

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

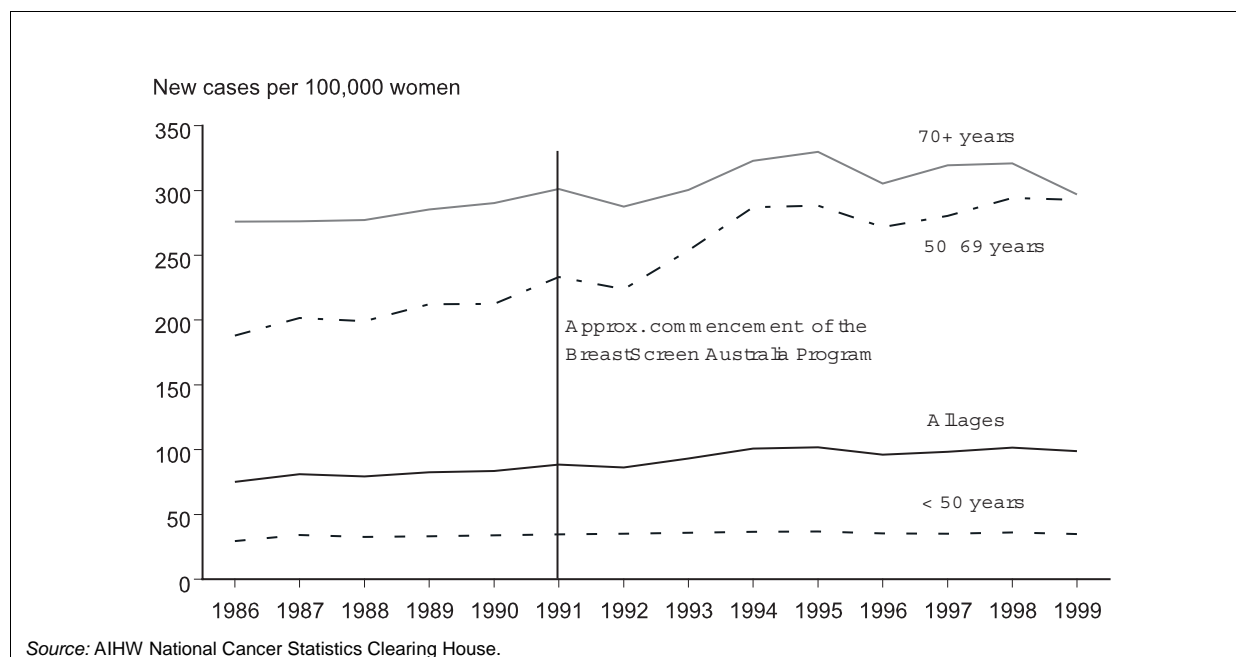
Registration of cancer cases is required by law in each of the states and territories. The data are collected by state and Territory cancer registries and compiled in a national database, the National Cancer Statistics Clearing House, which is held by the Australian Institute of Health and Welfare. The 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 1986 to 1999, the latest national data available. It also reports on breast cancer incidence by state and territory, by geographical region and by size.

Similarly, data on the incidence of ductal carcinoma in situ 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 about DCIS is provided in the chapter headed 'Indicator 4'.

Incidence of breast cancer in women, Australia, 1986–1999



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
All ages	75.1	80.9	79.4	82.6	83.5	88.5	86.3	93.0	100.9	101.9	96.1	98.4	101.6	98.7
< 50	29.5	34.1	32.5	33.1	33.7	34.5	35.0	35.9	36.5	36.8	35.4	35.0	35.9	34.8
50–69	188.1	201.7	199.1	212.2	212.3	233.2	223.9	253.8	287.1	288.3	271.8	280.5	294.4	292.8
70+	276.0	276.1	277.2	285.4	290.2	301.1	287.6	300.3	322.8	329.8	305.3	319.4	321.0	297.1

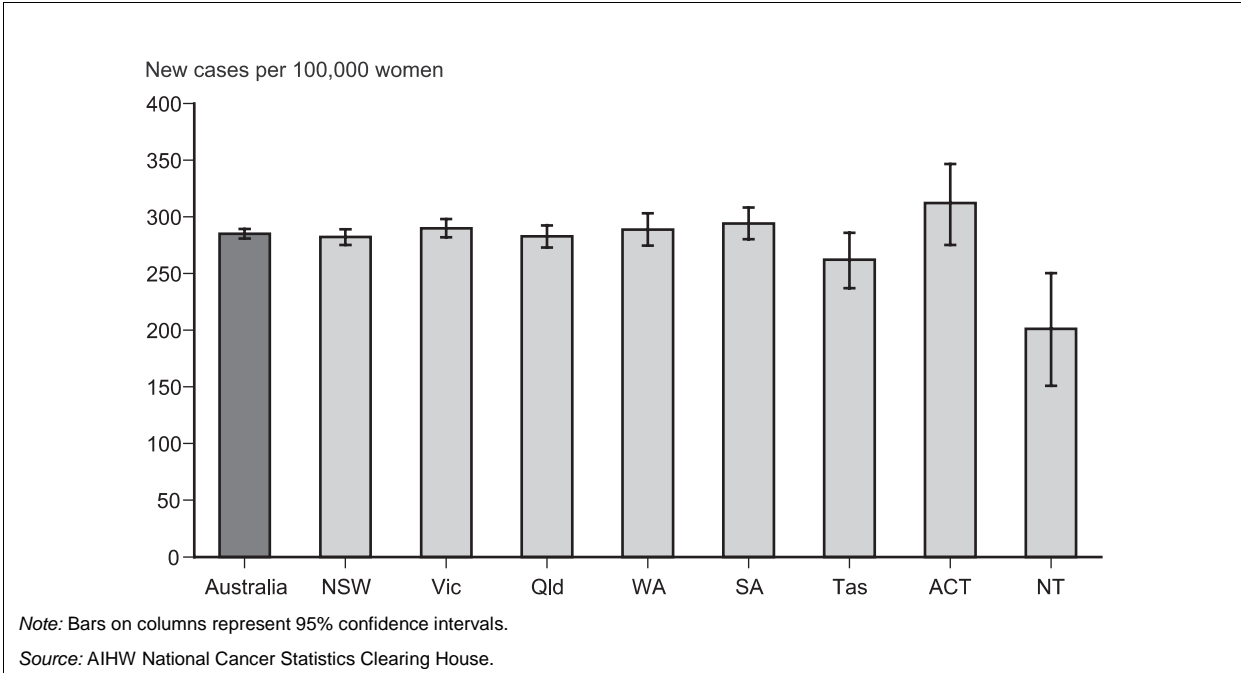
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 1991.

- Age-standardised incidence rates have increased for women in the target age group (50–69 years) from 188.1 cases per 100,000 women in 1986 to 292.8 cases per 100,000 women in 1999. A similar pattern of increase, although of a lesser degree, is evident for women aged 70 and over.
- Age-standardised incidence rates have also increased for women of all ages, from 75.1 new cancers per 100,000 women in 1986 to 98.7 new cancers per 100,000 women in 1999. The rates for women aged less than 50 years remained stable throughout the period.
- The increase in the rate of new cancers, especially in the 50–69 age group, corresponds to 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 in part, the result of the early detection of cancers in women who may otherwise have gone undiagnosed for some years.

For more information, see:

Tables 41 and 42.

Incidence of breast cancer in women, aged 50–69, 1996–1999



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	285.1	282.1	289.8	282.7	288.6	294.2	262.1	312.3	201.2*
95% CI	280.8–289.3	275.3–289.0	282.0–298.1	272.9–292.5	274.6–303.2	280.4–308.2	237.2–285.9	275.1–346.6	150.9–250.4

* Significantly different from the all-Australia rate.

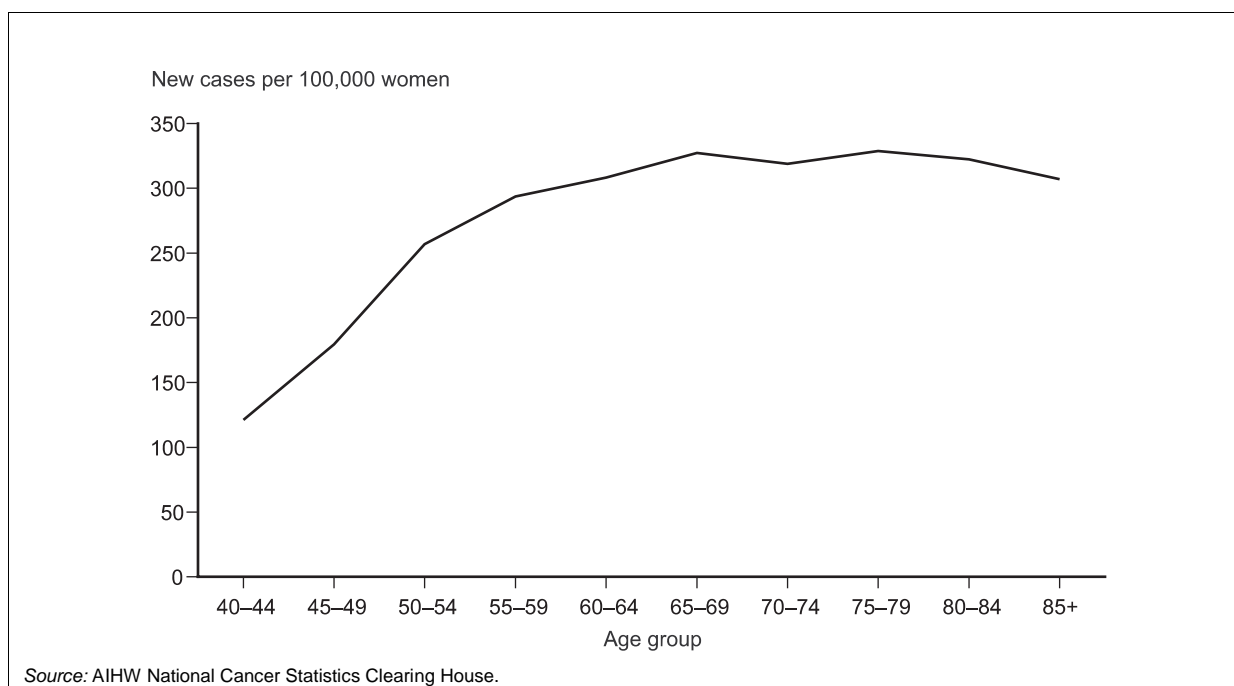
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 1991.

- Incidence data by state and territory provide an indication as to whether a Program needs to be specially tailored to local conditions – for example, high incidence in a particular state or territory – or whether a relatively generic program can be used nationally. Although there are some differences in incidence exist among the states and territories, they are relatively small except for the Northern Territory, where the rate was significantly lower than the all-Australia rate.
- For 1996–1999, the age-standardised incidence rate for women aged 50–69 years was highest in the Australian Capital Territory (312.3 per 100,000 women) and lowest in the Northern Territory (201.2 per 100,000 women). The age-standardised national incidence rate for women aged 50–69 years was 285.1 per 100,000 women.

For more information, see:

Tables 43 and 44.

Age-specific incidence rates for breast cancer in women, Australia 1999



Age	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Rate	115.2	173.2	252.0	287.1	327.0	312.9	298.6	296.2	303.4	285.0

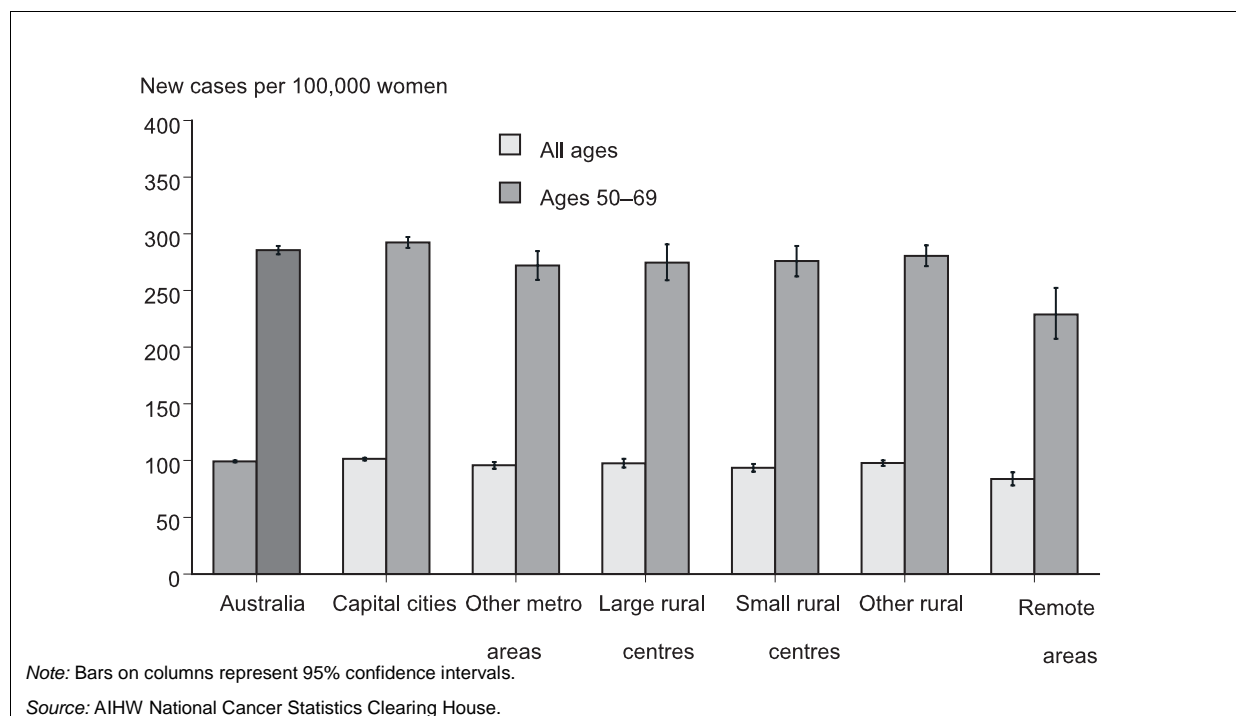
Note: Rates are the number of breast cancers detected per 100,000 women.

- In 1999 the age-specific incidence rates ranged from 115.2 new cancers per 100,000 women aged 40-44 years to 327.0 new cancers per 100,000 women aged 60-64 years.
- All women aged 40 years 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. In 1999, almost half (48%) of breast cancer cases occurred in women in the target age group.

For more information, see:

Table 42.

Incidence of breast cancer in women by region, 1995–1999



	Australia	Capital cities	Other metropolitan areas	Large rural centres	Small rural centres	Other rural areas	Remote areas
All ages	99.3	101.4	96.0	97.6	93.7*	97.7	83.8*
95% CI	98.5–100.2	100.2–102.5	92.9–98.8	93.9–101.4	90.3–96.9	95.4–100.1	78.1–89.6
Ages 50–69	285.7	292.5	272.2	274.7	275.9	280.5	228.9*
95% CI	282.0–289.4	287.7–297.2	259.5–284.8	259.0–290.7	262.5–289.3	271.6–289.9	207.5–252.2

* Significantly different from the all-Australia rate.

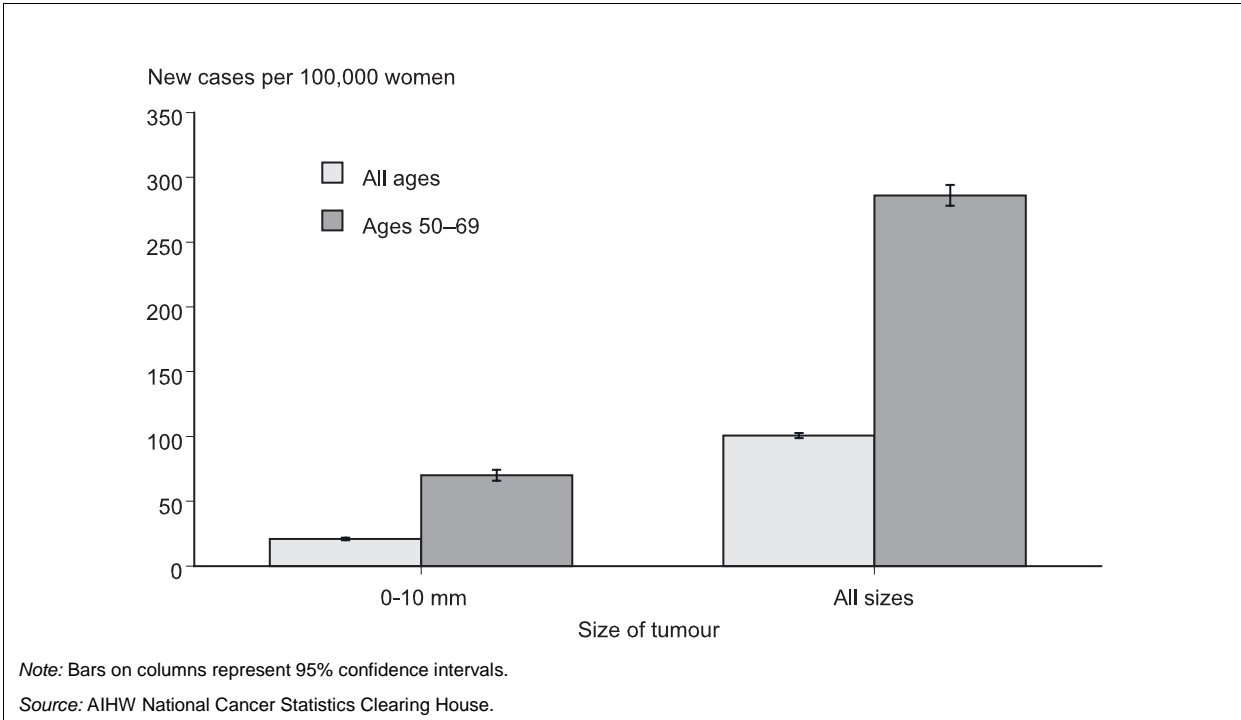
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 1991.

- The incidence of breast cancer by geographical location is of importance for the BreastScreen Australia Program because it can assist in identifying areas that may require specific Program efforts.
- In the period 1995–1999 the age-standardised rate of breast cancer incidence in the target age group (50–69 years) ranged from 228.9 cases per 100,000 women in remote areas to 292.5 cases per 100,000 women in capital cities.

For more information, see:

Tables 45 and 46.

Incidence of invasive cancer in women by tumour size, ages 50–69 and all ages, 1997



Size of tumour	All ages		Ages 50–69 years	
	0–10 mm	All sizes	0–10 mm	All sizes
Rate	20.9	100.7	70.0	285.9
95% CI	20.0–21.9	98.7–102.6	66.0–74.2	278.1–294.2

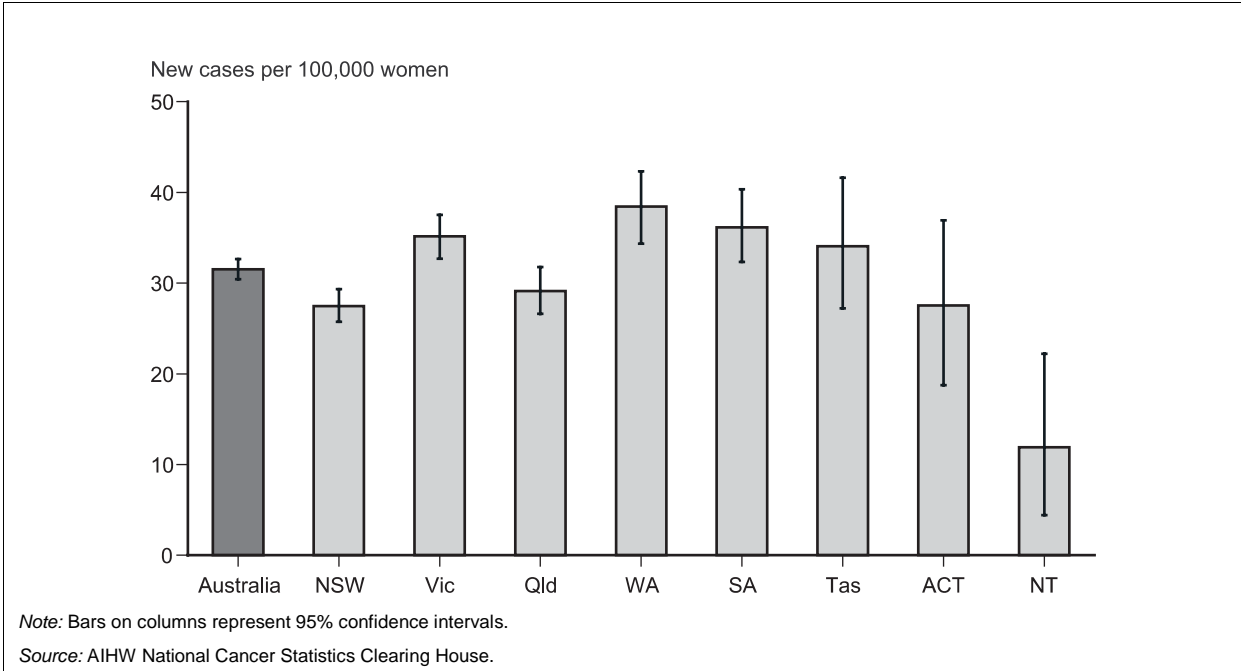
Note: Rates are the number of breast cancers detected per 100,000 women and age-standardised to the Australian population at 30 June 1991.

- The age-standardised national incidence rate for small cancers (10 mm or less) was 20.9 per 100,000 women of all ages, and 70.0 per 100,000 women in the target age group. For cancers of all sizes, the rates were 100.7 and 285.9 per 100,000 women respectively.

For more information, see:

Tables 47 and 48.

Incidence of ductal carcinoma in situ, ages 50–69, 1994–1999



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	34.6	29.9*	38.8*	33.6	39.5	38.2	40.3	31.5	13.9*
95% CI	33.4–35.8	28.0–31.6	36.3–41.2	31.0–36.1	35.3–43.8	33.9–42.2	32.9–47.9	22.1–41.0	4.1–24.1

* Significantly different from the all-Australia rate.

Note: Rates are the number of cases of DCIS detected per 100,000 women and age-standardised to the Australian population at 30 June 1991.

- The age-standardised national incidence rate for ductal carcinoma in situ among women of all ages was 10.2 per 100,000 women; this compares with 34.6 per 100,000 women aged 50–69 years.
- Across the states and territories, for the period 1994–1999, the age-standardised incidence rate of ductal carcinoma in situ for women aged 50–69 years ranged from 13.9 per 100,000 women in the Northern Territory to 39.5 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 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).

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 2,511 women in 2000. However, over this period the rates of deaths caused by breast cancer have steadily fallen.

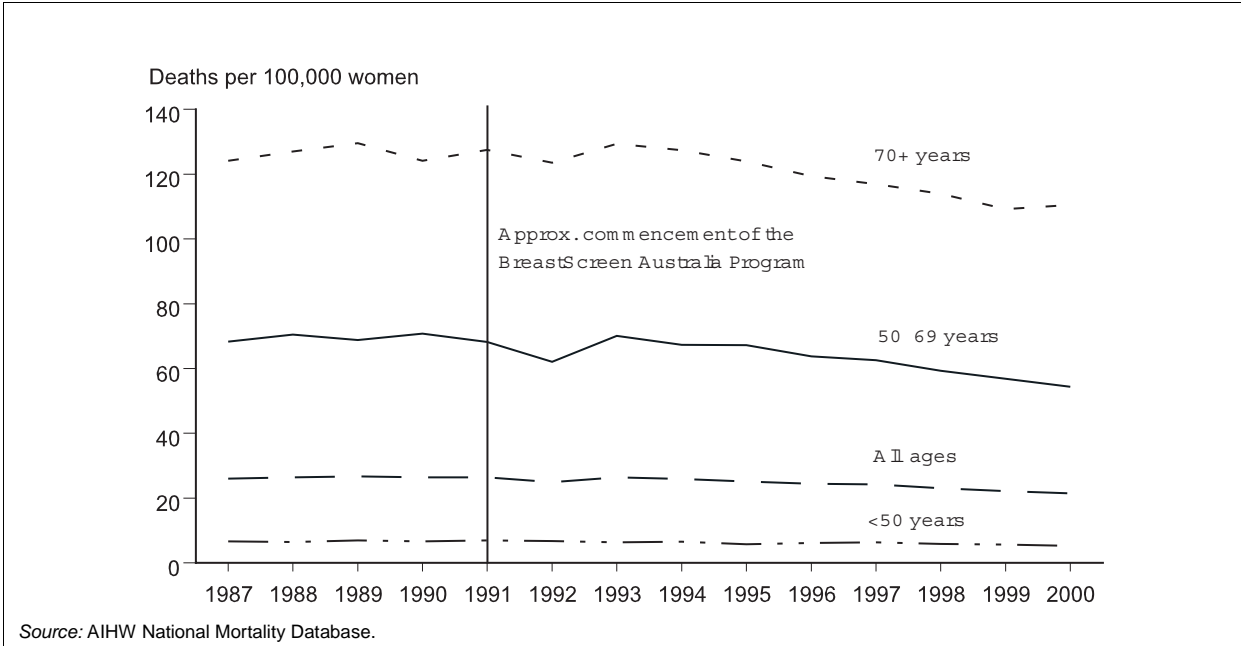
In the longer term, mortality rates from breast cancer are an important indicator of the effectiveness of the screening program. A particularly important indication of the effectiveness of a screening program is the change in mortality rates over time in the target age group for screening. There are, 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 1987 to 2000, the latest national data available. This chapter 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, 1987–2000



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
All ages	26.0	26.4	26.7	26.4	26.4	24.9	26.4	25.9	25.1	24.5	24.2	23.1	22.1	21.5
<50	6.6	6.4	7.0	6.6	6.9	6.7	6.3	6.5	5.7	6.1	6.4	5.8	5.6	5.2
50–69	68.3	70.4	68.8	70.7	68.2	62.1	70.1	67.3	67.2	63.7	62.5	59.3	56.8	54.4
70+	124.2	127.0	129.5	124.1	127.5	123.5	129.3	127.4	123.9	119.4	116.9	113.9	109.2	110.5

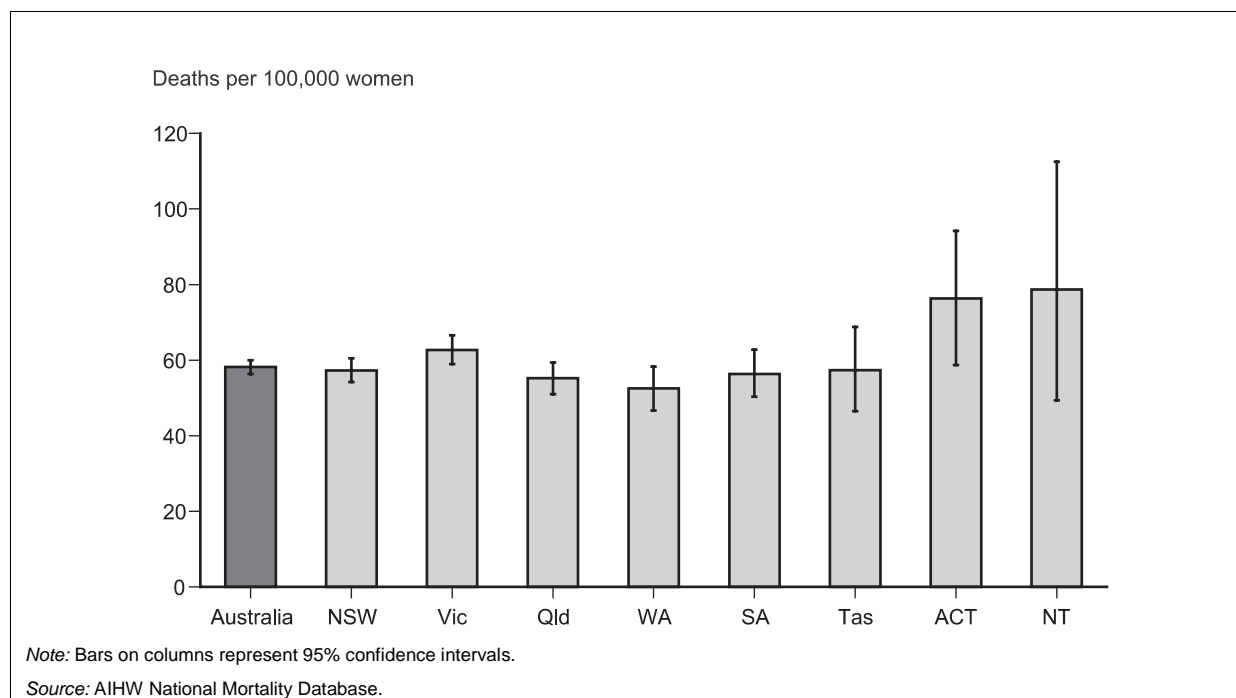
Note: Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 1991.

- The age-standardised mortality rate for women aged 50–69 years fluctuated during the period 1987 to 1993 and thereafter steadily declined. The mortality rates for women of all ages and aged 70 years and over displayed a similar pattern. The mortality rate for women aged less than 50 fluctuated at or below seven deaths per 100,000 women.

For more information, see:

Tables 51 and 52.

Mortality from breast cancer in women aged 50–69, 1997–2000



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	58.2	57.3	62.7	55.3	52.5	56.4	57.3	76.3	78.7
95% CI	56.3–60.0	54.2–60.5	59.0–66.6	51.0–59.4	46.7–58.3	50.3–62.8	46.5–68.8	58.7–94.2	49.4–112.5

Notes

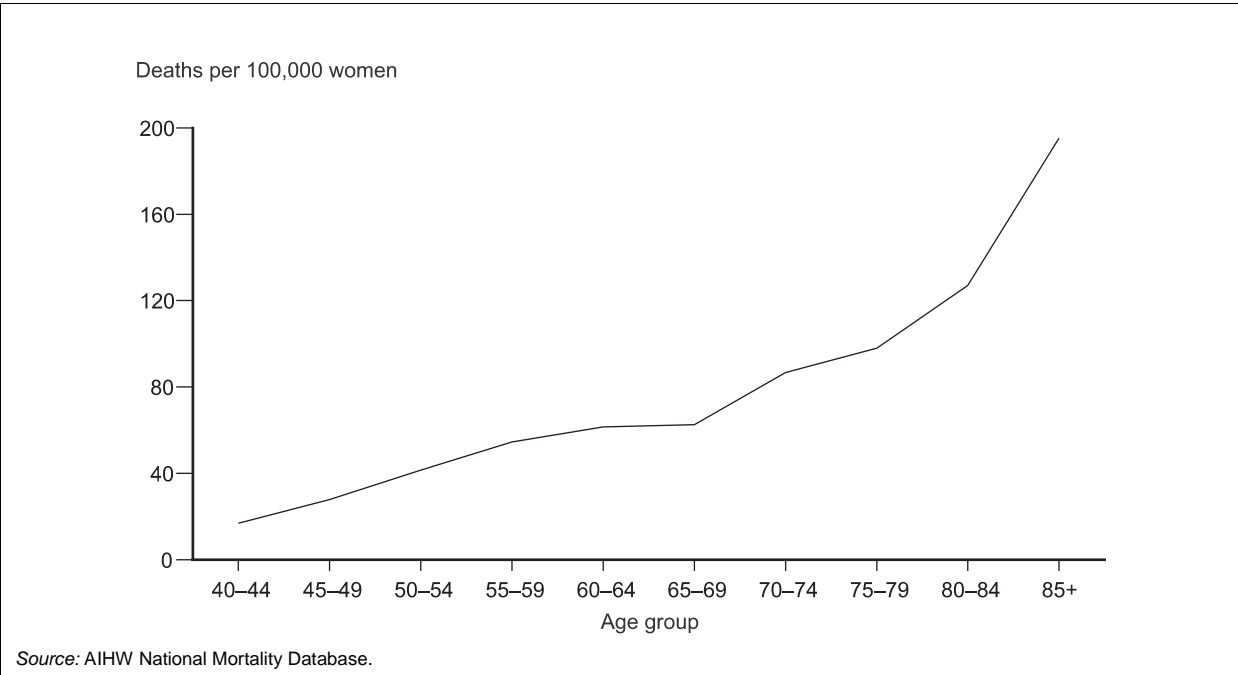
1. Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 1991.
2. None of the rates was significantly different from the all-Australia rate.

- The age-standardised mortality rates for women aged 50–69 years ranged from 52.5 deaths per 100,000 women in Western Australia to 78.7 deaths per 100,000 women in the Northern Territory.

For more information, see:

Tables 53 and 54.

Age-specific mortality rates for breast cancer, females, Australia, 2000



Age	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Rate	16.9	27.8	41.6	54.5	61.5	62.5	86.7	98.1	127.1	195.2

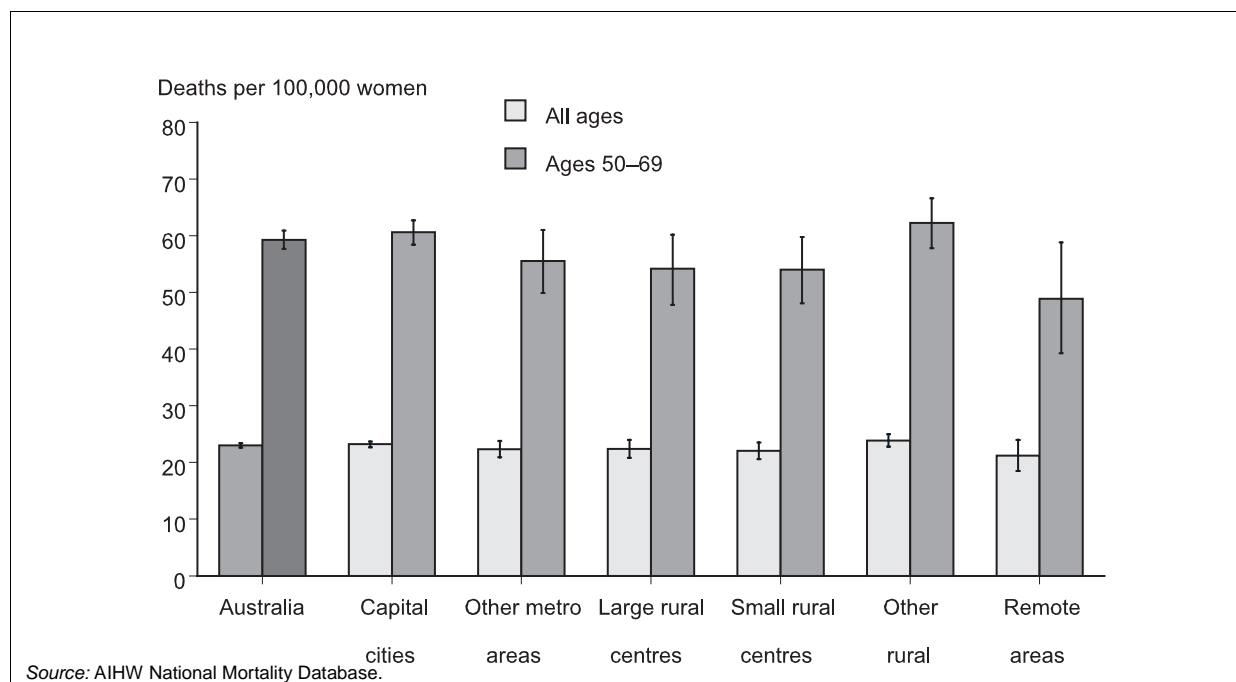
Note: Rates are the number of deaths from breast cancer per 100,000 women.

- Age-specific rates for breast cancer mortality in women increased with age, with the rise becoming sharp for women aged 75 and over. Deaths in females aged less than 20 are uncommon, and the mortality rate for women aged 25-29 is less than one per 100,000.
- The pattern of breast cancer mortality by age group remained the same during the period 1987 to 2000.

For more information, see:

Tables 51 and 52.

Mortality from breast cancer by region, females, 1996–2000



	Australia	Capital cities	Other metropolitan areas	Large rural centres	Small rural centres	Other rural areas	Remote areas
All ages	23.0	23.2	22.3	22.4	22.1	23.9	21.2
95% CI	22.6–23.4	22.7–23.7	20.9–23.8	20.8–24.0	20.6–23.5	22.8–25.0	18.5–24.0
Ages 50–69	59.3	60.6	55.6	54.2	54.0	62.3	48.9
95% CI	57.7–60.9	58.4–62.7	49.9–61.0	47.8–60.2	48.1–59.8	57.8–66.6	39.3–58.8

Notes

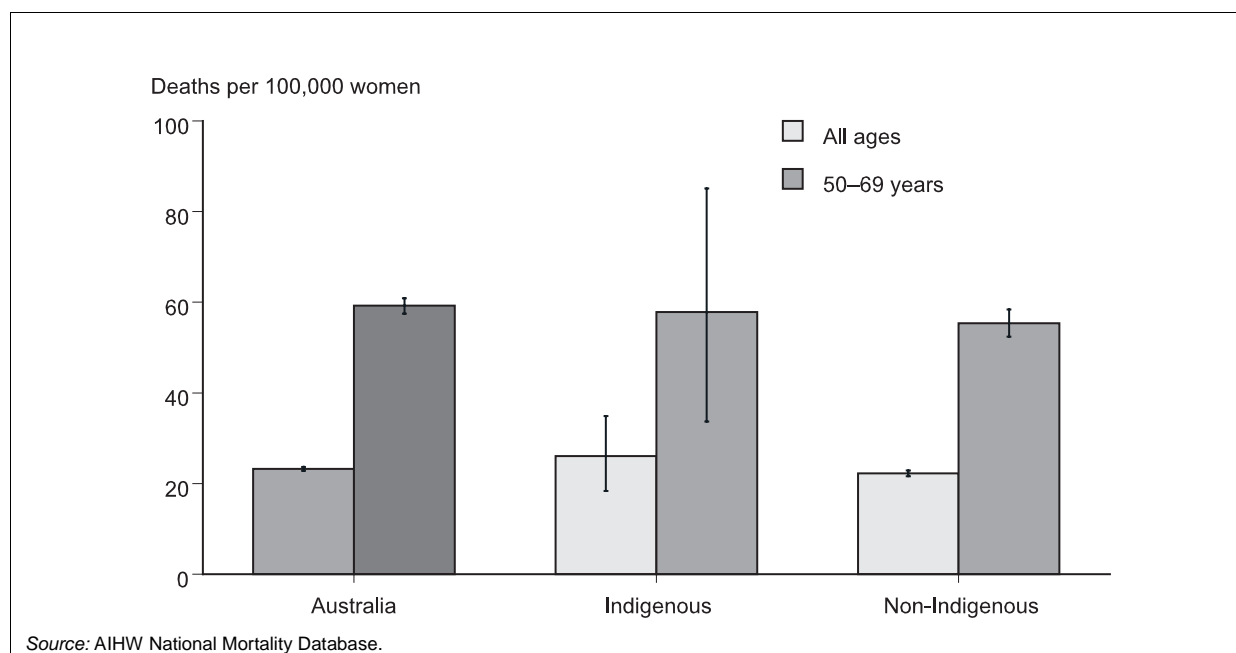
1. Rates are the number of deaths from breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 1991.
2. The Rural, Remote and Metropolitan Areas classification (DPIE & DSHS 1994) was used to create the above categories.
3. None of the rates was significantly different from the all-Australia rate.

- Mortality rates in the 50–69 age group ranged from 48.9 deaths per 100,000 women in 'Remote areas' to 62.3 deaths per 100,000 women in 'Other rural areas'. None of the regional rates was significantly different from the all-Australia rate, nor did they differ significantly from one another.

For more information, see:

Tables 55 and 56.

Mortality from breast cancer by Indigenous status, females, 1996–2000



	Australia	Indigenous	Non-Indigenous
All ages	23.3	26.1	22.3
95% CI	22.8–23.7	18.4–34.9	21.6–22.9
Ages 50–69	59.3	57.8	55.4
95% CI	57.5–60.9	33.7–85.1	52.4–58.4

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 1991.
5. None of the rates was significantly different from the all-Australia rate.

- The age-standardised mortality rates for Indigenous and non-Indigenous women are similar in both the target age group (50–69 years) and the all-ages group, with the rate among Indigenous women being a little higher. The difference between the rates is not significant. The wide confidence intervals around the Indigenous rates indicate that the data were based on a small number of deaths.

For more information, see:

Tables 57 and 68.