

Indicator 7: Incidence

7a. Incidence of breast cancer

The incidence rate of breast cancer is calculated per 100,000 estimated resident female population in a 12-month period by five-year age groups ((0-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85+ years) and for the target age group (50-69 years).

7b. Incidence of ductal carcinoma in situ

The incidence rate of ductal carcinoma in situ (DCIS) is calculated per 100,000 estimated resident female population in a six-year period by ten-year age groups (0-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70+ years), and for the target age group (50-69 years).

The incidence indicator

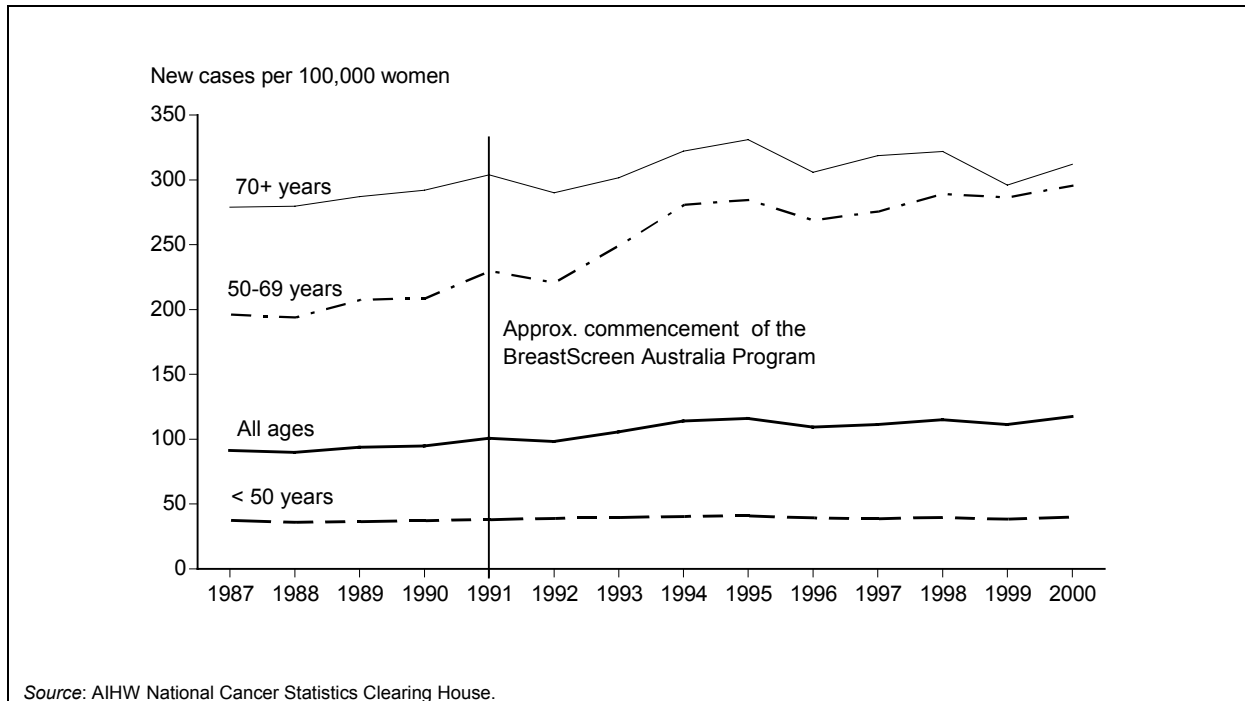
Registration of cancer cases is required by law in each of the states and territories. The data are collected by state and territory cancer registries and compiled in a national database, the National Cancer Statistics Clearing House, which is held by the Australian Institute of Health and Welfare. The data include clinical and demographic information about people with newly diagnosed cancer. The incidence indicator measures the number of new cases of breast cancer in the community each year. It does not distinguish between screen-detected cancers and other detection methods.

Incidence data provide information about the underlying risk of breast cancer in the Australian community. This knowledge can be used to assist in developing policies on breast cancer screening. For example, examining the trends in breast cancer incidence in different age groups helps to identify the ages at which women are most at risk of developing breast cancer. Incidence data can also be used to set data performance standards for breast cancer detection.

This chapter reports the rates of breast cancer from 1987 to 2000, the latest national data available. This chapter also reports on breast cancer incidence by state and territory, and by geographical region.

Similarly, data on the incidence of ductal carcinoma in situ (DCIS) provide information about the underlying risk to Australian women of developing the condition. Data are required to build more knowledge about DCIS, which was rarely detected before screening was introduced. Since the introduction of screening mammography, the detection of DCIS has increased (NBCC et al. 2000). More information is given on DCIS in the chapter headed 'Indicator 4'.

Incidence of breast cancer in women, Australia, 1987–2000



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
All ages	91.2	89.7	93.5	94.6	100.4	98.0	105.3	113.9	115.7	109.2	111.2	114.9	111.2	115.4
<50	38.3	36.7	37.3	38.0	38.8	39.7	40.4	41.3	41.7	40.1	39.4	40.4	39.2	40.6
50–69	197.1	194.8	208.5	209.6	230.5	221.6	250.6	281.6	285.3	269.7	276.5	290.1	287.5	296.2
70+	279.1	279.7	287.1	292.0	304.0	290.1	301.8	322.3	331.1	305.8	318.7	321.9	296.1	312.1

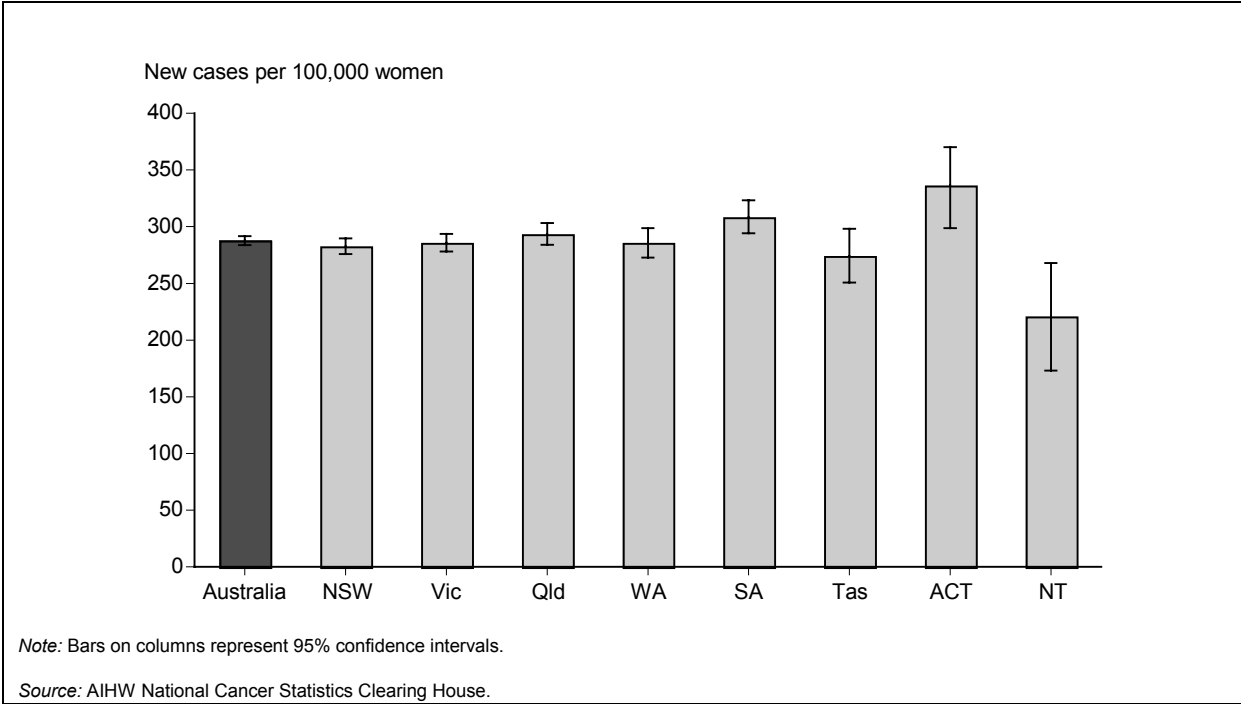
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 2001.

- With some fluctuation, a notable increase over the period 1987 to 2000 can be seen in the age-standardised breast cancer incidence rates for women in the target age group. Incidence has increased in this group from 197.1 new cancers per 100,000 women in 1987 to 296.2 per 100,000 women in 2000. A similar pattern of increase in incidence rates is apparent in the 70 and over age group. Incidence rates have remained more consistent over time in the 'all ages' category and in women under 50 years of age.
- The increase in the rate of new cancers, especially in the target age group, corresponds with the introduction in 1991 of BreastScreen Australia (then known as the National Program for the Early Detection of Breast Cancer). Although the underlying rate for breast cancer is increasing, the sharp increase between 1992 and 1994 is likely to be, at least partly, the result of the early detection of cancers in women who may otherwise have gone undiagnosed for some years.

For more information, see:

Tables 39 and 40

Incidence of breast cancer in women, aged 50–69 years, 1997–2000



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	287.8	282.5	285.7	293.2	285.8	308.3*	274.2	336.3*	220.9*
95% CI	283.7–291.7	275.7–289.6	278.0–293.5	284.0–303.3	272.7–298.6	294.1–323.1	250.6–298.1	298.6–370.2	173.0–267.9

* Significantly different from the all-Australia rate.

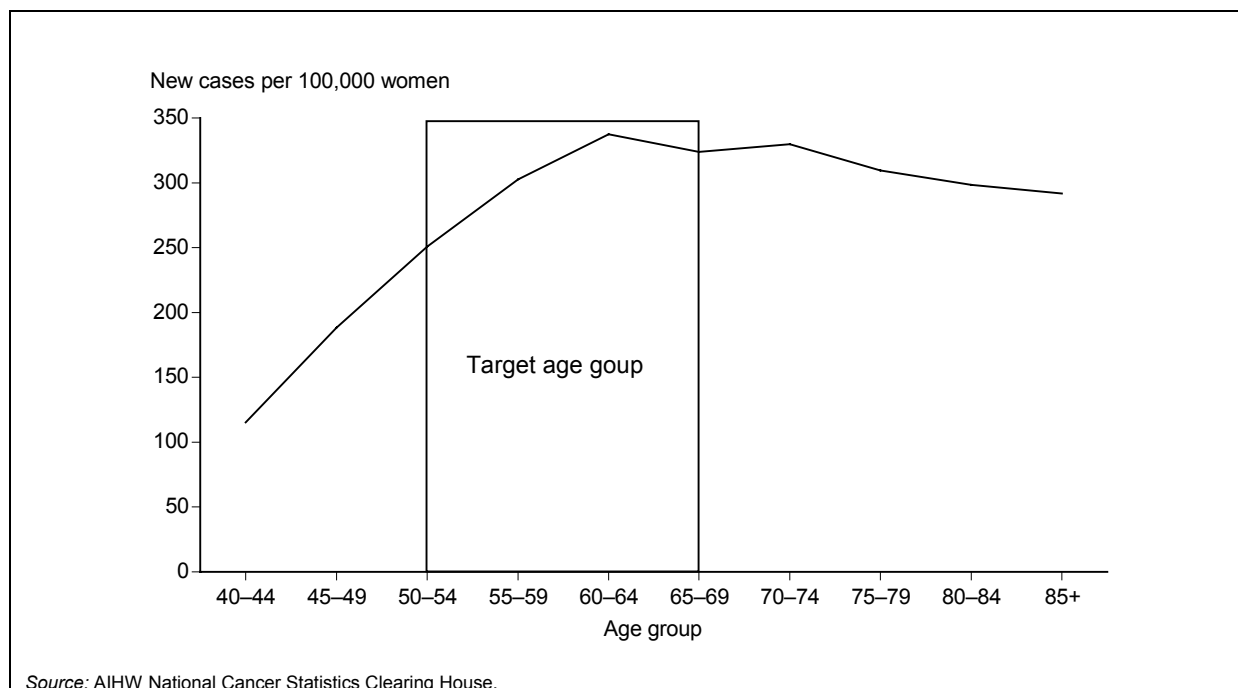
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 2001.

- The national age-standardised incidence rate for 1997 to 2000 was 287.8 new cancers per 100,000 women. Across the states and territories, incidence rates ranged from 220.9 new cancers per 100,000 women in the Northern Territory to 336.3 new cases per 100,000 women in the Australian Capital Territory.

For more information, see:

Tables 41 and 42

Age-specific incidence rates for breast cancer in women, Australia 2000



Age	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Rate	115.2	188.2	250.7	302.7	337.4	324.0	329.7	309.7	298.4	291.7

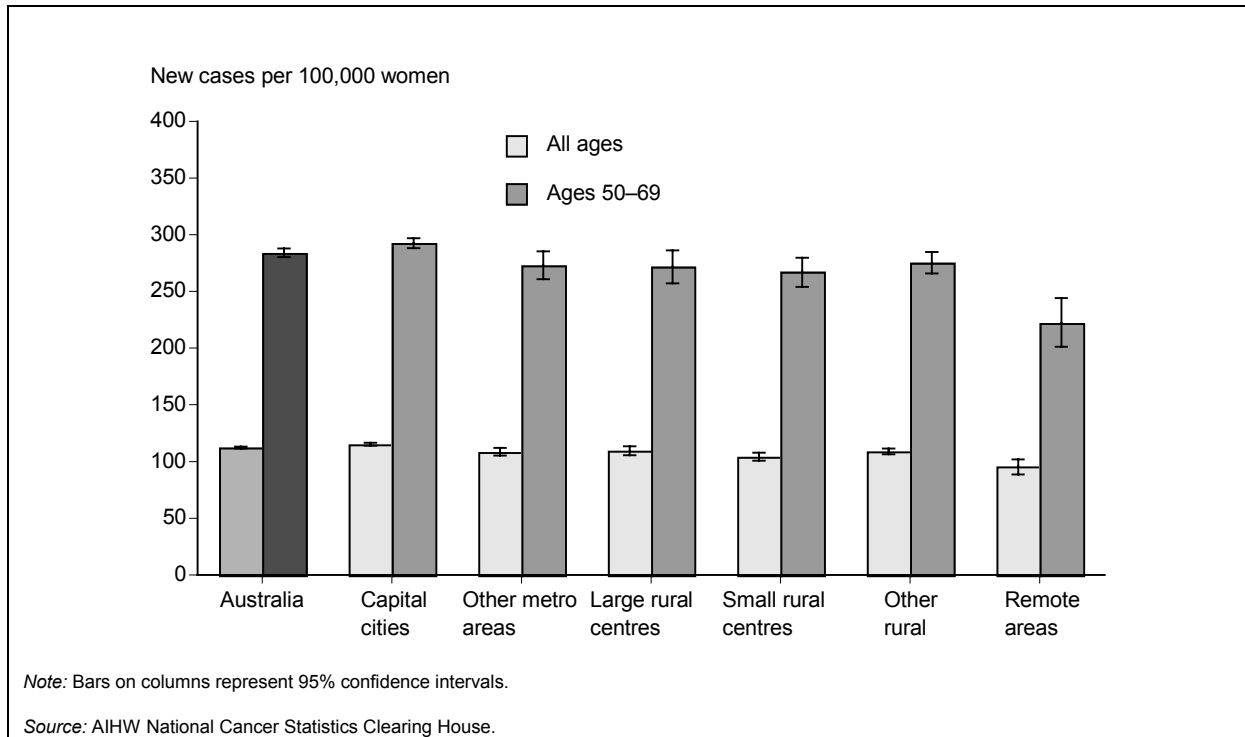
Note: Rates are the number of breast cancers detected per 100,000 women.

- All women aged 40 and over are able to attend for screening with BreastScreen Australia, although the Program is specifically aimed at women aged 50-69 years of age who are without symptoms. Of the 11,316 new cases of breast cancer in 2000, 5,452 (48%) occurred in women in the target age group. Only 6% of cases were women aged under 40 years.
- Age-specific incidence rates in 2000, ranged from 115.2 new cancers per 100,000 women in the 40-44 age group to 337.4 new cases per 100,000 women in the 60-64 age group.

For more information, see:

Tables 39 and 40

Incidence of breast cancer in women by region, 1996–2000



	Australia	Capital cities	Other metropolitan areas	Large rural centres	Small rural centres	Other rural areas	Remote areas
All ages	112.3	115.2*	108.4	109.4	104.2*	108.9	95.5*
95% CI	111.3–113.2	114.0–116.4	105.2–112.0	105.5–113.3	100.8–107.7	106.4–111.5	88.7–101.9
Ages 50–69	284.0	292.5*	273.0	271.8	267.2*	275.1	222.0*
95% CI	280.2–287.7	288.0–296.9	260.8–285.4	257.0–286.0	253.9–279.6	265.7–284.6	201.3–244.2

* Significantly different from the all-Australian rate.

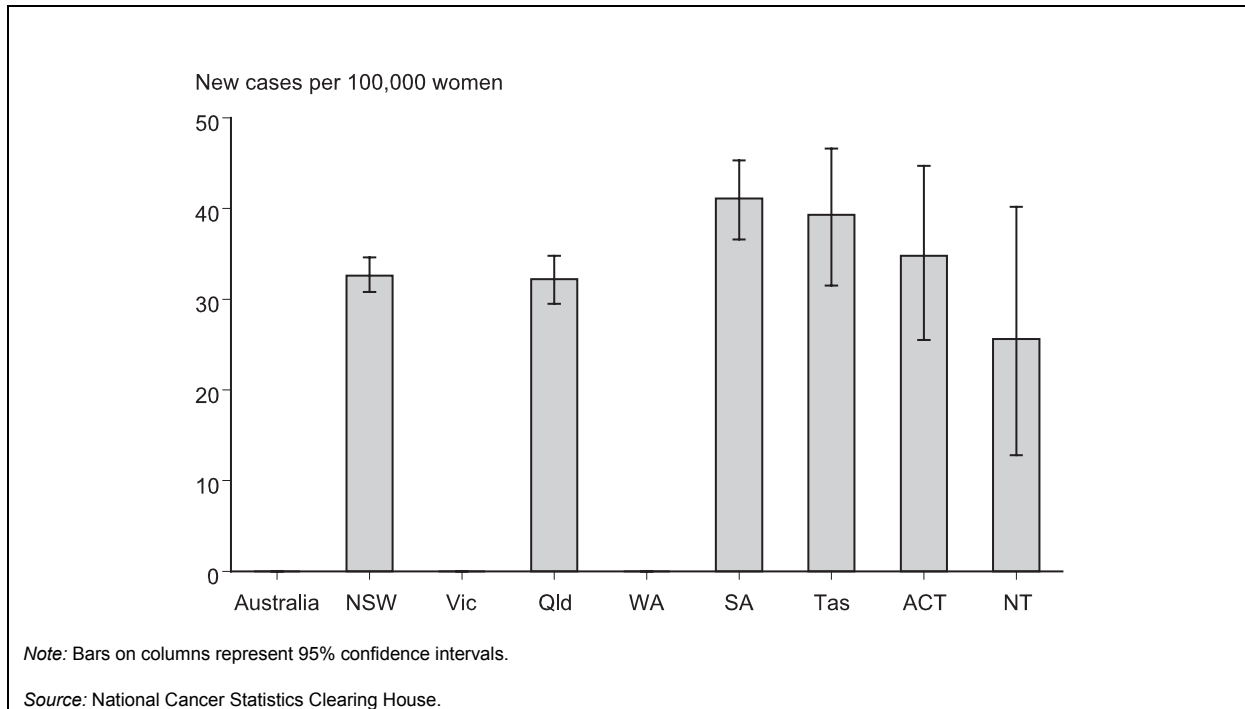
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 2001.

- For the period 1996 to 2000, the age-standardised incidence rate was 284.0 cases of breast cancer per 100,000 women for women in the target age group, and 112.3 cases per 100,000 women for all women aged 40 and over. Breast cancer incidence rates for women in the target age group ranged from 222.0 cases per 100,000 women in remote areas to 292.5 cases per 100,000 women in capital cities.

For more information, see:

Tables 43 and 44

Incidence of ductal carcinoma in situ in women, aged 50–69 years, 1995–2000



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	n.a.	32.6	n.a.	32.2	n.a.	41.1	39.3	34.8	25.6
95% CI	n.a.	30.8–34.6	n.a.	29.5–34.8	n.a.	36.6–45.3	31.5–46.6	25.5–44.7	12.8–40.2

n.a. Not available.

Notes

1. Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 2001.
2. Data for Victoria and Western Australia were unavailable at the time of publication.

- Between 1995 and 2000, the age-standardised incidence of ductal carcinoma in situ for women aged 50–69 years ranged from 25.6 cases per 100,000 in the Northern Territory to 41.1 per 100,000 in South Australia.

For more information, see:

Tables 45 and 46

Indicator 8: Mortality

Mortality rate

The mortality rate from breast cancer is calculated per 100,000 estimated resident female population in a 12-month period by 5-year age groups (0–4, 5–9, 10–14, 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+years) and for the target age group (50–69 years).

The mortality indicator

Mortality statistics are one of the most comprehensively collected national data sets. Registration of death is a legal requirement in Australia and, as a result, compliance is virtually complete. Registration of deaths is the responsibility of the Registrar of Births, Deaths and Marriages in each state and territory. The Registrars provide the mortality data to the Australian Bureau of Statistics for coding the cause of death and compilation into national statistics. The Australian Institute of Health and Welfare also holds these data in a national mortality database. The data presented here are from the AIHW National Mortality Database and are based on year of registration of the death. Note that about 5% of deaths are not registered until the year following the death (ABS 2002).

Breast cancer is the most common cause of cancer death in Australian women. The number of deaths from breast cancer over the last five years has remained fairly stable, with 2,569 women dying from the disease in 1996 and 2,585 women in 2001. However, over this period the rates of deaths caused by breast cancer have steadily fallen.

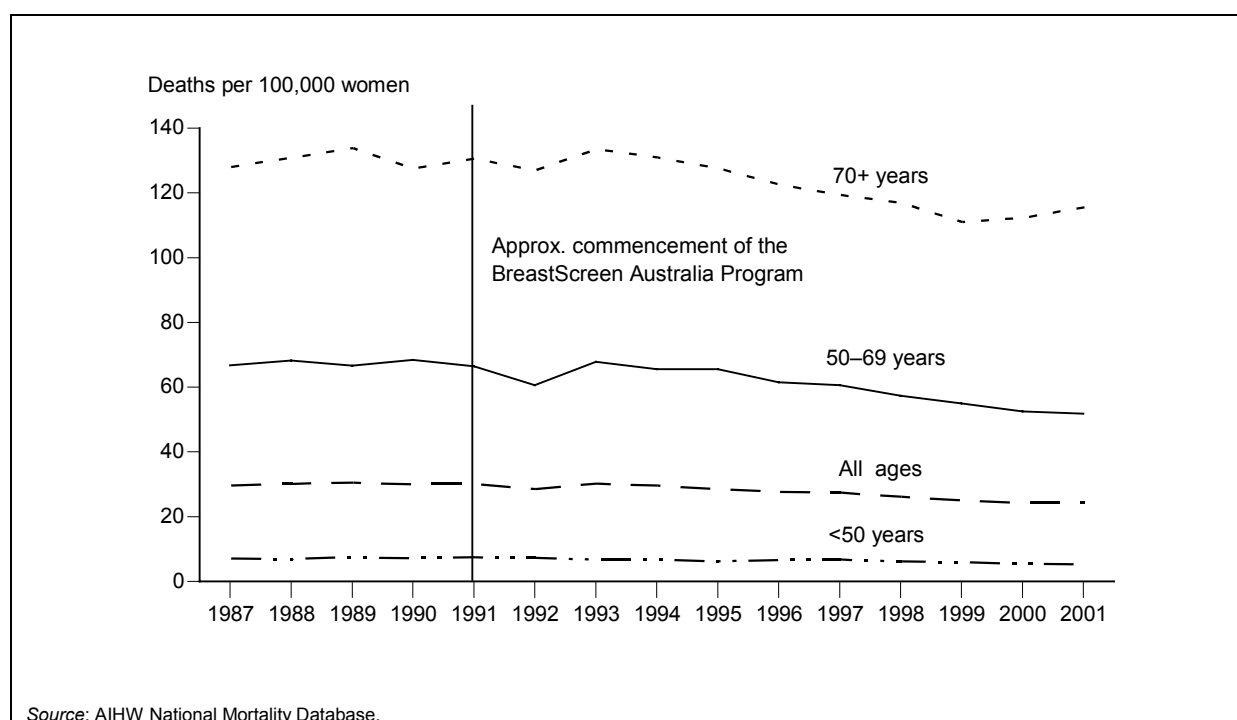
In the longer term, mortality rates from breast cancer are an important indicator of the effectiveness of the screening program. A particularly important indication of the effectiveness of a screening program is the change in mortality rates over time in the target age group for screening. There are, however, two difficulties with using these mortality rates as an indicator of screening effectiveness. The first is that changes in mortality over time may reflect factors additional to screening, such as new and more effective treatments. The second is that changes in the mortality rates may not be apparent for a number of years following the commencement of a screening program. Accordingly, this is a measure that needs to be viewed over the long term and interpreted with caution.

The mortality rates presented in this chapter are for the total female population of Australia, not just for those women who participated in the BreastScreen Australia Program.

This chapter shows the trend in breast cancer mortality from 1988 to 2001, the latest national data available. It also reports on breast cancer mortality by state and territory, by age, by region, and by Indigenous status.

Some changes have been made to the coding and processing of mortality data. These are described in Appendix A.

Mortality from breast cancer, females, Australia, 1987–2001



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
All ages	30.0	30.5	30.8	30.4	30.5	28.9	30.5	30.0	28.9	28.1	27.8	26.5	25.4	24.7	24.7
<50	7.4	7.3	7.9	7.5	7.8	7.6	7.1	7.1	6.5	6.9	7.2	6.6	6.4	5.9	5.7
50–69	66.8	68.3	66.7	68.5	66.5	60.6	67.9	65.5	64.6	61.5	60.6	57.3	55.0	52.5	51.8
70+	128.3	131.2	134.1	127.9	130.9	127.4	133.9	131.3	128.0	122.9	119.7	117.3	111.4	112.7	115.9

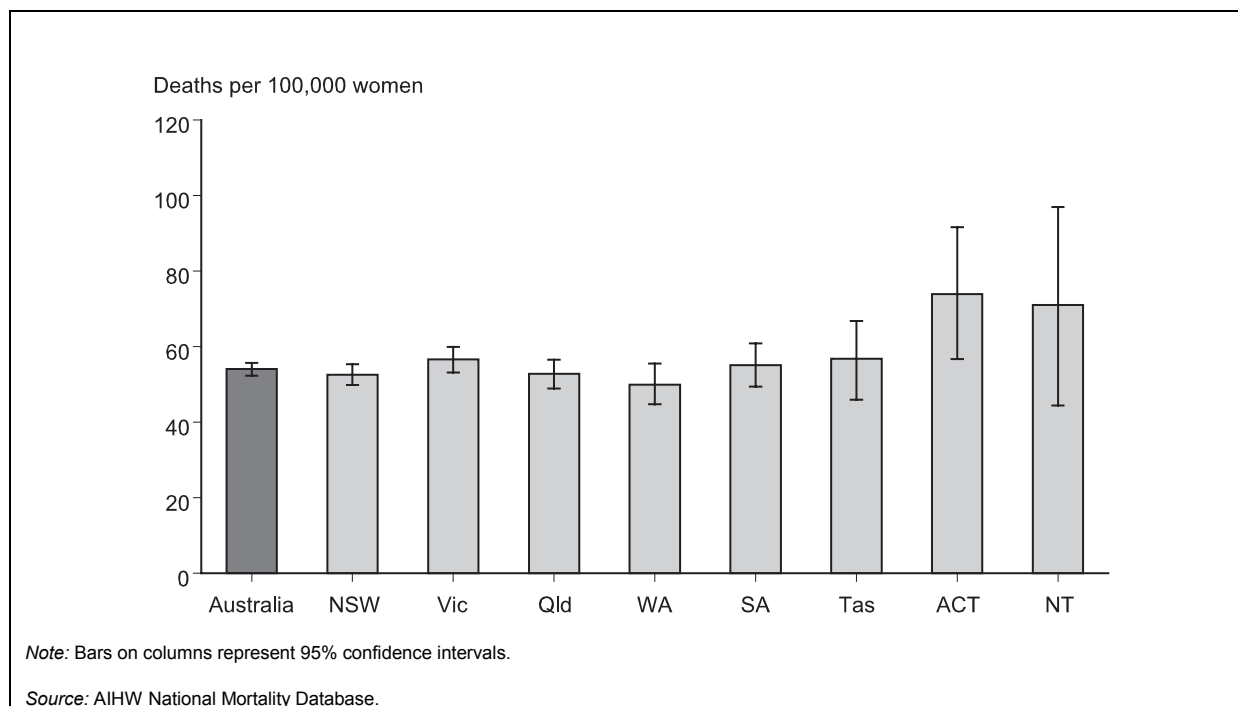
Note: Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 2001.

- From 1993 a steady decline is evident in the age-standardised mortality rates for women in the target age group. The mortality rate for these women was 66.8 deaths per 100,000 women in 1988; in 2001 the corresponding figure was 51.8 deaths per 100,000 women. A similar pattern of decline in mortality rates can be observed in women aged 70 and over. Mortality rates for women aged under 50 years remained the lowest and most consistent, staying below 8 deaths per 100,000 women for the period 1987 to 2001.

For more information, see:

Tables 47 and 48

Mortality from breast cancer in women aged 50–69, 1998–2001



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	54.1	52.5	56.6	52.8	49.9	55.1	56.8	73.9	71.0
95% CI	52.3–55.7	49.8–55.3	53.1–59.9	48.9–56.5	44.7–55.5	49.4–60.8	45.9–66.8	56.7–91.6	44.4–96.9

Notes

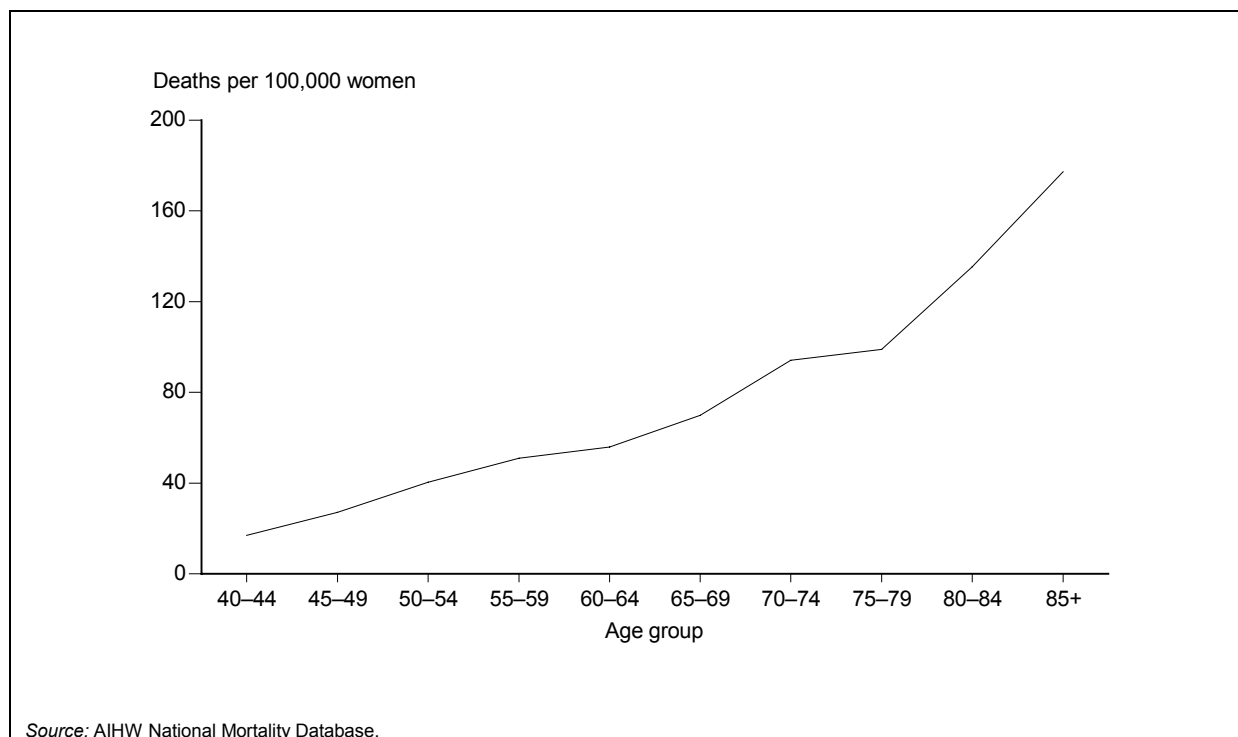
1. Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 2001.
2. None of the rates was significantly different from the all-Australia rate.

- For the period 1998–2001, the national age-standardised mortality rate was 54.1 deaths per 100,000 women. Across the states and territories, the mortality rate ranged from 49.9 deaths per 100,000 women in Western Australia to 73.9 deaths per 100,000 women in the Australian Capital Territory.

For more information, see:

Tables 49 and 50

Age-specific mortality rates for breast cancer, females, Australia, 2001



Age	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Rate	16.9	27.1	40.4	51.0	55.9	69.8	94.1	99.0	135.3	177.3

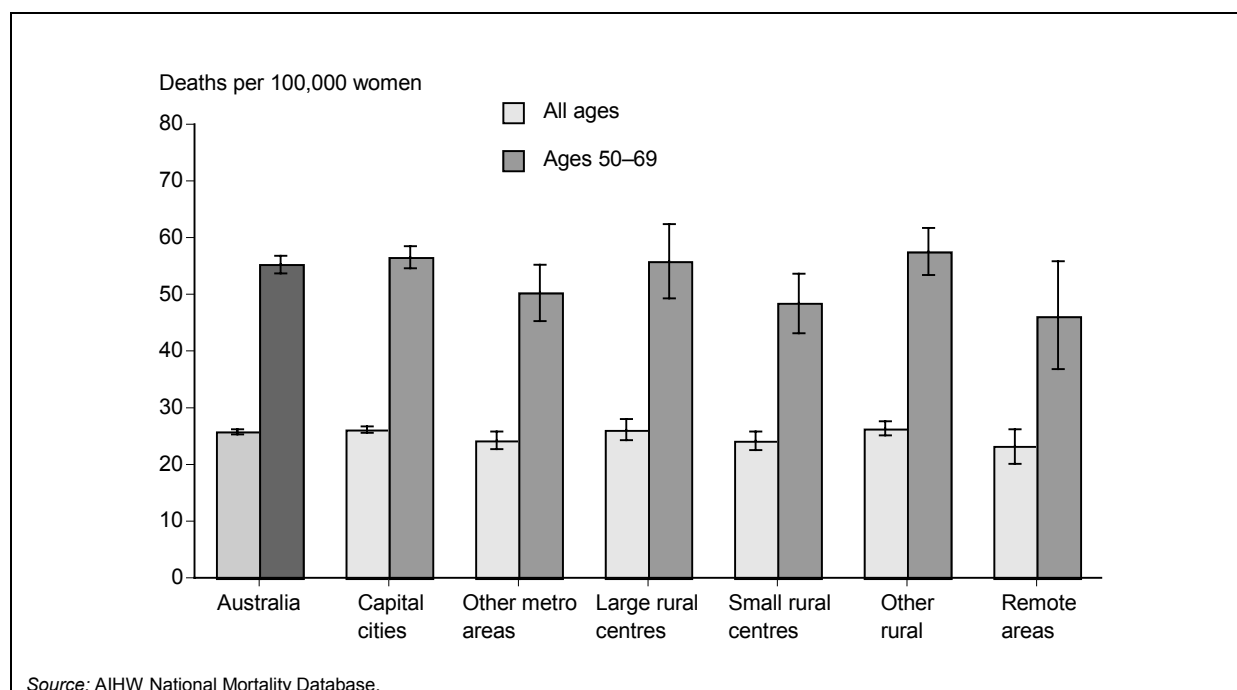
Note: Rates are the number of deaths from breast cancer per 100,000 women.

- In 2001, age-specific mortality rates increased consistently with age. For women aged 40-44, the rate was 16.9 deaths per 100,000 women. The rate increased to 177.3 deaths per 100,000 women for women aged 85 and over.
- The pattern of breast cancer mortality by age group has remained the same over the period 1988-2001.

For more information, see:

Tables 47 and 48

Mortality from breast cancer by region, females, 1997–2001



	Australia	Capital cities	Other metropolitan areas	Large rural centres	Small rural centres	Other rural areas	Remote areas
All ages	25.8	26.1	24.2	26.1	24.1	26.3	23.2
95% CI	25.3–26.2	25.6–26.7	22.7–25.8	24.3–28.0	22.5–25.8	25.1–27.6	20.1–26.2
Ages 50–69	55.3	56.6	50.3	55.8	48.5	57.5	46.1
95% CI	53.7–56.8	54.6–58.5	45.3–55.2	49.3–62.4	43.1–53.7	53.4–61.7	36.8–55.8

Notes

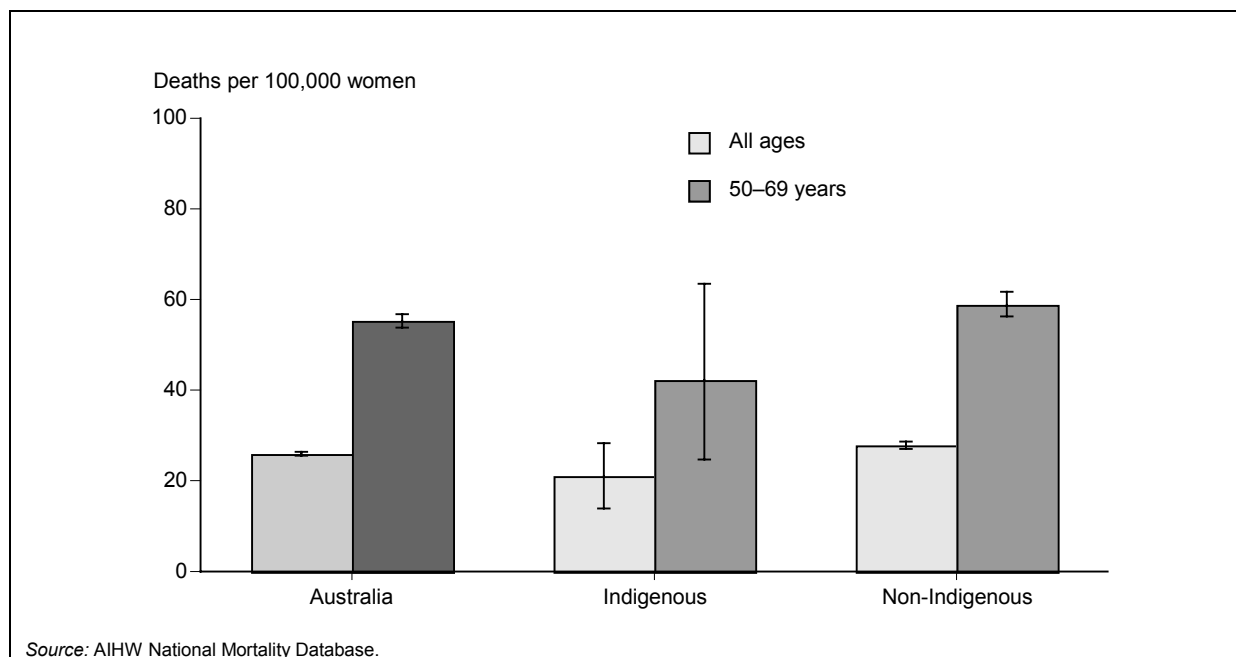
1. Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 2001.
2. The Rural, Remote and Metropolitan Areas classification (DPIE & DSHS 1994) was used to create the above categories.
3. None of the rates was significantly different from the all-Australia rate.

- Across all regions, mortality rates were significantly higher for women in the target age group than for the 'all ages' group. For women in the target age group, mortality rates ranged from 46.1 deaths per 100,000 women in 'Remote areas' to 57.5 deaths per 100,000 women in 'Other rural areas'. However, this difference was not significant.

For more information, see:

Tables 51 and 52

Mortality from breast cancer by Indigenous status, females, 1997–2001



	Australia	Indigenous	Non-Indigenous
All ages	25.9	21.0	27.8*
95% CI	25.5–26.4	13.9–28.3	27.0–28.6
Ages 50–69	55.3	42.2	58.8
95% CI	53.8–56.8	24.7–63.5	56.3–61.7

* Significantly different from the all-Australian rate.

Notes

1. Only Queensland, Western Australia, South Australia and the Northern Territory had Indigenous death registration data considered to be of a publishable standard at the time of preparation of this report. Therefore data from these jurisdictions only are included in the analysis by Indigenous status. Data for Queensland are included from 1998 onwards.
2. 'Australia' includes all states and territories.
3. Women whose Indigenous status was recorded as 'not stated' are included in the analysis for all women but excluded from the analysis by Indigenous status.
4. Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 2001.

- In the target age group, the age-standardised mortality rate for Indigenous women (42.2 deaths per 100,000 women) was lower than that for non-Indigenous women (58.8 deaths per 100,000 women). However, this difference was not significant. In the 'all ages' category non-Indigenous women had a mortality rate significantly higher than the national rate.

For more information, see:

Tables 53 and 54