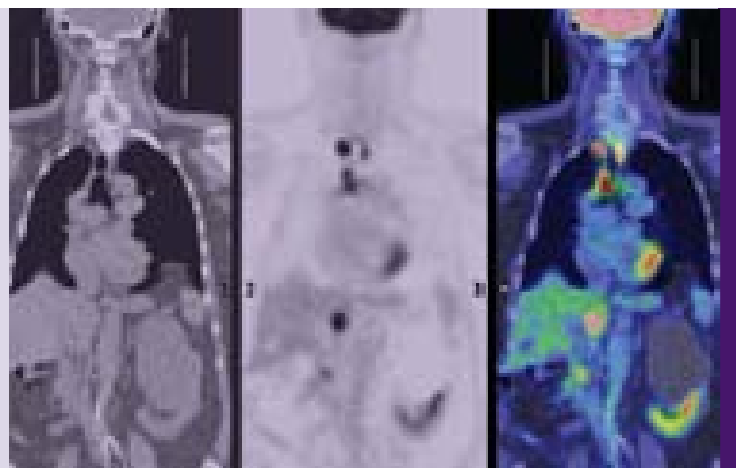
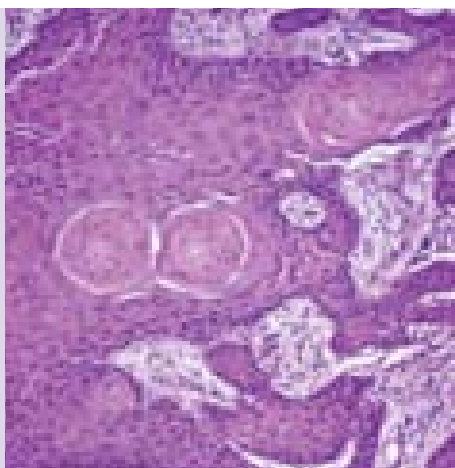


# 2006

## Cancer in New South Wales: **Incidence and Mortality Report**

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cancer  
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## All cancer

- There were 35,159 new cases of cancer in 2006.
- Over 10 years, incidence rates for cancer increased by 10 per cent in males and by seven per cent in females.
- The increase in cancer in males in the past three years is largely due to the increase in prostate cancer.
- Mortality rates have declined by 13.8 per cent in males and eight per cent in females in the past 10 years.
- The likelihood or risk of developing cancer is one in two in males and one in three in females by the age of 85.
- 221,602 people were living with a least one diagnosis of cancer at the end of 2004.

There were 35,159 new cases of cancer in NSW in 2006 (19,951 male, 15,208 female). Of the 13,103 deaths from cancer, 7,305 were in males and 5,798 in females.<sup>i</sup> Allowing for differences in age, males were 1.5 times more likely to be diagnosed with cancer than females and 1.6 times more likely to die from cancer.<sup>ii</sup>

Crude incidence rates (new cases per 100,000) were 590.6 in males and 442.2 in females. Corresponding incidence rates (adjusted for age and standardised to the Australian 2001 population) were 590.0 and 394.1 respectively. Crude mortality rates (deaths per 100,000) were 216.3 in males and 168.6 in females and mortality rates (adjusted for age and standardised to the 2001 population) were 223.5 and 140.8 deaths per 100,000. There is very little difference in crude and age-adjusted rates in males because the age structure of the Australian and NSW population in 2001 is very similar. NSW females, by contrast, have a slightly different age structure than the Australian female population, hence the slightly lower age-standardised rates compared to the crude rates.

In 2006, cancer was the underlying cause of death for 39,753 registered deaths in Australia. This accounted for 30 per cent of all registered deaths. Cancer contributed to a total of 45,625 deaths as an underlying or associated cause of death in Australia. Cancer was the most common cause of death overall in NSW, with 29 per cent of total deaths (32 per cent in males and 26 per cent in females).

From 2006 figures, the likelihood or risk of developing cancer is one in three in males and one in four in females by the age of 75 years; and one in two in males and one in three in females by the age of 85 years.

i. Cancer is defined as all cancer sites with the exception of non melanoma skin cancer that is not registered by the NSW Central Cancer Registry.

ii. Unless otherwise stated rates are age standardised to the 2001 Australian population. Rates standardised to the standard 'world' population are presented in Tables 1 to 12 and rates are provided for Australian 2001 and World standard populations in all tables. Rates standardised to the World population will always be lower because the age structure is the 1960 world population which gives a greater weighting to younger populations.

### Numbers of new cases and deaths by age group

Age-specific incidence rates rose with increasing age in both sexes. From 0 to 14 years, leukaemia was the most common cancer, followed by melanoma in males and females from ages 15 to 34 years. Due mainly to breast cancer, female incidence rates exceeded those in males between 50 and 64 years, thereafter rates in males were higher.

In 1977, the median age at diagnosis of cancer was 65 in males and 62 in females, increasing to 68 in males and 66 in females in 2006. Similarly, the median age at death was 68 in males and 67 in females in 1977, increasing to 74 years in males and 75 years in females in 2006. The increase in the median age for both incidence and mortality is indicative of an older age at diagnosis and death, largely due to ageing of the population and an increased life expectancy.

#### Numbers of new cases and deaths by age group

Age (yr)	0 to 49	50 to 64	65 to 79	80+	Total
Incidence	4,603	10,264	13,644	6,648	35,159
Per cent of total incidence	13.1%	29.2%	38.8%	18.9%	100%
Mortality	767	2,614	5,311	4,406	13,103
Per cent total deaths	5.9%	20.2%	40.6%	33.4%	100%

### Projections of incidence and mortality

In 2008, the estimated number of new cases of cancer is expected to increase to 38,807 new cases: 22,124 new cases in males and 16,683 new cases in females. Incidence rates are expected to increase to 615.3 new cases per 100,000 in males and to 410.7 in females.<sup>iii</sup>

The number of cancer deaths is expected to increase to 13,576 deaths overall: 7,535 cancer deaths in males and 6,041 in females. Mortality rates (deaths per 100,000) are expected to decline to 215.0 in males and 138.8 in females. While the projected number of new cases and deaths based on historical trends provide the best estimates, they do assume that historical patterns will continue in the future.

iii. You H, Morrell S, Stavrou E, Baker D and Bishop J. Cancer Incidence and Mortality Projections in New South Wales: 2008 to 2012. Sydney: Cancer Institute NSW (in press).

## All cancer

### Time trends – incidence by age category

In 2006, there were 4,603 new cases diagnosed in people aged 0 to 49 years, or 13.1 per cent of total cases of cancer; 10,264, or 29.2 per cent, in people aged 50 to 64 years; 13,644, or 38.8 per cent, in people aged 65 to 79 years and 6,648, or 18.9 per cent, in people aged 80 years or older.

Cancer incidence rates were examined by sex and by age category at the time of diagnosis and then trends considered over time. In 2006, rates in males (cases per 100,000) were 80.2 for males aged 0 to 49, increasing to 949.5 for males aged 50 to 64 years, 2,747.6 for males aged 65 to 79 years and 3,831.4 for males aged 80 years and older.

In females, the rates were lower for all age categories, except for the 0 to 49 years, and were half the rate of males aged 80 years and older; with 111.8, 747.7, 1,412.5 and 1,901.6 cases per 100,000 respectively.

Between 1997 and 2006, the incidence rates of cancer rose by:

- 9.8 per cent in males and 6.7 per cent in females for all ages combined;
- 7.1 per cent in males and 5.4 per cent in females aged 0 to 49 years;
- 20.2 in males aged 50 to 64 years; and
- 9.8 per cent in males aged 65 to 79 years.

### Time trends – mortality by age category

In 2006, there were 763 deaths in people aged 0 to 49 years, or 5.9 per cent of total cancer deaths; 2,601, or 20.2 per cent, in people aged 50 to 64; 5,230, or 40.6 per cent, in people aged 65 to 79 years; and 4,301, or 33.4 per cent of deaths, in people aged 80 years and older.

Cancer mortality rates were examined by age at death and then trends considered over time. Cancer deaths per 100,000 were 14.7 in males and 16.0 in females aged 0 to 49 years; 224.8 in males and 179.9 in females aged 50 to 64 years; 956.0 in males and 567.1 in females aged 65 to 79; and 2,344.5 and 1,208.6 in males and females aged 80 years and older. Mortality rates were double those of females aged from 65 years and older.

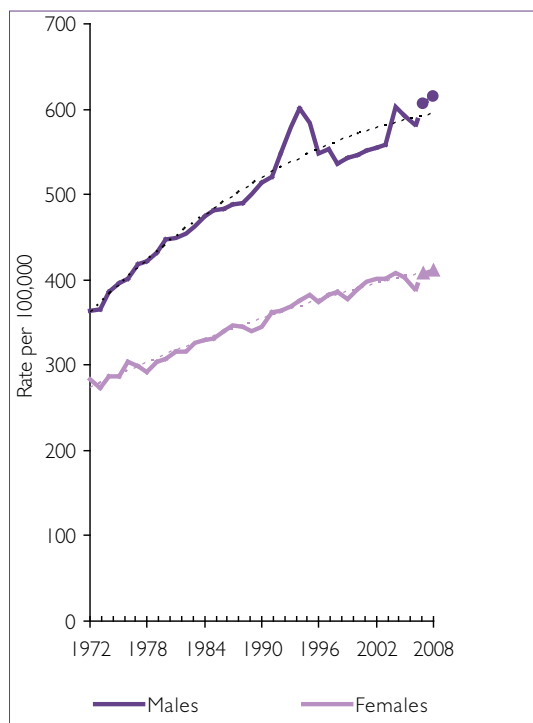
Mortality rates fell by:

- 13.8 per cent in males and 7.9 per cent in females for the period 1997 to 2006 for all ages combined;
- 23.5 per cent in males and 25.1 per cent in females aged 0 to 49 years;
- 22.2 per cent in males and 19.1 per cent in females aged 50 to 64;
- 21.6 per cent in males and 13.5 per cent in females aged 65 to 79 years; and

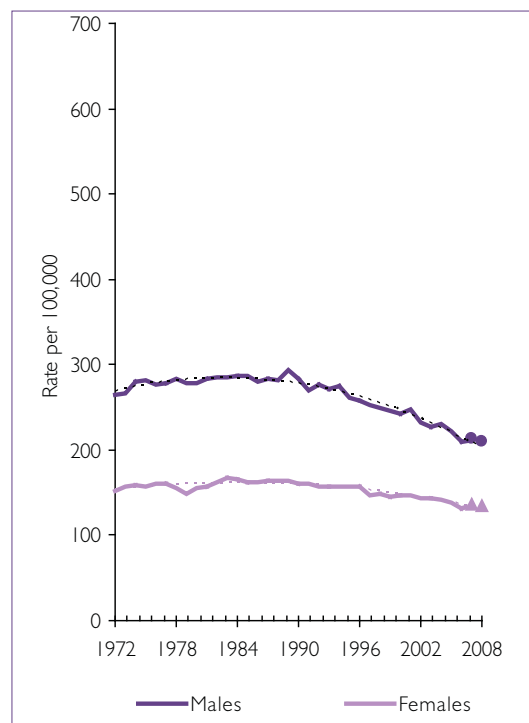
Mortality rates did not significantly change in those age over 80 years.

Figure 13 All cancers

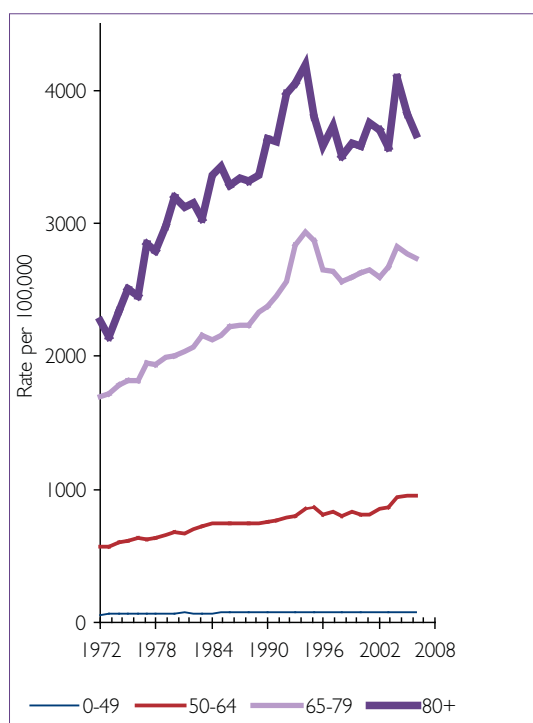
Age-standardised incidence, NSW



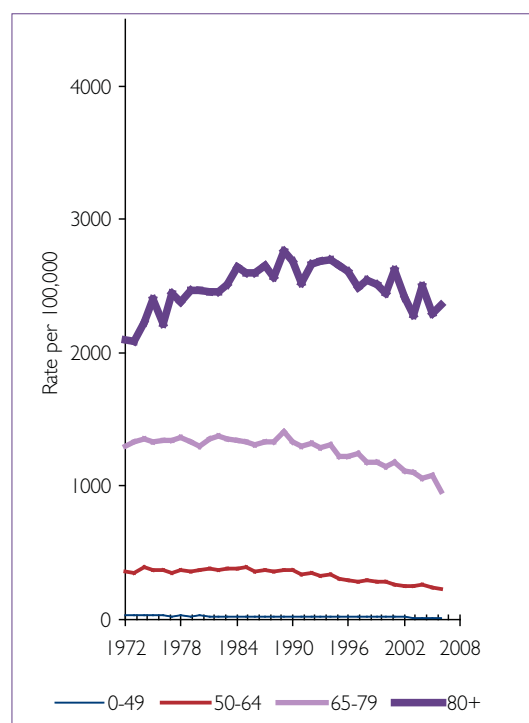
Age-standardised mortality, NSW



Age-standardised incidence by age category, NSW males



Age-standardised mortality by age category, NSW males



# All cancer

## International variation

Presented below are age-standardised incidence rates in males and females for the time period 1998 to 2002. These rates are standardised to the world population and relate to a selection of 14 countries and all Australian states.

The registries have been selected on the basis of quality indicators and similarity with NSW. Other Australian states have similarities in terms of health systems and screening programs and general cancer risk profiles of the population. The regions and countries selected also have information on OECD health indicators and risk factors.

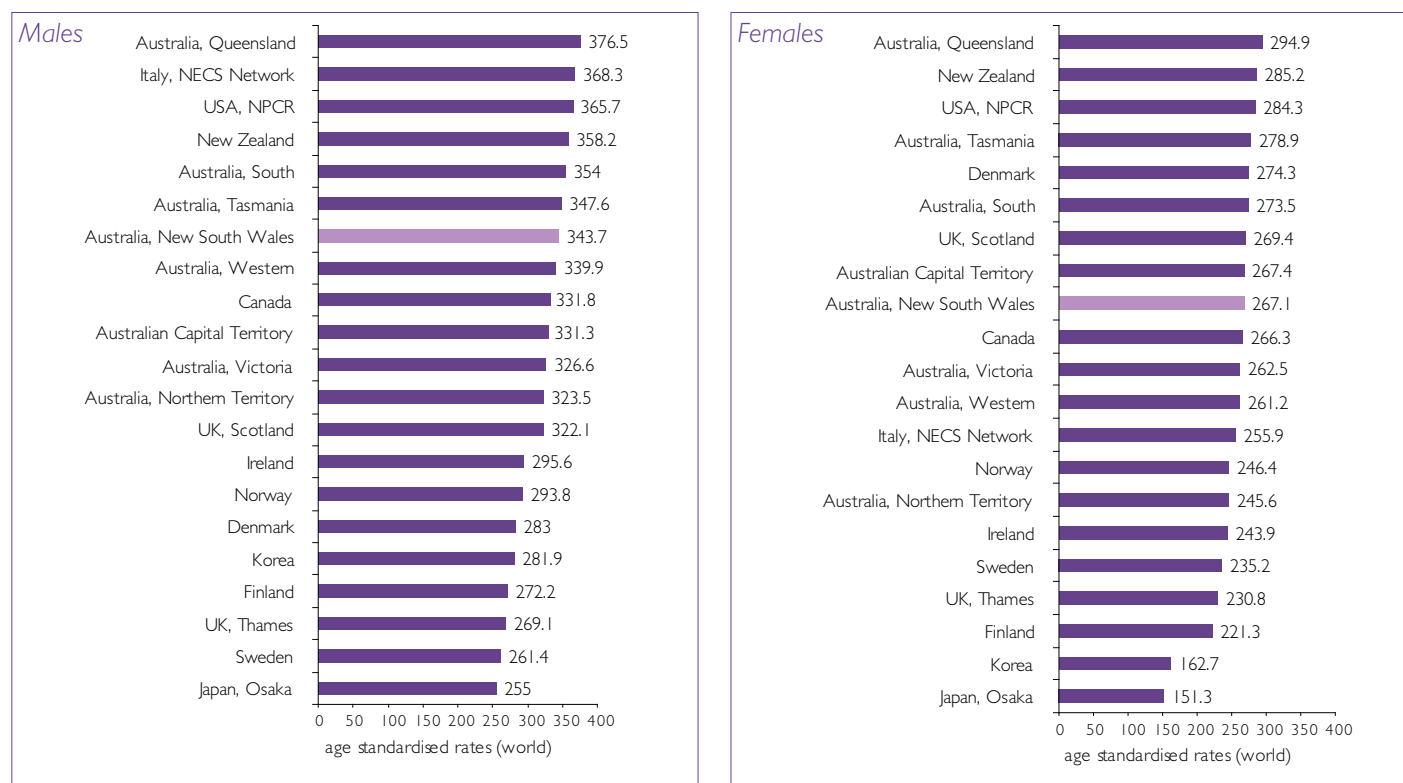
From 1998 to 2002,<sup>iv</sup> NSW incidence rates for cancer (except non-melanoma skin cancer), standardised to the world population, were 343.7 in males and 267.1 in females per 100,000. There is considerable variation in incidence rates by region. NSW and other Australian states have the highest cancer incidence rates of the selected registries, with

Queensland having the highest incidence rates in males and females overall. Incidence rates are strongly influenced by common cancers. Melanoma incidence rates in Australia are the highest in the world and reflect the beach-loving coastal lifestyle of Australians.

Of the selected countries, Japan and Korea have the lowest rates in females. All cancer rates in females are strongly influenced by breast cancer incidence rates. Japan and Korea have the lowest breast cancer incidence rates of selected countries. In addition, Korea and Japan have the lowest and second lowest levels of obesity, as measured by BMI, of all OECD countries.<sup>v</sup> USA, UK, Canada, New Zealand and Australia are in the top six OECD countries for obesity.

When all registries are considered, the highest incidence rates of cancer were found in African American males in Detroit, USA, with 518.6 cases per 100,000 and Caucasian females from Los Angeles with 318.2 per 100,000.

Figure 14 Age-standardised incidence rates for all cancer (except non-melanoma skin cancer) in males and females (1998–2002)



iv. North., A.B., South, C.D. Cancer Incidence in Antarctica (1998–2002). In: Curado. M. P., Edwards, B., Shin. H.R., Storm. H., Ferlay. J., Heanue. M. and Boyle. P., eds (2007) Cancer Incidence in Five Continents, Vol. IX IARC Scientific Publications No. 160, Lyon, IARC.

v. Source OECD Health data 2008, June 2008 [www.oecd.org/health/healthdata](http://www.oecd.org/health/healthdata).

## Survival and prevalence

The five-year relative survival experienced from 1999 to 2003 in NSW was 60 per cent for males and 66 per cent for females diagnosed with cancer. Five-year survival declined with extent of disease at diagnosis. Survival was 82.8 per cent for localised disease, 60.9 per cent for regional spread, 12.9 per cent for distant metastases and 58.6 per cent for unknown spread. Five-year survival for cancer of all types (except non-melanoma skin cancer) improved across all time periods, from 48.7 per cent in those diagnosed in 1980–1983 to 51.3 per cent in 1984–1988, 55.7 per cent in 1989–1993, 60.9 per cent in 1994–1998 and to 62.9 per cent in the latest time period 1999–2003.<sup>vi</sup>

There were 221,602 people (106,519 male, 115,083 female) living with cancer at the end of 2004 who were diagnosed between 1980 and 2004. Of these, 92,357 people (48,005 males, 44,352 females) or 41.7 per cent (45.1 per cent male, 38.5 per cent female) were living with cancer five years prior to December 2004.

Five-year age-standardised prevalence rates were 1,321 per 100,000 population overall, 1,443 per 100,000 population in males and 1,231 in females. For every person diagnosed with cancer in 2006, there were another three males and three females who had been diagnosed in the previous five years.

## Risk factors

Risk factors for cancer vary by cancer type. By far the most common risk factor is tobacco, which impacts on a number of tobacco-related cancers including lung cancer, bladder, bowel, cervix, head and neck cancers, lip, pancreas, oesophagus, colorectal, prostate and kidney cancer. Melanoma is strongly affected by ultraviolet radiation exposure, particularly in childhood. Exposure to ionising radiation causes cancer of the brain, lung, leukaemia, multiple myeloma and thyroid.

Other risk factors include alcohol, diet and obesity; and reproductive factors such as number of children and age at first birth, which impact on both breast and ovarian cancer. The main risk factors for each cancer type are outlined in this report.

vi. Tracey E, Barraclough H, Chen W, Baker D, Roder D, Jelfs P, Bishop J. Survival from Cancer in NSW: 1980 to 2003: Sydney Cancer Institute, NSW, September 2007.