Indicator 1: Participation

Participation rate

The participation rate is the percentage of women in the population screened through the BreastScreen Australia Program in a 24-month period by 5-year age groups (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 participation indicator

The participation rate is a population-based indicator that measures the proportion of the eligible population attending the screening program within the recommended screening interval. All women who are Australian citizens and those with permanent residency status are eligible for breast screening. It is important that a high proportion of women in the target age group to attend for screening if BreastScreen Australia is to realise the anticipated reductions in overall mortality from breast cancer (DHSH 1994). The participation rate is a direct measure of this attendance. The indicator also provides information to assist in assessing the effectiveness of the program's communication and education strategies, and can be used to assess whether the target age group is well represented in the screening population.

The focus of this report is on women who have had a mammogram in the BreastScreen Australia Program. However, other mammography for screening and diagnosis (that is, investigating breast symptoms) is conducted outside the program. To some extent, therefore, the results presented in this report are an underestimation of screening on a national basis. This chapter reports on the participation rates for the BreastScreen Australia Program for 2000 and 2001.

One of the objectives of the BreastScreen Australia Program is 'To achieve, after five years, a 70 per cent participation in the National Program by women in the target group (50–69)…' (BSANAC & DHAC 2000). The age-standardised national participation rate for women in the target group in 2000–2001 was 56.9%. This rate has been steadily increasing since 1996–1997, when it was 52.3%.

Age-standardised participation rates for women in the target age group (50–69 years), Australia, 1996–1997 to 2000–2001

	Objective[(a)]	1996–1997	1997–1998	1998–1999	1999–2000	2000–2001
Rate (%)	70.0	52.3	54.3	55.6	55.9	56.9
95% CI	. .	52.1–52.3	54.1–54.4	55.5–55.8	55.8–56.0	56.8–57.0

(a) Performance objective of the BreastScreen Australia Program as set out in the National Accreditation Standards (NQMC unpublished).

. . Not applicable.

Note: Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.

Source: AIHW analysis of BreastScreen Australia data.

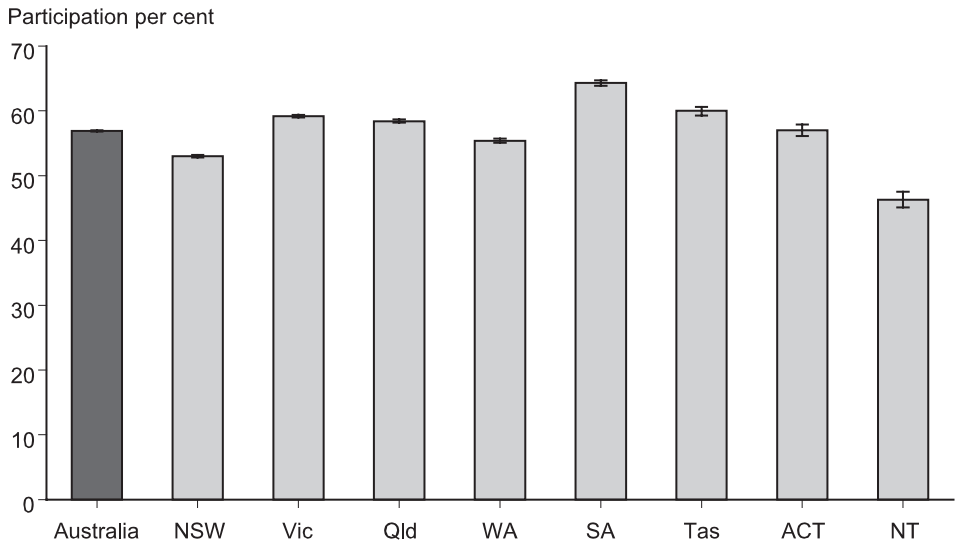
Another BreastScreen Australia objective relating to participation is 'To achieve patterns of participation in the Program which are representative of the socioeconomic, ethnic and cultural profiles of the target population' (BSANAC & DHAC 2000). This chapter reports national participation rates by region, socioeconomic status, Indigenous status, and main language spoken at home.

Participation rates in capital cities and 'Other remote areas' were significantly lower than those in other regions. The lower participation rates in capital cities may reflect greater access to private radiology services. Or there may be a group of women in the target age group who are working women and cannot easily access BreastScreen Australia services. For some women, proximity to services could create over-familiarity and lead to postponement of screening in order to accommodate other priorities. Lower rates in remote areas may reflect a larger proportion of Indigenous women in the target age group who may not find services culturally accessible. However, there are no data to test these hypotheses. Although the participation rate for 'Other remote areas' is lower than that for all other regions except capital cities, it is similar to the all-Australia rate. Participation in country areas is encouraged through the use of mobile mammography units.

There was some variation in the participation rates among different socioeconomic groups, but there was only a marginally significant difference between the most and the least disadvantaged groups. This demonstrates the success of the program in reaching women at all socioeconomic levels, since there is no decline in participation with decreasing socioeconomic status.

Participation among Indigenous women was significantly lower than that of non-Indigenous women. Similarly, participation among women who speak a language other than English at home was significantly lower than that of women who speak English at home. These results should, however, be treated with caution because of the data issues discussed in the report.

Participation of women aged 50–69 years in BreastScreen Australia, 2000–2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate (%)	56.9	53.0*	59.2*	58.4*	55.4*	64.3*	60.0*	57.0	46.3*
95% CI	56.8–57.0	52.9–53.2	59.0–59.4	58.1–58.6	55.1–55.7	63.9–64.7	59.3–60.6	56.0–57.8	45.1–47.5

* Significantly different from the all-Australia rate.

Notes

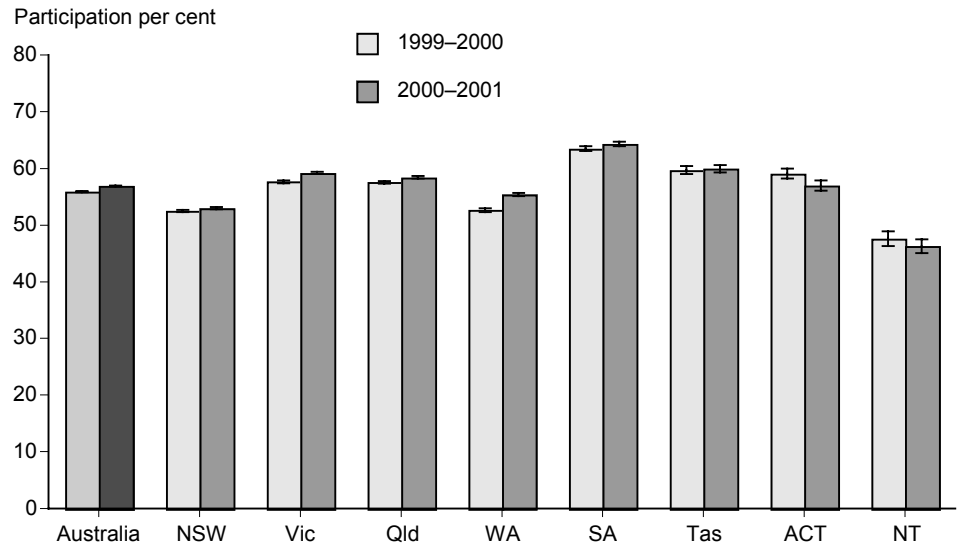
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2000 to 31 December 2001.

- In 2000–2001, 1,567,544 women were screened as part of the BreastScreen Australia Program. Of these women, 1,063,479 (68%) were in the target age group (50–69 years).
- In 2000–2001, 56.9% (age-standardised) of women in the target age group attended a BreastScreen Australia service. The corresponding participation rate for all women aged 40 and over was 37.5% (Table 2).
- Across states and territories, the age-standardised participation rate for women in the target age group ranged from 46.3% in the Northern Territory to 64.3% in South Australia.

For more information, see:

Tables 1 and 2

Participation of women aged 50–69 years in BreastScreen Australia, 1999–2000 and 2000–2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
1999–2000	55.9	52.5	57.7	57.6	52.7	63.5	59.7	59.1	47.6
95% CI	55.8–56.0	52.3–52.7	57.4–57.9	57.3–57.8	52.3–53.0	63.1–63.9	59.0–60.4	58.2–60.0	46.3–48.9
2000–2001	56.9*	53.0*	59.2*	58.4	55.4*	64.3	60.0	57.0*	46.3
95% CI	56.8–57.0	52.9–53.2	59.0–59.4	58.1–58.6	55.1–55.7	63.9–64.7	59.3–60.6	56.0–57.8	45.1–47.5

* Significantly different from the 1999–2000 rate.

Notes

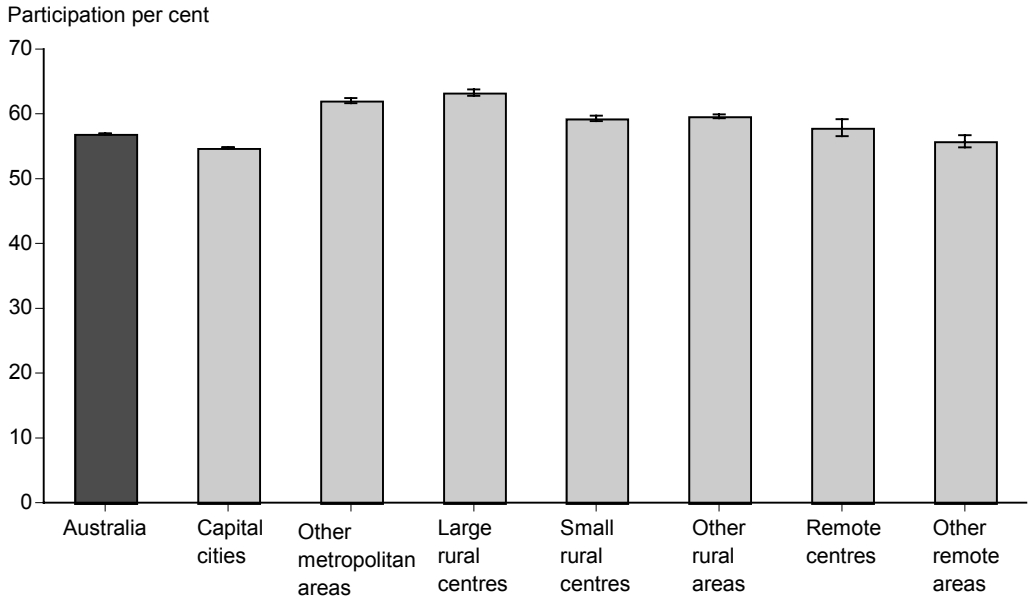
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Periods cover 1 January 1999 to 31 December 2000 and 1 January 2000 to 31 December 2001.

- Nationally, participation in BreastScreen Australia among women in the target age group rose significantly from 1999–2000 to 2000–2001. The national age-standardised participation rate for women in the target age group rose from 55.9% in 1999–2000 to 56.9% in 2000–2001.
- New South Wales, Victoria, Western Australia and the Australian Capital Territory were the only jurisdictions to show a significant change in their age-standardised participation rates for women in the target age group in 2000–2001. In Victoria, the rate rose from 57.7% in 1999–2000 to 59.2% in 2000–2001 and in Western Australia it rose from 52.7% to 55.4%. In the Australian Capital Territory the participation rate fell from 59.1% to 57.0%.

For more information, see:

Tables 1 and 2

Participation of women aged 50–69 years in BreastScreen Australia by region, 2000–2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	Capital cities	Other metro	Large rural centres	Small rural centres	Other rural areas	Remote centres	Other remote
Rate (%)	56.9	54.8*	62.1*	63.3*	59.3*	59.6*	57.9	55.8*
95% CI	56.8–57.0	54.6–54.9	61.7–62.5	62.8–63.7	58.9–59.7	59.3–59.9	56.6–59.2	54.8–56.7

* Significantly different from the all-Australia rate.

Notes

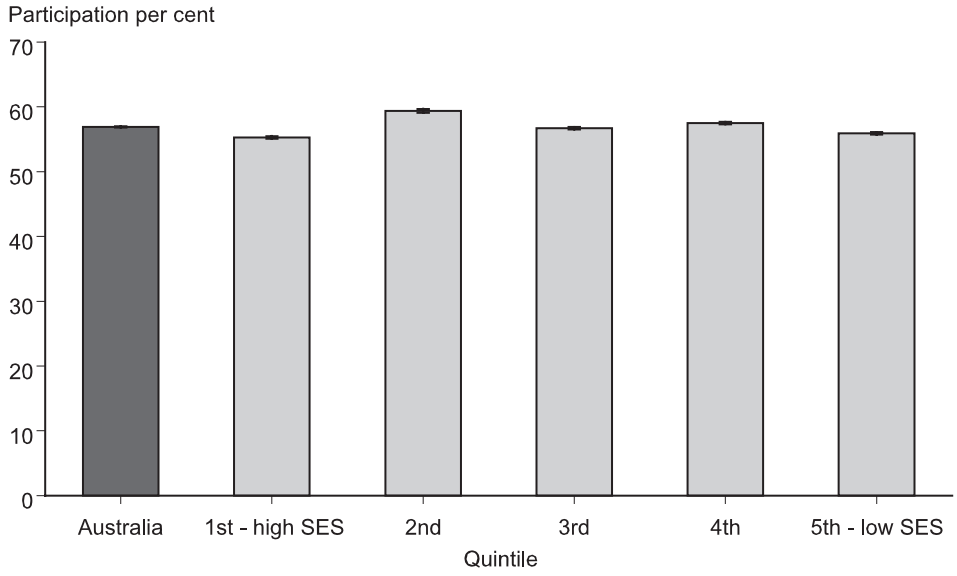
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2000 to 31 December 2001.

- The age-standardised participation rate for women in the target age group (50–69 years) ranged from 54.8% in 'Capital cities' to 63.3% in 'Large rural centres'.
- In all regional categories except 'Capital cities', 'Remote centres' and 'Other remote', the age-standardised participation rates for women in the target age group were significantly higher than the national rate. The rate of 54.8% recorded for 'Capital cities' was significantly lower than the national rate of 56.9%.

For more information, see:

Table 3

Participation of women aged 50–69 years in BreastScreen Australia by socioeconomic status, 2000–2001



Notes:

1. Bars on columns represent 95% confidence intervals.
2. SES means socioeconomic status.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Rate (%)	56.9	55.3*	59.4*	56.7	57.5*	55.9*
95% CI	56.8–57.0	55.1–55.6	59.2–59.7	56.4–56.9	57.3–57.8	55.7–56.1

* Significantly different from the all-Australia rate.

Notes

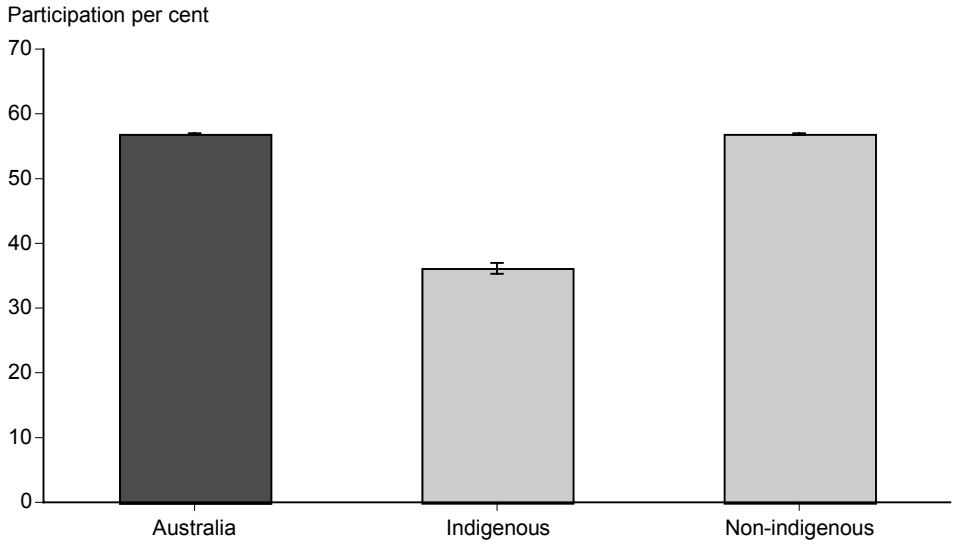
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2000 to 31 December 2001.
3. The first quintile corresponds to the highest socioeconomic status and the fifth to the lowest.

- Women in the target age group with the highest socioeconomic status had the lowest age-standardised participation rate (55.3%) in 2000–2001. The socioeconomic group with the highest age-standardised participation rate for women in the target age group was the second quintile (59.4%).
- For women in the target age group, the most disadvantaged group (fifth quintile) had a significantly higher participation rate (55.9%) than the least disadvantaged group (first quintile), at 55.3%. Both groups' participation rates were significantly lower than the national rate (56.9%).

For more information, see:

Table 4

Participation of women aged 50–69 years in BreastScreen Australia by Indigenous status, 2000–2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	Indigenous	Non-Indigenous
Rate (%)	56.9	36.2*	56.9
95% CI	56.8–57.0	35.3–37.0	56.8–57.0

* Significantly different from the all-Australia rate.

Notes

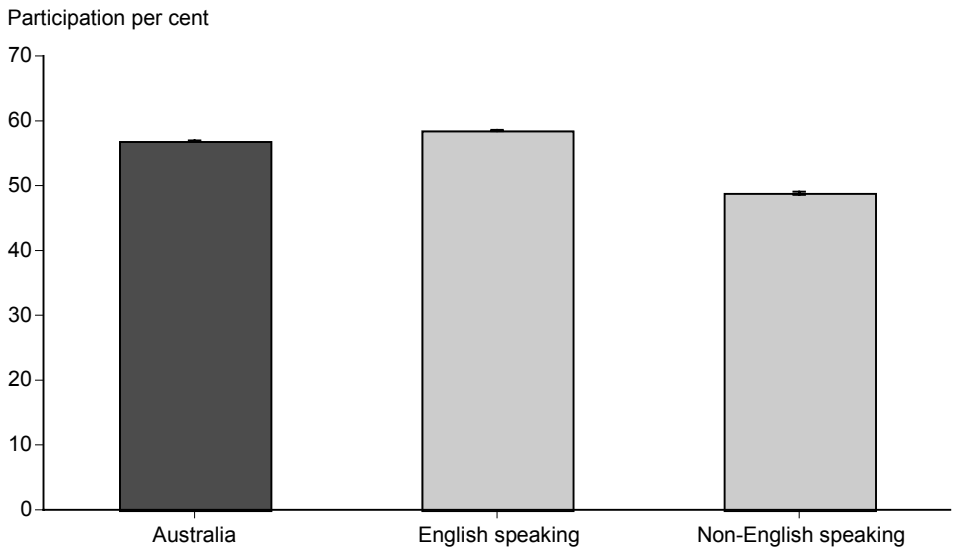
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2000 to 31 December 2001.
3. Women whose Indigenous status was recorded as 'not stated' were included in the analysis for all women but excluded from the analysis by Indigenous status.

- Of the 1,567,544 women participating in screening through the BreastScreen Australia Program in 2000–2001, there were 10,960 (0.7%) who identified themselves as Indigenous. While 4,844 women were classified as not stating their Indigenous status, the true figure is higher because some jurisdictions classified these women as 'non-Indigenous' (Appendix A). The comparison of participation rates between Indigenous and non-Indigenous women should therefore be treated with caution.
- At 36.2%, the age-standardised participation rate for Indigenous women in the target age group was significantly lower than both the national participation rate and the non-Indigenous participation rate. The age-standardised participation rate for non-Indigenous women was the same as the national participation rate (56.9%).

For more information, see:

Table 5

Participation of women aged 50–69 years in BreastScreen Australia by language spoken at home, 2000–2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	English speaking	Non-English speaking
Rate (%)	56.9	58.5*	48.9*
95% CI	56.8–57.0	58.4–58.6	48.6–49.1

* Significantly different from the all-Australia rate.

Notes

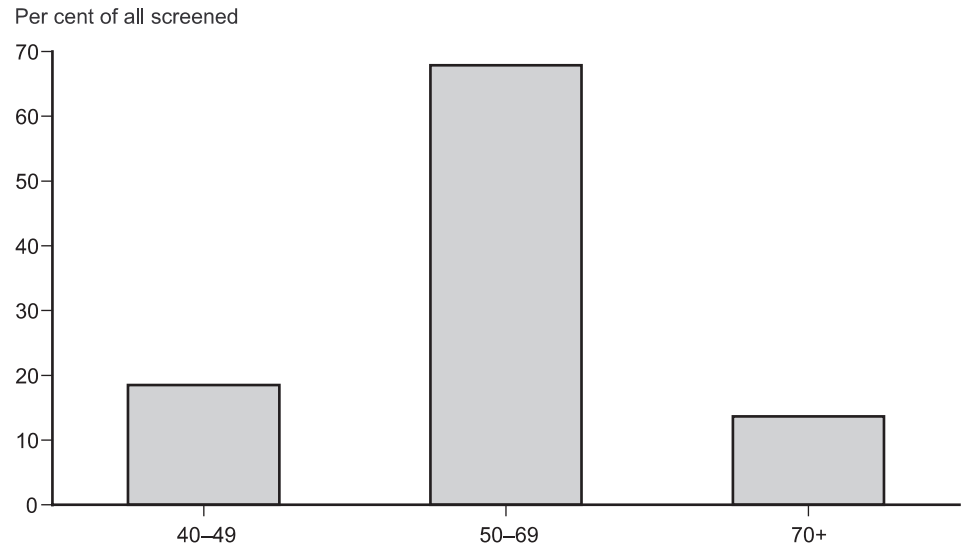
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2000 to 31 December 2001.
3. Women who were recorded as not stating their language spoken at home are included in the analysis for all women but excluded from the analysis by language.

- Of the 1,567,544 women participating in screening through the BreastScreen Australia Program in 2000–2001, there were 212,844 (14%) who identified as non-English speaking. While 1,417 women were classified as not stating the language they spoke at home, the true figure may be higher as some jurisdictions did not use the 'not stated' category. Women in these jurisdictions who did not state the language they spoke at home were allocated to one of the other two categories (Appendix A). Participation rates between English speaking and non-English speaking women should therefore be treated with caution.
- There was a significantly lower age-standardised rate of participation for women in the target age group from a non-English speaking background (48.9%) than for English speaking women (58.5%). English speaking women had a significantly higher participation rate, at 58.6%, than the national rate of 56.9% (age-standardised).

For more information, see:

Table 6

Age-distribution of women aged 40 years and over in BreastScreen Australia, 2000–2001



Source: AIHW analysis of BreastScreen Australia data.

Age	40–49	50–69	70+
%	18.5	67.8	13.7

Notes

1. Rates are the number of women screened as a percentage of all women aged 40 or over screened by BreastScreen Australia.
2. Period covers 1 January 2000 to 31 December 2001.

- The majority of women participating in the BreastScreen Australia Program in 2000–2001 were in the target age group (50–69 years). Of all women screened, 67.8% were aged 50–69 years, 18.5% were aged 40–49 years, and 13.7% were aged 70 years and over.

For more information, see:

Tables 1 and 2

Indicator 2: Detection of small invasive cancers

Small invasive cancer detection rate

The detection rate for small invasive cancers is the rate of women with small diameter (≤ 15mm) invasive breast cancers per 10,000 women screened by five-year age groups (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). Detection rates for all invasive cancers are also provided by screening round (that is, first round and subsequent rounds), five-year age groups and for the target age group.

The small invasive cancer detection indicator

The small invasive cancer detection indicator measures the rate of invasive breast cancers that are 15 mm of less in size diagnosed in women attending BreastScreen Australia for screening. This is expressed as the number of small cancers detected for every 10,000 women screened.

A greater rate of detection of small cancers within the BreastScreen Australia Program increases the likelihood that the anticipated reductions in morbidity and mortality from breast cancer will be achieved. One of BreastScreen Australia's aims is to maximise the early detection of breast cancers (BSANAC & DHAC 2000). Finding breast cancer early often means that the cancer is small, can be more effectively treated, and is less likely to have spread to other parts of the body. As a result, women who have cancers detected early may suffer less morbidity from breast cancer (Day 1991).

In 2001, 65% of all invasive breast cancers detected by BreastScreen Australia in women aged 40 and over were small diameter cancers.

The table below shows the percentage of all invasive cancers detected that were small diameter invasive breast cancers, by screening round, for women screened in 2001.

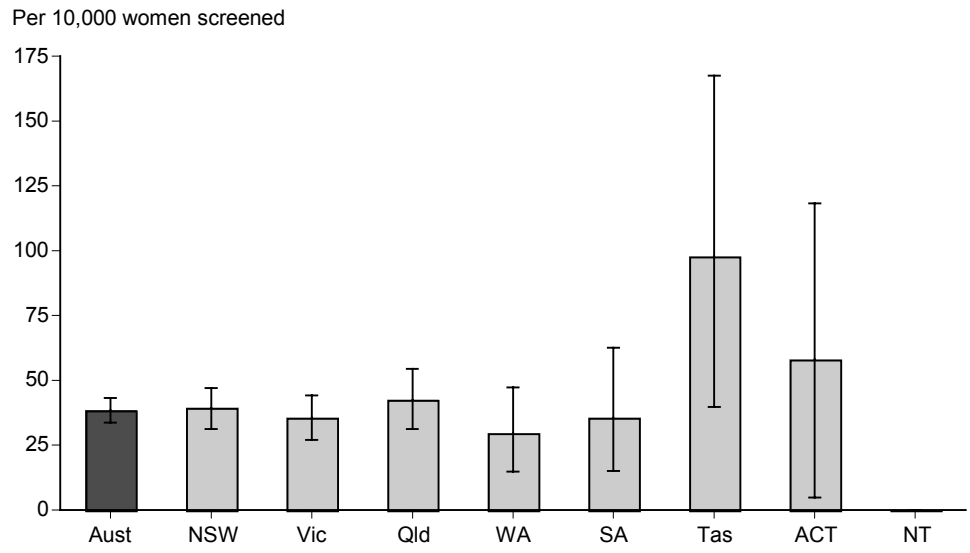
Percentage of invasive cancers detected that were small (≤ 15 mm) in diameter, 2001

	First screening round	Subsequent screening rounds
50–69 years	58.2	66.3
Ages 40 and over	56.4	66.6

Source: AIHW analysis of BreastScreen Australia data.

It is evident that a higher proportion of women attending the program for the first time have tumours larger than 15 mm compared with those who have been screened previously. This is because regular, biennial mammography provides the best chance for the detection of early-stage small cancers (AHMAC 1990).

Small (≤ 15mm) invasive breast cancer detection in women aged 50–69, first screening round, 2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	38.4	39.3	35.5	42.5	29.6	35.5	97.8	57.9	. .
95% CI	33.7–43.2	31.2–47.0	27.0–44.2	31.1–54.4	14.8–47.2	15.1–62.5	39.7–167.5	4.8–118.2	. .

. . Not applicable—no small invasive breast cancers were found in the Northern Territory at first-round screening in 2001.

Notes

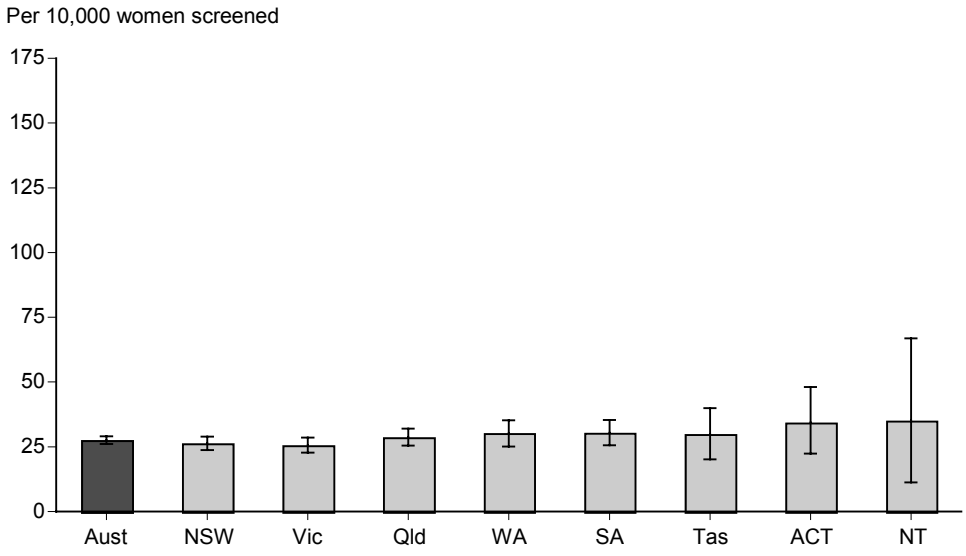
1. Rates are the number of small invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.
2. None of the rates were significantly different from the all-Australia rate.

- Nationally, small diameter invasive cancers were found in 455 women aged 40 and over in the first round of screening. Of these women, 285 were in the target age group (50–69 years). The age-standardised detection rates were 38.4 per 10,000 women screened for women in the target age group and 39.3 per 10,000 women screened for all women aged 40 and over (see Tables 7 and 8).
- Across the states and territories, the age-standardised detection rate for small invasive cancers in women in the target age group ranged from none detected in the Northern Territory to 97.8 per 10,000 women screened in Tasmania. Large confidence intervals can be observed in the smaller states and territories due to the small number of cases detected in these states and territories (see Table 7).

For more information, see:

Tables 7 and 8

Small (≤ 15mm) invasive breast cancer detection in women aged 50–69, subsequent screening rounds, 2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	27.6	26.4	25.6	28.7	30.2	30.4	29.9	34.4	35.1
95% CI	26.1–29.0	23.7–28.9	22.8–28.6	25.5–32.0	25.1–35.2	25.6–35.3	20.1–39.9	22.3–48.1	11.3–66.9

Notes

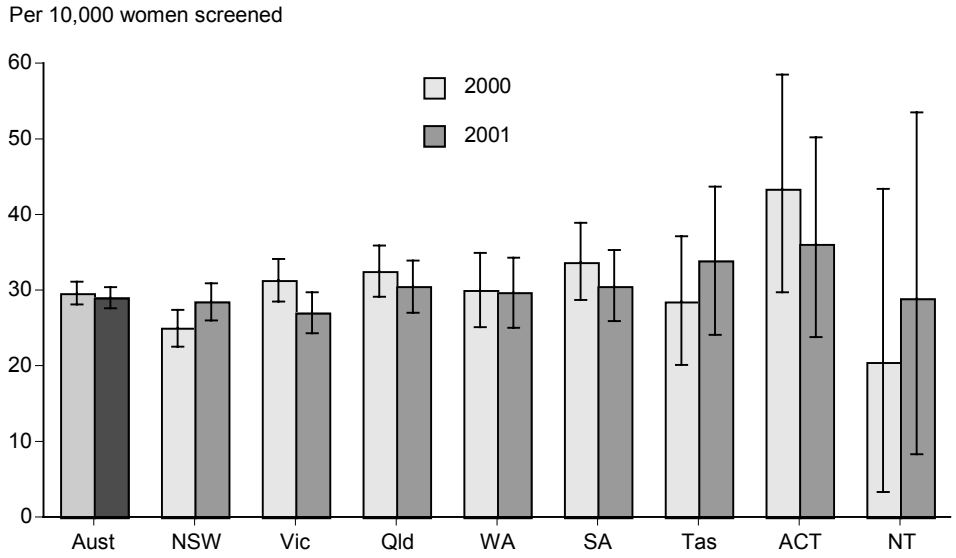
1. Rates are the number of small invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.
2. None of the rates were significantly different from the all-Australia rate.

- For women in the target age group attending a BreastScreen Australia service for their second or subsequent screen in 2001, small (≤ 15 mm diameter) invasive cancers were detected at a rate of 27.6 per 10,000 women screened (age-standardised). The rate for all women aged 40 and over was not significantly different at 25.8 per 10,000 women screened. In both age categories, the small cancer detection rates for women attending their second or subsequent screen were significantly lower than the rates for women attending their first screen (Tables 8 and 10).
- The age-standardised detection rate of small invasive cancers by state and territory ranged from 25.6 per 10,000 women screened in Victoria to 35.1 in the Northern Territory. This difference was not statistically significant. Large confidence intervals can be observed in the smaller states and territories due to the small number of cases detected in these states and territories (see Table 9).

For more information, see:

Tables 9 and 10

Small (≤ 15mm) invasive breast cancer detection in women aged 50–69, all screening rounds, 2000 and 2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2000 rate	29.6	25.0*	31.3	32.5	30.0	33.7	28.5	43.4	20.5
95% CI	28.1–31.1	22.6–27.5	28.5–34.1	29.1–36.0	25.1–34.8	28.6–38.8	20.1–37.1	29.6–58.5	3.3–43.4
2001 rate	29.0	28.5	27.0	30.5	29.7	30.5	33.9	36.1	28.9
95% CI	27.7–30.4	26.0–30.9	24.3–29.7	27.1–33.9	25.0–34.3	26.0–35.3	24.1–43.7	23.8–50.2	8.3–53.5

* Significantly different from the all-Australia rate for the same period.

Notes:

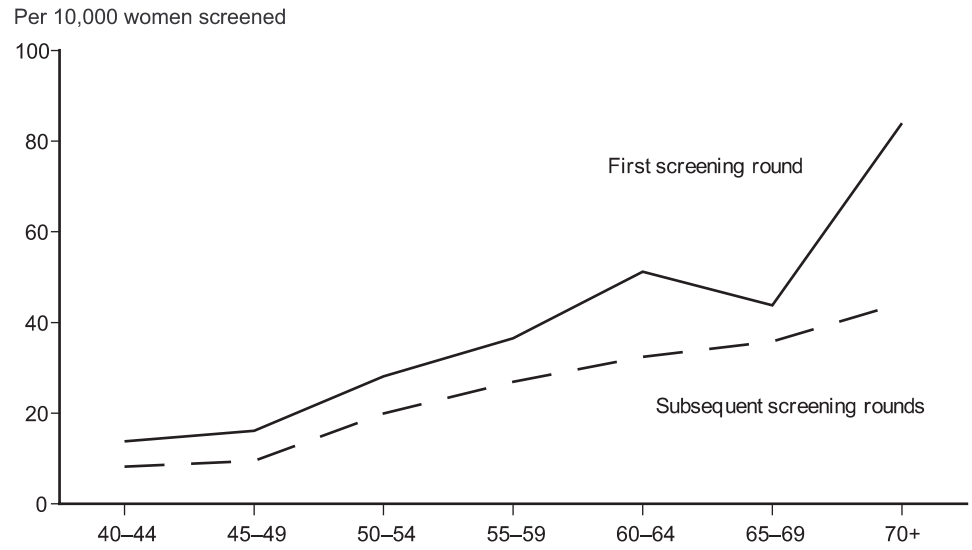
1. Rates are the number of small invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.
2. None of the 2001 rates were significantly different from the 2000 rates.

- Nationally, the age-standardised rate of small (≤ 15 mm diameter) invasive cancer detection was 29 per 10,000 women screened in 2001. This was not significantly different from the 2000 rate of 29.6 per 10,000 women screened. Large confidence intervals can be observed in some states and territories due to the small number of cases detected.
- In 2001, small invasive cancers were detected in 2,379 women. Of these women, 1,652 (69%) were in the target age group (Table 11). Of women in the target age group with a screen detected cancer, 65% were women with small invasive cancers. The proportion of women with small invasive cancers of all women aged 40 and over with a screen detected cancer was also 65%.

For more information, see:

Tables 7, 8, 9, 10 and 11

Small (≤ 15mm) invasive breast cancer detection by age, 2001



Source: AIHW analysis of BreastScreen Australia data.

Age-specific rate	40–44	45–49	50–54	55–59	60–64	65–69	70+
First screening round	13.7	16.1	28.1	36.5	51.2	43.7	84.0
Subsequent screening rounds	8.2	9.5	19.9	26.9	32.4	35.8	44.3

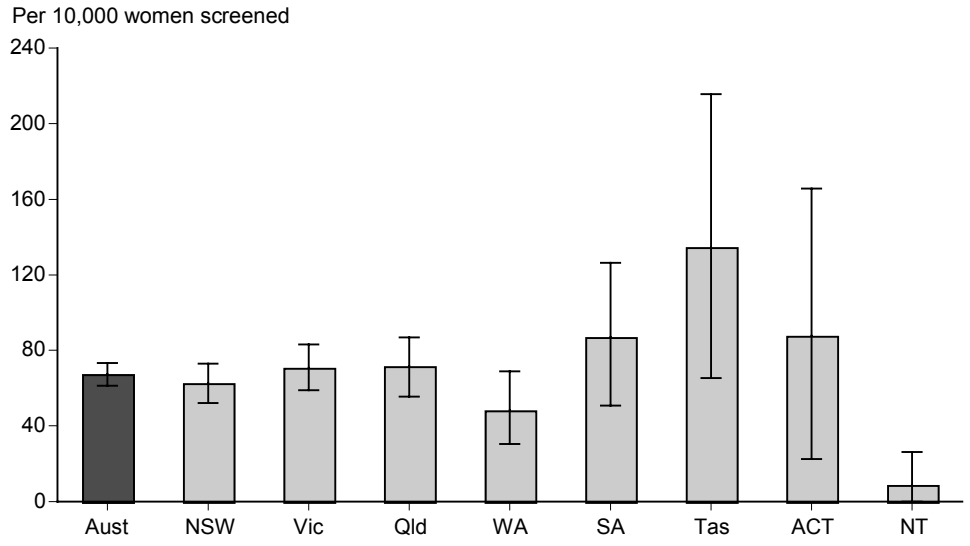
Note: Rates are the number of small invasive cancers detected per 10,000 women screened.

- The steady increase in the detection of small (≤ 15 mm diameter) invasive cancers with age in 2001 reflects the greater incidence of breast cancer with age (Table 42). The detection rate for women aged 40–44 making a first round attendance at a BreastScreen Australia service in 2000–2001 was 13.7 per 10,000 women screened. This rate increases to 84 per 10,000 women screened for women aged 70 and over, apart from a small fluctuation for women aged between 65 and 69. A similar pattern occurred for women making a second or subsequent round attendance, although the rate of increase with age was not as great.

For more information, see:

Tables 8, 10 and 42

All-size invasive breast cancer detection in women aged 50–69 years, first screening round, 2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	67.3	62.5	70.7	71.6	48.2	86.9	134.8	87.6	8.8*
95% CI	61.2–73.2	52.0–73.0	58.9–83.0	55.5–86.7	30.3–68.8	50.7–126.4	65.3–215.6	22.5–165.7	0.0–26.3

* Significantly different from the all-Australia rate.

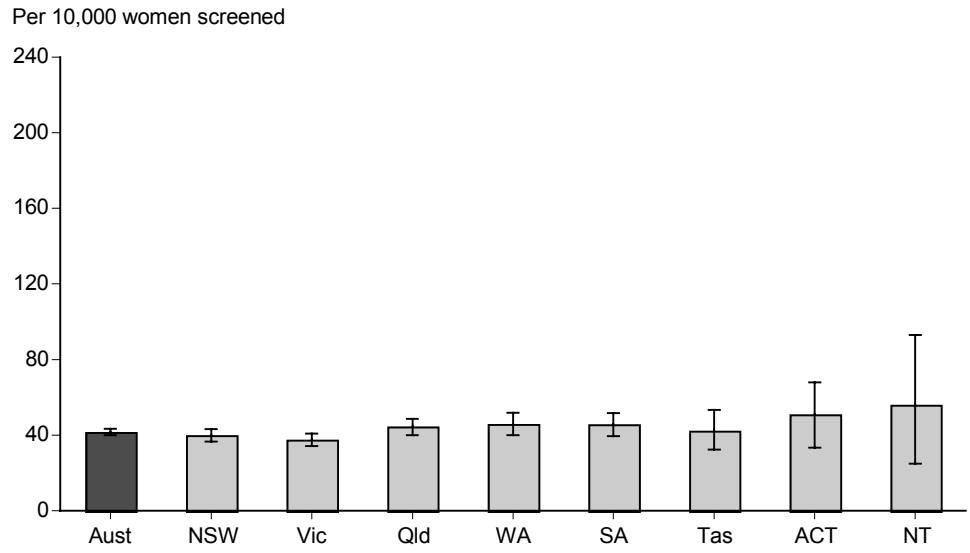
Note: Rates are the number of invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.

- The age-standardised rate of detection of invasive cancers of all sizes for women attending a BreastScreen Australia Service for the first time in 2001 was 67.3 per 10,000 women screened. Across the states and territories, the Northern Territory had the lowest age-standardised detection rate, at 8.8 per 10,000 women screened, and Tasmania had the highest rate, at 134.8 per 10,000 women screened.
- The detection rate for invasive cancers among all women aged 40 and over (69.9 per 10,000 women screened) was not significantly different from the rate for women in the target age group (67.3 per 10,000 women screened).

For more information, see:

Tables 13 and 14

All-size invasive breast cancer detection in women aged 50–69 years, subsequent screening rounds, 2001



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Rate	41.6	39.9	37.6	44.6	45.9	45.7	42.3	50.9	56.1
95% CI	39.9–43.3	36.6–43.1	34.2–40.8	40.0–48.7	40.0–51.8	39.4–51.7	32.3–53.4	33.4–67.9	24.8–93.0

Notes

1. Rates are the number of invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.
2. None of the rates were significantly different from the all-Australia rate.

- The age-standardised rate of detection of invasive cancers of all sizes in women in the target age group attending a BreastScreen Australia service in 2001 for their second or subsequent visit was 41.6 per 10,000 women screened. This is significantly lower than the detection rate for first round attendances (67.3 per 10,000 women screened).
- The age-standardised rate of detection of invasive cancers for all women aged 40 and over, attending for their second or subsequent screen was 39.0 per 10,000 women screened. This is not significantly different from the rate for women in the target group (41.6 per 10,000 women screened).
- Across the states and territories, age-standardised rate of detection of all invasive cancers for women in the target age group ranged from 37.6 per 10,000 women screened in Victoria to 56.1 per 10,000 women screened in the Northern Territory.

For more information, see:

Tables 15 and 16