

3 Cancer control

Primary goal:

“ Reduce the incidence of, mortality from, and impact of cancer on the Australian population ”

- Overview
- Highlights
- Priority indicators
- Priority indicators not reported due to incomplete information
- Strategies, initiatives and interventions

Overview

The National Health Priority Area of 'Cancer control' is represented by a cross-section of indicators reflecting the continuum of care, from illness prevention to treatment, support services and palliative care. Primary outcome indicators include cancer incidence, mortality, five-year survival rates and quality of life of cancer patients, their carers and families. Indicators reflecting intermediate outcomes include risk factor prevalence rates and patient satisfaction with cancer treatment. Process indicators include screening participation rates and establishment of hospital-based cancer registries.

Seven cancers have been targeted in the 'Cancer control' priority area—lung cancer, melanoma, non-melanocytic skin cancer (NMSC), colorectal cancer, prostate cancer in males and cancer of the cervix and breast in females (see the table below). NMSC is the most frequently occurring cancer in the population, but the least life threatening.

Incidence of, and mortality from, NHPA targeted cancers, 1990

Targeted cancer	Number of new cases		Number of deaths	
	Males	Females	Males	Females
Lung cancer	4,896	1,826	4,447	1,593
Melanoma	3,127	2,654	512	317
Cervical cancer	—	1,067	—	339
Breast cancer	—	7,121	—	2,421
Colorectal cancer	4,719	4,007	2,189	1,943
Prostate cancer	5,753	—	2,078	—
<i>All cancers</i>	<i>31,741</i>	<i>27,173</i>	<i>17,010</i>	<i>13,033</i>
Targeted cancers as a proportion of all cancers (excluding NMSC)	58.3%	46.6%	54.2%	50.7%

Note: NMSC incidence data are not routinely collected by all State and Territory cancer registries.

Source: Jelfs et al. (1996).

Of the more life-threatening cancers, prostate cancer is the most common form of cancer among males (18.1% of all cancers excluding NMSC), followed by lung cancer (15.4%). Among females, breast cancer accounts for 26.2% of the targeted cancers. It is also the greatest cause of cancer-related mortality among women, particularly those aged 45–64 years.

Part of the increased incidence of breast and prostate cancer during this period may be attributed to increased awareness and detection of these diseases. Analysis of trends in the incidence rates suggests that the increases are likely to continue in the coming years.

On the whole, the States and Territories mirror national trends in incidence and mortality from cancer. Notable exceptions are the high incidence of cancer of the cervix in the Northern Territory (almost double the national average) and the high incidence of melanoma in Queensland, particularly among males.

Several different factors contribute to the initiation or promotion of cancer. Tobacco smoking has been identified as the primary cause of 15% of all cancers (in particular lung and oropharyngeal), and alcohol consumption the primary cause of 1% of all cancers (3% of breast cancers among females have been attributed to alcohol

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consumption) (Jelfs et al. 1996). Indicators for smoking among adults and adolescents are included in the section on 'Cardiovascular health' (pages 16–19).

Diet has also been associated with the onset of cancer, although the relationship is not fully understood. Fat consumption, for example, has been linked to higher incidence of colorectal cancer and breast cancer. Diet-related indicators are included in the section on 'Cardiovascular health' (pages 22–25).

Exposure to sunlight is strongly associated with the risk of contracting skin cancers; however, no indicators are included in this report as exposure measurement in the population is problematic.

Genetic mutations have been implicated in several of the cancers. For example, BRCA1 and BRCA2 genes are known to contribute to familial breast cancer. Several other oncogenes are also now being identified in the development of cancer. Genetic factors, however, are outweighed by environmental risk factors in many cases.

Early detection of cancer is generally associated with improved survival. Population-based screening programs have been established for breast cancer and cancer of the cervix. To reflect participation in these programs, two screening indicators are included in this section.

Five-year survival rates for South Australia provide an indication of the success of cancer treatment. The five-year survival rate for all cancers is about 50% (Bonett et al. 1992). Higher rates of survival were found in people diagnosed with melanoma than for people with lung cancer. Five-year survival rates for the targeted cancers were not available on a national basis at the time of publication, but are expected to become available in 1997–98. The development of the National Death Index coupled with incidence data from the National Cancer Statistics Clearing House at the Australian Institute of Health and Welfare (AIHW) will be used to develop national population-based survival rates.

The treatment of cancer frequently involves combinations of treatments. The treatments may often have side-effects which can be debilitating, cause considerable disruption to the life of the patient and their families, and invoke substantial anxiety over and above the initial diagnosis. An indicator of patient satisfaction with cancer treatment enables an assessment of the overall quality of treatment received—from the patient's rather than the practitioner's perspective. Indicators of patient satisfaction for treatment of cancer of the cervix, breast cancer and prostate cancer are expected to be developed by 1997–98.

The quality of life of patients, their carers and families has been specified as one of the goals of the 'Cancer control' priority area. Provision of support for patients and their carers is an integral part of good treatment. The notion of quality of life is an exceedingly difficult concept to measure, particularly over time—an indicator of this aspect of the continuum of care in 'Cancer control' is not expected to be developed for some years.

Monitoring the distribution and frequency of cancer in the population requires the availability of good quality cancer data. National cancer statistics are reliant upon the supply of data by State and Territory cancer registries. Regrettably, while data from many jurisdictions is timely, national data have been delayed by poor performance of one or two registries. AIHW is now targeting publication of national data three years after the end of the relevant period. The establishment of hospital-based cancer registries in selected hospitals by 1999 would enable ongoing quality appraisal of cancer treatment,

provide mechanisms for research into outcomes of care/intervention and permit better evaluation of treatment regimes. An indicator of the achievement of this goal has been included in the report.

Highlights

- Between 1986 and 1994, the age-standardised death rates for all cancers have remained stable, but generally incidence rates have increased. Each year, approximately 190,000 new cancer cases are diagnosed in Australia. About 135,000 are non-melanocytic skin cancers (NMSC) which, if treated, are not life-threatening. Between 1983 and 1990, there were increases in the numbers diagnosed in all of the targeted cancers except male lung cancer and female cervical cancer, mostly due to population growth, ageing of the population, increased public awareness and improved disease detection.
- In 1990, prostate cancer was the most common form of cancer among males (18.1% of all cancers, excluding NMSC), followed by lung cancer (15.4%). No targets have been set; however, on current indications, the projected death rate for prostate cancer in the year 2000 would be approximately 43 deaths per 100,000 males.
- Among females, breast cancer occurred much more frequently than other cancers (26.2%). It is also the greatest cause of cancer-related death among women, particularly those aged 45–64 years. The number of newly diagnosed cases of breast cancer per 100,000 women aged 50–74 years rose by an average of 2.5% from 178.8 in 1983 to 213.6 in 1990. No targets have been set for the year 2000.
- Between 1983 and 1990, the average annual rate of decline in the incidence of lung cancers among males was 2.2%. Females, however, experienced an annual increase of 2.2% during this period. In 1990, there were 4,896 new cases of lung cancer among males and 1,826 new cases among females. No targets have been set for the year 2000.
- Australia has the highest incidence of both melanoma and NMSC in the world. Between 1983 and 1988, incidence rates increased appreciably for both males and females, but have dropped slightly since then. If this trend continues, the year 2000 target is unlikely to be reached for males. Female age-standardised death rates reached the target for 2000 in 1993. In contrast, male death rates will need to decline by an average of 2.7% per year to achieve the set target.
- NMSC is the most common cancer in Australia. Age-standardised incidence rates are 17 times higher than the next most common male cancer (prostate) and nine times higher than the next most common female cancer (breast). Between 1985 and 1990, the incidence rates increased among both males (25.7%) and females (17.7%). In order to reach the year 2000 target, male and female age-standardised death rates will need to decline annually by an average of 1.5% and 8.4%, respectively.
- Cervical cancer risk rises with age, with approximately 50% of new cases diagnosed after the age of 50. In 1990, the incidence rate for women aged 20–74 years was 2.3% below the year 2000 target. On the other hand, if the year 2000 target of 3.6 deaths per 100,000 women is to be reached, the annual rate will need to decline by 2.4%.
- Colorectal cancer is responsible for more than one in eight cancer deaths. In 1988, colorectal cancer accounted for 14.5% of newly diagnosed cancers and 14.1% of cancer deaths. For both males and females the incidence and death rates were relatively stable between 1983 and 1990.

Priority indicators

This section covers indicators for which adequate data are available for reporting progress.

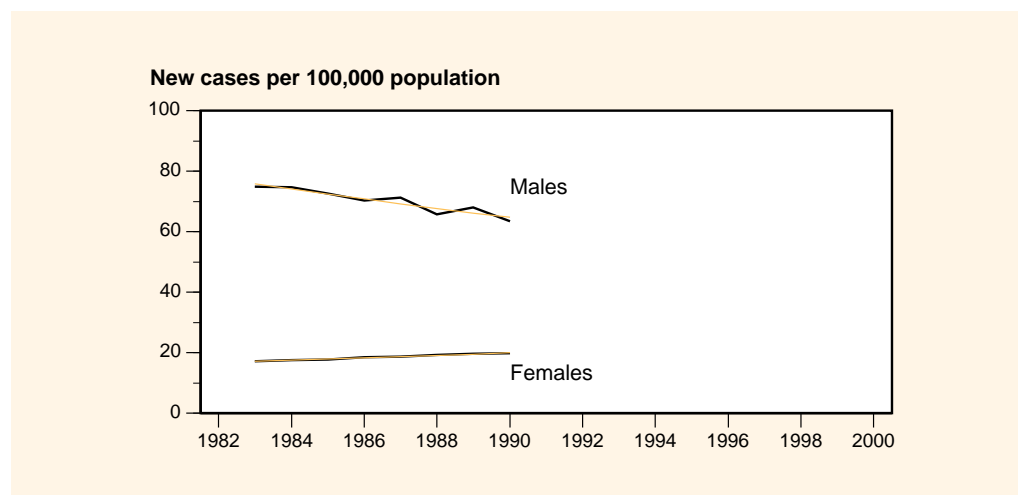
- 3.1.1 Incidence of cancer of the trachea, bronchus and lung**
- 3.1.2 Death rate for cancer of the trachea, bronchus and lung**
- 3.1.3 Incidence of melanoma of the skin**
- 3.1.4 Death rate for melanoma of the skin**
- 3.1.5 Incidence of (treated) non-melanocytic skin cancer**
- 3.1.6 Death rate for non-melanocytic skin cancer**
- 3.1.7 Incidence of cancer of the cervix among women aged 20–74 years**
- 3.1.8 Death rate for cancer of the cervix among women aged 20–74 years**
- 3.1.9 Incidence of breast cancer among women aged 50–74 years**
- 3.1.10 Death rate for breast cancer among women aged 50–74 years**
- 3.1.11 Incidence of colorectal cancer**
- 3.1.12 Death rate for colorectal cancer**
- 3.1.13 Incidence of prostate cancer**
- 3.1.14 Death rate for prostate cancer**
- 3.2.1 Proportion of women aged 50–69 years screened for breast cancer**
- 3.2.2 Proportion of women aged 20–69 years screened within specific intervals for cancer of the cervix**

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INDICATOR 3.1.1 Incidence of cancer of the trachea, bronchus and lung

*Goal: Reduce the incidence
of, and mortality from, cancer*

National trends



Sex	1983	1984	1985	1986	1987	1988	1989	1990	Target 2000
Males	74.8	74.7	72.7	70.2	71.3	65.8	68.1	63.4	Not set
Females	17.1	17.6	17.8	18.4	18.8	19.2	19.6	19.8	Not set

Sources: AIHW and the Australasian Association of Cancer Registries.

- Cigarette smoking is the single most important cause of lung cancer. Smoking-related cancers account for 20.9% of all cancers in males and 7.6% of all cancers in females (Jelfs et al. 1996).
- In 1983, males were 4.4 times more likely to develop cancer of the trachea, bronchus or lung than females. In 1990 there were 4,896 new cases of lung cancer among males, and 1,826 new cases among females, reflecting a drop in the male to female ratio to 3.2:1.0. The reduction in the differential reflects both a decline in incidence among males and an increase in incidence among females.
- Between 1983 and 1990, the average annual rate of decline in incidence among males was 2.2%. Females, however, experienced an annual increase of 2.2% during this period.

Cancer of the trachea, bronchus and lung (ICD-9 162)

State comparisons

- All States and Territories followed the national trend of declining incidence rates due to lung cancer among males. New South Wales and the Northern Territory observed the same change, a decline of about 14%, between 1983–85 and 1988–90.
- Age-standardised incidence rates for females increased for all States and Territories, except Queensland, which experienced a decline (17.9 per 100,000 females in 1983–85 compared with 15.3 in 1988–90), reaching an incidence rate lower than all other States and Territories.

Incidence per 100,000 population

State/Territory	Males			Females		
	Average 1983–85	Average 1988–90	Per cent change	Average 1983–85	Average 1988–90	Per cent change
NSW	75.1	64.7	–13.8	16.3	19.5	19.4
VIC	73.5	65.9	–10.3	19.5	21.1	8.0
QLD	79.4	62.2	–21.7	17.9	15.3	–14.4
WA	71.6	66.0	–7.9	19.4	22.2	14.7
SA	66.6	66.4	–0.3	14.4	19.7	37.0
TAS	74.1	73.3	–1.0	18.5	24.1	30.5
ACT	58.9	57.7	–2.0	15.4	17.7	14.9
NT	56.8	49.2	–13.5	17.0	18.7	10.3
Australia	74.1	65.8	–11.2	17.5	19.5	11.6

Sources: AIHW and the Australasian Association of Cancer Registries.

Data issues

Definition

- Age-standardised number of new cases of cancer of the trachea, bronchus and lung identified each year per 100,000 population

Data availability

- AIHW National Cancer Statistics Clearing House
- Data on incidence are collected by State and Territory cancer registries. These are forwarded to the National Cancer Statistics Clearing House at AIHW for collation at national level.

Data coverage

- Annual and national; States and Territories
- National data are currently available for the period 1983 to 1990. It is expected that

the data up to 1993 will be available by 1997.

- Data for States and Territories are currently available for:

New South Wales	up to 1993
Victoria	up to 1993
Queensland	up to 1990
Western Australia	up to 1994
South Australia	up to 1995
Tasmania	up to 1994
Australian Capital Territory	up to 1994
Northern Territory	up to 1993

Targets

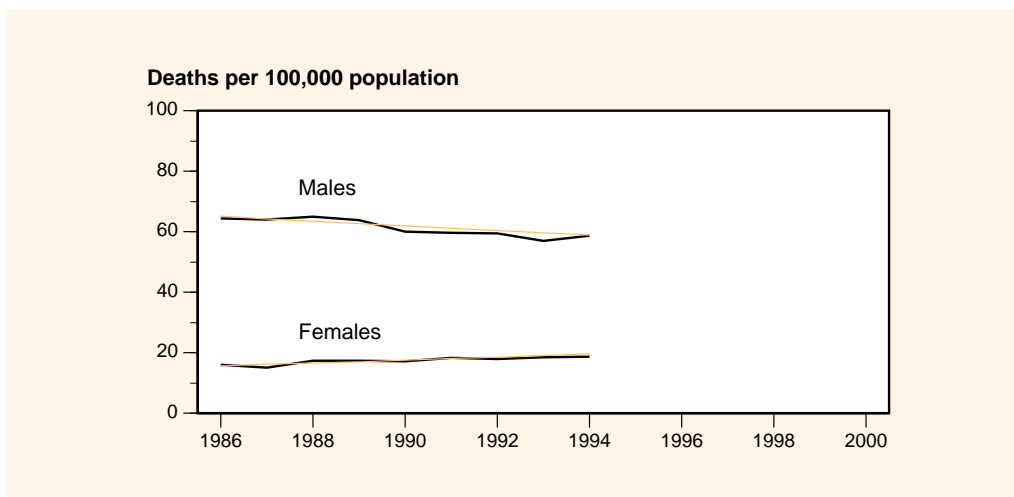
- No targets have been set.

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INDICATOR 3.1.2 Death rate for cancer of the trachea, bronchus and lung

*Goal: Reduce the incidence
of, and mortality from, cancer*

National trends



Sex	1986	1987	1988	1989	1990	1991	1992	1993	1994	Target 2000
Males	64.4	64.0	65.0	63.9	60.0	59.6	59.4	56.9	58.7	Not set
Females	16.1	15.0	17.4	17.4	17.2	18.3	17.9	18.5	18.7	Not set

Source: AIHW mortality database.

- Cancer of the trachea, bronchus and lung is the most common cause of cancer death in the Australian population. In 1994, the crude death rate for this type of cancer was 37.5 per 100,000 total population.
- Trends in mortality closely reflect changes in incidence (see 'Incidence of cancer of the trachea, bronchus and lung', page 46). Between 1986 and 1994, the age-standardised death rate among males fell by an average 1.4% per year; the decline in incidence between 1983 and 1990 was 2.2% per year. Among females the age-standardised death rate increased by an average 2.9% per year between 1986 and 1994; the increase in incidence between 1983 and 1990 was 2.2% per year.

Cancer of the trachea, bronchus and lung (ICD-9 162)

State comparisons

- Limited variation exists in the age-standardised death rates among States and Territories, with the Northern Territory showing the highest death rates for both sexes. The difference between the male and female death rates follows the national pattern in all jurisdictions, with the male death rate higher than the respective female death rate.
- Trends in mortality from cancer of the trachea, bronchus and lung are not uniform across all States and Territories. From 1986–88 to 1992–94, the gap between the age-standardised death rates widened for both males and females. Particularly among females, the difference between the highest and lowest death rates increased considerably.
- All States and the Australian Capital Territory followed the same downward trend in death rates as the national total for males, with the Australian Capital Territory showing the greatest change (–26.5%). In contrast, an increase in the death rate (19.9%) was recorded in the Northern Territory between the two periods, 1986–88 and 1992–94.
- Except for the Australian Capital Territory, which recorded a decline of 24.5%, females had substantially higher death rates due to lung cancer in 1992–94 than in 1986–88 in all States and Territories. The increase in Western Australia (5.4%) was well below the national average (13.9%), but in the Northern Territory, the death rate among females rose by 52.9%.

Number of deaths per 100,000 population

State/Territory	Males			Females		
	Average 1986–88	Average 1992–94	Per cent change	Average 1986–88	Average 1992–94	Per cent change
NSW	63.3	58.6	–7.4	16.0	18.2	13.9
VIC	64.3	58.3	–9.3	16.3	19.5	19.8
QLD	64.3	58.5	–9.0	13.2	16.6	26.4
WA	65.4	57.1	–12.7	19.0	20.1	5.4
SA	57.8	57.6	–0.2	14.7	16.3	11.2
TAS	67.5	58.3	–13.7	18.0	19.7	9.0
ACT	67.4	49.5	–26.5	25.5	19.3	–24.5
NT	72.1	86.5	19.9	27.7	42.3	52.9
Australia	64.4	58.3	–9.5	16.2	18.4	13.9

Source: AIHW mortality database.

Data issues

Definition

- Age-standardised number of deaths from cancer of the trachea, bronchus and lung per 100,000 population

Data availability

- AIHW National Cancer Statistics Clearing House

Data coverage

- Annual and national; States and Territories

Targets

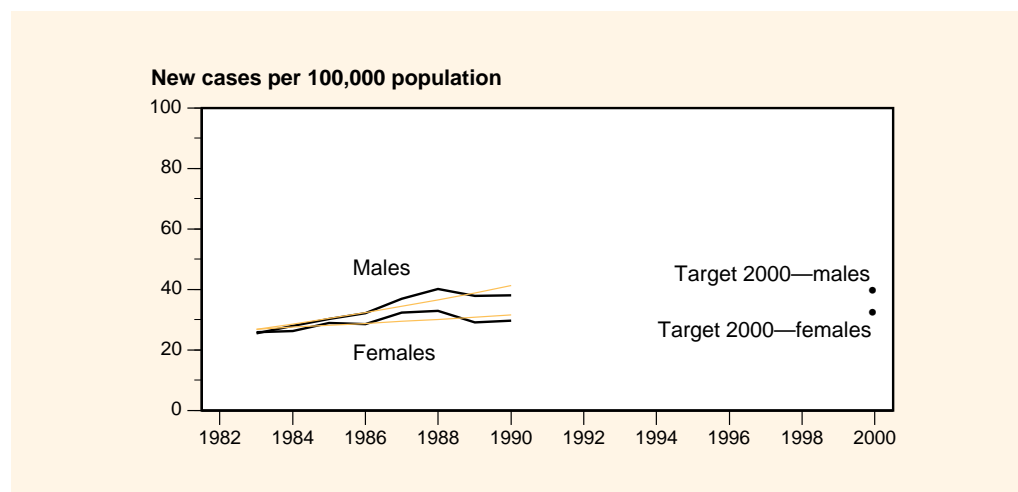
- No targets have been set.

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INDICATOR 3.1.3 Incidence of melanoma of the skin

Goal: Reduce the incidence of, and mortality from, cancer

National trends



Sex	1983	1984	1985	1986	1987	Baseline 1988	1989	1990	Target 2000
Males	25.5	28.0	30.3	32.3	37.0	40.1	38.0	38.2	39.3
Females	25.9	26.2	28.9	28.5	32.3	32.9	29.1	29.7	32.2

Note: The baseline and target values differ from the rates published in the BHO report due to differing populations used for age-standardisation.

Sources: AIHW and the Australasian Association of Cancer Registries.

- Australia has the highest incidence of skin cancer in the world, and is rising. The incidence rate for melanoma, which contributes up to 80% to the mortality from skin cancer, increased appreciably for both sexes between 1983 and 1988. Since 1988, the rates have dropped slightly.
- In 1990, there were 3,127 new cases of melanoma among males compared with 2,654 new cases among females, reflecting age-standardised incidence rates of 38.2 per 100,000 and 29.7 per 100,000 among males and females, respectively. Both these rates are below the year 2000 targets of 39.3 per 100,000 for males and 32.2 per 100,000 for females.
- The incidence of melanoma is higher in people with fair, sun-sensitive skin, those with many pigmented naevi or moles on their skin, and those whose pattern of sun exposure has been intermittent as indicated by high recreational exposure or frequent sunburns. Exposure in childhood may be particularly important.
- Despite a decline in incidence between 1988 and 1990, the overall trend since 1983 was that of an increase in the rate in both sexes. If this trend were to continue, the year 2000 target is unlikely to be reached for males but may be achieved for females.

Melanoma (ICD-9 172)

State comparisons

- A large variation was noted in the incidence rate for melanoma among States and Territories, with Queensland showing the highest rate for both sexes. Except in Tasmania, a higher incidence of melanoma was noted in males than in females.
- All States and Territories recorded an increase in the age-standardised incidence rate for melanoma between 1983–85 and 1988–90. Tasmania showed a substantially higher increase in the incidence rate for both sexes in this period than any other State or Territory, excluding the Northern Territory where the data prior to 1988 are not complete.

Incidence per 100,000 population

State/Territory	Males			Females		
	Average 1983–85	Average 1988–90	Per cent change	Average 1983–85	Average 1988–90	Per cent change
NSW	30.5	42.4	39.0	27.2	30.9	13.3
VIC	18.9	27.2	43.5	23.8	27.0	13.5
QLD	43.9	54.7	24.5	40.2	43.0	7.1
WA	27.8	38.8	39.9	27.5	29.4	6.7
SA	21.2	32.9	55.0	24.0	29.2	21.7
TAS	15.5	28.3	82.3	20.2	30.3	50.2
ACT	30.9	38.9	25.6	25.1	27.4	9.4
NT	2.9	30.8	>100	2.7	17.1	>100
Australia	28.0	38.7	38.5	27.0	30.5	12.9

Sources: AIHW and the Australasian Association of Cancer Registries.

Data issues

Definition

- Age-standardised number of new cases of melanoma identified each year per 100,000 population

Data availability

- AIHW National Cancer Statistics Clearing House
- Data on incidence are collected by State and Territory cancer registries. These are forwarded to the National Cancer Statistics Clearing House at AIHW for collation at national level.

Data coverage

- Annual and national; States and Territories
- National data are currently available for the period 1983 to 1990. It is expected that the data up to 1993 will be available by 1997.
- Data for States and Territories are currently available for:

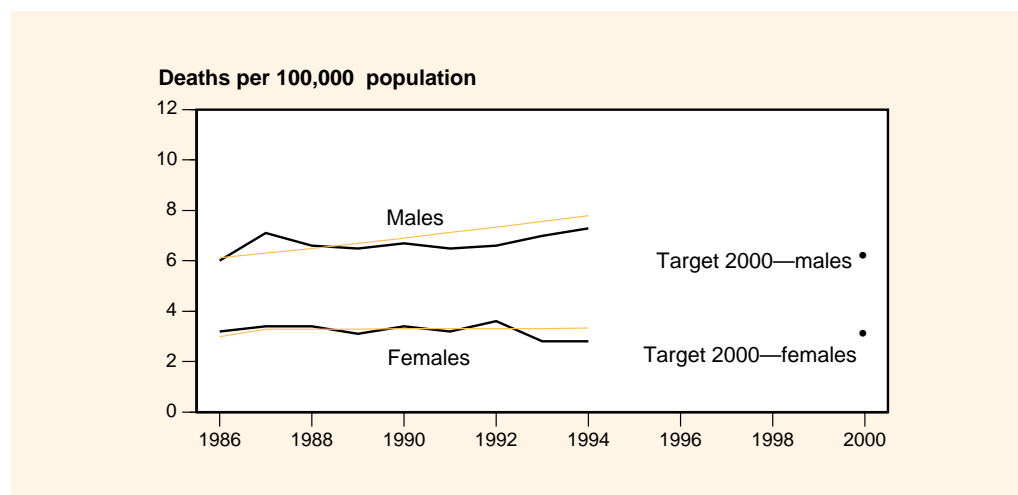
New South Wales	up to 1993
Victoria	up to 1993
Queensland	up to 1990
Western Australia	up to 1994
South Australia	up to 1995
Tasmania	up to 1994
Australian Capital Territory	up to 1994
Northern Territory	up to 1993

Cancer control

INDICATOR 3.1.4 Death rate for melanoma of the skin

Goal: Reduce the incidence of, and mortality from, cancer

National trends



Sex	1986	1987	1988	1989	1990	Baseline 1991	1992	1993	1994	Target 2000
Males	6.0	7.1	6.6	6.5	6.7	6.5	6.6	7.0	7.3	6.2
Females	3.2	3.4	3.4	3.1	3.4	3.2	3.6	2.8	2.8	3.1

Note: The baseline and target values differ from the rates published in the BHO report due to differing populations used for age-standardisation.

Source: AIHW mortality database.

- Mortality from melanoma has been rising continuously since the 1950s (when good quality data first became available), but the rate of increase has declined in recent years.
- The age-standardised death rate for melanoma among males increased between 1986 and 1994 from 6.0 to 7.3 per 100,000 males. In comparison, the death rate among females remained relatively stable between 1986 and 1992, but has since declined. In 1994, the age-standardised death rate for melanoma was 2.8 per 100,000 females.
- Between 1986 and 1994, the average annual increase in the death rate for melanoma among males was 1.1%, while the corresponding increase among females was 0.5%. Based on the trend among males, to reach the target by the year 2000, the death rate will need to decrease by an average 2.7% per year.
- Except in 1992, the death rate for melanoma among females has shown a downward trend since 1990. As a result, the year 2000 target was reached in 1993. In 1994, the death rate continued to be below the target value of 3.1 deaths per 100,000 females.

Melanoma (ICD-9 172)

State comparisons

- Between 1986–88 and 1992–94, most of the States and Territories followed the Australian trend of increasing male death rate and recently decreasing female death rate for melanoma. However, Tasmania showed a decrease in death rates for both males and females between the two periods.
- The male death rate in the Northern Territory showed a substantial increase (more than 100%) between 1986–88 and 1992–94. In comparison, the increase in the death rate for females in the Northern Territory was relatively small (17.3%), but nonetheless revealed a trend apart from other States (except Western Australia), the Australian Capital Territory and Australia as a whole. The female death rate for melanoma declined most in the Australian Capital Territory (66.5%) compared with a decline of 7.2% nationally.
- Death rates for the Northern Territory and the Australian Capital Territory are based on relatively small numbers. Therefore the estimates given below may have large variances, and should be interpreted cautiously.

Number of deaths per 100,000 population

State/Territory	Males			Females		
	Average 1986–88	Average 1992–94	Per cent change	Average 1986–88	Average 1992–94	Per cent change
NSW	7.2	7.9	10.5	3.7	3.7	1.4
VIC	5.2	5.5	5.9	3.0	2.9	-5.4
QLD	7.8	8.7	10.6	3.5	3.3	-3.3
WA	7.1	7.1	-0.1	2.9	3.2	11.8
SA	5.1	4.8	-6.7	3.4	2.6	-22.5
TAS	6.2	4.4	-29.4	3.1	2.0	-36.6
ACT	5.9	6.2	4.7	6.9	2.3	-66.5
NT	1.8	10.7	>100	2.2	2.5	17.3
Australia	6.6	7.0	6.6	3.3	3.1	-7.4

Source: AIHW mortality database.

Data issues

Definition

- Age-standardised number of deaths from melanoma per 100,000 population

Data availability

- AIHW National Cancer Statistics Clearing House

Data coverage

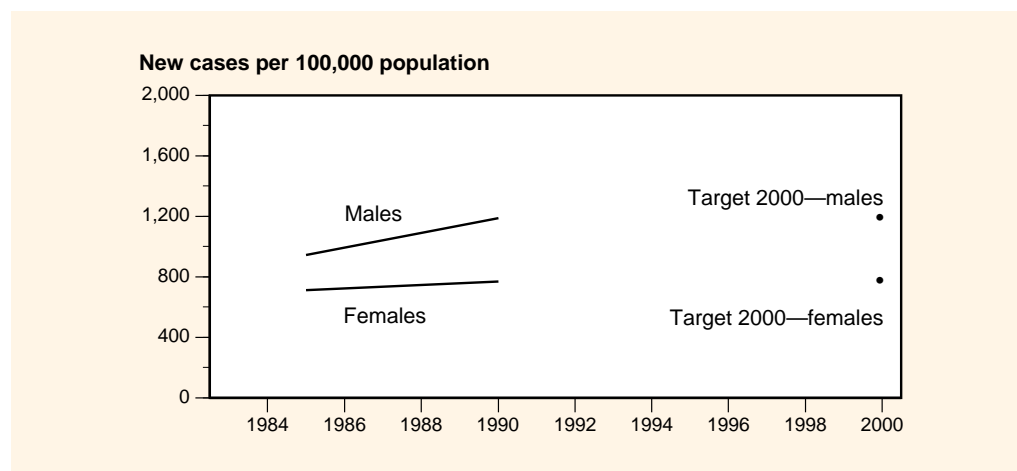
- Annual and national; States and Territories

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INDICATOR 3.1.5 Incidence of (treated) non-melanocytic skin cancer

**Goal: Reduce the incidence
of, and mortality from, cancer**

National trends



Sex	1985	Baseline 1990	Target 2000
Males	944	1,187	1,187
Females	714	769	769

Notes:

1. The baseline and target values differ from the rates published in the BHO report due to differing populations used for age-standardisation.
2. The incidence rates are age-standardised using the World Standard Population, and could not be standardised to the 1991 Australian population because of non-availability of age-specific rates.

Source: Marks et al. (1993).

- Non-melanocytic skin cancer (NMSC) is the most common cancer and a significant public health problem in Australia (Giles et al. 1988). Sun exposure is the main cause of NMSCs, and fair-skinned people who tan poorly are at high risk. As with melanoma, sun exposure in early life may be important in the development of these cancers.
- The incidence of NMSC is difficult to monitor because incidence data for this cancer are not collected on a routine basis by cancer registries as is the case for other cancers. Besides, many cases are treated in doctors' surgeries which do not lead to a hospital-based medical record (Marks et al. 1993). Surveys of treated cases currently provide the best possible estimate of the incidence rate in the population.
- Survey-based estimates show that the age-standardised incidence rates for treated NMSC were 1,187 cases per 100,000 males and 769 cases per 100,000 females in 1990 (Marks et al. 1993). These incidence rates are 17 times higher than the next most common male cancer (prostate) and nine times higher than the next most common female cancer (breast).
- Over the five-year period 1985–1990 the incidence of NMSC increased among both males and females. The rise was much higher among males (25.7%) than among females (17.7%).
- Targets for the year 2000 were set at the same level as those prevailing in 1990 to halt the rising incidence of NMSC. No information is currently available to confirm if this has occurred over the past five years (1991–95).

Non-melanocytic skin cancer (ICD-9 173)

Data issues

Definition

- Age-standardised number of new cases of non-melanocytic skin cancer identified each year per 100,000 population

Data coverage

- Five-yearly

Data availability

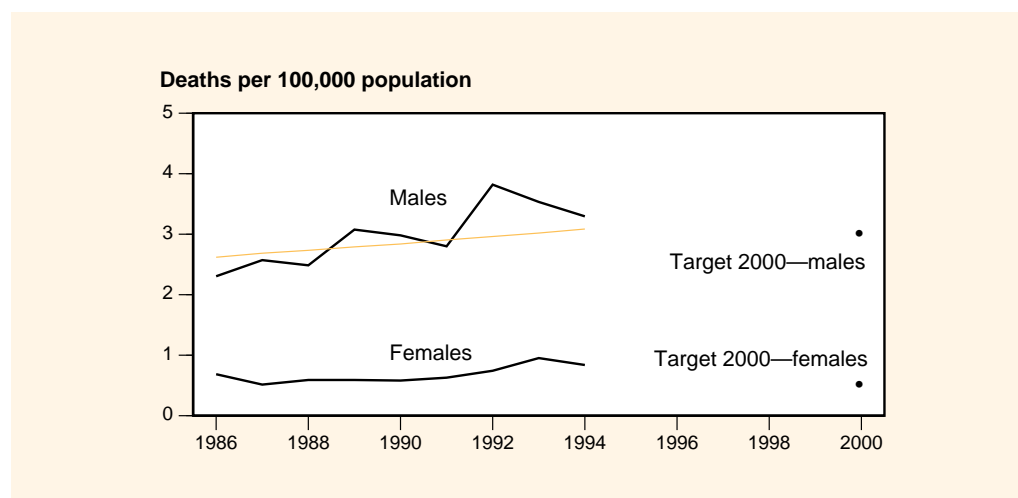
- Anti-Cancer Council of Victoria survey data (non-melanocytic skin cancer treated in Australia). Data for State comparisons are not available.

Cancer control

INDICATOR 3.1.6 Death rate for non-melanocytic skin cancer

*Goal: Reduce the incidence
of, and mortality from, cancer*

National trends



Sex	1986	1987	1988	1989	1990	Baseline 1991	1992	1993	1994	Target 2000
Males	2.3	2.6	2.5	3.1	3.0	2.8	3.8	3.5	3.3	3.0
Females	0.7	0.5	0.6	0.6	0.6	0.6	0.7	1.0	0.8	0.5

Note: The baseline and target values differ from the rates published in the BHO report due to differing populations used for age-standardisation.

Source: AIHW mortality database.

- Provided NMSCs are treated early, they can usually be cured. Removal is simple and often done in doctors' surgeries. Despite this prognosis, NMSC mortality has increased recently. In 1994, NMSC killed 260 males and 97 females.
- Between 1986 and 1994, the age-standardised death rate for males increased considerably. In comparison, the death rate among females remained relatively stable with a slight rise in 1993 and 1994.
- The average annual rate of increase in the death rate for NMSC is currently 7.2% among males. However, the rate has shown a downward trend since 1992. If the target set for the year 2000 is to be reached, the annual rate of decline will need to be 1.5%.
- The NMSC death rate among females did not show any clear trend. An average annual increase of 2.0% was noted between 1986 and 1994. The death rate must decline at an annual rate of 8.4% if the target of 0.5 deaths per 100,000 females is to be reached by the year 2000.

Non-melanocytic skin cancer (ICD-9 173)

State comparisons

- For most States and Territories the age-standardised death rates for NMSC are based on a small number of deaths; changes in death rates are therefore difficult to interpret. Only New South Wales figures can be interpreted meaningfully, which showed a slight increase in death rates, similar to that for Australia as a whole.
- In the period 1986–88, there were 215 male deaths and 69 female deaths from NMSC in New South Wales. During 1992–94, the number of deaths had increased to 337 among males and to 114 deaths among females, with the majority of these deaths occurring in people aged 65 years and over.

Number of deaths per 100,000 population

State/Territory	Males			Females		
	Average 1986–88	Average 1992–94	Per cent change	Average 1986–88	Average 1992–94	Per cent change
NSW	3.2	4.2	32.5	0.7	1.0	41.1
VIC	1.6	2.9	80.0	0.4	0.6	51.3
QLD	3.0	4.3	42.9	0.7	1.0	38.3
WA	2.9	2.7	-7.0	0.8	1.0	27.7
SA	1.3	2.1	56.4	0.5	0.7	31.3
TAS	1.8	4.2	>100	0.0	0.6	>100
ACT	1.4	3.5	>100	0.5	0.3	-36.3
NT	2.3	3.7	59.2	5.7	0.8	-86.0
Australia	2.5	3.5	44.3	0.6	0.9	43.1

Source: AIHW mortality database.

Data issues

Definition

- Age-standardised number of deaths from non-melanocytic skin cancer per 100,000 population

Data availability

- AIHW National Cancer Statistics Clearing House

Data coverage

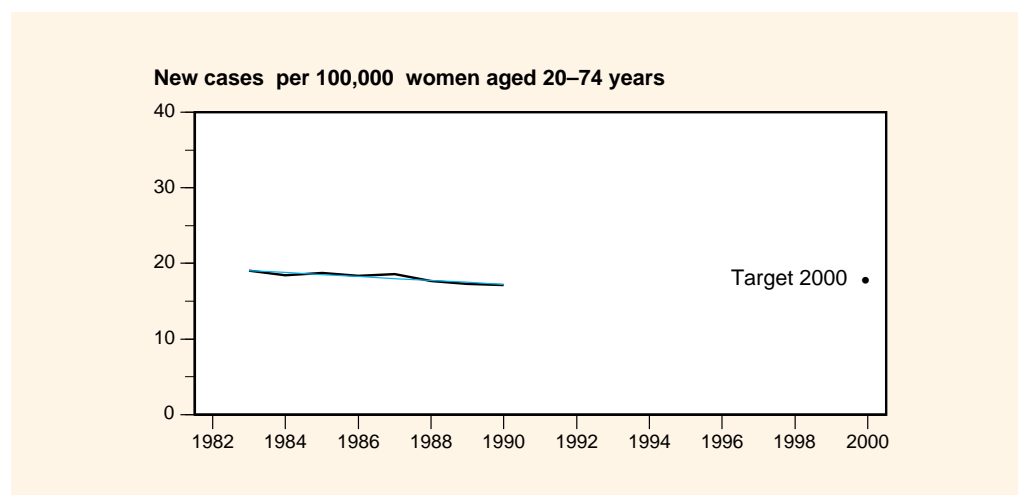
- Annual and national; States and Territories

Cancer control

INDICATOR 3.1.7 Incidence of cancer of the cervix among women aged 20–74 years

*Goal: Reduce the incidence
of, and mortality from, cancer*

National trends



Population group	1983	1984	1985	1986	1987	Baseline 1988	1989	1990	Target 2000
Women aged 20–74 years	19.0	18.5	18.7	18.3	18.6	17.6	17.3	17.2	17.6

Note: The baseline and target values differ from the rates published in the BHO report due to differing populations used for age-standardisation.

Sources: AIHW and the Australasian Association of Cancer Registries.

- Cervical cancer is the seventh most common cancer in women (Jelfs et al. 1996). The causes of pre-cancerous and cancerous lesions of the cervix are multi-factorial but the major known risk factors are age, sexual behaviour and the related transmission of human papilloma virus, smoking, socioeconomic status and race.
- Cervical cancer is much more common among Indigenous women than non-Indigenous women. No reliable estimates of the incidence rate are currently available for Indigenous women.
- It is estimated that up to 90% of the most common cervical cancer cases are preventable with two-yearly screening, although up until 1991, only 50% of potential cases of cervical cancer were being prevented (Jelfs 1995).
- The incidence of cervical cancer is declining in Australia, with an average annual rate of decline of 1.4% between 1983 and 1990. However, an age-dependent variation has been noted in trends. Among women aged 50 years and over, the incidence of cancer of the cervix has fallen since 1983, while rates for those under the age of 50 years have increased slightly.
- The target for the rate of incidence for cervical cancer in the year 2000 has been set at the same level as that prevailing in 1988, the baseline year. However, the continuing decline in incidence has led to a better than expected result.
- In 1990, the rate of incidence for cervical cancer was 2.3% below the year 2000 target. Incidence rates have been predicted to fall by 1.2% per year between 1990 and 1995, and may continue further.

Cancer of the cervix (ICD-9 180)

State comparisons

- The incidence of cervical cancer varies substantially at the State and Territory level. Of the States, Queensland (18.2) and Western Australia (20.9) showed the highest rates, whereas South Australia (15.9) showed the lowest rate among women aged 20–74 years for the period 1988–90.
- Most States and Territories experienced a slight downward trend in incidence rates over the period 1983–1990, except the Australian Capital Territory where a slight upward trend was noted.
- Rates of incidence for cervical cancer have lately dropped in the Northern Territory; however, it still has the highest age-standardised incidence rate of all States and Territories. High incidence of cervical cancer among Aboriginal and Torres Strait Islander women is the single largest contributor to this high rate in the Northern Territory.

Incidence per 100,000 women aged 20–74 years

State/Territory	Average 1983–85	Average 1988–90	Per cent change
NSW	17.5	16.6	–4.7
VIC	16.8	16.5	–1.8
QLD	22.7	18.2	–20.1
WA	22.3	20.9	–6.4
SA	18.3	15.9	–13.2
TAS	20.7	20.0	–3.6
ACT	18.0	18.4	2.0
NT	31.5	30.3	–3.8
Australia	18.7	17.4	–7.3

Sources: AIHW and the Australasian Association of Cancer Registries.

Data issues

Definition

- Age-standardised number of new cases of cancer of the cervix identified each year per 100,000 women aged 20–74 years

Data availability

- AIHW National Cancer Statistics Clearing House
- Data on incidence are collected by State and Territory cancer registries. These are forwarded to the National Cancer Statistics Clearing House at AIHW for collation at national level.

Data coverage

- Annual and national; States and Territories
- National data are currently available for the period 1983 to 1990. It is expected that the data up to 1993 will be available by 1997.
- Data for States and Territories are currently available for:

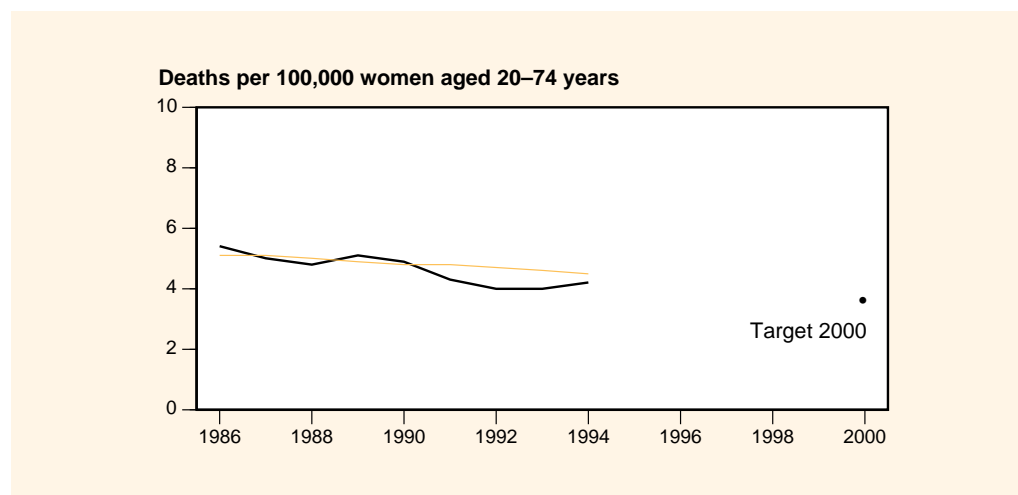
New South Wales	up to 1993
Victoria	up to 1993
Queensland	up to 1990
Western Australia	up to 1994
South Australia	up to 1995
Tasmania	up to 1994
Australian Capital Territory	up to 1994
Northern Territory	up to 1993

Cancer control

INDICATOR 3.1.8 Death rate for cancer of the cervix among women aged 20–74 years

Goal: Reduce the incidence of, and mortality from, cancer

National trends



Population group	1986	1987	1988	1989	1990	Baseline 1991	1992	1993	1994	Target 2000
Women aged 20–74 years	5.4	5.0	4.8	5.1	4.9	4.3	4.0	4.0	4.2	3.6

Note: The baseline and target values differ from the rates published in the BHO report due to differing populations used for age-standardisation.

Source: AIHW mortality database.

- Cervical cancer is the seventh most common cancer in women, but the eleventh ranked cause of cancer deaths. In 1994, there were 336 deaths from cervical cancer with an age-standardised death rate of 4.2 per 100,000 females.
- Mortality from cervical cancer is much more common among Indigenous than non-Indigenous women. A standardised mortality ratio (SMR) of 8.3 was noted in 1992–94 between the rates for the two groups (Anderson et al. 1996).
- Cervical cancer risk rises with age, with approximately 50% of new cases diagnosed after the age of 50. There has been a decrease in incidence over the age of 50 since 1982, but the rates for those under the age of 50 have shown a slight increase. These varying trends in the incidence are also reflected in mortality from cervical cancer.
- Despite varying trends among different age groups, overall mortality from the disease fell by 1.5% per year between 1986 and 1994. If the target of 3.6 deaths per 100,000 females is to be reached by the year 2000, the death rate will need to decline by 2.4% annually.
- In parallel with the trend noted in the total population, the age-standardised death rate for cervical cancer among Indigenous women also decreased slightly over the same period (Anderson et al. 1996).

Cancer of the cervix (ICD-9 180)

State comparisons

- The death rate for cervical cancer varies greatly among States and Territories. Both in 1986–88 and 1992–94, the Northern Territory had the highest death rate for cervical cancer among women aged 20–74 years. An average of 15.3 deaths per 100,000 women were noted in this age bracket during 1992–94, almost seven times the rate prevalent in the Australian Capital Territory.
- All States and Territories, except Tasmania and the Northern Territory, showed a decline in the age-standardised death rate for cervical cancer between 1986–88 and 1992–94. The death rate for women in Tasmania did not increase significantly but in the Northern Territory it increased by more than two-thirds between the two periods.
- In contrast, the death rate for cervical cancer declined to less than half between 1986–88 and 1992–94 in the Australian Capital Territory. Large declines in the death rate were also noted in South Australia and Victoria.
- Large changes in the number of deaths between 1986–88 and 1992–94 in the Australian Capital Territory and the Northern Territory may be an artefact of population numbers. Per cent changes in the death rate for cervical cancer in the two Territories between the two periods therefore should be interpreted cautiously.

Number of deaths per 100,000 women aged 20–74 years

State/Territory	Average 1986–88	Average 1992–94	Per cent change
NSW	5.4	4.3	-19.4
VIC	4.5	3.6	-20.3
QLD	4.8	3.9	-18.5
WA	5.4	4.8	-10.2
SA	3.8	2.6	-33.0
TAS	6.4	6.6	3.7
ACT	4.6	2.2	-51.8
NT	9.0	15.3	69.7
Australia	5.1	4.1	-19.9

Source: AIHW mortality database.

Data issues

Definition

- Age-standardised number of deaths from cancer of the cervix per 100,000 women aged 20–74 years

Data availability

- AIHW National Cancer Statistics Clearing House

Data coverage

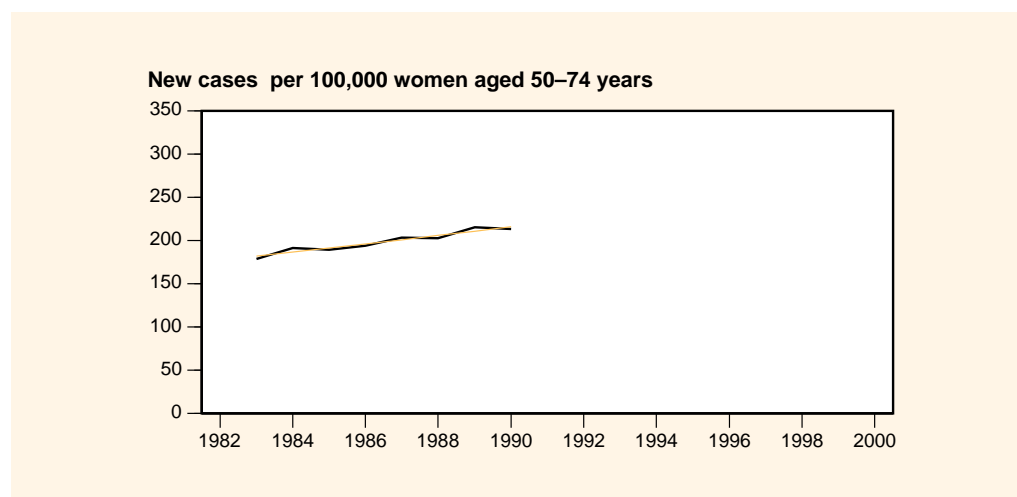
- Annual and national; States and Territories

Cancer control

INDICATOR 3.1.9 Incidence of breast cancer among women aged 50–74 years

*Goal: Reduce the incidence
of, and mortality from, cancer*

National trends



Population group	1983	1984	1985	1986	1987	Baseline 1988	1989	1990	Target 2000
Women aged 50–74 years	178.8	191.4	189.1	194.3	203.7	202.4	215.4	213.6	Not set

Note: The baseline figure published in the BHO report refers to all females; the data have been revised to reflect the target age group.
Sources: AIHW and the Australasian Association of Cancer Registries.

- Breast cancer is the second most common cancer in women (26.2% in 1990) after NMSC, and is the major cause of cancer death in women.
- The number of newly diagnosed cases of breast cancer rose by an average of 2.5% from 178.8 per 100,000 women aged 50–74 years in 1983 to 213.6 in 1990.
- A national breast cancer screening program began in 1991. Over the next several years, this will lead to an apparent increase in incidence as cases of breast cancer are diagnosed earlier than they would have been without the screening program. In the longer term, the earlier diagnosis of breast cancer should lead to a fall in mortality. Women aged 50–74 years have been targeted in this program (see ‘Proportion of women aged 50–69 years screened for breast cancer’, on page 74).
- There are numerous interrelated risk factors for breast cancer. Age is a significant, non-modifiable risk factor. The risk increases steadily with age, with breast cancer rare in women under 30 years. Other risk factors include: a previous history of breast cancer; a first degree relative diagnosed with breast cancer; the first full-term pregnancy at 35 years or older; evidence of specific genetic susceptibility; previous radiation to the breast; and biopsy confirmed benign proliferative disease with atypia. These and other known risk factors are estimated to account for up to 30% of breast cancers.
- No target has been set for the incidence of breast cancer in the year 2000 due to the unknown impact of the screening program in detecting new cases.

Breast cancer (ICD-9 174)

State comparisons

- Substantial increases in breast cancer incidence rates occurred among women (aged 50–74 years) in all the States during 1983–1990. However, in the Australian Capital Territory and the Northern Territory, with the highest and lowest incidence rates of all States and Territories in 1983–85 respectively, relatively small increases were noted in the rates through to 1988–90.
- Large increases in the incidence rate noted for some of the States, between 1983–85 and 1988–90, result mostly from improved detection programs.

Incidence per 100,000 women aged 50–74 years

State/Territory	Average 1983–85	Average 1988–90	Per cent change
NSW	178.7	207.6	16.2
VIC	196.8	211.8	7.6
QLD	189.6	212.9	12.3
WA	186.1	228.6	22.8
SA	187.9	210.4	12.0
TAS	162.9	175.1	7.5
ACT	230.0	230.2	0.1
NT	121.8	123.5	1.3
Australia	186.5	210.5	12.9

Sources: AIHW and the Australasian Association of Cancer Registries.

Data issues

Definition

- Age-standardised number of new cases of breast cancer identified each year per 100,000 women aged 50–74 years

Data availability

- AIHW National Cancer Statistics Clearing House
- Data on incidence are collected by State and Territory cancer registries. These are forwarded to the National Cancer Statistics Clearing House at AIHW for collation at national level.

Data coverage

- Annual and national; States and Territories
- National data are currently available for the period 1983 to 1990. It is expected that

the data up to 1993 will be available by 1997.

- Data for States and Territories are currently available for:

New South Wales	up to 1993
Victoria	up to 1993
Queensland	up to 1990
Western Australia	up to 1994
South Australia	up to 1995
Tasmania	up to 1994
Australian Capital Territory	up to 1994
Northern Territory	up to 1993

Target

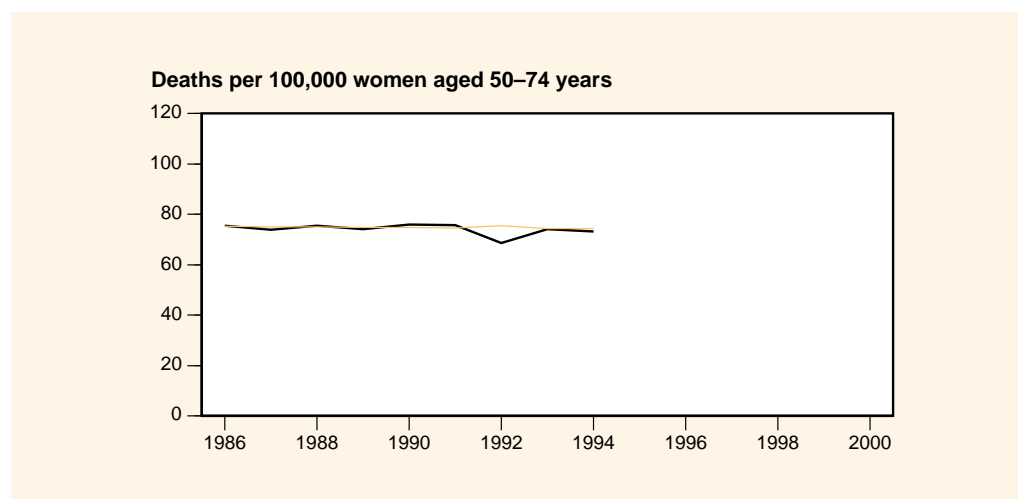
- No target has been set.

Cancer control

INDICATOR 3.1.10 Death rate for breast cancer among women aged 50–74 years

Goal: Reduce the incidence of, and mortality from, cancer

National trends



Population group	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Women aged 50–74 years	75.4	73.8	75.4	74.0	75.9	75.6	68.7	74.1	73.2	Not set

Note: The baseline figure published in the BHO report refers to all females rather than to women in the age-bracket 50–74 years; the estimate has been revised to reflect the target age group. A different population was also used for age-standardisation.

Source: AIHW mortality database.

- Breast cancer is the most common cause of cancer death in women. In 1994, it accounted for 19% of all female cancer deaths and nearly 5% of all female deaths.
- Among women aged between 50 and 74 years the age-standardised death rate for breast cancer remained fairly constant between 1986 and 1994 with a slight dip in 1992. This trend runs counter to the trend in breast cancer incidence which has lately shown a consistent increase in numbers.
- A national breast cancer screening program began in 1991. Over the next several years, this will lead to an earlier diagnosis of breast cancer which, through timely intervention, should lead to a fall in the death rate.
- Between 1986–88 and 1992–94, age-standardised death rate fell by 1.9% for women in all ages, compared with a fall of 3.8% for women aged 50–74 years of age. The latter change is strongly influenced by the much smaller number of deaths from breast cancer in 1992, and therefore should be interpreted cautiously.

Breast cancer (ICD-9 174)

State comparisons

- Death rates for breast cancer in most States and Territories do not deviate much from the national average among women aged 50–74 years. The gap between the highest and the lowest rates was in the order of 28% in 1986–88, although it increased to 60% in 1992–94.
- A decline of 3.8% in the breast cancer death rate was noted between 1986–88 and 1992–94, due mainly to a large dip in numbers in 1992. All States and Territories except the Australian Capital Territory showed this decline.
- The much larger decline in the death rate for breast cancer in the Northern Territory, a change of 42.4% between the two triennia (1986–88 and 1992–94), was possibly on account of small numbers.

Number of deaths per 100,000 women aged 50–74 years

State/Territory	Average 1986–88	Average 1992–94	Per cent change
NSW	74.6	70.4	–5.7
VIC	78.3	77.5	–1.1
QLD	69.4	65.2	–6.1
WA	72.8	70.3	–3.5
SA	77.1	79.1	2.6
TAS	70.3	65.1	–7.4
ACT	80.1	82.0	2.4
NT	88.8	51.2	–42.4
Australia	74.8	72.0	–3.8

Source: AIHW mortality database.

Data issues

Definition

- Age-standardised number of deaths from breast cancer per 100,000 women aged 50–74 years

Data availability

- AIHW National Cancer Statistics Clearing House

Data coverage

- Annual and national; States and Territories

Target

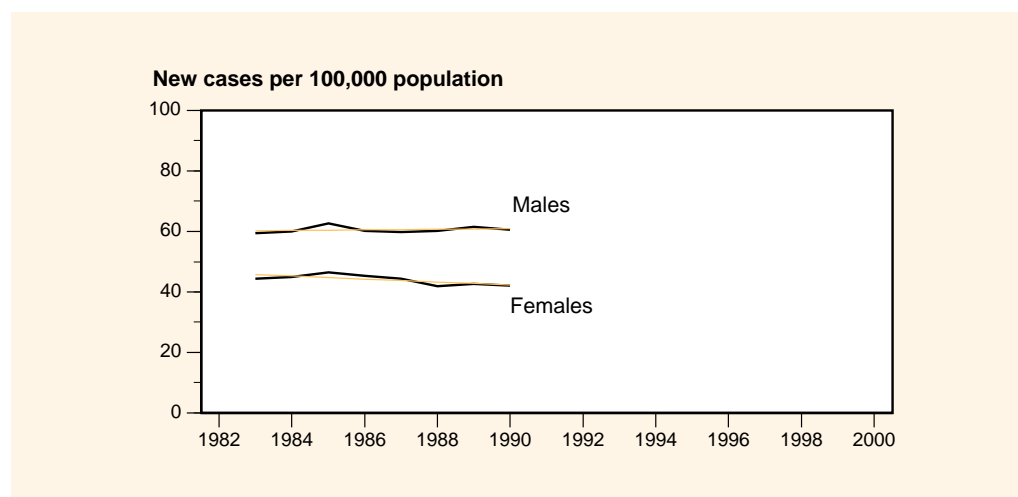
- No target has been set.

Cancer control

INDICATOR 3.1.11 Incidence of colorectal cancer

Goal: Reduce the incidence of, and mortality from, cancer

National trends



Sex	1983	1984	1985	1986	1987	Baseline 1988	1989	1990	Target 2000
Males	59.4	60.0	62.7	60.3	59.9	60.2	61.5	60.6	Not set
Females	44.3	45.0	46.5	45.3	44.3	42.0	42.7	42.2	Not set

Note: The baseline figures differ from the rates published in the BHO report due to differing populations used for age-standardisation.

Sources: AIHW and the Australasian Association of Cancer Registries.

- Together, cancers of the colon and rectum are the most commonly occurring cancers, accounting for 14.5% of newly diagnosed cancers and 14.1% of cancer deaths in 1988. They affect around 4,500 males and nearly 4,000 females each year. Approximately 85% of new cases occur in people aged over 55 years.
- The incidence rate for colorectal cancer has been relatively stable recently with similar levels observed in 1983 and 1990, 59.4 and 60.6 per 100,000 males, respectively, compared with 44.3 and 42.2 per 100,000 females.
- Males experienced an average annual increase of 0.2% in incidence over the period 1983 to 1990, while women showed a 1.1% decrease.
- The risk of colorectal cancer and precursor colorectal adenomas is increased by a family history of the disease, a diet high in fat and low in vegetables, and physical inactivity. Alcohol in the form of beer drinking may also have a causative role in colorectal cancer. Specific genetic mutations have also been linked to familial adenomatous polyposis (FAP) which can develop into colon cancer.

Colorectal cancer (ICD-9 153–154)

State comparisons

- The incidence of colorectal cancer varies slightly from year to year at the national level; this trend is also evident at the State and Territory level.
- Age-standardised rates for males have risen in New South Wales, South Australia and the Northern Territory, but declined elsewhere, between 1983–85 and 1988–90.
- Age-standardised rates for females decreased in New South Wales, Victoria, Queensland, Western Australia, Tasmania and the Australian Capital Territory in concordance with the national trend for female incidence, but rose in South Australia and the Northern Territory.

Incidence per 100,000 population

State/Territory	Males			Females		
	Average 1983–85	Average 1988–90	Per cent change	Average 1983–85	Average 1988–90	Per cent change
NSW	60.6	61.6	1.6	44.2	40.2	-9.0
VIC	64.9	63.8	-1.7	47.4	45.2	-4.7
QLD	59.5	59.4	-0.1	48.9	41.5	-15.1
WA	56.0	55.1	-1.6	41.6	41.5	-0.2
SA	56.3	59.9	6.5	41.0	45.3	10.5
TAS	59.3	57.7	-2.6	47.5	43.7	-7.9
ACT	65.4	54.4	-16.7	44.8	43.2	-3.4
NT	24.5	44.5	81.7	12.5	36.6	>100
Australia	60.7	60.7	0.1	45.3	42.3	-6.6

Sources: AIHW and the Australasian Association of Cancer Registries.

Data issues

Definition

- Age-standardised number of new cases of colorectal cancer identified each year per 100,000 population

Data availability

- AIHW National Cancer Statistics Clearing House
- Data on incidence are collected by State and Territory cancer registries. These are forwarded to the National Cancer Statistics Clearing House at AIHW for collation at national level.

Data coverage

- Annual and national; States and Territories
- National data are currently available for the period 1983 to 1990. It is expected that

the data up to 1993 will be available by 1997.

- Data for States and Territories are currently available for:

New South Wales	up to 1993
Victoria	up to 1993
Queensland	up to 1990
Western Australia	up to 1994
South Australia	up to 1995
Tasmania	up to 1994
Australian Capital Territory	up to 1994
Northern Territory	up to 1993

Targets

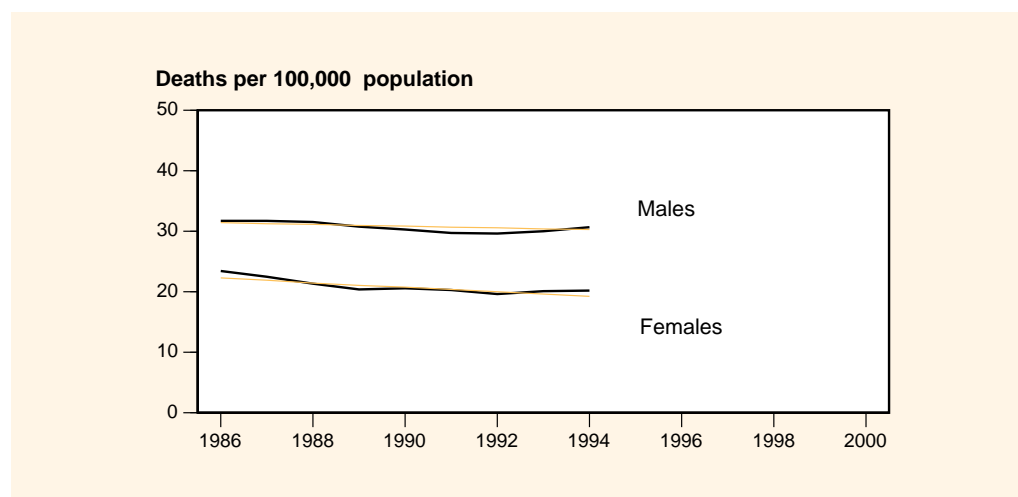
- No targets have been set.

Cancer control

INDICATOR 3.1.12 Death rate for colorectal cancer

Goal: Reduce the incidence of, and mortality from, cancer

National trends



Sex	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Males	31.8	31.8	31.6	30.8	30.3	29.8	29.7	30.0	30.7	Not set
Females	23.5	22.5	21.4	20.4	20.6	20.3	19.7	20.1	20.2	Not set

Note: The baseline figures differ from the rates published in the BHO report due to differing populations used for age-standardisation.
Source: AIHW mortality database.

- Colorectal cancer is responsible for more than one in eight cancer deaths in Australia, most of which result from cancer of the colon. The death rate is much higher among males—almost one and a half times that among females.
- Between 1986 and 1994, the death rate for colorectal cancer declined among both males and females. For males the age-standardised death rate fell by an average 1.2% per year. For females the age-standardised death rate fell by an average 3.5% per year during the same time period.
- No targets were set for the year 2000 for colorectal cancer deaths. However, on the basis of existing trends, it is projected that by 2000 the age-standardised death rate for this cancer will be 27.0 and 14.0 per 100,000 for males and females respectively.

Colorectal cancer (ICD-9 153–154)

State comparisons

- Limited variation exists in the death rate for colorectal cancer among the States and Territories. The difference between the male and female death rates is also similar in proportion in all jurisdictions except the Northern Territory.
- No consistent pattern emerges in the trends for colorectal cancer deaths when considered at the State and Territory level. In males, the change in death rates between 1986–88 and 1992–94 varied in range from –9.8% to 10.4%. In comparison, the death rate for colorectal cancer among females declined in all the States and the Australian Capital Territory.
- The death rate for colorectal cancer among females in the Northern Territory increased by 146% between 1986–88 and 1992–94. The change noted among males in the Territory was much smaller. Large changes in the death rate for colorectal cancer also occurred, among both males and females, in the Australian Capital Territory.
- Wide fluctuations in numbers may occur due to a small population base in the Northern Territory, but are unlikely to explain the large increase in death rate for colorectal cancer among females between 1986–88 and 1992–94. The number of deaths from colorectal cancer in the Northern Territory almost doubled between the two periods; a relatively larger proportion of deaths also occurred in the higher age groups during 1992–94.

Number of deaths per 100,000 population

State/Territory	Males			Females		
	Average 1986–88	Average 1992–94	Per cent change	Average 1986–88	Average 1992–94	Per cent change
NSW	29.7	29.5	–0.6	21.0	18.6	–11.4
VIC	34.4	31.5	–8.5	23.9	22.7	–4.9
QLD	30.2	28.9	–4.5	21.6	18.8	–13.0
WA	32.1	29.0	–9.8	21.6	19.9	–7.7
SA	33.8	29.9	2.7	20.0	18.4	–7.9
TAS	34.9	34.3	1.4	28.3	23.7	–16.3
ACT	35.7	38.5	10.4	30.5	22.2	–27.3
NT	26.0	27.1	4.6	11.8	29.1	>100
Australia	31.7	30.1	–5.0	22.4	20.0	–10.9

Source: AIHW mortality database.

Data issues

Definition

- Age-standardised number of deaths from colorectal cancer per 100,000 population

Data availability

- AIHW National Cancer Statistics Clearing House

Data coverage

- Annual and national; States and Territories

Targets

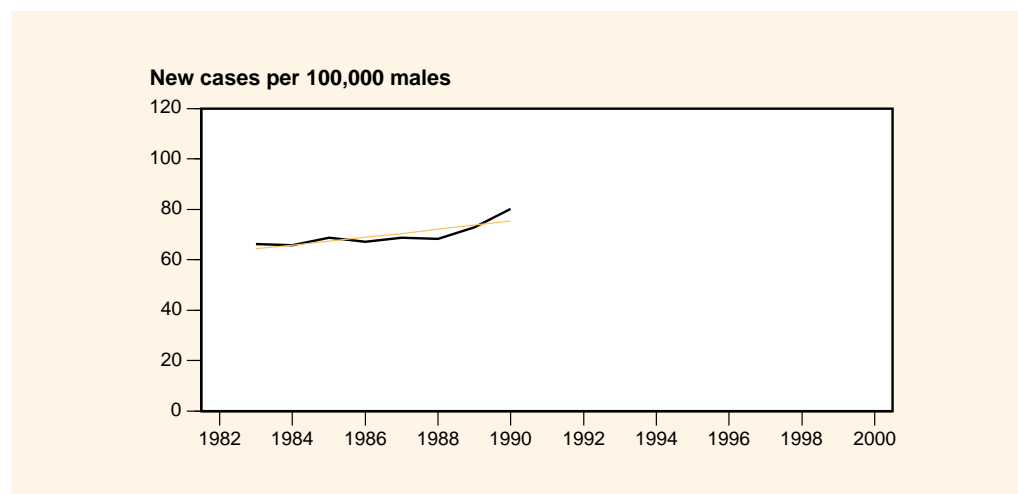
- No targets have been set.

Cancer control

INDICATOR 3.1.13 Incidence of prostate cancer

Goal: Reduce the incidence of, and mortality from, cancer

National trends



Sex	1983	1984	1985	1986	1987	Baseline 1988	1989	1990	Target 2000
Males	66.3	65.9	68.8	67.2	68.9	68.4	73.0	80.2	Not set

Note: The baseline differs from the rate published in the BHO report due to differing populations used for age-standardisation.

Sources: AIHW and the Australasian Association of Cancer Registries.

- Cancer of the prostate was the second most common cancer diagnosed among males until 1990. However, with over 5,000 new cases in 1989 and over 5,500 cases in 1990, it has become the most common cancer (excluding NMSC) in Australian males.
- The risk of cancer of the prostate increases with age; 95% of the cases are detected in men who are 60 years of age or older. Less than 1% of the cases are seen in males aged under 50.
- For many males, cancer of the prostate is an incidental finding and unlikely to lead to significant morbidity or death. Autopsy studies suggest that up to 30% of men over 50 and 80% of men over 80 have histological evidence of prostate cancer which was of no significance during their lifetime (Pienta & Esper 1993).
- The age-standardised incidence rate for prostate cancer increased by an average 2.3% annually between 1983 and 1990. The increase was much higher during 1989 and 1990, when a more than 5% increase was noted in the annual incidence rate.
- Evidence from cancer registries with incidence data to 1995 indicate that the large increase in prostate cancer incidence rates has continued.
- The increase in the number of new cases being diagnosed is due largely to greater public awareness and improved disease detection through the wider use of prostate-specific antigen tests and ultrasonography (Jelfs et al. 1996).

Prostate cancer (ICD-9 185)

State comparisons

- Limited variation occurs in the incidence rate for prostate cancer between the States, with Victoria and New South Wales slightly below the national rate and South Australia, Western Australia and Queensland slightly higher. The lowest age-standardised incidence rates reported for the period 1988–1990 were for the Northern Territory and the Australian Capital Territory.
- The incidence of prostate cancer increased in all the States between 1983–85 and 1988–90, but revealed large variation. The rate for the Australian Capital Territory changed by only 0.1%. In comparison, the incidence of prostate cancer increased by 64.6% in the Northern Territory between 1983–85 and 1988–90.

Incidence rate per 100,000 males

State/Territory	Average 1983–85	Average 1988–90	Per cent change
NSW	63.5	75.2	18.4
VIC	66.8	69.1	3.3
QLD	76.4	77.7	1.7
WA	60.2	76.4	26.9
SA	72.7	78.8	8.4
TAS	62.7	71.2	13.7
ACT	56.5	56.6	0.1
NT	28.6	47.0	64.6
Australia	67.0	74.0	10.4

Source: AIHW and the Australasian Association of Cancer Registries.

Data issues

Definition

- Age-standardised number of new cases of prostate cancer identified each year per 100,000 males

Data availability

- AIHW National Cancer Statistics Clearing House
- Data on incidence are collected by State and Territory cancer registries. These are forwarded to the National Cancer Statistics Clearing House at AIHW for collation at national level.

Data coverage

- Annual and national; States and Territories
- National data are currently available for the period 1983 to 1990. It is expected that

the data up to 1993 will be available by 1997.

- Data for States and Territories are currently available for:

New South Wales	up to 1993
Victoria	up to 1993
Queensland	up to 1990
Western Australia	up to 1994
South Australia	up to 1995
Tasmania	up to 1994
Australian Capital Territory	up to 1994
Northern Territory	up to 1993

Target

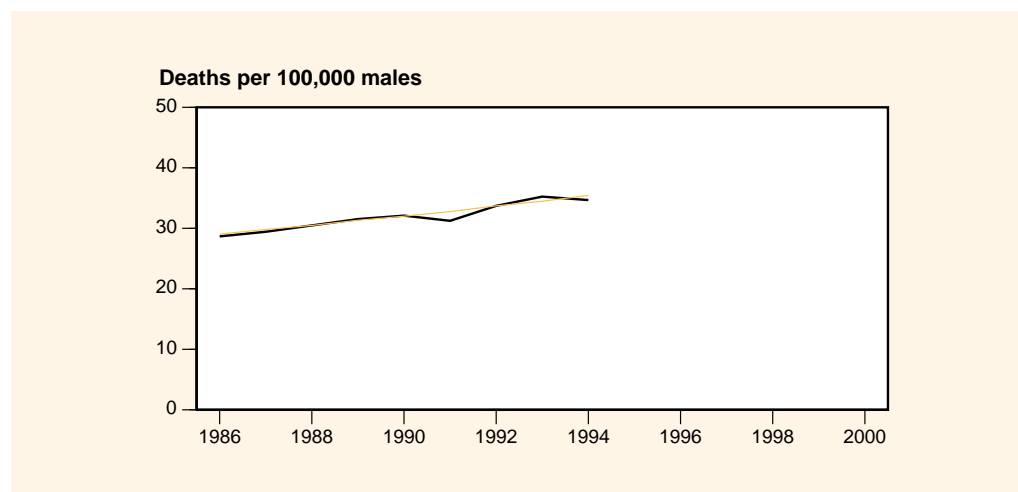
- No target has been set.

Cancer control

INDICATOR 3.1.14 Death rate for prostate cancer

Goal: Reduce the incidence of, and mortality from, cancer

National trends



Sex	1986	1987	1988	1989	1990	1991	Baseline 1992	1993	1994	Target 2000
Males	28.7	29.4	30.5	31.5	32.1	31.2	33.7	35.2	34.7	Not set

Note: The baseline differs from the rate published in the BHO report due to differing populations used for age-standardisation.

Source: AIHW mortality database.

- In 1988, there were 1,883 deaths from prostate cancer in Australia accounting for 4,818 years of life lost before the age of 75 (Jelfs et al. 1994). The numbers have increased substantially since then, with over 2,000 deaths annually since 1990.
- Between 1986 and 1994, the age-standardised death rate for prostate cancer increased by 20.9%, from 28.7 to 34.7 per 100,000 males. This represents an average annual rate of increase of 3.0%.
- As 95% of cancers of the prostate are detected in men who are 60 years of age or older, the death rate for this disease is substantially higher among older men. In 1994, the age-standardised death rate was 218.2 per 100,000 males aged 60 years and over compared with the rate of 34.7 per 100,000 among all males.
- No target has been set for this particular indicator of mortality. On current indications, the projected death rate for prostate cancer in the year 2000 would be around 43 deaths per 100,000 males.
- The age-standardised death rate for prostate cancer is relatively low among Aboriginal men. A standardised mortality ratio of 0.2 was observed in 1992–94 between the Indigenous and non-Indigenous death rates (Anderson et al. 1996).

Prostate cancer (ICD-9 185)

State comparisons

- Much variation exists in the death rate for prostate cancer among States and Territories. The Australian Capital Territory showed the highest death rate during the two triennia, 1986–88 and 1992–94. In comparison, death rate for this particular cancer among males in the Northern Territory was the lowest of all jurisdictions during the two periods.
- In all States and Territories, the age-standardised death rates for prostate cancer increased between 1986–88 and 1992–94. The biggest increase was observed in the Australian Capital Territory, caused by an increase of 13 deaths, from 16 to 29 between 1986–88 and 1992–94. A large increase in death rate for prostate cancer was also noted in the Northern Territory between the two time periods.

Number of deaths per 100,000 males

State/Territory	Average 1986–88	Average 1992–94	Per cent change
NSW	29.7	33.7	13.7
VIC	29.0	34.8	20.0
QLD	29.5	35.1	19.0
WA	27.8	31.6	13.6
SA	29.0	35.8	23.6
TAS	32.6	37.7	15.4
ACT	32.6	46.2	41.8
NT	23.3	31.3	34.2
Australia	29.6	34.5	16.9

Source: AIHW mortality database.

Data issues

Definition

- Age-standardised number of deaths from prostate cancer per 100,000 males

Data availability

- AIHW National Cancer Statistics Clearing House

Data coverage

- Annual and national; States and Territories

Target

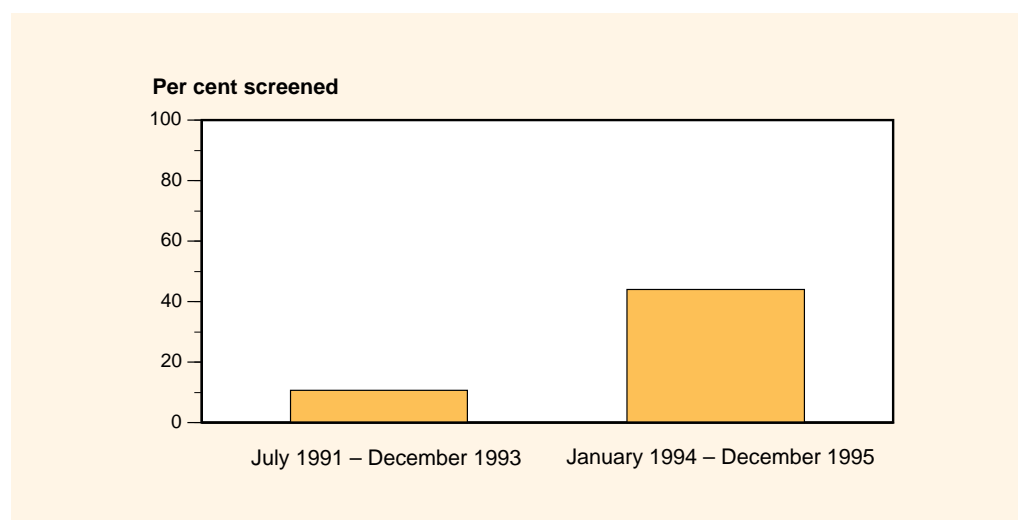
- No target has been set.

Cancer control

INDICATOR 3.2.1 Proportion of women aged 50–69 years screened for breast cancer

Goal: Ensure high levels of screening for early detection of cancers where there is a scientifically demonstrated benefit at acceptable cost

National trends



Population group	July 1991 – December 1993	January 1994 – December 1995
Women aged 50–69 years	10.8	44.0

Sources: Data for July 1991–December 1993 were obtained from the National Program for the Early Detection of Breast Cancer, December 1994, Commonwealth Department of Human Services and Health (DHSH); data for January 1994–December 1995 were provided by BreastScreen Australia, 1996.

- The National Program for the Early Detection of Breast Cancer began in 1991. The program, now known as BreastScreen Australia, aims to reduce mortality from breast cancer by the early detection of tumours. Two methods are being employed to encourage early detection: screening mammography and breast examination (either self-examination or examination by a clinician).
- Women aged 40 years or over are eligible for screening mammography offered under the program, but women in the 50–69 year age group have been actively targeted for screening.
- Between July 1991–December 1993 and January 1994–December 1995, the proportion of women in the target age group participating in the national breast cancer screening program increased from 11% to 44%.
- Participation rates are lower among women from a non-English-speaking background, among women who are separated/divorced/widowed compared with those in married/de facto relationships and among Aboriginal and Torres Strait Islander women (National Program for the Early Detection of Breast Cancer Monitoring and Evaluation Reference Group 1994).

Data issues

Definition

- Proportion of women aged 50–69 years screened within specified intervals (two years)

Data availability

- Commonwealth Department of Health and Family Services (DHFS): BreastScreen Australia

Data coverage

- Annual and national; States and Territories
- The overall participation of women aged 50–69 years may be underestimated, as some women may have had screening mammograms outside the program.
- Accessibility of services (location, hours of operation, costs, language and cultural

barriers) has been identified as a major factor in recruiting women to the screening program.

Data reliability

- The participation rate for women aged 50–69 years is estimated from the number of women aged 50–69 years screened in a 12-month period and doubling this rate to obtain an estimate of the two-year participation rate (BreastScreen Australia, DHFS 1996).

Baseline figures

- No baseline figures are available.

Cancer control

INDICATOR 3.2.2 Proportion of women aged 20–69 years screened within specified intervals for cancer of the cervix

Goal: Ensure high levels of screening for early detection of cancers where there is a scientifically demonstrated benefit at acceptable cost

National trends

Pap smear participation rate among women aged 20–69 years, by age group, 1992–1994

Age group	Participation rate (%)
20–29 years	55
30–39 years	69
40–49 years	70
50–59 years	63
60–69 years	39

Notes

1. The participation rates were calculated from the number of women making at least one Pap smear claim under Medicare in a three-year period divided by the target population in the middle year.
2. The estimates were adjusted for the proportion of women in each age group considered to have had a hysterectomy as reported in the 1989–90 ABS National Health Survey.

Source: Commonwealth Department of Health and Family Services (DHFS).

- The risk of cervical cancer increases with age. Women who are, or have been, sexually active and who have not had a hysterectomy are regarded as those at higher risk of developing the cancer. It is estimated that 90% of new cases of squamous cervical cancer (comprising 80–85% of all cases) could be prevented if women in the target group were to have a Pap smear once every two years.
- Annual data from the Medicare system indicate that the Pap smear rates for women aged 15–69 years showed an upward trend between 1984–85 and 1992–93, although there has been a slight decline in the last two years. The proportion of Pap smears being performed in private (Medicare-funded) versus public laboratories may have influenced this rise.
- As most deaths from cervical cancer occur in women who are unscreened or under-screened (Medley 1995), the National Cervical Screening Program is concentrating recruitment efforts on these women.
- Although overall screening rates appear to have increased, it has been estimated that only half the potential cases are currently being prevented. The reason for this is that much of the screening is occurring among younger women who are at lower risk. Screening rates are lower among older women, women of non-English-speaking background, and women of lower socioeconomic status.
- Indigenous women have a very high risk of cervical cancer. In Western Australia, the incidence rate for Indigenous women was nearly five times, and the death rate was over eight times, the rate for the entire State. It has been suggested that poor screening among Indigenous women contributes to their increased death rates from this type of cancer (Gillies et al. 1995).

Data issues

Definition

- Proportion of women aged 20–69 years screened within specified intervals (two years)

Data availability

- Commonwealth Department of Health and Family Services: Organised Approach to the Prevention of Cancer of the Cervix (data are or will be available from State and Territory cytology registers)
- Health Insurance Commission: Medicare claims data
- Cervical cytology registries, now established in most States and Territories, will enable much more accurate estimation of national screening rates. Currently, only Queensland does not have an operational cytology registry.

Data coverage

- Annual and national; States and Territories
- National participation rates in cervical screening may be estimated from Medicare data on Pap smear claims obtained from the Health Insurance Commission. However, Medicare claims data will significantly underestimate screening rates because they do not include the approximate 28% of Pap smears reported in public laboratories.
- Surveys by the Department of Health and Family Services in 1991, 1992 and 1993 indicate that Medicare claims account for only 72% of Pap smear tests. The Medicare share may have increased in more recent years, possibly due to changes in public hospital funding.

Baseline and target

- No baseline or target has been set.

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Priority indicators not reported due to incomplete information

Priority indicators for which the availability of data and/or the targets are presently incomplete, but which will be addressed in future reports, are listed below.

Priority indicator	Data availability	Target status
3.3.2 Five-year survival rate for melanoma of the skin	1997–98	Not set
3.3.3 Five-year survival rate for cancer of the cervix	1997–98	Not set
3.3.4 Five-year survival rate for breast cancer	1997–98	Not set
3.3.5 Five-year survival rate for colorectal cancer	1997–98	Not set
3.3.6 Five-year survival rate for prostate cancer	1997–98	Not set
3.3.15 Patient satisfaction for treatment for cancer of the cervix	Not available by 1997–98	Not set
3.3.16 Patient satisfaction for treatment for breast cancer	Not available by 1997–98	Not set
3.3.18 Patient satisfaction for treatment for prostate cancer	Not available by 1997–98	Not set
3.4.1 Improved access to quality support services for all cancer patients, their families and carers	Not available by 1997–98	Not set
3.8.1 The establishment of hospital-based cancer registries	Not available by 1997–98	Not set

Notes

1. Data availability: '1997–98'—monitoring data are expected to become available by 1997–98; 'Not available by 1997–98'—monitoring data will not become available by 1997–98, but the indicator is considered to be of a sufficiently high priority for future reporting.
2. Target status: 'Not set'—no target has been set due to lack of baselines or trends data; 'Possible'—no target set, but is possible given available monitoring data (or the likelihood of these data becoming available soon).

Strategies, initiatives and interventions

The following section deals with particular examples of best practice activities that are occurring at the Commonwealth, State and Territory levels, with the broad aim of reducing the impact of cancer on the community. The information below is far from comprehensive; rather, it gives a few examples of the activities, considered to have contributed to, or that have the potential to contribute to, improved health status. It is provided to facilitate the exchange of information about activity which is deemed to be particularly useful, and which may have potential to be adapted for use by other States/Territories.

Prevention	Management	Maintenance	Research/Information
BreastScreen Australia	ACT cancer management initiative		
<i>ACT Smoke Free Areas (Enclosed Public Places) Act 1994</i>	Optimising cancer management in New South Wales		Establishment of hospital-based cancer registries in South Australia
Katherine District Remote Communities Cervical Cancer Prevention Program			Linked Database Project (also covers Mental Health and Diabetes)
Protocol for melanoma screening trial and pilot			Victorian Breast Cancer Research Consortium
Colorectal genetics pilot and colorectal cancer screening development			

Prevention

BreastScreen Australia

BreastScreen Australia is a national mammography screening program, providing free screening mammograms at two-year intervals mainly to women aged 50–69 years. It is a Commonwealth and State/Territory Program that aims to achieve significant reductions in the mortality and morbidity attributable to breast cancer. BreastScreen Australia operates 35 dedicated screening and assessment services at 121 locations throughout Australia. Key features of the program include its focus on multidisciplinary teamwork, quality management and consumer needs, as well as Commonwealth/State coordination and liaison through program managers' meetings and a national advisory group.

ACT Smoke Free Areas (Enclosed Public Places) Act 1994

Until two years ago, smoking was a common occurrence in ACT shops, shopping malls, restaurants, cafes, taxis, lobbies, waiting areas, and other places where people go to conduct business or engage in leisure activities. Although some businesses had introduced their own policies to restrict or prohibit smoking, customers and patrons had no guaranteed or systematic protection from exposure to environmental tobacco smoke. Since the 1970s, evidence has been mounting about the detrimental effects of environmental tobacco smoke exposure on the health of non-smoking infants, children and adults. By the mid-1980s, groups including the World Health Organization and the

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National Health and Medical Research Council (NHMRC) had called for non-smokers to be protected from environmental tobacco smoke in public places and workplaces. Responding to this evidence, the ACT Government took the view that its public health responsibilities included reducing or eliminating people's exposure to environmental tobacco smoke in enclosed public places.

Legislation was considered an appropriate option for a number of reasons, including the failure of earlier attempts at hospitality industry self-regulation and the perceived need to create a 'level playing field'. The passage of the legislation, even in amended form, has resulted in smoking being prohibited in most enclosed public places in the ACT, with restaurants given a 12-month phase-in period and licensed premises given 30 months. There can be little doubt that the legislation has resulted in the reduction or elimination of a health risk for thousands of people. For particularly vulnerable groups, such as pregnant women, infants and young children, and for people who suffer from allergies, respiratory diseases and heart disease, smoke-free environments have meant an improvement in their quality of life. Although the main thrust of the legislation has been to help ensure that non-smokers are not exposed to other people's smoke, research has indicated that restricting people's opportunities to smoke also encourages smokers to quit or reduce their tobacco consumption.

Katherine District Remote Communities Cervical Cancer Prevention Program

The Cervical Cancer Prevention Program is conducted in remote communities in the Katherine District of the Northern Territory by female Aboriginal Health Workers and Community Health Nurses supported by a specialist Women's Health Nurse. In 1991, a computerised Pap smear register and reminder system was developed for remote communities throughout the district. The register is located in the district administrative centre maintained by the Women's Health Nurse, and operates through the Community Health Centres in each of 18 remote communities, where personal invitations to women are more appropriate than mailed reminders as used in other programs.

The register is based on community health centre records of all eligible women in each community. Combined with an education program, also conducted through local Community Health Centres, and operating as part of the integrated Well Women's Checkups Program, this program was able to increase the proportion of eligible women who had had a Pap smear in the previous three years to over 80% by 1995.

As part of the national cervical cancer program, the Northern Territory Cervical Cytology Register has also been established to provide a reminder system to women throughout the Territory, and Northern Territory BreastScreen is providing mammography and other programs to increase the early detection and treatment of breast cancer.

Protocol for melanoma screening trial and pilot

Whether screening would lower mortality from melanoma is arguably the single most important unresolved question in cancer control for Australia. A consortium involving Queensland Health, the University of Queensland and the Queensland Cancer Fund has designed a protocol for an initial pilot and a full trial of screening for melanoma. The Queensland Cancer Fund has agreed to fund a large-scale pilot of what would be the world's first randomised trial on this important neoplasm.

Colorectal genetics pilot and colorectal cancer screening development

Commenced in late 1996, this service will be piloted over a period of three years, and will be carefully monitored and evaluated by the management group comprised of the Victorian Council of Genetic Services, the Anti-Cancer Council of Victoria and the Royal Melbourne Hospital. Clinical services for familial adenomatous polyposis (FAP) and hereditary non-polyposis colorectal cancer (HNPCC) will be increased at Royal Melbourne Hospital and jointly staffed by the Victorian Council of Genetic Services. A genetic resource laboratory will operate from the Victorian Council of Genetic Services, a register will be at the Anti-Cancer Council of Victoria for FAP and a database will be at Royal Melbourne Hospital for HNPCC.

The service provides a model for the development and implementation of services for other genetic diseases, because of particular characteristics of the disease and current levels of knowledge regarding detection and treatment. These include the well recognised clinical features for FAP, the availability of reliable genetic tests, a register of FAP- and HNPCC-affected families, and the existence of management and treatment protocols that reduce morbidity and mortality. The evaluation results of this three-year pilot will inform the development and implementation of other genetic services.

A number of steps are being taken in Victoria to prepare for the possible introduction of widespread screening for colorectal cancer. A series of projects examining the feasibility of population-based screening were initiated under the State's Cancer and Heart Offensive. These projects, which are nearing completion, have involved four major hospitals, general practitioners and over 1,000 screenees. They will provide valuable information about potential service models, patient recruitment and compliance factors, and GPs' attitudes, knowledge and skills.

The next step is now being taken by the Department of Human Services, working with the Anti-Cancer Council of Victoria, to assess the latest evidence in the context of the forthcoming NHMRC report, and to develop models for delivery that can form the basis of larger-scale pilots.

Management

ACT cancer management initiative

A public health participatory model that brought together the experience of those engaged in cancer care and control within the ACT was used to develop a draft Regional Strategic Plan for Cancer Services.

Five working parties under a reference group have identified cancer needs along the care continuum—health promotion/prevention, diagnosis and early intervention, treatment, rehabilitation and extended care, and palliative care. Extensive reference to the literature informed the process. The reference group comprised 12 consumer representatives, 21 clinicians (medical and nurse practitioners, both specialist and general, and social workers), five community support agency representatives, and 10 professional support representatives (epidemiologists, data managers and health administrators).

Emphasis is on improving the management of patient care, as primary preventive health measures in tumour control are still limited. Clinical issues have been identified with, and direct links made across, the primary, secondary and tertiary sectors, to

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enable both treatment and management issues to be addressed within a five-year strategic framework. Research and data needs have been outlined to signpost scientific and evidence-based activities and inform debate around resource planning priorities and allocation.

The wide consultation at all points along the continuum was the unique contribution to both identifying health needs and the development of a plan and discussion of issues in achieving health care reform at the regional level.

Optimising cancer management in New South Wales

This initiative arose from the consultative process through which goals and targets for cancer control were developed in NSW. It aims to optimise cancer management through developing and implementing a model for the integration of cancer services and programs incorporating evidence based practice.

The initiative consolidates and builds on work being done in several related areas of cancer care in the NSW health system. Initially a model is being developed centrally, guided by a panel of experts and representatives from Area Health Services. The model includes principles for cancer care; mapping and integrating cancer services based on current best practice models; and incorporating quality of care and outcomes monitoring systems and evidence based clinical guidelines.

The initial phase of the project will report on the principles for cancer care in NSW; report on current cancer care practice including the location of services, infrastructure and models of care in NSW; develop a minimum data set for monitoring the outcomes of care from radiotherapy treatment in NSW; review existing mechanisms for developing and implementing clinical guidelines for cancer management in NSW and identify opportunities for future development of evidence-based guidelines; report on the feasibility and cost of establishing a cancer clinical guidelines repository; report on a statewide framework for monitoring the quality and outcomes of cancer care including a generic data model and a register of existing cancer clinical data systems; report on quality of life indicators of cancer care; and report on strategies for joint decision-making in cancer management.

Research/Information

Establishment of hospital-based cancer registries in South Australia

South Australia has established and operated hospital-based cancer registries at all four major teaching hospitals in Adelaide since 1987. Hospital-based registries of this type have been developed and used for decades in the USA to monitor standards of care and evaluate best practice treatment protocols based on tumour characteristics, and provide a means of case audit and quality assurance. Indeed, the US Commission on Cancer will not accredit hospitals for cancer care if they do not have such a registry. In addition, hospital-based registries have important research applications.

A prerequisite for hospital-based cancer registries in the South Australian model is a State population-based cancer registry that can provide the hospital-based registries with up-to-date case data, including survival data, and that has sufficient technical resources to support the development and ongoing functioning of hospital-based registries.

Linked Database Project (also covers Mental Health and Diabetes)

The West Australian Linked Database Project is a collaborative effort by the University of Western Australia's Centre for Health Services Research and the Health Department of Western Australia to link together health records over the entire State for the period from 1980 onwards. Midwives and birth information as well as hospital morbidity, mortality, cancer and mental health records are being linked so that health records for individuals can be tracked through the system. Other data will be linked in as the project progresses, and the project is already providing a major tool for health services research throughout Australia as well as in Western Australia. Projects already using the linked database include a needs analysis for patients with long-term renal disease, an evaluation of the quality and outcomes of common surgical procedures, and an analysis of hospital usage in the last years of life among people aged over 65. A study of co-morbidity in psychiatric patients has recently received funding. Health care data for rural areas will be added in the near future, enabling effective studies of the health of, among others, rural Indigenous people for whom diseases such as diabetes are a major problem.

Victorian Breast Cancer Research Consortium

The Victorian Government has committed \$3 million a year for a minimum of 10 years for the development of a Breast Cancer Research Consortium managed by the Anti-Cancer Council of Victoria. The consortium will foster and support three collaborative research teams whose work will focus on recent advances in our understanding of the biology of breast cancer as it affects prevention, diagnosis and treatment.

The treatment service and the mammography screening program are making important advances in the fight against breast cancer. Further advances in survival and quality of life are dependent on the appropriate research, linked to clinical trials of preventive and therapeutic interventions. Under the proposal, this will be achieved by making use of the excellent medical researchers and research facilities in Victoria to provide answers on such subjects as the genetics of breast cancer, cell changes which may be markers of the development of cancer, better understanding of early forms of cancer, and opportunities for earlier detection and targeted treatment.

Key Victorian research institutes working in collaboration with the Anti-Cancer Council of Victoria to constitute the consortium include the Ludwig Institute of Cancer Research, the Peter MacCallum Cancer Institute, the Walter and Eliza Hall Institute of Medical Research, the Baker Institute, the Austin Research Institute and St Vincent's Institute for Medical Research. An interim scientific committee has been formed to advise the consortium and to define and prioritise the major research areas. The key areas of research will be genetics, cellular and molecular biology and molecular pathology.

The three research group leaders and staff are currently being appointed, and this is likely to involve some relocations from overseas. Once constituted, each of the three research teams will undertake strategically driven research with a specific focus on one or more of the key research areas. The expected outcome of the work is a significant, measurable reduction in mortality from breast cancer by the year 2015.

