

3 Cancer trends

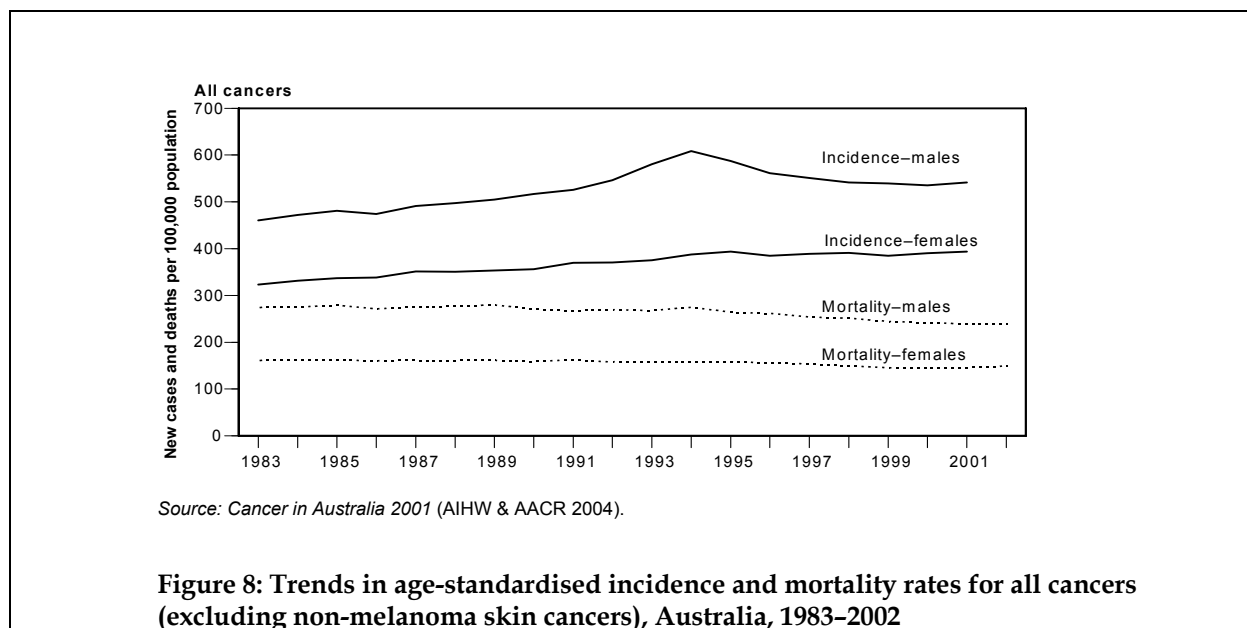
National trends in cancer incidence and mortality

National cancer incidence and mortality rates for the most common cancer sites are presented in Figures 8–14. Incidence data are presented for the period 1983–2001 while mortality data are presented for the period 1983–2002.

The trends in incidence and mortality rates vary with the type of cancer. 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 (for example, 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 118 new cases, whereas the same percentage increase in cervical cancer incidence would result in approximately seven new cases.

Between 1991 and 2001, age-standardised incidence rates for all cancers combined (except non-melanoma skin cancers) increased for males by an average of 4.4% per annum until 1995 and then declined by an average of 1.3% per annum until 2001. For females, age-standardised rates increased by an average of 1.5% until 1995 and then fluctuated around this level through to 2001 (Figure 8). 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.

Between 1991 and 2001, age-standardised mortality rates for all cancers combined (except non-melanoma skin cancers) hovered around 270 cases per 100,000 for males until 1995 and then decreased by an average of 1.8% through to 2001. For females the age-standardised rates remained close to 160 cases per 100,000 until 1997 and then declined by an average of 1.4% through to 2001.



The number of new cases of cancer increased by 34.0% from 65,966 in 1991 to 88,398 in 2001 while the number of deaths increased by 17.4% from 30,928 in 1991 to 36,319 in 2001.

Prostate cancer

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 9). This upward trend has been attributed to increased detection of the disease through increased investigations, particularly the introduction of PSA testing (introduced around 1990). However, from 1994 to 1997 the age-standardised prostate cancer incidence rate fell by 30%. There has been little change between the 1998 and 2001 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 death rate from prostate cancer, which is significantly lower than the incidence rate, decreased by 1.8% per annum between 1991 and 2001.

Breast cancer

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 100.4 cases per 100,000 population in 1991 to 117.2 cases per 100,000 population in 2001. The breast cancer incidence rate increased on average 1.4% per annum between 1991 and 2001 (Figure 9). From 1991 to 2001 the breast cancer mortality rates declined by an average of 2.2% per year.

Colorectal cancer

For colorectal cancer, both the male and female incidence rates have increased since 1991 by an average of 0.3% and 0.1% respectively per year. Mortality rates have fallen steadily – the male rate decreased 1.2% per annum between 1991 and 2001 and the female rate decreased 1.6% (Figure 9).

Lung cancer

Between 1991 and 2001, the incidence and mortality of lung cancer among males fell by an average of 2.1% per year (Figure 10). These declining rates are attributed to decreased tobacco smoking among men 10 to 20 years earlier, and represent the lowest incidence rate (61.4 new cases per 100,000 population) recorded since national data collection began in 1982. In contrast, lung cancer incidence among females increased by 1.2% per annum between 1991 and 2001. The death rate from lung cancer among females also increased on average by 1.1% per annum between 1991 and 2001.

Melanoma

The incidence rate for melanoma among males and females increased between 1991 and 2001 on average by 2.1% and 1.2% per year respectively, some of this increase due to improved registration of this cancer. Mortality rates for males increased by 0.5% per annum between 1996 and 2001 while the female rates increased by 0.2% per annum between 1991 and 2001 (Figure 10).

Non-Hodgkin's lymphoma

The incidence of non-Hodgkin's lymphoma increased by an average of 0.7% per year in males and 1.2% in females between 1991 and 2001 (Figure 11). During the same period the annual mortality rate in males decreased by 0.4% while for females there was an increase of 0.2% during the same period.

Cancer of the bladder

The incidence of bladder cancer for males increased between 1991 and 2001 by an average of 0.1% per annum (Figure 11). Some of the increase in male incidence may be a result of the increased use of screening for prostate cancer leading to a diagnosis of bladder cancer as part of the diagnostic assessment. The female incidence rate increased by an average of 0.7% per annum over the same period. Mortality rates decreased for both males and females between 1991 and 2001 – 0.2% per annum and 0.5% per annum respectively.

Cancer of the stomach

Stomach cancer incidence fell by an average of 2.3% and 1.6% per year for males and females respectively over the period 1991–2001 (Figure 11). Mortality rates decreased substantially for both sexes over the 1991 to 2001 period, by 3.4% in males and 3.6% in females on average per annum.

Leukaemias

The incidence rate for leukaemias in males and females decreased between 1991 and 2001 by an average of 0.5% and 0.3% respectively per year (Figure 12). During the same time the mortality rates increased by 0.1% per annum for males and decreased by 0.7% per annum for females.

Brain cancer

Incidence of brain cancer between 1991 and 2001 increased by an average of 0.1% per annum in males and decreased by an average of 0.8% per annum in females (Figure 12). The mortality rate over the same period remained stable for males and decreased on average for females by 0.4% per year.

Cancer of the pancreas

Between 1991 and 2001, the male incidence and mortality rates for cancer of the pancreas fell annually by an average of 0.3% and 0.2% respectively. In contrast, over the same period, the female incidence rate remained stable while the mortality rate increased by an average of 0.2% per year (Figure 12).

Cervical cancer

The age-standardised incidence rate for cervical cancer declined by an average of 6.2% per annum between 1991 and 2001 (Figure 13). Mortality rates have fallen by an average of 5.2% per year since 1991. These gains are due, in part, to the success of the National Cervical Screening Program in both detecting pre-cancerous abnormalities and in detecting cervical cancer at an early stage.

Cancer of the uterus

The incidence rate for cancer of the uterus increased on average by 0.3% per year between 1991 and 2001. The mortality rate decreased 1.6% per annum in the same period (Figure 13).

Cancer of the ovary

The incidence and mortality rates for cancer of the ovary declined on average by 0.4% and 0.7% per year between 1991 and 2001 respectively (Figure 13).

Cancer of the kidney

Between 1991 and 2001, male and female incidence rates for cancer of the kidney increased by an average of 1.6% and 0.9% per annum respectively. Mortality rates increased by 0.7% per annum for males and decreased by 1.1% for females (Figure 14).

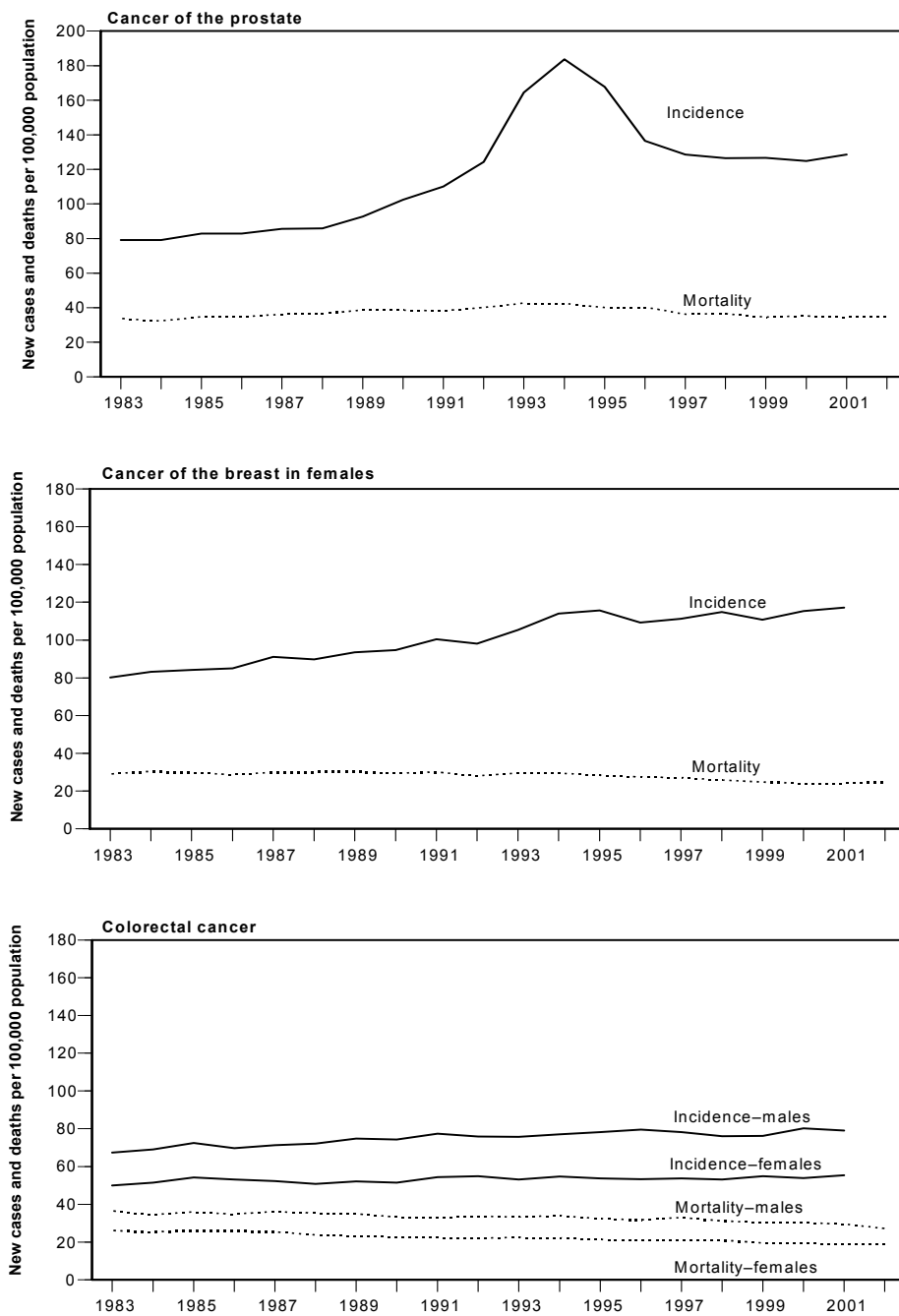
Cancer of the testis

The incidence rate for testicular cancer increased on average by 1.8% per annum between 1991 and 2001. The mortality rate declined on average by 3.7% per annum over the same period (Figure 14).

Cancers of unknown primary site

'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. Although there are many cancers in this category, it is important to know the current trends, given that this cancer group represents about 3.7% of new cases and 6.7% of deaths. Between 1991 and 2001 mortality rates decreased on average for both males and females by 3.4% and 2.5% per annum respectively. Incidence rates declined for both males and females on average by 1.9% and 1.4% per annum respectively (Figure 14). This may reflect a tendency for clinicians to investigate cancer cases more extensively, or for patients to present earlier with symptoms, before further investigation becomes unfruitful, resulting in fewer cases being classified as cancers of unknown primary site.

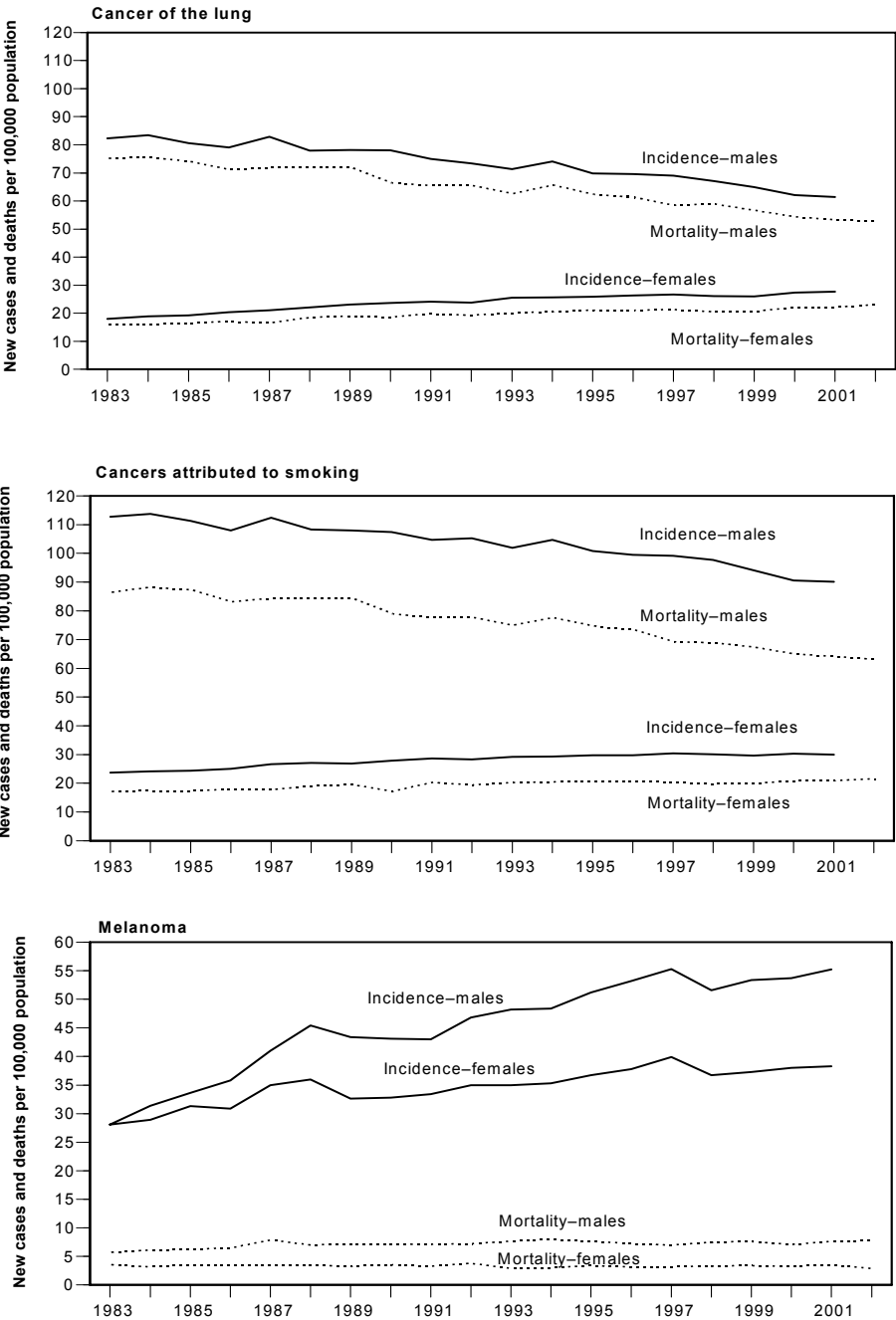
Prostate, breast and colorectal cancer



Source: *Cancer in Australia 2001* (AIHW & AACR 2004).

Figure 9: Trends in age-standardised incidence and mortality rates for prostate, breast and colorectal cancer, Australia, 1983–2002

Cancer of the lung, smoking-related cancers and melanoma

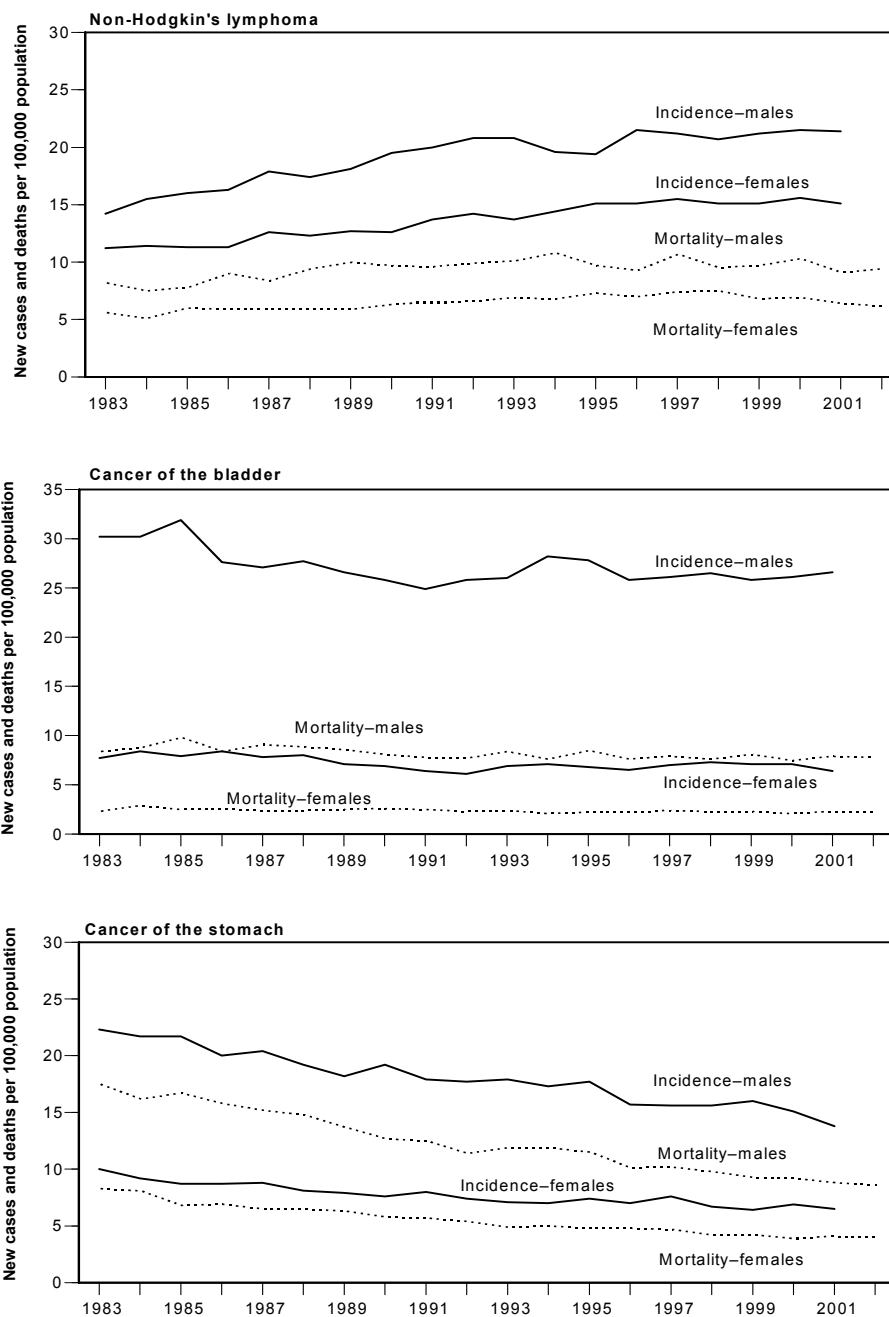


Note: Melanoma is graphed on a different scale from cancer of the lung and smoking-related cancers.

Source: Cancer in Australia 2001 (AIHW & AACR 2004).

Figure 10: Trends in age-standardised incidence and mortality rates for cancers of the lung, smoking-related cancers and melanoma, Australia, 1983–2002

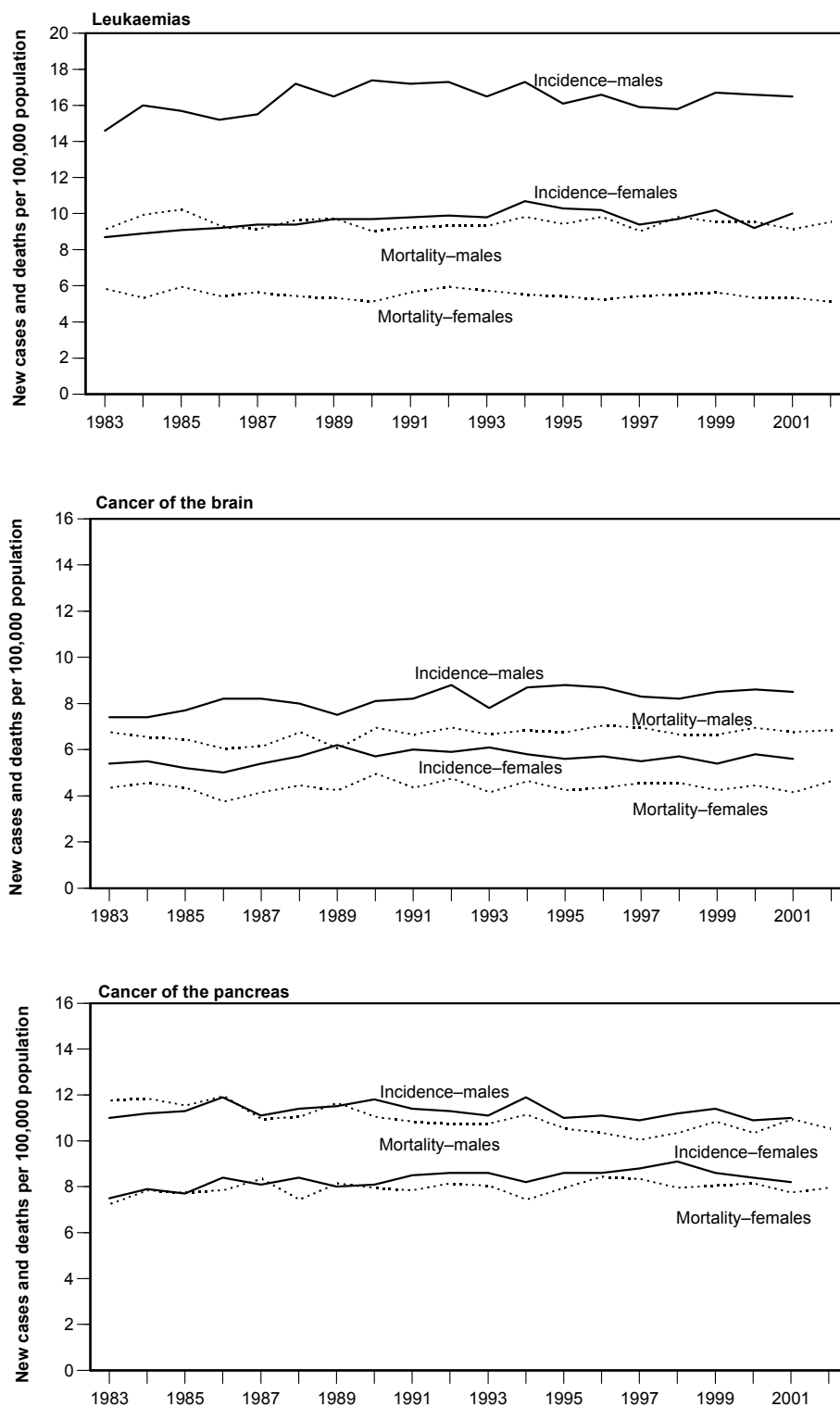
Non-Hodgkin's lymphoma, and cancers of the bladder and stomach



Source: *Cancer in Australia 2001* (AIHW & AACR 2004).

Figure 11: Trends in age-standardised incidence and mortality rates for non-Hodgkin's lymphoma, and cancers of the bladder and stomach, Australia, 1983-2002

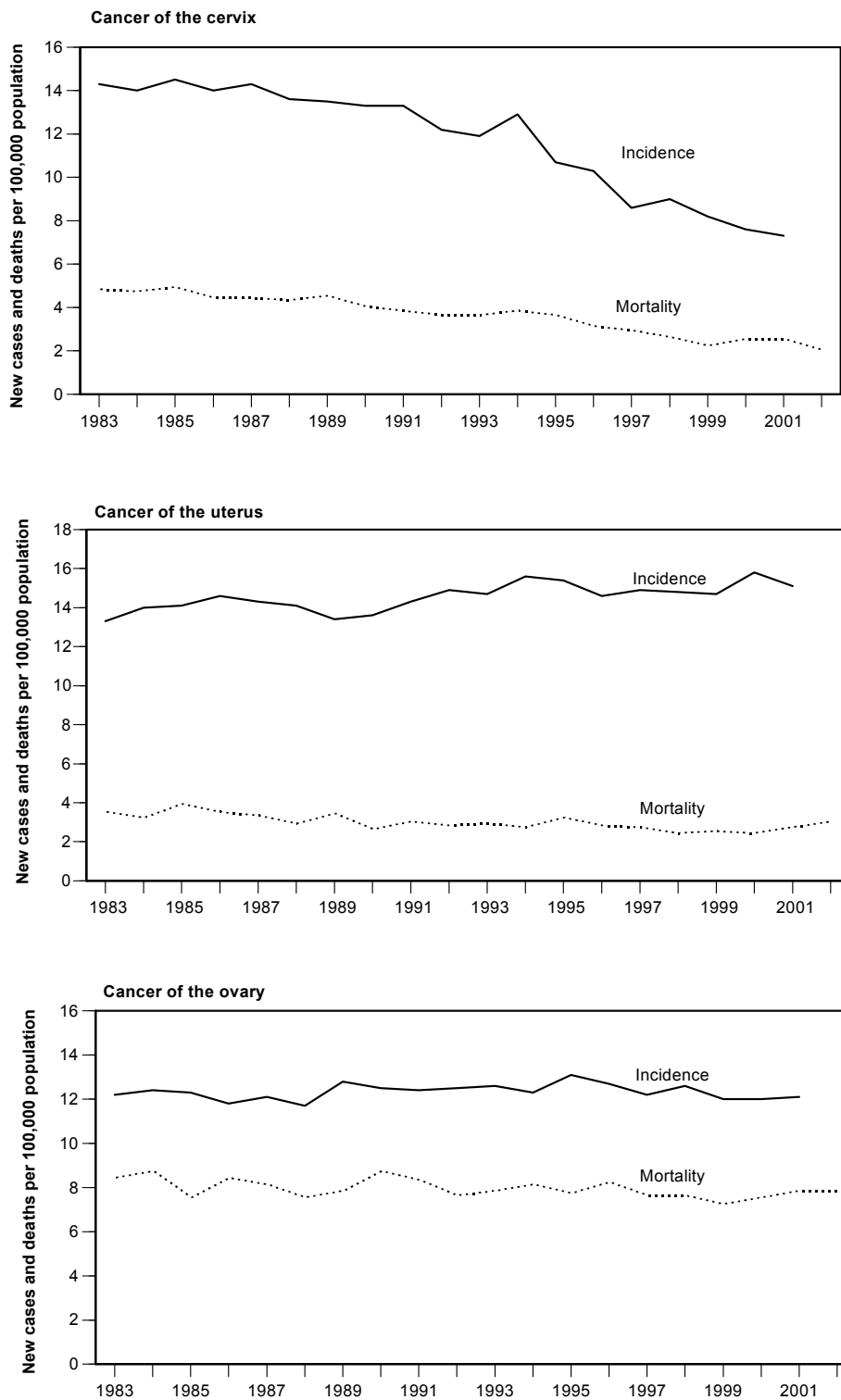
Leukaemias, and cancers of the brain and pancreas



Source: *Cancer in Australia 2001* (AIHW & AACR 2004).

Figure 12: Trends in age-standardised incidence and mortality rates for leukaemia and cancers of the brain and pancreas, Australia, 1983–2002

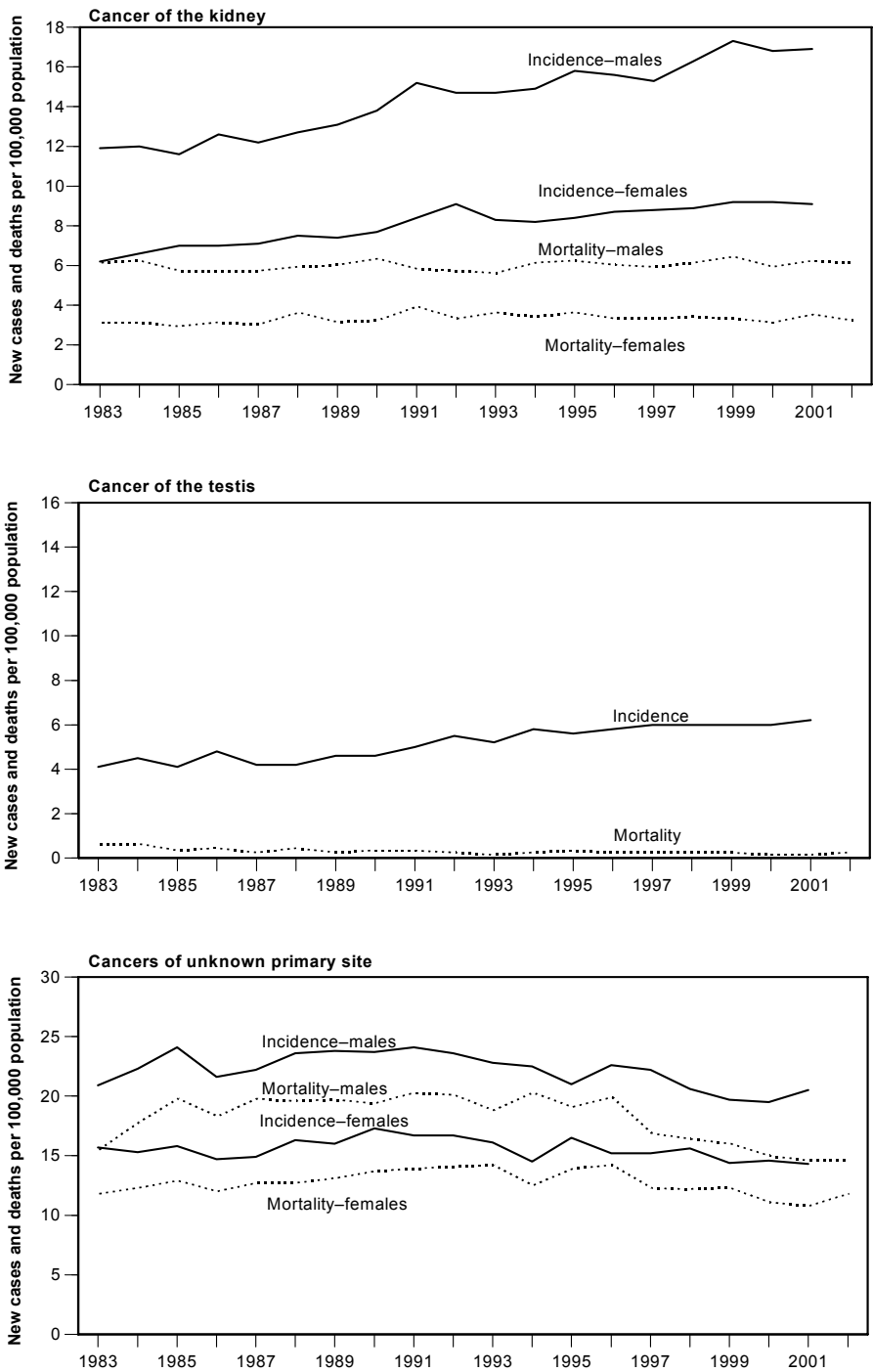
Cancers of the cervix, uterus and ovary



Source: *Cancer in Australia 2001* (AIHW & AACR 2004).

Figure 13: Trends in age-standardised incidence and mortality rates for cancers of the cervix, uterus and ovary, Australia, 1983–2002

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



Note: Cancers of unknown primary site are graphed on a different scale from cancers of the kidney and testis.
 Source: Cancer in Australia 2001 (AIHW & AACR 2004).

Figure 14: Trends in age-standardised incidence and mortality rates for cancers of the kidney and testis, and cancers of unknown primary site, Australia, 1983-2002

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 AACR agreed site and site groupings of the International Classification of Diseases, 10th Revision. Some groupings are guided by multiple primary rules (WHO 2000).
- All rates are presented per 100,000 population.
- Age-standardised rates are calculated by the 'direct method' (see definition in Appendix B). Age-standardised rates for Australia use both the total 2001 Australian population and the new WHO World Standard Population as the standard populations. Previous Cancer Series publications have used the 1991 Australian Standard Population, thus special care needs to be taken when comparing the age-standardised rates from the current publication with those published in previous years. Age-standardised rates for the States and Territories use only the total 2001 Australian Population as the standard population. Particular care should also 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 old World Standard Population.
- The person-years of life lost (PYLL) and lifetime risk estimates are for the ages 0–74 years.
- The confidence intervals used for crude and age-standardised rates are at the 95% level.
- The 'all cancers' incidence and mortality estimates exclude non-melanoma 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 vaginal 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. Changes over the longer term may also 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

In July 2004 cancer incidence data were available to 2001 for all states and territories.

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 1997–2001. 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 average numbers of cases or deaths per year 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. Mortality data may also differ for the reasons discussed on page 19 of this report.

State and territory mortality rates in this publication refer to the state and territory of **usual residence** for persons who died. Care should be taken when making comparisons with rates in previous Cancer Series publications as numbers were based on state or territory of registration of death.

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 2001. 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 old World Standard Population. However, the NCSCCH is able to provide state and territory rates that have been age-standardised to the new WHO World Standard Population on request or the registries can be contacted directly.

Cancer incidence estimates provided in this publication were made at October 2004. 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 NCSCCH. 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.

5 Other sources of cancer data

Cancer mortality—multiple causes of death

The mortality data reported in the summary tables in this report relate to deaths where cancer was recorded as the underlying cause of death. However, a diagnosis of cancer can raise a person's risk of death from a number of associated causes and these deaths may not be coded as having cancer as their underlying cause. Since 1997, national deaths data in Australia have been coded by the Australian Bureau of Statistics for all causes of death recorded on the death certificate (both underlying and associated). The following table shows the number of deaths where cancer was the underlying cause as well as the number of deaths where cancer was an associated cause appearing on the death certificate for deaths registered in 2001.

Table 7: Number of persons dying with cancer (underlying cause and from another cause of death), Australia, 2001 (year of registration)

Cancer	Additional persons who died		Total
	Underlying cause	with this cancer	
Breast (C50)	2,612	609	3,221
Cervix (C53)	262	43	305
Colorectal cancer (C18–C21)	4,745	659	5,404
Lung (C33–C34)	7,038	512	7,550
Melanoma (C43)	1,069	130	1,199
Non-Hodgkin's lymphoma (C82–C85, C96)	1,514	307	1,821
Skin cancer—non-melanoma (C44)	389	198	587
Prostate cancer (C61)	2,711	1,218	3,929
<i>All cancers (C00–C97)</i>	<i>36,750</i>	<i>4,519</i>	<i>41,269</i>

Sources: ABS 2001; AIHW Mortality Database.

In 2001, 41,269 deaths were registered where the person had cancer. Of these, cancer was the underlying cause in 36,750 deaths. There were 4,519 further deaths registered where the person had cancer but this was not the underlying cause. The most common underlying causes of death where cancer was listed as an additional cause of death were ischaemic heart disease, chronic obstructive pulmonary disease and stroke.

Cancer mortality by remoteness category

Introduction

The following tables examine cancer mortality using remoteness index in the ABS Australian Standard Geographic Classification (ASGC). This classification allocates a category of remoteness to areas based on an average of the road distance to the closest of five classes of service centre. Areas are classified as Major Cities, Inner Regional, Outer Regional, Remote, or Very Remote. The bulk (66%) of the Australian population lives in Major Cities, 31% in regional areas, and 3% in remote areas. Indigenous people live most commonly in Major Cities (30%); 20% live in Inner Regional areas, 23% in Outer Regional, 9% in Remote and 18% in Very Remote, where they represent 45% of the total population, compared to only 1% of the population in Major Cities.

Cancer mortality outcomes by remoteness are likely to be affected by a complex range of factors including:

- the age structure of the population and of families;
- socioeconomic status;
- diet and lifestyle risk factors including tobacco smoking;
- ethnicity and Indigenous status;
- environmental, industry and occupational exposures to carcinogens;
- access to cancer screening and treatment services, and the extent to which cancers diagnosed are detected early; and
- level of co-morbidities with other diseases such as cardiovascular diseases and diabetes.

Findings

Mortality distribution of cancers by remoteness

- Lung cancer, cervical cancer and cancer of the uterus as a proportion of the cancer deaths in the population all increase with remoteness.
- Breast cancer, leukaemias, ovarian cancer and stomach cancer as a proportion of the cancer deaths in the population all decrease with remoteness.

Age-standardised cancer death rates by remoteness

- The age-standardised average annual cancer death rate for all cancers from 1998–2002 was lowest for Major Cities at 187.0 per 100,000 population. This was significantly below the national average.
- In Major Cities, cancers with a death rate significantly below the national average were colorectal, prostate, and lung, while the melanoma rate also verged on being significantly below. No cancers in Major Cities had death rates significantly above the national average.
- In Very Remote Areas, age-standardised death rates for colorectal and brain cancers and leukaemias were all significantly below the national average, and the lung cancer death rate was significantly above the national average.

- The highest age-standardised annual death rate (203 per 100,000 population in 1998–2002) was found in Outer Regional areas. Cancers significantly above the national average in this regional category include colorectal, prostate, lung, and unknown site, while there were none of the common cancers with death rates below the national average. There are similar findings for Remote areas.
- Inner Regional areas tend to have greater access to health and other services than more remote areas, but its age-standardised annual death rate of 194, although next lowest after Major Cities, was also significantly above the national average. This may be partly due to older people diagnosed with cancer moving to Inner Regional areas from more remote areas to access treatment.

Age of cancer deaths by remoteness

- The median age of death from cancer in 1998–2002 was 73 for Major Cities and Inner Regional areas and 72 for Outer Regional Areas. This fell to 69 for Remote Areas and 65 for Very Remote Areas.
- Consequently only 24% of cancer deaths in Very Remote areas were of people aged 75 years and over, in contrast to 46% of cancer deaths in Major Cities, 44% in Inner Regional areas, 41% in Outer Regional areas and 34% in Remote Areas. This may be partly due to older people diagnosed with cancer moving from more remote areas to access treatment.

Table 8: Average annual cancer deaths by remoteness category, selected cancers, persons, 1998–2002

Cancer site	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number						
Colon & rectum	2,951	1,105	530	57	14	4,664
Breast	1,717	570	262	28	12	2,592
Prostate	1,604	668	336	36	11	2,656
Lung	4,414	1,581	802	98	46	6,953
Melanoma	628	254	113	12	4	1,012
Non-Hodgkins lymphoma	1,004	338	156	17	7	1,525
Cervix	158	47	34	5	2	248
Unknown site	1,587	575	286	34	16	2,501
Leukaemias	899	304	137	14	5	1,368
Pancreas	1,118	408	182	20	9	1,742
Uterus	185	64	28	3	2	284
Brain	693	237	111	14	3	1,060
Ovary	525	173	76	8	3	786
Stomach	811	248	124	13	5	1,203
Other cancers	4,772	1,656	810	101	50	7,405
All cancers	23,064	8,229	3,988	462	189	36,001
Percent						
Colon & rectum	12.8	13.4	13.3	12.4	7.7	13.0
Breast	7.4	6.9	6.6	6.1	6.2	7.2
Prostate	7.0	8.1	8.4	7.7	5.9	7.4
Lung	19.1	19.2	20.1	21.3	24.2	19.3
Melanoma	2.7	3.1	2.8	2.5	2.1	2.8
Non-Hodgkin's lymphoma	4.4	4.1	3.9	3.7	3.5	4.2
Cervix	0.7	0.6	0.8	1.1	1.2	0.7
Unknown site	6.9	7.0	7.2	7.4	8.4	6.9
Leukaemias	3.9	3.7	3.4	3.1	2.7	3.8
Pancreas	4.8	5.0	4.6	4.4	4.7	4.8
Uterus	0.8	0.8	0.7	0.7	1.3	0.8
Brain	3.0	2.9	2.8	3.1	1.5	2.9
Ovary	2.3	2.1	1.9	1.8	1.7	2.2
Stomach	3.5	3.0	3.1	2.9	2.7	3.3
Other cancers	20.7	20.1	20.3	21.9	26.3	20.6
All cancers	100.0	100.0	100.0	100.0	100.0	100.0

Source: AIHW National Mortality Database.

Table 9: Age-standardised average annual cancer death rates by remoteness category, selected cancers, persons, 1998–2002

Cancer site	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Age-standardised number per 100,000 population						
Colon & rectum	24.0	26.0	26.9	24.6	16.5	24.7
Breast	13.9	13.7	13.3	11.2	10.6	13.7
Prostate	13.0	15.7	17.6	17.5	14.8	14.1
Lung	35.8	36.8	40.2	41.4	47.2	36.7
Melanoma	5.1	6.1	5.7	4.7	4.1	5.3
Non-Hodgkins lymphoma	8.1	8.0	7.9	6.9	6.2	8.1
Cervix	1.3	1.1	1.7	1.9	2.2	1.3
Unknown site	12.9	13.6	14.7	15.6	17.5	13.3
Leukaemias	7.3	7.2	7.0	6.0	4.6	7.2
Pancreas	9.1	9.6	9.2	8.6	10.0	9.2
Uterus	1.5	1.5	1.4	1.4	3.0	1.5
Brain	5.6	5.7	5.5	5.5	2.2	5.6
Ovary	4.3	4.1	3.9	3.5	3.1	4.2
Stomach	6.6	5.8	6.3	6.0	5.2	6.4
Other cancers	38.7	39.0	41.2	42.6	51.1	39.2
All cancers	187.0	193.8	202.6	197.5	198.2	190.8
Confidence interval						
Colon & rectum	23.6–24.3	25.3–26.6	25.9–27.9	21.7–27.6	12.5–20.5	24.4–25.0
Breast	13.6–14.2	13.2–14.2	12.5–14.0	9.3–13.1	7.7–13.5	13.5–14.0
Prostate	12.7–13.3	15.1–16.2	16.8–18.5	14.9–20.1	10.8–18.8	13.9–14.4
Lung	35.4–36.3	36.0–37.7	38.9–41.4	37.7–45.1	40.7–53.6	36.4–37.1
Melanoma	4.9–5.2	5.7–6.4	5.2–6.2	3.4–5.9	2.1–6.0	5.2–5.5
Non-Hodgkin's lymphoma	7.9–8.4	7.6–8.3	7.4–8.5	5.4–8.4	3.9–8.5	7.9–8.3
Cervix	1.2–1.4	1.0–1.3	1.5–2.0	1.2–2.7	0.8–3.6	1.2–1.4
Unknown site	12.6–13.1	13.1–14.1	13.9–15.5	13.2–18.0	13.4–21.7	13.1–13.5
Leukaemias	7.0–7.5	6.9–7.6	6.5–7.6	4.6–7.4	2.6–6.5	7.1–7.4
Pancreas	8.8–9.3	9.2–10.0	8.6–9.8	6.9–10.3	6.9–13.1	9.0–9.4
Uterus	1.4–1.6	1.3–1.7	1.2–1.7	0.8–2.1	1.3–4.7	1.4–1.6
Brain	5.4–5.8	5.3–6.0	5.1–6.0	4.2–6.8	0.9–3.5	5.4–5.7
Ovary	4.1–4.4	3.8–4.4	3.5–4.3	2.4–4.6	1.5–4.8	4.0–4.3
Stomach	6.4–6.8	5.5–6.2	5.8–6.8	4.5–7.4	3.1–7.3	6.2–6.5
Other cancers	38.2–39.2	38.2–39.9	39.9–42.5	38.8–46.4	44.3–57.9	38.8–39.6
All cancers	185.9–188.1	191.9–195.7	199.8–205.4	189.2–205.7	184.8–211.7	189.9–191.7

Source: AIHW National Mortality Database.

Table 10: Average annual cancer deaths by remoteness category, age, persons, 1998–2002

Age group	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number						
0–14	80	26	13	2	1	125
15–24	78	26	14	2	2	124
25–54	2,616	894	460	68	36	4,090
55–74	9,737	3,658	1,881	232	104	15,643
75 and over	10,553	3,625	1,619	157	45	16,017
Total ^(a)	23,064	8,229	3,987	462	187	35,998
Percent						
0–14	0.3	0.3	0.3	0.4	0.5	0.3
15–24	0.3	0.3	0.4	0.5	1.0	0.3
25–54	11.3	10.9	11.5	14.8	19.0	11.4
55–74	42.2	44.5	47.2	50.3	55.6	43.5
75 and over	45.8	44.1	40.6	34.0	23.9	44.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

(a) Totals exclude records with unknown age.

Source: AIHW National Mortality Database.

Table 11: Median age at death by remoteness category, selected cancers, persons, 1998–2002

Cancer site	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Colon & rectum	74	73	72	69	70	73
Breast	67	67	65	61	58	67
Prostate	79	78	78	78	73	78
Lung	72	72	71	69	65	72
Melanoma	70	69	68	64	64	69
Non-Hodgkins lymphoma	74	73	71	67	61	73
Cervix	66	64	65	59	63	65
Unknown site	76	76	74	74	67	76
Leukaemias	74	72	73	70	59	73
Pancreas	74	74	72	68	66	74
Uterus	74	74	72	69	70	74
Brain	64	64	62	61	44	63
Ovary	72	72	70	67	60	71
Stomach	74	74	73	72	63	74
Other cancers	74	73	72	69	64	73
All cancers	73	73	72	69	65	73

Source: AIHW National Mortality Database.

Cancer expenditure

Introduction

Health System Expenditure on Disease and Injury in Australia 2000–01 (AIHW 2004b) includes a breakdown of allocatable Australian health expenditure in 2000–01 for major diseases and injury groups. AIHW analysis of health expenditure data has found that approximately 86% of health expenditure can be allocated to disease groups.

Main findings

- Allocatable expenditure on cancer in 2000–01, excluding public health expenditure, was \$2.7 billion, representing 5.7% of total allocatable health expenditure.
- 71.3% of cancer expenditure was in hospital care (\$1,988m) and 9.0% of all expenditure in hospitals was on cancer.
- Out-of-hospital medical services accounted for 12.3% of cancer expenditure (\$343m) and pharmaceutical 6.6% (\$183m).
- \$215m was spent on cancer research in 2000–01, 18.2% of all health research expenditure in Australia.
- There was a 31% increase in inflation-adjusted cancer expenditure from 1993–94 to 2000–01.
- Average cancer expenditure per person was \$146 for males and \$135 for females in 2000–01. This was much higher in the older age groups. In the 65–74 year age group, average expenditure per person in 2000–01 was \$641 for males and \$389 for females, while in the 75 years and over age groups, the averages were \$984 for males and \$480 for females.

Table 12: Allocated recurrent expenditure in Australia, by broad disease group, 2000–01 (\$ million)

	Cancer expenditure		Total expenditure	
	\$ million	% of total expenditure	\$ million	Cancer expenditure as % of total expenditure
Hospitals ^(a)				
Admitted patients	1,716	61.5	17,347	9.9
Non-admitted services	272	9.7	4,683	5.8
Total hospitals	1,988	71.3	22,030	9.0
Aged care homes ^(b)	37	1.3	3,899	0.9
Out-of hospital medical services ^(c)	343	12.3	8,454	0.4
Dental and other professional services	24	0.9	5,524	0.4
Pharmaceuticals ^(d)				
Prescription	167	6.0	5,896	2.8
Over-the-counter	16	0.6	2,189	0.7
Total pharmaceuticals	183	6.6	8,085	2.3
Research	215	7.7	1,182	18.2
Total expenditure	2,790	100	49,174	5.7

(a) Public and private acute hospitals and psychiatric hospitals. Includes a preliminary estimate of private medical services provided in hospital.

(b) Includes expenditure on residents that require and receive a level of care that falls within one of the four highest levels in residential aged care services.

(c) Includes services delivered outside of hospitals by paramedical professionals such as physiotherapists, chiropractors, occupational therapists, audiologists, speech therapists, hydropaths, podiatrists, therapeutic and clinical massage therapists, clinical psychologists, dietitians and osteopaths.

(d) Includes all pharmaceuticals for which a prescription is needed, including private prescriptions and under-copayment prescriptions, and includes over-the-counter medicaments such as vitamins and minerals, patent medicines, first aid and wound care products, analgesics, feminine hygiene products, cold sore preparations, and a number of complementary health products that are sold in both pharmacies and other retail outlets.

Source: AIHW 2004b.

Table 13: Allocated cancer expenditure per person, age and sex, 2000–01

Age (years)	Male	Female
0–4	25	19
5–14	12	18
15–24	18	26
25–34	25	45
35–44	43	90
45–54	120	185
55–64	277	248
65–74	641	389
75 +	984	480
Total	146	135

Note: Based on preliminary AIHW estimates published in *Health System Expenditure on Disease and Injury in Australia 2000–01*.

Source: AIHW 2004b.

Cancer screening

For breast, cervical and bowel cancers, there is evidence that illness and death can be reduced through population-based screening and effective follow-up treatment. National screening programs for breast cancer (via mammography) and cervical cancer (via Pap smears) have been implemented in Australia with the aim of achieving this reduction. These programs are called BreastScreen Australia and the National Cervical Screening Program. Pilot tests for a population-based screening program for bowel cancer commenced in November 2002. Final invitations to screen were sent to the pilot study group in June 2004 and a pilot evaluation report is being prepared.

BreastScreen Australia

The BreastScreen Australia Program is jointly funded by the Australian and state and territory governments. It consists of a network of dedicated screening and assessment services throughout metropolitan, rural and remote areas of all Australian states and territories. These services can be fixed or mobile and provide free 2-yearly mammographic screening and follow-up of any suspicious lesions identified at screening to the point of diagnosis of breast cancer. The program is aimed specifically at women aged 50–69 years of age without symptoms, although women aged 40–49 years and 70 years and older may attend for screening. Women may attend without a doctor's referral.

In addition, recruitment and reminder systems are used to promote screening and rescreening among women in the target group once every 2 years.

A comprehensive system of accreditation is used to ensure that all BreastScreen Australia services operate under a common set of standards. Each service is assessed regularly by an independent team to ensure that the service provided complies with national standards.

The proportion of women in the target age group who were screened under the BreastScreen Australia program in a 2-year period rose from 52.3% in 1996–1997 to 57.1% in 2001–2002 (Table 14). Age-standardised participation rates for women in the target age group in Major Cities (55.6%) and Very Remote areas (48.5%) were significantly lower than the national rate of 57.1%. Significantly higher than the national rate were Inner Regional areas at 59.7%, Outer Regional areas at 60.7% and Remote areas at 60.9% (Figure 15). Women in the target age group with the highest socioeconomic status had the lowest age-standardised participation rate (53.7%) in 2001–2002. In contrast, women with the lowest socioeconomic status had the highest participation rate (64.0%) (Figure 16).

Table 14: Women screened in each 2-year period, 1996 to 2002

	1996 & 1997	1997 & 1998	1998 & 1999	1999 & 2000	2000 & 2001	2001 & 2002
BreastScreen Australia						
All ages 40 years and over	1,240,885	1,367,759	1,452,263	1,496,417	1,567,544	1,611,262
Target population (ages 50–69)	844,607	921,283	975,258	1,011,394	1,063,479	1,102,227
Participation rate for target population (%) ^(a)	52.3	54.3	55.6	55.9	56.9	57.1
National Cervical Screening Program^(b)						
All ages 20 years and over	2,630,235	2,721,650	2,777,324	3,314,787	3,331,408	3,310,13
Target population (ages 20–69)	2,563,107	2,653,504	2,716,364	3,244,329	3,262,931	3,262,574
Participation rate for target population (%) ^(a)	60.8	62.4	63.4	61.3	61.0	61.0

(a) Participation rates are age-standardised to the 2001 total Australian population.

(b) The Queensland Health Pap Smear registry began in February 1999, so the cervical screening data presented here exclude Queensland.

n.a. Not available.

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

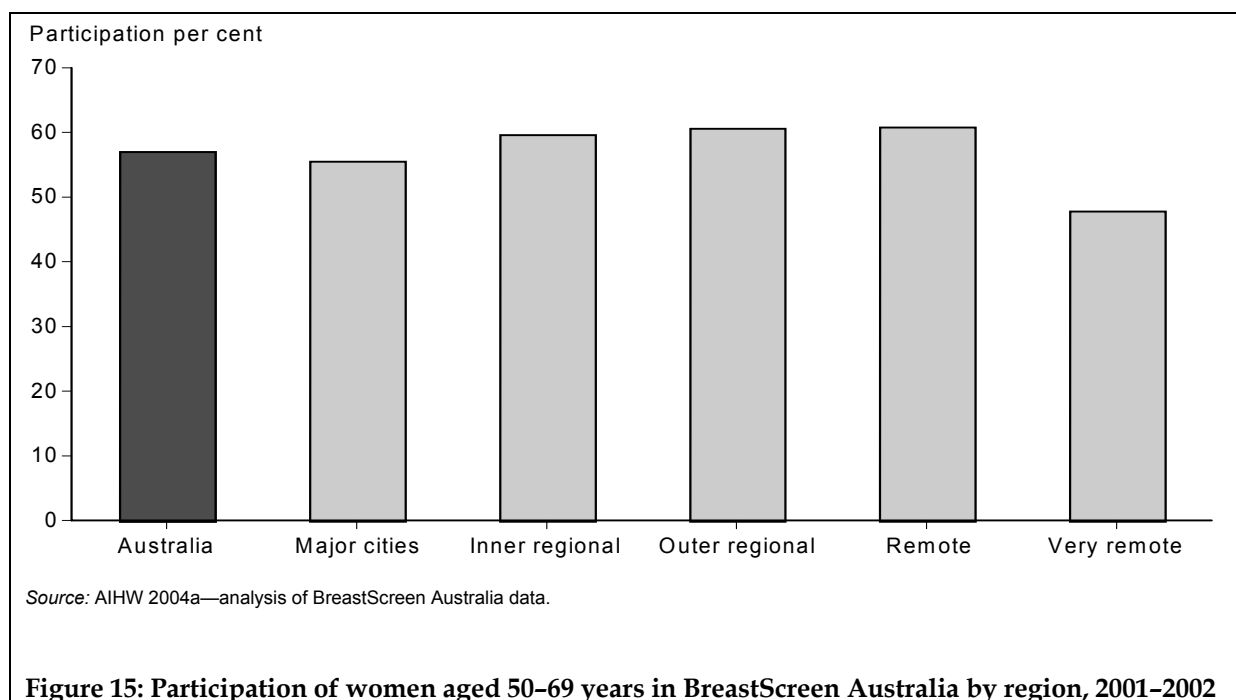
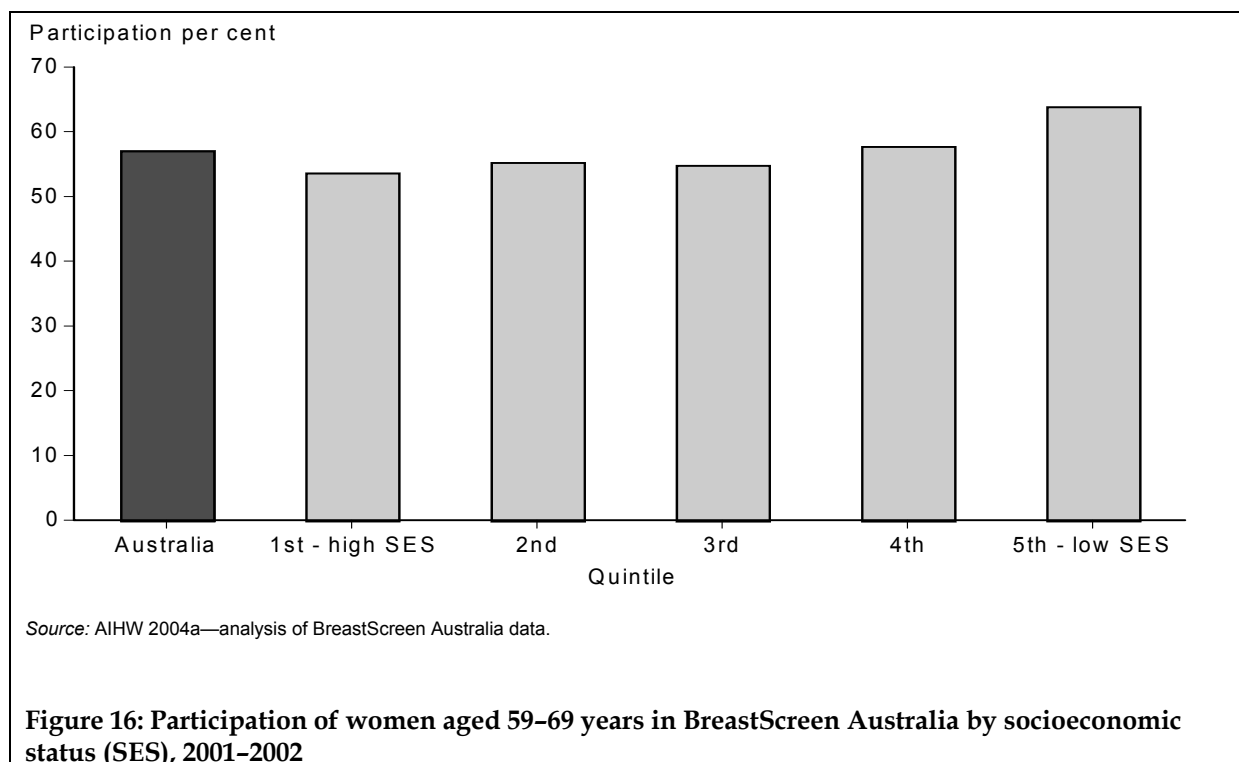


Figure 15: Participation of women aged 50–69 years in BreastScreen Australia by region, 2001–2002



National Cervical Screening Program

Screening to detect abnormalities of the cervix has been available for Australian women since the 1960s. Until the early 1990s this screening was largely unstructured, with no agreement on the screening target group or the best interval between screens. Since then it has become progressively more organised and in 1995 the program became known as the National Cervical Screening Program.

Unlike breast screening, cervical screening in Australia does not operate through a separate dedicated screening and assessment service. Instead screening services are provided as part of mainstream health services, with approximately 80% of Pap smears performed by general practitioners. Cervical screening is funded mainly by Medicare (61%) with the remainder funded by Australian government contributions through special purpose payments to state and territory governments (23%) and these governments' own revenue sources (16%).

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

Cervical cytology registries operate in all states and territories. The major functions of the registries are to:

- remind women to attend for screening;
- ensure the follow-up of women with abnormal Pap smears;
- provide cervical screening histories to laboratories and clinicians to aid reporting and management; and
- monitor the effects of initiatives to improve participation by women in screening.

The Australian recommendation is for all women who have been sexually active at any stage in their lives to have a Pap smear every 2 years until they reach the age of 70 years. Screening may cease at the age of 70 for women who have had two normal Pap smears within the last 5 years. Women over 70 years who have never had a Pap smear or who request a Pap smear are also screened. However, for reporting purposes the target group is taken to be all women aged between 20 and 69 years who have not had a hysterectomy.

The proportion of women in the target age group who were screened under the National Cervical Cancer Screening Program in a 2-year period rose from 60.8% in 1996–1997 to 63.4% in 1998–1999 before falling to 61.0% in 2001–2002 (Table 14).

National bowel screening pilot program

The Australian Government Department of Health and Ageing conducted a pilot test of bowel cancer screening in Australia in 2003 and 2004. The primary aim of the pilot was to provide information about the feasibility, acceptability and cost effectiveness of bowel cancer screening amongst the Australian population in both rural and urban areas. The results of the pilot will inform decisions about whether, and how, to introduce a national bowel cancer screening program.

The pilot was conducted at three sites – in Melbourne (part of the North East Valley Division of General Practice), Adelaide (part of the Adelaide Southern and Western Divisions of General Practice), and Mackay (part of the Mackay Division of General Practice). The population living in these areas includes a mixture of urban and rural residents and diverse socio-economic and ethnic groups to reflect the broader Australian population.

The pilot commenced in Mackay in November 2002, with screening starting in the other two sites in early 2003. All people living in each site who were aged from 55 to 74 on 1 January 2003 were sent an invitation to participate in the pilot and a screening test kit. These were sent over a period of 12 to 18 months, with the final invitations and kits being sent in June 2004. Monitoring data has been collected covering responses to these invitations and the outcomes for those who complete the screening kits. These data cover outcomes up to the point of definite diagnosis for those who are found to have bowel cancer. A pilot evaluation report is currently being prepared.

Cancer workforce

Introduction

Data on the cancer workforce are limited to those occupations which can be identified as cancer-specific or cancer-related in the AIHW national medical and nursing labour force collections and in the national population census conducted by the Australian Bureau of Statistics. It should be noted that the primary care workforce of general practitioners is the largest workforce providing cancer care (see General practice management of cancer, page 55). A large specialist workforce providing procedural diagnosis services and treatments cannot be identified separately from the procedural workforce at large.

Medical workforce

The main medical disciplines specialising in cancer include medical oncology (171 in 2001, a decline on a peak of 187 in 1999), and radiation oncology (182 in 2001 compared with 117 in 1995).

Table 15: Employed specialist clinicians by main specialty of practice, 1995 to 2001

Occupation	1995	1996	1997	1998	1999	2000	2001
Clinical haematology	122	134	138	127	161	146	149
Haematology	55	55	57	52	61	72	57
Clinical immunology	69	83	83	82	79	69	86
Immunology	11	8	14	12	8	9	1
Medical oncology	135	133	158	152	187	168	171
Diagnostic radiology	985	1,078	1,076	1,035	1,109	1,120	1,135
Obstetric & gynaecology (includes gynae oncology)	904	959	997	1,031	1,089	1,001	1,123
Radiation oncology	117	133	138	152	156	144	182

Source: AIHW National Medical Labour Force Collection.

Table 16: Employed specialists-in-training by main specialty of practice, 1995 to 2001

Occupation	1995	1996	1997	1998	1999	2000	2001
Clinical haematology	43	32	28	27	35	36	29
Haematology	16	16	18	19	32	23	50
Clinical immunology	8	6	9	4	28	4	16
Immunology	0	1	2	4	4	7	17
Medical oncology	49	54	51	51	42	69	53
Diagnostic radiology	180	166	187	166	165	165	262
Obstetric & gynaecology (includes gynae oncology)	240	239	272	281	277	299	320
Radiation oncology	47	50	52	56	48	40	57

Source: AIHW National Medical Labour Force Collection.

Nursing workforce

The number of registered nurses working mainly in the area of oncology increased from 2,620 in 1997 to 3,599 in 2001, while the number of enrolled nurses working in the same area increased from 285 in 1997 to 396 in 2001.

- 87% of registered nurses and 78% of enrolled nurses working mainly in oncology were employed in hospitals.
- There were 1,062 nurses working in hospices in 2001, almost the same as the number in 1995. It should be noted that most of the care nurses provide in hospices is for pain management of terminally ill cancer patients.

Table 17: All employed nurses working in the area of oncology as their main area of practice, 1997–2001

Work setting	1997	1999	2001
Enrolled nurses			
Hospital	231	231	308
Day procedure centre	1	8	10
Aged care	15	21	41
Hospice	10	18	10
Community health	1	0	7
Other	27	13	19
<i>Total</i>	285	291	396
Registered Nurses			
Hospital	2,236	2,723	3,139
Day procedure centre	80	99	133
Aged care	44	25	52
Hospice	32	44	45
Community health	61	53	71
Other	168	103	159
<i>Total</i>	2,620	3,046	3,599
Total			
Hospital	2,466	2,953	3,447
Day procedure centre	81	108	143
Aged care	59	45	93
Hospice	42	61	55
Community health	62	53	78
Other	195	116	178
Total	2,904	3,337	3,994

Source: AIHW National Nursing Labour Force Collection.

Table 18: All employed nurses working in hospices in their main job, 1995–2001

Classification	1995	1997	1999	2001
Enrolled	248	233	262	232
Registered	822	777	812	830
Total	1,071	1,010	1,074	1,062

Source: AIHW National Nursing Labour Force Collection.

Radiation therapists

At the 2001 population census, there were 808 radiation therapists, a 15.4% increase on the 700 in 1996.

Management of cancer in general practice

Introduction

The continuous national study of general practice activity in Australia, known as the BEACH (Bettering the Evaluation and Care of Health) program, has been running since April 1998. It provides insight into the patients and problems managed in general practice and the ways in which general practitioners (GPs) manage the problems. In BEACH, a random sample of about 1,000 GPs provides details of around 100,000 GP-patient encounters each year. The study is conducted by the General Practice Statistics and Classification Unit (an AIHW collaborating unit within the Family Medicine Research Centre, University of Sydney).

This report presents trend data on those problems that the GP labelled as any type of cancer. In this analysis the 6 years of BEACH data have been divided into three time periods: April 1998 to March 2000, April 2000 to March 2002, April 2002 to March 2004, and comparisons are made to identify any changes which have occurred during that period.

In 1998–2000, 2,031 GPs provided data on 203,100 encounters. In 2000–2002, 1,982 recorded details of 198,200 encounters and in 2002–2004 there were 2,008 GPs providing 200,800 encounters. The participating GPs were randomly selected from the Health Insurance Commission list of active GPs (those who provided more than 375 GP services in the previous quarter). Each GP completed a paper encounter record for each of 100 encounters.

Data elements included:

- date of encounter;
- service item number/form of payment/indirect encounters (e.g. telephone consults);
- patient age and sex and other socio-demographics;
- patient's reasons for encounter (up to three);
- diagnoses/problems managed (up to four);
- status of each problem to the patient (new/old);
- medications prescribed, advised or supplied (up to 4 per problem);
- other treatments provided (up to 2 per problem); and
- referral, pathology tests and imaging ordered.

Findings

Most frequently managed cancers (Table 19)

- The 10 most frequently managed types of cancer accounted for approximately 75% of all cancers managed.
- There was little difference in the order the individual cancers were managed nor in the rate of management across the three 2-year time periods.
- Skin cancers predominated overall. Extrapolating to the total Australian population, GPs had over half a million patient encounters for basal cell carcinomas and over a quarter of a million for squamous cell carcinomas per year. In addition, there were almost 90,000 patient encounters per year in 2002–2004 for melanomas, and a further 70,000 for other skin cancers.

- The next most common cancers managed were prostate cancer, female breast cancer and lung cancer.

Treatments and referrals (Table 20)

GP management of cancers included medications, clinical treatments, procedural treatments, and ordering of pathology and imaging tests.

- No significant difference was found in the rate of total medications recorded, but a significant decrease was apparent in prescribing rates, for cancer between 1998–2000 when the rate was 30.5 per 100 contacts (confidence interval: 27.7–33.3) and 2002–2004 when the rate was 25.3 per 100 (CI: 23.1–27.5).
- There was a significant increase in the overall rate of other treatments provided between 1998–2000 and 2002–2004. GPs provided these treatments at a rate of 39.4 per 100 cancer contacts (CI: 37.4–41.4) in 1998–2000 and at a rate of 46.1 per 100 (CI: 42.3–49.8) in 2002–2004.
- The total referral rate for cancer of approximately 20.0 per 100 contacts did not change over time. However, referrals to hospital, though fairly uncommon, decreased significantly through all three measurement points. The same pattern was seen for referrals to allied health services.
- There was a notable decrease in the ordering rate for pathology tests for cancer contacts between 1998–2000 (24.5 per 100, CI: 22.4–26.7) and 2000–2002 (15.0 per 100, CI: 12.4–17.6). This was despite the expansion of the pathology coding frame in BEACH to include specific tests that were previously grouped, which logically should have increased the number of pathology tests coded. The rate in 2002–2004 was also significantly lower than in 1998–2000, but no significant difference was found between the two later time periods.

Medications prescribed (Table 21)

- Opioids (synthetic narcotics that have opiate-like activities but are not derived from opium) were the most commonly prescribed medications for cancer, accounting for approximately one-quarter of all prescriptions. They were prescribed by GPs at a rate of 7 per 100 cancer contacts in 2002–2004.
- There were no significant changes over time in medications prescribed from 1998 to 2004.

Other treatments by GPs to manage cancer (Table 22)

- The provision of all other treatments increased significantly from 9.4 per 100 cancer contacts (CI: 37.4–41.4) in 1998–2000 to 46.1 per 100 (CI: 42.3–49.8) in 2002–2004.
- A significant increase was found in the rate at which GPs undertook administrative procedures between 1998–2000 (0.8 per 100 cancer contacts, CI: 0.5–1.0) and the two later periods when the rates were 1.5 per 100 (CI: 1.1–1.9) and 1.9 (CI: 1.4–2.4) respectively.
- An increase over time in the local injection/infiltration rate may be due partly to a methodological change, which saw medications injected at the encounter recorded more consistently as a treatment.

Referrals made by GPs in management of cancer (Table 23)

- There was no significant difference between 1998–2000 and 2002–2004 in the overall rate of referrals for cancer.
- Of the 10 most common individual referrals only referrals to hospitals showed a significant change, decreasing from 1.4 per 100 cancer contacts (CI: 1.0–1.8) in 1998–2000 to 0.6 per 100 (CI: 0.4–0.9) in 2000–2002 and 0.6 per 100 (CI: 0.3–0.8) in 2002–2004. As a percentage of all referrals, hospital referrals halved between the first and third time periods, from 6.8% to 2.9%.
- The referral rates to unspecified specialists and to allied health professionals had also decreased by 2002–2004, dropping out of the top 10 most common referrals for cancer.

Table 19: Top ten types of cancer managed at GP-patient encounters, 1998 to 2004

Type of cancer	Number	Estimated national no. of contacts per year	Rate per 100 encounters	Percentage of total cancer contacts
April 1998 to March 2000				
Basal cell carcinoma	990	511,800	0.5	24.6
Squamous cell carcinoma	507	262,100	0.4	12.6
Prostate cancer	468	241,900	0.2	11.6
Breast cancer (female)	342	176,800	0.2	8.5
Lung cancer	191	98,700	0.1	4.7
Melanoma	148	76,500	0.1	3.7
Other skin cancer	121	62,600	0.1	3.0
Large bowel cancer	120	62,000	0.1	3.0
Colon cancer	81	41,900	0.0	2.0
Leukaemia: chronic lymphocytic	68	35,200	0.0	1.7
<i>All cancers</i>	<i>4,028</i>	<i>2,081,900</i>	<i>2.0</i>	<i>100.0</i>
April 2000 to March 2002				
Basal cell carcinoma	966	511,800	0.5	25.5
Squamous cell carcinoma	495	262,200	0.3	13.1
Prostate cancer	448	237,300	0.2	11.8
Breast cancer (female)	308	163,200	0.2	8.1
Lung cancer	156	82,600	0.1	4.1
Melanoma	145	76,800	0.1	3.8
Other skin cancer	112	59,300	0.1	3.0
Large bowel cancer	98	51,900	0.1	2.6
Colon cancer	95	50,300	0.1	2.5
Bowen's disease	73	38,700	0.0	1.9
<i>All cancers</i>	<i>3,790</i>	<i>2,007,200</i>	<i>1.9</i>	<i>100.0</i>
April 2002 to March 2004				
Basal cell carcinoma	1,106	578,300	0.6	25.9
Squamous cell carcinoma	597	312,200	0.3	14.0
Prostate cancer	474	247,900	0.2	11.1
Breast cancer (female)	425	222,200	0.2	9.9
Melanoma	171	89,400	0.1	4.0
Lung cancer	139	72,700	0.1	3.3
Other skin cancer	129	67,500	0.1	3.0
Colon cancer	111	58,000	0.1	2.6
Large bowel cancer	97	50,700	0.1	2.3
Leukaemia: chronic lymphocytic	71	37,100	0.0	1.7
<i>All cancers</i>	<i>4,276</i>	<i>2,234,900</i>	<i>2.1</i>	<i>100.0</i>

Source: AIHW General Practice Classification and Statistics Unit.

Table 20: GP management of cancer, 1998 to 2004

	Number	Rate per 100 cancer contacts	
		Rate	95% confidence interval
April 1998 to March 2000			
All medications	1,313	32.6	29.7–35.5
Prescribed medications	1,229	30.5	27.7–33.3
Advised over-the-counter medications	28	0.7	0.4–1.0
Medications supplied by GP	56	1.4	0.9–1.9
All other treatments	1,588	39.4	37.4–41.4
Clinical treatments	667	16.6	15.0–18.1
Procedural treatments	921	22.9	21.0–24.7
Referrals			
All referrals	845	21.0	19.5–22.4
Referrals to a hospital	57	1.4	1.0–1.8
Referrals to a specialist	700	17.4	16.0–18.7
Referrals to allied health services	85	2.1	1.6–2.6
Referrals to an emergency department	1	0.0	0.0–0.1
Pathology tests ordered	988	24.5	22.4–26.7
Imaging tests ordered	169	4.2	3.4–5.0
April 2000 to March 2002			
All medications	1,153	30.4	27.3–33.6
Prescribed medications	1,075	28.4	25.3–31.4
Advised over the counter medications	19	0.5	0.3–0.7
Medications supplied by GP	59	1.6	0.9–2.2
All other treatments	1,571	41.5	38.1–44.8
Clinical treatments	678	17.9	16.1–19.7
Procedural treatments	893	23.6	21.0–26.1
Referrals			
All referrals	726	19.2	17.6–20.7
Referrals to a hospital	24	0.6	0.4–0.9
Referrals to a specialist	653	17.2	15.8–18.7
Referrals to allied health services	34	0.9	0.6–1.2
Referrals to an emergency department	1	0.0	0.0–0.1
Pathology tests ordered	567	15.0	12.4–17.6
Imaging tests ordered	185	4.9	4.1–5.7
April 2002 to March 2004			
All medications	1,193	27.9	25.6–30.3
Prescribed medications	1,082	25.3	23.1–27.5
Advised over the counter medications	27	0.6	0.3–0.9
Medications supplied by GP	84	2.0	1.1–2.8
All other treatments	1,970	46.1	42.3–49.8
Clinical treatments	845	19.8	17.2–22.3
Procedural treatments	1,125	26.3	23.5–29.1
Referrals			
All referrals	861	20.1	18.5–21.8
Referrals to a hospital	25	0.6	0.3–0.8
Referrals to a specialist	776	18.2	16.6–19.7
Referrals to allied health services	38	0.9	0.5–1.3
Referrals to an emergency department	1	0.0	0.0–0.1
Pathology tests ordered	722	16.9	14.3–19.5
Imaging tests ordered	191	4.5	3.7–5.3

Source: AIHW General Practice Classification and Statistics Unit.

Table 21: Top ten medications prescribed by GPs for management of cancer, 1998 to 2004

ATC ^(a) class of medication	Number	Per cent of all prescriptions	Rate per 100 cancer contacts	
			Rate	95% confidence interval
April 1998 to March 2000				
Opioids	298	24.3	7.4	6.2–8.6
Other analgesics and antipyretics	117	9.5	2.9	2.3–3.5
Hormones and related agents	112	9.1	2.8	2.2–3.3
Hormone antagonists and related agents	90	7.3	2.2	1.7–2.8
Corticosteroids for systemic use, plain	47	3.8	1.2	0.8–1.5
Propulsives	46	3.7	1.1	0.7–1.6
Hypnotics and sedatives	43	3.5	1.1	0.7–1.4
Antipsychotics	29	2.4	0.7	0.4–1.0
Anxiolytics	23	1.9	0.6	0.3–0.8
Laxatives	21	1.7	0.5	0.3–0.8
Total medications	1,229	100.0	30.5	27.7–33.3
April 2000 to March 2002				
Opioids	283	26.3	7.5	6.3–8.7
Hormones and related agents	139	12.9	3.7	3.0–4.3
Other analgesics and antipyretics	94	8.7	2.5	1.9–3.1
Hormone antagonists and related agents	89	8.3	2.4	1.8–2.8
Propulsives	43	4.0	1.1	0.7–1.5
Corticosteroids for systemic use, plain	41	3.8	1.1	0.6–1.5
Hypnotics and sedatives	23	2.1	0.6	0.3–0.9
Antiandrogens	22	2.1	0.6	0.3–0.8
Antipsychotics	19	1.8	0.5	0.3–0.7
Antimetabolites	16	1.5	0.4	0.2–0.7
Total medications	1,075	100.0	28.4	25.3–31.4
April 2002 to March 2004				
Opioids	292	27.0	6.8	5.8–7.8
Hormones and related agents	135	12.5	3.2	2.6–3.7
Hormone antagonists and related agents	92	8.5	2.2	1.7–2.6
Other analgesics and antipyretics	91	8.4	2.1	1.7–2.6
Propulsives	39	3.6	0.9	0.6–1.2
Corticosteroids for systemic use, plain	32	3.0	0.8	0.5–1.0
Hypnotics and sedatives	32	3.0	0.8	0.5–1.0
Antiandrogens	22	2.0	0.5	0.3–0.8
Laxatives	18	1.7	0.4	0.2–0.6
Anxiolytics	17	1.6	0.4	0.2–0.6
Total medications	1,082	100.0	25.3	23.1–27.5

(a) Anatomical Therapeutic Chemical Classification Index, WHO Collaborating Centre for Drug Statistics Methodology.

Source: AIHW General Practice Classification and Statistics Unit.

Table 22: Top ten other treatments used by GPs for management of cancer, 1998 to 2004

Treatment	Number	Per cent of all other treatments		Rate per 100 cancer contacts	
		Rate	95% confidence interval	Rate	95% confidence interval
April 1998 to March 2000					
Excision/removal tissue; Biopsy; Destruction; Debridement; Cauterisation	651	41.0	37.8–44.2	16.2	14.6–17.7
Observation/Health education/advice	306	19.3	17.0–21.6	7.6	6.6–8.6
Therapeutic counselling/Listening	305	19.2	16.6–21.8	7.6	6.5–8.7
Repair/Fixation-suture/Cast/Prosthetic device (Apply/Remove)	145	9.1	7.6–10.7	3.6	3.0–4.2
Local injection/Infiltration	32	2.0	1.2–2.8	0.8	0.5–1.1
Administrative procedure	31	2.0	1.3–2.6	0.8	0.5–1.0
Dressing/Pressure/Compression/Tamponade	26	1.6	0.9–2.3	0.7	0.4–0.9
Clarification/discussion of patient's RFE/demand	24	1.5	0.9–2.3	0.6	0.3–0.9
Physical medicine/Rehabilitation	17	1.1	0.5–1.6	0.4	0.2–0.6
Other therapeutic procedures/surgery n.e.c.	14	0.9	0.3–1.4	0.4	0.1–0.6
Total treatments	1,588	100.0		39.4	37.4–41.4
April 2000 to March 2002					
Excision/removal tissue; Biopsy; Destruction; Debridement; Cauterisation	662	42.1	38.3–46.0	17.5	15.0–20.0
Therapeutic counselling/Listening	326	20.8	18.0–23.5	8.6	7.2–10
Observation/Health education/advice	264	16.8	14.6–19.0	7.0	6.0–7.9
Repair/Fixation—suture/Cast/Prosthetic device (Apply/Remove)	107	6.8	5.1–8.5	2.8	2.1–3.5
Administrative procedure	57	3.6	2.6–4.6	1.5	1.1–1.9
Local injection/Infiltration	40	2.6	1.7–3.4	1.1	0.7–1.4
Dressing/Pressure/Compression/Tamponade	34	2.2	1.4–3.0	0.9	0.6–1.2
Clarification/discussion of patient's RFE/demand	22	1.4	0.7–2.1	0.6	0.3–0.9
Other therapeutic procedures/surgery n.e.c.	15	1.0	0.3–1.6	0.4	0.1–0.7
Histological/Exfoliative cytology	6	0.4	0.0–0.7	0.2	0.0–0.3
Total treatments	1,571	100.0		41.5	38.1–44.8
April 2002 to March 2004					
Excision/removal tissue; Biopsy; Destruction; Debridement; Cauterisation	771	39.1	34.5–43.8	18.0	15.4–20.7
Therapeutic counselling/Listening	405	20.6	17.7–23.4	9.5	8.1–10.8
Observation/Health education/advice	322	16.4	13.0–19.7	7.5	5.6–9.4
Repair/Fixation-suture/Cast/Prosthetic device (Apply/Remove)	139	7.1	5.7–8.4	3.3	2.6–3.9
Local injection/Infiltration	95	4.8	3.3–6.4	2.2	1.4–3.0
Administrative procedure	81	4.1	3.0–5.2	1.9	1.4–2.4
Dressings/Pressure/Compression/Tamponade	35	1.8	1.1–2.4	0.8	0.5–1.1
Medication-prescription/Request/Renewal/Injection	28	1.4	0.9–2.0	0.7	0.4–0.9
Clarification/discussion of patient's RFE/demand	27	1.4	0.8–1.9	0.6	0.4–0.9
Other therapeutic procedures/surgery n.e.c.	17	0.9	0.4–1.3	0.4	0.2–0.6
Total treatments	1,970	100.0		46.1	42.3–49.8

Source: AIHW General Practice Classification and Statistics Unit.

Table 23: Top ten referrals made by GPs in management of cancer, 1998 to 2004

Service or specialist type referred to	Number	Per cent of total referrals		Rate per 100 cancer contacts	
		Rate	95% confidence interval	Rate	95% confidence interval
April 1998 to March 2000					
Surgeon	188	22.3	19.3–25.2	4.7	4.0–5.4
Dermatologist	184	21.8	18.7–24.8	4.6	3.8–5.3
Plastic surgeon	95	11.2	8.9–13.6	2.4	1.8–2.9
Hospital	57	6.8	5.0–8.5	1.4	1.0–1.8
Oncologist	49	5.8	4.2–7.4	1.2	0.9–1.6
Urologist	49	5.8	4.2–7.4	1.2	0.9–1.6
Specialist	42	5.0	3.5–6.4	1.0	0.7–1.4
Health professional	32	3.8	2.4–5.2	0.8	0.5–1.1
Colonoscopy	20	2.4	1.4–3.4	0.5	0.3–0.7
Palliative care	19	2.3	1.2–3.3	0.5	0.3–0.7
All referrals	845			21.0	19.5–22.4
April 2000 to March 2002					
Dermatologist	182	25.1	21.6–28.6	4.8	4.0–5.6
Surgeon	152	20.9	17.7–24.2	4.0	3.3–4.7
Plastic surgeon	98	13.5	10.8–16.2	2.6	2.0–3.1
Oncologist	53	7.3	5.4–9.2	1.4	1.0–1.8
Urologist	50	6.9	4.9–8.8	1.3	0.9–1.7
Specialist	25	3.4	2.1–4.8	0.7	0.4–0.9
Hospital	24	3.3	2.0–4.6	0.6	0.4–0.9
Gynaecologist	20	2.8	1.5–4.0	0.5	0.3–0.8
Gastroenterologist	18	2.5	1.3–3.7	0.5	0.2–0.7
Unspecified	14	1.9	0.9–3.0	0.4	0.2–0.6
All referrals	726			19.2	17.6–20.7
April 2002 to March 2004					
Surgeon	210	24.4	21.3–27.5	4.9	4.2–5.7
Dermatologist	172	20.0	17.0–22.9	4.0	3.3–4.7
Plastic surgeon	127	14.8	12.3–17.2	3.0	2.4–3.5
Oncologist	66	7.7	5.9–9.5	1.5	1.2–1.9
Urologist	62	7.2	5.4–9.0	1.5	1.1–1.8
Gynaecologist	32	3.7	2.4–5.0	0.8	0.5–1.0
Hospital	25	2.9	1.7–4.1	0.6	0.3–0.8
Haematologist	23	2.7	1.6–3.7	0.5	0.3–0.8
Unspecified	21	2.4	1.3–3.6	0.5	0.3–0.7
Palliative care	18	2.1	1.0–3.2	0.4	0.2–0.7
All referrals	861			20.1	18.5–21.8

Source: AIHW General Practice Classification and Statistics Unit.

International comparison

Introduction

The International Agency for Research on Cancer (IARC) is part of the World Health Organization. Its mission is 'to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control'.

It collates cancer incidence and mortality data for 27 cancers from countries around the world and publishes estimates for all countries in its GLOBOCAN database, which is publicly available on its web site at <<http://www.iarc.fr/>>.

The following tables were extracted from the GLOBOCAN database and present comparative data on crude and age-standardised rates of incidence and mortality for selected cancers for selected countries and regions of the world. Numbers and rates are estimates for the middle of 2000, based on the most recent data available, generally 3 to 5 years earlier, so care should be taken in interpretation. Nevertheless they provide a good guide to how Australia compares with countries such as Canada, New Zealand, the United States and the United Kingdom, to the world as a whole, and to regions such as South East Asia and eastern, southern, western and northern Europe.

In summary, in comparison to other developed countries, Australia has relatively high incidence rates but comparatively low mortality rates, indicating that cancer survival in Australia is relatively very good. This suggests that the health system in Australia is performing well in lengthening survival through early detection and in treatment of cancer.

All cancers except cancers of the skin

- Australia has higher age-standardised incidence per 100,000 population for males (355 and females (279) than for the more developed countries of the world (301 and 218 respectively), but lower mortality for males (151 compared with 174) and the same level of mortality for females (103).
- Australia's incidence rates for males and females are much higher than for the United Kingdom and Canada, but are slightly lower than for the United States and are around 20 persons per 100,000 population lower than for New Zealand. Australia's mortality rates are lower than for all four of these countries.

Colorectal cancer

- Colorectal cancer is a disease besetting affluent countries. The age-standardised incidence per 100,000 population is an average of 37 for more developed countries and 10 for less developed countries for males, with Australia having a very high rate by world standards of 50.
- The Australian incidence rate is higher than for the United States, Canada and the United Kingdom, but less than that for New Zealand.
- Australia's male and female mortality rates for colorectal cancer are also high by world standards, including above those of Canada, the United States and the United Kingdom.

Female breast cancer

- Breast cancer is another disease particularly high in affluent countries. Australian age-standardised incidence per 100,000 population is much higher than the average for the more developed countries of the world, but is almost the same as for Canada and New Zealand and below that of the United States.
- Australia's breast cancer screening program appears to have been successful in achieving lower mortality than would be expected from its incidence rate, although the relative reduction in mortality is not as great as that which has been achieved by the United States. Age-standardised breast cancer mortality in Australia is lower than that for Canada, the United States, the United Kingdom and New Zealand.

Prostate cancer

- The age-standardised incidence of prostate cancer in Australia is much higher than in the United Kingdom and other European countries, but is well below the very high rates found in the United States and New Zealand.
- Age-standardised prostate cancer mortality is similar in Australia to each of Canada, the United States, the United Kingdom and New Zealand.

Melanoma

- Because of excessive sun exposure, Australia and New Zealand have by far the highest rates of not only incidence of melanoma in the world, but also mortality, although mortality rates are quite low.
- The melanoma incidence rates in Australia and New Zealand are around four times as high as those found in Canada, the United States and the United Kingdom.

Lung cancer

- Australia's male lung cancer incidence and mortality rates are both well below the averages for the more developed countries of the world, especially compared with very high incidence rates in Canada, the United States and most European countries.
- Canada and the United States have almost double Australia's incidence and mortality for female lung cancer. Australia's rates are also below those of the United Kingdom and New Zealand, and northern European countries, but well above the low levels found in eastern, western and southern Europe.

Non-Hodgkin's lymphoma

- Australian age-standardised incidence and mortality rates for non-Hodgkin's lymphoma are the same as for New Zealand and Canada, but above the rates for the United Kingdom and below those for the United States.

Cervical cancer

- Because of the success of the National Cervical Screening Program in detecting and following up pre-cancerous abnormalities, Australia's cervical cancer incidence and mortality rates have been declining steadily for many years. They are both well below the averages for the more developed countries of the world, and also below those of the United Kingdom, Canada, the United States and New Zealand.

Stomach cancer

- Australia has stomach cancer incidence and mortality rates which are low by world standards, in fact less than half those of the averages for the more developed countries of the world.
- However, the Australian rates are higher than those found in the United States, and similar to those of Canada, the United Kingdom and New Zealand.

Cancer of the pancreas

- There are mixed patterns in the comparisons between Australia and similar western countries for male and female pancreatic cancer data.
- For males, Australian rates of pancreatic cancer incidence and mortality are almost the same as for New Zealand and the United Kingdom, and below the rates experienced in Canada and the United States.
- For females, the age-standardised Australian incidence rate is above that of the United Kingdom but below the rates of Canada, the United States and New Zealand. The Australian mortality rate is on a par with those of New Zealand and the United States, but below the rates of the United States and Canada.

Table 24: Global ranking of incidence and mortality for cancer of all sites but skin, selected countries, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Males						
World	5,317,905	174.4	201.9	3,522,366	115.5	134.4
More developed countries	2,503,772	433.4	301.0	1,488,212	257.6	173.9
Less developed countries	2,814,132	113.9	153.8	2,034,163	82.3	112.9
Australia	45,066	480.5	355.3	19,803	211.1	150.9
Canada	68,952	447.4	323.4	35,303	229.1	160.5
New Zealand	9,297	488.5	375.3	4,248	223.2	167.3
United Kingdom	123,791	428.6	260.3	84,722	293.3	171.0
United States of America	653,465	476.4	361.4	301,050	219.5	161.8
Eastern Europe	522,447	359.6	290.0	363,550	250.2	199.9
Northern Europe	194,551	420.7	263.4	129,289	279.6	168.2
South-Eastern Asia	237,409	91.8	131.1	181,556	70.2	101.3
Southern Europe	312,156	443.4	275.4	204,532	290.5	172.1
Western Europe	444,491	494.9	318.7	270,193	300.9	185.2
Females						
World	4,737,646	157.6	157.8	2,686,313	89.4	88.3
More developed countries	2,175,974	356.6	218.3	1,157,634	189.7	103.1
Less developed countries	2,561,666	106.9	127.9	1,528,670	63.8	77.5
Australia	37,864	398.3	279.3	15,488	162.9	103.2
Canada	62,664	398.3	266.0	30,400	193.2	116.7
New Zealand	8,163	416.8	303.2	3,814	194.7	131.1
United Kingdom	123,876	413.7	234.3	76,923	256.9	128.1
United States of America	598,177	423.7	283.2	268,965	190.5	116.4
Eastern Europe	483,649	299.1	197.2	274,613	169.8	101.4
Northern Europe	195,489	406.1	235.1	115,945	240.9	121.7
South-Eastern Asia	257,923	99.3	120.1	156,137	60.1	74.1
Southern Europe	248,549	336.9	194.3	137,936	187.0	92.7
Western Europe	375,854	401.8	230.7	213,455	228.2	110.4

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC, 2004.

Table 25: Global ranking of incidence and mortality for cancer of the colon/rectum, selected countries, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Males						
World	498,754	16.4	19.1	254,816	8.4	9.8
More developed countries	318,694	55.2	37.3	152,178	26.3	17.4
Less developed countries	180,059	7.3	9.9	102,640	4.2	5.8
Australia	6,423	68.5	49.9	2,631	28.1	20.1
Canada	8,804	57.1	40.8	3,642	23.6	16.4
New Zealand	1,366	71.8	55.3	650	34.2	25.7
United Kingdom	17,249	59.7	35.4	9,341	32.3	18.7
United States of America	74,938	54.6	40.6	29,843	21.8	15.9
Eastern Europe	60,325	41.5	32.9	33,570	23.1	18.1
Northern Europe	26,409	57.1	34.7	14,357	31.0	18.4
South-Eastern Asia	22,338	8.6	12.6	14,359	5.6	8.1
Southern Europe	38,786	55.1	32.9	20,216	28.7	16.4
Western Europe	61,128	68.1	42.1	30,211	33.6	20.1
Females						
World	445,963	14.8	14.4	237,595	7.9	7.6
More developed countries	291,897	47.8	25.4	149,470	24.5	12.3
Less developed countries	154,064	6.4	7.9	88,121	3.7	4.5
Australia	5,305	55.8	35.4	2,237	23.5	14.4
Canada	7,831	49.8	29.8	3,215	20.4	11.6
New Zealand	1,292	65.9	43.4	606	30.9	20.2
United Kingdom	15,924	53.2	25.3	9,047	30.2	13.8
United States of America	73,033	51.7	30.7	29,753	21.1	12.0
Eastern Europe	60,148	37.2	21.5	36,727	22.7	12.4
Northern Europe	24,953	51.8	25.2	14,204	29.5	13.7
South-Eastern Asia	20,328	7.8	10.0	13,022	5.0	6.4
Southern Europe	32,706	44.3	22.0	17,658	23.9	10.9
Western Europe	58,255	62.3	29.4	31,835	34.0	14.8

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC, 2004.

Table 26: Global ranking of incidence and mortality for cancer of breast, females, selected countries, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Females						
World	1,050,346	34.9	35.7	372,969	12.4	12.5
More developed countries	579,285	94.9	63.2	189,203	31.0	18.6
Less developed countries	471,063	19.7	23.1	183,768	7.7	9.1
Australia	10,645	112.0	82.7	2,723	28.6	19.7
Canada	18,468	117.4	81.8	5,610	35.7	22.8
New Zealand	2,102	107.4	82.6	704	35.9	25.9
United Kingdom	34,815	116.3	74.9	14,415	48.1	26.8
United States of America	183,494	130.0	91.4	45,553	32.3	21.2
Eastern Europe	110,975	68.6	49.4	43,058	26.6	17.2
Northern Europe	54,551	113.3	73.2	20,992	43.6	24.6
South-Eastern Asia	55,907	21.5	25.6	24,961	9.6	11.5
Southern Europe	65,284	88.5	56.2	25,205	34.2	19.1
Western Europe	115,308	123.3	78.2	40,443	43.2	23.5

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC, 2004.

Table 27: Global ranking of incidence and mortality for cancer of the prostate, selected countries, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Males						
World	542,990	17.8	21.2	204,313	6.7	8.0
More developed countries	415,568	71.9	46.7	128,185	22.2	13.7
Less developed countries	127,419	5.2	7.7	76,127	3.1	4.6
Australia	10,129	108.0	76.0	2,518	26.8	18.0
Canada	18,658	121.1	83.9	4,022	26.1	17.1
New Zealand	2,646	139.1	101.1	577	30.3	21.2
United Kingdom	21,302	73.7	40.2	10,062	34.8	18.5
United States of America	193,205	140.8	104.3	35,882	26.2	17.9
Eastern Europe	36,390	25.1	19.4	16,193	11.2	8.5
Northern Europe	37,046	80.1	45.4	16,806	36.4	20.0
South-Eastern Asia	11,152	4.3	7.1	6,681	2.6	4.2
Southern Europe	31,474	44.7	23.9	17,577	25.0	13.0
Western Europe	84,856	94.5	54.9	30,777	34.3	19.3

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC, 2004.

Table 28: Global ranking of incidence and mortality for melanoma of the skin, selected countries, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Males						
World	65,177	2.1	2.4	19,990	0.7	0.8
More developed countries	50,608	8.8	6.7	13,827	2.4	1.7
Less developed countries	14,571	0.6	0.8	6,162	0.3	0.3
Australia	4,841	51.6	40.5	605	6.4	4.8
Canada	1,637	10.6	8.2	409	2.7	2.0
New Zealand	860	45.2	36.7	128	6.8	5.3
United Kingdom	2,398	8.3	6.1	769	2.7	1.8
United States of America	22,463	16.4	13.3	4,860	3.5	2.7
Eastern Europe	9,253	6.4	5.2	3,000	2.1	1.7
Northern Europe	4,688	10.1	7.4	1,437	3.1	2.1
South-Eastern Asia	765	0.3	0.4	359	0.1	0.2
Southern Europe	3,667	5.2	3.8	1,535	2.2	1.5
Western Europe	8,498	9.5	7.0	2,348	2.6	1.8
Females						
World	67,425	2.2	2.2	17,057	0.6	0.6
More developed countries	53,511	8.8	6.1	11,048	1.8	1.1
Less developed countries	13,904	0.6	0.7	6,019	0.3	0.3
Australia	3,865	40.7	31.8	345	3.6	2.5
Canada	1,673	10.6	8.0	286	1.8	1.2
New Zealand	868	44.4	34.9	87	4.5	3.2
United Kingdom	3,375	11.3	7.7	795	2.7	1.5
United States of America	18,183	12.9	9.4	2,931	2.1	1.4
Eastern Europe	10,983	6.8	5.0	2,736	1.7	1.1
Northern Europe	6,085	12.6	8.7	1,293	2.7	1.6
South-Eastern Asia	1,083	0.4	0.5	507	0.2	0.2
Southern Europe	5,053	6.9	4.6	1,352	1.8	1.1
Western Europe	11,215	12.0	8.1	2,222	2.4	1.3

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC, 2004.

Table 29: Global ranking of incidence and mortality for cancer of the lung, selected countries, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Males						
World	901,746	29.6	34.9	810,419	26.6	31.4
More developed countries	470,836	81.5	55.6	430,043	74.4	50.2
Less developed countries	430,919	17.4	24.8	380,389	15.4	22.0
Australia	5,553	59.2	42.2	4,798	51.1	36.2
Canada	11,997	77.8	55.1	11,123	72.2	50.4
New Zealand	1,054	55.4	41.4	1,004	52.8	39.3
United Kingdom	23,708	82.1	47.6	24,433	84.6	48.6
United States of America	107,618	78.5	58.6	98,738	72.0	53.2
Eastern Europe	126,653	87.2	69.7	115,091	79.2	63.1
Northern Europe	119,664	78.4	58.2	109,906	72.0	52.9
South-Eastern Asia	47,456	18.3	27.8	43,716	16.9	25.7
Southern Europe	67,518	95.9	58.8	59,426	84.4	50.4
Western Europe	75,350	83.9	53.2	71,024	79.1	48.9
Females						
World	337,115	11.2	11.1	292,700	9.7	9.5
More developed countries	175,392	28.7	15.6	151,159	24.8	13.1
Less developed countries	161,719	6.8	8.4	141,538	5.9	7.4
Australia	2,604	27.4	17.5	2,140	22.5	14.0
Canada	7,589	48.2	30.2	6,421	40.8	25.0
New Zealand	629	32.1	21.7	553	28.2	18.7
United Kingdom	13,423	44.8	21.8	13,231	44.2	21.1
United States of America	78,320	55.5	34.0	63,378	44.9	27.2
Eastern Europe	24,420	15.1	8.8	22,063	13.6	7.8
Northern Europe	18,063	37.5	18.9	17,792	37.0	18.1
South-Eastern Asia	18,368	7.1	9.1	16,883	6.5	8.4
Southern Europe	11,227	15.2	8.0	10,330	14.0	6.9
Western Europe	18,183	19.4	10.7	16,789	18.0	9.2

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC, 2004.

Table 30: Global ranking of incidence and mortality for non-Hodgkin's lymphoma, persons, selected countries, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Persons						
World	166,624	5.5	6.1	93,309	3.1	3.4
More developed countries	80,181	13.9	10.3	38,575	6.7	4.7
Less developed countries	86,436	3.5	4.3	54,738	2.2	2.8
Australia	1,758	18.7	14.4	848	9.1	6.6
Canada	2,940	19.1	14.6	1,296	8.4	6.1
New Zealand	331	17.4	14.0	148	7.8	6.0
United Kingdom	4,402	15.2	10.4	2,414	8.4	5.3
United States of America	28,094	20.5	16.1	12,835	9.4	7.1
Eastern Europe	11,246	7.7	6.6	5,692	3.9	3.3
Northern Europe	6,767	14.6	10.1	3,688	8.0	5.2
South-Eastern Asia	10,489	4.1	5.2	7,465	2.9	3.8
Southern Europe	9,322	13.2	9.2	4,167	5.9	3.8
Western Europe	14,286	15.9	11.1	6,529	7.3	4.6

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC & AIHW, 2004.

Table 31: Global ranking of incidence and mortality for cancer of the cervix uteri, females, selected countries, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Females						
World	470,606	15.7	16.1	233,372	7.8	8.0
More developed countries	91,451	15.0	11.4	39,350	6.5	4.1
Less developed countries	379,153	15.8	18.7	194,025	8.1	9.8
Australia	835	8.8	7.1	332	3.5	2.4
Canada	1,608	10.2	8.3	650	4.1	2.8
New Zealand	242	12.3	10.6	100	5.1	4.0
United Kingdom	3,537	11.8	9.3	1,906	6.4	3.9
United States of America	13,230	9.4	7.8	6,417	4.5	3.3
Eastern Europe	35,482	21.9	16.8	15,180	9.4	6.2
Northern Europe	6,049	12.6	9.8	3,162	6.6	4.0
South-Eastern Asia	39,648	15.3	18.3	20,462	7.9	9.7
Southern Europe	10,116	13.7	10.2	4,011	5.4	3.3
Western Europe	13,282	14.2	10.4	6,207	6.6	3.7

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC & AIHW, 2004.

Table 32: Global ranking of incidence and mortality for stomach cancer, selected countries, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Males						
World	558,458	18.3	21.5	405,215	13.3	15.6
More developed countries	208,282	36.1	24.6	138,699	24.0	16.2
Less developed countries	350,176	14.2	19.9	266,514	10.8	15.3
Australia	1,243	13.3	9.6	811	8.6	6.1
Canada	1,974	12.8	9.1	1,419	9.2	6.4
New Zealand	274	14.4	10.9	172	9.0	6.8
United Kingdom	6,178	21.4	12.4	5,101	17.7	10.1
United States of America	13,884	10.1	7.6	8,435	6.2	4.5
Eastern Europe	62,207	42.8	34.1	51,342	35.3	28.0
Northern Europe	9,751	21.1	12.7	8,195	17.7	10.6
South-Eastern Asia	15,035	5.8	8.7	12,843	5.0	7.5
Southern Europe	22,884	32.5	19.5	17,113	24.3	14.1
Western Europe	20,187	22.5	13.8	15,934	17.7	10.7
Females						
World	317,883	10.6	10.4	241,352	8.0	7.8
More developed countries	125,029	20.5	11.0	91,240	15.0	7.7
Less developed countries	192,850	8.1	10.0	150,100	6.3	7.8
Australia	753	7.9	5.0	481	5.1	3.1
Canada	1,123	7.1	4.2	894	5.7	3.2
New Zealand	162	8.3	5.2	126	6.4	4.0
United Kingdom	3,579	12.0	5.5	3,199	10.7	4.8
United States of America	8,594	6.1	3.6	5,690	4.0	2.3
Eastern Europe	42,223	26.1	14.5	35,375	21.9	12.2
Northern Europe	6,069	12.6	6.1	5,364	11.1	5.1
South-Eastern Asia	9,949	3.8	4.8	8,473	3.3	4.1
Southern Europe	14,965	20.3	9.7	11,707	15.9	7.2
Western Europe	14,146	15.1	7.0	12,709	13.6	6.0

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC & AIHW, 2004.

Table 33: Global ranking of incidence and mortality of the cancer of the pancreas, 2000

Population	Incidence			Mortality		
	Numbers	Crude	ASR(W)	Numbers	Crude	ASR(W)
Males						
World	115,697	3.8	4.5	111,966	3.7	4.3
More developed countries	66,186	11.5	7.8	65,773	11.4	7.7
Less developed countries	49,520	2.0	2.8	46,189	1.9	2.7
Australia	855	9.1	6.5	803	8.6	6.1
Canada	1,554	10.1	7.2	1,653	10.7	7.5
New Zealand	158	8.3	6.4	153	8.0	6.0
United Kingdom	2,978	10.3	6.2	3,240	11.2	6.6
United States of America	14,932	10.9	8.2	14,026	10.2	7.5
Eastern Europe	15,899	10.9	8.7	14,966	10.3	8.2
Northern Europe	4,991	10.8	6.7	5,502	11.9	7.2
South-Eastern Asia	3,565	1.4	2.0	3,258	1.3	1.9
Southern Europe	8,088	11.5	6.9	7,778	11.1	6.6
Western Europe	9,633	10.7	6.8	11,724	13.1	8.0
Females						
World	100,670	3.4	3.2	101,496	3.4	3.3
More developed countries	61,230	10.0	5.1	62,957	10.3	5.1
Less developed countries	39,449	1.7	2.1	38,545	1.6	2.0
Australia	872	9.2	5.5	841	8.9	5.2
Canada	1,585	10.1	5.9	1,676	10.7	6.0
New Zealand	188	9.6	6.2	161	8.3	5.1
United Kingdom	3,144	10.5	4.9	3,475	11.6	5.3
United States of America	15,380	10.9	6.3	14,796	10.5	6.0
Eastern Europe	13,732	8.5	4.8	13,085	8.1	4.4
Northern Europe	5,220	10.8	5.2	5,793	12.0	5.6
South-Eastern Asia	3,143	1.2	1.6	3,014	1.2	1.5
Southern Europe	7,463	10.1	4.7	7,177	9.7	4.4
Western Europe	9,223	9.9	4.6	12,069	12.9	5.7

Notes

1. Cancer numbers and rates are estimates for the middle of 2000, from the most recent data available, generally 3–5 years earlier.
2. Rates are expressed per 100,000 populations and age-standardised to the year 2000 Standard Population of the corresponding country and to the World Standard Population (ASR (W)).

Source: GLOBOCAN 2000, IARC & AIHW, 2004.

