.4</b>	<b>453.5</b>	<b>425.4</b>	<b>468.2</b>

(a) Age-standardised incidence rate using the Australian 2001 Standard Population, and expressed per 100,000 persons.

(b) Due to ICD-O-3 coding changes, D45–D47 were not recorded as malignant until 2002 to 2004, depending on the state or territory. Therefore the rates given are under-representative of the true rates.

(c) Only includes D47.1 and D47.3.

(d) Excluding non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

# 9 Incidence rates and most common cancers over the life span

## 9.1 Definitions

In this chapter a person is said to be of age  $N$  if they have had their  $N^{\text{th}}$  birthday but not their  $(N+1)^{\text{th}}$ . Persons of age 0, that is, less than 1 year of age, are called *infants*. The oldest age group in the analysis comprises all persons aged 100 years or more and its members are called *centenarians*.

The analysis is based on the combined 2001–2005 incidence data.

## 9.2 Incidence rates over the life span

### Males

The all-cancer incidence rate for males over the life span is shown in Figures 9.1 and 9.2. Over the period 2001–2005 the cancer incidence rate for male infants was 23.4 cases per 100,000 males per year. This rate remained about the same for ages 1, 2 and 3 but then started to decline until it reached its lowest point in the male life span at age 11 at a value of 7.6 cases per 100,000 males per year. From this age the rate increased again, reaching the same value as it had for infants by age 16. The rate continued to increase at a gentle pace until age 43 when the rate was around 170 cases per 100,000 males per year. Then there began a long period of drastically increasing rates that did not peak until age 85, by which time the rate had grown to about 4,000 cases per 100,000 males per year. The rate then remained steady until age 93 whereupon it began to decline rapidly. Male centenarians experienced cancer rates approximately the same as men in their mid-60s.

### Females

The all-cancer incidence rate for females over the life span is shown in Figures 9.1 and 9.2. Over the period 2001–2005 the cancer incidence rate for female infants was 21.6 cases per 100,000 females per year. This rate remained around the same for ages 1 and 2 but then started to decline until it reached its lowest point in the female life span at age 8 at a value of 7.0 cases per 100,000 females per year. From this age the rate increased again, reaching the same value as it had for infants by age 17. The rate continued to increase at a gentle pace until age 36 when the rate was about 150 cases per 100,000 females per year. Then there began a long period of more quickly increasing rates that peaked at age 87, by which time the rate had grown to around 2,100 cases per 100,000 females per year. The rate then gently declined until age 94 (except for a spike at age 91) whereupon it began to decline more rapidly. Female centenarians experienced cancer rates approximately the same as women in their late 60s.

## Sexes compared

By looking at the graphs in Figures 9.1 and 9.2, males appear to have much the same rate as females until the mid-50s whereupon the male rate begins to soar above the female one, reaching its greatest difference in the late 80s when the male rate is around 4,000 and the female rate is around 2,000. However, the large vertical scale needed to depict the male rate over the life span hides real differences in the rates in an earlier part of life. Using a 95% level of confidence, the male and female rates are not statistically significantly different for ages 0 to 29 except that the male rate is sporadically statistically higher (ages 1, 7, 8, 16, 19 and 22). For ages 30 to 53 the female rate is in fact statistically significantly higher than the male rate. Age 54 is the crossover point, where the two rates are not statistically different. Then, for ages 55 to 99 the male rate is statistically higher. The two rates are not statistically different for centenarians.

The point at which the male rate is at its greatest difference from the female rate is age 85 where the difference is 2,000. By contrast, the point at which the female rate exceeds the male rate by the most is at age 48 and the difference is just 148, a very small amount by comparison. An alternate way to compare the rates is by taking their ratio, that is, one divided by the other. This is depicted in Figure 9.3. The male-to-female rate ratio reaches its peak at age 84 at a value of 2.00, that is, at this age males are being diagnosed with cancer at 2.00 times the rate that females are. By contrast, the female-to-male rate ratio reaches its peak at age 41 at a value of 1.81, which is not so different from the peak male-to-female rate ratio.

## 9.3 Most common cancers over the life span

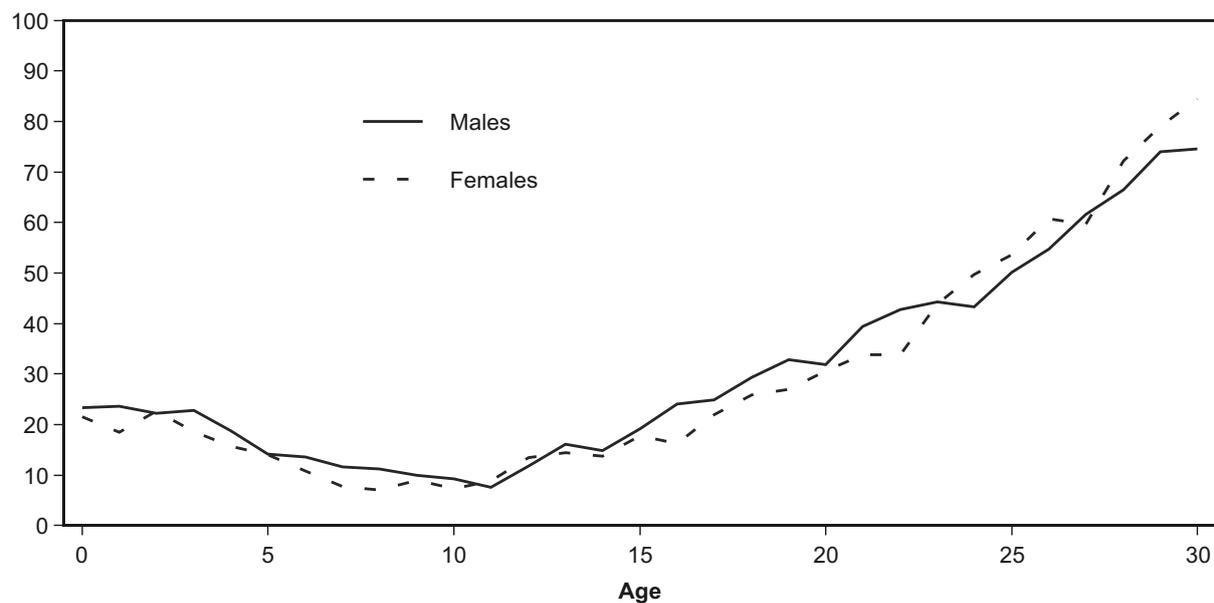
In determining the most common cancers over the life span, the International Classification of Childhood Cancer, Third Edition (ICCC-3) (Steliarova-Foucher et al. 2005) was used for ages 0 to 14 and the ICD-10 thereafter.

The results are shown in Figure 9.4. The most common cancer in infants of both sexes was neuroblastoma, which can appear in various parts of the body. From age 1 to about 15 lymphoid leukaemia was generally the most common cancer in both sexes, with a few exceptions. However, from that age there were substantial differences between males and females.

In males, lymphoid leukaemia was the most common cancer for ages 1 to 15 except for non-Hodgkin lymphoma which was most common at age 11 and equally most common at age 13. For ages 16 to 29 a different phase occurred in which melanoma of the skin and testicular cancer generally alternated for the most common cancer. Melanoma of the skin took over as the undisputedly most common cancer for ages 30 to 51. From age 52 until the end of the life, prostate cancer was the most common.

In females, lymphoid leukaemia was the most common cancer for ages 1 to 14 except for brain cancer at age 10 and Hodgkin lymphoma at age 12. Hodgkin lymphoma was again the most common at ages 15 and 16. For ages 17 to 33 the most common cancer was melanoma of the skin following which breast cancer became the most common for ages 34 to 75. Colorectal cancer was the most common for ages 76 to 95. For ages 96 to 100+ the most common cancer was shared between breast cancer, colorectal cancer and cancer of unknown primary site.

**Incidence rate**

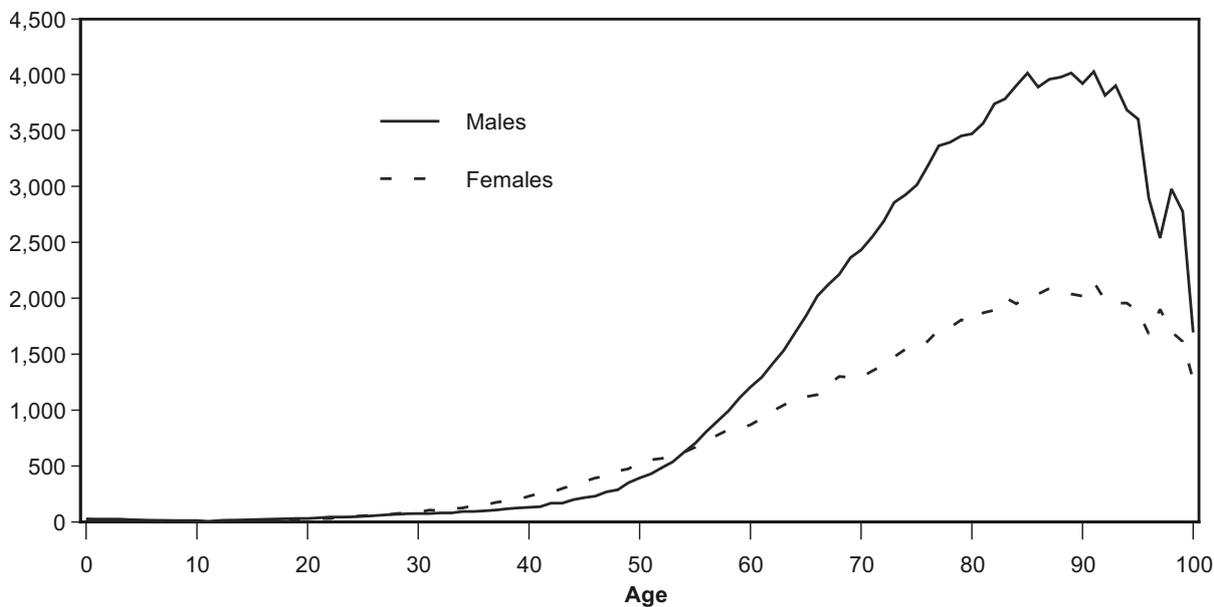


*Note:* Incidence rate is expressed per 100,000 males/females per year.

*Source:* National Cancer Statistics Clearing House, AIHW.

**Figure 9.1: Cancer incidence rate for ages 0 to 30, Australia, 2001-2005**

**Incidence rate**

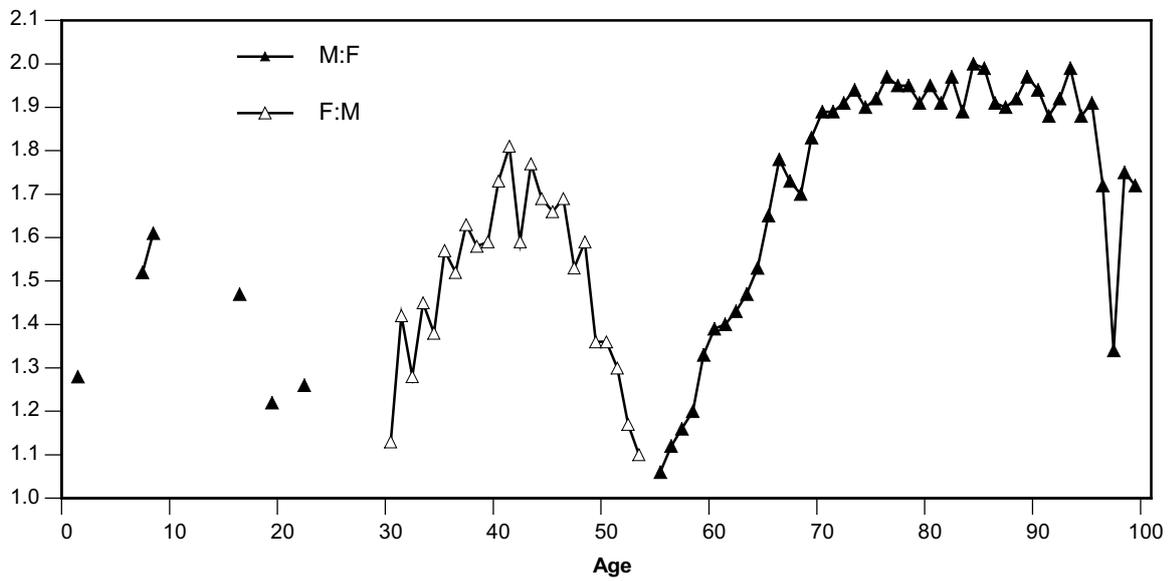


*Note:* Incidence rate is expressed per 100,000 males/females per year.

*Source:* National Cancer Statistics Clearing House, AIHW.

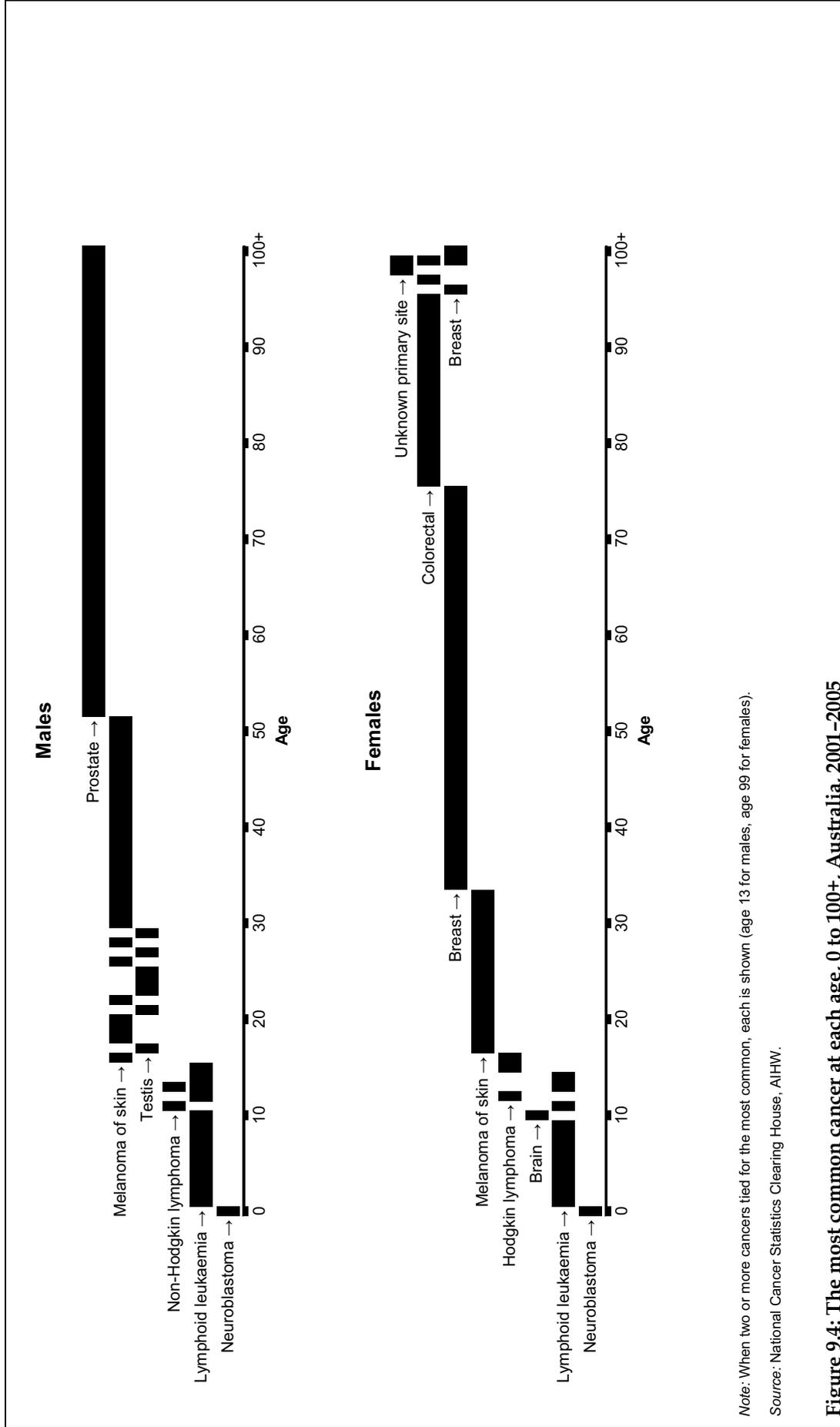
**Figure 9.2: Cancer incidence rate for ages 0 to 100+, Australia, 2001-2005**

**Incidence rate ratio**



Note: Ratio is only shown when the male and female rates are statistically significantly different ( $p < 0.05$ ) in which case the ratio given is the larger rate divided by the smaller.

**Figure 9.3: Incidence rate ratios greater than 1, by age and sex, 2001–2005**



Note: When two or more cancers tied for the most common, each is shown (age 13 for males, age 99 for females).  
 Source: National Cancer Statistics Clearing House, AIHW.

**Figure 9.4: The most common cancer at each age, 0 to 100+, Australia, 2001-2005**

# 10 Cancer survival, 1982–2004

The findings presented here are a summary of a detailed report on cancer survival and prevalence published in July 2008 (AIHW, CA & AACR 2008). The measurement used to assess cancer survival was 'relative survival':

relative survival = observed survival divided by expected survival.

For example, if the observed 5-year survival of a particular cohort of people diagnosed with cancer was 0.80 (that is, 80% of them were still alive 5 years after diagnosis) and their expected survival, based on Australian life-tables, was 0.90 (that is, 90% of Australians with the same age- and sex-profile as the cohort would be expected to be alive 5 years later) then the 5-year relative survival would be  $0.8/0.9 = 0.89$ . One way to interpret this figure is that each person in the cancer cohort has an 89% chance of being alive 5 years after diagnosis *relative to other Australians of the same sex and age*. By dividing the observed survival by the expected survival we remove the so-called 'background mortality', which varies by sex, age and calendar year. This allows us to meaningfully compare survival between the sexes, across different age groups and across different time periods.

## 10.1 Main findings

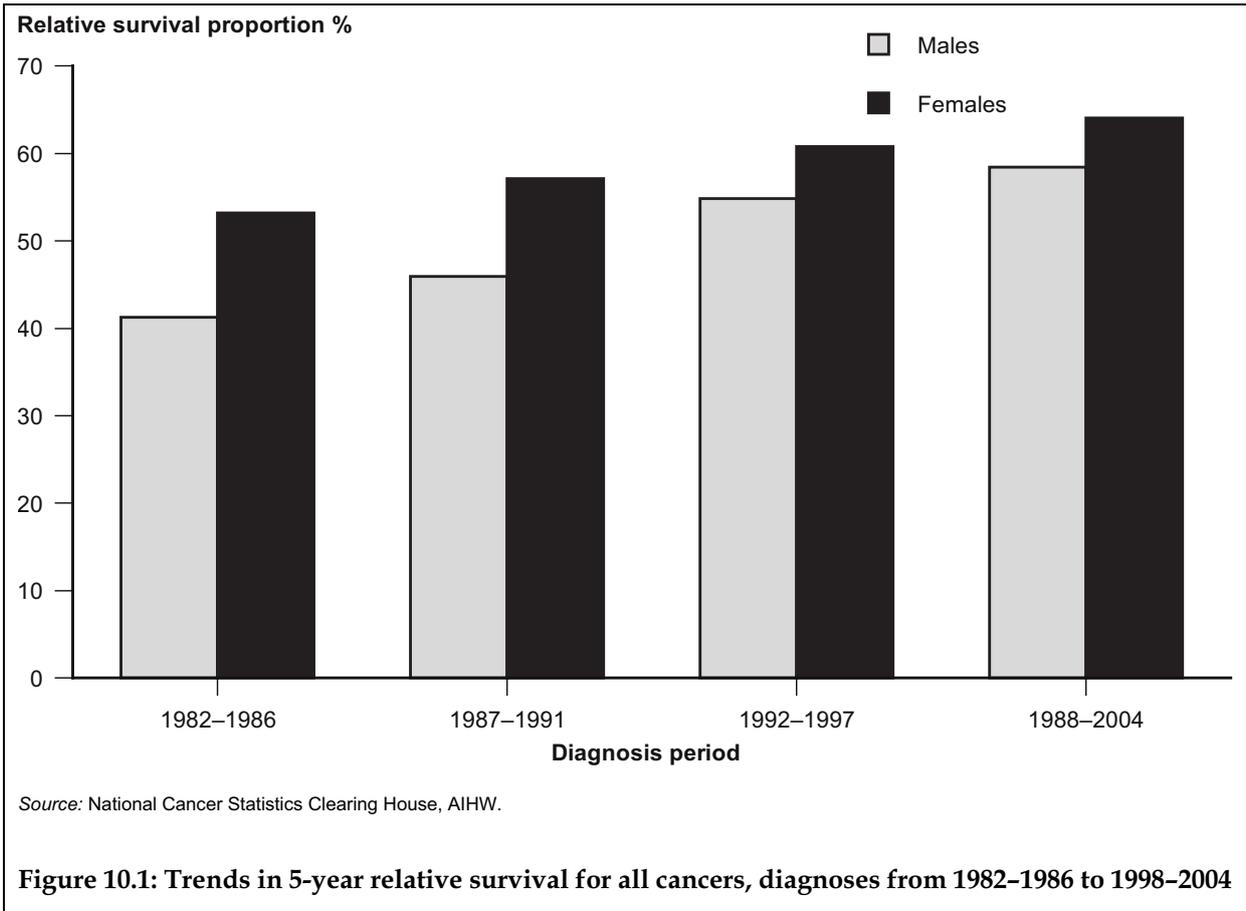
There was a significant increase in all-cancer relative survival between diagnoses made in 1982–1986 and those made in 1998–2004. For males, 5-year relative survival increased from 41% to 58% and for females, it increased from 53% to 64%.

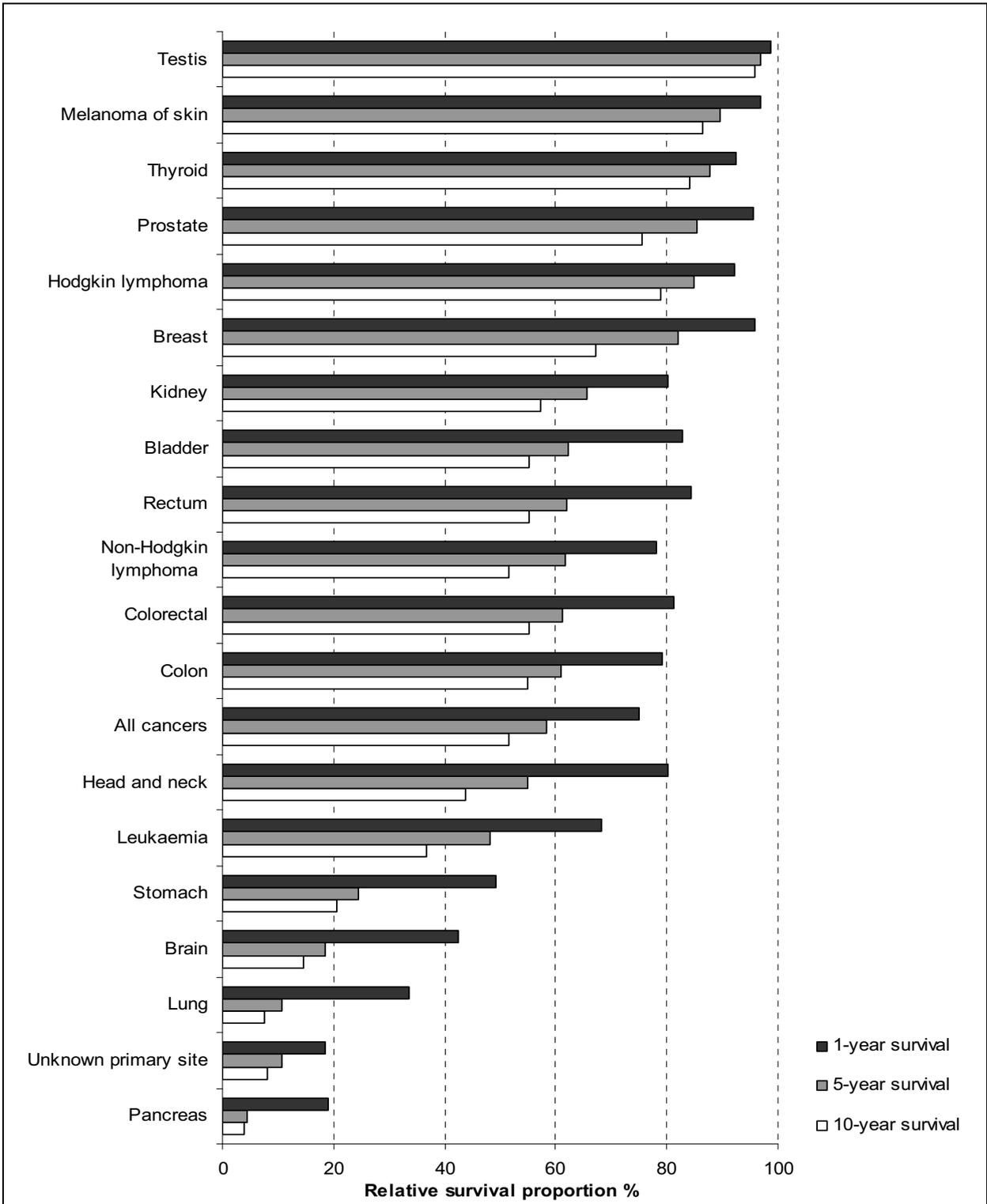
The cancers with the highest 5-year relative survival in 1998–2004 were testicular cancer (97%), thyroid cancer (93%), melanoma of the skin (92%), breast cancer (88%) and prostate cancer (85%).

The cancers with the lowest 5-year relative survival in 1998–2004 were pancreatic cancer (4.6%), cancer of unknown primary site (9.1%), lung cancer (12%), brain cancer (19%) and stomach cancer (25%).

For males diagnosed in 1998–2004, 1-year relative survival was highest for testicular cancer (99%) and lowest for cancer of unknown primary site (19%). At both 5 and 10 years after diagnosis, relative survival was highest for testicular cancer (97% at 5 years, 96% at 10 years) and lowest for pancreatic cancer (4.5% at 5 years, 3.9% at 10 years).

For females diagnosed in 1998–2004, 1-year relative survival was highest for melanoma of the skin (98%) and lowest for cancer of unknown primary site (16%). At both 5 and 10 years after diagnosis, relative survival was highest for thyroid cancer (95% at both 5 and 10 years) and lowest for pancreatic cancer (4.7% at 5 years, 3.6% at 10 years).

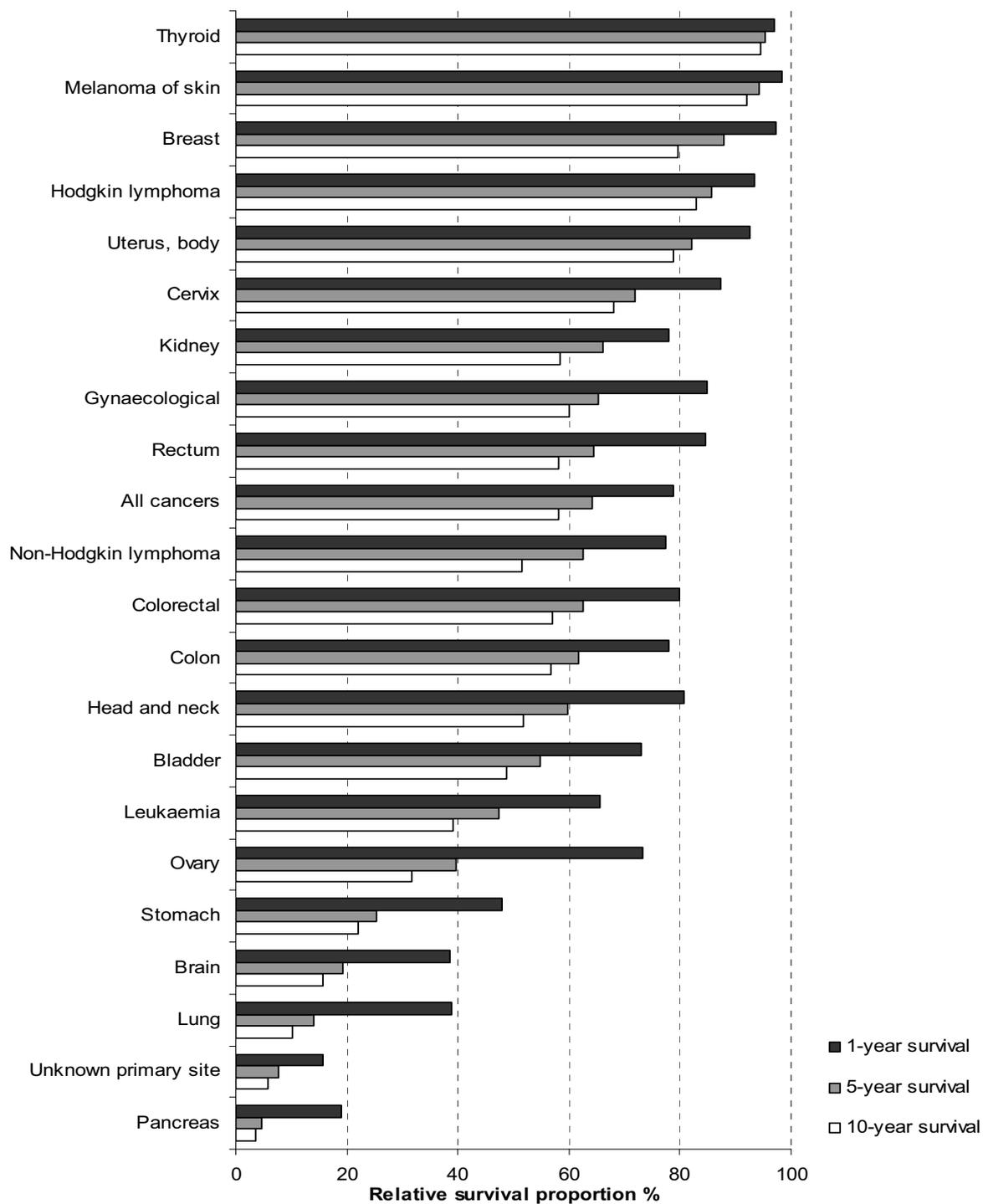




*Notes*  
 1. 10-year relative survival proportions are based on 1996–2004 diagnoses.  
 2. All cancers exclude non-melanocytic skin cancer (C44).

*Source:* National Cancer Statistics Clearing House, AIHW.

**Figure 10.2: Relative survival by cancer site, males, diagnoses in 1998–2004**



*Notes*

1. 10-year relative survival proportions are based on 1996–2004 diagnoses.
2. All cancers exclude non-melanocytic skin cancer (C44).

Source: National Cancer Statistics Clearing House, AIHW.

**Figure 10.3: Relative survival by cancer site, females, diagnoses in 1998–2004**

**Table 10.1: Trends in 5-year relative survival (per cent) by cancer site, males, diagnoses from 1982–1986 to 1998–2004**

Cancer site/type (ICD-10 codes)	1982–1986		1987–1991		1992–1997		1998–2004	
	%	95% CI <sup>(a)</sup>						
Stomach (C16)	16.2	15.2–17.3	18.9	17.9–20.0	20.5	19.5–21.5	24.4	23.3–25.4
Colon (C18)	48.3	47.2–49.4	53.2	52.2–54.1	57.0	56.1–57.8	60.9	60.2–61.7
Rectum (C19–C20)	46.8	45.4–48.2	50.1	48.8–51.3	56.5	55.5–57.5	61.9	61.0–62.8
Colorectal (C18–C20)	47.7	46.9–48.6	52.0	51.2–52.8	56.8	56.2–57.4	61.3	60.7–61.9
Pancreas (C25)	2.8	2.3–3.3	3.0	2.5–3.5	4.2	3.7–4.8	4.5	4.0–5.0
Lung (C33–C34)	7.9	7.5–8.2	9.1	8.7–9.4	9.7	9.3–10.0	10.7	10.3–11.0
Melanoma of skin (C43)	82.2	81.3–83.2	86.3	85.6–87.1	89.3	88.7–89.8	89.7	89.1–90.2
Prostate (C61)	57.4	56.4–58.4	63.2	62.4–64.0	81.7	81.2–82.1	85.3	84.9–85.7
Testis (C62)	90.8	89.2–92.2	95.0	93.8–96.1	95.3	94.4–96.1	96.8	96.0–97.4
Kidney (C64)	45.2	43.1–47.2	49.8	48.0–51.7	58.6	57.1–60.0	65.6	64.4–66.8
Bladder (C67)	69.1	67.7–70.4	69.1	67.7–70.5	65.2	63.9–66.4	62.3	61.1–63.5
Brain (C71)	20.8	19.3–22.4	19.7	18.3–21.2	18.7	17.5–19.9	18.5	17.5–19.6
Thyroid (C73)	79.1	74.9–82.8	78.3	74.5–81.7	85.3	82.7–87.6	87.7	85.8–89.5
Hodgkin lymphoma (C81)	72.0	68.8–75.0	76.8	73.8–79.6	81.5	79.0–83.8	84.8	82.7–86.7
Non-Hodgkin lymphoma (C82–C85, C96)	46.3	44.7–47.9	48.2	46.8–49.6	52.3	51.2–53.5	61.6	60.6–62.6
Leukaemia (C91–C95)	37.9	36.4–39.5	42.6	41.1–44.1	43.0	41.7–44.2	48.2	47.0–49.3
Unknown primary site (C26, C39, C76, C80)	6.4	5.9–7.0	6.9	6.4–7.5	6.7	6.3–7.1	10.6	10.1–11.2
All cancers (C00–C96 <sup>(b)</sup> , D45–D47 <sup>(c)</sup> )	41.3	41.0–41.6	45.9	45.6–46.2	54.8	54.6–55.1	58.4	58.2–58.6

(a) 95% confidence interval for 5-year relative survival proportion.

(b) Excluding non-melanocytic skin cancer (C44).

(c) Only includes D47.1 and D47.3.

Source: National Cancer Statistics Clearing House, AIHW.

**Table 10.2: Trends in 5-year relative survival (per cent) by cancer site, females, diagnoses from 1982–1986 to 1998–2004**

Cancer site/type (ICD-10 codes)	1982–1986		1987–1991		1992–1997		1998–2004	
	%	95% CI <sup>(a)</sup>						
Stomach (C16)	18.2	16.8–19.6	18.9	17.5–20.4	22.3	20.9–23.7	25.3	23.9–26.7
Colon (C18)	49.5	48.4–50.5	52.9	51.9–53.8	56.5	55.7–57.3	61.6	60.8–62.3
Rectum (C19–C20)	50.4	48.9–52.0	54.0	52.5–55.5	59.4	58.2–60.6	64.5	63.4–65.6
Colorectal (C18–C20)	49.7	48.9–50.6	53.2	52.4–54.0	57.4	56.7–58.1	62.4	61.8–63.1
Pancreas (C25)	2.8	2.3–3.4	4.0	3.4–4.7	3.5	3.0–4.0	4.7	4.2–5.3
Lung (C33–C34)	10.5	9.8–11.3	10.8	10.2–11.5	12.6	12.0–13.2	14.0	13.4–14.5
Melanoma of skin (C43)	90.5	89.7–91.2	92.8	92.2–93.4	93.9	93.4–94.4	94.1	93.6–94.6
Breast (C50)	71.8	71.1–72.4	77.5	77.0–78.0	83.7	83.3–84.1	87.8	87.5–88.1
Cervix (C53)	68.3	66.9–69.7	71.2	69.9–72.5	73.6	72.4–74.8	71.8	70.4–73.1
Uterus, body (C54)	75.6	74.1–77.1	78.0	76.6–79.4	80.2	79.1–81.3	82.1	81.1–83.0
Ovary (C56)	32.7	31.3–34.2	35.7	34.3–37.1	37.9	36.6–39.1	39.8	38.6–41.0
Kidney (C64)	48.8	46.2–51.5	52.5	50.2–54.8	58.7	56.8–60.5	66.0	64.4–67.5
Bladder (C67)	65.0	62.8–67.1	61.9	59.7–64.1	55.8	53.7–57.9	54.8	52.9–56.7
Brain (C71)	19.9	18.2–21.6	20.4	18.8–22.0	18.3	17.0–19.7	19.4	18.1–20.6
Thyroid (C73)	85.3	83.1–87.2	89.9	88.2–91.5	94.3	93.3–95.3	95.3	94.5–96.0
Hodgkin lymphoma (C81)	71.3	67.5–74.8	77.5	74.1–80.6	83.6	81.0–86.0	85.8	83.5–87.8
Non-Hodgkin lymphoma (C82–C85, C96)	47.6	45.9–49.3	52.4	50.9–54.0	54.0	52.7–55.2	62.6	61.5–63.6
Leukaemia (C91–C95)	37.2	35.4–39.0	42.9	41.2–44.6	42.8	41.4–44.3	47.3	46.0–48.6
Unknown primary site (C26, C39, C76, C80)	5.6	5.1–6.2	5.9	5.4–6.4	5.5	5.1–6.0	7.6	7.1–8.0
All cancers (C00–C96 <sup>(b)</sup> , D45–D47 <sup>(c)</sup> )	53.2	52.9–53.5	57.1	56.8–57.4	60.8	60.6–61.0	64.1	63.9–64.3

(a) 95% confidence interval for 5-year relative survival proportion.

(b) Excluding non-melanocytic skin cancer (C44).

(c) Only includes D47.1 and D47.3.

Source: National Cancer Statistics Clearing House, AIHW.

**Table 10.3: Trends in 5-year relative survival (per cent) by cancer site, persons, diagnoses from 1982–1986 to 1998–2004**

Cancer site/type (ICD-10 codes)	1982–1986		1987–1991		1992–1997		1998–2004	
	%	95% CI <sup>(a)</sup>						
Stomach (C16)	16.9	16.1–17.8	18.9	18.1–19.8	21.2	20.3–22.0	24.7	23.9–25.6
Colon (C18)	48.9	48.2–49.6	53.0	52.3–53.7	56.7	56.2–57.3	61.3	60.7–61.8
Rectum (C19–C20)	48.4	47.3–49.4	51.7	50.7–52.6	57.7	56.9–58.5	62.9	62.2–63.6
Colorectal (C18–C20)	48.7	48.1–49.3	52.6	52.0–53.1	57.1	56.6–57.5	61.8	61.4–62.3
Pancreas (C25)	2.8	2.4–3.2	3.5	3.1–3.9	3.8	3.5–4.2	4.6	4.2–5.0
Lung (C33–C34)	8.5	8.2–8.8	9.5	9.2–9.8	10.6	10.3–10.9	11.8	11.5–12.1
Melanoma of skin (C43)	86.5	85.8–87.1	89.4	88.9–89.9	91.4	91.0–91.8	91.6	91.3–92.0
Kidney (C64)	46.5	44.9–48.2	50.8	49.4–52.3	58.6	57.5–59.8	65.8	64.8–66.7
Bladder (C67)	68.0	66.8–69.2	67.3	66.1–68.4	62.9	61.8–63.9	60.4	59.4–61.4
Brain (C71)	20.4	19.3–21.6	20.0	19.0–21.1	18.6	17.7–19.5	18.9	18.1–19.7
Thyroid (C73)	83.6	81.7–85.4	86.8	85.2–88.3	92.1	91.1–93.0	93.4	92.7–94.1
Hodgkin lymphoma (C81)	71.7	69.3–74.0	77.1	74.9–79.2	82.5	80.7–84.2	85.2	83.7–86.6
Non-Hodgkin lymphoma (C82–C85, C96)	46.9	45.7–48.1	50.1	49.1–51.2	53.1	52.2–53.9	62.1	61.3–62.8
Leukaemia (C91–C95)	37.6	36.4–38.8	42.7	41.6–43.8	42.9	42.0–43.9	47.8	47.0–48.7
Unknown primary site (C26, C39, C76, C80)	6.0	5.7–6.4	6.5	6.1–6.8	6.1	5.8–6.4	9.1	8.8–9.5
All cancers (C00–C96 <sup>(b)</sup> , D45–D47 <sup>(c)</sup> )	46.9	46.7–47.1	51.2	51.0–51.4	57.5	57.4–57.7	61.0	60.9–61.2

(a) 95% confidence interval for 5-year relative survival proportion.

(b) Excluding non-melanocytic skin cancer (C44).

(c) Only includes D47.1 and D47.3.

Source: National Cancer Statistics Clearing House, AIHW.

## 10.2 International comparison of mortality-to-incidence ratios

It can be very difficult to make valid comparisons of cancer survival between countries. Some examples of the difficulties experienced are:

- whether the cohort method or period method was used. The latter method usually gives higher estimates of survival.
- whether the survival proportions were age-adjusted or not. Age-adjustment can sometimes drastically alter the survival proportion (when the age profile of the particular cancer is quite different to the age profile of the standard population being used).
- the time period of diagnoses used and the length of the follow-up period. It is generally the case that more recent diagnoses experience higher survival (due to advances in treatment or earlier detection because of public health policy, for example, sun behaviour advertising campaigns or the introduction of a screening program). Therefore

countries should only be compared if their most recent analyses were based on cases diagnosed in similar periods.

- different groupings of cancers being given the same name. For example, some countries, such as Australia, use the term 'colorectal cancer' to refer to cancer of the colon, rectosigmoid junction and rectum but not the anus, whereas other countries include cancers of the anus under this heading.
- cancers of different morphological behaviour being combined. For example, most countries include only invasive neoplasms in their definition of cancer but the United States and Canada include both invasive and in situ cases in their definition of bladder cancer. Therefore, because in situ disease is much less serious than invasive disease, the survival from bladder cancer in these two countries is much higher than in other countries.

A less complicated measure of survival is the mortality-to-incidence ratio (MIR). This is defined as the age-standardised mortality rate divided by the age-standardised incidence rate. For example, an MIR of 0.42 in a given year means that for every 100 new cancer cases diagnosed that year, there were 42 deaths in the same year (though the deaths need not be of the same people as the cases). If people tend to die rather quickly from a particular cancer, that is, the death rate is nearly as high as incidence rate, then the MIR will be close to 1.00 whereas if they tend to survive a long time then the MIR will be close to zero. The MIR only gives a valid measure of the survival experience in a population provided that:

- cancer registration and death registration are complete or nearly so, and
- the incidence rate, mortality rate and survival proportion are not undergoing rapid change.

The incidence and mortality data used to calculate the MIRs in Table 10.4 were extracted from the 2002 GLOBOCAN database (IARC 2004). GLOBOCAN is maintained by the International Agency for Research on Cancer (IARC) and currently holds incidence and mortality data for 27 cancers from 172 countries. Numbers and rates are estimates for 2002 based on the most recent data that were available at the time the database was last updated – not necessarily the same year for every country – so some care still needs to be used in interpretation.

With respect to the MIR for all cancers combined except non-melanoma skin cancer, Australia compared extremely well to other countries, having the second lowest MIR for both males and females (with the United States having the lowest MIR for males and Israel the lowest for females). Taking a simple, unweighted average of the MIRs of the two sexes, the top five countries overall were the United States (average MIR of 0.369), followed by Australia (0.391), Israel (0.397), Switzerland (0.420) and New Zealand (0.432).

**Table 10.4: Top 15 countries as ranked by the mortality-to-incidence ratio for all cancers combined except non-melanoma skin cancer, c. 2002<sup>(a)</sup>**

Country	Incidence		Mortality		MIR <sup>(c)</sup>
	No. of cases	ASR(W) <sup>(b)</sup>	No. of deaths	ASR(W) <sup>(b)</sup>	
<b>Males</b>					
United States of America	762,399	406.6	295,630	152.6	0.375
Australia	46,931	347.2	20,672	147.1	0.424
New Zealand	9,189	363.1	4,142	159.7	0.440
Israel	9,835	295.6	4,537	132.6	0.449
Switzerland	19,790	329.1	9,489	150.1	0.456
Puerto Rico	6,128	264.3	2,950	125.7	0.476
Canada	71,785	327.4	35,450	156.6	0.478
Luxembourg	1,107	339.2	559	165.0	0.486
Sweden	22,038	277.5	11,406	135.1	0.487
Finland	10,507	264.1	5,359	130.3	0.493
Austria	19,178	312.9	9,981	156.0	0.499
Norway	10,860	311.5	5,779	156.7	0.503
Iceland	537	288.4	281	145.8	0.506
Germany	213,227	317.7	113,901	161.8	0.509
Italy	162,756	321.3	91,711	170.9	0.532
<b>Females</b>					
Israel	11,787	303.3	4,535	105.0	0.346
Australia	39,518	276.8	15,832	99.0	0.358
United States of America	669,941	308.8	270,105	111.9	0.362
Switzerland	15,654	240.1	7,153	92.1	0.384
Luxembourg	947	254.2	446	101.3	0.399
France	117,407	237.2	58,580	96.3	0.406
Finland	10,571	227.9	5,109	93.0	0.408
Sweden	20,632	251.8	10,094	102.8	0.408
Italy	129,247	231.7	64,590	95.2	0.411
Iceland	534	284.5	259	118.6	0.417
Norway	9,912	260.5	4,836	109.1	0.419
Canada	65,726	272.4	30,514	114.3	0.420
New Zealand	8,085	298.8	3,778	127.0	0.425
Croatia	9,556	239.0	4,771	104.6	0.438
Germany	194,685	248.9	104,269	110.4	0.444

(a) Incidence and mortality statistics are estimates for 2002, although they are based on data from around 2 to 5 years earlier. This varies between countries.

(b) Age-standardised rate calculated using the WHO World 2000 Standard Population. Rates are expressed as the number of cases/deaths per 100,000 males/females.

(c) Mortality-to-incidence ratio: the ASR(W) mortality rate divided by the ASR(W) incidence rate.

Source: IARC 2004.

# 11 Prevalence of cancer at end of 2004

## 11.1 Introduction

The findings presented here are a summary of a detailed report on cancer survival and prevalence published in 2008 (AIHW, CA & AACR 2008). *N-year prevalence* on a given day, where *N* is any number 1, 2, 3, etc., is defined to be the number of people alive at the end of that day who had been diagnosed with cancer at any time in the past *N* years. For example, 5-year prevalence at the end of 2004 is the number of people alive at the end of 2004 who had been diagnosed with cancer at any time in the past 5 years, that is, during 2000–2004.

This summary is based on all cancers (excluding non-melanocytic skin cancer) diagnosed between 1 January 1982 and 31 December 2004, a period of 23 years.

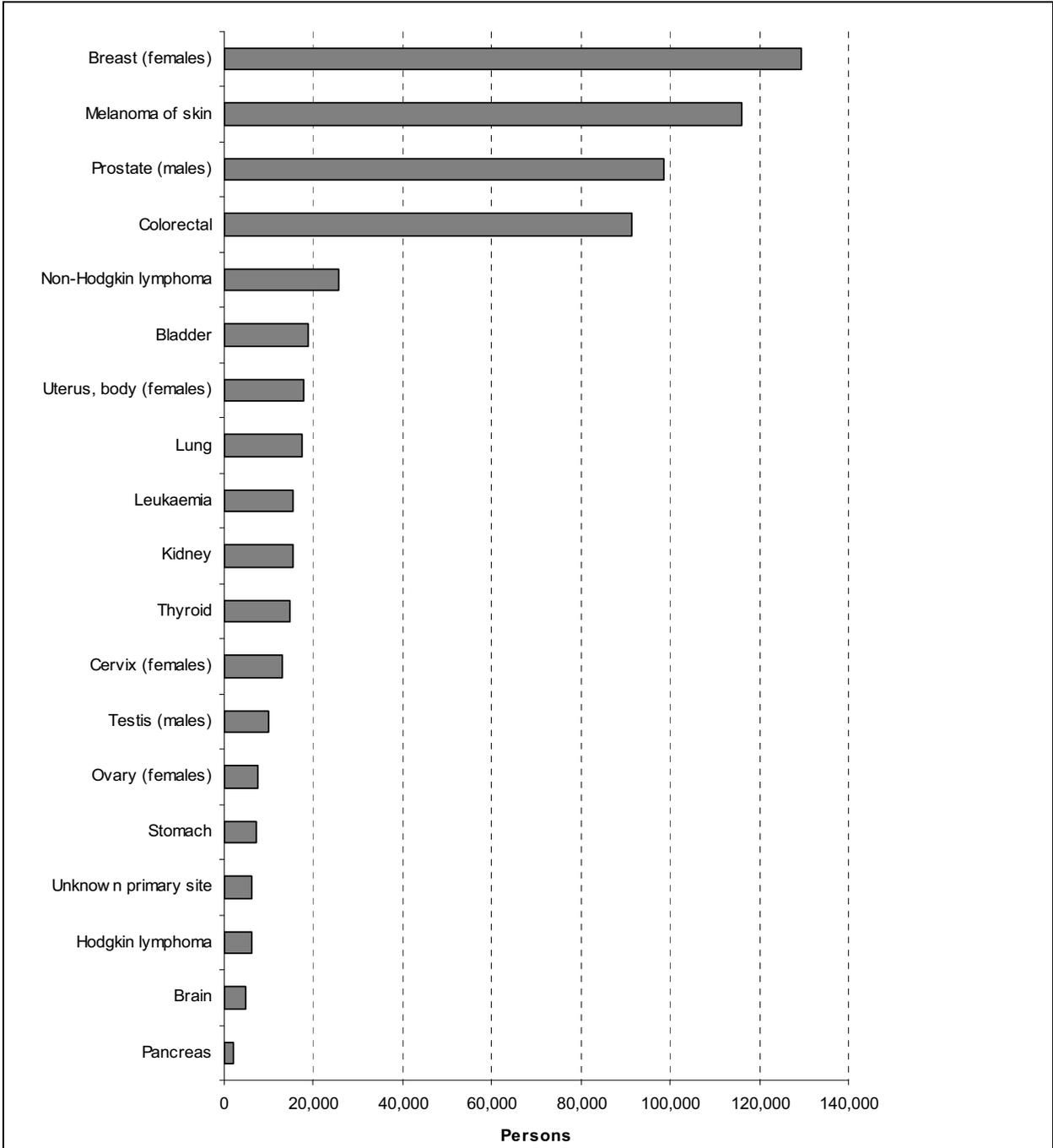
## 11.2 Main findings

At the end of 2004, 654,977 living persons had been diagnosed with cancer at some time in the previous 23 years. This represented 3.2% of the Australian population (3.1% of males and 3.3% of females).

Males made up 55% of the 1-year prevalence, 52% of the 5-year prevalence and 48% of the 23-year prevalence. The reason for the initially higher percentage is that males have higher incidence than females. The reason for the decline over time is that males have lower survival than females.

For males, the three most prevalent cancers were prostate cancer (5-year prevalence of 53,296 males), melanoma of the skin (23,514) and colorectal cancer (23,148), but their relative percentages varied over time. Prostate cancer was always the most prevalent, representing 34% of all prevalent cases at 1 year and 5 years but dropping to 31% at 23 years. Colorectal cancer represented about 14%–15% of all prevalent cases throughout the period. Melanoma represented 12% of cases at 1 year, 15% at 5 years and 19% at 23 years. The reason for the increasing percentage of melanoma is that it is more commonly diagnosed in younger people than the other two cancers and survival is comparatively high.

For females, the three most prevalent cancers were breast cancer (5-year prevalence of 53,051 females), colorectal cancer (18,940) and melanoma of the skin (18,697). With high incidence and survival, breast cancer was always the most prevalent, representing 32% of all prevalent cases at 1 year, rising to 37% at 5 years and 38% at 23 years. Colorectal cancer represented about 13%–14% of cases throughout the period. Melanoma showed the same trend as it did for males, rising steadily from 11% of cases at 1 year to 17% at 23 years.



Note: Numbers refer to the number of persons, not the number of cancers, prevalent at the end of 2004.

Source: National Cancer Statistics Clearing House, AIHW.

**Figure 11.1: 23-year prevalence as at the end of 2004**

# 12 National cancer screening programs

## 12.1 Introduction

There are three national cancer screening programs in Australia: the National Cervical Screening Program, the BreastScreen Australia Program and the National Bowel Cancer Screening Program. The aim of these screening programs is to detect cancer or pre-cancerous changes at an early and therefore more treatable stage. The cervical screening program uses Papanicolaou (Pap) tests to detect abnormalities of the cervix, the breast cancer screening program uses mammography for early detection of cancer or ductal carcinoma in situ and the bowel cancer screening program uses faecal occult blood tests (FOBT) to detect microscopic amounts of blood in the faeces.

The programs are joint initiatives between the Commonwealth and state and territory governments.

## 12.2 National Cervical Screening Program

The National Cervical Screening Program commenced in 1991. The main objective of the Program is to reduce morbidity and mortality from cervical cancer. The Program depends on the use of organised regular screening using the Pap test (the terms Pap test and Pap smear are often used interchangeably) to identify treatable pre-cancerous lesions as well as cervical cancer.

Cervical screening services are provided as part of mainstream health services, with approximately 80% of Pap tests performed by general practitioners. The test involves a doctor or specially trained nurse collecting cells from the surface of the cervix, transferring them onto a slide or into a special liquid and sending them to a pathology laboratory for assessment. If the Pap test shows an abnormality, the woman may be advised either to have a repeat test if the abnormality is low grade, or be referred to a specialist for further investigation if the abnormality is high grade.

The national policy of the National Cervical Screening Program is for all women who have been sexually active at any stage in their lives to have a Pap test every 2 years until they reach the age of 70 years. However, the target group for the Program is all women aged between 20 and 69 years who have not had a hysterectomy.

The National Cervical Screening Program has both national and state and territory components. Although policy is usually decided at a national level, coordination of screening activity is the responsibility of the individual state or territory.

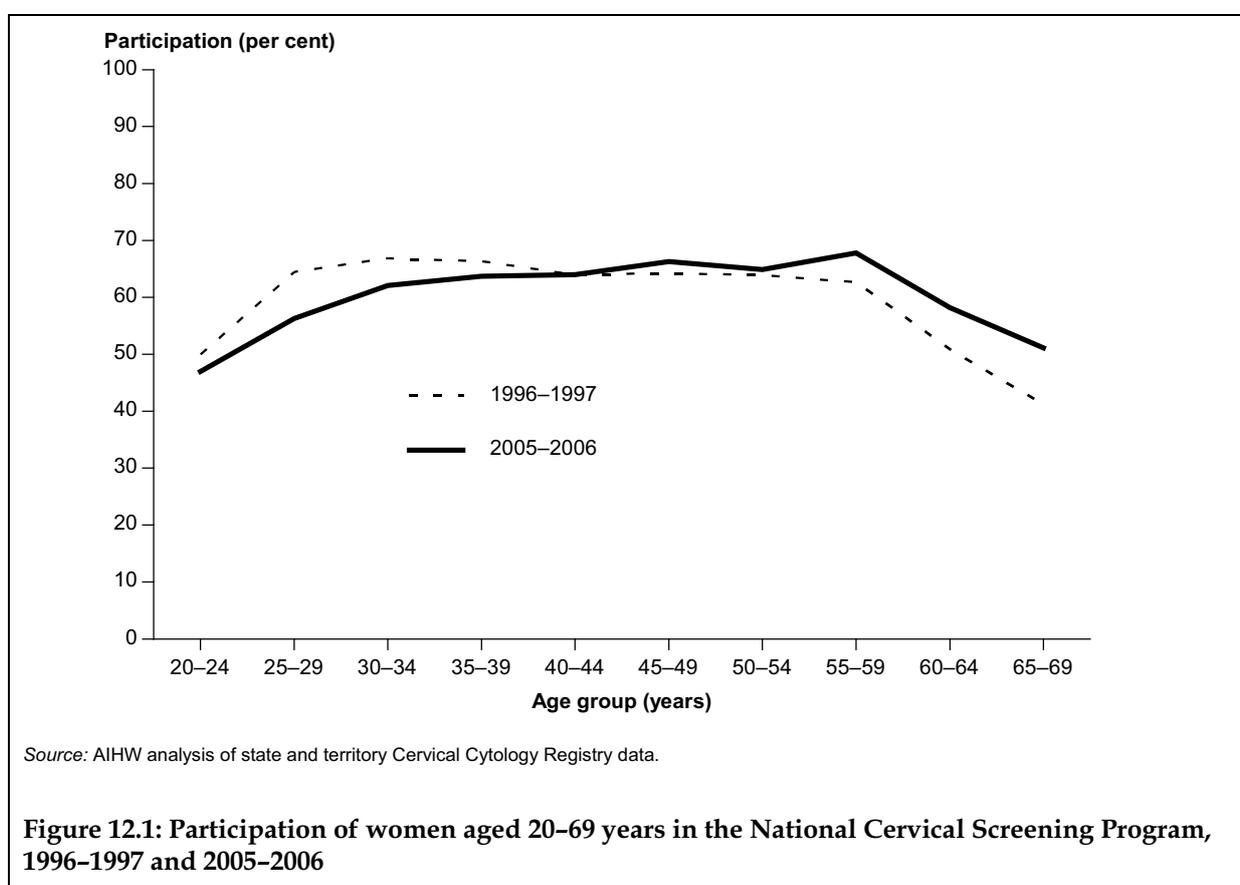
### Participation

The effectiveness of cervical cancer screening is dependent on the majority of women in the target age group participating in the Program. Through increased participation, more women with pre-cancerous abnormalities can be detected and managed before progression

to cervical cancer, thus reducing morbidity and mortality due to this disease. The number of women aged 20–69 years participating increased from just under 2.6 million in 1996–1997 to just under 3.5 million in 2005–2006.

### Participation by age

The Program monitoring indicator ‘Participation’ measures the proportion of the target population participating in the cervical screening program in the recommended 2-year screening interval. Participation in the National Cervical Screening Program was 61.0% in 1996–1997 when reporting commenced and was virtually the same in the most recent reporting period of 2005–2006 (60.6%). Despite this overall stability in participation, there have been changes in participation proportions in various age groups. There has been a decline in participation among women aged less than 40 years and an increase in participation among women aged 45 years and over.



**Table 12.1: Per cent participation of women aged 20–69 years in the National Cervical Screening Program, by 5-year age group, 1996–1997 and 2005–2006**

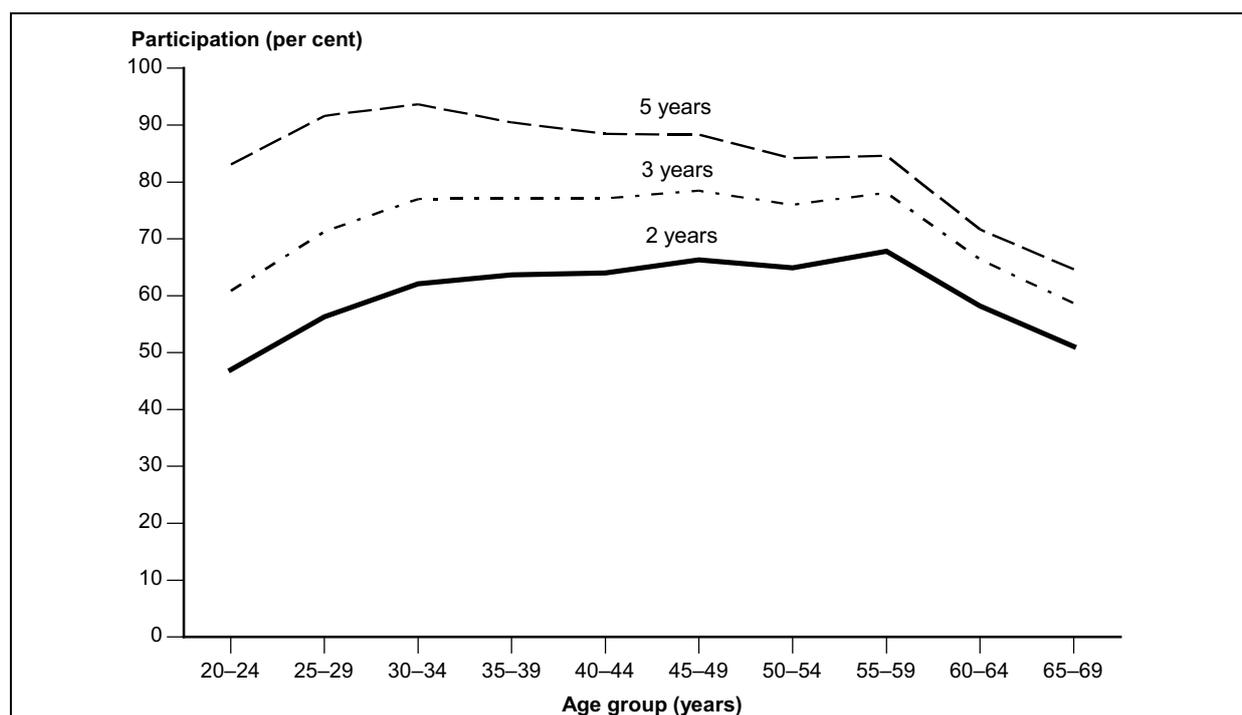
2-year period	Age group (years)										20–69
	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	
1996–1997	50.0	64.5	66.9	66.4	64.0	64.3	64.0	62.7	50.9	41.2	61.0 (60.9–61.1)
2005–2006	47.0	56.3	62.1	63.7	64.0	66.3	64.9	67.8	58.2	51.1	60.6 (60.6–60.7)

*Notes*

1. Participation for a 5-year age group is the number of women screened as a percentage of the eligible female population. The eligible female population is the total female population minus the estimated number of women who have had a hysterectomy.
2. Participation for the target age group 20–69 years is calculated by age-standardising the age-specific figures against the eligible female population aged 20–69 at 30 June 2001.
3. With the exception of Victoria and the Australian Capital Territory, number of women screened includes all women screened in each jurisdiction, not just the women resident in each jurisdiction.
4. These data exclude women who have opted not to be on the cervical cytology register.
5. The periods cover two full calendar years, i.e., from 1 January of the first year to 31 December of the second year.

### Participation by screening interval

In the latest reporting period 2005–2006, the proportion of the target population participating in the cervical screening program over 3-year and 5-year screening intervals were also measured. Analysis of participation over 3 and 5 years allows international comparisons of cervical screening performance to be made, since many other countries use a 3- or 5-year screening interval (Dickinson, 2002). Participation in the National Cervical Screening Program compares well to international rates.



Source: AIHW analysis of state and territory Cervical Cytology Registry data.

**Figure 12.2: Participation of women aged 20–69 years in the National Cervical Screening Program with screening interval of 2 years (2005–2006), 3 years (2004–2006) and 5 years (2002–2006)**

**Table 12.2: Per cent participation of women aged 20–69 years in the National Cervical Screening Program with screening interval of 2 years (2005–2006), 3 years (2004–2006) and 5 years (2002–2006)**

Screening interval	Age group (years)										20–69
	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	
2 years (2005–2006)	47.0	56.3	62.1	63.7	64.0	66.3	64.9	67.8	58.2	51.1	60.6 (60.6–60.7)
3 years (2004–2006)	60.9	71.3	77.0	77.2	77.1	78.5	76.0	78.1	66.4	58.7	73.1 (73.0–73.2)
5 years (2002–2006)	83.1	91.6	93.7	90.5	88.5	88.4	84.2	84.6	71.7	64.7	85.9 (85.8–86.0)

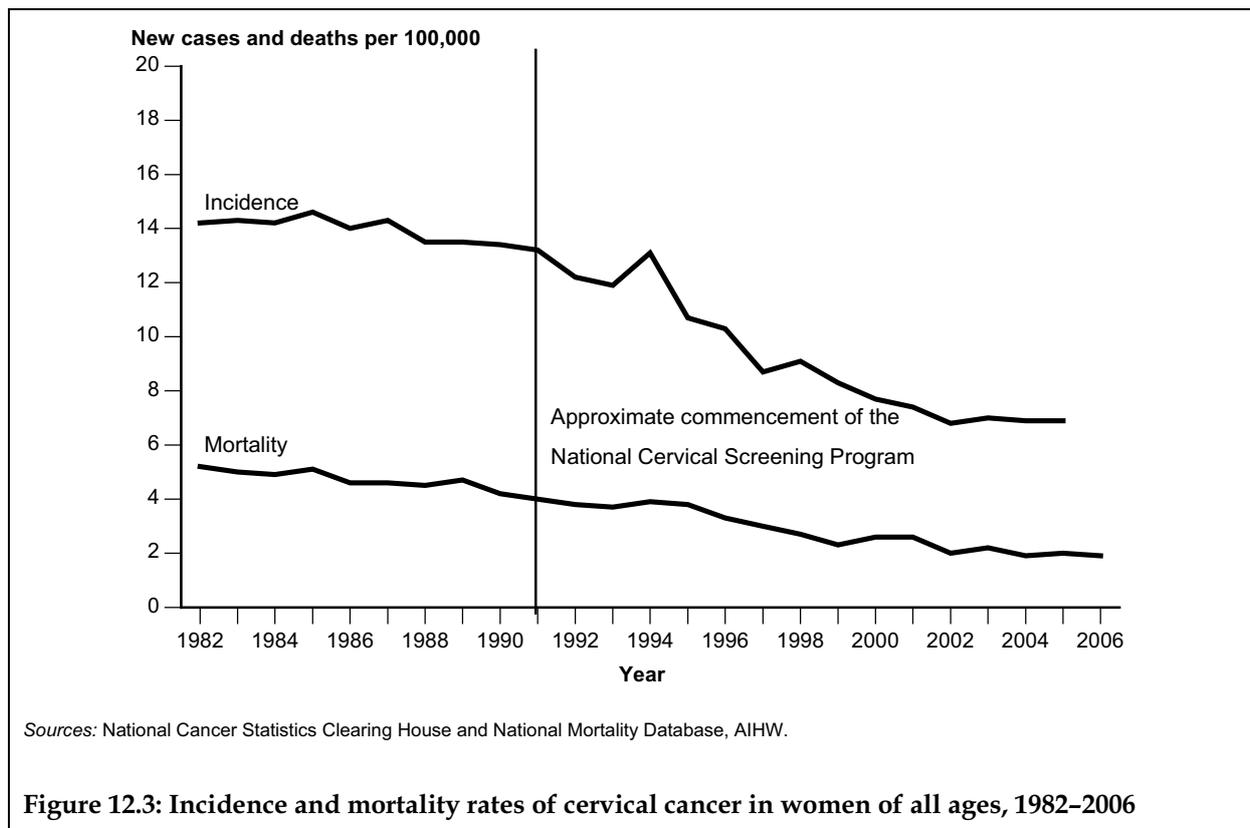
*Notes*

1. Participation for a 5-year age group is the number of women screened as a percentage of the eligible female population. The eligible female population is the total female population minus the estimated number of women who have had a hysterectomy.
2. Participation for the target age group 20–69 years is calculated by age-standardising the age-specific figures against the eligible female population aged 20–69 at 30 June 2001.
3. With the exception of Victoria and the Australian Capital Territory, number of women screened includes all women screened in each jurisdiction, not just the women resident in each jurisdiction.
4. These data exclude women who have opted not to be on the cervical cytology register.

## Cervical cancer incidence and mortality

In interpreting cervical cancer incidence statistics, it should be noted that cervical screening has been available on an ad hoc basis since the 1960s, but it is only since the late 1980s and early 1990s that there has been an organised national approach to screening at a population level. Therefore while incidence and mortality were both declining before the Program commenced in 1991, it is likely that ad hoc cervical screening contributed to these earlier declines.

New cases of cervical cancer for women of all ages almost halved from 13.2 new cancers per 100,000 women in 1991 to 6.9 new cancers per 100,000 women in 2005. Mortality also halved from 4.0 deaths per 100,000 women in 1991 to 1.9 deaths per 100,000 women in 2006.



## 12.3 BreastScreen Australia Program

The BreastScreen Australia Program commenced in 1991. The Program aims to significantly reduce mortality and morbidity from breast cancer by detecting cancers early using regular mammographic screening. If cancers are detected while they are still small they are more likely to respond favourably to treatment. When suspicious lesions are identified at screening they are followed up within the Program to the point of definite diagnosis.

The target age group is 50–69 years as this is the group for which mammographic screening is believed to be most effective. Women aged 40–49 years and 70 years or over may also be screened under this program. Women may attend without a doctor's referral.

The BreastScreen Australia Program operates through a separate dedicated screening and assessment service with both fixed and mobile mammography centres throughout the country. In addition, recruitment and reminder systems are used to promote screening and rescreening among women in the target age group.

Annual monitoring of the BreastScreen Australia Program reports on eight indicators: participation, detection of all-size and small invasive cancers, sensitivity, detection of ductal carcinoma in situ, recall to assessment, rescreening, incidence and mortality.

In 2007–2008 a comprehensive evaluation to review all aspects of the Program was undertaken. The evaluation was overseen by an Evaluation Advisory Committee (EAC) comprised of eminent Australian and overseas experts, jurisdictional representatives and consumer representatives.

### Participation

The Program monitoring indicator ‘Participation’ is a population-based indicator that measures the proportion of the eligible population attending the screening program within the recommended screening interval. All women who are Australian citizens and those with permanent residency status are eligible for breast screening. The participation rate is measured as the proportion of women in the population screened through the BreastScreen Australia Program in a 24-month period.

In 2004–2005 around 1.6 million women were screened by the BreastScreen Australia Program, with just over 1.2 million (74%) in the target age group (50–69 years). Participation by women aged 50–69 years increased significantly from 51.4% in 1996–1997 to 56.9% in 2000–2001 and has declined slightly since then to 56.2% in 2004–2005.

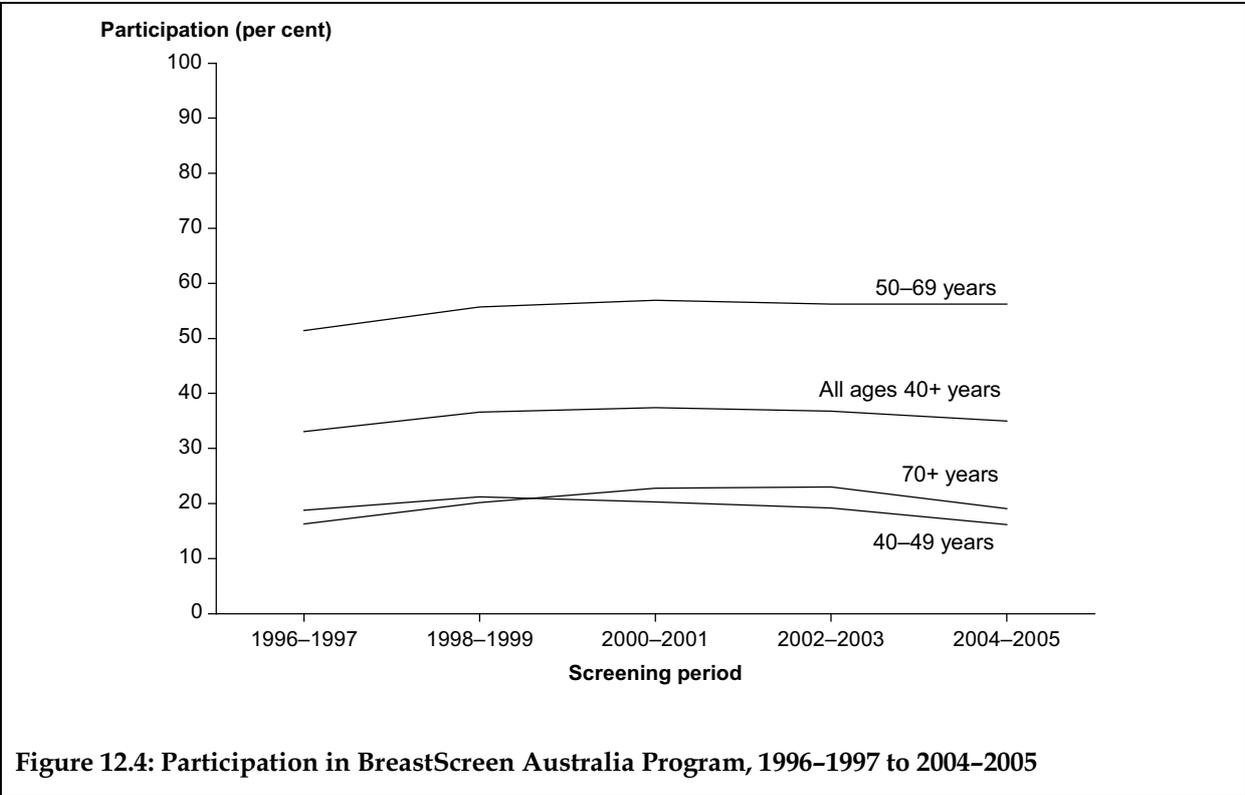


Figure 12.4: Participation in BreastScreen Australia Program, 1996–1997 to 2004–2005

**Table 12.3: Per cent participation in BreastScreen Australia Program, 1996–1997 to 2004–2005**

	1996–1997	1998–1999	2000–2001	2002–2003	2004–2005
40–49 years	18.8	21.2	20.3	19.2	16.2
50–69 years	51.4	55.7	56.9	56.2	56.2
70 years and over	16.3	20.2	22.8	23.0	19.1
<b>40 years and over</b>	<b>33.1</b>	<b>36.6</b>	<b>37.4</b>	<b>36.8</b>	<b>35.0</b>

*Notes*

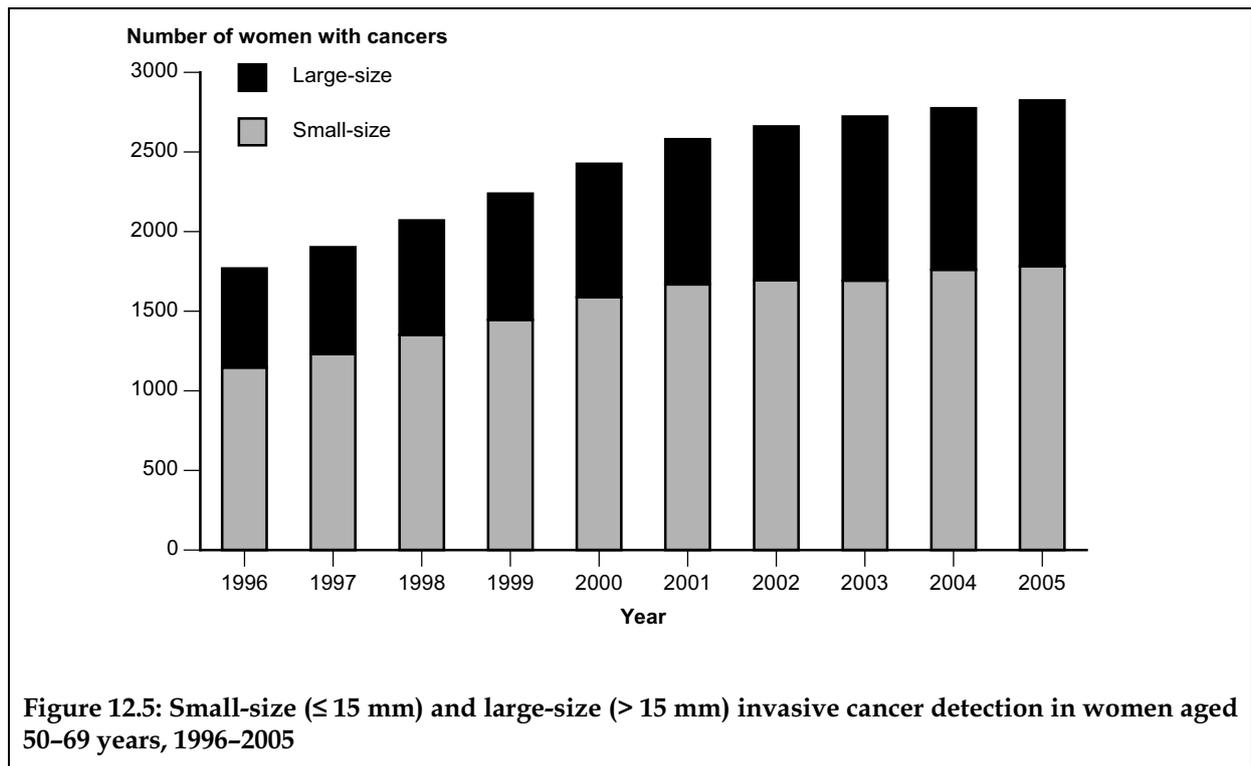
1. Rates are the number of women screened as a percentage of the eligible female population calculated as the average of the Australian Bureau of Statistics estimated resident population and age-standardised to the Australian 2001 Standard Population.
2. The periods cover two full calendar years, i.e., from 1 January of the first year to 31 December of the second year.

## Cancer detection

The rate for invasive cancers detected in the BreastScreen Australia Program is the number of women with invasive breast cancers detected per 10,000 women screened. One of the aims of BreastScreen Australia is to maximise the early detection of breast cancers (BSANAC & DHAC 2000). Finding breast cancer early often means that the cancer is small, can be more effectively treated and is less likely to have spread to other parts of body. As a result, women who have cancers detected early may suffer less morbidity from breast cancer (Day 1991).

A recent publication (AIHW & NBCC 2007) showed that Australian women with breast cancers of 15 mm or less in size had greater than 90% survival after 9 years, with survival decreasing with increasing cancer size.

Cancer detection by the Program for women in the target age group increased from 56 per 10,000 in 1996 to 74 per 10,000 in 2005. In 2005, the Program detected 2,823 all-size invasive breast cancers in women aged 50–69 years and of these 63% (1,780) were of small size ( $\leq 15$  mm).



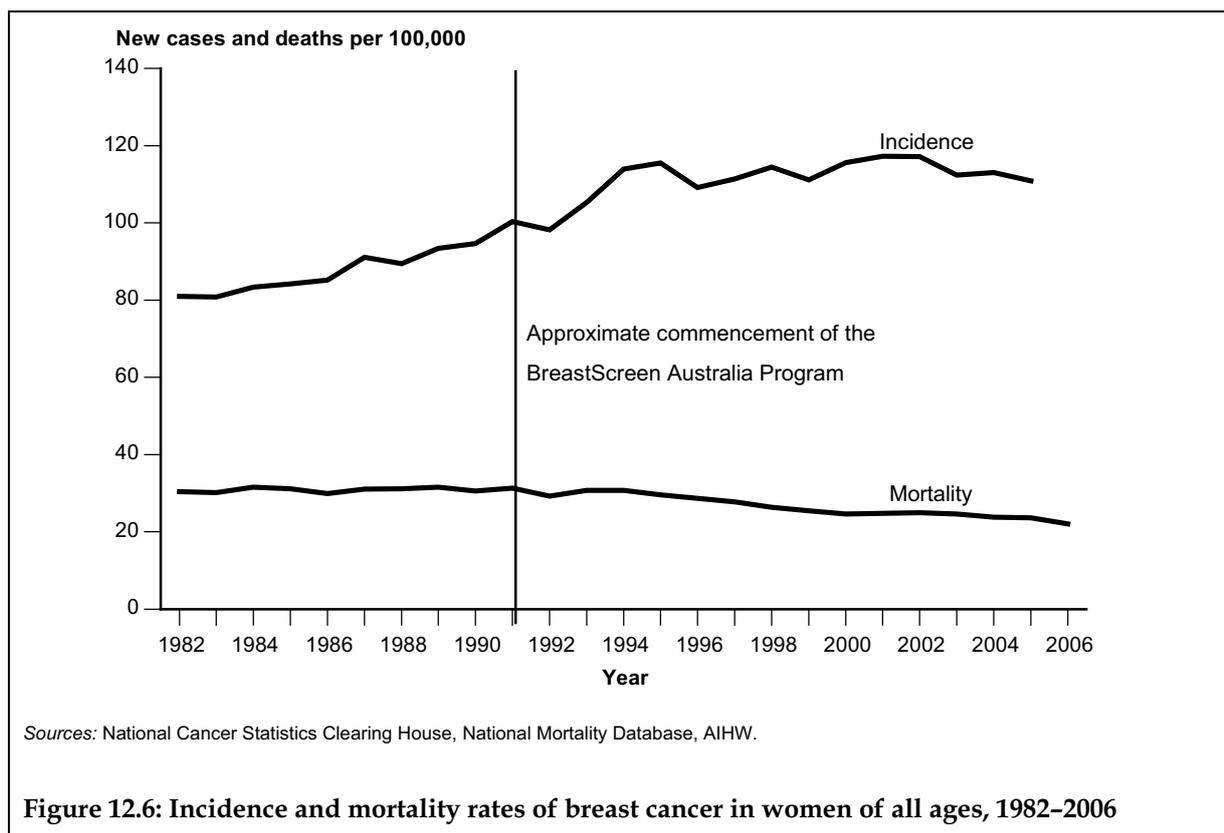
**Table 12.4: Small-size (≤ 15 mm) and large-size (> 15 mm) invasive cancer detection in women aged 50-69 years, 1996-2005**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Small-size (≤ 15 mm)	1,144	1,228	1,351	1,445	1,587	1,667	1,692	1,691	1,759	1,780
Large-size (> 15 mm)	623	673	718	792	838	912	967	1,030	1,013	1,043
<b>All-size</b>	<b>1,767</b>	<b>1,901</b>	<b>2,069</b>	<b>2,237</b>	<b>2,425</b>	<b>2,579</b>	<b>2,659</b>	<b>2,721</b>	<b>2,772</b>	<b>2,823</b>

## Breast cancer incidence and mortality

Since the commencement of the Program the incidence rate of breast cancer in Australia for women of all ages has increased from 100 new cases per 100,000 women in 1991 to 111 new cases per 100,000 women in 2005.

Although the incidence rate has been increasing, the mortality rate for breast cancer decreased from 31 per 100,000 in 1991 to 22 per 100,000 in 2006.

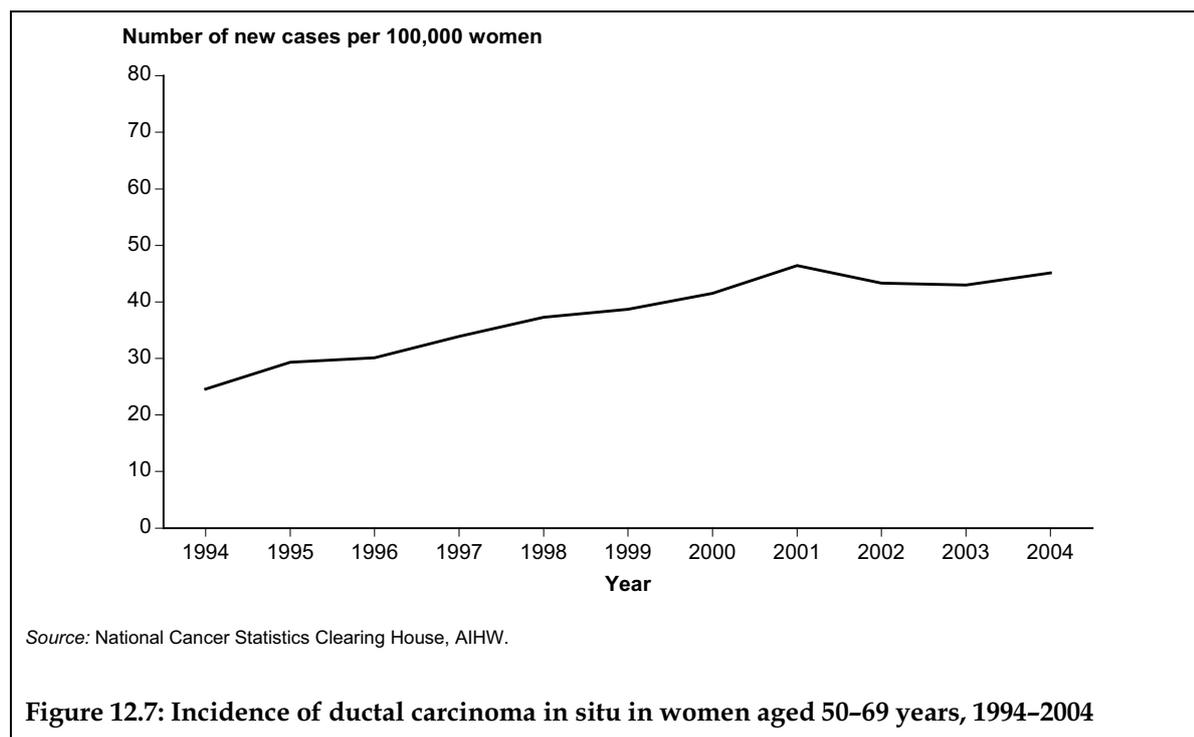


## Incidence of ductal carcinoma in situ

Ductal carcinoma in situ (DCIS) is a disease that involves changes in the cells in the lining of the ducts of the breast. Although the changes are like those seen in breast cancer, DCIS has not spread beyond the ducts and therefore is not an invasive cancer (NBCC et al. 2000). The natural history of DCIS is still not well understood, although women with the condition are at increased risk of subsequent development of invasive breast cancer (O’Shaughnessy 2000).

Data on incidence of DCIS provide information about the underlying level of the condition among Australian women. DCIS was rarely detected before screening was introduced. Since the introduction of screening mammography, the detection of DCIS has increased (NBCC et al. 2000).

The age-standardised incidence rate of DCIS increased steadily and significantly from 24.6 cases per 100,000 women in 1994 to 46.4 per 100,000 in 2001. It has declined slightly since then.



**Table 12.5: Incidence rate of ductal carcinoma in situ in women aged 50–69 years, 1994–2004**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Rate	24.6*	29.3*	30.1*	33.9*	37.3*	38.7*	41.5	46.4	43.3	43.0	45.1
95% CI	22.2– 27.3	26.7– 32.1	27.4– 32.9	31.2– 36.9	34.4– 40.2	35.8– 41.7	38.6– 44.6	43.4– 49.5	40.4– 46.3	40.2– 45.9	42.3– 48.1

\* Statistically significantly different from the 2004 rate ( $p < 0.05$ ).

Note: Rates are age-standardised to the Australian 2001 Standard Population and expressed per 100,000 women.

## 12.4 National Bowel Cancer Screening Program

The first phase of the National Bowel Cancer Screening Program (NBCSP) was implemented in August 2006 by the Australian Government, in partnership with state and territory governments, as part of its Strengthening Cancer Care initiative. From 7 August 2006, people across Australia turning 55 or 65 years of age between 1 May 2006 and 30 June 2008 were invited to participate. The Program commenced in Queensland and was progressively rolled out to the rest of Australia, with all states and territories participating by April 2007.

The goals of the NBCSP are to reduce the incidence of and mortality due to bowel cancer through screening to detect abnormalities of the colon and rectum at an early stage, and, where bowel cancer has developed, to detect cancers at an early stage in order to maximise the effectiveness of treatment.

The screening tool used is a faecal occult blood test (FOBT). This is a non-invasive test that detects microscopic amounts of blood in the faeces, which can be an early indication of bowel cancer. The NBCSP uses an immunochemical FOBT as it does not require dietary restrictions and can be easily used at home. Participants are requested to post their completed FOBT to a pathology laboratory for analysis. Results of this analysis are sent to

the participant, the participant’s nominated general practitioner and the National Bowel Cancer Screening Program Register. Participants with a positive result, indicating blood in their faeces, are advised to consult their general practitioner to discuss further testing – in most cases this will be a colonoscopy, which is a procedure that involves a specialist looking inside the bowel using a special instrument.

**Participation**

Participation in the NBCSP is defined as the proportion of people who have received an invitation that completed the screening test. There were 929,329 invitations sent to people aged 55 or 65 years between 7 August 2006 and 30 June 2008. Of these, 366,826 returned a FOBT for analysis.

Crude proportions represent an under-estimate of the true screening participation level. This is because of the lag in response time. An alternative approach is to follow each individual and, for those who respond, to record the time it takes them to respond. This allows the calculation of a response rate over time from the date of invitation. The response rates were calculated using the Kaplan-Meier method, which is a standard statistical method used to model the time to an event and the changes in the rates of an event over time. In this case, the event is a person’s completion of the FOBT and the time to the event is measured in weeks from the date the invitation was sent. These Kaplan-Meier estimates represent valid estimates of the true participation rates.

After adjustment for the lag between invitation and response using the Kaplan-Meier method, estimated participation at 38 weeks from invitation was 42.9% nationally. Females were 19% more likely to participate in screening with an estimated participation of 46.7% compared with 39.2% for males. Older people were also 20% more likely to participate in bowel cancer screening with an estimated participation of 47.7% for those aged 65 years compared with 39.9% for those aged 55 years.

**Table 12.6: Participation in the National Bowel Cancer Screening Program at 38 weeks from invitation: 7 August 2006–30 June 2008**

	Sex		Age		Total
	Males	Females	55 years	65 years	
Participation rate	39.2	46.7	39.9	47.7	42.9
95% CI	39.1–39.4	46.5–46.8	39.7–40.0	47.6–47.9	42.8–43.0

*Note:* Participation rate is defined as the proportion of people who have received an invitation who complete the screening test. Rates are expressed per 100 invitations and are calculated using the Kaplan-Meier method for time to event analysis.

## Outcomes

The proportion of positive FOBT results between 7 August 2006 and 30 June 2008, referred to as the positivity rate, was 8.9% for males and 6.4% for females. The overall positivity rate was 7.5%.

Of those who had results from a positive FOBT investigated by colonoscopy and outcomes reported to the Register, 5.2% were found to have cancer and 12.4% had adenomas detected (see Glossary for definition of adenoma). A further 41.3% had polyps detected (see Glossary) at colonoscopy but histopathology results were not recorded in the Register at 30 June 2008. The remaining 41.1% were found to have no cancer or adenoma.

**Table 12.7: National Bowel Cancer Screening Program FOBT positivity rates, by age and sex: 7 August 2006–30 June 2008**

	Positive results	Valid results	Rate (per 100 valid results)
<b>Males</b>			
55 years	6,876	91,212	7.5
65 years	8,006	75,293	10.6
<b>Total</b>	<b>14,882</b>	<b>166,505</b>	<b>8.9</b>
<b>Females</b>			
55 years	6,297	113,553	5.5
65 years	6,163	82,419	7.5
<b>Total</b>	<b>12,460</b>	<b>195,972</b>	<b>6.4</b>
<b>Persons</b>			
55 years	13,173	204,765	6.4
65 years	14,169	157,712	9.0
<b>Total</b>	<b>27,342</b>	<b>362,477</b>	<b>7.5</b>

*Notes*

1. Rates are the number of FOBT positive results as a percentage of the total number of valid results.
2. A valid result is either positive or negative. Inconclusive results are excluded.

**Table 12.8: National Bowel Cancer Screening Program outcomes from colonoscopic investigation of positive FOBT, by age and sex: 7 August 2006–30 June 2008**

	No cancer or adenoma detected <sup>(a)</sup>		Polyps <sup>(b)</sup>		Adenomas <sup>(c)</sup>		Cancer <sup>(d)</sup>		Total <sup>(e)</sup>
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	
<b>Males</b>									
55 years	1,297	35.7	1,656	45.6	518	14.3	164	4.5	3,635
65 years	1,274	30.4	2,050	49.0	592	14.1	270	6.5	4,186
<b>Total</b>	<b>2,571</b>	<b>32.9</b>	<b>3,706</b>	<b>47.4</b>	<b>1,110</b>	<b>14.2</b>	<b>434</b>	<b>5.5</b>	<b>7,821</b>
<b>Females</b>									
55 years	1,818	54.7	1,069	32.2	314	9.4	124	3.7	3,325
65 years	1,549	47.2	1,180	35.9	360	11.0	194	5.9	3,283
<b>Total</b>	<b>3,367</b>	<b>51.0</b>	<b>2,249</b>	<b>34.0</b>	<b>674</b>	<b>10.2</b>	<b>318</b>	<b>4.8</b>	<b>6,608</b>
<b>Persons</b>									
55 years	3,115	44.8	2,725	39.2	832	12.0	288	4.1	6,960
65 years	2,823	37.8	3,230	43.2	952	12.7	464	6.2	7,469
<b>Total</b>	<b>5,938</b>	<b>41.1</b>	<b>5,955</b>	<b>41.3</b>	<b>1,784</b>	<b>12.4</b>	<b>752</b>	<b>5.2</b>	<b>14,429</b>

(a) Either (1) no polyps were identified at colonoscopy or (2) the polyps were confirmed as non-adenomatous by histopathology or (3) no cancers were suspected at colonoscopy or (4) the sample was confirmed as non-cancerous by histopathology.

(b) Polyps detected at colonoscopy and sent to histopathology for analysis, but histopathology results not received by Register.

(c) Adenomas confirmed by histopathology.

(d) Cancer confirmed by histopathology or cancer suspected at colonoscopy but not yet confirmed by histopathology.

(e) Total number of colonoscopies with outcome data recorded in the National Bowel Cancer Screening Program Register.

# 13 Cancer-related hospital separations, 2002–03 to 2006–07

## 13.1 Introduction

The AIHW National Hospital Morbidity Database contains diagnosis and treatment information for separations of admitted patients from almost all public and private hospitals in Australia starting from the financial year 1993–94. A simplified definition of a hospital separation is a single, continuous stay at a hospital, beginning with admission and ending with discharge, transfer or death – a full definition is given in the glossary.

This chapter presents trend data for admitted patients with a principal diagnosis related to cancer for the 5-year period from 2002–03 to 2006–07 inclusive. Note that one person may have multiple separations (for example, for chemotherapy) – this chapter counts hospital separations, not persons.

The principal diagnosis is defined as the diagnosis established, after study, to be chiefly responsible for occasioning the admitted patient's episode of care in hospital.

Principal diagnoses for 2002–03 and 2003–04 were classified, coded and reported to the National Hospital Morbidity Database using the third edition of the International Classification of Diseases, 10th Revision, Australian Modification (ICD-10-AM) (NCCH 2002). Principal diagnoses for 2004–05 and 2005–06 were coded using the fourth edition of ICD-10-AM (NCCH 2004) and principal diagnoses for 2006–07 were coded using the fifth edition of ICD-10-AM (NCCH 2006).

The term 'all cancer-related separations' is used to describe hospital separations with a principal diagnosis of cancer (ICD-10-AM codes C00–C97, D45–D46, D47.1 and D47.3) or with another reason for hospitalisation that is primarily related to cancer (such as Z51.1 chemotherapy session). These exclude hospital separations where the patient has cancer but was admitted for a reason unrelated to cancer.

Five-year trends were determined using linear regression.

## 13.2 Main findings

In 2006–07, there were 777,848 cancer-related separations, accounting for about 10% of all hospital separations in that year. Over 39% of these separations were chemotherapy sessions (304,102 separations). The next four largest numbers of separations were due to non-melanoma skin cancer (79,793), special screening examinations (38,875), secondary cancers (37,826) and follow-up after surgery for cancer (35,631).

From 2002–03 to 2006–07 the number of cancer-related separations grew by 23,202 extra separations per year. Over half of this increase was accounted for by chemotherapy sessions (12,318 extra separations per year). The next four largest increases occurred for special screening examinations (3,837), prostate cancer (2,762), follow-up after surgery for cancer (868) and colorectal cancer (777). By contrast, bladder cancer separations decreased by 220 separations per year. The large decrease in separations due to personal and family history of

cancer (949 fewer separations per year) may be a result of changes in coding practice but this could not be confirmed.

In 2006–07 the average length of stay for a person in hospital with a principal diagnosis of cancer was 2.8 days. The five separation types with the longest average length of stay were cancer of the central nervous system excluding the brain (11.6 days), brain cancer (11.4), cancer of the gallbladder (9.9), pancreatic cancer (9.5) and cancer of the small intestine (9.1).

Excluding same-day separations, the average length of stay was 7.9 days and the five separation types with the longest average length of stay were cancer of the central nervous system excluding the brain (15.5 days), myeloid leukaemia (15.0), leukaemia of unspecified type (13.9), brain cancer (12.8) and Kaposi sarcoma (12.5).

Although not shown in Table 13.2, an analysis for trend was carried out. The five strongest trends in average length of stay were all negative and were for oropharyngeal cancer (a decrease of 0.5 days per year), prostate cancer (-0.4), laryngeal cancer (-0.3), colon cancer (-0.2) and liver cancer (-0.2). There were no statistically significant trends of increasing length of stay.

Excluding same-day separations, the five strongest trends in average length of stay were all negative and were for oropharyngeal cancer (a decrease of 0.6 days per year), laryngeal cancer (-0.4), prostate cancer (-0.4), colon cancer (-0.4) and eye cancer (-0.3). Increasing trends in length of stay were observed for leukaemia (an increase of 0.2 days per year), myelodysplastic syndromes (0.1) and non-Hodgkin lymphoma (0.1).

**Table 13.1: Cancer-related hospital separations, Australia, 2002–03 to 2006–07**

Principal diagnosis (ICD-10 codes)	Financial year					Average	Annual change <sup>(a)</sup>
	2002–03	2003–04	2004–05	2005–06	2006–07		
Lip (C00)	730	698	658	688	683	691	
Tongue (C01–C02)	1,348	1,332	1,305	1,487	1,476	1,390	
Mouth (C03–C06)	901	972	1,032	1,269	1,117	1,058	
Major salivary glands (C07–C08)	487	464	497	561	620	526	36
Oropharynx (C09–C10)	874	877	983	1,015	1,075	965	54
Nasopharynx (C11)	441	511	546	504	534	507	
Hypopharynx (C12–C13)	497	505	480	490	463	487	
Pharynx, unspecified (C14)	323	228	205	237	267	252	
Nasal cavity, middle ear & sinuses (C30–C31)	406	390	409	401	399	401	
Larynx (C32)	1,441	1,475	1,562	1,553	1,774	1,561	74
<i>Head and neck (C01–C14, C30–C32)</i>	<i>6,718</i>	<i>6,754</i>	<i>7,019</i>	<i>7,517</i>	<i>7,725</i>	<i>7,147</i>	<i>278</i>
Oesophagus (C15)	4,628	4,687	4,769	4,978	4,860	4,784	
Stomach (C16)	5,523	5,499	5,432	5,545	5,669	5,534	
Small intestine (C17)	644	758	686	716	697	700	
Colon (C18)	16,612	16,565	16,918	17,377	18,481	17,191	455
Rectum (C19–C20)	10,033	10,287	10,619	10,852	11,362	10,631	322
<i>Colorectal (C18–C20)</i>	<i>26,645</i>	<i>26,852</i>	<i>27,537</i>	<i>28,229</i>	<i>29,843</i>	<i>27,821</i>	<i>777</i>
Anus (C21)	744	749	701	719	762	735	
Liver (C22)	2,346	2,595	2,739	3,110	3,261	2,810	235
Gallbladder (C23–C24)	1,108	1,076	953	1,086	1,241	1,093	
Pancreas (C25)	4,199	4,358	4,766	4,702	4,962	4,597	187
Lung, bronchus & trachea (C33–C34)	17,360	17,716	17,911	18,393	18,867	18,049	369
Other thoracic organs (C37–C38)	517	453	398	461	442	454	
Bone & articular cartilage (C40–C41)	1,610	1,769	1,809	1,870	1,748	1,761	
Melanoma of skin (C43)	8,425	8,680	8,330	9,153	9,109	8,739	
Non-melanoma skin cancer (C44) <sup>(b)</sup>	74,282	74,660	72,634	77,721	79,793	75,818	
Mesothelioma (C45)	1,785	1,989	1,950	1,830	2,011	1,913	
Kaposi sarcoma (C46)	52	35	52	56	43	48	
Peritoneum & retroperitoneum (C48)	605	714	743	724	902	738	60
Other connective and soft tissue (C47, C49)	1,641	1,561	1,697	1,715	1,694	1,662	
Breast (C50)	22,701	23,748	21,190	22,482	23,011	22,626	
Vulva (C51)	534	620	638	644	672	622	30
Vagina (C52)	170	221	219	190	218	204	
Cervix (C53)	1,921	1,782	1,812	1,724	1,846	1,817	
Uterus, body (C54)	2,584	2,795	2,886	2,964	2,957	2,837	92
Uterus, unspecified (C55)	629	640	697	634	610	642	
Ovary (C56)	3,217	3,323	3,239	3,578	3,827	3,437	148

(continued)

**Table 13.1 (continued): Cancer-related hospital separations, Australia, 2002–03 to 2006–07**

Principal diagnosis (ICD-10 codes)	Financial year					Average	Annual change <sup>(a)</sup>
	2002–03	2003–04	2004–05	2005–06	2006–07		
Other female genital organs (C57)	124	147	154	149	184	152	12
Placenta (C58)	15	23	27	30	17	22	
<i>Gynaecological (C51–C58)</i>	<i>9,194</i>	<i>9,551</i>	<i>9,672</i>	<i>9,913</i>	<i>10,331</i>	<i>9,732</i>	<i>264</i>
Penis (C60)	134	117	144	127	151	135	
Prostate (C61)	17,153	20,547	23,343	25,429	28,522	22,999	2,762
Testis (C62)	1,127	1,246	1,195	1,274	1,166	1,202	
Other male genital organs (C63)	62	48	74	50	41	55	
Kidney (C64)	3,306	3,538	3,675	3,696	3,856	3,614	126
Bladder (C67)	15,672	15,256	14,848	14,796	14,803	15,075	–220
Other urinary organs (C65–C66, C68)	860	806	918	950	1,006	908	44
Eye (C69)	608	698	680	634	657	655	
Brain (C71)	4,566	4,384	4,603	4,761	4,855	4,634	
Other central nervous system (C70, C72)	240	320	286	250	303	280	
Thyroid (C73)	2,570	2,972	3,101	3,291	3,516	3,090	221
Other endocrine organs (C74–C75)	356	424	392	520	593	457	57
Hodgkin lymphoma (C81)	1,510	1,675	1,802	1,774	1,856	1,723	79
Non-Hodgkin lymphoma (C82–C85, C96)	19,174	18,901	18,841	19,998	19,532	19,289	
<i>All lymphomas (C81–C85, C96)</i>	<i>20,684</i>	<i>20,576</i>	<i>20,643</i>	<i>21,772</i>	<i>21,388</i>	<i>21,013</i>	
Immunoproliferative cancers (C88)	663	783	779	572	593	678	
Myeloma (C90)	13,833	15,244	9,167	8,826	9,506	11,315	
Lymphoid leukaemia (C91)	8,591	9,160	9,155	9,162	9,364	9,086	
Myeloid leukaemia (C92–C94)	9,937	10,156	10,146	10,522	10,928	10,338	235
Leukaemia, unspecified (C95)	385	407	379	333	339	369	
<i>All leukaemias (C91–C95)</i>	<i>18,913</i>	<i>19,723</i>	<i>19,680</i>	<i>20,017</i>	<i>20,631</i>	<i>19,793</i>	<i>373</i>
Polycythaemia vera (D45)	2,266	2,320	2,279	2,881	3,059	2,561	215
Myelodysplastic syndromes (D46)	9,842	11,209	11,243	11,395	11,717	11,081	
Other chronic myeloproliferative diseases (D47 <sup>(b)</sup> )	2,681	2,692	2,630	2,568	2,604	2,635	
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(b)</sup>)</i>	<i>68,882</i>	<i>72,547</i>	<i>66,421</i>	<i>68,031</i>	<i>69,498</i>	<i>69,076</i>	
Unknown primary site (C26, C39, C76, C80)	2,816	2,530	2,747	2,555	2,574	2,644	
Secondary cancers (C77–C79)	37,464	39,976	36,409	37,537	37,826	37,842	
<b>All cancers (C00–C96<sup>(c)</sup>, D45–D47<sup>(b)</sup>)</b>	<b>347,273</b>	<b>360,311</b>	<b>350,482</b>	<b>365,509</b>	<b>377,021</b>	<b>360,119</b>	
<b>Other cancer-related separations<sup>(d)</sup></b>							
Personal and family history (Z80, Z85, Z92.3)	14,229	12,156	11,203	10,534	10,293	11,683	–949
Observation for suspected cancer (Z03.1)	412	450	429	312	270	375	
Special screening examination (Z12)	23,010	25,319	29,229	31,954	38,875	29,677	3,837
Prophylactic surgery (Z40)	299	397	452	550	638	467	83

(continued)

**Table 13.1 (continued): Cancer-related hospital separations, Australia, 2002–03 to 2006–07**

Principal diagnosis (ICD-10 codes)	Financial year					Average	Annual change <sup>(a)</sup>
	2002–03	2003–04	2004–05	2005–06	2006–07		
Radiotherapy session (Z51.0)	849	561	605	620	2,273	982	
Chemotherapy session (Z51.1)	256,226	265,616	285,701	293,047	304,102	280,938	12,318
Follow-up after radiotherapy (Z54.1, Z08.1)	509	482	420	435	427	455	
Follow-up after chemotherapy (Z54.2, Z08.2)	1,047	1,096	977	983	957	1,012	
Follow-up after surgery for cancer (Z08.0)	32,177	32,913	33,635	34,688	35,631	33,809	868
Follow-up after multiple treatment (Z08.7–Z08.9)	5,758	6,317	6,595	6,886	7,361	6,583	378
<b>All other cancer-related separations</b>	<b>334,516</b>	<b>345,307</b>	<b>369,246</b>	<b>380,009</b>	<b>400,827</b>	<b>365,981</b>	<b>16,732</b>
<b>All cancer-related separations</b>	<b>681,789</b>	<b>705,618</b>	<b>719,728</b>	<b>745,518</b>	<b>777,848</b>	<b>726,100</b>	<b>23,202</b>

(a) Gradient of the line that best fits the 5 years of data. Only shown when the gradient is statistically significantly different ( $p < 0.05$ ) from zero.

(b) Only includes D47.1 and D47.3.

(c) Includes non-melanocytic skin cancer (C44).

(d) Separations for specific procedures, usually related to another separation for a principal diagnosis of cancer, but excluding any procedures conducted as part of that other separation.

Source: National Hospital Morbidity Database, AIHW.

**Table 13.2: Average length of stay (days) for cancer-related hospital separations, Australia, 2002–03 to 2006–07**

Principal diagnosis (ICD-10 codes)	Including same-day separations					Excluding same-day separations				
	02–03	03–04	04–05	05–06	06–07	02–03	03–04	04–05	05–06	06–07
Lip (C00)	1.7	2.0	1.6	1.7	1.9	3.9	4.9	3.4	3.9	4.3
Tongue (C01–C02)	6.7	6.4	6.0	6.4	6.7	8.8	8.4	7.7	8.3	8.7
Mouth (C03–C06)	7.7	8.0	9.1	7.1	8.3	10.0	10.3	11.6	9.4	10.6
Major salivary glands (C07–C08)	6.2	6.3	6.0	6.5	6.1	6.8	6.9	6.5	7.2	7.0
Oropharynx (C09–C10)	6.8	6.7	6.0	5.7	4.9	8.5	8.7	7.5	7.0	6.4
Nasopharynx (C11)	5.9	5.0	4.9	5.6	4.9	7.3	6.9	6.7	7.2	6.2
Hypopharynx (C12–C13)	11.5	8.5	10.4	9.4	8.5	14.7	11.2	12.6	12.9	11.5
Pharynx, unspecified (C14)	7.6	8.4	8.0	6.8	7.4	10.4	11.1	10.0	9.1	10.6
Nasal cavity, middle ear & sinuses (C30–C31)	6.8	8.7	7.3	6.0	6.0	8.5	10.6	9.1	7.6	7.6
Larynx (C32)	8.2	8.3	7.8	7.2	7.3	12.1	12.0	11.6	10.6	10.8
<i>Head and neck (C01–C14, C30–C32)</i>	7.5	7.3	7.2	6.7	6.7	9.8	9.6	9.4	8.8	8.9
Oesophagus (C15)	7.1	6.9	6.5	6.6	6.6	10.1	9.8	9.1	9.2	9.4
Stomach (C16)	7.3	7.7	7.4	7.3	7.2	10.2	10.7	10.2	10.1	9.9
Small intestine (C17)	9.4	7.9	8.8	9.7	9.1	12.9	11.6	11.8	12.4	11.9
Colon (C18)	8.5	8.3	8.0	7.9	7.5	11.5	11.1	10.7	10.4	10.1
Rectum (C19–C20)	8.1	7.9	7.6	7.9	7.6	11.9	11.5	10.9	11.2	11.1
<i>Colorectal (C18–C20)</i>	8.3	8.2	7.8	7.9	7.5	11.6	11.3	10.7	10.7	10.4
Anus (C21)	8.1	7.4	7.5	7.3	8.0	11.2	10.2	10.4	9.8	11.0
Liver (C22)	7.9	7.3	7.4	7.1	7.0	9.3	8.8	8.9	8.5	8.2
Gallbladder (C23–C24)	9.5	8.9	9.5	9.6	9.9	11.1	10.6	11.1	11.3	11.7
Pancreas (C25)	9.2	9.4	9.0	9.1	9.5	11.1	11.2	10.8	11.0	11.5
Lung, bronchus & trachea (C33–C34)	8.0	7.8	7.9	8.0	7.7	10.0	9.8	9.8	9.9	9.6
Other thoracic organs (C37–C38)	6.0	7.0	5.9	7.0	7.5	7.0	8.4	7.3	8.1	9.0
Bone & articular cartilage (C40–C41)	5.5	6.1	5.7	5.9	6.4	6.5	7.3	6.9	7.0	7.8
Melanoma of skin (C43)	2.4	2.3	2.5	2.4	2.3	5.1	5.0	5.3	5.0	4.7
Non-melanoma skin cancer (C44) <sup>(a)</sup>	1.6	1.6	1.6	1.6	1.6	4.3	4.3	4.4	4.5	4.3
Mesothelioma (C45)	7.5	6.9	7.3	7.2	7.1	8.7	8.0	8.6	8.3	8.2
Kaposi sarcoma (C46)	6.0	6.7	6.4	3.7	7.4	11.3	11.4	13.3	7.0	12.5
Peritoneum & retroperitoneum (C48)	7.1	7.3	7.4	8.0	6.3	8.6	9.0	9.1	9.7	7.7
Other connective and soft tissue (C47, C49)	5.6	5.4	5.0	5.8	5.4	7.7	7.0	6.8	7.6	7.1
Breast (C50)	3.8	3.8	3.8	3.6	3.5	4.8	4.9	4.6	4.3	4.2
Vulva (C51)	7.4	7.2	7.1	7.7	7.7	9.7	9.1	9.0	9.6	9.6
Vagina (C52)	5.8	4.4	5.8	5.6	6.3	8.2	6.3	8.1	7.3	8.4
Cervix (C53)	5.0	5.4	5.2	5.1	4.9	6.9	7.3	7.6	7.4	7.1
Uterus, body (C54)	5.5	5.0	5.3	4.8	4.8	7.2	6.8	7.1	6.5	6.5
Uterus, unspecified (C55)	5.1	5.0	5.4	4.8	4.8	6.9	7.0	7.2	6.9	6.6
Ovary (C56)	7.0	7.3	7.3	6.5	6.5	8.4	8.8	8.9	7.8	7.8

(continued)

**Table 13.2 (continued): Average length of stay (days) for cancer-related hospital separations, Australia, 2002–03 to 2006–07**

Principal diagnosis (ICD-10 codes)	Including same-day separations					Excluding same-day separations				
	02–03	03–04	04–05	05–06	06–07	02–03	03–04	04–05	05–06	06–07
Other female genital organs (C57)	6.6	7.0	5.5	7.5	5.3	7.6	9.1	6.4	8.8	6.6
Placenta (C58)	2.3	3.2	9.8	2.2	2.3	2.4	3.2	11.3	2.3	2.3
<i>Gynaecological (C51–C58)</i>	6.0	6.0	6.1	5.7	5.6	7.8	7.8	8.0	7.5	7.4
Penis (C60)	4.6	4.9	5.9	4.6	4.1	5.8	6.9	8.1	5.8	5.7
Prostate (C61)	5.3	4.7	4.4	4.1	3.8	7.4	7.1	6.6	6.2	6.0
Testis (C62)	2.8	3.0	3.1	3.2	2.9	3.2	3.5	3.5	3.7	3.4
Other male genital organs (C63)	3.2	4.9	3.5	4.5	4.8	3.9	6.2	4.3	6.4	6.1
Kidney (C64)	8.1	7.8	7.7	7.8	7.4	9.1	9.1	8.8	8.8	8.3
Bladder (C67)	3.0	3.1	3.1	3.1	3.1	5.1	5.2	5.2	5.2	5.1
Other urinary organs (C65–C66, C68)	6.1	6.8	6.7	6.3	6.4	7.9	8.8	8.5	7.8	8.3
Eye (C69)	3.2	2.7	2.7	2.8	2.5	5.0	4.6	4.3	4.2	3.7
Brain (C71)	10.5	11.3	10.6	10.6	11.4	12.3	12.7	12.7	12.3	12.8
Other central nervous system (C70, C72)	7.3	9.0	8.0	11.6	11.6	9.9	14.8	13.3	15.4	15.5
Thyroid (C73)	3.4	3.1	3.3	2.9	3.1	3.4	3.2	3.3	3.0	3.1
Other endocrine organs (C74–C75)	6.1	6.5	5.8	6.5	5.9	8.4	9.4	8.5	11.0	8.6
Hodgkin lymphoma (C81)	4.1	4.1	3.9	3.6	4.1	6.8	7.2	6.6	5.9	6.7
Non-Hodgkin lymphoma (C82–C85, C96)	5.1	4.9	5.2	5.2	5.2	8.3	8.2	8.3	8.5	8.7
<i>All lymphomas (C81–C85, C96)</i>	5.0	4.9	5.1	5.0	5.1	8.2	8.1	8.2	8.3	8.6
Immunoproliferative cancers (C88)	3.1	2.7	3.0	3.3	2.8	8.0	7.6	7.3	7.8	7.1
Myeloma (C90)	3.4	3.2	4.9	5.1	5.0	9.6	9.3	9.8	9.7	10.5
Lymphoid leukaemia (C91)	3.8	3.6	3.9	3.7	3.7	7.7	7.3	8.0	8.0	8.2
Myeloid leukaemia (C92–C94)	5.8	5.8	6.0	6.0	5.7	14.2	14.1	14.8	14.4	15.0
Leukaemia, unspecified (C95)	4.3	4.3	3.8	5.0	6.5	7.8	8.5	7.0	9.6	13.9
<i>All leukaemias (C91–C95)</i>	4.8	4.7	5.0	4.9	4.8	10.9	10.6	11.2	11.4	11.7
Polycythaemia vera (D45)	1.2	1.2	1.2	1.2	1.2	5.3	6.4	6.1	6.1	8.4
Myelodysplastic syndromes (D46)	1.9	1.9	1.8	1.9	2.0	4.0	4.1	4.1	4.4	4.5
Other chronic myeloproliferative diseases (D47 <sup>(a)</sup> )	2.3	2.3	2.2	2.1	2.0	5.0	5.7	5.2	5.3	4.9
<i>All lymphohaematopoietic cancers (C81–C96, D45–D47<sup>(a)</sup>)</i>	3.9	3.8	4.2	4.2	4.2	8.5	8.5	8.7	8.8	9.1
Unknown primary site (C26, C39, C76, C80)	7.1	7.7	7.4	7.5	8.0	9.8	10.4	9.7	9.9	11.1
Secondary cancers (C77–C79)	7.3	6.9	7.7	7.9	7.8	9.6	9.5	9.4	9.5	9.5
<b>All cancers (C00–C96<sup>(b)</sup>, D45–D47<sup>(a)</sup>)</b>	<b>4.9</b>	<b>4.7</b>	<b>4.9</b>	<b>4.8</b>	<b>4.8</b>	<b>8.3</b>	<b>8.2</b>	<b>8.1</b>	<b>8.1</b>	<b>8.0</b>
<b>Other cancer-related separations<sup>(c)</sup></b>										
Personal and family history (Z80, Z85, Z92.3)	1.0	1.0	1.0	1.0	1.0	2.0	1.7	2.2	2.0	2.8
Observation for suspected cancer (Z03.1)	1.2	1.1	1.1	1.1	1.3	2.7	2.6	3.0	2.1	3.2
Special screening examination (Z12)	1.0	1.0	1.0	1.0	1.0	1.6	1.5	1.4	1.4	1.4

(continued)

**Table 13.2 (continued): Average length of stay (days) for cancer-related hospital separations, Australia, 2002–03 to 2006–07**

Principal diagnosis (ICD-10 codes)	Including same-day separations					Excluding same-day separations				
	02–03	03–04	04–05	05–06	06–07	02–03	03–04	04–05	05–06	06–07
Prophylactic surgery (Z40)	3.2	3.6	3.0	3.1	2.9	3.4	3.8	3.3	3.4	3.1
Radiotherapy session (Z51.0)	1.2	1.1	1.1	1.1	1.0	4.9	5.6	8.4	3.9	4.6
Chemotherapy session (Z51.1)	1.0	1.0	1.0	1.0	1.0	2.2	2.4	1.7	1.9	2.9
Follow-up after radiotherapy (Z54.1, Z08.1)	2.4	3.1	3.8	2.8	2.6	7.0	9.2	10.9	8.0	7.2
Follow-up after chemotherapy (Z54.2, Z08.2)	1.4	1.7	1.4	1.5	1.4	2.6	3.0	2.6	3.0	2.2
Follow-up after surgery for cancer (Z08.0)	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.6	1.6
Follow-up after multiple treatment (Z08.7–Z08.9)	1.0	1.0	1.0	1.0	1.0	1.7	1.7	1.8	1.8	1.9
<b>All cancer-related separations</b>	<b>3.0</b>	<b>2.9</b>	<b>2.9</b>	<b>2.9</b>	<b>2.8</b>	<b>8.2</b>	<b>8.1</b>	<b>8.0</b>	<b>7.9</b>	<b>7.9</b>

(a) Only includes D47.1 and D47.3.

(b) Includes non-melanocytic skin cancer (C44).

(c) Separations for specific procedures, usually related to another separation for a principal diagnosis of cancer, but excluding any procedures conducted as part of that other separation.

Source: National Hospital Morbidity Database, AIHW.

# 14 Burden of cancer in 2003

This chapter is a summary of the report *The burden of disease and injury in Australia 2003* (Begg et al. 2007) as it relates to the burden of cancer.

## 14.1 Introduction

The impact of conditions causing illness, impairment, injury or premature death—commonly known as the total burden of disease—is expressed as the disability-adjusted life year (DALY). One DALY is equivalent to one lost year of healthy life and represents the gap between current health status and an ideal situation of the whole population living into old age in full health. The more DALYs attributed to a disease, the greater the health loss or burden.

The DALY estimates calculated represent the overall burden of disease remaining after preventive and treatment interventions have had their effect. Consequently, some important disease groups are low in the DALY rankings because preventive and treatment interventions for these diseases have been very successful. This applies in particular to infectious and parasitic diseases, which contributed only 1.7% of DALYs in 2003.

Total burden of cancer (and any other disease), consists of two components, fatal and non-fatal:

$$\text{DALYs} = \text{YLL} + \text{YLD}$$

where      YLL = number of deaths  $\times$  standard life expectancy at age of death, and  
              YLD = incidence  $\times$  duration  $\times$  severity weight.

The fatal component is simply the number of 'years of life lost' (YLL) due to premature death, and has already been used in Chapter 4. The non-fatal component is more complicated and is based on the incidence, duration and severity of illness due to the cancer, its treatment and long-term consequences. It is referred to as 'years lost to disability' (YLD) and the formula is given above.

The severity weight is a number between 0 and 1 that measures the degree of illness experienced: a severity close to 0 means that there is very little negative impact on the person's health (for example, removal of a small melanoma on the skin) whereas a severity close to 1 means that there is a very great impact (for example, a bone marrow transplant). Begg et al. (2007) modelled the duration and severity weight for each major cancer based on a literature review and consultation with experts. For example, for a particular cancer the model might be that there is a period of three months of intense treatment immediately after diagnosis during which the severity weight is 0.6, followed by a recuperation period of two months with a severity weight of 0.3 before the person returns to normal health. The model is applied to the total number of people who were diagnosed with that cancer to arrive at the total YLD for the cancer.

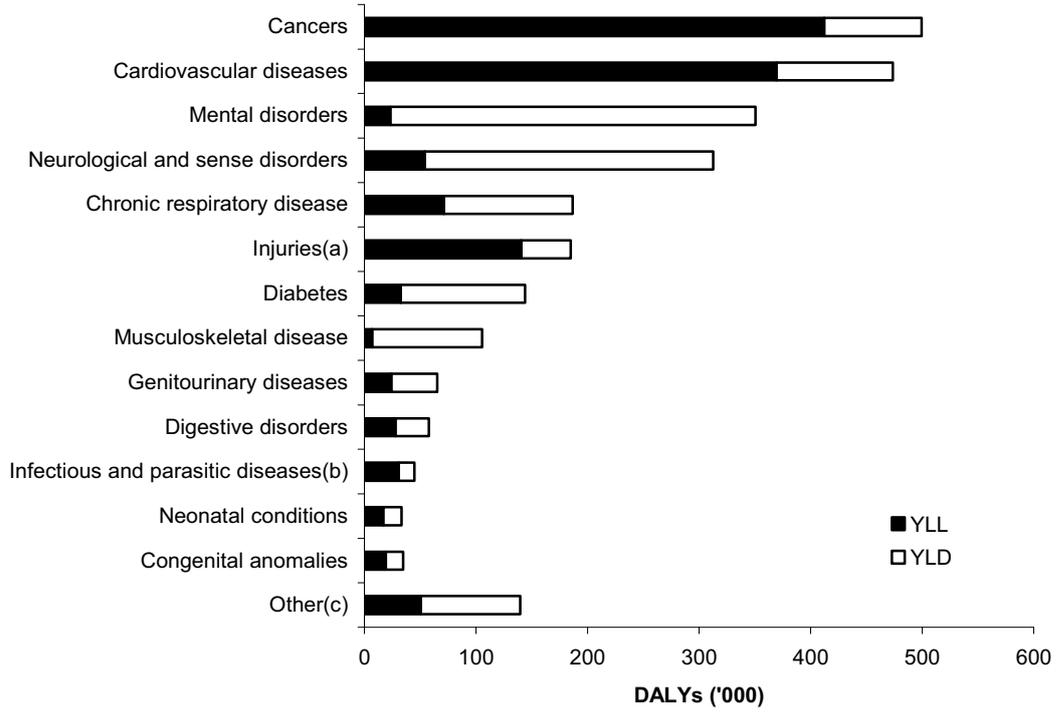
## 14.2 Main findings

The total burden of disease and injury in Australia in 2003 was estimated to be more than 2.6 million DALYs. The largest contributor to this burden was cancer (19.0%), followed by cardiovascular disease (18.0%), mental disorders (13.3%) and neurological and sense disorders (11.9%).

For cancer, the major burden is death rather than disability. The total burden of cancer comprised 82% due to YLL and only 18% due to YLD. A similar distribution was observed for cardiovascular disease (78% YLL, 22% YLD), in stark contrast to some other disease groups in which most of the burden is due to the non-fatal component. For example, for mental disorders 93% of the total burden was YLD.

Several cancers ranked in the top 20 in terms of contributing to the total burden of disease. For males, lung cancer was the highest ranked cancer, ranking 4th overall and contributing 4.0% to the total burden of disease in males. The other cancers in the top 20 for males were prostate cancer (9th, 2.7%), colorectal cancer (10th, 2.5%) and melanoma (19th, 1.0%). For females, breast cancer was the highest ranked cancer (6th, 4.8%), followed by lung cancer (8th, 2.7%) and colorectal cancer (10th, 2.3%).

Fourteen major risk factors for ill-health were analysed to determine how much of the burden of cancer can be attributed to them. The greatest contributor to the burden of cancer was tobacco smoking, which was responsible for one fifth of the total cancer burden.



(a) Includes intentional and unintentional injuries.

(b) Excludes acute respiratory infections.

(c) Includes maternal conditions, nutritional deficiencies, non-malignant neoplasms, skin diseases, oral health conditions, acute respiratory infections and ill-defined conditions.

Source: Begg et al. 2007.

**Figure 14.1: Burden (YLL, YLD and total DALYs) of major disease groups, 2003**

**Table 14.1: Fatal and non-fatal burden of major disease groups, 2003**

Disease group	Fatal component		Non-fatal component		Total	
	YLL ('000)	Per cent of total YLL	YLD ('000)	Per cent of total YLD	DALYs ('000)	Per cent of total DALYs
Cancer	412.0	32.2	87.5	6.5	499.4	19.0
Cardiovascular disease	369.4	28.9	104.4	7.7	473.8	18.0
Mental disorders	23.2	1.8	327.4	24.2	350.5	13.3
Neurological and sense disorders	54.1	4.2	258.6	19.1	312.8	11.9
Chronic respiratory disease	71.3	5.6	115.4	8.5	186.7	7.1
Injuries <sup>(a)</sup>	140.6	11.0	44.4	3.3	185.1	7.0
Diabetes	32.3	2.5	111.5	8.2	143.8	5.5
Musculoskeletal disease	7.0	0.5	98.5	7.3	105.5	4.0
Genitourinary disease	24.1	1.9	41.2	3.0	65.2	2.5
Digestive disorders	27.7	2.2	30.2	2.2	58.0	2.2
Infectious & parasitic diseases	30.7	2.4	14.0	1.0	44.7	1.7
Acute respiratory infections	23.8	1.9	11.8	0.9	35.5	1.3
Congenital anomalies	19.0	1.5	15.6	1.2	34.6	1.3
Neonatal conditions	16.9	1.3	16.3	1.2	33.2	1.3
Other <sup>(b)</sup>	26.8	2.1	77.2	5.7	103.9	3.9
<b>Total</b>	<b>1278.8</b>	<b>100.0</b>	<b>1354.0</b>	<b>100.0</b>	<b>2632.8</b>	<b>100.0</b>

(a) Includes intentional and unintentional injuries.

(b) Includes maternal conditions, nutritional deficiencies, non-malignant neoplasms, skin diseases, oral health conditions and ill-defined conditions.

Source: Begg et al. 2007.

**Table 14.2: Leading causes of burden (DALYs) for more specific disease groups, by sex, Australia, 2003**

Rank	Males	DALYs	Per cent of total	Females	DALYs	Per cent of total
1	Ischaemic heart disease	151,107	11.1	Anxiety & depression	126,464	10.0
2	Type 2 diabetes	71,176	5.2	Ischaemic heart disease	112,390	8.9
3	Anxiety & depression	65,321	4.8	Stroke	65,166	5.1
4	Lung cancer	55,028	4.0	Type 2 diabetes	61,763	4.9
5	Stroke	53,296	3.9	Dementia	60,747	4.8
6	COPD <sup>(a)</sup>	49,201	3.6	Breast cancer	60,520	4.8
7	Adult-onset hearing loss	42,653	3.1	COPD <sup>(a)</sup>	37,550	3.0
8	Suicide & self-inflicted injuries	38,717	2.8	Lung cancer	33,876	2.7
9	Prostate cancer	36,547	2.7	Asthma	33,828	2.7
10	Colorectal cancer	34,643	2.5	Colorectal cancer	28,962	2.3
11	Dementia	33,653	2.5	Adult-onset hearing loss	22,200	1.8
12	Road traffic accidents	31,028	2.3	Osteoarthritis	20,083	1.6
13	Asthma	29,271	2.1	Personality disorders	16,339	1.3
14	Alcohol abuse	27,225	2.0	Migraine	15,875	1.3
15	Personality disorders	16,248	1.2	Back pain	15,188	1.2
16	Schizophrenia	14,785	1.1	Lower respiratory tract infections	14,233	1.1
17	Osteoarthritis	14,495	1.1	Falls	13,269	1.0
18	Back pain	14,470	1.1	Parkinson's disease	13,189	1.0
19	Melanoma	13,734	1.0	Schizophrenia	12,717	1.0
20	Parkinson's disease	13,664	1.0	Rheumatoid arthritis	12,062	1.0

(a) COPD = Chronic obstructive pulmonary disease

Source: Begg et al. 2007.

**Table 14.3: Fourteen selected risks to health and their contribution to the total burden of cancer, Australia, 2003**

<b>Risk to health</b>	<b>Attributable burden (%)</b>
Tobacco	20.1
Physical inactivity	5.6
High body mass	3.9
Alcohol	3.1
Occupational exposures and hazards	3.1
Low fruit and vegetable consumption	2.0
Unsafe sex	1.0
Urban air pollution	0.8
Intimate partner violence	0.5
Child sexual abuse	< 0.1
High blood pressure	0.0
High blood cholesterol	0.0
Illicit drugs	0.0
Osteoporosis	0.0
<b>Joint effect<sup>(a)</sup></b>	<b>32.9</b>

(a) Overall contribution of all 14 risk factors. The figure does not equal the column total because the risk factors are not independent.

Source: Beggs et al. 2007.

# Appendixes

# Appendix A: Cancer registration in Australia

The table below provides information about cancer registration in Australia. Each state and territory operates its own registry. Generally, operational guidelines for each of the registries are similar and coincide with the objectives of the International Association of Cancer Registries. Although some registries operate under different coding systems for site, morphology and other variables, the majority of information is directly comparable and has been reconciled for this publication. The reporting sources of the registries vary according to the local conditions and those bodies named in the legislation. Every attempt is made to report all cancer cases, although not every case will be identified. Cancer registries are dependent upon their reporting sources. Variation in reporting of cancers by age, sex, type, geographical location, country of birth or other variables does occur and may affect the final statistics. Occasionally, delays in reporting some case information may extend over several years but this has a minimal effect on the final reported data. In order to minimise the effects on the final reported registration, multiple reporting sources are used to compile case information where possible. Case information is exchanged between registries where there is cause for suspicion of duplicate registration. Further information regarding registry coding practices may be obtained by contacting the registrar in each state or territory.

**Table A.1: Summary of cancer registration in the states and territories**

	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>WA</b>	<b>SA</b>	<b>Tas</b>	<b>ACT</b>	<b>NT</b>
Total population (2005)	6,756,457	5,048,602	3,994,858	2,017,088	1,552,514	486,327	330,164	206,373
Per cent of Australian population	33.1	24.8	19.6	9.9	7.6	2.4	1.6	1.0
Per cent of population aged 65 and over	13.4	13.3	12.0	11.7	15.0	14.4	9.3	4.3
No. of new cancers per year <sup>(a)</sup>	32,810	22,965	18,483	8,719	7,955	2,530	1,244	492
First year of population registration	1972	1982	1982	1982	1977	1978	1972	1981
Year of legislation	1972	1982	1982	1981	1977	1992	1994	1991
Funding source	Pvte-Govt	Pvte-Govt	Pvte-Govt	Govt	Govt	Pvte-Govt	Govt	Govt
ICD-O edition used	3rd	3rd	3rd	3rd	1st	3rd	3rd	1st
<b>Reporting sources</b>								
Public hospitals	Yes	Yes	Yes	No <sup>(b)</sup>	Yes	Yes	Yes	Yes
Private hospitals	Yes	Yes	Yes	No <sup>(b)</sup>	Yes	Yes	Yes	No
Repatriation hospitals	Yes	Yes	Yes	No <sup>(b)</sup>	Yes	Yes	Yes	No
Pathology laboratories	Yes							
Radiotherapy units	Yes	No						
Nursing homes	Yes	No	Yes	No	No	No <sup>(b)</sup>	Yes	No
Registrar of Births, Deaths and Marriages	Yes							
Doctors	No <sup>(b)</sup>							

(a) Average annual number of new cases over the 5-year period 2001–2005. Excludes non-melanocytic skin cancer.

(b) Information is provided on special request only.

## Appendix B: Non-melanocytic skin cancer

Non-melanocytic skin cancer (NMSC), also called non-melanoma skin cancer, is any skin cancer except melanoma. By far the two most common types of NMSC are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), each of which is more common than all other cancers combined. These two cancers are the only cancers that are not notifiable diseases and as such the exact numbers of these conditions are unknown. Estimates of the incidence of treated BCC and SCC are derived from data that were collected in national household surveys in 1985, 1990, 1995 and 2002 (NCCI 2003). The 2002 survey report indicates that approximately 256,000 people were diagnosed with BCC and 118,000 with SCC in Australia during 2002, a total of 374,000 people. In contrast, the total number of all other cancers diagnosed in 2002 was 92,876. These totals show that there were just over four times as many BCC and SCC cases as all other cancers combined.

There are other forms of NMSC and these are notifiable diseases. However, there have been difficulties for many cancer registries in obtaining complete incidence data for these conditions. The AACR and AIHW are working towards rectifying this situation and hope to have complete national incidence data for this group of skin cancers in the next *Cancer in Australia* report. Based on data from Victoria and Western Australia, there are probably around 400 to 900 cases per year in Australia.

NMSC is excluded from all incidence data in this report. However, it is included in mortality data and hospital separations data. Further information about NMSC can be found in the recent report *Non-melanoma skin cancer: General practice consultations, hospitalisation and mortality* (AIHW & CA 2008).

# Appendix C: Cancer data on the AIHW website

The AIHW website <[www.aihw.gov.au/cancer/data/index.cfm](http://www.aihw.gov.au/cancer/data/index.cfm)> contains links to a variety of cancer data:

## Australian Cancer Incidence and Mortality (ACIM) books

The ACIM books are interactive Excel workbooks of tables and graphs by age and sex for 'all cancers' and the major cancers, for incidence from 1982 to 2005 and mortality from 1968 to 2006.

## Cancer incidence data cubes

There are two cancer incidence data cubes which overlap partly with the ACIM books. They do not contain the graphs and summary data available in the ACIM books, nor any data on mortality, but do contain age-specific data on every cancer, whereas the ACIM books are provided only for major cancers.

## Excel tables

There are two Excel files which present data on the most common cancers in 2005 and average annual incidence data for the states and territories over the period 2001–2005.

## General Record of Incidence of Mortality (GRIM) books

The GRIM books are interactive Excel workbooks that feature mortality data on selected causes of death by age and sex for each year from 1907 to 2006.

## National hospital morbidity data cubes

The interactive national hospital morbidity data page contains links to a number of data cubes containing information on the principal diagnoses, procedures and diagnosis-related groups of patients admitted to Australian hospitals. These include patients with a principal diagnosis of cancer. The source of these data is the National Hospital Morbidity Database. This database, compiled by the AIHW from data supplied by the state and territory health authorities, is a collection of records for admitted patients separated from public and private hospitals in Australia.

# Appendix D: Methods

This section describes the methods used to calculate the estimates presented in the tables in this report. The calculations in the examples below are applicable to both incidence and mortality.

## Example table

Lung, bronchus and trachea cancer incidence (ICD-10 C33–34), males, Australia, 2002

	No. of cases in 2002	Australian 2002 male population <sup>(a)</sup>	Age-specific rate per 100,000 population	Australian 2001 Standard Population <sup>(a)</sup>	Expected number of cases
Age group	(column 1)	(column 2)	(column 3)	(column 4)	(column 5)
0–4	1	651,556	0.2	1,282,357	3
5–9	0	691,399	0.0	1,351,664	0
10–14	0	700,013	0.0	1,353,177	0
15–19	2	696,033	0.3	1,352,745	4
20–24	4	676,737	0.6	1,302,412	8
25–29	3	689,035	0.4	1,407,081	6
30–34	5	744,130	0.7	1,466,615	10
35–39	15	733,565	2.0	1,492,204	30
40–44	56	751,657	7.5	1,479,257	111
45–49	118	684,477	17.2	1,358,594	234
50–54	222	650,897	34.1	1,300,777	444
55–59	453	550,272	82.3	1,008,799	830
60–64	608	427,466	142.2	822,024	1,169
65–69	812	344,606	235.6	682,513	1,608
70–74	1,107	304,348	363.7	638,380	2,322
75–79	1,031	233,554	441.4	519,356	2,292
80–84	624	137,123	455.1	330,050	1,502
85+	338	86,265	391.8	265,235	1,039
<b>Total</b>	<b>5,399</b>	<b>9,753,133</b>		<b>19,413,240</b>	

(a) Australian Bureau of Statistics 2005.

## Crude rates—all age groups

A crude incidence rate is defined as the number of new cases of cancer divided by the population at risk in a specified time period. A crude mortality rate substitutes deaths for new cases in this calculation. Both are conventionally expressed as annual rates per 100,000 population and may be calculated for males, females or persons, or for subsets of the

population (for example, see 'Age-specific rates' below). The total rate calculated in this way without adjustment for age or other factors is known as the 'crude rate'.

The crude rate is calculated by dividing the total number of cases across all age groups by the total population, for example:

$$\begin{aligned} \text{Crude incidence rate for lung cancer} &= \frac{\text{Column 1 total}}{\text{Column 2 total}} \times 100,000 \\ &= \frac{5,399}{9,753,133} \times 100,000 \\ &= 55.4 \text{ per } 100,000 \end{aligned}$$

## Age-specific rates

Age-specific rates are calculated by dividing the number of cases occurring in each specified age group by the corresponding population in the same age group. For convenience they are expressed per 100,000 population. This rate may be calculated for particular age and sex groupings, for example:

$$\begin{aligned} \text{Age-specific lung cancer incidence rates in males aged 75-79} &= \frac{\text{Column 1 for this age}}{\text{Column 2 for this age}} \times 100,000 \\ &= \frac{1,031}{233,554} \times 100,000 \\ &= 441.4 \text{ per } 100,000 \end{aligned}$$

## Age-standardised rates (ASRs)

Rates are adjusted for age to facilitate comparisons between populations that have different age structures, for example, between youthful and ageing communities. There are two different methods commonly used to adjust for age. In this publication direct standardisation is used, in which age-specific rates are multiplied against a constant population (the Australian 2001 Standard Population or the WHO World 2000 Standard Population). This effectively removes the influence of age structure on the summary rate and is described as the age-standardised rate. The method may be used for both incidence and mortality calculations. The method used for this calculation comprises three steps which can be followed by reference to the example table on the previous page.

*Step 1* Calculate the age-specific rate (as shown above) for each age group (column 3).

- Step 2* Calculate the expected number of cases in each 5-year age group by multiplying the age-specific rates (column 3) by the corresponding standard population (column 4) and dividing by 100,000, giving you the expected number of cases (column 5).
- Step 3* To give the age-standardised rate, sum the expected number of cases in each age group (total column 5). Divide this sum by the total of the standard population used in the calculation and multiply by 100,000.

## Risk to age 75 and age 85

These quantities are measures that approximate the risk of contracting (or dying from) a particular cancer before a given age, assuming that the risks at the time of estimation remained throughout life. It is based on a mathematical relationship with the cumulative rate. An example for risk to age 75 follows.

The cumulative rate is calculated by summing the age-specific rates for the age groups from 0–4 to 70–74. Using the example table at the start of this appendix we have:

$$\begin{aligned}
 \text{Cumulative rate} &= \frac{5 \times (\text{Sum of the age-specific rates}) \times 100}{100,000} \\
 &= \frac{5 \times 886.8 \times 100}{100,000} \\
 &= 4.43\%
 \end{aligned}$$

The factor of 5 is used to indicate the 5 years of life in each age group and the factor of 100 is used to present the result as a percentage. As age-specific rates are presented per 100,000 population (column 3), the result is divided by 100,000 to return the age-specific rates to a division of cases by population. Cumulative risk is related to cumulative rate by the expression:

$$\text{Cumulative risk} = 1 - e^{-\text{rate}/100}$$

where rate is expressed as a percentage.

Lifetime risk is expressed as a '1 in n' proportion by taking the inverse of the above formula:

$$n = \frac{1}{(1 - e^{-\text{rate}/100})}$$

Continuing with the example, the cumulative rate was 4.43%. Therefore

$$\begin{aligned}n &= \frac{1}{(1 - e^{-4.43/100})} \\ &= 23.06\end{aligned}$$

That is, for men, the risk to age 75 of developing lung cancer is about 1 in 23, providing they remain at risk for the whole period and the 2002 age-specific rates apply throughout their lives. Note that no account has been taken of specific cancer risk factors. For example, the risk for men who smoke would be higher than that for those who have never smoked.

## Per cent of all cancers

The 'per cent of all cancers' measure is the percentage of all cancers accounted for by a particular cancer. The measure may be computed for cancer incidence or mortality. Using an incidence example, the measure is calculated by taking the number of new cases of a particular cancer, for example, lung cancer, and dividing that by the total number of all new cancer cases and multiplying by 100 to express it as a percentage. This is undertaken for each sex and for total persons.

## Sex ratio

This measure indicates the relative incidence or mortality between the sexes. It can be calculated on the basis of observed numbers, crude rates, age-standardised rates or cumulative rates. In this publication it is calculated using the age-standardised rates where the male rate is divided by the female rate for each cancer. Ratios greater than 1 indicate an excess in males while ratios less than 1 indicate an excess in females.

It is preferable to use either the age-standardised rate or the cumulative rate as these both adjust for age variations between male and female populations.

## Person-years of life lost

Person-years of life lost is a concept that attempts to measure the number of years of life lost per annum due to death as a result of a specific cause, for example, lung cancer, given life expectancies at specific ages. The method used in this publication for the calculation of person-years of life lost is the number of years between age at death and 75 years, or 85 years, summed over all persons. For example, a person dying at age 50 contributes 25 years, or 35 years, to the measure of person-years of life lost.

# Incidence and mortality projections

## Incidence

The incidence data for the last 10 years, namely 1996–2005, were divided into series, one for each combination of sex, 5-year age group and cancer type, where cancer type was defined by the 3-character ICD-10 codes, that is, there was no grouping of codes. Thus there were 2 sexes times 18 age-groups times 86 cancer types = 3,096 series. The incidence numbers were divided by the sex- and age-specific mid-year populations to obtain the sex- and age-specific incidence rates. Each series of rates was tested for a linear trend at the 5% level of significance. If the trend was not statistically significant then the average rate over the last 10 years was used as the estimated rate for each of the next 5 years. If the trend was statistically significant then the regression line through the rates over the last 10 years was extrapolated to produce projected rates for the next five. However, because rates cannot be less than zero, if the forecast rate was negative then zero was used instead.

The ICD-10 codes D45–D47 had to be treated a little differently because there is not a reliable 10-year history of incidence data. These cancers were considered non-malignant until the ICD-O-3 was published in 2000. Based on information from the eight state and territory cancer registries, it is considered that Australia does not have complete national coverage of these cancers until the beginning of 2003. However, examination of the national rates of these cancers shows a sharp trend break between 2000 and 2001 and none afterwards, which suggests that the series is reliable from 2001 onwards. Therefore, for D45–D47 a 5-year series (2001–2005) was used instead of the 10-year series used for all other cancers. The critical value of the test statistic was adjusted accordingly for these cancers.

After obtaining the projected incidence rates these were multiplied by the estimated resident population to obtain the projected incidence numbers. The populations used were the ABS projected populations from Series 29(B) (ABS 2008). Finally, the sex-, age- and cancer-specific rates and numbers were aggregated into the figures presented in this report.

## Mortality

The procedure for obtaining mortality projections was exactly the same as for incidence projections, with the following exceptions.

- Mortality statistics coded in ICD-10 began in 1997. Therefore the 9-year series 1997–2005 was used as input instead of the 10-year series 1996–2005 that was used for incidence projections.
- There were five extra ICD-10 codes: C44, C77–C79 and C97. The first is for non-melanocytic skin cancer: it is not used for incidence data because complete national data are not available (see Appendix B) whereas it is available for mortality data. The other four codes are simply not used in incidence data – they are used in mortality data when the medical certificate of cause of death is too vague to allow assignment to a single primary site.
- The special treatment of D45–D47 in the incidence projections was not required because the mortality data for these diseases were not affected by the publication of ICD-O-3.

# Appendix E: Cancers attributed to smoking and excessive alcohol consumption

The following table summarises the aetiological fractions derived by Ridolfo and Stevenson (2001) for estimating the number of cancers that can be attributed to smoking and excessive consumption of alcohol.

**Table A.2: Cancer site and percentage of cancers attributed to smoking and excessive alcohol consumption**

<b>Cancer site</b>	<b>Males (per cent)</b>	<b>Females (per cent)</b>
<b>Cancers attributed to smoking</b>		
Lung (C33–C34)	84	77
Larynx (C32)	73	66
Oral cancers (C01–C06, C09–C14)	57	51
Renal pelvis (C65)	55	48
Oesophagus (C15)	54	46
Anus (C21.0, C21.1)	48	41
Bladder (C67)	43	36
Kidney, except renal pelvis (C64)	28	21
Pancreas (C25)	24	19
Vulva unspecified (C51.9)	—	40
Penis (C60)	30	—
Stomach (C16)	14	11
<b>Cancers attributed to excessive alcohol consumption</b>		
Larynx (C32)	51	46
Oesophagus (C15)	46	40
Liver (C22)	39	35
Oral cancers (C01–C06, C09–C14)	39	31
Breast (C50)	0	12

Source: Ridolfo & Stevenson 2001.

# Appendix F: AACR/ABCR classification of lymphohaematopoietic cancers

This classification was agreed upon by the AACR and the Australian Blood Cancer Registry (ABCR) and is based on the WHO 2001 classification.

**Table A.3: AACR/ABCR classification of lymphohaematopoietic cancers and the corresponding ICD-O-3 morphology codes**

Group	ICD-O-3 morphology codes (all malignant)
<i>Lymphoid cancers</i>	
Hodgkin lymphomas	9650–55, 9659, 9661–65, 9667
<i>Mature B-cell cancers</i>	
Chronic lymphocytic leukaemia / Small lymphocytic lymphoma	9670, 9823
Diffuse large B-cell lymphoma	9680
Follicular lymphoma	9690–91, 9695, 9698
Plasma cell disorders	9731–34
Other mature B-cell cancers	9671, 9673, 9675, 9678–79, 9684, 9687, 9689, 9699, 9761, 9764, 9826, 9833, 9940
Mature T- and NK-cell cancers	9700–02, 9705, 9708–09, 9714, 9716–19, 9827, 9831, 9834, 9948
Acute lymphoblastic leukaemia	9727–29, 9835–37
Non-Hodgkin lymphomas, NOS	9591, 9766, 9820, 9832
Lymphoid cancers, NOS	9590, 9596
<i>Myeloid cancers</i>	
Acute myeloid leukaemias	9805, 9840, 9861, 9866–67, 9870–74, 9891, 9895–97, 9910, 9920, 9930–31
Chronic myeloid leukaemia	9863, 9875
Other chronic myeloproliferative diseases	9950, 9960–64
Myelodysplastic syndromes	9980, 9982–87, 9989
Myelodysplastic / myeloproliferative diseases	9876, 9945–46
Myeloid cancers, NOS	9860
Lymphoid / myeloid cancers, NOS	9800–01
Other lymphohaematopoietic cancers	9740–42, 9750, 9754–58, 9760, 9762

# Appendix G: Population data

Table A.4: Australian resident population, 2005

Age (years)	Males	Females	Total
0–4	660,134	625,411	1,285,545
5–9	684,908	650,685	1,335,593
10–14	719,278	681,695	1,400,973
15–19	716,200	683,383	1,399,583
20–24	730,666	705,232	1,435,898
25–29	690,248	681,316	1,371,564
30–34	752,694	763,254	1,515,948
35–39	737,019	745,725	1,482,744
40–44	765,647	776,908	1,542,555
45–49	726,499	738,749	1,465,248
50–54	665,406	673,077	1,338,483
55–59	621,700	616,906	1,238,606
60–64	474,157	470,390	944,547
65–69	376,621	385,699	762,320
70–74	299,961	325,237	625,198
75–79	249,632	299,535	549,167
80–84	159,831	235,867	395,698
85+	97,463	207,658	305,121
<b>Total</b>	<b>10,128,064</b>	<b>10,266,727</b>	<b>20,394,791</b>

Source: Australian Bureau of Statistics.

**Table A.5: Australian 2001 Standard Population and WHO World 2000 Standard Population**

Age (years)	Australian 2001 Standard Population		WHO World 2000 Standard Population	
	Number	Per cent of total	Relative number	Per cent of total
0-4	1,282,357	6.6	8.86	8.9
5-9	1,351,664	7.0	8.69	8.7
10-14	1,353,177	7.0	8.60	8.6
15-19	1,352,745	7.0	8.47	8.5
20-24	1,302,412	6.7	8.22	8.2
25-29	1,407,081	7.2	7.93	7.9
30-34	1,466,615	7.6	7.61	7.6
35-39	1,492,204	7.7	7.15	7.1
40-44	1,479,257	7.6	6.59	6.6
45-49	1,358,594	7.0	6.04	6.0
50-54	1,300,777	6.7	5.37	5.4
55-59	1,008,799	5.2	4.55	4.5
60-64	822,024	4.2	3.72	3.7
65-69	682,513	3.5	2.96	3.0
70-74	638,380	3.3	2.21	2.2
75-79	519,356	2.7	1.52	1.5
80-84	330,050	1.7	0.91	0.9
85+	265,235	1.4	0.63	0.6
<b>Total</b>	<b>19,413,240</b>	<b>100.0</b>	<b>100.03</b>	<b>100.0</b>

Sources: Australian Bureau of Statistics and Ahmad et al. (2000).

# Appendix H: Cancer registries contact list

## **Australasian Association of Cancer Registries**

Chair: Professor Graham Giles (see Victorian Cancer Registry)  
Secretariat: see National Cancer Statistics Clearing House  
Website: [www.aihw.gov.au/cancer/aacr/](http://www.aihw.gov.au/cancer/aacr/)

## **National Cancer Statistics Clearing House**

c/- Health Registers and Cancer Monitoring Unit  
Australian Institute of Health and Welfare  
GPO Box 570  
Canberra ACT 2601  
Email: [cancer@aihw.gov.au](mailto:cancer@aihw.gov.au)  
Website: [www.aihw.gov.au/cancer/ncsch/](http://www.aihw.gov.au/cancer/ncsch/)

Unit Head: Ms Chris Sturrock  
Phone: + 61 2 6244 1118

## **New South Wales Central Cancer Registry**

Cancer Institute NSW  
PO Box 41  
Alexandria NSW 1435  
Phone: +61 2 8374 5600  
Email: [ccr@cancerinstitute.org.au](mailto:ccr@cancerinstitute.org.au)  
Website: [www.cancerinstitute.org.au](http://www.cancerinstitute.org.au)  
Manager: Ms Narelle Grayson

## **Victorian Cancer Registry**

The Cancer Council Victoria  
1 Rathdowne Street  
Carlton South VIC 3053  
Phone: +61 3 9635 5000  
Website: [www.cancervic.org.au](http://www.cancervic.org.au)

Director: Professor Graham Giles  
Email: [graham.giles@cancervic.org.au](mailto:graham.giles@cancervic.org.au)  
Phone: +61 3 9635 5155

Director Information Systems: Ms Helen Farrugia  
Email: [helen.farrugia@cancervic.org.au](mailto:helen.farrugia@cancervic.org.au)  
Phone: +61 3 9635 5318

Information Manager: Mrs Vicky Thursfield  
Email: [vicky.thursfield@cancervic.org.au](mailto:vicky.thursfield@cancervic.org.au)  
Phone: +61 3 9635 5162

## **Queensland Cancer Registry**

The Cancer Council Queensland  
Locked Bag 1450  
Spring Hill Post Office QLD 4004  
Phone: +61 7 3258 2341  
Website: [www.cancerqld.org.au](http://www.cancerqld.org.au)

Director: Dr Joanne Aitken  
Email: [JoanneAitken@cancerqld.org.au](mailto:JoanneAitken@cancerqld.org.au)  
Phone: +61 7 3258 2300

Registrar: Ms Kerrie Dennison  
Email: [kerrie\\_dennison@health.qld.gov.au](mailto:kerrie_dennison@health.qld.gov.au)  
Phone: +61 7 3258 2333

Assistant Registrar: Ms Marilla Fraser  
Email: [marilla\\_fraser@health.qld.gov.au](mailto:marilla_fraser@health.qld.gov.au)  
Phone: +61 7 3258 2333

## **Western Australian Cancer Registry**

Information Collection and Management  
Department of Health, Western Australia  
1st Floor, C Block  
189 Royal Street  
East Perth WA 6004  
Phone: +61 8 9222 4022  
Email: [wacanreg@health.wa.gov.au](mailto:wacanreg@health.wa.gov.au)  
Website: [www.health.wa.gov.au/wacr](http://www.health.wa.gov.au/wacr)

Principal Medical Officer & Manager: Dr Tim Threlfall  
Email: [tim.threlfall@health.wa.gov.au](mailto:tim.threlfall@health.wa.gov.au)

Coding advisor: Dr Judy Thompson  
Email: [judy.thompson@health.wa.gov.au](mailto:judy.thompson@health.wa.gov.au)

## **South Australian Cancer Registry**

Epidemiology Branch  
SA Department of Human Services  
PO Box 6  
Rundle Mall SA 5000  
Phone: +61 8 8226 6158  
Email: [Epidemiology@health.sa.gov.au](mailto:Epidemiology@health.sa.gov.au)  
Website: [www.dh.sa.gov.au/pehs/branches/branch-cancer-registry.htm](http://www.dh.sa.gov.au/pehs/branches/branch-cancer-registry.htm)

Director: Dr Ron Somers  
Email: [ron.somers@health.sa.gov.au](mailto:ron.somers@health.sa.gov.au)  
Phone: +61 8 8226 6361

Registrar: Ms Elaine Morton  
Email: [elaine.morton@health.sa.gov.au](mailto:elaine.morton@health.sa.gov.au)

### **Tasmanian Cancer Registry**

Menzies Research Institute  
Private Bag 23  
Hobart TAS 7001  
Phone: +61 3 6226 7757  
Email: [tcr@menzies.utas.edu.au](mailto:tcr@menzies.utas.edu.au)  
Website: [www.menzies.utas.edu.au/cancer\\_reg.html](http://www.menzies.utas.edu.au/cancer_reg.html)  
Director: Associate Professor Alison Venn  
Phone: +61 3 6226 7706  
Manager: Marita Dalton  
Phone: +61 3 6226 7757

### **Australian Capital Territory Cancer Registry**

Population Health Research Centre  
ACT Health  
Level 1, Building 5, The Canberra Hospital  
PO Box 11  
Woden ACT 2606  
Phone: +61 2 6207 4032  
Email: [cancerregistry@act.gov.au](mailto:cancerregistry@act.gov.au)  
Director: Linda Halliday  
Phone: +61 2 6207 4036  
Epidemiologist: Janet Li  
Phone: +61 2 6207 4026

### **Northern Territory Cancer Registry**

Health Gains Planning  
NT Department of Health and Community Services  
PO Box 40596  
Casuarina NT 0811  
Phone: +61 8 8985 8078  
Registrar: Ms Karen Dempsey  
Email: [karen.dempsey@nt.gov.au](mailto:karen.dempsey@nt.gov.au)  
Phone: +61 8 8985 8081

# Appendix I: Data sources

## National Cancer Statistics Clearing House database

Cancer (excluding basal cell and squamous cell carcinoma of the skin) is a notifiable disease in all states and territories. The data are collected by cancer registries and include clinical and demographic information about people with newly diagnosed cancer. This information is obtained from hospitals, pathologists, radiation oncologists, cancer treatment centres and nursing homes.

The AIHW is responsible for the compilation of national cancer incidence statistics through the National Cancer Statistics Clearing House. National statistics are currently available for all years from 1982 to 2005.

## National Mortality Database

Registration of deaths in Australia is the responsibility of the state and territory Registrars of Births, Deaths and Marriages. Information on the cause of death is supplied by the medical practitioner certifying the death or by a coroner. Other information about the deceased is supplied by a relative or other person acquainted with the deceased or by an official institution where the death occurred. Registration of death is a legal requirement in Australia, and compliance is virtually complete. The registrars provide deaths data to the ABS for coding and compilation into national statistics. The AIHW also holds these data in its national mortality database. National statistics are currently available for all years from 1968 to 2006.

# Abbreviations and glossary

**AACR:** Australasian Association of Cancer Registries

**ABCR:** Australian Blood Cancer Registry

**ABS:** Australian Bureau of Statistics

**ACIM books:** Australian Cancer Incidence and Mortality books

**ACT:** Australian Capital Territory

**Adenoma:** a benign tumour that arises in glandular tissue, for example in the colon, rectum, adrenal gland and pituitary gland. Over time an adenoma may progress to cancer. Adenomas in the colon and rectum have a higher chance of developing into cancer than adenomas in most other organs.

**AIHW:** Australian Institute of Health and Welfare

**ASR:** age-standardised rate. See Appendix D for definition.

**ASR(A):** age-standardised rate using the Australian 2001 Standard Population

**ASR(W):** age-standardised rate using the WHO World 2000 Standard Population

**Aust:** Australia

**BCC:** Basal cell carcinoma

**Cancer (malignant neoplasm):** a term used to describe one of many diseases which result when the process of cell division, by which tissues normally grow and renew themselves, becomes uncontrolled and leads to the development of malignant cells. These cancer cells multiply in an uncoordinated way, independently of normal growth control mechanisms, to form a tumour. This tumour may expand locally by invasion or systemically by metastasis via the lymphatic or vascular systems. If left untreated most malignant tumours will eventually result in death. See 'What is cancer?' on page 1.

**Cancer death:** a death for which the underlying cause is indicated as cancer. Persons with cancer who die of other causes are not counted in the death statistics in this publication.

**Colonoscopy:** a medical procedure in which a long, thin, flexible tube with a light and camera lens at the end is inserted into the rectum in order to view the inside of the bowel.

**CI:** confidence interval

**CNS:** central nervous system

**DALY:** disability-adjusted life year, equivalent to one year of healthy life

**Epidemiology:** the quantitative study of the distribution and determinants of health-related states and events in populations, and the application of this study to the control of health problems.

**FOBT:** faecal occult blood test

**GRIM books:** General Record of Incidence of Mortality books

**Hospital separation:** an episode of care for an admitted patient, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation).

**IACR:** International Association of Cancer Registries

**IARC:** International Agency for Research on Cancer

**ICD-10:** International Classification of Diseases, 10th edition

**ICD-10-AM:** International Classification of Diseases, 10th edition, Australian Modification

**ICD-O-1:** International Classification of Diseases for Oncology, 1st edition

**ICD-O-2:** International Classification of Diseases for Oncology, 2nd edition

**ICD-O-3:** International Classification of Diseases for Oncology, 3rd edition

**Incidence:** *see* new cancer case

**Lymphohaematopoietic cancers:** cancers of the generative cells of the blood and lymphoid tissues; usually found in blood, bone marrow, spleen or lymph nodes.

**Mortality:** *see* cancer death

**NBCC:** National Breast Cancer Centre. Now called NBOCC.

**NBCSP:** National Bowel Cancer Screening Program

**NBOCC:** National Breast and Ovarian Cancer Centre

**NCSCH:** National Cancer Statistics Clearing House

**New cancer case:** a person who has a new cancer diagnosed for the first time. A person may have more than one cancer and therefore may be counted twice in incidence statistics if it is decided that the two cancers are not of the same origin. This decision is based on a series of principles called the 'multiple primary rules'. For the latest version see <[www.iacr.com.fr/MPrules\\_july2004.pdf](http://www.iacr.com.fr/MPrules_july2004.pdf)>.

**NMSC:** non-melanocytic skin cancer (also called non-melanoma skin cancer). Any skin cancer other than melanoma. The two major types are BCC and SCC.

**NOS:** not otherwise specified

**NSW:** New South Wales

**NT:** Northern Territory

**Polyp:** a benign growth that protrudes from a mucous membrane, commonly found inside hollow organs such as the colon, rectum, uterus and nose.

**PYLL:** person-years of life lost

**Qld:** Queensland

**SA:** South Australia

**SCC:** squamous cell carcinoma

**Tas:** Tasmania

**Vic:** Victoria

**WA:** Western Australia

**WHO:** World Health Organization

# References

## Acronyms used in references

AACR	Australasian Association of Cancer Registries
ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
BSA	BreastScreen Australia
BSANAC	BreastScreen Australia National Advisory Committee
CA	Cancer Australia
DHAC	Department of Health and Aged Care
IARC	International Agency for Research on Cancer
NBCC	National Breast Cancer Centre
NCCH	National Centre for Classification in Health
NCCI	National Cancer Control Initiative
WHO	World Health Organization

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- AIHW, CA & AACR 2008. Cancer survival and prevalence in Australia: cancers diagnosed from 1982 to 2004. Cancer series no. 42. Cat. no. CAN 38. Canberra: AIHW.
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# Related state and territory cancer registry publications

A list of related publications from state and territory cancer registries during 2004–2008 follows.

## New South Wales

### 2004

Begg CB, Hummer A, Mujumdar U, Armstrong BK, Krickler A, Marrett LD, et al. for the GEM Study Group 2004. Familial Aggregation of Melanoma Risks in a Large Population-Based Sample of Melanoma Cases. *Cancer Causes and Control* 15:957–65.

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### 2005

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- Fritschi L, Benke G, Hughes AM, Kricker A, Turner J, Vajdic CM et al. 2005. Occupational exposure to pesticides and risk of non-Hodgkin lymphoma. *American Journal of Epidemiology* 162:1–9.
- Grulich AE, Vajdic CM, Kaldor JM, Hughes AM, Kricker A, Fritschi L et al. 2005. Birth order, atopy, and risk of non-Hodgkin lymphoma. *Journal of the National Cancer Institute* 97:587–94.
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