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Cancer in Australia 1997

Incidence and mortality data for 1997 and selected data for 1998 and 1999

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Contents

List of tables

A comprehensive set of Excel tables for all cancer sites is available on the Institute's web site <http://www.aihw.gov.au>. These are listed in Appendix F.

List of figures

Preface

The Australian Institute of Health and Welfare (AIHW) and the Australasian Association of Cancer Registries (AACR) are pleased to present *Cancer in Australia 1997*, the most recent report generated from the National Cancer Statistics Clearing House (NCSCH). This report contains national cancer incidence and mortality data and also includes data from another of the AACR members, New Zealand, and features some international comparisons using recent data available.

The AACR and the Institute wish to acknowledge the efforts of all the cancer registries in compiling and providing timely data to the NCSCH so that this report could be published. We intend to continue to improve provision of data on cancer in Australia, undertake a work program that encourages further standardisation of cancer registry information and increase analysis of the national data collection (e.g. survival analysis).

Cancer registration is a legal requirement in all States and Territories. The data are collected to monitor cancer trends, assist national efforts to understand the causes of cancer, and assist prevention efforts and treatment decisions. Data confidentiality and the uses to which cancer registry data can be put are controlled by State and Territory registries (under State and Territory law) and within the AIHW under the *Australian Institute of Health and Welfare Act 1987*. The cancer registries together with the Institute and community organisations (e.g. cancer charity organisations) intend to promote further public awareness of their data collections and findings. Particular use has been made of the Internet in improving public access to data by a number of the registries. A home page for the AACR has been developed on the AIHW web site (http://www.aihw.gov.au/cancer) with links to Australian and international cancer-related organisations. A data dissemination tool will be available in the near future.

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Contributors

This joint report between the Australian Institute of Health and Welfare (AIHW) and the Australasian Association of Cancer Registries would not have been possible without the cooperation and effort of those who direct the operation, promotion and development of the State and Territory cancer registries. These people, identified below, have all worked to produce the national cancer incidence statistics in this publication.

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 major contributors of information on cancer deaths are the State and Territory Registrars of Births, Deaths and Marriages, and the Australian Bureau of Statistics. We thank them for their contribution.

Funding and support of cancer registries in Australia is undertaken by State and Territory governments and various charity bodies. We recognise the support of the State and Territory governments, the New South Wales Cancer Council, the Anti-Cancer Council of Victoria, the Queensland Cancer Fund, the Cancer Foundation of Western Australia, the Northern Territory Anti-Cancer Foundation and the Australian Cancer Society. Finally, the contributions of the staff and volunteers who work with the State and Territory cancer registries are acknowledged.

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Executive summary

This report presents national cancer incidence and mortality statistics for 1997 and is part of a series of publications concerning cancer patterns in Australia. The State and Territory cancer registries provide the incidence data for this report whereas the mortality data are provided by the State and Territory Registrars of Births, Deaths and Marriages and coded by the Australian Bureau of Statistics.

Each year, approximately 350,000 new cancer cases are diagnosed in Australia. A large proportion of these, approximately 270,000, are non-melanocytic skin cancers. Incidence data for this cancer are not collected on a routine basis by cancer registries, and are not reported in this publication.

Excluding non-melanocytic skin cancers, there were 79,538 new cancer cases and 33,966 deaths due to cancer in Australia in 1997. At the incidence rates prevailing in 1997, it would be expected that 1 in 3 men and 1 in 4 women would be directly affected by cancer in the first 75 years of life. Further, an estimated 261,000 potential years of life would be lost to the community each year as a result of people dying of cancer before the age of 75. Cancer currently accounts for 28% of male deaths and 24% of female deaths.

In males, prostate cancer (9,725 new cases diagnosed in 1997) is the most common registrable cancer, followed by colorectal cancer (6,139), lung cancer (5,322) and melanoma (4,649). These four cancers account for 60% of all registrable cancers in males.

In females, breast cancer (10,096) is the most common registrable cancer, followed by colorectal cancer (5,106), melanoma (3,717) and lung cancer (2,497). These four cancers account for 59% of all registrable cancers in females.

The most common cancers causing death are lung (4,615), colorectal (2,544) and prostate (2,449) cancers in males, and breast (2,596), colorectal (2,134) and lung (2,068) cancers in females.

The risk of cancer increases with age, with twice as many cancers diagnosed in those over the age of 60 as in those under 60.

Between 1992 and 1997, age-standardised incidence rates for all cancers combined (except non-melanocytic skin cancers) declined for males by an average of 0.3% and rose for females by an average of 0.9% per year but death rates declined for both males and females by an average of 1.3% and 0.6% per year respectively. A significant proportion of the rise in female incidence rates can be attributed to the continuing increase of breast cancer incidence which in turn can be attributed in part to detection of prevalent cancers by the breast screening programs. The recent fall in male incidence rate is strongly influenced by the decline in prostate and lung cancer rates. The introduction of prostate-specific antigen testing and its later fall in use has induced the rapid rise and subsequent fall of prostate cancer incidence rates in recent years.

Cigarette smoking is estimated to have directly caused 10,391 new cases of cancer (13% of all new cases of cancer) and 6,909 deaths (20% of cancer deaths) in 1997. Between 1992 and 1997, the male incidence rate for smoking-related cancers fell by an average of 1.5% per year, while the rate for females rose by 0.6% per year. Over the same period, mortality rates fell by 1.9% per annum for males and rose by 0.7% per annum for females.

Incidence and mortality rates for cervical cancer have continued to fall at a rapid rate. These gains are due, in part, to the success of the National Cervical Screening Program.

A comparison with some countries with similar economic development to Australia shows that Australia's male and female incidence rates are fairly average but that our mortality rates compare favourably with the selected countries. Australia's melanoma rates are

amongst the highest in the world while our colorectal and prostate rates are also relatively high. Lung and liver cancer rates in Australia are lower than in most other countries. In a direct comparison with New Zealand, Australia's female mortality rates are substantially lower than New Zealand's for several cancers, with cancers of the breast and lung showing the largest differences. Cancer incidence and mortality rates in New Zealand males are slightly higher than those of Australian males for most types of cancer.

1 Introduction

Cancer is a notifiable disease in all States and Territories and is the only major disease category for which an almost complete coverage of incidence data is available. Cancer is also a major cause of death in Australia. If this situation is to be changed, good information on the occurrence of different types of cancer, on the characteristics of patients, and on survival and mortality is essential. Such information facilitates the monitoring of trends and the impact of interventions, and provides a sound basis for epidemiological studies and the initiation of prevention and treatment programs.

What is cancer?

Cancer describes a range of diseases in which abnormal cells proliferate and spread out of control. Other terms for cancer are tumours and neoplasms, although these terms can also be used for non-cancerous growths.

Normally, cells grow and multiply in an orderly way and have a specific function in the body. Occasionally, however, they multiply in an uncontrolled way after being affected by a carcinogen, or after developing from a random genetic mutation, and form a lump 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.

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. Spread to other parts of the body occurs 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. They can cause serious damage by destruction, crushing or blocking.

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 less than a year after detection. 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 a vital organ or is close to other vital organs.

Although a number of cancers share risk factors, most cancers have a unique set of risk factors that are responsible for their onset. Some cancers occur as a direct result of smoking, dietary influences, infectious agents or exposure to radiation (e.g. ultraviolet radiation), while others may be a result of inherited genetic faults. It should be noted that for some cancers the causes are unknown. While some of the causes are modifiable through lifestyle changes, some others are inherited and cannot be avoided. 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 cut out the growth or by other methods such as cancer-destroying drugs (chemotherapy) or ray treatment (radiation therapy). The growth of some cancers can also be controlled through hormone therapy.

The treatment approach 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 the cancer does not recur.

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 cancer cases 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, cancer registration 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 charity organisations. Some State and Territory cancer registries have been operating for nearly 30 years and obtain their information from hospital, pathology, radiotherapy and physician records (Appendix D). It was not until 1982, however, that cancer registration was universal in Australia (data were published in *Cancer in Australia 1982* (Giles et al. 1987)). Before then, there was no registration in some States, and in some others, registries covered only particular areas, hospitals or cancer sites.

The 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 a facility for compiling data produced by individual State and Territory registries on a continuing basis.

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;

- facilitate exchange of scientific and technical information between cancer registries and promote standardisation in the collection and classification of cancer data; and
- facilitate cancer research both nationally and internationally.

The NCSCH receives data from individual State and Territory cancer registries on cancer diagnosed in residents of Australia. This commenced with cases first diagnosed in 1982. The data items provided to the NCSCH by the State and Territory cancer registries enable record linkage to be performed and the analysis of cancer by site and behaviour.

The NCSCH produces reports of national incidence and mortality data. Periodically, analyses of specific cancer sites, cancer histology, differentials in cancer rates by country of birth, geographical variation, trends over time and survival are undertaken on an accumulation of data which permits examination of the data in greater depth. The section 'Related Publications' sets out the range of publications based on these data.

In 2000 there will be an emphasis placed on data development in cancer registry collections. This project will look at the transition of existing collections towards the National Health Data Dictionary (NHDD) standards, where they do not currently comply, and the development of cancer registry specific NHDD definitions.

Reports on national cancer survival patterns for the 20 most common cancers are planned for release in 2000 and 2001. The analyses will focus on cancers diagnosed between 1982 and 1997, with a follow-up period extending to 1999. These will be the first national reports on cancer survival in Australia.

The NCSCH is able to make available a broad range of statistical data. Data identifying individuals may only be released to bona fide researchers after a strict scientific and ethical review process which involves the AACR executive, the AIHW Health Ethics Committee and the State and Territory cancer registries. General database enquiries and enquiries about the release of statistical data should be addressed to:

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Structure of this report

This report is divided into five major components:

- an introduction and overview of cancer in Australia in 1997;
- summary tables for all cancer sites for 1997;
- a series of data tables for the most common cancer sites, and some less common but topical cancer sites, for 1997;
- glossary and reference sections;
- appendixes comprising cancer coding system, methods, State and Territory registration features and a full set of statistical tables which are published separately on the AIHW web site at http://www.aihw.gov.au/publications/can/ca97/index.html.

The overview of cancer in Australia provides a selection of highlights from the data tables. It describes the patterns of cancer incidence and mortality by site, age, sex, and State and Territory. Trends in cancer incidence and mortality are discussed and a series of graphs are provided presenting the most common cancers by sex and age group, and trends in national cancer incidence (1983–1997) and mortality (1983–1998). An international comparison is made for selected cancers.

Summary tables of incidence and mortality for 1997 for all cancer sites are provided. These tables list numbers of new cases and deaths, and crude and age-standardised incidence and mortality rates for Australia. Cumulative rates are given for incidence, while the mortality tables provide estimates of the person-years of life lost. Sex ratios are presented in both the incidence and mortality tables.

The series of data tables for the most common or topical cancers in 1997 contain age-specific, crude, and age-standardised incidence and mortality rates for males, females and persons for each cancer site. The order of the tables is based on the International Classification of Diseases (World Health Organization 1977) (Appendix A). All rates are expressed per 100,000 population and, at the Australian level, are directly age-standardised (Appendix B) to both the total estimated resident population of Australia at 30 June 1991 and the World Standard Population (Appendix C). Included in these tables are estimates of the lifetime risk of contracting each cancer, the person-years of life lost, and the numbers of each cancer as a proportion of the total (excluding non-melanocytic skin cancers).

The data tables also include average annual numbers of new cancer cases and deaths, and age-standardised incidence and mortality rates for each State and Territory. **It should be noted that the State and Territory incidence and mortality rates have been directly age-standardised to the total estimated resident population of Australia at 30 June 1991. Therefore, particular care should be taken not to compare these State and Territory rates with previous Cancer Series publications—*Cancer in Australia 1989–1990 (with Projections to 1995), Cancer in Australia 1986–1988* or *Cancer in Australia 1983–1985*—where age-standardisation used the World Standard Population.** The NCSCH is able to provide State and Territory rates that have been age-standardised to the World Standard Population on request or State and Territory cancer registries can be contacted directly.

The appendixes include the International Classification of Diseases coding system; a methods section providing formulae, explanations and examples of the techniques used to present the data in the report; population data for Australia for 1997; and a summary table of State and Territory cancer registry characteristics.

This report together with a comprehensive set of Excel tables for all cancer sites is available on the Institute's web site <http://www.aihw.gov.au/publications/can/ca97/index.html>.

If you are unable to access these data via the Internet, contact the Australian Institute of Health and Welfare for a hard copy.

2 Cancer in Australia

General

Each year, approximately 350,000 new cancer cases are diagnosed in Australia. A large proportion of these, approximately 270,000, are non-melanocytic skin cancers. Incidence data for this cancer are not collected on a routine basis by cancer registries; however, data are collected on a survey basis. The latest survey-based estimates show age-standardised incidence rates (standardised to the World Standard Population) for treated non-melanocytic skin cancers in 1995 were 1,374 per 100,000 population for males and 857 per 100,000 population for females (Staples et al. 1998). These rates are eight times the next most common male cancer (prostate) and seven times the next most common female cancer (breast). Despite non-melanocytic skin cancer's high incidence rate it has a relatively low mortality rate at 1.8 per 100,000 population compared with the high mortality rates of male lung cancer at 52.2 per 100,000 population, female breast cancer (24.2) and prostate cancer (29.4). Non-melanocytic skin cancer will be excluded from any further comparisons in this publication. The totality of other cancers will be referred to as 'registrable cancers'.

Excluding non-melanocytic skin cancers, there were 79,538 new cancer cases and 33,966 deaths due to cancer in Australia in 1997. At the incidence rates prevailing in 1997, it would be expected that 1 in 3 men and 1 in 4 women would be directly affected by cancer in the first 75 years of life. Further, an estimated 261,000 potential years of life would be lost to the community each year as a result of people dying of cancer before the age of 75. Cancer currently accounts for 28% of male deaths and 24% of female deaths.

In this publication the term 'cancer site' is used to represent cancers located in specific organs or tissues as well as systemic cancers such as leukaemia and lymphoma.

Most common cancers

Among all persons, the combination of cancers of the colon and rectum (11,245 new cases), often referred to as bowel or colorectal cancer, is the most common registrable cancer in 1997 (Table 1). Colorectal, breast cancer (10,166), prostate (9,725), melanoma (8,366), and lung cancer (7,819) together account for 59% of all registrable cancers in 1997.

In males, the most common registrable cancers after prostate cancer are colorectal cancer (6,139 new cases diagnosed in 1997), lung cancer (5,332) and melanoma (4,649) (Table 1, Figure 1). These four cancers account for 60% of all registrable cancers in males.

In females, breast cancer (10,096) is the most common registrable cancer, followed by colorectal cancer (5,106), melanoma (3,717) and lung cancer (2,497) which in total account for 59% of all registrable cancers in females.

The cancers most commonly causing death are lung (4,615), colorectal (2,544) and prostate (2,449) cancers in males, and breast (2,596), colorectal (2,134) and lung (2,068) cancers in females (Table 1). The number of person-years of life lost due to cancer is generally dominated by the most common cancers due to the large numbers of cases diagnosed, rather

than by those less common cancers which occur earlier in life. Lung cancer is responsible for the highest number of person-years of life lost before 75 years of age (44,578 in 1997), followed by colorectal cancer (31,573) and breast cancer (31,508) (Table 1). Cancer of the brain and nervous system is responsible for the fourth-highest number of person-years of life lost (16,765). This contrasts with its ranking as the thirteenth most common cancer (1,299 new cases diagnosed in 1997). Further, the ratio of person-years of life lost to new cases for cancer of the brain and nervous system (13.2) is much higher than that for lung cancer (5.7), breast cancer (3.1) or colorectal cancer (2.8). This is a direct result of the relatively large number of younger people diagnosed with, and dying from, cancer of the brain and nervous system.

The most common cancers vary depending on age (Figure 2). In people aged less than 15, the most common cancers diagnosed are lymphatic leukaemia and cancers of the brain and central nervous system. These two cancer sites account for 44% of all cancers in this age group. In those aged 15–44, melanoma and breast cancer are the most common cancers, while breast, colorectal, melanoma, prostate and lung cancers are predominant in people aged over 45 years.

The ranking of the most frequently occurring cancers by age group (Figure 2) is based on the number of new cases, and for those cancers the number of deaths is also shown. However, some cancers that would be ranked in the top five cancers based on number of deaths (rather than new cases) are not presented in Figure 2. Cancers which have a substantial number of deaths in each age group that are not presented in Figure 2 are those of the other endocrine glands (18 deaths) and myeloid leukaemia (16 deaths) in the 0–14 age group and cancer of the brain and nervous system (144) in the 15–44 age group. In the age group 45–64, cancers of unknown primary site (450 deaths), non-Hodgkin's lymphoma (359 deaths) and cancer of the brain and nervous system (350 deaths) are responsible for a substantial number of deaths. Cancers of unknown primary site (1,726 deaths) are also a significant cause of death in the 65 and over age group.

The mortality to incidence ratio (MIR) gives a rough indication of the survival rates for people diagnosed with cancer. Cancers affecting vital organs or systems tend to have a high MIR as few people survive these cancers. Cancers of the liver, pancreas and oesophagus have MIRs of more than 0.9 while cancers of the brain and lung have ratios of between 0.8 and 0.9. MIRs for some other important cancers are 0.42 (colorectal), 0.37 (cervix), 0.25 (prostate) and 0.26 (female breast cancer). Melanoma is one of the few common cancers with a consistently low MIR of approximately 0.11.

Table 1: Most frequently occurring cancers in Australia, 1997 [a] [b]

	New cases					Deaths				
Cancer site	Number	% of all new cancer cases	ASR (A)	ASR (W)	Lifetime risk[c]	Number	% of all cancer deaths	ASR (A)	ASR (W)	PYLL[c]
Males										
Prostate	9,725	22.5	110.9	74.5	1 in 11	2,449	12.9	29.4	16.5	6,008
Colorectal	6,139	14.2	68.4	48.8	1 in 17	2,544	13.3	28.8	19.6	18,500
Lung	5,322	12.3	59.8	41.3	1 in 20	4,615	24.2	52.2	35.3	29,773
Melanoma	4,649	10.8	50.1	39.3	1 in 23	580	3.0	6.4	4.6	6,690
Bladder	1,986	4.6	22.6	15.1	1 in 56	554	2.9	6.5	4.0	2,398
NHL	1,687	3.9	18.6	14.0	1 in 66	815	4.3	9.2	6.3	7,918
Unknown site	1,680	3.9	19.0	12.9	1 in 70	1,171	6.1	13.4	8.7	7,998
Kidney	1,229	2.8	13.5	10.2	1 in 82	467	2.5	5.2	3.7	3,913
Stomach	1,193	2.8	13.4	9.2	1 in 93	768	4.0	8.8	5.7	5,285
Lip	855	2.0	9.4	7.1	1 in 130	17	0.1	0.2	0.1	190
Females										
Breast	10,096	27.8	97.9	80.2	1 in 11	2,596	17.4	24.2	18.6	31,453
Colorectal	5,106	14.1	46.6	33.2	1 in 26	2,134	14.3	18.7	12.8	13,073
Melanoma	3,717	10.2	37.0	30.5	1 in 33	330	2.2	3.1	2.3	4,438
Lung	2,497	6.9	23.5	17.3	1 in 46	2,068	13.9	19.2	13.7	14,805
Unknown site	1,489	4.1	12.9	8.6	1 in 113	1,084	7.3	9.2	6.0	5,855
NHL	1,450	4.0	13.5	10.2	1 in 87	725	4.9	6.4	4.4	4,995
Uterus	1,395	3.8	13.5	10.7	1 in 77	271	1.8	2.4	1.6	1,605
Ovary	1,151	3.2	11.0	8.8	1 in 103	740	5.0	6.8	4.9	6,233
Pancreas	844	2.3	7.4	5.0	1 in 184	830	5.6	7.2	4.7	4,025
Kidney	818	2.3	7.7	5.8	1 in 156	329	2.2	2.8	1.8	1,548
Persons										
Colorectal	11,245	14.1	56.6	40.5	1 in 21	4,678	13.8	23.2	16.0	31,573
Breast	10,166	12.8	51.2	41.2	1 in 22	2,612	7.7	13.0	9.7	31,508
Prostate	9,725	12.2	49.5	34.2	1 in 23	2,449	7.2	11.8	6.8	6,008
Melanoma	8,366	10.5	42.9	34.6	1 in 27	910	2.7	4.6	3.4	11,128
Lung	7,819	9.8	39.6	28.3	1 in 28	6,683	19.7	33.7	23.5	44,578
Unknown site	3,169	4.0	15.7	10.6	1 in 87	2,255	6.6	11.1	7.3	13,853
NHL	3,137	3.9	15.8	12.0	1 in 75	1,540	4.5	7.6	5.3	12,913
Bladder	2,681	3.4	13.4	9.2	1 in 89	807	2.4	3.9	2.4	3,190
Kidney	2,047	2.6	10.4	7.9	1 in 108	796	2.3	4.0	2.7	5,460
Stomach	1,919	2.4	9.6	6.7	1 in 128	1,244	3.7	6.2	4.1	8,193

(a) Rates are expressed per 100,000 population and age-standardised to the Australian 1991 Population ASR (A) and to the World Standard Population ASR (W). The rates age-standardised to the two populations (World and Australia 1991) differ due to the age distributions of these populations. For example the World population gives more weight to younger age groups where there are fewer cancers, consequently the rate is lower compared with the Australian 1991 population. A greater weight is given to the older age groups in the Australian 1991 population where there are more cancers, consequently these rates tend to be higher.

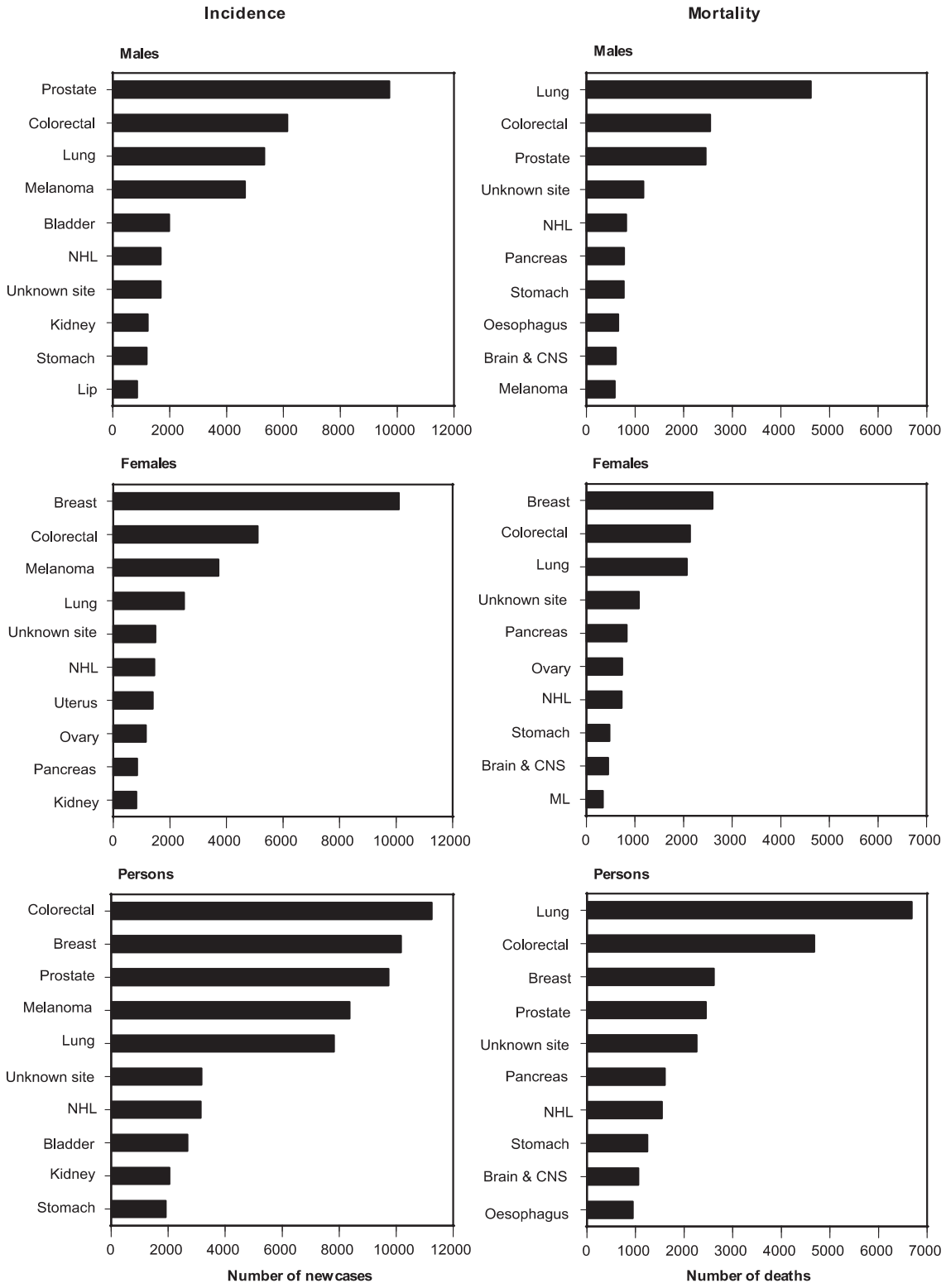
(b) Non-melanocytic skin cancer, known to be the most common cancer type, is excluded from this list, as it is not a registrable cancer.

(c) These measures are calculated for ages 0–74 years; PYLL refers to person-years of life lost. Methods for the calculation of these measures are presented in Appendix B.

Note: NHL refers to non-Hodgkin's lymphoma.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Most frequently occurring cancers

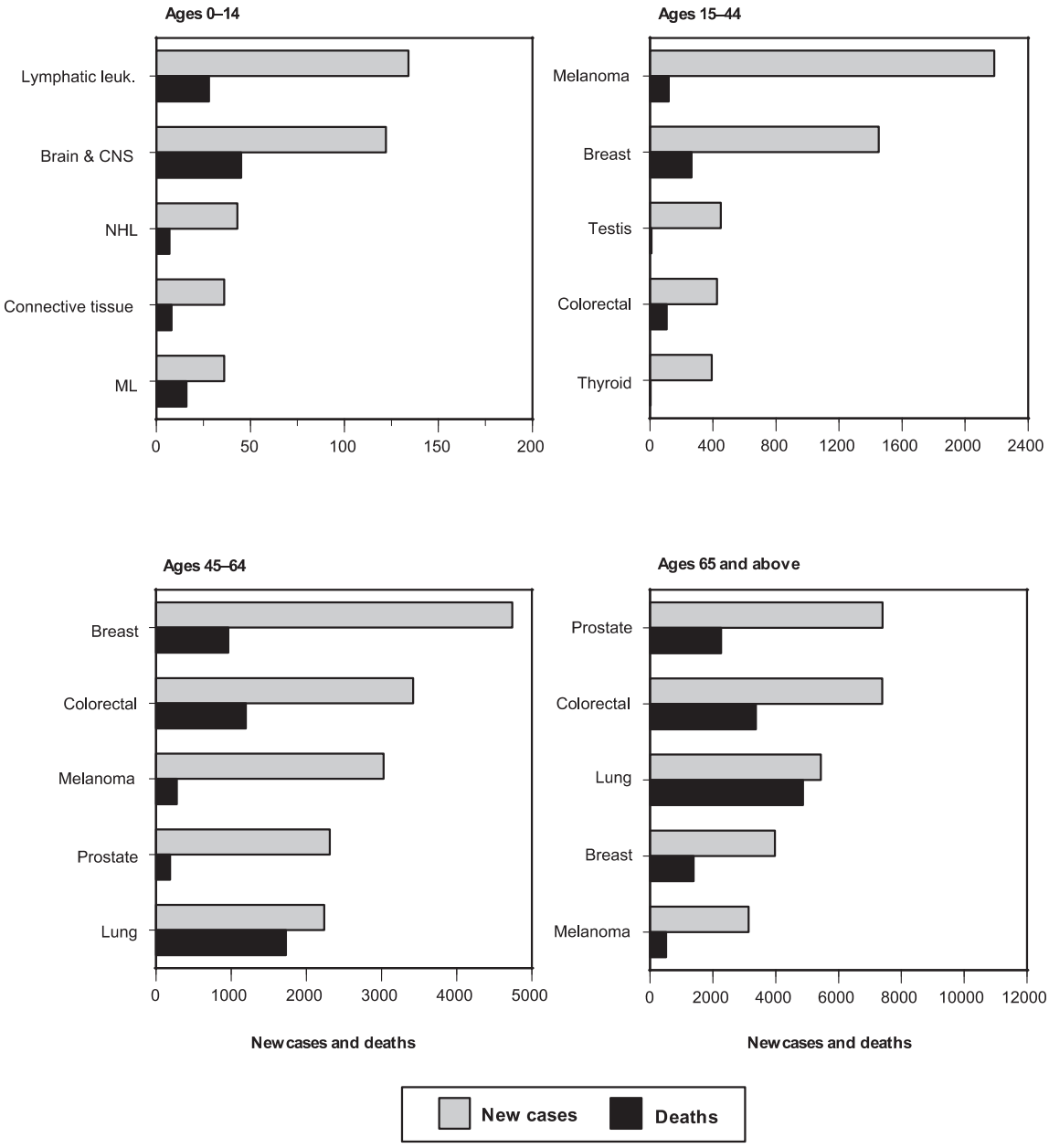


Note: NHL refers to non-Hodgkin's lymphoma, CNS refers to central nervous system, ML refers to myeloid leukaemia.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 1: Most frequently occurring cancers, Australia, 1997

Most frequently occurring cancers by age group



Notes

1. NHL refers to non-Hodgkin's lymphoma, CNS refers to central nervous system and ML refers to myeloid leukaemia.
2. Each age group is graphed on a different scale.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 2: Most frequently occurring cancers by age group, ranked by number of new cases (persons), Australia, 1997

Age and sex differences

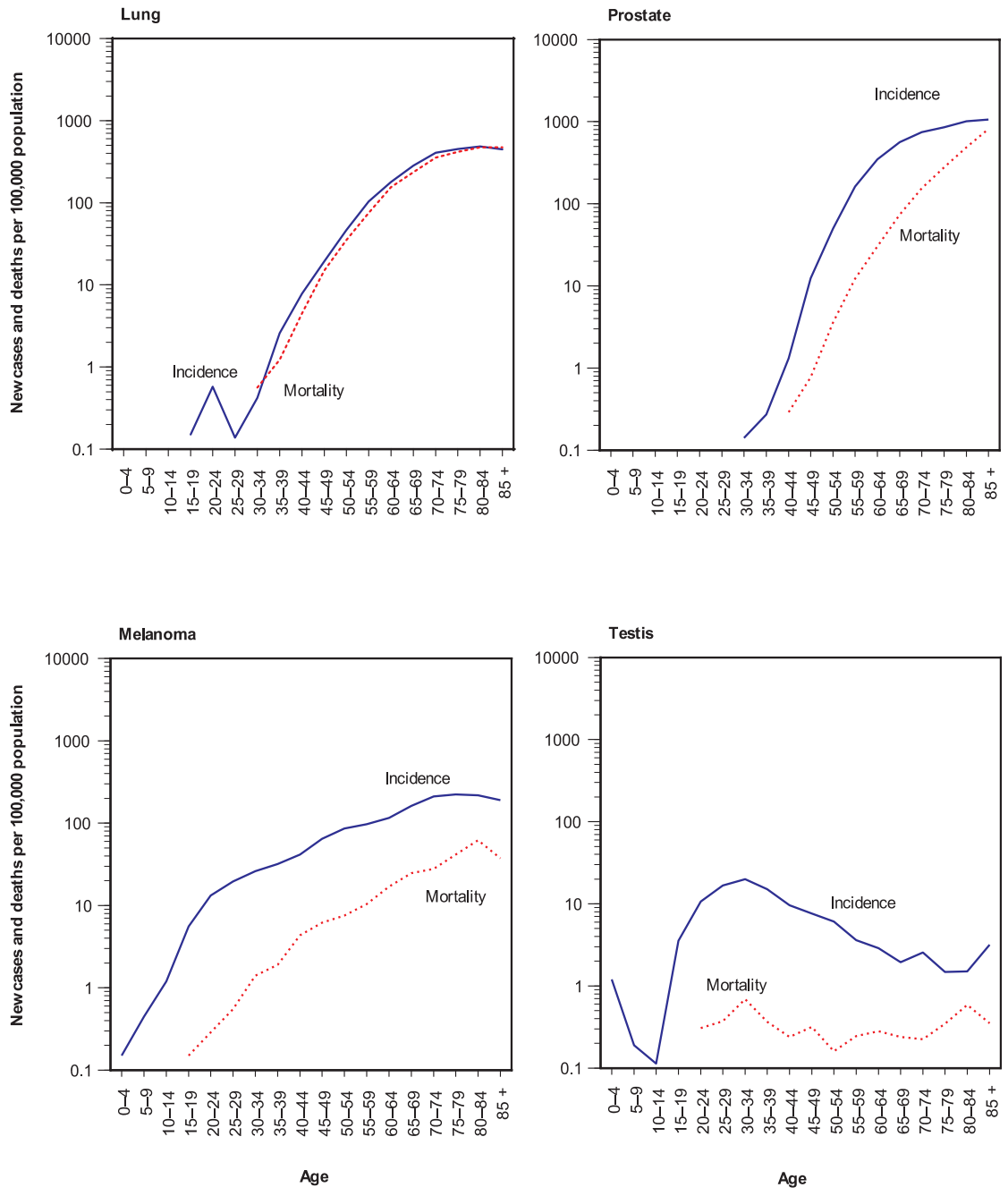
Cancer occurs more commonly in males than females. The age-standardised incidence rate in 1997 for all cancers combined (excluding non-melanocytic skin cancers) was 482.7 new cases per 100,000 for males and 344.2 per 100,000 for females, resulting in an age-adjusted sex ratio of 1.4. Males have a higher incidence rate for every cancer site, except for monocytic leukaemia and for cancers of the breast, thyroid, gallbladder, peritoneum and parts of the nervous system.

The risk of cancer increases with age. The age-standardised incidence rate in 1997 for all cancers combined (excluding non-melanocytic skin cancers) was 14.7 per 100,000 population for people aged less than 15 years; 95.8 per 100,000 population for 15–44 year olds; 700.9 per 100,000 population for 45–64 year olds; and 2,161.2 per 100,000 population for people aged 65 years and over.

Of people diagnosed with cancer, 0.7% of all cancers (excluding non-melanocytic skin cancers) occur in those aged less than 15 years, 10.2% in the 15–44 age group, 31.6% in the 45–64 age group, and 57.4% in those aged 65 and over. While the pattern of deaths across age groups is similar to that of incidence, a larger proportion (71.1%) of cancer deaths occurs in those aged 65 and over. Cervical and testicular cancers are exceptions to the age pattern with the number of cases in the 15–44 age group exceeding that in the 45–64 and 65 and over age groups.

Age-specific incidence and mortality rates vary depending upon the cancer site (Figures 3–6). For example, lung cancer incidence and mortality rates parallel each other closely from age group 30–34, rising sharply from ages 15–19 and 25–29 through to 75–79 before falling slightly in the oldest age groups. The age-specific incidence rates for melanoma of the skin, on the other hand, rise much more steadily across the whole age range. Some cancers, however, have their highest rates in early or middle life and remain fairly constant in the higher age groups (i.e. cancer of the cervix) or even decline with age (incidence of cancer of the testis).

Age-specific incidence and mortality rates—males

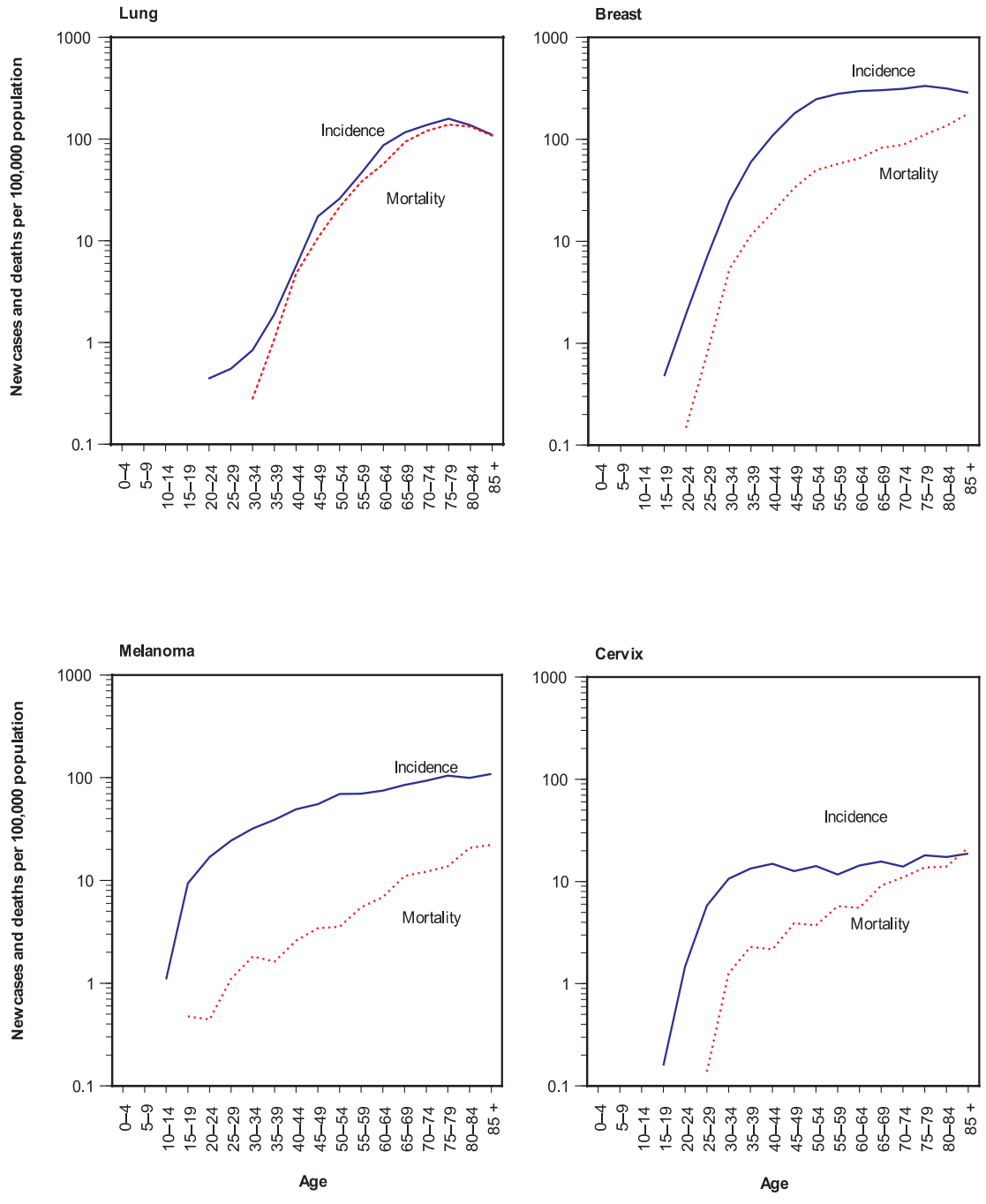


Note: Data for cancer of the testis have been averaged over 1993–1997 to provide more stable estimates.

Source: *Cancer in Australia 1997*, AIHW & AACR 2000.

Figure 3: Age-specific incidence and mortality rates for melanoma and cancers of the lung, prostate and testis in males, Australia, 1997

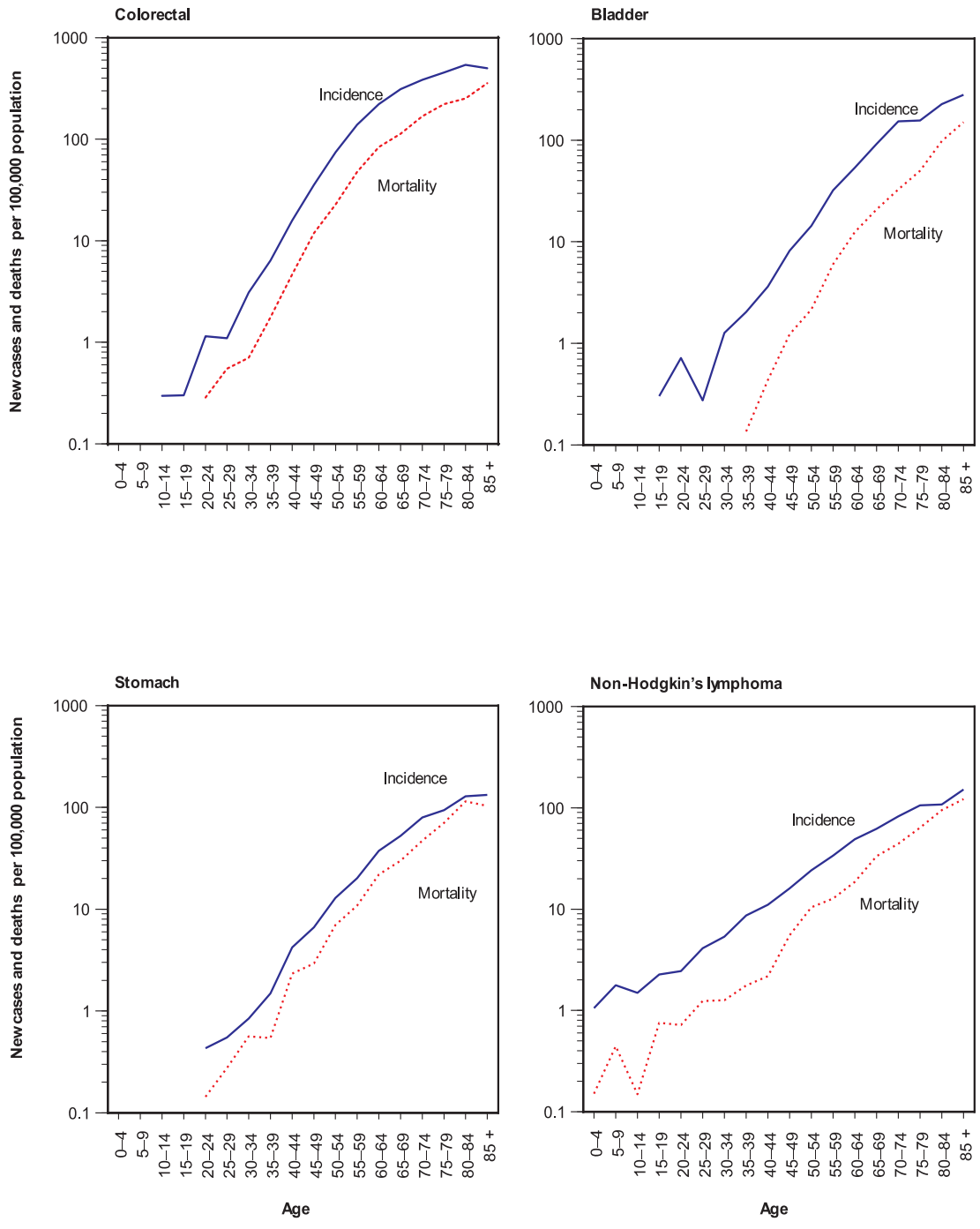
Age-specific incidence and mortality rates—females



Source: *Cancer in Australia 1997*, AIHW & AACR 2000.

Figure 4: Age-specific incidence and mortality rates for melanoma and cancers of the lung, breast and cervix in females, Australia, 1997

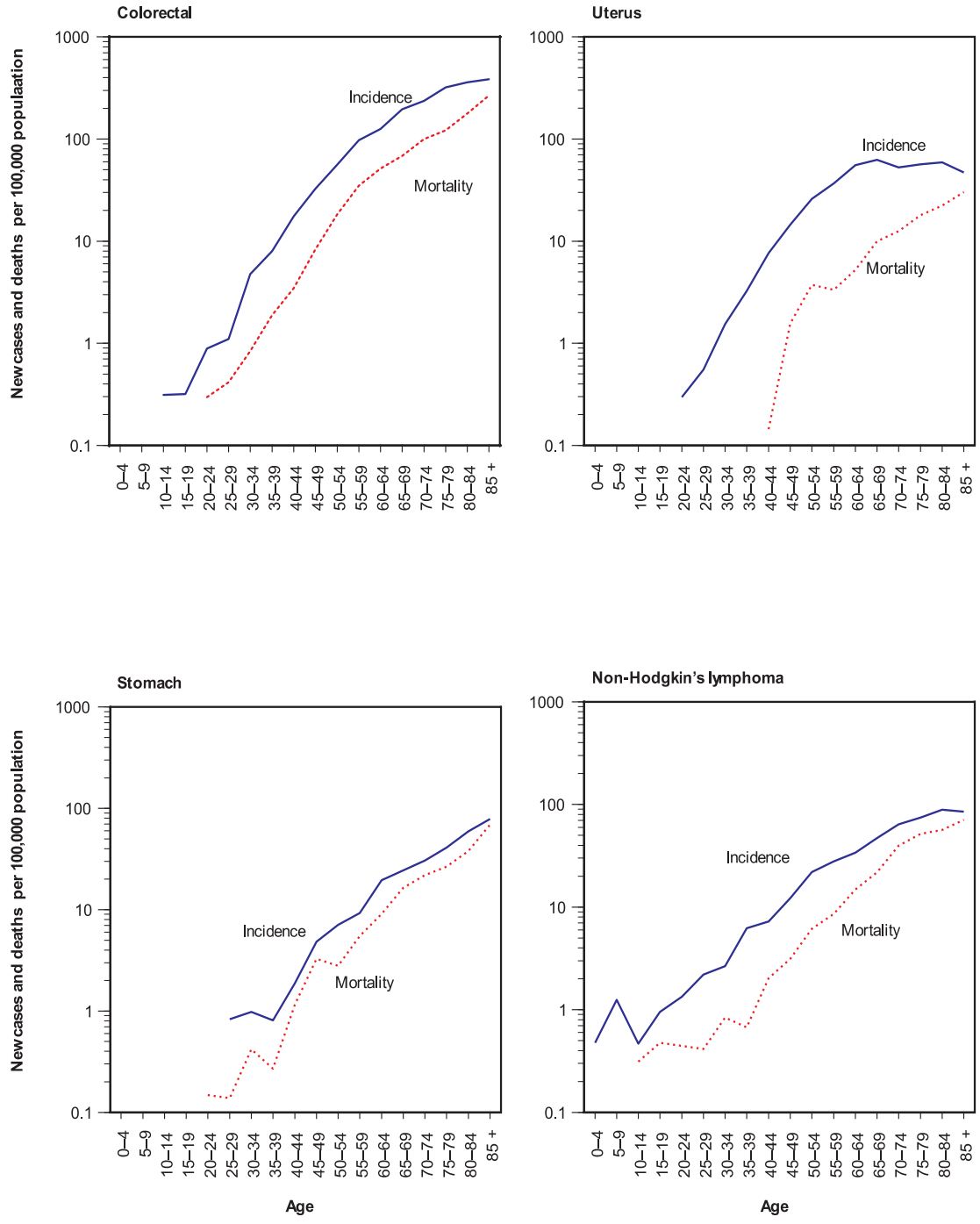
Age-specific incidence and mortality rates—males



Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 5: Age-specific incidence and mortality rates for colorectal cancer, cancers of the bladder and stomach, and non-Hodgkin's lymphoma in males, Australia, 1997

Age-specific incidence and mortality rates—females



Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 6: Age-specific incidence and mortality rates for colorectal cancer, cancers of the uterus and stomach, and non-Hodgkin's lymphoma in females, Australia, 1997

Alcohol- and smoking-related cancers

Alcohol and smoking are risk factors for some cancers. In 1997, alcohol-related cancers accounted for 0.9% of all new cancers, while smoking-related cancers accounted for 13.1%. Smoking-related cancers also accounted for a large proportion of deaths from cancer in 1997 (20.3% of all cancer deaths). These data and those in Tables 24–25 are derived from a series of age- and sex-specific aetiological fractions developed by English et al. (1995) and the cancer incidence estimates for specific cancer sites for 1997. These fractions are based on an analysis of international and Australian studies and estimate the probability that a specific agent (alcohol or tobacco) causes a specific disease (cancer). The cancers thought to be directly attributable to smoking (excluding passive smoking) and alcohol are listed in Table 2.

Table 2: Cancer site and per cent of cancers attributable to alcohol and smoking

	Males (%)	Females (%)
Alcohol-related cancers		
Oropharynx	21	8
Oesophagus	14	6
Liver	18	12
Larynx	21	13
Female breast cancer	—	3
Smoking-related cancers		
Oropharynx	57	51
Oesophagus	54	46
Stomach	14	11
Anus	48	41
Pancreas	24	19
Larynx	73	66
Lung	84	77
Uterus	—	10
Cervix	—	19
Vulva	—	40
Penis	30	—
Bladder	43	36
Renal parenchyma	28	21
Renal pelvis	55	48

Source: English et al. 1995.

It is estimated that 688 new cases of cancer were directly attributable to hazardous and harmful alcohol consumption in 1997 at a rate of 3.5 per 100,000 population, as were 319 deaths at a rate of 1.6 per 100,000 population. While other cancers may be indirectly caused by alcohol consumption in combination with other risk factors, alcohol is believed to be the primary causative agent for differing proportions of specific cancers. The mechanism by which alcohol causes cancer has not been fully determined, but the major metabolite of ethanol has been shown to be carcinogenic in animal experiments (English et al. 1995). The lifetime risk of an alcohol-related cancer is 1 in 236 for males and 1 in 299 for females. Between 1992 and 1997, the incidence rate for alcohol-related cancers in males fell by an average of 2.1% per annum, while the rate in females increased by 2.2% per annum.

Smoking-related cancers account for 18.0% of all new cases of cancer in males and 7.2% of all new cases of cancer in females. This large difference is attributable to the higher rates of smoking among men than women in the past 30 years. Twenty-five years ago, smoking rates in men were almost double those in women. However, this is no longer the case, with the latest estimates indicating that 25% of men and 20% of women aged over 14 years currently smoke (AIHW 1999). Organs associated with the respiratory system are the ones most affected by cigarette smoke, probably as a result of the known carcinogens in cigarette smoke such as polycyclic aromatic hydrocarbons (Table 2). Epidemiological evidence indicates that other cancers, including cancer of the upper digestive tract, bladder, renal pelvis (kidneys) and pancreas are also associated with cigarette smoking (English et al. 1995).

Cigarette smoking is estimated to have directly caused 10,391 new cases of cancer (52.9 new cases per 100,000 population) and 6,909 deaths (35.0 per 100,000 population) in 1997. Between 1992 and 1997, the male incidence rate for smoking-related cancers fell by an average of 1.5% per year, while the rate for females rose by 0.6% per year, both probably a reflection of the changing lung cancer incidence rates (Figure 14). Over the same period, mortality rates fell by 1.9% per annum for males and rose by 0.7% per annum for females. These trends in incidence and mortality rates for smoking-related cancers are depicted in Figure 14.

To illustrate the improvement in the male mortality rate for smoking-related cancers, if the 1987 age-specific rates were applied to the 1997 male population there would be an additional 1,135 male deaths due to smoking in 1997. In contrast, the female mortality rate for smoking-related cancers has increased since 1987. There would be 199 fewer female deaths in 1997 if the 1987 rates were applied to the 1997 female population.

Cancer rates in the States and Territories 1993–1997

Cancer incidence and mortality are reported here for the combined period 1993–1997 for all States and Territories.

Cancer incidence is generally similar among States and Territories. However, the variation in the incidence of melanoma creates some differences in the overall incidence rates. An analysis of all cancers combined (excluding non-melanocytic skin cancers) showed that Queensland had the highest incidence among males (535.3 per 100,000 population), while the Northern Territory reported the lowest with 441.4 cases per 100,000 population. For females, Queensland reported the highest rate (361.5 per 100,000 population) and the Australian Capital Territory reported the lowest (328.5 per 100,000 population) (Figure 7, Table 8).

When the impact of melanoma was removed from the comparison, the order of States and Territories with the highest and lowest cancer incidence rate for males changed with Tasmania reporting the highest incidence rate for all cancers combined (excluding non-melanocytic skin cancers and melanoma) among males (493.3 per 100,000 population), and the Northern Territory reporting the lowest with 414.3 cases per 100,000 population. The remaining States and Territories reported the following rates for males: Queensland 470.0 per 100,000 population, South Australia 467.2, Victoria 456.9, Western Australia 453.7, the Australian Capital Territory 445.3 and New South Wales 440.8. For females, Tasmania reported the highest rate (318.8 per 100,000 population) and Western Australia reported the lowest (297.8 per 100,000 population). The remaining States and Territories reported the following rates for females: Queensland 315.0 per 100,000 population, Victoria 312.8, the

Northern Territory 309.9, South Australia 304.7, New South Wales 301.9 and the Australian Capital Territory 298.0.

The cancer mortality rates reported for males across the States and Territories range from 216.2 per 100,000 population in New South Wales to 249.8 per 100,000 population in the Australian Capital Territory (Table 8). For females, the mortality rates vary from 131.9 per 100,000 population in Queensland to 177.0 in the Northern Territory.

There is more variation among the States and Territories when selected cancer sites are examined. The cancer with the greatest variation between States and Territories is melanoma. Melanoma incidence rates in both males and females, highest in Queensland, are more than twice that of the lowest rates occurring in the Northern Territory (Figure 7, Table 13), a situation that has prevailed since the early 1980s. Melanoma risk is generally highest in the northern areas and lower in the more southerly areas, showing a correlation to ultra-violet radiation exposure (Jelfs et al. 1994). The variation among the State and Territory mortality rates is smaller than the variation in incidence rates (Table 13).

Lung cancer incidence rates are highest in the Northern Territory (for males 90.3 cases per 100,000 population, for females 41.3) (Table 12). The lowest lung cancer incidence rates are reported for males in the Australian Capital Territory (41.4 per 100,000 population) and for females in South Australia (21.7).

State and Territory variations in smoking-related cancers generally reflect those observed for lung cancer (Table 27). The Northern Territory reported the highest incidence rates for males and females (114.8 and 40.7 per 100,000 population respectively). The Australian Capital Territory reported the lowest smoking-related cancer incidence rates for males (63.9 per 100,000 population) and South Australia had the lowest rate for females (22.2). Death rates from smoking-related cancers were highest in the Northern Territory for both males and females.

These patterns of incidence probably reflect smoking behaviour approximately 10–20 years ago, due to the time lag between exposure to carcinogens in the tobacco smoke and the diagnosis of cancer. Differentials in smoking rates between the States and Territories reported in the 1995 National Health Survey (ABS 1997a) are likely to affect smoking-related cancer incidence rates in the future. Tasmania (57.3%) reported the highest proportion of current and ex-smokers followed by the Northern Territory with 56.0%. The lowest smoking and ex-smoking rates were found in New South Wales at 49.2%. In the other States and the Australian Capital Territory the proportions of smokers and ex-smokers ranged from 50% to 53%.

Western Australia, Victoria, the Australian Capital Territory and New South Wales reported the highest incidence rates for breast cancer in females (ranging from 99.8 to 98.3 per 100,000 population), while the Northern Territory reported the lowest incidence rate (69.0 per 100,000 population) (Table 14). The Australian Capital Territory and Tasmania reported high rates of prostate cancer (161.6 and 156.3 per 100,000 population respectively), while significantly lower rates were reported in the Northern Territory (87.7 per 100,000 population) (Table 18), a rate influenced by the low Indigenous population incidence rates (d'Espaignet et al. 1996). These interstate variations in prostate cancer incidence might also be explained by differences in the time and rate of uptake of prostate-specific antigen (PSA) testing in the States and Territories (Smith et al. 1998; Threlfall et al. 1998).

There were differences in cervical cancer incidence among the States and Territories. This probably reflects in part the relative impact of the screening programs in each jurisdiction. Most of the large States show consistent rates of approximately 10–11 new cases per 100,000 population; however, South Australia shows a substantially lower rate of 7.4 per 100,000

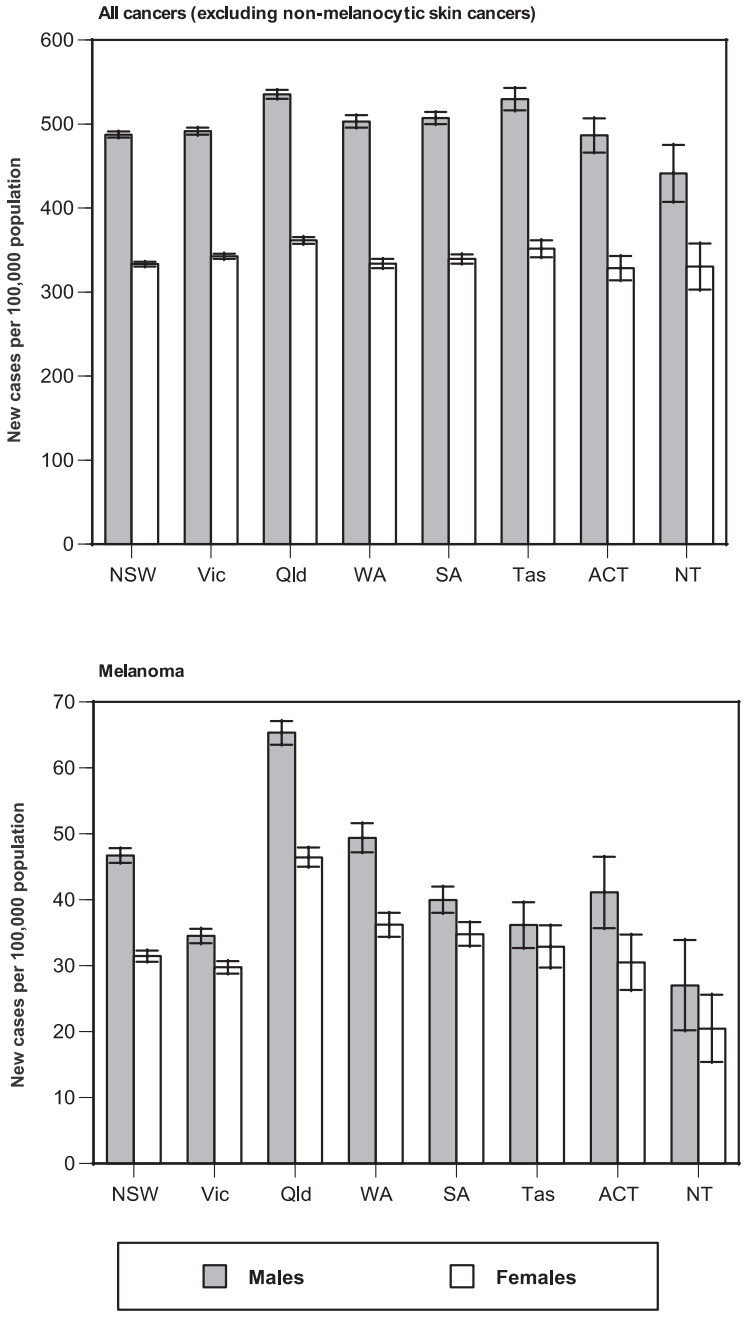
population. The Northern Territory, while having relatively small numbers of new cases, has a very high incidence rate of 21.2 per 100,000 population. A major contributor to this incidence rate is the high rate of cervical cancer amongst the Indigenous population, which d'Espaignet et al. (1996) indicated was up to three times the non-Indigenous population rate. This situation is also reflected in a high mortality rate (9.1 deaths per 100,000 population). This high mortality rate may be an indicator of late stage detection of these cancers.

While 1997 incidence data are the latest national data, some States and Territories have released data for 1998—the Northern Territory—and data for 1999—Western Australia, South Australia and Tasmania. These four jurisdictions account for approximately 20% of new cancer cases. A combination of the 1998 and 1999 incidence rates for these jurisdictions, compared with their 1997 combined rates for the most common cancers, shows some changes which may be early indicators for the larger states of New South Wales, Victoria and Queensland. The incidence rates for all cancers combined remained fairly steady. Melanoma rates increased and lung cancer rates declined for both sexes. Prostate cancer rates registered a small fall while breast cancer rates rose marginally. Most other cancers showed only minor change.

Differences in State and Territory cancer incidence rates may be explained by variations in underlying cancer risk, the availability and utilisation of diagnostic procedures, reporting and coding inconsistencies, and normal incidence rate fluctuations. A case in point is bladder cancer (Table 20), where State and Territory comparisons vary by as much as 100%. This is largely due to differences in local coding practices, particularly in regard to the inclusion or exclusion of tumours of uncertain behaviour. The AACR plans to address this issue in the near future by standardising coding practices.

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 a small number of cases, the numbers and rates presented for the States and Territories in Tables 8 to 27 in this publication are annual averages of the 5-year period 1993–1997. For annual sex- and cancer-specific data, or data cross-classified by other variables (e.g. age, geographic area), the State and Territory cancer registries should be contacted directly (see pages 78 and 79 for contact details).

All cancers and melanoma incidence rates by sex and by State and Territory



Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 7: Age-standardised incidence rates (95% confidence intervals) for all cancers (excluding non-melanocytic skin cancers) and for melanoma by State and Territory, 1993–1997

International comparisons

Cancer incidence and mortality patterns vary internationally. This variation may be the result of variations in risk factor exposure (e.g. smoking, diet, and ultraviolet radiation), in genetic susceptibility, in detection and treatment of cancer or in the level of cancer registration and in coding practices.

Australia is one of the few countries in which cancer registration occurs on a national basis. Many countries either have State/Province, regional or hospital based cancer registries to record cancer incidence, although most countries have national mortality collections. Data have been presented in Figures 8–11 for a selection of common cancers—lung, colorectal, liver, prostate, melanoma, breast and cervix—and for a selection of countries for which recent data were available. In order to gain some data consistency between these countries internationally standardised data sources have been used (see data sources, page 84). Figures 8–11 present Australian incidence and mortality rates for 1997.

Australia's incidence rate for the aggregation of all cancers combined in both males and females is similar to most of the selected countries (Figures 10 and 11). Differences among countries are more noticeable when individual cancer sites are examined. Incidence and mortality rates for melanoma in Australia are at very high levels matched only by New Zealand. A comparison between Australia and England & Wales shows a sevenfold difference in incidence, but it is known that this ranges up to 150-fold compared with other countries. The international spread of mortality rates is more narrow as melanoma has a relatively high survival rate.

In comparing Australia's incidence and mortality rates for other cancers with those of the selected group of countries it was found that:

- Australian males have relatively low rates of lung cancer incidence and mortality. Australian females show a slightly higher ranking;
- colorectal incidence and mortality rates for both males and females are ranked amongst the countries with the highest rates;
- Australian males have low rates of liver cancer;
- prostate cancer incidence rates are lower than those of the United States (SEER–Surveillance, Epidemiology and End Results data) and New Zealand but higher than those of the European countries in the group. Mortality rates are similar across the group;
- breast cancer incidence and mortality rates are similar to those of other countries; and
- Australia's cervical cancer rates compare favourably with the selected countries.

Cancer in New Zealand

One of Australia's closest neighbours, New Zealand, shares a similar heritage to Australia and a similar level of economic development. The New Zealand population at 3.8 million is slightly larger than that of Queensland (3.4 million) and slightly smaller than that of Victoria (4.6 million). New Zealand serves as a good comparison for Australia in cancer patterns, as the two countries share similar patterns of cancer risk factors, e.g. diet, smoking patterns and ultraviolet radiation exposure and also share some similarities in their cancer control programs, e.g. cervical and breast cancer screening. Both countries have a sizeable Indigenous population, which exhibit lower life expectancies than the rest of the population. New Zealand Maoris comprise approximately 14.5% of total population and Australia's

Aboriginal and Torres Strait Islander population represent approximately 2.1% of the total population.

The New Zealand Health Information Service has supplied 1996 incidence and 1997 mortality data (Table 3) which enable a direct comparison of recent rates for cancers between Australia and New Zealand. These rates have been standardised to the World Standard Population. Tables 3, 4 and 5 have been used for purposes of comparing the two countries' cancer patterns.

New Zealand has approximately 16,000 new cancers diagnosed each year and 7,300 deaths occur as a result of cancer. The most frequently occurring cancers in Australia and New Zealand are very similar, with prostate, colorectal and lung cancers in males and breast, colorectal and melanoma in females being the dominant cancers. The other common cancers are ranked similarly in the two countries, although the policy for reporting a combination of all leukaemias (New Zealand) and unknown primary (Australia) in the dominant cancers makes for some minor variations in the rankings (Tables 1 and 3).

In comparing the age-standardised incidence rates for all cancers combined (excluding non-melanocytic skin cancer), it is apparent that there is some variation at this aggregate level. New Zealand males (362.0 new cases per 100,000 population) and females (286.9) have rates approximately 5% higher than those of Australian males and females. Mortality rates in males also show approximately the same variation. In females, however, mortality rates in New Zealand (114.7 deaths per 100,000 population) are 20% higher than those of Australian females (94.9). This difference in female mortality rates appears to be spread across a range of cancers, some of which are described below.

Breast cancer incidence rates are similar in both Australian (80.2 new cases per 100,000 population) and New Zealand females (78.4). However, there is a substantial difference in mortality rates (New Zealand 23.2, Australia 18.6 deaths per 100,000 population). The breast screening program in Australia has been operating since approximately 1990 and may have had some impact on mortality rates. The New Zealand breast screening program only commenced in 1999 and benefits from this program may not be seen for some time.

New Zealand prostate cancer rates are similar to those seen in Australia, showing a dramatic rise and subsequent decline, although Australia's rates peaked one year earlier. Both countries' rates have been strongly influenced by the rapidly changing use of PSA testing.

There are some differences in the patterns of colorectal cancer between the two countries. Males in New Zealand (53.3 new cases per 100,000 population) are above their Australian counterparts (48.8). There is a more substantial difference between the females (New Zealand 40.8 and Australia 33.2). These differences between the countries are carried over to the mortality rate for colorectal cancer.

Both Australians and New Zealanders are known for their outdoor lifestyle, which places both populations at risk of melanoma and non-melanocytic skin cancers from the increased ultraviolet radiation exposure. This is reflected in high incidence rates of melanoma in both countries. Of note in assessing the melanoma incidence rates is the relatively small difference between males and females in New Zealand, a sex ratio of 1.1, compared with a ratio of 1.4 for Australia. Australia had approximately the same sex ratio as New Zealand in the early 1980s. Since then there has since been a significant divergence in rates.

Lung cancer incidence and mortality rates in New Zealand and Australian males are similar. The incidence rates in New Zealand females are approximately 25% higher than in Australian females and the mortality rate is nearly 40% higher.

There appear to be substantial differences in the reported cancer incidence and mortality rates between New Zealand and Australia for some of the most common cancers. This

would suggest some differences in the impact of particular risk factors, and in relation to mortality, a difference in the stage at detection and treatment. Investigation of these differences will be pursued further in later reports in this series.

Table 3: Most frequently occurring cancers in New Zealand [(a) (b)]

	New cases 1996				Deaths 1997			
Cancer site	Number	% of all new cancer cases	ASR (W)	Lifetime risk[(c)]	Number	% of all cancer deaths	ASR (W)	PYLL[(c)]
Males								
Prostate	2,439	28.5	97.7	1 in 9	525	13.7	19.0	1,428
Colorectal	1,247	14.6	53.3	1 in 16	575	15.0	23.3	4,613
Lung	967	11.3	40.4	1 in 20	882	23.0	35.5	5,563
Melanoma	785	9.2	35.0	1 in 27	121	3.2	5.0	1,260
Bladder	401	4.7	16.0	1 in 56	110	2.9	3.9	453
NHL	302	3.5	13.5	1 in 65	144	3.8	5.6	1,223
Leukaemia	256	3.0	11.4	1 in 96	135	3.5	6.0	2,283
Stomach	251	2.9	10.5	1 in 79	156	4.1	6.1	1,085
Kidney	202	2.4	9.0	1 in 95	78	2.0	3.2	803
Brain	160	1.9	7.9	1 in 141	125	3.3	5.7	2,295
Females								
Breast	1,906	25.4	78.4	1 in 12	620	18.0	23.2	7,800
Colorectal	1,187	15.8	40.8	1 in 20	514	14.9	15.8	3,140
Melanoma	800	10.7	32.6	1 in 31	80	2.3	2.8	995
Lung	576	7.7	21.6	1 in 36	530	15.4	19.1	4,753
Ovary	288	3.8	11.7	1 in 81	166	4.8	5.8	1,570
NHL	274	3.7	10.4	1 in 89	146	4.2	4.5	1,055
Uterus	269	3.6	11.1	1 in 73	49	1.4	1.7	348
Cervix	219	2.9	9.8	1 in 100	73	2.1	2.8	1,338
Leukaemia	213	2.8	8.0	1 in 140	97	2.8	3.4	1,293
Pancreas	174	2.3	5.7	1 in 142	145	4.2	4.2	718
Persons								
Prostate	2,439	15.1	43.5	1 in 18	525	7.2	7.7	1,428
Colorectal	2,434	15.2	46.8	1 in 18	1,089	15.0	19.4	7,753
Breast	1,906	11.9	40.6	1 in 23	620	8.5	12.2	7,800
Melanoma	1,585	9.9	33.5	1 in 29	201	2.8	3.8	2,255
Lung	1,543	9.6	29.9	1 in 26	1,412	19.4	26.3	10,315
NHL	576	3.6	11.8	1 in 76	290	4.0	5.0	2,278
Bladder	538	3.4	9.5	1 in 91	157	2.2	2.3	453
Leukaemia	469	2.9	9.4	1 in 114	232	3.2	4.6	3,575
Stomach	402	2.5	7.4	1 in 112	268	3.7	4.5	1,085
Kidney	328	2.0	6.8	1 in 121	144	2.0	2.6	803

(a) Rates are expressed per 100,000 population and age-standardised to the World Standard Population ASR (W).

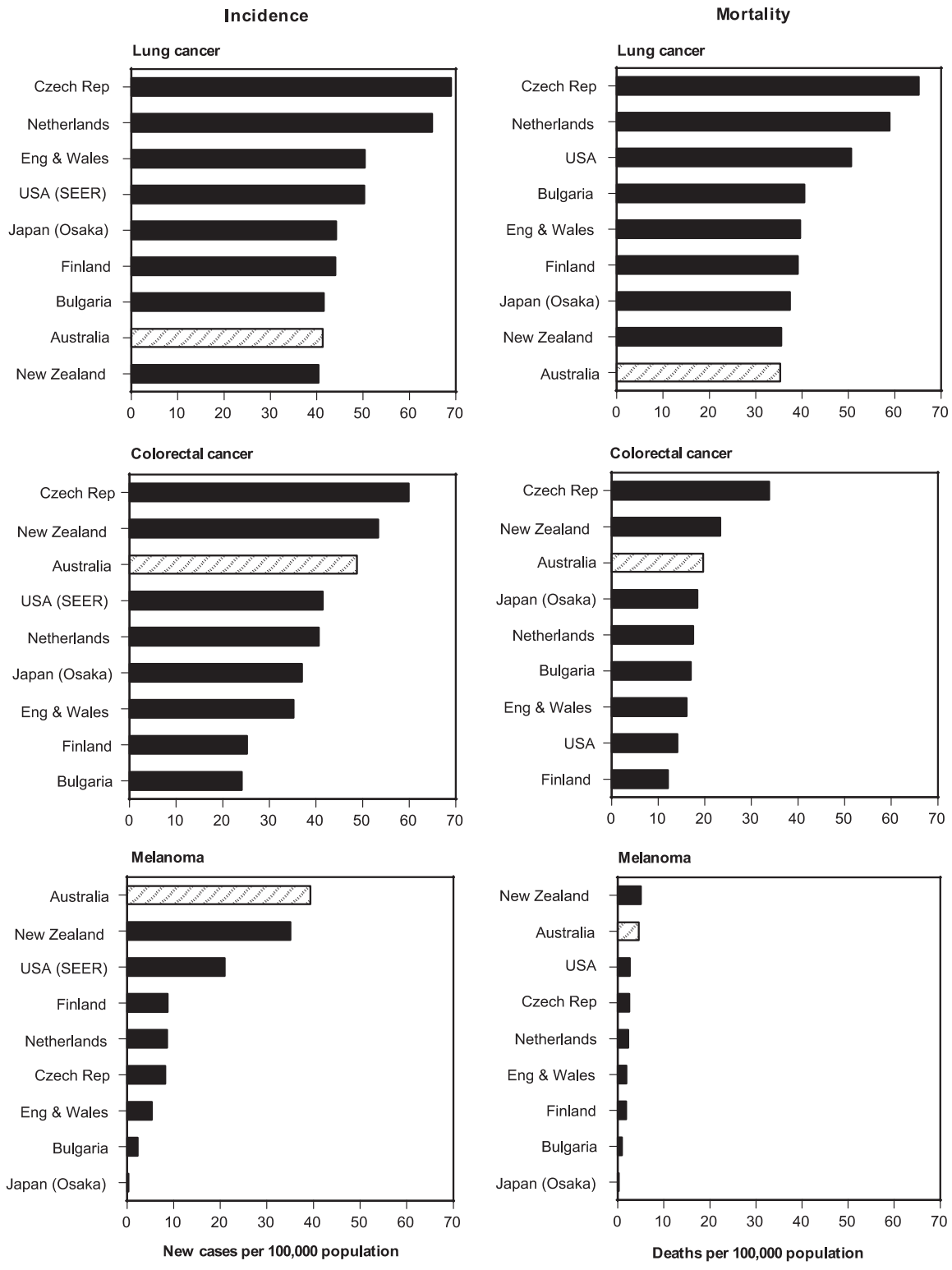
(b) Non-melanocytic skin cancer, known to be the most common cancer type, is excluded from this list, as it is not a registrable cancer.

(c) These measures are calculated for ages 0–74 years; PYLL refers to person-years of life lost. Methods for the calculation of these measures are presented in Appendix B.

Note: NHL refers to non-Hodgkin's lymphoma.

Source: New Zealand Health Information Service, *Cancer in Australia 1997*, AIHW & AACR 2000.

International comparison of melanoma, lung and colorectal cancer for males

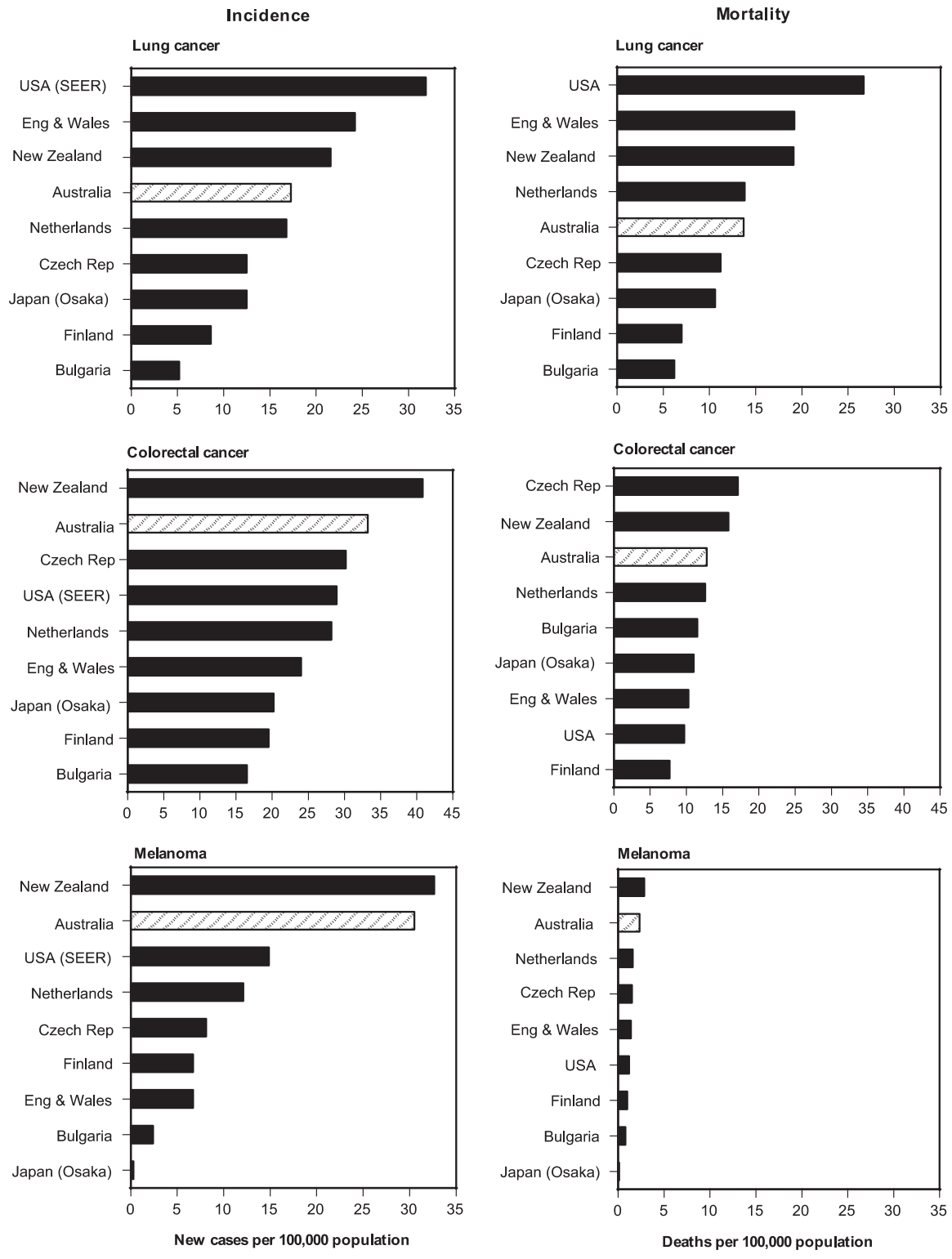


Note: Rates are age-standardised to the World Standard Population.

Source: Cancer in Australia 1997, AIHW & AACR 2000, WHO Mortality Database 1997.

Figure 8: International comparison of age-standardised incidence and mortality rates for melanoma, lung and colorectal cancers for males, Australia 1997, and other selected countries

International comparison of melanoma, lung and colorectal cancer for females

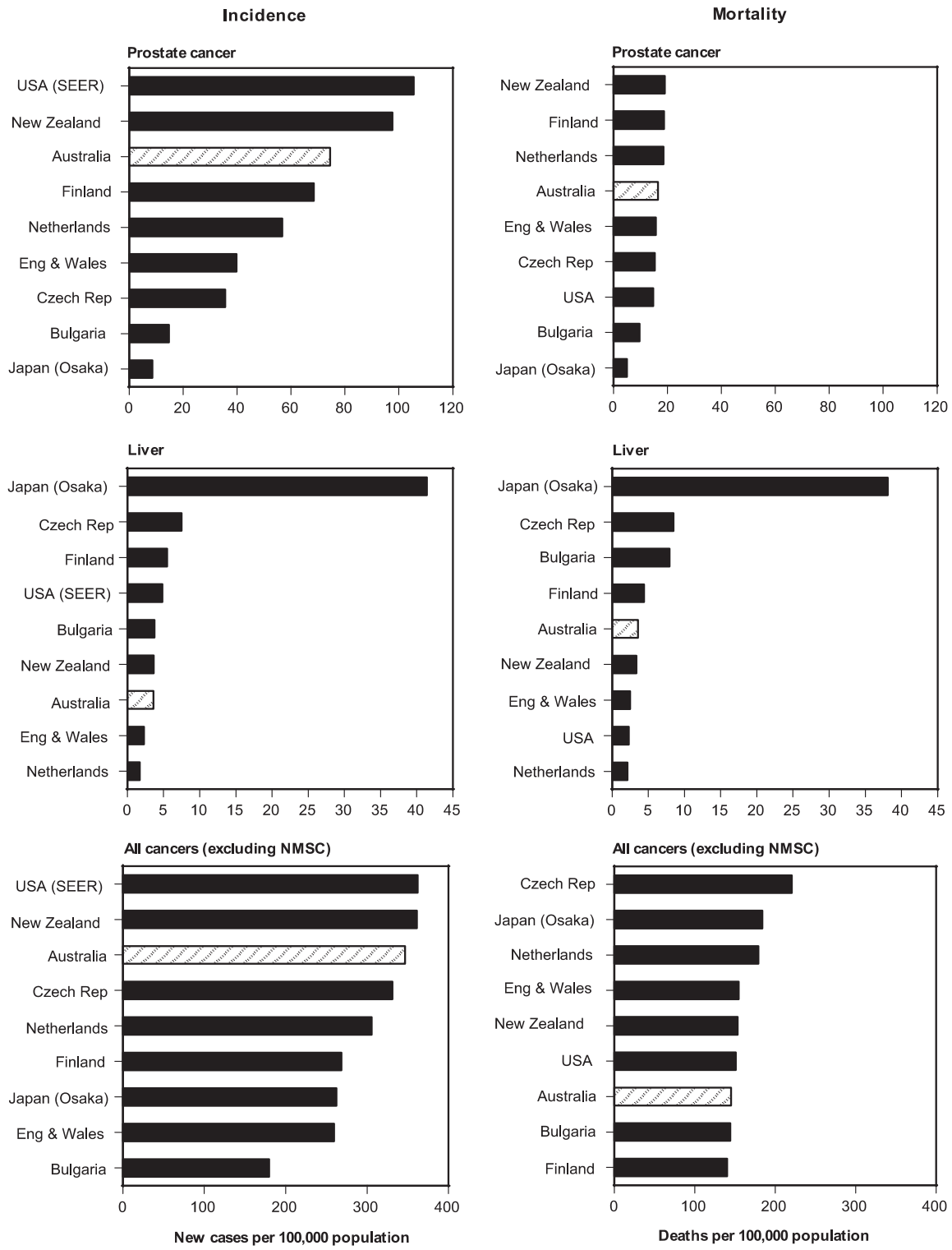


Note: Rates are age-standardised to the World Standard Population.

Source: Cancer in Australia 1997, AIHW & AACR 2000, WHO Mortality Database 1997.

Figure 9: International comparison of age-standardised incidence and mortality rates for melanoma, lung and colorectal cancers for females, Australia 1997, and other selected countries

International comparison of prostate, liver and all cancers for males



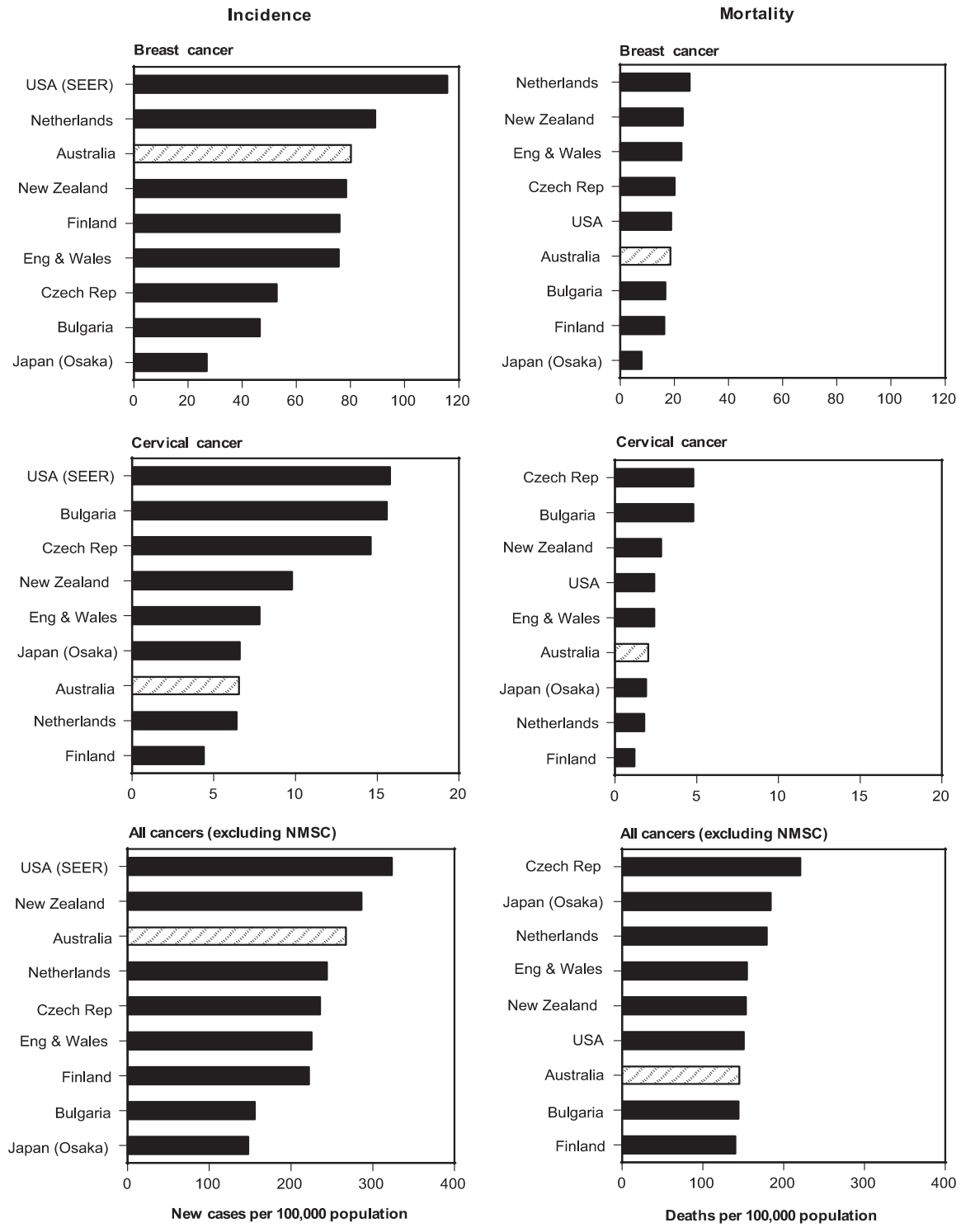
Notes

1. Rates are age-standardised to the World Standard Population.
2. NMSC refers to non-melanocytic skin cancer.

Source: Cancer in Australia 1997, AIHW & AACR 2000, WHO Mortality Database1997.

Figure 10: International comparison of age-standardised incidence and mortality rates for prostate, liver and all cancers for males, Australia 1997, and other selected countries

International comparison of breast, cervix and all cancers for females



Notes

1. Rates are age-standardised to the World Standard Population.
2. NMSC refers to non-melanocytic skin cancer.

Source: Cancer in Australia 1997, AIHW & AACR 2000, WHO Mortality Database 1997.

Figure 11: International comparison of age-standardised incidence and mortality rates for breast, cervix and all cancers for females, Australia 1997, and other selected countries

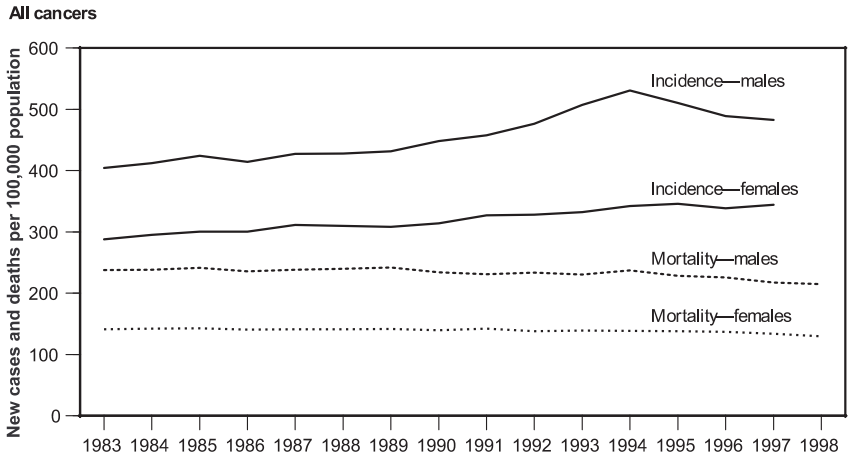
3 Cancer trends

National trends in cancer incidence and mortality

National cancer incidence and mortality rates for the most common cancer sites are presented in Figures 12–18. Incidence data are presented for the period 1983–1997 while mortality data are presented for the period 1983–1998.

The trends in incidence and mortality rates vary with cancer site. Some rates have shown an increase since 1983 while others have remained relatively stable or decreased. In assessing these trends it is important to recognise that small changes in the trend in the most common cancers (e.g. breast, prostate) can mean a substantial shift in the numbers of new cases or deaths, whereas the same shift in less common cancers can have a relatively small impact. For example, a 1% increase in the breast cancer incidence rate results in an increase of approximately 100 new cases, whereas the same percentage increase in cervical cancer incidence would only result in approximately 8 new cases.

Between 1992 and 1997, age-standardised incidence rates for all cancers combined (excluding non-melanocytic skin cancers) declined slightly for males by an average of 0.3% and rose for females by an average of 0.9% per year (Figure 12). These incidence rates have been strongly influenced by the steady rise in breast cancer incidence and the rise and fall of prostate cancer incidence during this period. Mortality rates declined for both males and females by an average of 1.3% and 0.6% respectively per year. The decline in male lung cancer deaths is the main contributor to the falling mortality rate for males.



Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 12: Trends in age-standardised incidence and mortality rates for all cancers (excluding non-melanocytic skin cancers), Australia, 1983–1998

Prostate cancer incidence rates were relatively stable up until 1989 but between 1990 and 1994 there was a dramatic rise in the number of new cases of prostate cancer registered (Figure 13). This upward trend has been attributed to increased detection of the disease through increased investigations, particularly the introduction of prostate-specific antigen (PSA) testing (introduced around 1990). However, from 1994 to 1997 the age-standardised prostate cancer incidence rate fell by 30% and those States and Territories with data available for 1998 and 1999 indicate that the incidence rate will continue to fall but at a reduced rate. PSA tests are specifically designed to identify cancers before the onset of clinical symptoms. Many of these prevalent cancers may not show any symptoms, and therefore would not be detected except for PSA testing. Much of the rise in the incidence rate of prostate cancer can be attributed to detection of these prevalent cancers. The recent decline in the incidence rate indicates a return towards the underlying rate, removing the effect of these previously undetected cases. The incidence rate is also declining as the number of PSA tests conducted falls, reducing the number of prevalent cases detected (Smith et al. 1998; Threlfall et al. 1998). The death rate from prostate cancer, which is significantly lower than the incidence rate, has remained relatively stable since 1983.

Among females, breast cancer is the most frequently diagnosed cancer and it is the most common cause of cancer-related death. The incidence of breast cancer in females rose from 85.7 cases per 100,000 population in 1992 to a peak of 101.1 cases per 100,000 population in 1995. The breast cancer incidence rate increased on average 2.1% per annum between 1992 and 1997 (Figure 13). The increase in incidence in the early 1990s was largely in women aged 50–69. The breast cancer mortality rates were stable from 1983 to 1994 but have declined slightly since then.

For colorectal cancer, the male incidence rate rose marginally between 1992 and 1997 (an average annual rise of 0.9%) while the female rate fell slightly (0.3%). In comparison, mortality rates have fallen slightly since 1992 (Figure 13).

Between 1992 and 1997, the incidence and mortality of lung cancer among males fell by an average of 1.7% and 2.1% respectively per year (Figure 14). These declining rates are attributed to decreased tobacco smoking among men, and represent the lowest incidence rate (59.8 new cases per 100,000 population) recorded since national data collection began in 1982. In contrast, lung cancer incidence among females increased by 1.7% per annum between 1992 and 1997. However, the increase in lung cancer incidence is predominantly in women aged 65 years and over, while rates in younger women have generally remained stable or fallen. The death rate from lung cancer among females increased on average by 1.4% per annum between 1992 and 1997.

The incidence rate for melanoma among males increased sharply between 1983 and 1988, some of this increase due to improved registration of this cancer. Between 1988 and 1991, the rate remained stable then increased steadily until 1994 and increased sharply again in the latest years (Figure 14). The pattern for women was similar although not quite as pronounced. The incidence rates in 1997 are the highest recorded for males (50.1 new cases per 100,000 population) and females (37.0) since collection of national data commenced in 1982. The largest proportional increase for both males and females was in the 60+ age group whereas younger adults aged (25–39) had very slight increases. Mortality rates for melanoma have changed very little since 1983.

The incidence of non-Hodgkin's lymphoma increased by an average of 1.9% per year in females and remained stable in males between 1992 and 1997 (Figure 15). The mortality rate in females with non-Hodgkin's lymphoma has risen steadily since 1983, while in males the mortality rate has fluctuated markedly but shows no average annual change between 1992 and 1997.

The incidence of bladder cancer for both males and females has generally declined between 1983 and 1997, although some annual fluctuation has been observed (Figure 15). It is likely that part of an increase in male incidence since 1991 is a result of the increased use of screening for prostate cancer leading to a diagnosis of bladder cancer as part of the diagnostic work-up. Despite these changes in the incidence of bladder cancer, mortality rates for both males and females remained relatively stable throughout the period.

Stomach cancer incidence fell by an average of 2.9% and 3.0% per year for males and females respectively over the period 1983–1991. This decline has continued for males between 1992 and 1997 but at a slightly reduced rate (2.5% per annum) while the female rate has increased marginally (Figure 15). Mortality rates decreased substantially for both sexes over the 1983 to 1998 period.

The incidence rate for leukaemias in males and females increased slightly between 1983 and 1997 although there were quite large annual fluctuations (Figure 16). At the same time the mortality rates for males and females decreased marginally.

Trends in brain cancer between 1983 and 1997 have remained fairly steady. The male incidence and mortality rates between 1992 and 1997 have increased marginally while the female rates have fallen slightly (Figure 16).

Between 1992 and 1997, the male incidence and mortality rates for cancer of the pancreas fell by an average of 1.0% and 1.4% respectively. In contrast, over the same period, the female incidence rate increased by an average of 0.3% per year and the female mortality rate increased by an average of 0.5% per year (Figure 16).

The age-standardised incidence rate for cervical cancer declined by an average of 6.3% per annum between 1992 and 1997 (Figure 17). This decline was achieved despite a sharp rise in new cases between 1993 and 1994. Mortality rates have fallen by an average of 3.8% per year since 1992. Some of the decline in incidence and mortality from cancer of the cervix can be attributed to the population-based cervical screening program.

The incidence rates for cancer of the uterus have fluctuated from year to year, resulting in an average annual rise of 0.1% between 1992 and 1997. Mortality rates remained relatively stable between 1983 and 1997 (Figure 17).

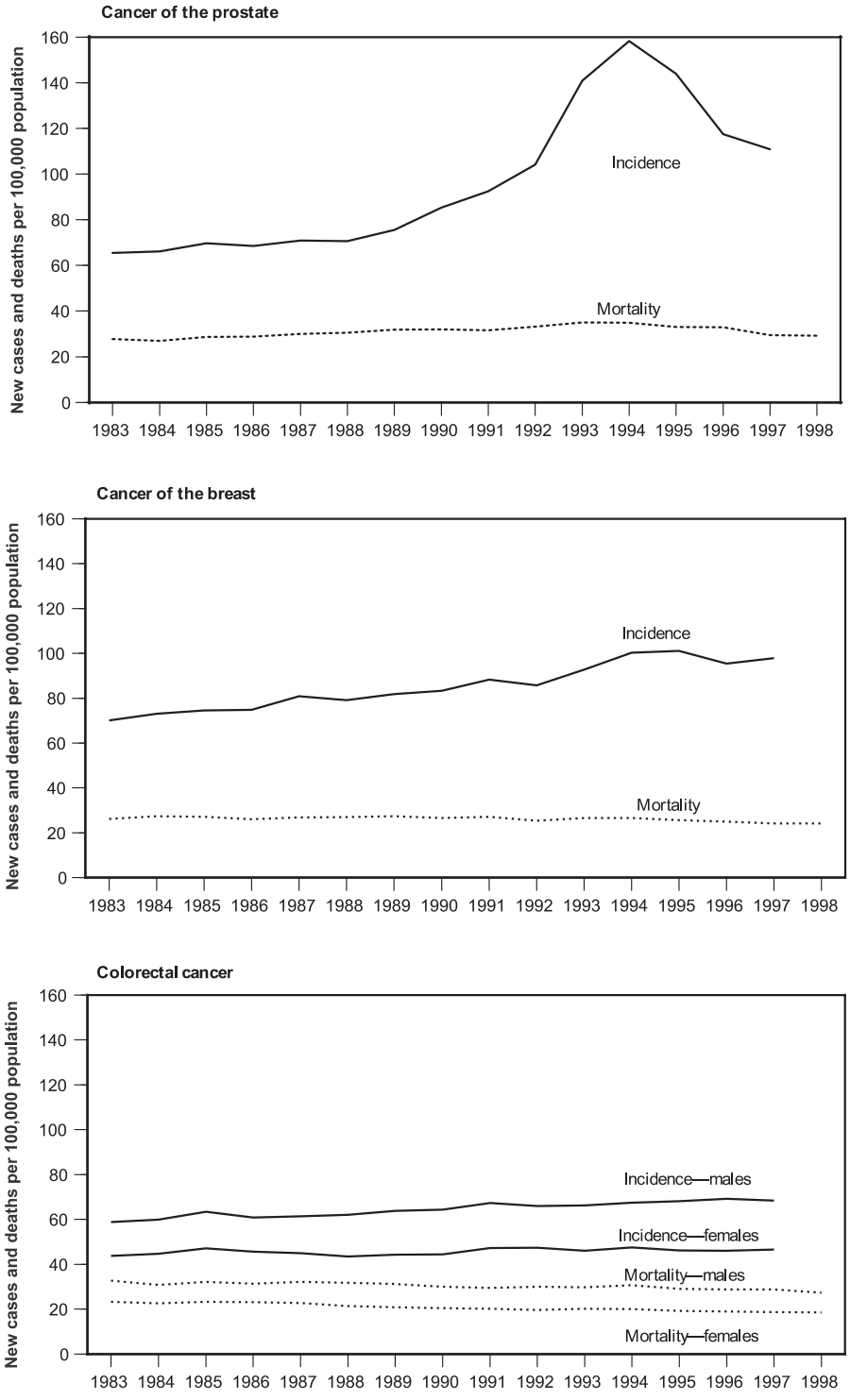
The incidence and mortality rates for cancer of the ovary have changed little since 1983 (Figure 17).

Between 1992 and 1997, male incidence and mortality rates for cancer of the kidney increased marginally by an average of 1.2% and 0.5% per annum respectively. Female rates declined by similar amounts, 0.5% and 1.5% per annum (Figure 18).

The incidence of testicular cancer has increased steadily by an average of 2.0% per annum since 1992 (Figure 18). Despite the increase in the incidence rate, the mortality rate for cancer of the testis remains low.

'Cancers of unknown primary site' is a category that captures cancer diagnoses which cannot be attributed to a particular body site. While some of these cancers have common features, at least in terms of aetiology, behaviour and outcome, others are a mixed collection. This makes it difficult to interpret with certainty the patterns of these cancers, particularly for mortality where often little histological evidence is available to identify a cancer site, and therefore an accumulation of cancers occurs in this category. However, given that this cancer group represents approximately 4% of new cases and 7% of deaths it is important to know the current trends. Mortality rates remained fairly steady from 1983 to 1997. Between 1983 and 1990 there was little variation in incidence for both sexes; however, since 1992, both male and female rates have shown an average annual decline of 1.6% (Figure 18).

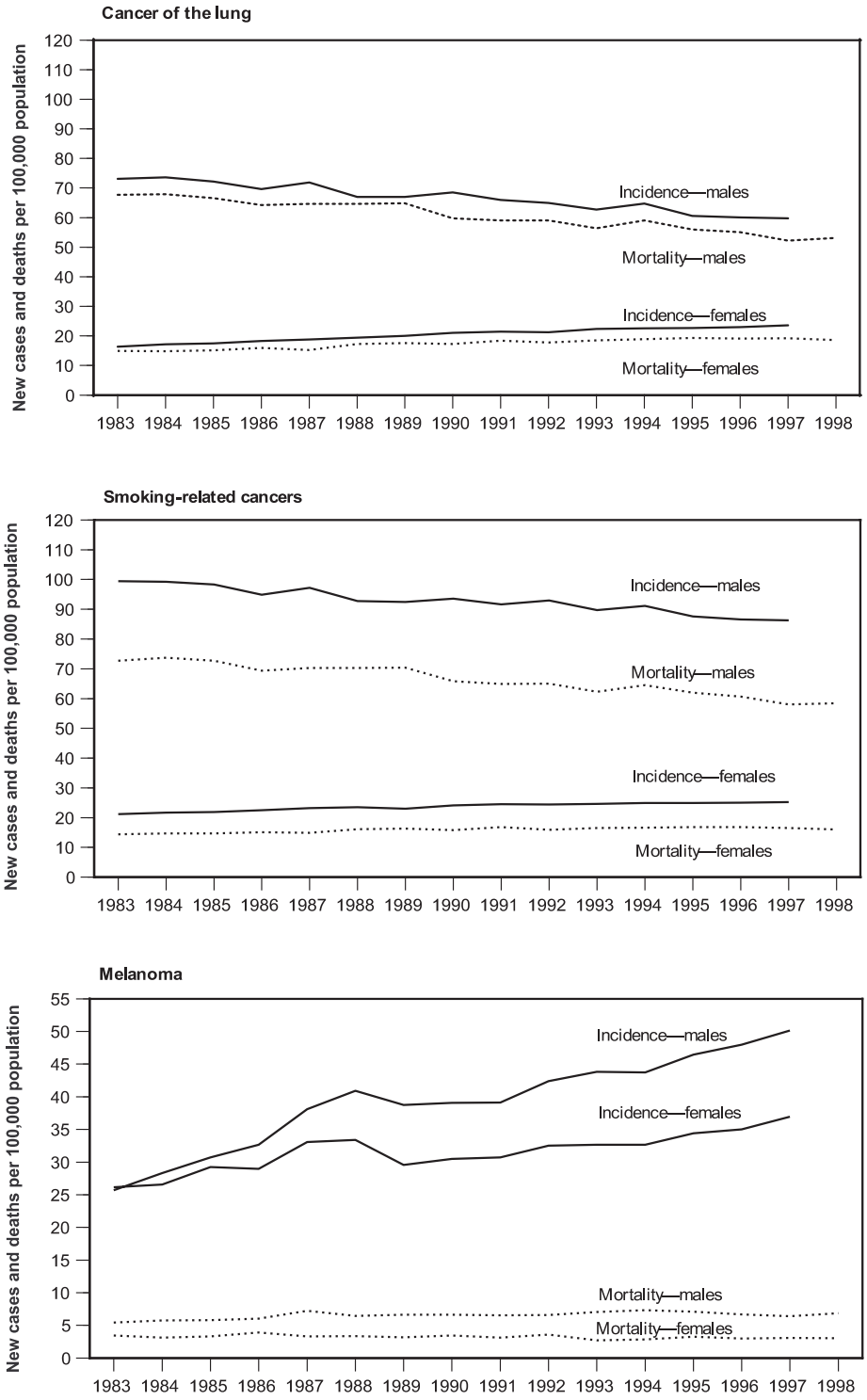
Cancers of the prostate and breast, and colorectal cancer



Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 13: Trends in age-standardised incidence and mortality rates for cancers of the prostate and breast, and colorectal cancer, Australia, 1983–1998

Cancer of the lung, melanoma and smoking-related cancers

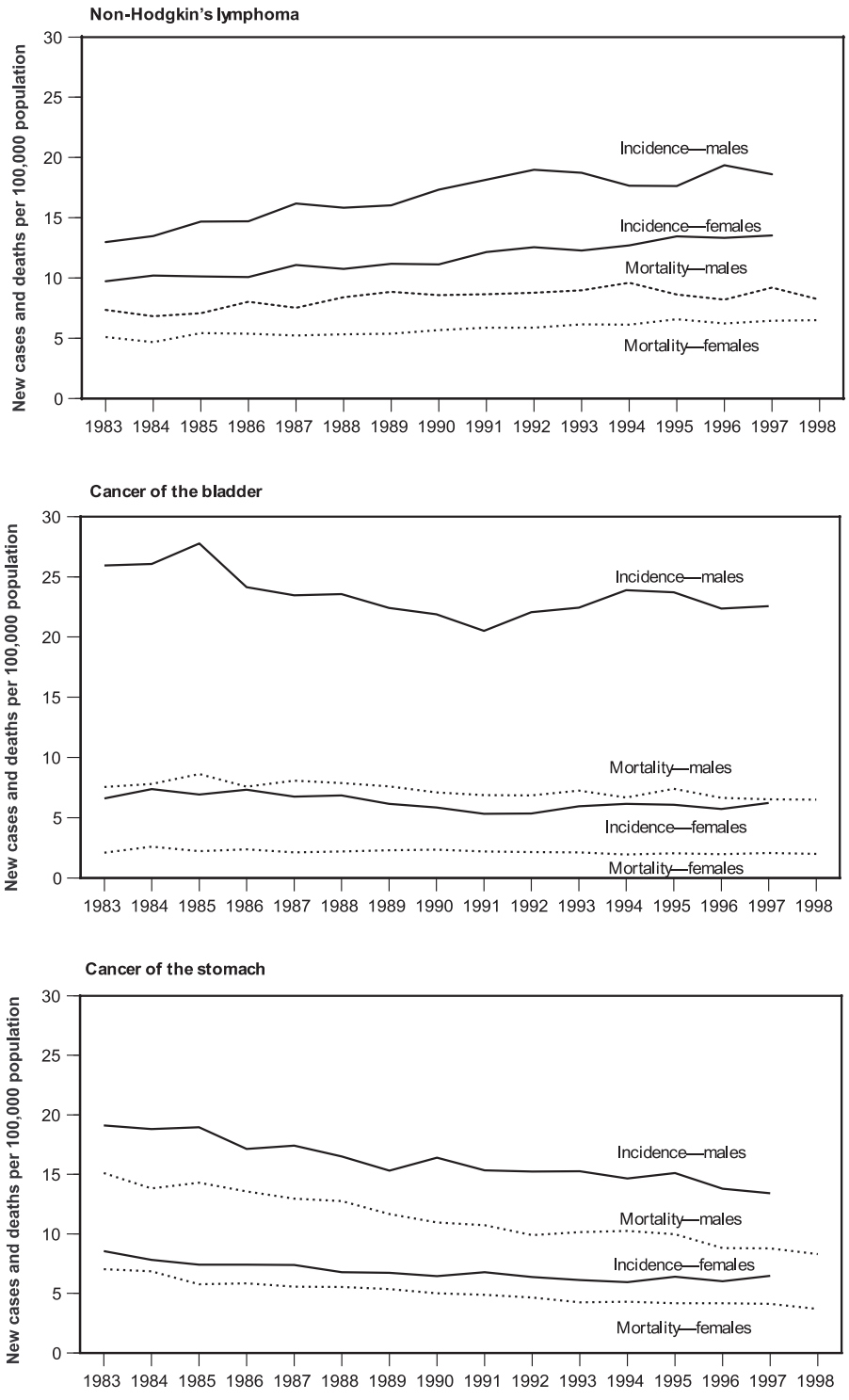


Note: Melanoma is graphed on a different scale to cancer of the lung and smoking-related cancers.

Source: *Cancer in Australia 1997*, AIHW & AACR 2000.

Figure 14: Trends in age-standardised incidence and mortality rates for cancer of the lung, smoking-related cancers and melanoma, Australia, 1983–1998

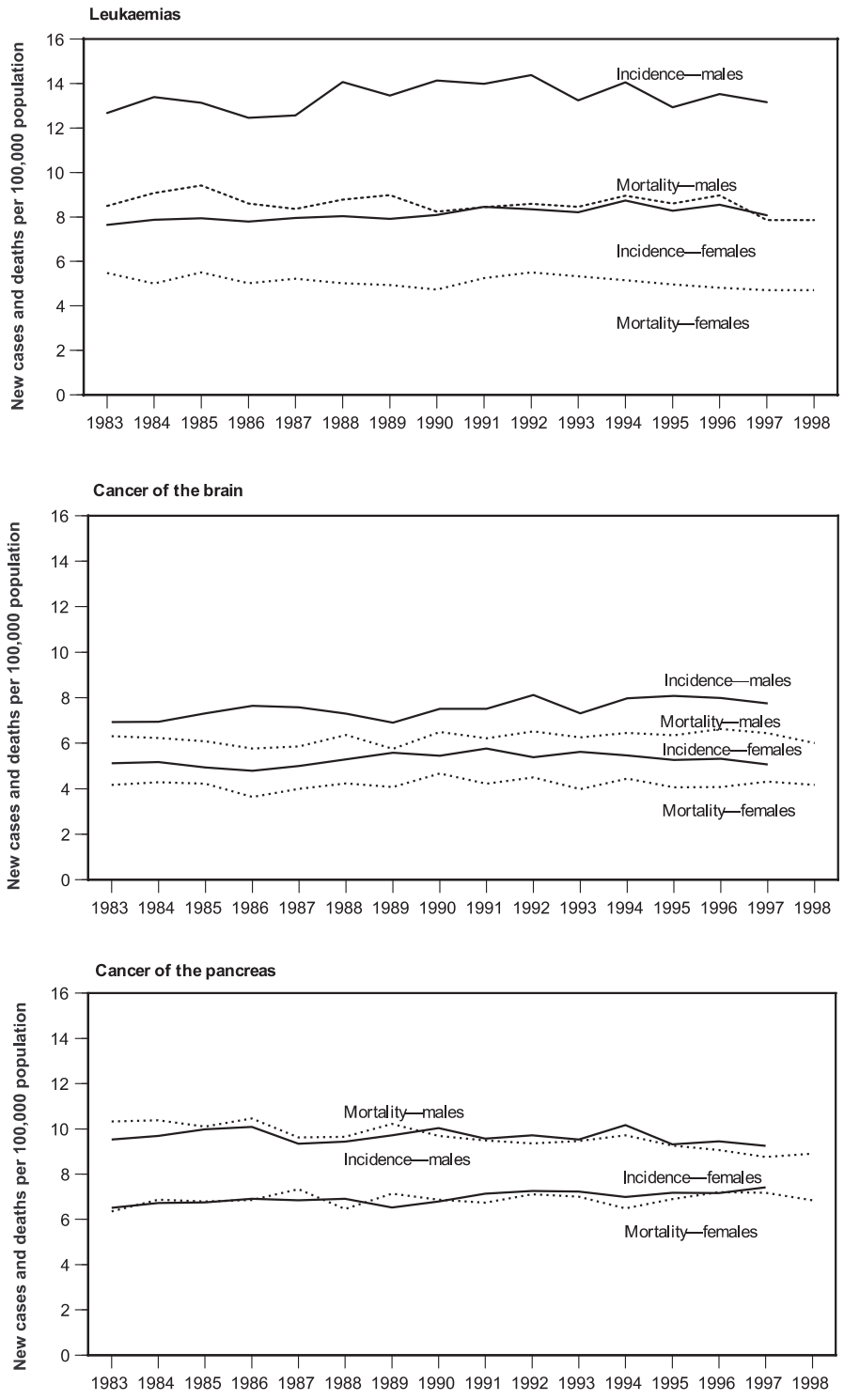
Non-Hodgkin's lymphoma, and cancers of the bladder and stomach



Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 15: Trends in age-standardised incidence and mortality rates for non-Hodgkin's lymphoma, and cancers of the bladder and stomach, Australia, 1983–1998

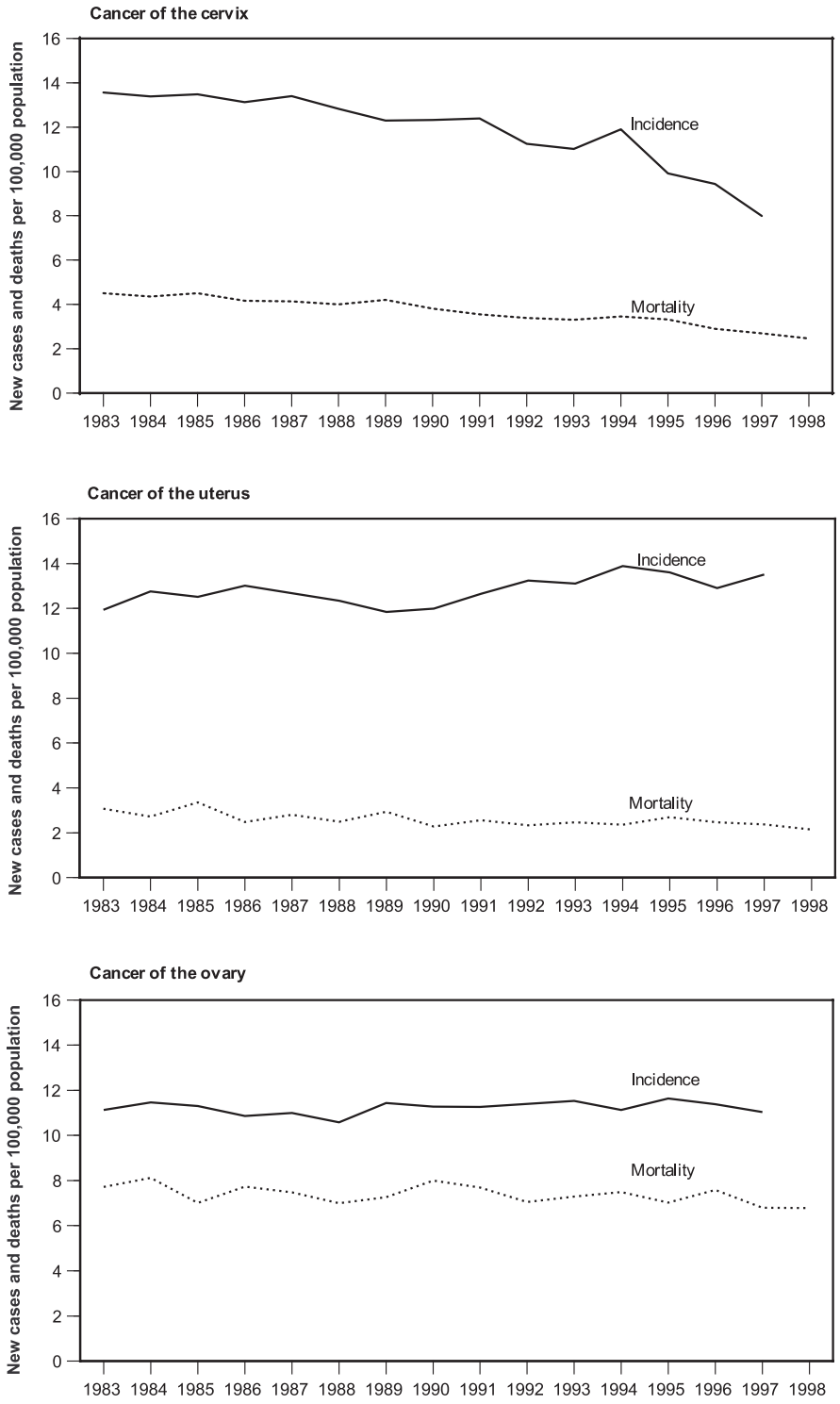
Leukaemias, and cancers of the brain and pancreas



Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 16: Trends in age-standardised incidence and mortality rates for leukaemias and cancers of the brain and pancreas, Australia, 1983–1998

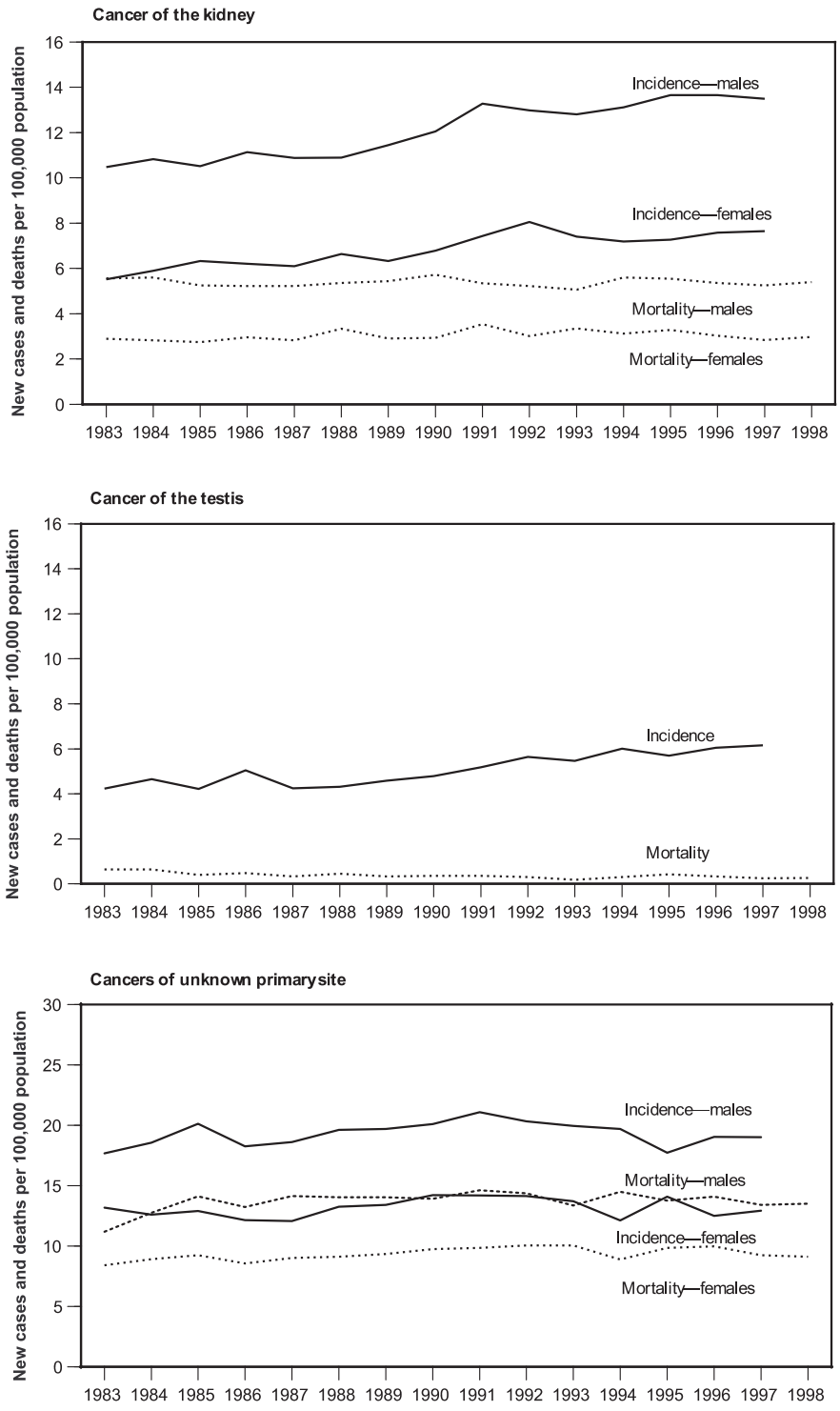
Cancers of the cervix, uterus and ovary



Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 17: Trends in age-standardised incidence and mortality rates for cancers of the cervix, uterus and ovary, Australia, 1983–1998

Cancers of the kidney and testis, and cancers of unknown primary site



Note: Cancers of unknown primary site is graphed on a different scale to cancers of the kidney and testis.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Figure 18: Trends in age-standardised incidence and mortality rates for cancers of the kidney and testis, and cancers of unknown primary site, Australia, 1983–1998

1998 and 1999 incidence data

While 1997 incidence data are the latest national data, some States and Territories have released data for 1998—the Northern Territory—and data for 1999—Western Australia, South Australia and Tasmania (preliminary). These four jurisdictions account for approximately 20% of new cancer cases. The number of new cases for the three States with 1999 data have been combined (Table 4) and age-standardised rates calculated (Table 5). The incidence trends for these jurisdictions for the period 1997–1999 may be early indicators for the nation.

Only the ten most frequently occurring cancers in Australia have been analysed. The key findings in relation to the 1998 and 1999 data for Western Australia, South Australia and Tasmania combined are as follows:

- the incidence rates for all cancers combined remained fairly constant;
- there is no evidence of significant change in the rates for most of the more common cancers, including female breast and colorectal cancer;
- prostate cancer rates declined steadily until 1997 and appear to have stabilised since then;
- melanoma rates increased for males and females;
- male lung cancer rates continued to decline;
- male and female rates for cancers of unknown primary site increased;
- female pancreas rates declined; and
- male kidney rates increased.

Table 4: Number of new cases for all cancers combined and most frequently occurring cancers, Western Australia, South Australia and Tasmania combined, 1993–1999 [(a) (b)]

Cancer site	1993	1994	1995	1996	1997	1998	1999
Males							
All cancers	8,394	9,412	9,137	8,825	8,510	8,482	8,984
Prostate	2,470	3,141	2,896	2,250	2,057	1,954	2,140
Colorectal	1,060	1,118	1,138	1,247	1,216	1,213	1,262
Lung	1,000	1,146	1,049	1,138	1,096	1,097	1,057
Melanoma	695	796	835	804	819	792	924
Bladder	291	294	305	291	296	293	309
NHL	276	293	275	337	325	354	364
Unknown site	329	359	297	302	326	330	372
Kidney	181	210	218	244	212	253	289
Stomach	257	258	271	243	223	231	259
Lip	233	173	183	205	178	191	169
Females							
All cancers	6,525	6,849	7,237	7,030	7,230	7,412	7,575
Breast	1,817	1,955	2,106	1,937	2,047	2,164	2,187
Colorectal	931	954	1,017	1,052	1,046	1,047	1,105
Melanoma	661	715	732	662	694	682	784
Lung	438	462	478	494	544	504	526
Unknown site	288	270	322	296	266	315	342
NHL	243	241	279	278	335	302	300
Uterus	237	258	271	279	270	286	271
Ovary	210	210	225	222	205	199	226
Pancreas	134	154	160	171	203	187	134
Kidney	129	132	115	150	148	148	167
Persons							
All cancers	14,919	16,261	16,374	15,855	15,740	15,894	16,559
Colorectal	1,991	2,072	2,155	2,299	2,262	2,260	2,367
Breast	1,831	1,972	2,121	1,953	2,062	2,175	2,205
Prostate	2,470	3,141	2,896	2,250	2,057	1,954	2,140
Melanoma	1,356	1,511	1,567	1,466	1,513	1,474	1,708
Lung	1,438	1,608	1,527	1,632	1,640	1,601	1,583
Unknown site	617	629	619	598	592	645	714
NHL	519	534	554	615	660	656	664
Bladder	386	390	404	361	403	402	417
Kidney	310	342	333	394	360	401	456
Stomach	390	396	406	388	377	366	392

(a) The most frequent cancers in this table are based on the 1997 national ranking of the most frequently occurring cancers.

(b) Non-melanocytic skin cancer, known to be the most common cancer type, is excluded from this list, as it is not a registrable cancer.

Note: NHL refers to non-Hodgkin's lymphoma.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 5: Age-standardised incidence rates for all cancers combined and the most frequently occurring cancers, Western Australia, South Australia and Tasmania combined, 1993–1999 [a] [b] [c]

Cancer site	1993	1994	1995	1996	1997	1998	1999
Males							
All cancers	506.5	555.6	524.9	494.7	466.7	453.2	468.7
Prostate	154.4	189.2	169.0	128.3	114.8	106.0	113.0
Colorectal	63.6	65.8	65.4	69.6	66.5	64.9	66.0
Lung	60.2	67.9	60.6	64.1	60.5	59.0	55.6
Melanoma	40.0	44.9	46.2	43.8	43.2	41.1	47.5
Bladder	17.9	18.0	18.2	16.8	16.6	16.1	16.5
NHL	16.2	16.9	15.4	18.8	17.4	18.7	18.6
Unknown site	20.2	21.5	17.5	17.4	18.1	17.9	19.6
Kidney	10.6	12.1	12.3	13.5	11.4	13.2	14.9
Stomach	15.7	15.6	15.8	13.7	12.3	12.4	13.6
Lip	13.5	9.9	10.2	11.1	9.7	10.0	8.6
Females							
All cancers	330.8	341.2	352.7	333.3	335.9	337.7	337.2
Breast	94.5	99.8	104.6	94.2	97.3	101.4	99.8
Colorectal	45.4	46.0	47.3	47.8	46.4	45.7	46.9
Melanoma	34.7	36.9	37.4	33.2	34.2	32.9	36.9
Lung	22.0	22.7	23.2	23.2	25.4	22.6	23.0
Unknown site	13.5	12.4	14.4	12.8	11.3	13.1	14.0
NHL	12.2	11.9	13.6	13.3	15.4	13.6	13.2
Uterus	12.1	13.2	13.5	13.2	12.9	13.1	12.4
Ovary	10.8	10.5	11.2	10.6	9.6	9.2	10.0
Pancreas	6.3	7.2	7.1	7.4	8.6	8.0	5.4
Kidney	6.5	6.7	5.6	6.9	6.7	6.8	7.6
Persons							
All cancers	403.1	431.3	425.8	402.4	390.4	386.0	393.0
Colorectal	53.7	54.9	55.5	57.8	55.6	54.3	55.5
Prostate	49.5	52.3	54.9	49.3	50.8	52.6	52.0
Breast	66.5	83.3	75.6	57.5	51.3	47.5	51.1
Melanoma	36.9	40.3	41.3	37.7	38.2	36.4	41.6
Lung	39.0	42.6	39.7	41.4	40.8	39.0	37.5
NHL	16.5	16.5	15.8	14.8	14.3	15.2	16.5
Unknown site	14.0	14.1	14.5	15.6	16.3	16.0	15.7
Bladder	10.4	10.3	10.3	9.1	9.7	9.6	9.7
Kidney	8.4	9.1	8.7	10.0	8.9	9.7	10.9
Stomach	10.5	10.4	10.5	9.7	9.2	8.7	9.1

(a) Rates are expressed per 100,000 population and age-standardised to the Australian 1991 Population.

(b) The most frequent cancers in this table are based on the 1997 national ranking of the most frequently occurring cancers.

(c) Non-melanocytic skin cancer, known to be the most common cancer type, is excluded from this list, as it is not a registrable cancer.

Note: NHL refers to non-Hodgkin's lymphoma.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

4 Incidence and mortality tables

Guide to interpreting incidence and mortality tables

This section provides information to assist in the interpretation of the tables in this report. More detailed information on methods is given in Appendix B.

Table features

- Tables are ordered according to the International Classification of Diseases
- All rates are presented per 100,000 population.
- Age-standardised rates are calculated by the 'direct method'. Age-standardised rates for Australia use both the total 1991 Australian population and the World Standard Population as the standard populations. Age-standardised rates for the States and Territories use only the total 1991 Australian population as the standard population. **Therefore, particular care should be taken not to compare these State and Territory rates with previous Cancer Series publications—*Cancer in Australia 1989–1990 (with Projections to 1995)*, *Cancer in Australia 1986–1988* or *Cancer in Australia 1983–1985*— where age-standardisation used the World Standard Population.**
- The person-years of life lost (PYLL) and lifetime risk estimates are for the ages 0–74.
- The confidence intervals used for crude and age-standardised rates are at the 95% level.
- The 'all cancers' incidence and mortality estimates exclude non-melanocytic skin cancers.
- In this publication the term 'cancer site' is used to represent cancers located in specific organs or tissues as well as systemic cancers such as leukaemia and lymphoma.
- In this publication the term 'melanoma' refers to melanoma of the skin only. Melanomas generally occur on the skin, but may also occur on the eye and mucous membranes (such as the vagina and nasal cavities).

Comparison of rates

Care should be exercised when interpreting a comparison between incidence or mortality rates: for example, when comparing different cancers or when comparing the same cancer in different years. The confidence intervals indicate the likely range of fluctuation of each rate. Some fluctuations may be within expectations, while others may indicate a change in the patterns of cancer incidence or mortality. Where small annual numbers of cancer cases or deaths are presented in a table, a direct comparison may produce a false perception of dramatic changes over time and, in these instances, averages over a period of time should be used. In general, cancer incidence and mortality rates change relatively slowly over time,

although from year to year there may be marked fluctuations due to significant changes in diagnostic procedures or changes over the longer term may reflect changing exposures to risk factors.

Combining rates

- Age-specific rates may be summed over cancer sites for a particular age and sex.
- Age-specific rates may not be summed across different ages or sexes, but should be recalculated from the raw data. However, if populations are similar, the crude rates for a 10-year age group will be approximated by the average of the two 5-year age-specific rates. For comparison within broader age groups, summary rates should be age-standardised.

State and Territory data

Cancer incidence data are available to 1997 for all States and Territories, to 1998 for the Northern Territory, and to 1999 for Tasmania, South Australia and Western Australia.

The Australian data are presented as annual numbers and rates, while the data for each State and Territory are presented as average annual rates and numbers of cases and deaths based on the 5-year average 1993–1997. By presenting the data in this manner, natural statistical variation due to small numbers of cases or deaths within each State and Territory and cancer site are averaged across the period and provide a more stable and representative rate of incidence or mortality. Nonetheless, care should be taken in the interpretation of these rates, especially for less common cancers or for States and Territories with small populations.

All numbers of cases or deaths in the State and Territory tables are rounded to the nearest integer. Occasionally, the number of cases or deaths will be zero but a small corresponding rate will appear. This indicates that there were, on average, fewer than 0.5 cases or deaths per year over the 5-year period and, although the rounding process has made the entry zero, a rate can still be presented at one decimal point.

The data in this report will not correspond exactly to data published by the individual State and Territory cancer registries due to the 5-year annual averaging, the use of different standard populations for age-standardisation and the continual updating of data sets by the cancer registries.

In this report, State and Territory incidence and mortality rates have been directly age-standardised to the total estimated resident population of Australia at 30 June 1991. Care should be taken not to compare these State and Territory age-standardised rates with previous Cancer Series publications—*Cancer in Australia 1989–1990 (with Projections to 1995), Cancer in Australia 1986–1988* or *Cancer in Australia 1983–1985*—where age-standardisation was done using the World Standard Population. However, the NCSCH is able to provide State and Territory rates that have been age-standardised to the World Standard Population on request or the registries can be contacted directly.

Cancer incidence estimates provided in this publication were made at September 2000. These estimates may be updated at any time as case details are added, modified or deleted in the national database. These modifications may occur several years after the initial diagnosis as additional case details are received by the State and Territory cancer registries from data suppliers and then passed to the NCSCH. This may have the impact of making incidence estimates for the same year incompatible between publications, but for the most part these changes are very small.

Summary tables
1997

Table 6: Incidence summary table, 1997

Australia 1997		Males					Females			
ICD-9	Cancer site	Number	AS Rate (Aust 1991)	AS Rate (World)	Cum. rate per cent	Sex ratio M:F	Number	AS Rate (Aust 1991)	AS Rate (World)	Cum. rate per cent
140–208	All cancers (excluding NMSC)	43,242	482.7	346.7	41.1	1.4	36,296	344.2	267.1	29.7
140	Lip	855	9.4	7.1	0.8	3.2	328	2.9	2.1	0.2
141	Tongue	280	3.0	2.4	0.3	1.9	166	1.6	1.2	0.1
142	Salivary gland	133	1.5	1.1	0.1	1.9	79	0.8	0.6	0.1
143	Gum	34	0.4	0.3	0.0	1.2	35	0.3	0.2	0.0
144	Floor of mouth	132	1.4	1.2	0.1	3.6	41	0.4	0.3	0.0
145	Other mouth	142	1.5	1.2	0.1	1.7	96	0.9	0.7	0.1
146	Oropharynx	180	1.9	1.6	0.2	3.7	54	0.5	0.4	0.0
147	Nasopharynx	68	0.7	0.6	0.1	2.6	26	0.3	0.2	0.0
148	Hypopharynx	135	1.5	1.1	0.2	6.0	25	0.2	0.2	0.0
149	Other lip, oral cavity and pharynx	56	0.6	0.5	0.1	4.7	14	0.1	0.1	0.0
141–149	Head and neck	1,160	12.5	9.9	1.2	2.4	536	5.1	4.0	0.5
150	Oesophagus	638	7.2	5.0	0.6	2.4	344	3.0	2.0	0.2
151	Stomach	1,193	13.4	9.2	1.1	2.1	726	6.5	4.5	0.5
152	Small intestine	115	1.3	0.9	0.1	1.6	80	0.8	0.6	0.1
153	Colon	3,694	41.4	28.9	3.5	1.3	3,515	31.9	22.4	2.6
154	Rectum	2,445	27.0	19.9	2.5	1.8	1,591	14.7	10.8	1.3
153–154	Colorectal	6,139	68.4	48.8	6.0	1.5	5,106	46.6	33.2	3.9
155	Liver	436	4.9	3.6	0.5	3.5	151	1.4	1.0	0.1
156	Gallbladder	267	3.0	2.0	0.2	1.0	327	3.0	2.0	0.2
157	Pancreas	821	9.2	6.3	0.7	1.2	844	7.4	5.0	0.5
158	Peritoneum	51	0.6	0.5	0.1	0.8	69	0.7	0.5	0.1
159	Other digestive organs	48	0.6	0.4	0.0	1.3	51	0.4	0.3	0.0
160	Nasal cavity	82	0.9	0.7	0.1	1.9	52	0.5	0.3	0.0
161	Larynx	516	5.6	4.3	0.6	8.2	70	0.7	0.5	0.1
162	Lung	5,322	59.8	41.3	5.2	2.5	2,497	23.5	17.3	2.2
163	Pleura	382	4.3	3.0	0.4	6.2	75	0.7	0.5	0.1
164	Other respiratory organs	35	0.4	0.3	0.0	1.4	28	0.3	0.2	0.0
170	Bone	111	1.2	1.1	0.1	1.7	70	0.7	0.7	0.1
171	Connective tissue	347	3.9	3.1	0.3	1.5	264	2.5	2.1	0.2
172	Skin—melanoma	4,649	50.1	39.3	4.4	1.4	3,717	37.0	30.5	3.1
173	Skin—non-melanocytic (NMSC)*									
174–175	Breast	70	0.8	0.5	0.1	<0.01	10,096	97.9	80.2	9.1
180	Cervix						795	8.0	6.5	0.6
181	Placenta						4	0.0	0.0	0.0
179+182	Uterus						1,395	13.5	10.7	1.3
183	Ovary						1,151	11.0	8.8	1.0
184	Other female genital organs						302	2.7	1.9	0.2
#	Gynaecological						3,643	35.2	28.0	3.1
185	Prostate	9,725	110.9	74.5	9.4					
186	Testis	566	6.2	5.4	0.4					
187	Penis & other male genital organs	78	0.9	0.6	0.1					
188	Bladder	1,986	22.6	15.1	1.8	3.6	695	6.2	4.2	0.5
189	Kidney	1,229	13.5	10.2	1.2	1.8	818	7.7	5.8	0.6
190	Eye	149	1.6	1.3	0.1	1.8	99	0.9	0.8	0.1
191	Brain	717	7.8	6.6	0.7	1.5	512	5.1	4.3	0.4
192	Other nervous system	31	0.3	0.3	0.0	0.8	39	0.4	0.4	0.0
193	Thyroid	230	2.5	2.1	0.2	0.4	630	6.4	5.5	0.5
194	Other endocrine	47	0.5	0.6	0.0	1.3	37	0.4	0.4	0.0
195–199	Unknown primary site	1,680	19.0	12.9	1.4	1.5	1,489	12.9	8.6	0.9
200+202	Non-Hodgkin's lymphoma	1,687	18.6	14.0	1.5	1.4	1,450	13.5	10.2	1.2
201	Hodgkin's disease	208	2.3	2.1	0.2	1.1	191	2.1	1.9	0.2
200–202	Lymphoma	1,895	20.9	16.1	1.7	1.3	1,641	15.6	12.1	1.3
203	Multiple myeloma	498	5.6	3.9	0.5	1.5	408	3.7	2.7	0.3
204	Lymphatic leukaemia	507	5.7	4.6	0.4	1.7	335	3.2	3.0	0.3
205	Myeloid leukaemia	583	6.5	4.8	0.5	1.5	448	4.2	3.3	0.3
206	Monocytic leukaemia	8	0.1	0.1	0.0	0.9	11	0.1	0.1	0.0
207–208	Other and unspecified leukaemia	76	0.9	0.6	0.1	1.8	56	0.5	0.3	0.0
204–208	Leukaemia	1,174	13.2	10.0	1.0	1.6	850	8.1	6.7	0.6
#	Alcohol-related	366	3.9	3.3	0.4	1.2	322	3.2	2.7	0.3
#	Smoking-related	7,763	86.3	62.1	7.7	3.4	2,628	25.2	19.2	2.4

Note: Rates are expressed per 100,000 population and age-standardised (AS Rate) to both the Australian 1991 Population Standard and the World Standard Population.

* Non-melanocytic skin cancer incidence data are not routinely collected by State and Territory cancer registries.

See Appendix A for ICD-9 codes.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 7: Mortality summary table, 1997

Australia 1997		Males					Females			
ICD-9	Cancer site	Number	AS Rate (Aust 1991)	AS Rate (World)	PYLL (<75 yrs)	Sex ratio M:F	Number	AS Rate (Aust 1991)	AS Rate (World)	PYLL (<75 yrs)
140–208	All cancers (excluding NMSC)	19,058	217.3	145.1	139,948	1.6	14,908	133.9	94.9	121,255
140	Lip	17	0.2	0.1	190	7.7	3	0.0	0.0	40
141	Tongue	97	1.1	0.8	1,073	2.2	50	0.5	0.3	503
142	Salivary gland	34	0.4	0.2	255	3.2	15	0.1	0.1	88
143	Gum	14	0.2	0.1	103	3.4	6	0.0	0.0	25
144	Floor of mouth	30	0.3	0.3	360	1.9	20	0.2	0.1	148
145	Other mouth	28	0.3	0.2	250	1.6	23	0.2	0.1	128
146	Oropharynx	97	1.1	0.8	1,170	4.7	24	0.2	0.2	113
147	Nasopharynx	45	0.5	0.4	790	2.6	19	0.2	0.1	245
148	Hypopharynx	68	0.7	0.5	620	6.4	11	0.1	0.1	78
149	Other lip, oral cavity and pharynx	22	0.2	0.2	180	3.6	8	0.1	0.0	20
141–149	Head and neck	435	4.8	3.6	4,800	3.0	176	1.6	1.2	1,345
150	Oesophagus	652	7.3	5.1	5,305	3.0	292	2.4	1.6	1,133
151	Stomach	768	8.8	5.7	5,285	2.1	476	4.1	2.8	2,908
152	Small intestine	33	0.4	0.3	273	1.2	35	0.3	0.2	293
153	Colon	1,869	21.2	14.3	13,343	1.5	1,662	14.6	10.0	9,985
154	Rectum	675	7.6	5.3	5,158	1.8	472	4.1	2.9	3,088
153–154	Colorectal	2,544	28.8	19.6	18,500	1.5	2,134	18.7	12.8	13,073
155	Liver	446	5.0	3.6	3,970	2.6	210	1.9	1.3	1,350
156	Gallbladder	131	1.5	0.9	655	0.8	219	2.0	1.3	1,218
157	Pancreas	773	8.8	5.8	5,225	1.2	830	7.2	4.7	4,025
158	Peritoneum	25	0.3	0.2	203	0.8	37	0.3	0.2	220
159	Other digestive organs	123	1.4	0.9	655	1.2	146	1.2	0.8	733
160	Nasal cavity	24	0.3	0.2	185	5.2	7	0.1	0.0	8
161	Larynx	223	2.5	1.8	1,868	7.9	35	0.3	0.2	215
162	Lung	4,615	52.2	35.3	29,773	2.7	2,068	19.2	13.7	14,805
163	Pleura	219	2.5	1.7	1,575	6.3	44	0.4	0.3	425
164	Other respiratory organs	23	0.3	0.2	360	1.5	18	0.2	0.1	240
170	Bone	67	0.8	0.6	1,863	2.5	31	0.3	0.2	673
171	Connective tissue	113	1.3	1.0	1,760	1.3	98	0.9	0.8	1,570
172	Skin—melanoma	580	6.4	4.6	6,690	2.1	330	3.1	2.3	4,438
173	Skin—non-melanocytic (NMSC)	227	2.7	1.7	1,185	3.6	97	0.7	0.4	285
174–175	Breast	16	0.2	0.1	55	<0.01	2,596	24.2	18.6	31,453
180	Cervix						291	2.7	2.0	3,693
181	Placenta						1	0.0	0.0	43
179+182	Uterus						271	2.4	1.6	1,605
183	Ovary						740	6.8	4.9	6,233
184	Other female genital organs						81	0.7	0.4	243
#	Gynaecological						1,383	12.5	9.0	11,773
185	Prostate	2,449	29.4	16.5	6,008					
186	Testis	23	0.2	0.2	620					
187	Penis & other male genital organs	10	0.1	0.1	93					
188	Bladder	554	6.5	4.0	2,398	3.2	253	2.1	1.3	793
189	Kidney	467	5.2	3.7	3,913	1.8	329	2.8	1.8	1,548
190	Eye	21	0.2	0.2	195	1.7	16	0.1	0.1	145
191	Brain	592	6.4	5.1	9,415	1.5	442	4.3	3.5	7,350
192	Other nervous system	13	0.1	0.1	200	1.6	10	0.1	0.1	125
193	Thyroid	34	0.4	0.3	268	1.2	37	0.3	0.2	248
194	Other endocrine	27	0.3	0.3	1,050	1.3	23	0.2	0.2	778
195–199	Unknown primary site	1,171	13.4	8.7	7,998	1.4	1,084	9.2	6.0	5,855
200+202	Non-Hodgkin's lymphoma	815	9.2	6.3	7,918	1.4	725	6.4	4.4	4,995
201	Hodgkin's disease	49	0.5	0.4	755	2.5	24	0.2	0.1	203
200–202	Lymphoma	864	9.8	6.7	8,673	1.5	749	6.7	4.5	5,198
203	Multiple myeloma	320	3.7	2.4	1,955	1.5	268	2.4	1.6	1,415
204	Lymphatic leukaemia	225	2.6	1.8	3,033	1.9	159	1.4	1.1	2,293
205	Myeloid leukaemia	432	4.9	3.4	4,670	1.6	342	3.1	2.2	3,288
206	Monocytic leukaemia	5	0.1	0.0	8	1.0	7	0.1	0.0	60
207–208	Other and unspecified leukaemia	24	0.3	0.2	268	1.7	20	0.2	0.1	188
204–208	Leukaemia	686	7.9	5.4	7,978	1.7	528	4.7	3.5	5,828
#	Alcohol-related	217	2.3	1.9	2,699	2.4	101	1.0	0.8	1,232
#	Smoking-related	5,149	58.1	39.9	36,455	3.5	1,760	16.5	12.1	14,208

Note: Rates are expressed per 100,000 population and age-standardised (AS Rate) to both the Australian 1991 Population Standard and the World Standard Population.

See Appendix A for ICD-9 codes.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Tables for selected cancers 1997

- Tables of new cases, deaths, incidence and mortality rates for Australia and the States and Territories for selected cancers.
- Tables for other cancer sites can be found on the Institute's web site at <http://www.aihw.gov.au> or can be requested in hard copy from the Institute.

Table 8: All cancers (excluding non-melanocytic skin cancer) (ICD 140–172, 174–208)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	144	21.7	131	20.8	275	21.3	31	4.7	14	2.2	45	3.5
5–9	87	12.9	45	7.0	132	10.0	24	3.6	30	4.7	54	4.1
10–14	93	13.8	76	11.9	169	12.9	21	3.1	17	2.7	38	2.9
15–19	160	24.1	144	22.8	304	23.5	34	5.1	26	4.1	60	4.6
20–24	295	42.3	272	40.3	567	41.3	43	6.2	26	3.9	69	5.0
25–29	460	63.2	517	71.3	977	67.3	67	9.2	56	7.7	123	8.5
30–34	578	81.4	784	109.8	1,362	95.6	86	12.1	118	16.5	204	14.3
35–39	761	103.2	1,258	169.8	2,019	136.6	134	18.2	217	29.3	351	23.7
40–44	1,079	156.7	1,828	264.1	2,907	210.6	273	39.7	349	50.4	622	45.1
45–49	1,710	263.2	2,659	415.4	4,369	338.8	502	77.3	600	93.7	1,102	85.4
50–54	2,545	456.5	3,169	591.0	5,714	522.5	878	157.5	828	154.4	1,706	156.0
55–59	3,587	828.7	3,106	739.9	6,693	785.0	1,255	290.0	1,003	238.9	2,258	264.8
60–64	4,962	1,376.9	3,407	938.9	8,369	1,157.2	1,958	543.3	1,240	341.7	3,198	442.2
65–69	6,801	2,020.9	4,136	1,175.9	10,937	1,589.1	2,803	832.9	1,777	505.2	4,580	665.5
70–74	7,721	2,746.8	4,476	1,363.3	12,197	2,001.5	3,520	1,252.3	2,251	685.6	5,771	947.0
75–79	5,945	3,131.2	4,258	1,665.1	10,203	2,289.8	3,175	1,672.3	2,204	861.9	5,379	1,207.2
80–84	3,914	3,607.5	3,228	1,803.7	7,142	2,484.5	2,435	2,244.3	1,984	1,108.6	4,419	1,537.3
85 and over	2,400	3,750.7	2,802	1,879.1	5,202	2,441.1	1,819	2,842.7	2,168	1,453.9	3,987	1,871.0
Total	**43,242**		**36,296**		**79,538**		**19,058**		**14,908**		**33,966**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	469.3		389.9		429.4		206.8		160.1		183.4	
95% CI	464.9 – 473.7		385.9 – 393.9		426.4 – 432.4		203.9 – 209.8		157.6 – 162.7		181.4 – 185.3	
AS Rate (Aust 1991)	482.7		344.2		402.7		217.3		133.9		169.1	
95% CI	478.1 – 487.3		340.6 – 347.8		399.9 – 405.5		214.2 – 220.4		131.7 – 136.1		167.3 – 170.9	
AS Rate (World)	346.7		267.1		301.4		145.1		94.9		116.8	
95% CI	343.4 – 350.1		264.2 – 270.1		299.2 – 303.7		143.0 – 147.3		93.2 – 96.6		115.5 – 118.1	
Lifetime risk (0–74)	1 in 3		1 in 4		1 in 3		1 in 7		1 in 10		1 in 8	
PYLL (0–74)							139,948		121,255		261,203	
Per cent of all cancers	100.0		100.0		100.0		100.0		100.0		100.0	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	14,854	487.5	11,761	333.4	26,615	402.4	6,444	216.2	4,983	133.3	11,427	170.0
Vic	10,625	491.4	8,935	342.6	19,560	404.1	4,916	231.9	3,988	144.2	8,903	180.8
Qld	8,003	535.3	6,208	361.5	14,211	437.5	3,329	229.6	2,340	131.9	5,670	174.4
WA	3,763	503.1	2,946	334.0	6,709	406.8	1,626	226.0	1,248	138.1	2,874	175.3
SA	3,864	507.1	3,073	339.5	6,937	408.8	1,690	224.5	1,320	135.8	3,010	172.1
Tas	1,225	529.5	954	351.7	2,179	425.7	558	245.3	429	149.4	987	189.1
ACT	490	486.5	426	328.5	916	395.3	225	249.8	188	156.5	414	194.3
NT	195	441.4	155	330.4	350	387.3	89	237.3	61	177.0	150	208.5

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 9: Cancer of the stomach (ICD 151)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5–9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10–14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15–19	0	0.0	1	0.2	1	0.1	0	0.0	0	0.0	0	0.0
20–24	3	0.4	0	0.0	3	0.2	1	0.1	1	0.1	2	0.1
25–29	4	0.5	6	0.8	10	0.7	2	0.3	1	0.1	3	0.2
30–34	6	0.8	7	1.0	13	0.9	4	0.6	3	0.4	7	0.5
35–39	11	1.5	6	0.8	17	1.2	4	0.5	2	0.3	6	0.4
40–44	29	4.2	13	1.9	42	3.0	16	2.3	8	1.2	24	1.7
45–49	43	6.6	31	4.8	74	5.7	19	2.9	21	3.3	40	3.1
50–54	72	12.9	38	7.1	110	10.1	39	7.0	15	2.8	54	4.9
55–59	87	20.1	39	9.3	126	14.8	47	10.9	23	5.5	70	8.2
60–64	135	37.5	71	19.6	206	28.5	79	21.9	33	9.1	112	15.5
65–69	177	52.6	86	24.5	263	38.2	101	30.0	58	16.5	159	23.1
70–74	224	79.7	100	30.5	324	53.2	132	47.0	72	21.9	204	33.5
75–79	178	93.8	105	41.1	283	63.5	134	70.6	68	26.6	202	45.3
80–84	139	128.1	106	59.2	245	85.2	124	114.3	68	38.0	192	66.8
85 and over	85	132.8	117	78.5	202	94.8	66	103.1	103	69.1	169	79.3
Total	**1,193**		**726**		**1,919**		**768**		**476**		**1,244**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	12.9		7.8		10.4		8.3		5.1		6.7	
95% CI	12.2 – 13.7		7.2 – 8.4		9.9 – 10.8		7.7 – 8.9		4.7 – 5.6		6.3 – 7.1	
AS Rate (Aust 1991)	13.4		6.5		9.6		8.8		4.1		6.2	
95% CI	12.7 – 14.2		6.0 – 7.0		9.2 – 10.0		8.1 – 9.4		3.7 – 4.5		5.8 – 6.5	
AS Rate (World)	9.2		4.5		6.7		5.7		2.8		4.1	
95% CI	8.7 – 9.8		4.2 – 4.9		6.4 – 7.0		5.3 – 6.1		2.5 – 3.1		3.9 – 4.4	
Lifetime risk (0–74)	1 in 93		1 in 200		1 in 128		1 in 162		1 in 327		1 in 220	
PYLL (0–74)							5,285		2,908		8,193	
Per cent of all cancers	2.8		2.0		2.4		4.0		3.2		3.7	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	418	13.8	222	5.9	640	9.5	257	8.6	145	3.7	402	5.9
Vic	329	15.3	182	6.5	511	10.4	216	10.2	130	4.5	346	7.0
Qld	200	13.7	111	6.1	311	9.6	132	9.2	71	3.8	203	6.2
WA	110	14.9	60	6.6	170	10.4	70	9.6	44	4.8	114	7.0
SA	105	13.8	60	6.1	165	9.4	75	10.0	50	5.0	125	7.1
Tas	36	15.8	21	7.0	57	10.8	29	12.9	16	5.3	45	8.6
ACT	13	13.1	8	6.9	21	9.6	9	11.0	6	4.7	15	7.2
NT	4	13.0	1	4.2	6	8.4	2	3.1	2	5.5	4	4.3

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 10: Cancer of the colon and rectum (ICD 153–154)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5–9	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1
10–14	2	0.3	2	0.3	4	0.3	0	0.0	1	0.2	1	0.1
15–19	2	0.3	2	0.3	4	0.3	0	0.0	0	0.0	0	0.0
20–24	8	1.1	6	0.9	14	1.0	2	0.3	2	0.3	4	0.3
25–29	8	1.1	8	1.1	16	1.1	4	0.5	3	0.4	7	0.5
30–34	22	3.1	34	4.8	56	3.9	5	0.7	6	0.8	11	0.8
35–39	47	6.4	59	8.0	106	7.2	13	1.8	14	1.9	27	1.8
40–44	109	15.8	121	17.5	230	16.7	32	4.6	24	3.5	56	4.1
45–49	230	35.4	209	32.7	439	34.0	77	11.9	53	8.3	130	10.1
50–54	415	74.4	302	56.3	717	65.6	127	22.8	98	18.3	225	20.6
55–59	600	138.6	410	97.7	1,010	118.5	206	47.6	147	35.0	353	41.4
60–64	798	221.4	456	125.7	1,254	173.4	302	83.8	187	51.5	489	67.6
65–69	1,049	311.7	687	195.3	1,736	252.2	381	113.2	241	68.5	622	90.4
70–74	1,081	384.6	775	236.1	1,856	304.6	474	168.6	329	100.2	803	131.8
75–79	862	454.0	819	320.3	1,681	377.3	420	221.2	312	122.0	732	164.3
80–84	586	540.1	643	359.3	1,229	427.5	273	251.6	318	177.7	591	205.6
85 and over	320	500.1	573	384.3	893	419.1	227	354.8	399	267.6	626	293.8
Total	**6,139**		**5,106**		**11,245**		**2,544**		**2,134**		**4,678**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	66.6		54.8		60.7		27.6		22.9		25.3	
95% CI	65.0 – 68.3		53.3 – 56.3		59.6 – 61.8		26.5 – 28.7		21.9 – 23.9		24.5 – 26.0	
AS Rate (Aust 1991)	68.4		46.6		56.6		28.8		18.7		23.2	
95% CI	66.7 – 70.1		45.3 – 47.9		55.5 – 57.6		27.7 – 30.0		17.9 – 19.5		22.6 – 23.9	
AS Rate (World)	48.8		33.2		40.5		19.6		12.8		16.0	
95% CI	47.5 – 50.0		32.2 – 34.2		39.8 – 41.3		18.8 – 20.4		12.2 – 13.4		15.5 – 16.4	
Lifetime risk (0–74)	1 in 17		1 in 26		1 in 21		1 in 44		1 in 70		1 in 55	
PYLL (0–74)							18,500		13,073		31,573	
Per cent of all cancers	14.2		14.1		14.1		13.3		14.3		13.8	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	2,002	65.4	1,645	44.6	3,647	54.7	818	27.4	693	18.0	1,511	22.4
Vic	1,501	69.3	1,289	47.3	2,790	57.2	666	31.2	607	21.1	1,273	25.7
Qld	1,058	70.8	872	49.9	1,931	59.6	421	28.9	341	19.0	762	23.5
WA	483	64.8	388	43.4	871	53.1	210	28.9	175	19.0	385	23.5
SA	518	67.6	469	48.5	987	57.1	219	28.8	191	19.0	410	23.3
Tas	155	66.3	143	50.5	298	57.8	78	33.8	72	24.4	150	28.7
ACT	65	64.0	54	45.1	119	54.1	34	36.6	27	23.3	62	29.3
NT	23	54.8	15	43.4	37	50.2	10	24.7	7	24.0	17	25.1

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 11: Cancer of the pancreas (ICD 157)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5–9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10–14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15–19	0	0.0	2	0.3	2	0.2	0	0.0	0	0.0	0	0.0
20–24	0	0.0	1	0.1	1	0.1	0	0.0	0	0.0	0	0.0
25–29	1	0.1	0	0.0	1	0.1	2	0.3	0	0.0	2	0.1
30–34	6	0.8	1	0.1	7	0.5	2	0.3	1	0.1	3	0.2
35–39	2	0.3	4	0.5	6	0.4	5	0.7	9	1.2	14	0.9
40–44	14	2.0	8	1.2	22	1.6	11	1.6	5	0.7	16	1.2
45–49	35	5.4	16	2.5	51	4.0	18	2.8	14	2.2	32	2.5
50–54	41	7.4	39	7.3	80	7.3	32	5.7	27	5.0	59	5.4
55–59	66	15.2	46	11.0	112	13.1	57	13.2	35	8.3	92	10.8
60–64	81	22.5	71	19.6	152	21.0	73	20.3	69	19.0	142	19.6
65–69	138	41.0	106	30.1	244	35.5	133	39.5	95	27.0	228	33.1
70–74	151	53.7	120	36.6	271	44.5	151	53.7	121	36.9	272	44.6
75–79	138	72.7	154	60.2	292	65.5	138	72.7	156	61.0	294	66.0
80–84	87	80.2	133	74.3	220	76.5	99	91.2	139	77.7	238	82.8
85 and over	61	95.3	143	95.9	204	95.7	52	81.3	159	106.6	211	99.0
Total	**821**		**844**		**1,665**		**773**		**830**		**1,603**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	8.9		9.1		9.0		8.4		8.9		8.7	
95% CI	8.3 – 9.5		8.5 – 9.7		8.6 – 9.4		7.8 – 9.0		8.3 – 9.5		8.2 – 9.1	
AS Rate (Aust 1991)	9.2		7.4		8.3		8.8		7.2		7.9	
95% CI	8.6 – 9.9		6.9 – 7.9		7.9 – 8.7		8.1 – 9.4		6.7 – 7.7		7.6 – 8.3	
AS Rate (World)	6.3		5.0		5.6		5.8		4.7		5.2	
95% CI	5.9 – 6.8		4.6 – 5.3		5.3 – 5.9		5.4 – 6.2		4.3 – 5.0		5.0 – 5.5	
Lifetime risk (0–74)	1 in 135		1 in 184		1 in 157		1 in 145		1 in 199		1 in 169	
PYLL (0–74)							5,225		4,025		9,250	
Per cent of all cancers	1.9		2.3		2.1		4.1		5.6		4.7	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	278	9.2	286	7.5	564	8.4	258	8.6	278	7.2	536	7.9
Vic	206	9.6	202	7.0	408	8.2	206	9.7	206	7.1	412	8.3
Qld	141	9.6	122	6.8	263	8.1	140	9.6	117	6.4	256	7.9
WA	72	9.8	66	7.2	138	8.5	66	9.0	62	6.8	128	7.9
SA	74	9.7	74	7.2	148	8.4	68	9.0	71	6.8	139	7.8
Tas	23	10.1	24	8.3	48	9.1	22	9.6	22	7.2	44	8.3
ACT	10	10.3	7	5.9	16	7.8	11	11.8	7	6.4	18	8.8
NT	4	6.7	3	11.0	7	9.2	3	6.5	2	8.7	6	8.1

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 12: Cancer of the trachea, bronchus and lung (ICD 162)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5–9	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1
10–14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15–19	1	0.2	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
20–24	4	0.6	3	0.4	7	0.5	0	0.0	1	0.1	1	0.1
25–29	1	0.1	4	0.6	5	0.3	0	0.0	0	0.0	0	0.0
30–34	3	0.4	6	0.8	9	0.6	4	0.6	2	0.3	6	0.4
35–39	19	2.6	14	1.9	33	2.2	9	1.2	8	1.1	17	1.2
40–44	54	7.8	39	5.6	93	6.7	31	4.5	33	4.8	64	4.6
45–49	126	19.4	111	17.3	237	18.4	97	14.9	68	10.6	165	12.8
50–54	260	46.6	139	25.9	399	36.5	195	35.0	115	21.4	310	28.3
55–59	449	103.7	195	46.5	644	75.5	327	75.5	160	38.1	487	57.1
60–64	645	179.0	314	86.5	959	132.6	560	155.4	206	56.8	766	105.9
65–69	953	283.2	409	116.3	1,362	197.9	790	234.7	330	93.8	1,120	162.7
70–74	1,139	405.2	450	137.1	1,589	260.7	995	354.0	395	120.3	1,390	228.1
75–79	856	450.9	405	158.4	1,261	283.0	790	416.1	353	138.0	1,143	256.5
80–84	525	483.9	244	136.3	769	267.5	513	472.8	236	131.9	749	260.6
85 and over	287	448.5	164	110.0	451	211.6	303	473.5	161	108.0	464	217.7
Total	**5,322**		**2,497**		**7,819**		**4,615**		**2,068**		**6,683**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	57.8		26.8		42.2		50.1		22.2		36.1	
95% CI	56.2 – 59.3		25.8 – 27.9		41.3 – 43.1		48.6 – 51.5		21.3 – 23.2		35.2 – 36.9	
AS Rate (Aust 1991)	59.8		23.5		39.6		52.2		19.2		33.7	
95% CI	58.1 – 61.4		22.6 – 24.5		38.8 – 40.5		50.7 – 53.8		18.3 – 20.0		32.9 – 34.5	
AS Rate (World)	41.3		17.3		28.3		35.3		13.7		23.5	
95% CI	40.2 – 42.4		16.6 – 18.0		27.6 – 28.9		34.2 – 36.3		13.0 – 14.3		22.9 – 24.1	
Lifetime risk (0–74)	1 in 20		1 in 46		1 in 28		1 in 23		1 in 58		1 in 34	
PYLL (0–74)							29,773		14,805		44,578	
Per cent of all cancers	12.3		6.9		9.8		24.2		13.9		19.7	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	1,795	59.0	818	22.7	2,613	39.3	1,592	52.7	676	18.5	2,268	34.0
Vic	1,333	61.6	616	23.2	1,949	40.2	1,225	57.1	548	20.2	1,773	36.4
Qld	957	64.4	374	21.9	1,331	41.4	839	57.0	308	17.9	1,146	35.7
WA	460	63.1	212	24.5	672	41.7	405	56.4	177	20.3	583	36.2
SA	469	61.0	203	21.7	672	38.9	408	53.4	161	16.9	569	32.8
Tas	157	67.3	68	25.2	226	43.9	140	60.7	58	21.3	199	38.5
ACT	39	41.4	28	24.0	67	31.6	42	44.4	23	18.9	64	30.2
NT	36	90.3	15	41.3	50	67.3	30	86.3	13	34.5	43	60.8

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 13: Cancer of the skin—melanoma (ICD 172)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	1	0.2	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
5–9	3	0.4	0	0.0	3	0.2	0	0.0	0	0.0	0	0.0
10–14	8	1.2	7	1.1	15	1.1	0	0.0	0	0.0	0	0.0
15–19	37	5.6	59	9.4	96	7.4	1	0.2	3	0.5	4	0.3
20–24	92	13.2	114	16.9	206	15.0	2	0.3	3	0.4	5	0.4
25–29	142	19.5	177	24.4	319	22.0	4	0.5	8	1.1	12	0.8
30–34	185	26.0	229	32.1	414	29.1	10	1.4	13	1.8	23	1.6
35–39	235	31.9	288	38.9	523	35.4	14	1.9	12	1.6	26	1.8
40–44	285	41.4	342	49.4	627	45.4	30	4.4	18	2.6	48	3.5
45–49	420	64.7	353	55.2	773	59.9	40	6.2	22	3.4	62	4.8
50–54	479	85.9	373	69.6	852	77.9	42	7.5	19	3.5	61	5.6
55–59	420	97.0	293	69.8	713	83.6	45	10.4	23	5.5	68	8.0
60–64	419	116.3	271	74.7	690	95.4	61	16.9	25	6.9	86	11.9
65–69	546	162.2	298	84.7	844	122.6	83	24.7	39	11.1	122	17.7
70–74	594	211.3	306	93.2	900	147.7	78	27.7	40	12.2	118	19.4
75–79	424	223.3	267	104.4	691	155.1	79	41.6	35	13.7	114	25.6
80–84	237	218.4	178	99.5	415	144.4	67	61.8	37	20.7	104	36.2
85 and over	122	190.7	162	108.6	284	133.3	24	37.5	33	22.1	57	26.7
Total	**4,649**		**3,717**		**8,366**		**580**		**330**		**910**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	50.5		39.9		45.2		6.3		3.5		4.9	
95% CI	49.0 – 51.9		38.6 – 41.2		44.2 – 46.1		5.8 – 6.8		3.2 – 3.9		4.6 – 5.2	
AS Rate (Aust 1991)	50.1		37.0		42.9		6.4		3.1		4.6	
95% CI	48.7 – 51.6		35.8 – 38.2		41.9 – 43.8		5.9 – 6.9		2.8 – 3.4		4.3 – 4.9	
AS Rate (World)	39.3		30.5		34.6		4.6		2.3		3.4	
95% CI	38.2 – 40.5		29.5 – 31.6		33.8 – 35.3		4.2 – 5.0		2.1 – 2.6		3.2 – 3.6	
Lifetime risk (0–74)	1 in 23		1 in 33		1 in 27		1 in 196		1 in 395		1 in 265	
PYLL (0–74)							6,690		4,438		11,128	
Per cent of all cancers	10.8		10.2		10.5		3.0		2.2		2.7	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	1,453	46.7	1,058	31.5	2,511	38.6	230	7.6	110	3.0	340	5.1
Vic	770	34.5	737	29.7	1,507	31.7	126	5.8	75	2.8	201	4.1
Qld	1,023	65.3	777	46.4	1,799	55.0	125	8.3	61	3.5	186	5.7
WA	401	49.4	318	36.2	719	42.2	52	6.9	28	3.1	80	4.8
SA	304	40.0	290	34.8	594	36.8	38	5.0	25	2.8	62	3.7
Tas	85	36.2	85	32.9	169	34.1	10	4.3	7	2.4	17	3.3
ACT	50	41.1	43	30.5	93	35.2	5	5.8	4	3.3	10	4.2
NT	19	27.0	15	20.5	34	23.8	3	6.1	0	1.1	3	3.8

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 14: Cancer of the breast (ICD 174–175)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5–9	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
10–14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15–19	0	0.0	3	0.5	3	0.2	0	0.0	0	0.0	0	0.0
20–24	1	0.1	13	1.9	14	1.0	0	0.0	1	0.1	1	0.1
25–29	0	0.0	53	7.3	53	3.6	0	0.0	6	0.8	6	0.4
30–34	1	0.1	178	24.9	179	12.6	0	0.0	38	5.3	38	2.7
35–39	0	0.0	443	59.8	443	30.0	0	0.0	85	11.5	85	5.8
40–44	3	0.4	757	109.4	760	55.0	0	0.0	133	19.2	133	9.6
45–49	6	0.9	1,147	179.2	1,153	89.4	1	0.2	215	33.6	216	16.7
50–54	2	0.4	1,320	246.2	1,322	120.9	0	0.0	267	49.8	267	24.4
55–59	5	1.2	1,170	278.7	1,175	137.8	0	0.0	241	57.4	241	28.3
60–64	8	2.2	1,080	297.6	1,088	150.4	1	0.3	236	65.0	237	32.8
65–69	6	1.8	1,065	302.8	1,071	155.6	1	0.3	290	82.5	291	42.3
70–74	13	4.6	1,024	311.9	1,037	170.2	3	1.1	291	88.6	294	48.2
75–79	14	7.4	854	333.9	868	194.8	5	2.6	285	111.4	290	65.1
80–84	7	6.5	562	314.0	569	197.9	4	3.7	242	135.2	246	85.6
85 and over	3	4.7	427	286.4	430	201.8	1	1.6	266	178.4	267	125.3
Total	**70**		**10,096**		**10,166**		**16**		**2,596**		**2,612**	

Rates per 100,000 with 95 per cent confidence intervals (95% CI)

Crude rate	0.8	108.4	54.9	0.2	27.9	14.1
95% CI	0.6 – 0.9	106.3 – 110.6	53.8 – 55.9	0.1 – 0.3	26.8 – 29.0	13.6 – 14.6
AS Rate (Aust 1991)	0.8	97.9	51.2	0.2	24.2	13.0
95% CI	0.6 – 1.0	96.0 – 99.8	50.2 – 52.2	0.1 – 0.3	23.2 – 25.1	12.5 – 13.5
AS Rate (World)	0.5	80.2	41.2	0.1	18.6	9.7
95% CI	0.4 – 0.7	78.6 – 81.8	40.4 – 42.0	0.1 – 0.2	17.8 – 19.3	9.3 – 10.1
Lifetime risk (0–74)	1 in 1,676	1 in 11	1 in 22	1 in 11,137	1 in 49	1 in 95
PYLL (0–74)				55	31,453	31,508
Per cent of all cancers	0.2	27.8	12.8	0.1	17.4	7.7

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	24	0.8	3,364	98.3	3,388	51.5	6	0.2	885	24.7	891	13.4
Vic	16	0.7	2,498	98.8	2,514	52.1	6	0.3	731	27.6	736	15.0
Qld	13	0.9	1,624	95.3	1,636	49.4	4	0.3	427	24.4	431	13.1
WA	6	0.8	875	99.8	882	51.8	1	0.1	226	25.0	227	13.4
SA	6	0.9	848	97.7	854	51.6	2	0.2	245	26.3	246	14.4
Tas	3	1.1	249	94.4	252	49.6	0	0.2	66	23.4	66	12.7
ACT	1	0.8	135	98.8	136	52.0	0	0.0	39	31.7	39	17.4
NT	0	0.5	41	69.0	41	31.7	0	0.0	8	19.7	8	9.3

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 15: Cancer of the cervix (ICD 180)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4			0	0.0					0	0.0		
5–9			0	0.0					0	0.0		
10–14			0	0.0					0	0.0		
15–19			1	0.2					0	0.0		
20–24			10	1.5					0	0.0		
25–29			42	5.8					1	0.1		
30–34			76	10.6					9	1.3		
35–39			99	13.4					17	2.3		
40–44			103	14.9					15	2.2		
45–49			81	12.7					25	3.9		
50–54			76	14.2					20	3.7		
55–59			49	11.7					24	5.7		
60–64			52	14.3					20	5.5		
65–69			55	15.6					32	9.1		
70–74			46	14.0					36	11.0		
75–79			46	18.0					35	13.7		
80–84			31	17.3					25	14.0		
85 and over			28	18.8					32	21.5		
Total			**795**						**291**			

Rates per 100,000 with 95 per cent confidence intervals (95% CI)

Crude rate	8.5	3.1
95% CI	7.9 – 9.1	2.8 – 3.5
AS Rate (Aust 1991)	8.0	2.7
95% CI	7.4 – 8.5	2.4 – 3.0
AS Rate (World)	6.5	2.0
95% CI	6.1 – 7.0	1.8 – 2.3
Lifetime risk (0–74)	1 in 156	1 in 447
PYLL (0–74)		3,693
Per cent of all cancers	2.2	2.0

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW			332	10.1					114	3.2		
Vic			243	10.0					75	2.9		
Qld			187	11.2					53	3.1		
WA			89	10.2					33	3.6		
SA			60	7.4					21	2.2		
Tas			28	11.1					13	4.7		
ACT			13	9.2					5	3.5		
NT			12	21.2					4	9.1		

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 16: Cancer of the uterus (ICD 179+182)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4			0	0.0					0	0.0		
5–9			0	0.0					0	0.0		
10–14			0	0.0					0	0.0		
15–19			0	0.0					0	0.0		
20–24			2	0.3					0	0.0		
25–29			4	0.6					0	0.0		
30–34			11	1.5					0	0.0		
35–39			24	3.2					0	0.0		
40–44			53	7.7					1	0.1		
45–49			93	14.5					10	1.6		
50–54			139	25.9					20	3.7		
55–59			154	36.7					14	3.3		
60–64			201	55.4					19	5.2		
65–69			220	62.5					35	10.0		
70–74			173	52.7					41	12.5		
75–79			145	56.7					46	18.0		
80–84			106	59.2					40	22.4		
85 and over			70	46.9					45	30.2		
Total			**1,395**						**271**			

Rates per 100,000 with 95 per cent confidence intervals (95% CI)

Crude rate	15.0	2.9
95% CI	14.2 – 15.8	2.6 – 3.3
AS Rate (Aust 1991)	13.5	2.4
95% CI	12.8 – 14.2	2.1 – 2.7
AS Rate (World)	10.7	1.6
95% CI	10.1 – 11.3	1.4 – 1.8
Lifetime risk (0–74)	1 in 77	1 in 549
PYLL (0–74)		1,605
Per cent of all cancers	3.8	1.8

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW			434	12.4					89	2.3		
Vic			383	14.9					73	2.6		
Qld			233	13.7					46	2.5		
WA			98	11.5					21	2.4		
SA			133	14.8					25	2.5		
Tas			32	12.0					7	2.6		
ACT			17	14.0					3	2.6		
NT			6	14.3					2	6.1		

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 17: Cancer of the ovary and other uterine adnexae (ICD 183)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4			0	0.0					0	0.0		
5–9			0	0.0					0	0.0		
10–14			3	0.5					0	0.0		
15–19			5	0.8					0	0.0		
20–24			10	1.5					1	0.1		
25–29			31	4.3					2	0.3		
30–34			26	3.6					2	0.3		
35–39			33	4.5					4	0.5		
40–44			54	7.8					19	2.7		
45–49			96	15.0					41	6.4		
50–54			132	24.6					43	8.0		
55–59			109	26.0					75	17.9		
60–64			118	32.5					70	19.3		
65–69			119	33.8					88	25.0		
70–74			133	40.5					116	35.3		
75–79			125	48.9					120	46.9		
80–84			88	49.2					93	52.0		
85 and over			69	46.3					66	44.3		
Total			**1,151**						**740**			

Rates per 100,000 with 95 per cent confidence intervals (95% CI)

Crude rate	12.4
95% CI	11.6 – 13.1
AS Rate (Aust 1991)	11.0
95% CI	10.4 – 11.7
AS Rate (World)	8.8
95% CI	8.2 – 9.3
Lifetime risk (0–74)	1 in 103
PYLL (0–74)	
Per cent of all cancers	3.2

	7.9											
	7.4 – 8.5											
	6.8											
	6.3 – 7.3											
	4.9											
	4.5 – 5.3											
	1 in 173											
	6,233											
	5.0											

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW			364	10.5					253	7.0		
Vic			342	13.4					213	8.0		
Qld			194	11.4					112	6.4		
WA			89	10.3					66	7.6		
SA			89	10.0					66	7.2		
Tas			36	13.7					23	8.3		
ACT			15	10.7					9	7.2		
NT			5	8.9					2	3.4		

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 18: Cancer of the prostate (ICD 185)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	0	0.0					0	0.0				
5–9	0	0.0					0	0.0				
10–14	0	0.0					0	0.0				
15–19	0	0.0					2	0.3				
20–24	0	0.0					0	0.0				
25–29	0	0.0					0	0.0				
30–34	1	0.1					0	0.0				
35–39	2	0.3					0	0.0				
40–44	9	1.3					2	0.3				
45–49	81	12.5					5	0.8				
50–54	277	49.7					20	3.6				
55–59	702	162.2					53	12.2				
60–64	1,253	347.7					109	30.2				
65–69	1,898	564.0					249	74.0				
70–74	2,098	746.4					433	154.0				
75–79	1,625	855.9					526	277.0				
80–84	1,099	1,012.9					530	488.5				
85 and over	680	1,062.7					520	812.7				
Total	**9,725**						**2,449**					

Rates per 100,000 with 95 per cent confidence intervals (95% CI)

Crude rate	105.5	26.6
95% CI	103.4 – 107.6	25.5 – 27.6
AS Rate (Aust 1991)	110.9	29.4
95% CI	108.7 – 113.1	28.2 – 30.6
AS Rate (World)	74.5	16.5
95% CI	73.0 – 76.0	15.9 – 17.2
Lifetime risk (0–74)	1 in 11	1 in 73
PYLL (0–74)		6,008
Per cent of all cancers	22.5	12.9

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	3,989	132.8					864	30.6				
Vic	2,690	126.8					669	33.4				
Qld	1,778	124.0					457	33.9				
WA	1,059	147.1					211	31.9				
SA	1,147	150.6					243	33.6				
Tas	357	156.3					84	38.8				
ACT	147	161.6					28	36.7				
NT	27	87.7					6	24.6				

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 19: Cancer of the testis (ICD 186)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	6	0.9					0	0.0				
5–9	2	0.3					0	0.0				
10–14	0	0.0					0	0.0				
15–19	15	2.3					0	0.0				
20–24	64	9.2					1	0.1				
25–29	107	14.7					3	0.4				
30–34	116	16.3					4	0.6				
35–39	94	12.7					1	0.1				
40–44	53	7.7					1	0.1				
45–49	33	5.1					1	0.2				
50–54	29	5.2					4	0.7				
55–59	19	4.4					1	0.2				
60–64	6	1.7					3	0.8				
65–69	10	3.0					1	0.3				
70–74	8	2.8					2	0.7				
75–79	2	1.1					1	0.5				
80–84	2	1.8					0	0.0				
85 and over	0	0.0					0	0.0				
Total	**566**						**23**					

Rates per 100,000 with 95 per cent confidence intervals (95% CI)

Crude rate	6.1	0.2
95% CI	5.6 – 6.6	0.1 – 0.4
AS Rate (Aust 1991)	6.2	0.2
95% CI	5.7 – 6.7	0.1 – 0.3
AS Rate (World)	5.4	0.2
95% CI	5.0 – 5.9	0.1 – 0.3
Lifetime risk (0–74)	1 in 232	1 in 4,605
PYLL (0–74)		620
Per cent of all cancers	1.3	0.1

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	176	5.7					9	0.3				
Vic	133	5.9					7	0.3				
Qld	95	5.9					6	0.4				
WA	49	5.6					2	0.2				
SA	46	6.3					3	0.4				
Tas	15	6.3					0	0.1				
ACT	11	6.8					0	0.1				
NT	4	4.2					0	0.2				

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 20: Cancer of the bladder (ICD 188)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	0	0.0	1	0.2	1	0.1	0	0.0	0	0.0	0	0.0
5–9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10–14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15–19	2	0.3	4	0.6	6	0.5	0	0.0	0	0.0	0	0.0
20–24	5	0.7	0	0.0	5	0.4	0	0.0	0	0.0	0	0.0
25–29	2	0.3	2	0.3	4	0.3	0	0.0	0	0.0	0	0.0
30–34	9	1.3	3	0.4	12	0.8	0	0.0	2	0.3	2	0.1
35–39	15	2.0	4	0.5	19	1.3	1	0.1	1	0.1	2	0.1
40–44	25	3.6	7	1.0	32	2.3	3	0.4	0	0.0	3	0.2
45–49	53	8.2	22	3.4	75	5.8	8	1.2	1	0.2	9	0.7
50–54	80	14.4	28	5.2	108	9.9	12	2.2	5	0.9	17	1.6
55–59	139	32.1	35	8.3	174	20.4	26	6.0	5	1.2	31	3.6
60–64	194	53.8	51	14.1	245	33.9	45	12.5	15	4.1	60	8.3
65–69	309	91.8	99	28.1	408	59.3	70	20.8	17	4.8	87	12.6
70–74	431	153.3	122	37.2	553	90.7	92	32.7	51	15.5	143	23.5
75–79	297	156.4	121	47.3	418	93.8	95	50.0	33	12.9	128	28.7
80–84	246	226.7	114	63.7	360	125.2	106	97.7	56	31.3	162	56.4
85 and over	179	279.7	82	55.0	261	122.5	96	150.0	67	44.9	163	76.5
Total	**1,986**		**695**		**2,681**		**554**		**253**		**807**	

Rates per 100,000 with 95 per cent confidence intervals (95% CI)

Crude rate	21.6	7.5	14.5	6.0	2.7	4.4
95% CI	20.6 – 22.5	6.9 – 8.0	13.9 – 15.0	5.5 – 6.5	2.4 – 3.1	4.1 – 4.7
AS Rate (Aust 1991)	22.6	6.2	13.4	6.5	2.1	3.9
95% CI	21.6 – 23.6	5.8 – 6.7	12.9 – 13.9	6.0 – 7.1	1.8 – 2.3	3.6 – 4.2
AS Rate (World)	15.1	4.2	9.2	4.0	1.3	2.4
95% CI	14.4 – 15.8	3.9 – 4.6	8.8 – 9.5	3.6 – 4.3	1.1 – 1.4	2.2 – 2.6
Lifetime risk (0–74)	1 in 56	1 in 202	1 in 89	1 in 264	1 in 736	1 in 394
PYLL (0–74)				2,398	793	3,190
Per cent of all cancers	4.6	1.9	3.4	2.9	1.7	2.4

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	539	18.0	186	4.9	725	10.8	191	6.7	83	2.0	274	4.0
Vic	643	30.0	210	7.6	852	17.4	136	6.7	58	1.9	194	3.8
Qld	427	29.1	148	8.4	575	17.8	97	7.0	46	2.4	142	4.3
WA	104	14.8	30	3.4	135	8.3	41	6.1	16	1.7	57	3.5
SA	125	16.7	43	4.2	168	9.5	54	7.4	23	2.2	77	4.2
Tas	66	28.5	20	6.9	86	16.5	14	6.6	6	1.8	20	3.7
ACT	15	17.2	5	4.1	19	9.6	9	10.9	2	2.2	11	5.7
NT	5	12.8	2	4.4	6	8.7	2	6.2	1	2.9	3	4.4

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 21: Cancer of the kidney and other and unspecified urinary organs (ICD 189)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	9	1.4	19	3.0	28	2.2	0	0.0	0	0.0	0	0.0
5–9	5	0.7	2	0.3	7	0.5	0	0.0	0	0.0	0	0.0
10–14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15–19	2	0.3	1	0.2	3	0.2	0	0.0	0	0.0	0	0.0
20–24	1	0.1	1	0.1	2	0.1	0	0.0	0	0.0	0	0.0
25–29	3	0.4	3	0.4	6	0.4	1	0.1	1	0.1	2	0.1
30–34	9	1.3	9	1.3	18	1.3	1	0.1	1	0.1	2	0.1
35–39	23	3.1	10	1.3	33	2.2	2	0.3	2	0.3	4	0.3
40–44	46	6.7	30	4.3	76	5.5	12	1.7	2	0.3	14	1.0
45–49	70	10.8	49	7.7	119	9.2	16	2.5	7	1.1	23	1.8
50–54	95	17.0	56	10.4	151	13.8	31	5.6	11	2.1	42	3.8
55–59	132	30.5	58	13.8	190	22.3	38	8.8	12	2.9	50	5.9
60–64	171	47.4	76	20.9	247	34.2	61	16.9	18	5.0	79	10.9
65–69	182	54.1	97	27.6	279	40.5	79	23.5	40	11.4	119	17.3
70–74	205	72.9	121	36.9	326	53.5	80	28.5	57	17.4	137	22.5
75–79	143	75.3	133	52.0	276	61.9	66	34.8	64	25.0	130	29.2
80–84	88	81.1	98	54.8	186	64.7	45	41.5	59	33.0	104	36.2
85 and over	45	70.3	55	36.9	100	46.9	35	54.7	55	36.9	90	42.2
Total	**1,229**		**818**		**2,047**		**467**		**329**		**796**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	13.3		8.8		11.1		5.1		3.5		4.3	
95% CI	12.6 – 14.1		8.2 – 9.4		10.6 – 11.5		4.6 – 5.5		3.2 – 3.9		4.0 – 4.6	
AS Rate (Aust 1991)	13.5		7.7		10.4		5.2		2.8		4.0	
95% CI	12.7 – 14.2		7.1 – 8.2		9.9 – 10.8		4.8 – 5.7		2.5 – 3.2		3.7 – 4.2	
AS Rate (World)	10.2		5.8		7.9		3.7		1.8		2.7	
95% CI	9.6 – 10.8		5.3 – 6.2		7.5 – 8.2		3.4 – 4.0		1.6 – 2.0		2.5 – 2.9	
Lifetime risk (0–74)	1 in 82		1 in 156		1 in 108		1 in 228		1 in 494		1 in 314	
PYLL (0–74)							3,913		1,548		5,460	
Per cent of all cancers	2.8		2.3		2.6		2.5		2.2		2.3	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	421	13.6	292	8.1	712	10.8	154	5.1	126	3.3	279	4.2
Vic	281	12.8	178	6.7	458	9.5	116	5.4	83	3.0	199	4.0
Qld	227	14.9	148	8.6	376	11.6	86	5.8	60	3.4	146	4.5
WA	75	9.8	53	6.0	129	7.8	33	4.5	28	3.1	60	3.7
SA	105	13.6	63	6.9	168	10.0	42	5.5	24	2.5	66	3.9
Tas	33	14.1	19	6.7	51	10.0	14	6.3	9	3.0	23	4.4
ACT	13	12.5	7	5.8	20	8.9	6	6.9	5	4.3	11	5.5
NT	6	12.3	2	6.8	8	9.9	1	2.7	1	5.8	2	4.6

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 22: Cancer of the brain (ICD 191)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	28	4.2	15	2.4	43	3.3	10	1.5	5	0.8	15	1.2
5–9	17	2.5	12	1.9	29	2.2	4	0.6	16	2.5	20	1.5
10–14	21	3.1	13	2.0	34	2.6	5	0.7	3	0.5	8	0.6
15–19	7	1.1	6	1.0	13	1.0	7	1.1	5	0.8	12	0.9
20–24	10	1.4	7	1.0	17	1.2	5	0.7	2	0.3	7	0.5
25–29	27	3.7	18	2.5	45	3.1	14	1.9	11	1.5	25	1.7
30–34	23	3.2	19	2.7	42	2.9	11	1.5	12	1.7	23	1.6
35–39	27	3.7	19	2.6	46	3.1	11	1.5	15	2.0	26	1.8
40–44	32	4.6	23	3.3	55	4.0	30	4.4	20	2.9	50	3.6
45–49	41	6.3	25	3.9	66	5.1	38	5.8	26	4.1	64	5.0
50–54	70	12.6	35	6.5	105	9.6	50	9.0	26	4.8	76	6.9
55–59	63	14.6	47	11.2	110	12.9	64	14.8	42	10.0	106	12.4
60–64	65	18.0	45	12.4	110	15.2	62	17.2	37	10.2	99	13.7
65–69	89	26.4	53	15.1	142	20.6	87	25.9	55	15.6	142	20.6
70–74	97	34.5	61	18.6	158	25.9	82	29.2	69	21.0	151	24.8
75–79	56	29.5	55	21.5	111	24.9	62	32.7	41	16.0	103	23.1
80–84	32	29.5	39	21.8	71	24.7	36	33.2	40	22.4	76	26.4
85 and over	12	18.8	20	13.4	32	15.0	14	21.9	17	11.4	31	14.5
Total	**717**		**512**		**1,229**		**592**		**442**		**1,034**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	7.8		5.5		6.6		6.4		4.7		5.6	
95% CI	7.2 – 8.4		5.0 – 6.0		6.3 – 7.0		5.9 – 6.9		4.3 – 5.2		5.2 – 5.9	
AS Rate (Aust 1991)	7.8		5.1		6.4		6.4		4.3		5.3	
95% CI	7.2 – 8.3		4.6 – 5.5		6.0 – 6.7		5.9 – 7.0		3.9 – 4.7		5.0 – 5.6	
AS Rate (World)	6.6		4.3		5.4		5.1		3.5		4.3	
95% CI	6.1 – 7.1		3.9 – 4.7		5.1 – 5.7		4.7 – 5.5		3.2 – 3.9		4.0 – 4.5	
Lifetime risk (0–74)	1 in 143		1 in 230		1 in 178		1 in 173		1 in 255		1 in 207	
PYLL (0–74)							9,415		7,350		16,765	
Per cent of all cancers	1.7		1.4		1.5		3.1		3.0		3.0	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	233	7.5	174	5.2	407	6.3	191	6.2	135	3.9	326	5.0
Vic	180	8.1	138	5.6	318	6.8	145	6.5	111	4.3	256	5.4
Qld	128	8.1	89	5.3	217	6.6	100	6.4	73	4.3	173	5.3
WA	56	6.9	43	4.9	99	5.9	50	6.3	35	4.1	86	5.1
SA	62	8.1	48	5.8	110	6.9	51	6.6	38	4.4	89	5.4
Tas	19	8.0	15	6.0	34	6.9	17	7.3	13	5.0	30	6.1
ACT	12	10.2	6	4.3	18	7.0	9	7.9	7	5.0	16	6.3
NT	3	3.6	2	4.3	6	3.8	2	3.4	1	3.5	4	3.5

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 23: Cancers of unknown primary site (ICD 195–199)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	2	0.3	7	1.1	9	0.7	0	0.0	1	0.2	1	0.1
5–9	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
10–14	0	0.0	1	0.2	1	0.1	1	0.1	0	0.0	1	0.1
15–19	2	0.3	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
20–24	3	0.4	2	0.3	5	0.4	0	0.0	0	0.0	0	0.0
25–29	2	0.3	1	0.1	3	0.2	2	0.3	3	0.4	5	0.3
30–34	12	1.7	10	1.4	22	1.5	3	0.4	7	1.0	10	0.7
35–39	16	2.2	16	2.2	32	2.2	9	1.2	12	1.6	21	1.4
40–44	35	5.1	25	3.6	60	4.3	23	3.3	18	2.6	41	3.0
45–49	63	9.7	43	6.7	106	8.2	27	4.2	26	4.1	53	4.1
50–54	90	16.1	56	10.4	146	13.3	64	11.5	31	5.8	95	8.7
55–59	119	27.5	82	19.5	201	23.6	77	17.8	47	11.2	124	14.5
60–64	176	48.8	102	28.1	278	38.4	110	30.5	68	18.7	178	24.6
65–69	237	70.4	160	45.5	397	57.7	168	49.9	113	32.1	281	40.8
70–74	298	106.0	191	58.2	489	80.2	185	65.8	150	45.7	335	55.0
75–79	275	144.8	267	104.4	542	121.6	210	110.6	189	73.9	399	89.5
80–84	209	192.6	248	138.6	457	159.0	172	158.5	177	98.9	349	121.4
85 and over	140	218.8	278	186.4	418	196.2	120	187.5	242	162.3	362	169.9
Total	**1,680**		**1,489**		**3,169**		**1,171**		**1,084**		**2,255**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	18.2		16.0		17.1		12.7		11.6		12.2	
95% CI	17.4 – 19.1		15.2 – 16.8		16.5 – 17.7		12.0 – 13.4		11.0 – 12.3		11.7 – 12.7	
AS Rate (Aust 1991)	19.0		12.9		15.7		13.4		9.2		11.1	
95% CI	18.1 – 19.9		12.3 – 13.6		15.1 – 16.2		12.6 – 14.2		8.7 – 9.8		10.6 – 11.6	
AS Rate (World)	12.9		8.6		10.6		8.7		6.0		7.3	
95% CI	12.2 – 13.5		8.1 – 9.1		10.2 – 11.0		8.2 – 9.3		5.6 – 6.4		7.0 – 7.6	
Lifetime risk (0–74)	1 in 70		1 in 113		1 in 87		1 in 109		1 in 163		1 in 131	
PYLL (0–74)							7,998		5,855		13,853	
Per cent of all cancers	3.9		4.1		4.0		6.1		7.3		6.6	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	572	19.1	507	13.2	1,078	16.0	412	13.9	388	9.9	800	11.8
Vic	368	17.3	360	12.7	728	14.7	268	12.7	263	9.0	531	10.7
Qld	291	19.9	237	13.2	528	16.3	199	13.7	166	9.1	366	11.2
WA	146	20.2	118	12.7	264	16.1	92	12.9	88	9.5	180	11.0
SA	130	17.2	128	12.5	258	14.6	115	15.2	106	10.2	220	12.4
Tas	46	20.2	43	14.3	89	16.9	33	14.5	35	11.6	68	12.8
ACT	17	18.3	14	11.3	31	14.6	13	15.5	12	10.4	25	12.5
NT	11	27.4	8	17.9	18	22.7	8	20.3	5	15.4	13	17.9

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 24: Non-Hodgkin's lymphoma (ICD 200+202)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	7	1.1	3	0.5	10	0.8	1	0.2	0	0.0	1	0.1
5–9	12	1.8	8	1.2	20	1.5	3	0.4	0	0.0	3	0.2
10–14	10	1.5	3	0.5	13	1.0	1	0.1	2	0.3	3	0.2
15–19	15	2.3	6	1.0	21	1.6	5	0.8	3	0.5	8	0.6
20–24	17	2.4	9	1.3	26	1.9	5	0.7	3	0.4	8	0.6
25–29	30	4.1	16	2.2	46	3.2	9	1.2	3	0.4	12	0.8
30–34	38	5.3	19	2.7	57	4.0	9	1.3	6	0.8	15	1.1
35–39	64	8.7	46	6.2	110	7.4	13	1.8	5	0.7	18	1.2
40–44	76	11.0	50	7.2	126	9.1	15	2.2	14	2.0	29	2.1
45–49	104	16.0	78	12.2	182	14.1	36	5.5	20	3.1	56	4.3
50–54	135	24.2	118	22.0	253	23.1	58	10.4	33	6.2	91	8.3
55–59	146	33.7	117	27.9	263	30.8	55	12.7	36	8.6	91	10.7
60–64	177	49.1	123	33.9	300	41.5	67	18.6	54	14.9	121	16.7
65–69	209	62.1	166	47.2	375	54.5	112	33.3	77	21.9	189	27.5
70–74	232	82.5	211	64.3	443	72.7	124	44.1	130	39.6	254	41.7
75–79	201	105.9	191	74.7	392	88.0	121	63.7	132	51.6	253	56.8
80–84	117	107.8	159	88.8	276	96.0	103	94.9	101	56.4	204	71.0
85 and over	97	151.6	127	85.2	224	105.1	78	121.9	106	71.1	184	86.3
Total	**1,687**		**1,450**		**3,137**		**815**		**725**		**1,540**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	18.3		15.6		16.9		8.8		7.8		8.3	
95% CI	17.4 – 19.2		14.8 – 16.4		16.3 – 17.5		8.2 – 9.5		7.2 – 8.4		7.9 – 8.7	
AS Rate (Aust 1991)	18.6		13.5		15.8		9.2		6.4		7.6	
95% CI	17.7 – 19.5		12.8 – 14.2		15.3 – 16.4		8.6 – 9.8		6.0 – 6.9		7.3 – 8.0	
AS Rate (World)	14.0		10.2		12.0		6.3		4.4		5.3	
95% CI	13.3 – 14.7		9.6 – 10.7		11.5 – 12.4		5.9 – 6.8		4.0 – 4.7		5.0 – 5.5	
Lifetime risk (0–74)	1 in 66		1 in 87		1 in 75		1 in 151		1 in 202		1 in 173	
PYLL (0–74)							7,918		4,995		12,913	
Per cent of all cancers	3.9		4.0		3.9		4.3		4.9		4.5	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	576	18.6	475	13.2	1,051	15.9	266	8.8	237	6.2	503	7.5
Vic	427	19.4	350	13.3	777	16.1	213	9.9	188	6.8	401	8.2
Qld	270	17.6	214	12.4	484	14.9	118	8.0	98	5.5	216	6.6
WA	124	15.9	107	12.2	231	13.9	57	7.7	57	6.3	114	6.9
SA	138	18.1	130	14.4	268	16.0	65	8.7	64	6.6	130	7.5
Tas	40	17.1	38	13.6	78	15.2	20	8.8	18	6.5	39	7.4
ACT	20	18.3	18	14.1	37	15.9	13	14.0	10	8.5	22	10.7
NT	7	11.0	4	9.2	11	10.4	1	1.4	1	2.9	2	2.2

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 25: Leukaemias (ICD 204–208)

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	42	6.3	47	7.5	89	6.9	12	1.8	4	0.6	16	1.2
5–9	31	4.6	15	2.3	46	3.5	7	1.0	9	1.4	16	1.2
10–14	22	3.3	19	3.0	41	3.1	6	0.9	7	1.1	13	1.0
15–19	21	3.2	13	2.1	34	2.6	7	1.1	8	1.3	15	1.2
20–24	16	2.3	25	3.7	41	3.0	15	2.2	7	1.0	22	1.6
25–29	20	2.7	20	2.8	40	2.8	13	1.8	8	1.1	21	1.4
30–34	15	2.1	9	1.3	24	1.7	14	2.0	3	0.4	17	1.2
35–39	29	3.9	26	3.5	55	3.7	16	2.2	13	1.8	29	2.0
40–44	33	4.8	30	4.3	63	4.6	11	1.6	14	2.0	25	1.8
45–49	50	7.7	23	3.6	73	5.7	14	2.2	9	1.4	23	1.8
50–54	61	10.9	47	8.8	108	9.9	21	3.8	23	4.3	44	4.0
55–59	74	17.1	50	11.9	124	14.5	26	6.0	23	5.5	49	5.7
60–64	101	28.0	56	15.4	157	21.7	56	15.5	39	10.7	95	13.1
65–69	118	35.1	94	26.7	212	30.8	74	22.0	52	14.8	126	18.3
70–74	187	66.5	99	30.2	286	46.9	133	47.3	68	20.7	201	33.0
75–79	160	84.3	89	34.8	249	55.9	102	53.7	59	23.1	161	36.1
80–84	112	103.2	85	47.5	197	68.5	95	87.6	81	45.3	176	61.2
85 and over	82	128.1	103	69.1	185	86.8	64	100.0	101	67.7	165	77.4
Total	**1,174**		**850**		**2,024**		**686**		**528**		**1,214**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	12.7		9.1		10.9		7.4		5.7		6.6	
95% CI	12.0 – 13.5		8.5 – 9.7		10.5 – 11.4		6.9 – 8.0		5.2 – 6.2		6.2 – 6.9	
AS Rate (Aust 1991)	13.2		8.1		10.3		7.9		4.7		6.1	
95% CI	12.4 – 13.9		7.5 – 8.6		9.8 – 10.7		7.3 – 8.4		4.3 – 5.1		5.7 – 6.4	
AS Rate (World)	10.0		6.7		8.2		5.4		3.5		4.3	
95% CI	9.4 – 10.7		6.2 – 7.2		7.8 – 8.6		5.0 – 5.8		3.1 – 3.8		4.1 – 4.6	
Lifetime risk (0–74)	1 in 101		1 in 158		1 in 124		1 in 180		1 in 294		1 in 226	
PYLL (0–74)							7,978		5,828		13,805	
Per cent of all cancers	2.7		2.3		2.5		3.6		3.5		3.6	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	394	13.1	293	8.1	687	10.4	240	8.1	183	4.9	424	6.3
Vic	270	12.7	213	7.9	483	10.0	180	8.5	142	5.0	321	6.5
Qld	235	15.6	177	10.1	412	12.7	132	9.1	92	5.1	224	6.9
WA	87	11.5	70	7.8	157	9.4	56	7.6	45	4.9	100	6.1
SA	126	16.8	90	9.9	216	12.9	73	9.9	49	5.1	123	7.1
Tas	27	11.9	23	8.5	51	9.9	14	6.2	15	5.0	28	5.4
ACT	14	12.3	11	8.5	25	10.3	11	10.4	7	6.1	18	8.1
NT	4	5.2	4	10.5	8	7.8	2	3.6	2	7.8	5	5.8

Note: AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 26: Alcohol-related cancers

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5–9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10–14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15–19	0	0.0	0	0.0	0	0.0	0	0.1	0	0.0	1	0.0
20–24	1	0.1	1	0.1	1	0.1	0	0.0	0	0.0	0	0.0
25–29	1	0.2	3	0.4	4	0.3	1	0.1	0	0.0	1	0.1
30–34	2	0.2	4	0.6	6	0.4	1	0.1	1	0.2	2	0.1
35–39	7	1.0	10	1.3	17	1.2	3	0.4	2	0.2	4	0.3
40–44	16	2.4	24	3.5	41	2.9	6	0.9	5	0.7	11	0.8
45–49	30	4.6	38	6.0	68	5.3	12	1.9	8	1.3	20	1.6
50–54	45	8.0	45	8.3	89	8.2	25	4.4	10	1.9	35	3.2
55–59	54	12.6	41	9.8	96	11.2	28	6.6	10	2.3	38	4.5
60–64	69	19.1	39	10.9	108	15.0	41	11.3	11	3.1	52	7.2
65–69	66	19.6	42	11.9	108	15.7	44	13.2	16	4.5	60	8.8
70–74	49	17.3	46	14.0	95	15.6	36	12.6	20	6.1	56	9.1
75–79	18	9.3	13	5.1	31	6.9	13	7.0	7	2.7	20	4.5
80–84	5	4.7	8	4.5	13	4.6	4	4.1	5	2.8	9	3.3
85 and over	3	5.2	7	4.7	10	4.9	3	5.5	6	3.9	9	4.3
Total	**366**		**322**		**688**		**217**		**101**		**319**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	4.0		3.5		3.7		2.4		1.1		1.7	
95% CI	3.6 – 4.4		3.1 – 3.8		3.4 – 4.0		2.0 – 2.7		0.9 – 1.3		1.5 – 1.9	
AS Rate (Aust 1991)	3.9		3.2		3.5		2.3		1.0		1.6	
95% CI	3.5 – 4.3		2.8 – 3.5		3.3 – 3.8		2.0 – 2.7		0.8 – 1.2		1.5 – 1.8	
AS Rate (World)	3.3		2.7		3.0		1.9		0.8		1.3	
95% CI	2.9 – 3.6		2.4 – 3.0		2.7 – 3.2		1.6 – 2.2		0.6 – 0.9		1.2 – 1.5	
Lifetime risk (0–74)	1 in 236		1 in 299		1 in 264		1 in 389		1 in 980		1 in 562	
PYLL (0–74)							2,699		1,232		3,931	
Per cent of all cancers	0.8		0.9		0.9		1.1		0.7		0.9	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	125	3.9	107	3.2	231	3.6	71	2.2	34	1.0	105	1.6
Vic	89	3.9	81	3.2	169	3.6	54	2.4	28	1.1	82	1.7
Qld	69	4.3	52	3.1	121	3.7	37	2.4	16	0.9	53	1.6
WA	32	4.0	28	3.3	60	3.6	19	2.4	9	1.0	28	1.7
SA	24	3.1	26	3.1	50	3.0	14	1.8	9	1.0	23	1.4
Tas	8	3.5	8	3.2	17	3.3	6	2.3	3	1.0	8	1.6
ACT	4	3.3	4	3.2	8	3.3	2	2.2	1	1.1	4	1.6
NT	4	7.8	2	2.8	6	5.6	2	4.6	0	1.3	3	3.1

Notes

1. AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.
2. Cancers attributable to alcohol are oropharynx, oesophagus, liver, larynx and female breast cancer.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Table 27: Smoking-related cancers

Australia 1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Age group												
0–4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5–9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10–14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15–19	7	1.0	3	0.5	10	0.7	1	0.1	1	0.1	1	0.1
20–24	32	4.5	8	1.1	39	2.9	2	0.2	1	0.1	3	0.2
25–29	55	7.5	24	3.3	78	5.4	3	0.4	2	0.2	4	0.3
30–34	72	10.1	34	4.8	106	7.4	8	1.1	6	0.9	14	1.0
35–39	104	14.1	52	7.0	156	10.5	16	2.1	13	1.8	29	2.0
40–44	167	24.2	81	11.6	247	17.9	51	7.3	33	4.7	83	6.0
45–49	301	46.3	163	25.5	464	36.0	131	20.2	72	11.2	203	15.7
50–54	469	84.2	165	30.7	634	58.0	254	45.6	106	19.9	361	33.0
55–59	729	168.4	212	50.5	941	110.4	396	91.5	142	33.8	538	63.1
60–64	966	268.2	315	86.7	1,281	177.1	645	179.0	185	50.9	830	114.7
65–69	1,311	389.4	412	117.1	1,722	250.3	894	265.5	289	82.2	1,183	171.9
70–74	1,478	525.9	466	142.0	1,945	319.1	1,057	375.9	355	108.1	1,412	231.6
75–79	1,050	553.0	387	151.5	1,437	322.6	816	430.0	292	114.0	1,108	248.7
80–84	646	595.1	172	96.4	818	284.6	541	498.3	144	80.6	685	238.3
85 and over	378	590.6	134	89.7	512	240.1	337	526.1	120	80.3	456	214.2
Total	**7,763**		**2,628**		**10,391**		**5,149**		**1,760**		**6,909**	
Rates per 100,000 with 95 per cent confidence intervals (95% CI)												
Crude rate	84.3		28.2		56.1		55.9		18.9		37.3	
95% CI	82.4 – 86.1		27.1 – 29.3		55.0 – 57.2		54.4 – 57.4		18.0 – 19.8		36.4 – 38.2	
AS Rate (Aust 1991)	86.3		25.2		52.9		58.1		16.5		35.0	
95% CI	84.4 – 88.3		24.3 – 26.2		51.9 – 53.9		56.5 – 59.7		15.8 – 17.3		34.1 – 35.8	
AS Rate (World)	62.1		19.2		39.2		39.9		12.1		24.8	
95% CI	60.6 – 63.5		18.4 – 19.9		38.4 – 40.0		38.8 – 41.0		11.5 – 12.7		24.2 – 25.4	
Lifetime risk (0–74)	1 in 13		1 in 42		1 in 21		1 in 21		1 in 64		1 in 32	
PYLL (0–74)							36,455		14,208		50,663	
Per cent of all cancers	18.0		7.2		13.1		27.0		11.8		20.3	

Average annual numbers and rates by State and Territory 1993–1997

	Incidence						Mortality					
	Males		Females		Persons		Males		Females		Persons	
	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate	Number	AS Rate
NSW	2,502	81.6	848	24.1	3,350	50.7	1,764	58.2	591	16.4	2,355	35.3
Vic	1,941	89.0	642	24.7	2,583	53.6	1,350	62.8	464	17.5	1,814	37.3
Qld	1,461	96.8	434	25.7	1,894	58.8	931	63.1	271	15.9	1,202	37.4
WA	634	84.8	217	25.3	851	52.3	449	61.9	151	17.5	600	37.2
SA	639	83.2	202	22.2	840	49.4	448	58.6	138	14.7	585	33.9
Tas	226	96.6	74	27.7	300	58.8	154	66.5	51	18.9	205	39.8
ACT	65	63.9	28	23.3	93	41.4	51	55.0	20	16.7	71	33.3
NT	50	114.8	17	40.7	67	80.1	34	90.6	12	30.9	46	61.6

Notes

1. AS Rates use Australian 1991 Population Standard unless World Standard Population is indicated. All rates are expressed per 100,000 population.
2. Cancers attributable to smoking are oropharynx, oesophagus, stomach, anus, pancreas, larynx, lung, uterus, cervix, vulva, penis, bladder, renal parenchyma and renal pelvis.

Source: Cancer in Australia 1997, AIHW & AACR 2000.

Appendixes

Appendix A: International Classification of Diseases—Ninth Revision—cancer site—codes and combinations

Buccal cavity	
Lip	140
Tongue	141
Salivary glands	142
Gum	143
Floor of mouth	144
Other and unspecified parts of mouth	145
Pharynx	
Oropharynx	146
Nasopharynx	147
Hypopharynx	148
Other sites within the lip, oral cavity and pharynx	149
Head and neck	141–149
Digestive organs and peritoneum	
Oesophagus	150
Stomach	151
Small intestine	152
Colon	153
Rectum	154
Colorectal	153–154
Liver and intrahepatic bile ducts	155
Gallbladder and extrahepatic bile ducts	156
Pancreas	157
Retroperitoneum and peritoneum	158
Unspecified digestive organs	159
Respiratory system	
Nasal cavities, middle ear and accessory sinuses	160
Larynx	161
Trachea, bronchus and lung	162
Pleura	163
Respiratory systems, ill-defined and other intrathoracic organs	164–165
Bone, connective tissue, skin and breast	
Bone and articular cartilage	170
Connective and other soft tissue	171
Melanoma	172
Non-melanocytic skin cancer (NMSC)	173
Breast	174–175
Genitourinary organs	
Cervix	180
Placenta	181
Corpus uteri	179+182
Ovary and other uterine adnexae	183
Other and unspecified female genital organs	184
Prostate	185
Testis	186
Penis and other male genital organs	187
Bladder	188
Kidney, ureter and urethra	189
Gynaecological cancers	179–180, 182–184
Other and unspecified organs	
Eye	190
Brain	191
Other and unspecified parts of the nervous system (NS)	192
Thyroid gland	193
Other endocrine glands	194
Unknown primary site	195–199
Lymphatic and haematopoietic tissue	
Non-Hodgkin's lymphomas (NHL)	200+202
Lymphosarcoma and reticulosarcoma	200
Hodgkin's disease	201
Other neoplasms of lymphoid and histiocytic tissue	202
Lymphomas	200–202
Multiple myeloma and immunoproliferative neoplasms	203
Lymphatic leukaemia	204
Acute lymphatic leukaemia	204.0
Chronic lymphatic leukaemia	204.1
Myeloid leukaemia	205
Acute myeloid leukaemia	205.0
Chronic myeloid leukaemia	205.1
Monocytic leukaemia	206
Other and unspecified leukaemias	207–208
Leukaemias	204–208
Smoking-related cancers (Aetiological fractions are applied to the following codes)	140, 141, 143–151, 154.3–154.4, 157, 161, 162, 180, 179+182, 184.4, 186, 188, 189.0, 189.1
Alcohol-related cancers (Aetiological fractions are applied to the following codes)	141, 143–146, 148–149, 150, 155, 161, 174

Note: Abbreviated versions of these names may be used in this report.

Source: World Health Organization 1977.

Appendix B: Methods

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

Example table

Trachea, bronchus and lung cancer incidence (ICD 162)—males

	No. of cases	Australian 1997 male population*	Age-specific rate per 100,000 population	Australian 1991 Population Standard**	Expected number of cases
Age group	**column 1**	**column 2**	**column 3**	**column 4**	**column 5**
0–4	0	663,326	0.0	1,271,703	0.0
5–9	0	674,264	0.0	1,272,208	0.0
10–14	0	671,797	0.0	1,241,619	0.0
15–19	1	663,680	0.2	1,364,074	2.7
20–24	4	697,074	0.6	1,396,764	8.4
25–29	1	727,726	0.1	1,399,663	1.4
30–34	3	710,389	0.4	1,425,735	5.7
35–39	19	737,306	2.6	1,328,387	34.5
40–44	54	688,428	7.8	1,294,271	101.0
45–49	126	649,590	19.4	1,029,145	199.7
50–54	260	557,455	46.6	846,934	394.7
55–59	449	432,830	103.7	725,950	752.8
60–64	645	360,382	179.0	736,868	1,319.0
65–69	953	336,529	283.2	671,390	1,901.4
70–74	1,139	281,090	405.2	510,755	2,069.6
75–79	856	189,861	450.9	384,495	1,733.7
80–84	525	108,495	483.9	229,828	1,112.1
85+	287	63,988	448.5	154,247	691.8
Total	**5,322**	**9,214,210**	**57.8**	**17,284,036**	**59.8**

* Australian Bureau of Statistics 1997b.

** Australian Bureau of Statistics 1993.

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 (e.g. see age-specific rates). 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 e.g.

$$\text{Crude incidence rate for lung cancer} = \frac{\text{Column 1 total}}{\text{Column 2 total}} \times 100{,}000$$

$$= \frac{5{,}332}{9{,}214{,}210} \times 100{,}000$$

$$= 57.8 \text{ per } 100{,}000$$

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 expressed as a rate per 100,000 population. This rate may be calculated for particular age and sex groupings, e.g.

$$\text{Age-specific lung cancer incidence rates in males aged 75–79} = \frac{\text{Column 1 for this age}}{\text{Column 2 for this age}} \times 100{,}000$$

$$= \frac{856}{189{,}861} \times 100{,}000$$

$$= 450.9 \text{ per } 100{,}000$$

Age-standardised rates (AS Rate)

Rates are adjusted for age to facilitate comparisons between populations which have different age structures, e.g. between youthful and ageing communities. There are two different methods commonly used to adjust for age. In this publication we use direct standardisation in which age-specific rates are multiplied against a constant population (the Australian 1991 Population Standard or the World Standard Population). This effectively removes the influence of age structure on the summary rate which 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 Sum the expected number of cases in each age group to give the age-standardised rate (total column 5). If the standard population is not the World Standard

Population then divide this sum by the total of the standard population and multiply by 100,000.

Confidence intervals (CI)

The age-standardised and crude incidence and mortality rates presented in the body of this report also show 95% confidence intervals. These confidence intervals indicate the variation that might be expected in such estimates purely by chance. The confidence intervals are calculated using the methods presented in Holman et al. (1987).

A relatively simple approximation of the confidence limits that readers might use when examining State and Territory age-standardised rates is as set out below.

$$\text{95\% CI approximation} = \text{AS Rate} \pm 1.96 \times \frac{\text{AS Rate}}{\sqrt{\text{Number of cases}}}$$

Lifetime risk and cumulative rate

Lifetime risk is a measure which approximates the risk of contracting a particular cancer in a lifetime if the risks at the time of estimation remained throughout life. It is based on a mathematical relationship with the cumulative rate and is calculated in this publication for ages 0–74.

Cumulative rate is a directly standardised rate calculated by summing age-specific rates from equal age groups, e.g. 5–9, 10–14 years. An example is provided below.

$$\text{Cumulative rate} = \frac{5 \times (\text{Sum of the age-specific rates}) \times 100}{100{,}000}$$

$$= \frac{5 \times 1048.8 \times 100}{100{,}000}$$

$$= 5.24\%$$

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:

$$\text{Cumulative risk} = \left(1 - e^{-rate \,/\, 100}\right)$$

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:

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

For lung cancer in men, the cumulative rate was 5.24% (see previous page), therefore:

$$n = \frac{1}{\left(1 - e^{-5.24/100}\right)}$$

$$= 19.59$$

That is, for men, the lifetime risk (0–74 years) of developing lung cancer is 1 in 20, providing they remain at risk for the whole period and the 1997 age-specific rates apply throughout their lives. Note that no account has been taken of specific cancer risk factors, e.g. 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 proportion of all causes 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, e.g. 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. Note that for this publication the incidence and mortality of non-melanocytic skin cancers is not included in total new cancer cases.

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 per cent. 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 rates or the cumulative rate as these both adjust for age variations between male and female populations. In addition, the use of cumulative rate per cent discounts the occurrence of cancer in people aged over 75. This gives more emphasis, therefore, to early cancer diagnosis or death, and diminishes the impact of variable diagnostic investigation of the elderly.

Person-years of life lost

Person-years of life lost is a concept which attempts to measure the number of years of life lost per annum due to death as a result of a specific cause, e.g. lung cancer, given life expectancies at specific ages. Age groups 0–4 up to 70–74 were used for the calculations, as deaths before age 75 are regarded as premature for both men and women. The method used in this publication for the calculation of person-years of life lost is an aggregation of years

between age at death and 75 for each person for each cancer, e.g. a person dying at age 50 contributes 25 years to the measure of person-years of life lost.

Average annual rates of change

To indicate the extent of change in age-standardised rates over time, a linear line of best fit is calculated for the time frame in question. Average annual rates of change are then calculated using the geometric formula:

$$\text{Average rate of change} = \left(\left(P_n / P_o \right)^{1/N} - 1 \right) \text{ x } 100$$

where P_n = rate at later year n

P_o = rate at earlier year o

N = $n - o$.

This process averages out variations in the actual annual changes that may have occurred between the two points in time.

Mortality to incidence ratio

The mortality to incidence ratio is calculated by dividing the number of deaths for a particular cancer by the number of new cases for that cancer in a specified time period. If registration is complete and the incidence of the cancer in question is not changing rapidly, the mortality to incidence ratio should reflect long-term survival.

Appendix C: Population data

Australian resident population 1997

	1997		
Age	**Males**	**Females**	**Total**
0–4	663,326	628,962	1,292,288
5–9	674,264	640,884	1,315,148
10–14	671,797	640,312	1,312,109
15–19	663,680	630,243	1,293,923
20–24	697,074	674,613	1,371,687
25–29	727,726	724,812	1,452,538
30–34	710,389	714,205	1,424,594
35–39	737,306	740,902	1,478,208
40–44	688,428	692,235	1,380,663
45–49	649,590	640,059	1,289,649
50–54	557,455	536,230	1,093,685
55–59	432,830	419,785	852,615
60–64	360,382	362,859	723,241
65–69	336,529	351,722	688,251
70–74	281,090	328,316	609,406
75–79	189,861	255,728	445,589
80–84	108,495	178,966	287,461
85+	63,988	149,112	213,100
Total	**9,214,210**	**9,309,945**	**18,524,155**

Source: Australian Bureau of Statistics 1997b.

Australian Standard Population* and World Standard Population**

	Australian Standard Population (1991)		World Standard Population	
Age		**% of total**		**% of total**
0–4	1,271,703	7.4	12,000	12.0
5–9	1,272,208	7.4	10,000	10.0
10–14	1,241,619	7.2	9,000	9.0
15–19	1,364,074	7.9	9,000	9.0
20–24	1,396,764	8.1	8,000	8.0
25–29	1,399,663	8.1	8,000	8.0
30–34	1,425,735	8.2	6,000	6.0
35–39	1,328,387	7.7	6,000	6.0
40–44	1,294,271	7.5	6,000	6.0
45–49	1,029,145	6.0	6,000	6.0
50–54	846,934	4.9	5,000	5.0
55–59	725,950	4.2	4,000	4.0
60–64	736,868	4.3	4,000	4.0
65–69	671,390	3.9	3,000	3.0
70–74	510,755	3.0	2,000	2.0
75–79	384,495	2.2	1,000	1.0
80–84	229,828	1.3	500	0.5
85+	154,247	0.9	500	0.5
Total	**17,284,036**	**100.0**	**100,000**	**100.0**

* Australian Bureau of Statistics 1993.

** Doll & Smith 1982.

Appendix D: 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 bulk 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 have effects on 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.

States and Territories	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Total population (1997)	6,272,784	4,605,210	3,397,071	1,797,870	1,479,680	473,478	308,011	186,907
Per cent of Australian population	33.8	24.8	18.3	9.7	8.0	2.6	1.7	1.0
Per cent of population older than age 65	12.7	12.6	11.2	10.4	14.1	12.9	7.5	3.3
No. new cancers (1997)	27,287	20,296	14,922	6,422	7,226	2,090	982	413
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	Govt	Govt	Govt	Pvte–Govt	Govt	Govt
ICD site coding	ICD-O-2	ICD-9	ICD-9	ICD-O-2	ICD-9	ICD-9	ICD-O-2	ICD-9
Morphology coding	ICD-O-2	ICD-O-2	ICD-O-2	ICD-O-2	SNOMED-II	ICD-O-2	ICD-O-2	SNOMED-II
Reporting sources								
Public hospitals	Yes	Yes	Yes	No*	Yes	Yes	Yes	Yes
Private hospitals	Yes	Yes	Yes	No*	Yes	Yes	Yes	No
Repatriation hospitals	Yes	Yes	Yes	No*	Yes	Yes	Yes	No
Pathology laboratories	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Radiotherapy units	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Nursing homes	Yes	No	Yes	No	No	No*	Yes	No
Registrar of Births, Deaths and Marriages	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Doctors	No*	No*	No*	No*	No*	No*	No*	No*

* Data are provided on special request only.

Appendix E: Cancer registries contact list

NSW Central Cancer Registry
NSW Cancer Council
LMB 1
KINGS CROSS NSW 1340

Phone: +61 2 9334 1902
Fax: +61 2 9368 0843
E-mail: ccr@nswcc.org.au
Home page: www.nswcc.org.au

Director: Professor Bruce Armstrong
E-mail: brucea@nswcc.org.au
Phone: +61 2 9334 1837

Registry Manager: Ms Elizabeth Tracey
E-mail: etracey@nswcc.org.au
Phone: +61 2 9334 1974

Victorian Cancer Registry
Anti-Cancer Council of Victoria
1 Rathdowne Street
CARLTON SOUTH VIC 3053

Phone: +61 3 9635 5000
Fax: +61 3 9635 5210
Home page: www.accv.org.au

Director: Professor Graham Giles
E-mail: ggg@accv.org.au
Phone: +61 3 9635 5154

Director Information Systems:
Ms Helen Farrugia
E-mail: helenf@accv.org.au
Phone: +61 3 9635 5318

Registrar: Ms Kathryn Whitfield
E-mail: kathryn@accv.org.au
Phone: +61 3 9635 5160

Statistician: Mrs Vicky Thursfield
E-mail: vickyt@accv.org.au
Phone: +61 3 9635 5162

Queensland Cancer Registry
Locked Bag 1450
SPRING HILL QLD 4004

Phone: +61 7 3258 2331
Fax: +61 7 3258 2345

Director: Dr Ian Ring
E-mail: ian_ring@health.qld.gov.au
Phone: +61 7 3234 0921
Fax: +61 7 3234 1529

Registrar: Mrs Judy Symmons
E-mail: judith_symmons@health.qld.gov.au
Phone: +61 7 3258 2333
Fax: +61 7 3258 2345

Western Australian Cancer Registry
Health Information Centre
Health Department of Western Australia
PO Box 8172
Stirling St
PERTH WA 6849

Phone: +61 8 9222 4022/4249
Fax: +61 8 9222 4236
Home page: www.health.wa.gov.au
E-mail: wacanreg@health.wa.gov.au

Director & Registrar: Dr Tim Threlfall
E-mail: tim.threlfall@health.wa.gov.au

South Australian Cancer Registry
Epidemiology Branch, Dept of Human Services
PO Box 6
RUNDLE MALL SA 5000
Phone: +61 8 8226 6372
Fax: +61 8 8226 6291
Home page:
www.health.sa.gov.au/pehs/health-stats.htm

Director: Associate Professor David Roder
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Appendix F: Tables published on the Internet

Table 1: All cancers (except non-melanocytic skin cancers) (ICD 140–172, 174–208)
Table 2: Cancer of the lip (ICD 140)
Table 3: Cancer of the tongue (ICD 141)
Table 4: Cancer of the salivary gland (ICD 142)
Table 5: Cancer of the gum (ICD 143)
Table 6: Cancer of the floor of mouth (ICD 144)
Table 7: Cancer of other and unspecified parts of mouth (ICD 145)
Table 8: Cancer of the oropharynx (ICD 146)
Table 9: Cancer of the nasopharynx (ICD 147)
Table 10: Cancer of the hypopharynx (ICD 148)
Table 11: Cancer of other sites within the lip, oral cavity and pharynx (ICD 149)
Table 12: Cancer of the head and neck (ICD 141–149)
Table 13: Cancer of the oesophagus (ICD 150)
Table 14: Cancer of the stomach (ICD 151)
Table 15: Cancer of the small intestine (ICD 152)
Table 16: Cancer of the colon (ICD 153)
Table 17: Cancer of the rectum (ICD 154)
Table 18: Cancer of the colon and rectum (ICD 153–154)
Table 19: Cancer of the liver and intrahepatic bile ducts (ICD 155)
Table 20: Cancer of the gallbladder and extrahepatic bile ducts (ICD 156)
Table 21: Cancer of the pancreas (ICD 157)
Table 22: Cancer of the retroperitoneum and peritoneum (ICD 158)
Table 23: Cancer of the unspecified digestive organs (ICD 159)
Table 24: Cancer of the nasal cavities, middle ear and accessory sinuses (ICD 160)
Table 25: Cancer of the larynx (ICD 161)
Table 26: Cancer of the trachea, bronchus and lung (ICD 162)
Table 27: Cancer of the pleura (ICD 163)
Table 28: Cancer of the other respiratory organs (ICD 164–165)
Table 29: Cancer of the bone and articular cartilage (ICD 170)
Table 30: Cancer of the connective and other soft tissue (ICD 171)
Table 31: Cancer of the skin—melanoma (ICD 172)
Table 32: Cancer of the skin—non-melanocytic (ICD 173)
Table 33: Cancer of the breast (ICD 174–175)
Table 34: Cancer of the cervix (ICD 180)
Table 35: Cancer of the placenta (ICD 181)
Table 36: Cancer of the uterus (ICD 179+182)
Table 37: Cancer of the ovary and other uterine adnexae (ICD 183)

Glossary

AACR: Australasian Association of Cancer Registries

ABS: Australian Bureau of Statistics

ACT: Australian Capital Territory—a land-locked Territory of Australia situated within the State of New South Wales on the eastern seaboard, with a population of 308,011 (1997). Its capital city is Canberra, which is also Australia's capital city.

AIHW: Australian Institute of Health and Welfare

AS Rate: age-standardised rate

Cancer (malignant neoplasm): a term used to describe one of several 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? 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.

CI: confidence interval

CNS: central nervous system

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.

IACR: International Association of Cancer Registries

ICD-9: International Classification of Disease—a coding system used to identify the primary site of the malignancy. This publication uses the ninth revision of the ICD classification.

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

MIR: mortality to incidence ratio

Mortality: *see* **cancer death**

NCSCH: National Cancer Statistics Clearing House

New cancer case: a person who has a new cancer diagnosed for the first time. One 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 set out in more detail in a publication by Jensen et al. (1991).

NHL: non-Hodgkin's lymphoma

NMSC: non-melanocytic skin cancers

NSW: New South Wales—a State of Australia on the eastern seaboard which has the largest capital city in Australia, Sydney, and a population of 6,272,784 (1997).

NT: Northern Territory—a Territory in the north of Australia, with a population of 186,907 (1997) and Darwin as its capital city.

PSA: prostate-specific antigen

PYLL: person-years of life lost

Qld: Queensland—a State in the north-east of Australia, with a population of 3,397,071 (1997) and Brisbane as its capital city.

SA: South Australia—a State in the southern part of Australia, with a population of 1,479,680 (1997) and Adelaide as its capital city.

SNOMED: Systematised Nomenclature of Medicine

Tas: Tasmania—an island State in the south-east of Australia, with a population of 473,478 (1997) and Hobart as its capital city.

Vic: Victoria—a State in the south-east of Australia, with a population of 4,605,210 (1997) and Melbourne as its capital city.

WA: Western Australia—the largest State in Australia, located in the west, with a population of 1,797,870 (1997) and Perth as its capital city.

WHO: World Health Organization

Data sources

National Cancer Statistics Clearing House Database

Cancer 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 national collection of cancer incidence statistics through the National Cancer Statistics Clearing House. National statistics are available for all years from 1982 to 1997.

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 without unique identifiers in a national mortality database.

International Data

The international incidence and mortality data were sourced from the national/regional institutions collecting cancer statistics, either by personal correspondence or in electronic format from the Internet. Bulgaria provided unpublished 1997 data, New Zealand provided 1996 incidence and 1997 mortality data, the Czech Republic 1997 and Japan (Osaka prefecture) 1996 data. England & Wales supplied provisional 1996 incidence and 1998 mortality data. The Dutch and Finnish incidence and mortality estimates are for 1996 and were extracted from the EUCAN database which is a product of the European Network of Cancer Registries. The most comprehensive collection of cancer incidence statistics in the United States is available from the National Cancer Institute on CD-ROM (SEER—Surveillance, Epidemiology, and End Results) and in this publication the 1997 data were used. The 1997 cancer mortality data for the United States were extracted from the World Health Organization's Mortality Database.

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