

Indicator 7: Incidence

7a. Incidence of breast cancer

The incidence 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 of 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

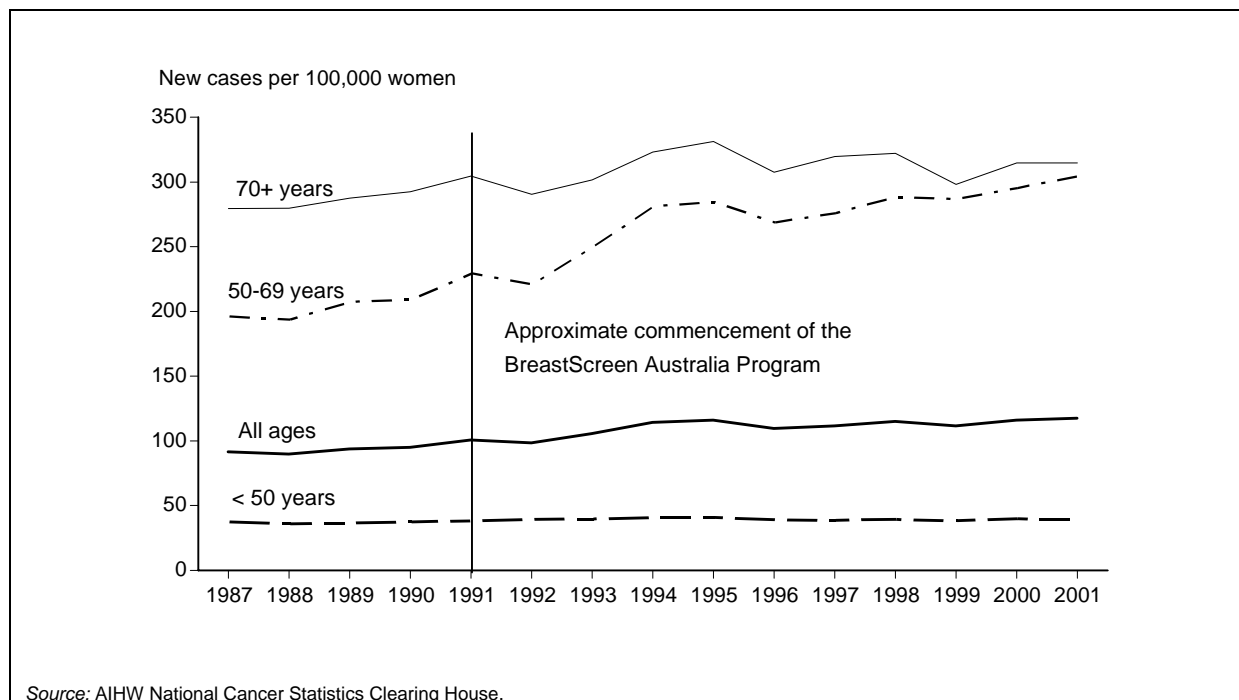
Registration of cancer cases is required by law in each of the states and territories. The data are collected by state and territory cancer registries and compiled in a national database, the National Cancer Statistics Clearing House, which is held by the Australian Institute of Health and Welfare (AIHW). 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 level 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 performance standards for breast cancer detection.

This chapter reports the rates of breast cancer from 1987 to 2001, 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 DCIS provide information about the underlying level of the condition among Australian women. 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, 1987–2001



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
All ages	91.2	89.6	93.4	94.8	100.4	98.2	105.4	114.0	115.7	109.2	111.3	114.6	111.3	115.6	117.2
<50	38.2	36.7	37.2	38.1	38.8	39.8	40.5	41.3	41.6	39.9	39.4	40.2	39.1	40.7	40.4
50–69	196.9	194.5	208.1	209.7	230.3	222.0	250.8	282.0	285.3	269.6	276.7	289.2	287.7	296.2	305.4
70+	279.4	279.6	287.6	292.4	304.5	290.5	301.7	323.1	331.4	307.6	319.7	322.1	298.1	314.7	314.7

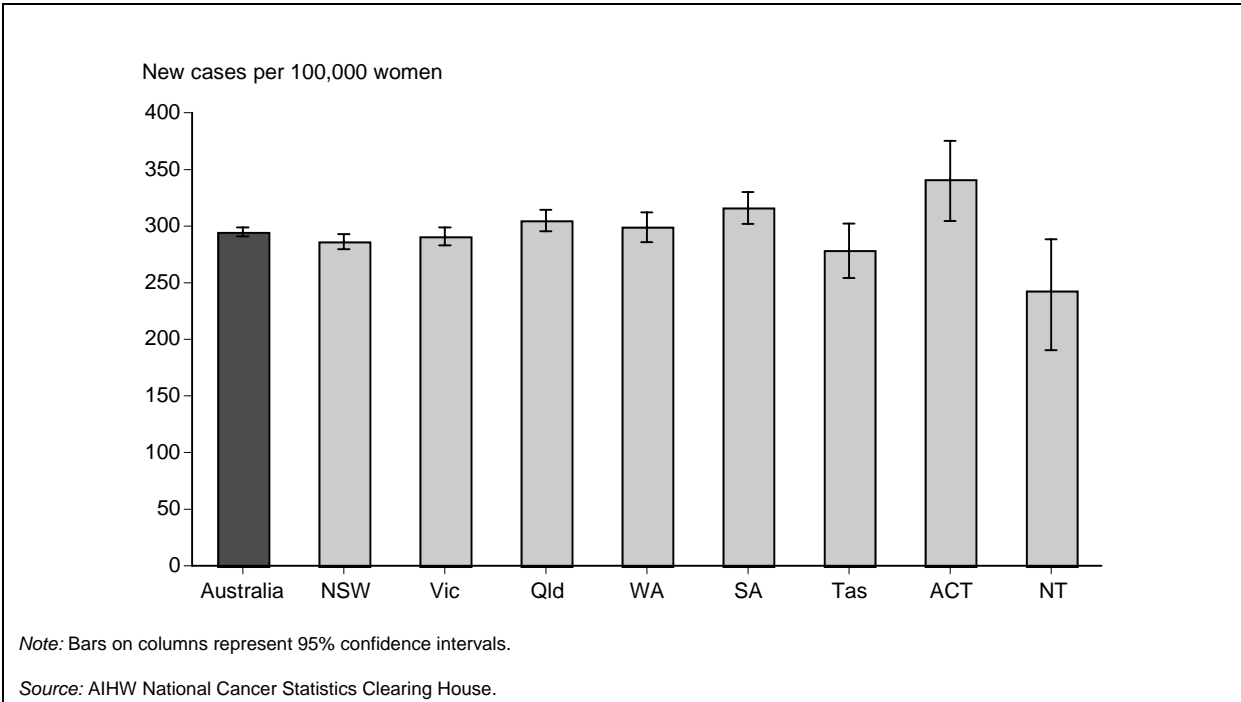
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 2001.

- With some fluctuations, a notable increase over the period 1987 to 2001 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 196.9 new cancers per 100,000 women in 1987 to 305.4 per 100,000 women in 2001. 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 43 and 44

Incidence of breast cancer in women aged 50–69 years, 1998–2001



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	294.9	286.3	290.9	305.0	299.3	316.2*	278.9	341.3*	242.9
95% CI	290.9–298.9	279.7–293.0	283.1–298.8	295.6–314.6	286.4–312.7	302.3–330.7	255.6–303.7	307.2–378.1	197.4–295.5

* Significantly different from the all-Australia rate.

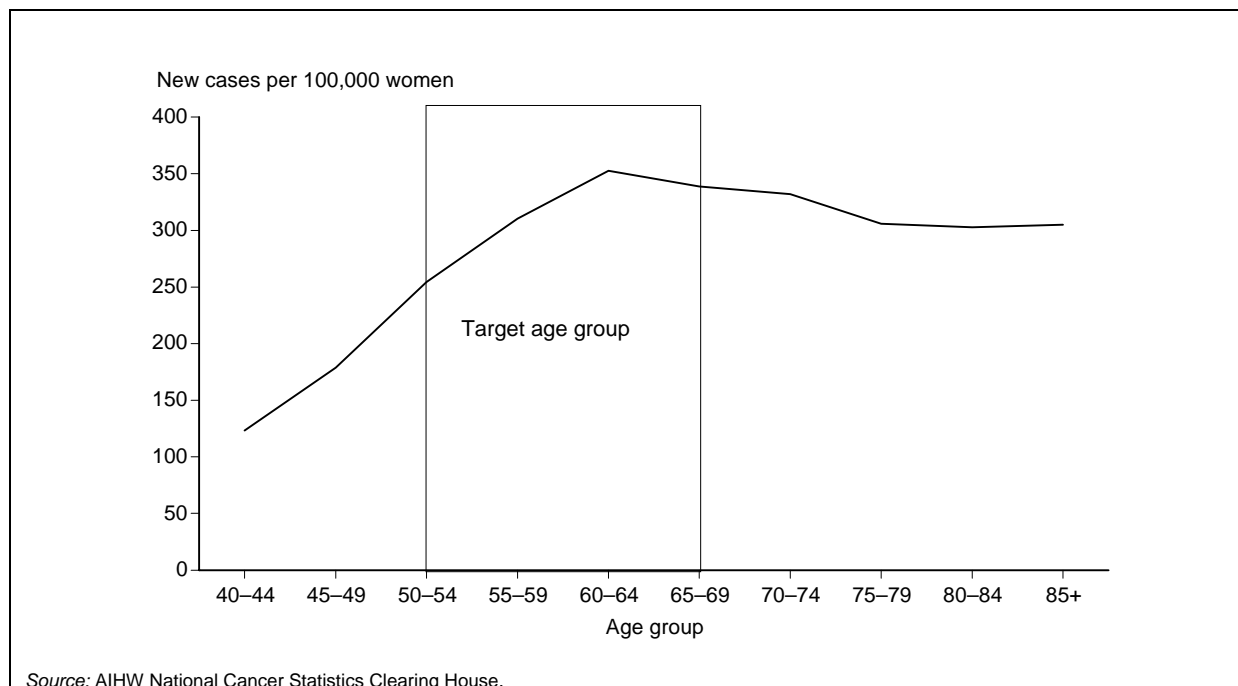
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 2001.

- The national age-standardised incidence rate for 1998 to 2001 was 294.9 new cancers per 100,000 women. Across the states and territories, incidence rates ranged from 242.9 new cancers per 100,000 women in the Northern Territory to 341.3 new cases per 100,000 women in the Australian Capital Territory. The rates for the Australian Capital Territory and South Australian (316.2 per 100,000 women) were significantly above the national rate.

For more information, see:

Tables 45 and 46

Age-specific incidence rates for breast cancer in women, Australia, 2001



Age	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Rate	123.1	178.9	254.4	310.3	352.7	338.7	332.1	305.8	302.8	304.9

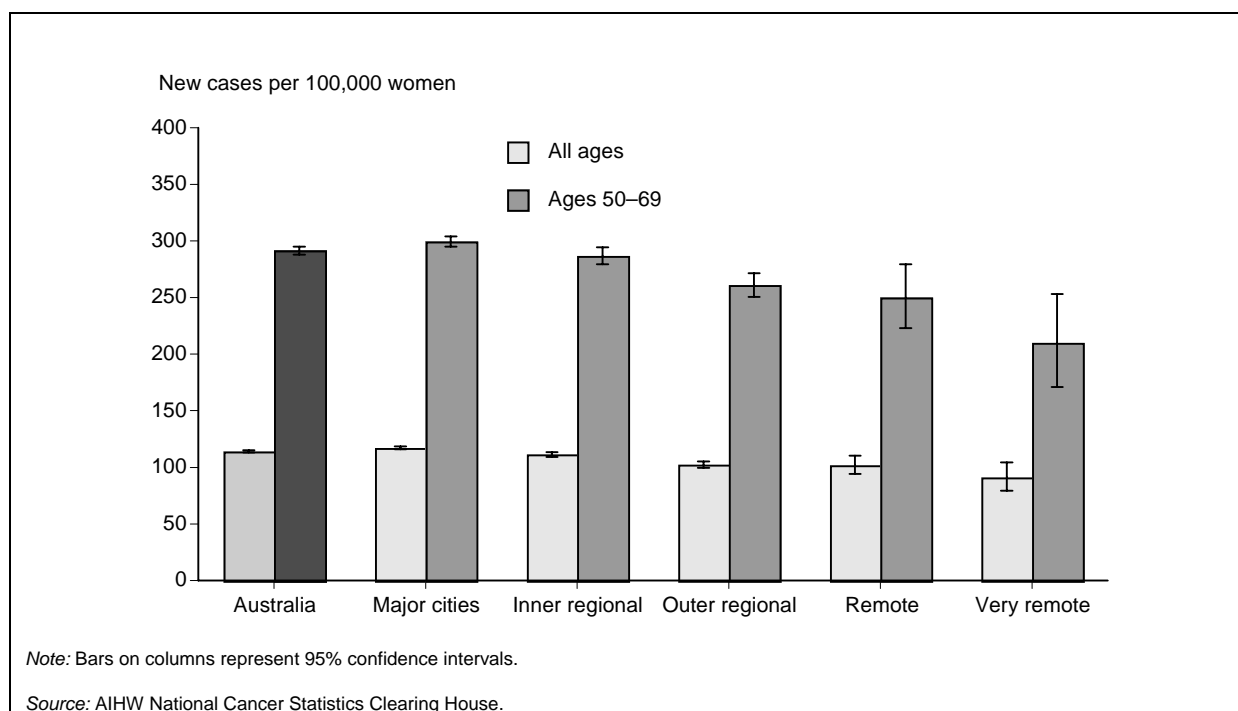
Note: Rates are the number of breast cancers detected per 100,000 women.

- 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 11,791 new cases of breast cancer in 2001, 5,802 (49%) occurred in women in the target age group. Only 6% of cases were women aged under 40 years.
- Age-specific incidence rates in 2001 ranged from 123.1 new cancers per 100,000 women in the 40-44 age group to 352.7 new cases per 100,000 women in the 60-64 age group.
- The mean age at diagnosis for women diagnosed with breast cancer in 2001 was 60 years. The median age at diagnosis was 59 years.

For more information, see:

Table 44

Incidence of breast cancer in women by region, 1997–2001



	Australia	Major cities	Inner regional	Outer regional	Remote	Very remote
All ages	114.1	117.2*	111.3	102.3*	101.9*	91.2*
95% CI	113.1–115.0	116.0–118.4	109.3–113.4	99.5–105.2	94.1–110.2	79.2–104.3
Ages 50–69	291.4	299.4	286.7	260.9*	249.9*	209.8*
95% CI	287.9–295.0	295.0–303.9	279.3–294.3	250.7–271.4	222.8–279.4	171.0–253.0

* Significantly different from the all-Australian rate.

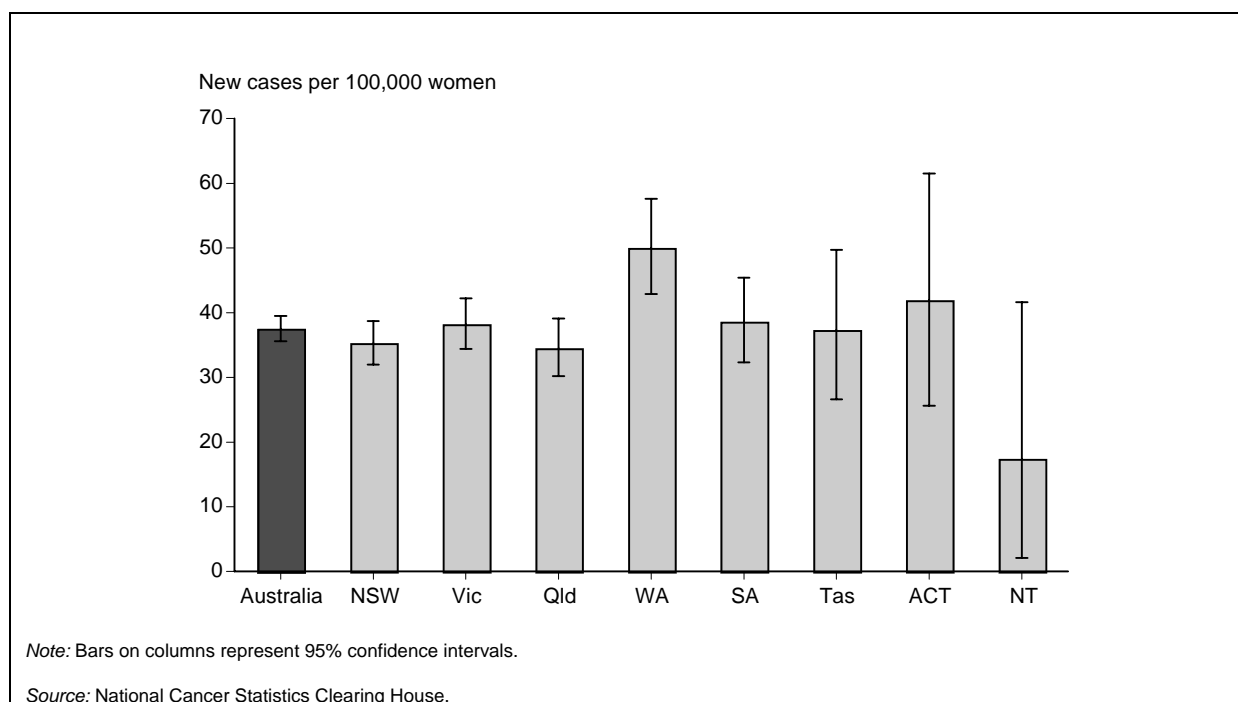
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 2001.

- For the period 1997 to 2001, the age-standardised incidence rate was 291.4 cases of breast cancer per 100,000 women for women in the target age group, and 114.1 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 209.8 cases per 100,000 women in very remote areas to 299.4 cases per 100,000 women in major cities.

For more information, see:

Tables 47 and 48

Incidence of ductal carcinoma in situ in women aged 50–69 years, 1996–2001



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	37.5	35.3	38.2	34.5	50.0*	38.6	37.3	41.9	17.4
95% CI	35.6–39.5	32.0–38.6	34.3–42.1	30.2–39.1	43.0–57.6	32.3–45.4	26.5–49.7	25.6–61.5	2.1–41.6

* Significantly different from the all-Australia rate.

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

- For the period 1996 to 2001, the national age-standardised incidence rate of DCIS for women aged 50–69 years was 37.5 per 100,000 women. Western Australia was the only state or territory to have a DCIS incidence rate significantly different from the national rate, with 50 cases per 100,000, well above the national rate.
- For the period 1996 to 2001, the age-standardised incidence of DCIS ranged from 17.4 cases per 100,000 women in the Northern Territory to 50.0 cases per 100,000 women in Western Australia.

For more information, see:

Tables 49 and 50

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 (ABS) for coding the cause of death and compilation into national statistics. The AIHW also holds these data in a national mortality database. The data presented here are from the AIHW National Mortality Database and are based on the 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 in recent years has remained fairly stable, with 2,609 women dying from the disease in 1997 and 2,698 women in 2002. However, over this period the rates of deaths caused by breast cancer have steadily fallen.

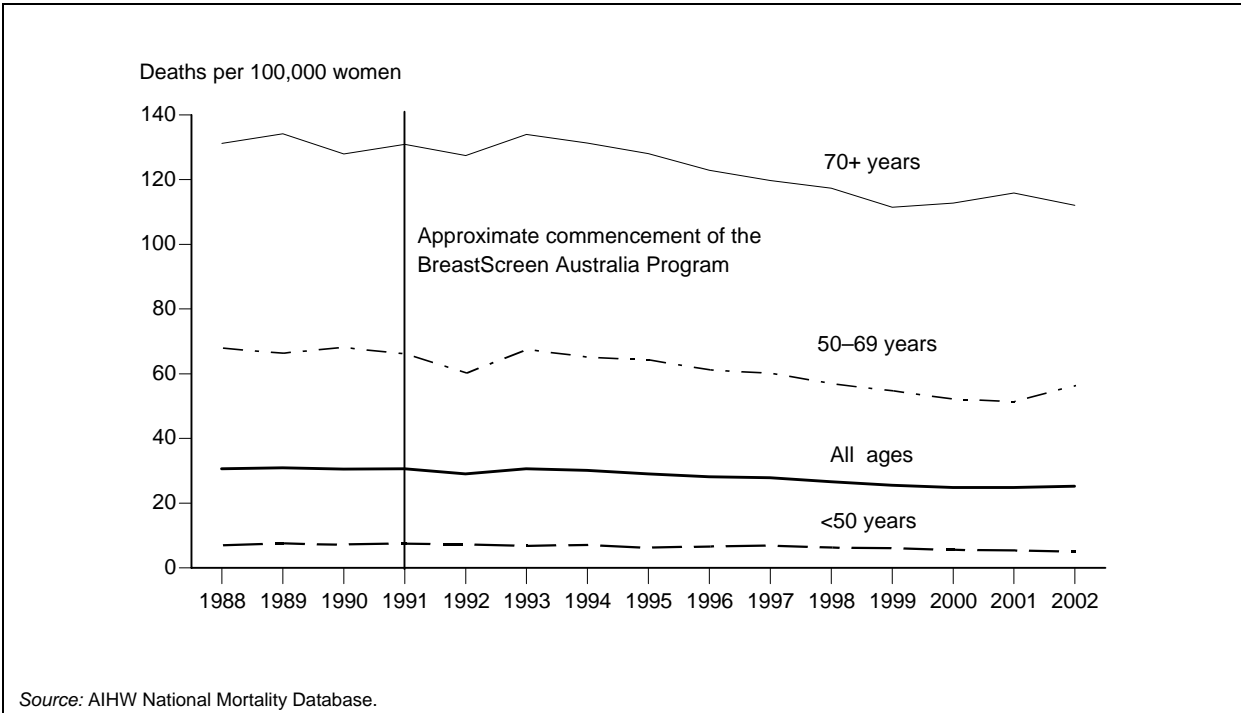
In the longer term, mortality rates from breast cancer are an important indicator of the effectiveness of the screening program. A particularly important indication of the effectiveness of a screening program is the change in mortality rates over time in the target age group for screening. There are, 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 only for those women who participated in the BreastScreen Australia Program.

This chapter shows the trend in breast cancer mortality from 1988 to 2002, 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, 1988–2002



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
All ages	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	25.1
<50	7.3	7.9	7.5	7.8	7.6	7.1	7.4	6.5	6.9	7.2	6.6	6.4	5.9	5.7	5.4
50–69	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	56.7
70+	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	112.0

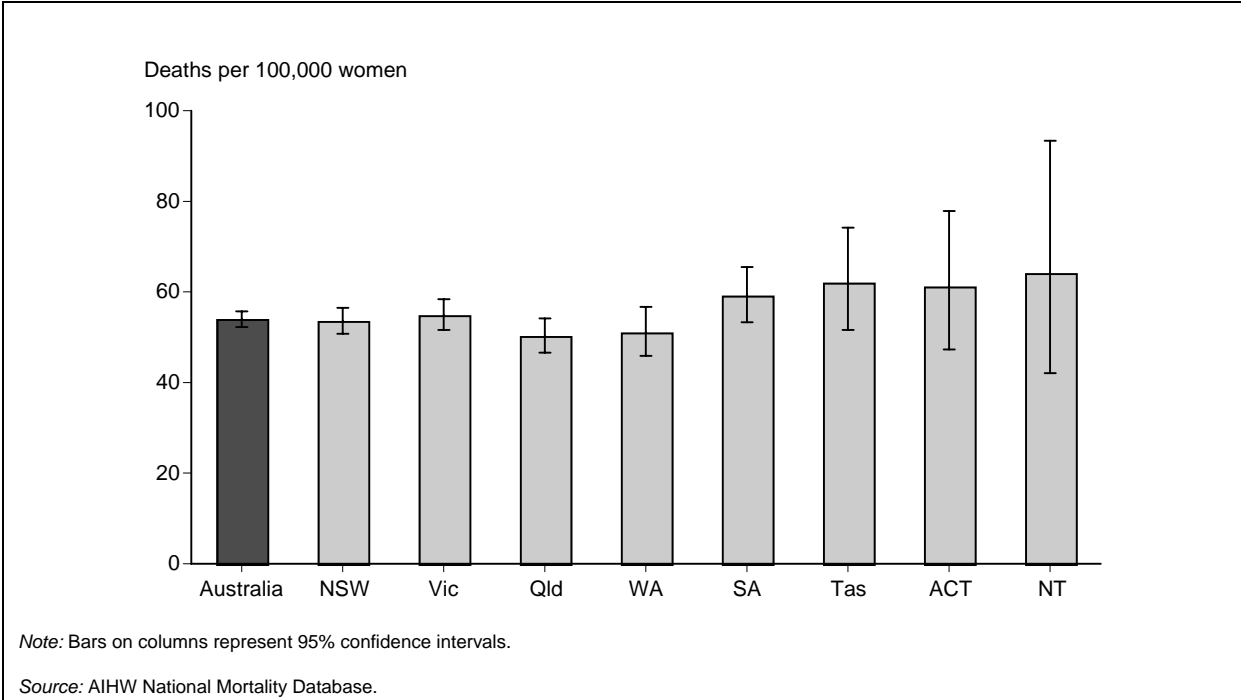
Note: Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 2001.

- Since 1993 the age-standardised mortality rates for women in the target age group have declined steadily. The mortality rate for these women was 68.3 deaths per 100,000 women in 1988; in 2001 the corresponding figure was 51.8 deaths per 100,000 women. There was a small increase in the mortality rate in 2002, rising to 56.7 deaths per 100,000 women. However, this increase was not statistically significant. 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 1988 to 2002.

For more information, see:

Tables 51 and 52

Mortality from breast cancer in women aged 50–69, 1999–2002



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	54.0	53.6	54.9	50.3	51.1	59.2	62.1	61.2	64.2
95% CI	52.3–55.7	50.8–56.5	51.6–58.4	46.6–54.2	46.0–56.7	53.3–65.5	51.6–74.2	47.3–77.9	42.1–93.3

Notes

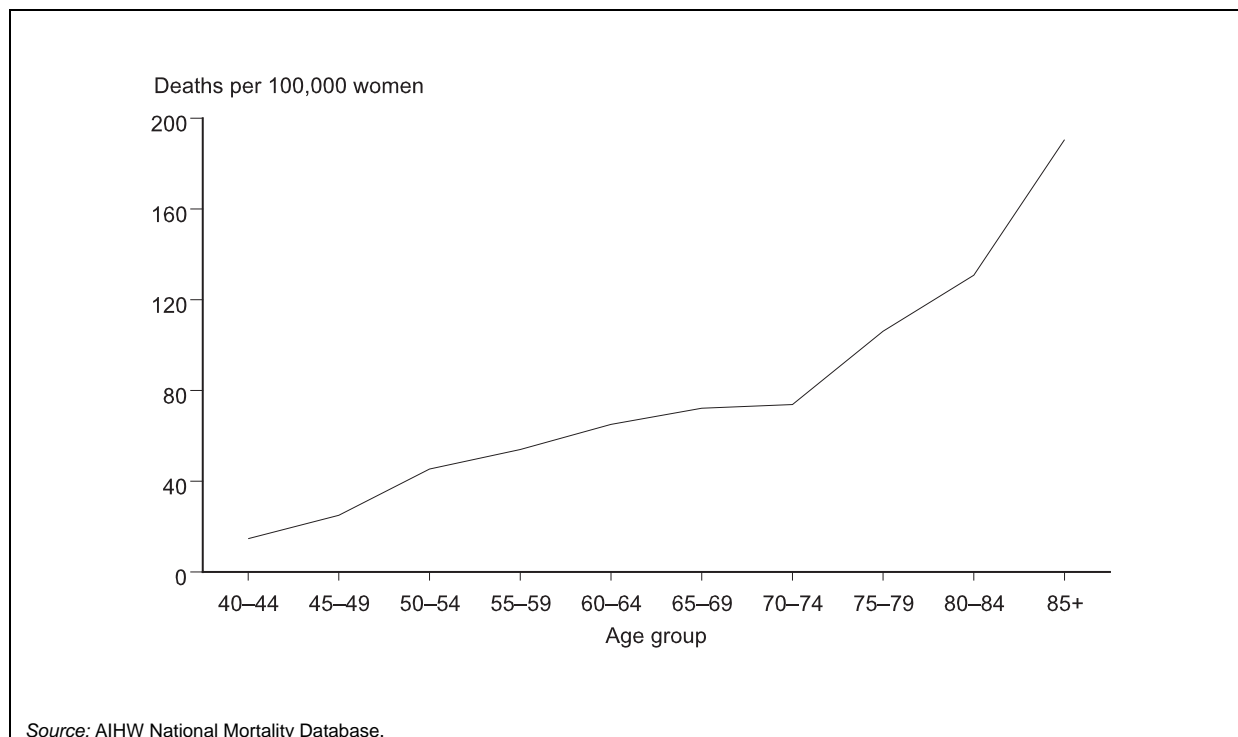
1. Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 2001.
2. None of the rates was significantly different from the all-Australia rate.

- The national age-standardised mortality rate was 54.0 deaths per 100,000 women for the period 1999 to 2002. Across the states and territories, the mortality rate ranged from 50.3 deaths per 100,000 women in Queensland to 64.2 deaths per 100,000 women in the Northern Territory, despite the incidence rate in the Northern Territory being the lowest of any state or territory (Tables 45 and 46).

For more information, see:

Tables 53 and 54

Age-specific mortality rates for breast cancer, females, Australia, 2002



Age	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Rate	14.7	25.0	45.4	54.0	65.0	72.0	73.6	105.9	131.0	192.6

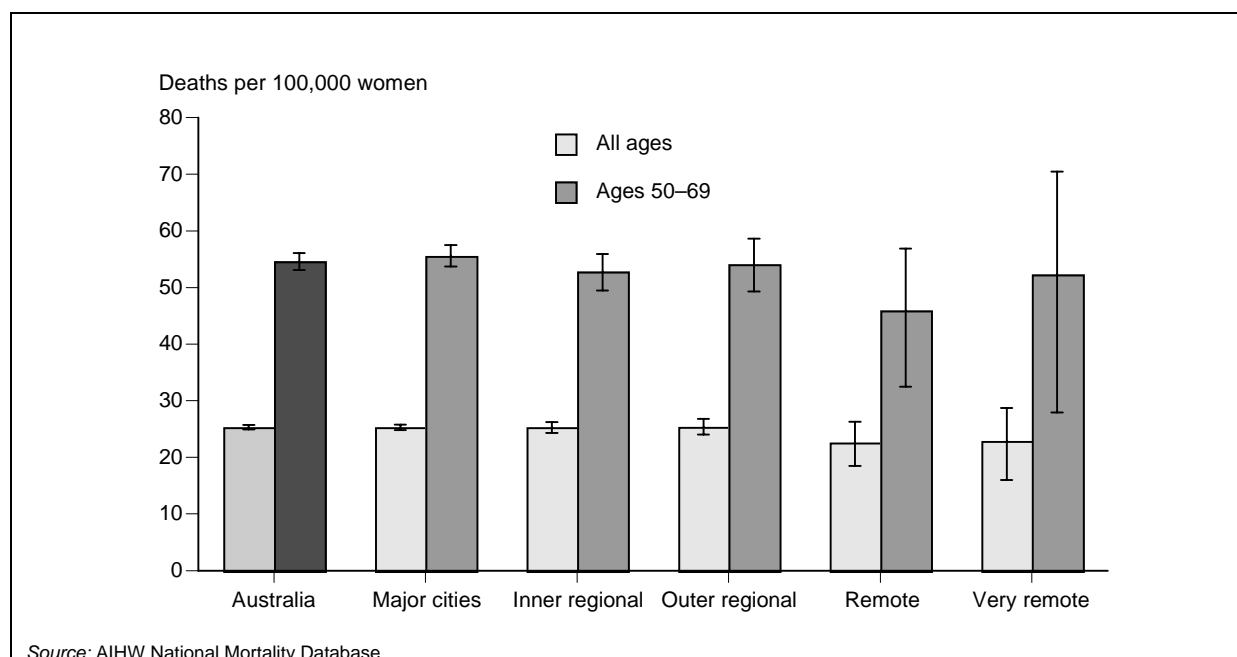
Note: Rates are the number of deaths from breast cancer per 100,000 women.

- In 2002, age-specific mortality rates increased consistently with age. For women aged 40-44 years, the rate was 14.7 deaths per 100,000 women. The rate increased to 192.6 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 to 2002 (Table 51).
- The mean age at death for women dying from breast cancer in 2002 was 67 years. The median age at death was also 67 years.

For more information, see:

Tables 51 and 52

Mortality from breast cancer by region, females, 1998–2002



	Australia	Major cities	Inner regional	Outer regional	Remote	Very remote
All ages	25.3	25.3	25.3	25.4	22.6	22.6
95% CI	24.8–25.7	24.8–25.9	24.4–26.3	24.0–26.8	18.9–26.7	16.8–29.5
Ages 50–69	54.6	55.6	52.8	54.1	45.9	51.8
95% CI	53.1–56.1	53.8–57.5	49.6–56.0	49.6–59.0	34.9–59.3	33.8–75.9

Notes

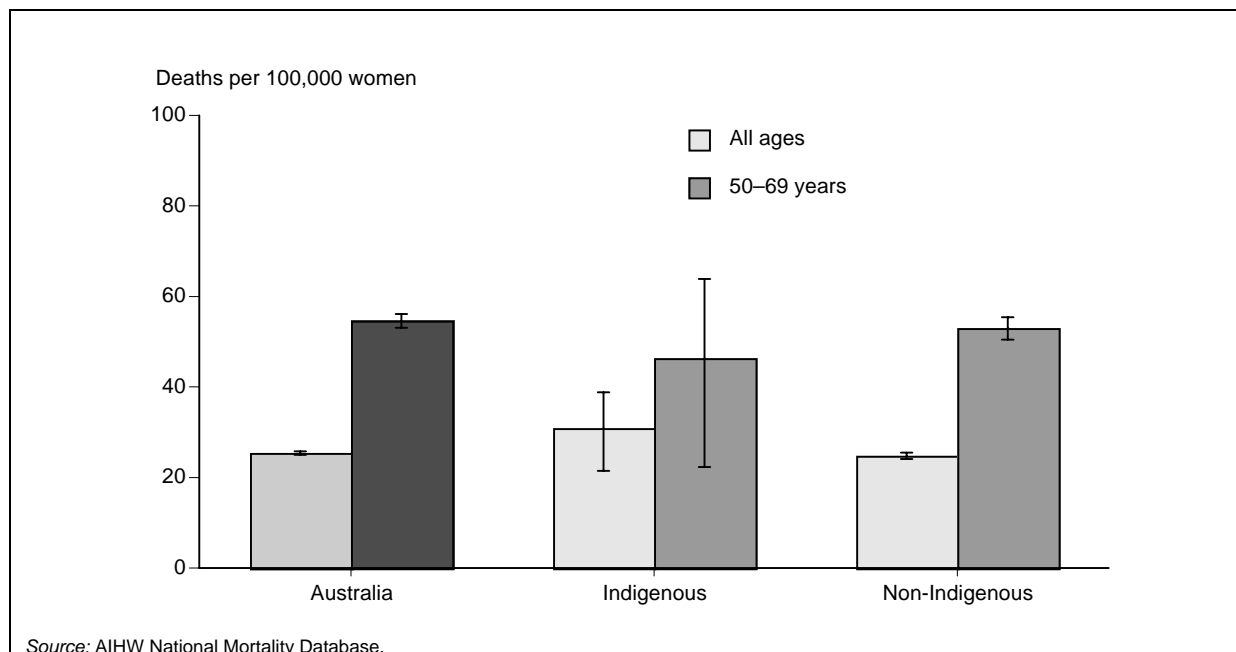
1. Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 2001.
2. The Australian Standard Geographical Classification (ASGC) was used to create the above categories (ABS 2001).
3. None of the rates was significantly different from the all-Australia rate.

- Across all regions, mortality rates were significantly higher for women in the target age group than the 'all ages' group.
- For women in the target age group, mortality rates were highest in major cities with 55.6 deaths per 100,000 women, and lowest in remote areas, with 45.9 deaths per 100,000 women. These differences were not statistically significant because the relatively small number of deaths in remote areas have wide confidence intervals. The actual number of deaths by region can be seen in Table 55.

For more information, see:

Tables 55 and 56

Mortality from breast cancer by Indigenous status, females, 1998–2002



	Australia	Indigenous	Non-Indigenous
All ages	25.4	30.9	24.8
95% CI	25.0–25.9	23.1–40.4	24.1–25.6
Ages 50–69	54.6	46.4	53.0
95% CI	53.1–56.1	28.9–70.5	50.5–55.5

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 this report was prepared. Therefore data from these jurisdictions only are included in the analysis by Indigenous status.
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.
5. None of the rates was significantly different from the all-Australia rate.

- In the target age group, the age-standardised mortality rate for Indigenous women (46.4 deaths per 100,000 women) was lower than that for non-Indigenous women (53.0 deaths per 100,000 women). However, this difference was not significant.
- Nationally and among non-Indigenous women, the mortality rate was significantly higher for women in the target age group than for all women. There was no significant difference between age groups for Indigenous women.

For more information, see:

Tables 57 and 58