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 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 2001 and 2002.

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 2001–2002 was 57.1%. 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 2001–2002

	Objective[(a)]	1996–1997	1997–1998	1998–1999	1999–2000	2000–2001	2001–2002
Rate (%)	70.0	52.3	54.3	55.6	55.9	56.9	57.1
95% CI	. .	52.1–52.3	54.1–54.4	55.5–55.8	55.8–56.0	56.8–57.0	57.0–57.2

(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Performance objective of the BreastScreen Australia Program as set out in the National Accreditation Standards (NQMC unpublished).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. Below are some key points on each of these variables.

Region

Participation rates in 'Major cities' and 'Very remote' areas were significantly lower than those in other regions.

The lower participation rates in 'Major cities' may reflect greater access to, and use of, 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 'Very remote' areas may reflect a larger proportion of Indigenous women in the target age group who may not find services culturally accessible. The lower rates may also reflect the unavailability of BreastSceen Australia services in some remote areas of the Northern Territory. However, there are no data to test these hypotheses. Participation in rural areas is encouraged through the use of mobile mammography units.

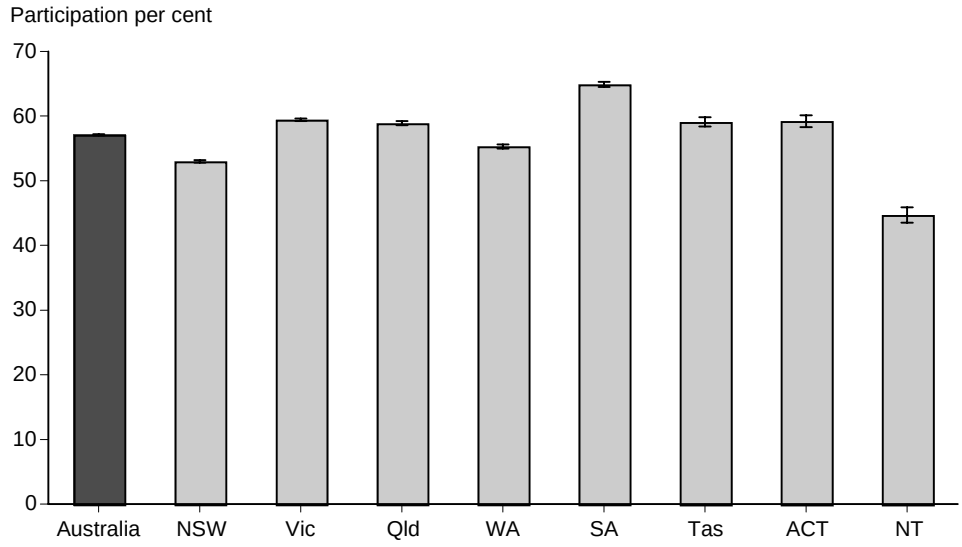
Socioeconomic status

Breast cancer incidence and mortality are highest among women with the highest socioeconomic status (Tracey et al. 2004; Dunn et al. 2002). 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.

Indigenous status and main language spoken at home

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, 2001–2002



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 (%)	57.1	53.0*	59.4*	58.9*	55.3*	64.9*	59.1*	59.2*	44.7*
95% CI	57.0–57.2	52.8–53.2	59.2–59.6	58.6–59.1	55.0–55.7	64.5–65.3	58.5–59.8	58.3–60.1	43.5–45.9

* Significantly different from the all-Australia rate.

Notes

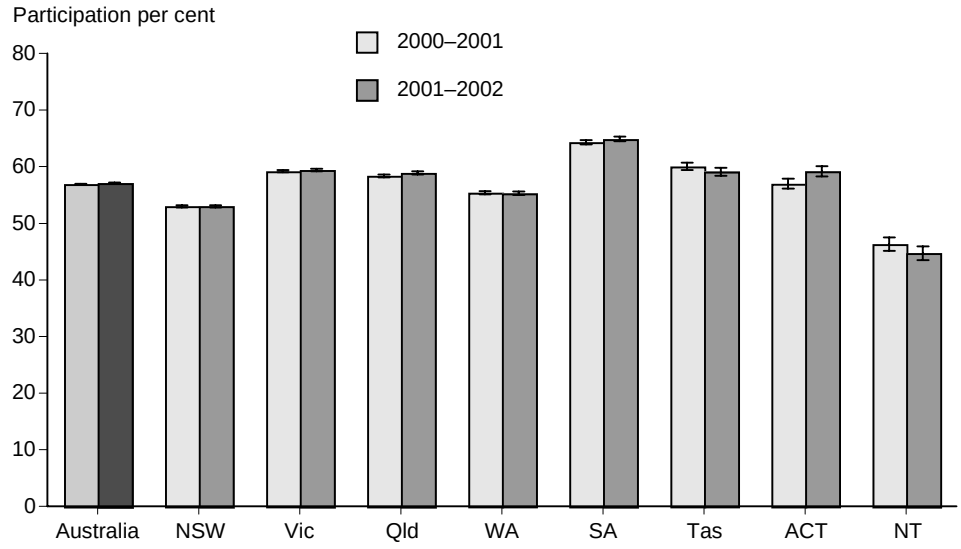
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2001 to 31 December 2002.

- Of the 1,611,262 women screened during 2001 and 2002 as part of the BreastScreen Australia Program, 1,102,227 (68%) were in the target age group (50–69 years).
- In 2001–2002, 57.1% (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%.
- Across states and territories, the age-standardised participation rate for women in the target age group ranged from 44.7% in the Northern Territory to 64.9% in South Australia. It should be noted that BreastScreen Australia services are not provided in some remote areas of the Northern Territory and this may lower the participation rate for this jurisdiction.

For more information, see:

Tables 1 and 2

Participation of women aged 50–69 years in BreastScreen Australia, 2000–2001 and 2001–2002



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2000–2001	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
2001–2002	57.1	53.0	59.4	58.9	55.3	64.9	59.1	59.2*	44.7
95% CI	57.0–57.2	52.8–53.2	59.2–59.6	58.6–59.1	55.0–55.7	64.5–65.3	58.5–59.8	58.3–60.1	43.5–45.9

* Significantly different from the 2000–2001 rate.

Notes

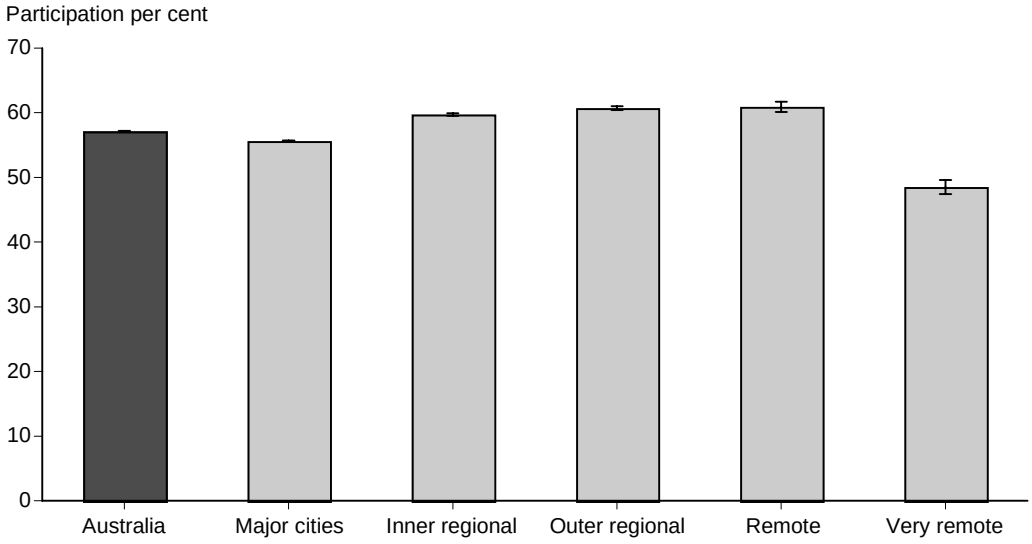
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Periods cover 1 January 2000 to 31 December 2001 and 1 January 2001 to 31 December 2002.

- Participation in BreastScreen Australia among women in the target age group rose from 56.9% (age-standardised) in 2000–2001 to 57.1% in 2001–2002. However, this difference was not significant.
- The Australian Capital Territory was the only jurisdiction to show a significant increase in participation for women in the target age group in 2001–2002. In the Australian Capital Territory, the age-standardised participation rate rose from 57.0% in 2000–2001 to 59.2% in 2001–2002.

For more information, see:

Tables 1 and 2

Participation of women aged 50–69 years in BreastScreen Australia by region, 2001–2002



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	Major cities	Inner regional	Outer regional	Remote	Very remote
Rate (%)	57.1	55.6*	59.7*	60.7*	60.9*	47.9*
95% CI	57.0–57.2	55.5–55.7	59.5–60.0	60.3–61.0	59.9–61.8	46.6–49.2

* Significantly different from the all-Australia rate.

Notes

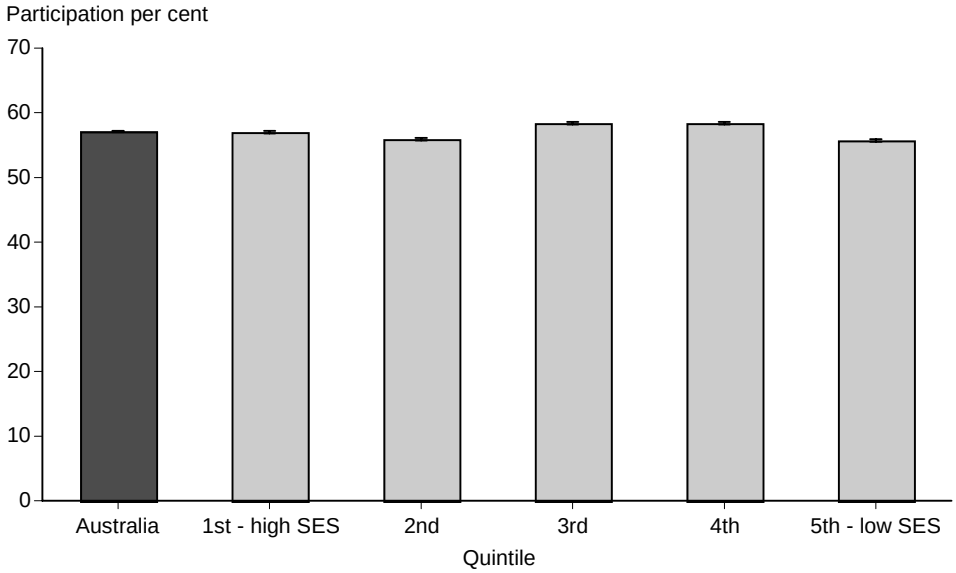
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2001 to 31 December 2002.
3. The Australian Standard Geographical Classification (ASGC) was used to create the above categories (ABS 2001).

- Participation in BreastScreen Australia varied significantly between regions in 2001–2002.
- Age-standardised participation rates for women in the target age group in 'Major cities' (55.6%) and 'Very remote' areas (47.9%) were significantly lower than the national rate of 57.1%. Significantly higher than the national rate were 'Inner regional' areas at 59.7%, 'Outer regional' areas at 60.7% and 'Remote' areas at 60.9%.

For more information, see:

Table 3

Participation of women aged 50–69 years in BreastScreen Australia by socioeconomic status, 2001–2002



Notes

1. Bars on columns represent 95% confidence intervals.
2. SES means socioeconomic status (see details in Appendix A).

Source: AIHW analysis of BreastScreen Australia data.

	Australia	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Rate (%)	57.1	57.0	55.9*	58.4*	58.4*	55.7*
95% CI	57.0–57.2	56.7–57.2	55.6–56.1	58.2–58.6	58.1–58.6	55.5–56.0

* Significantly different from the all-Australia rate.

Notes

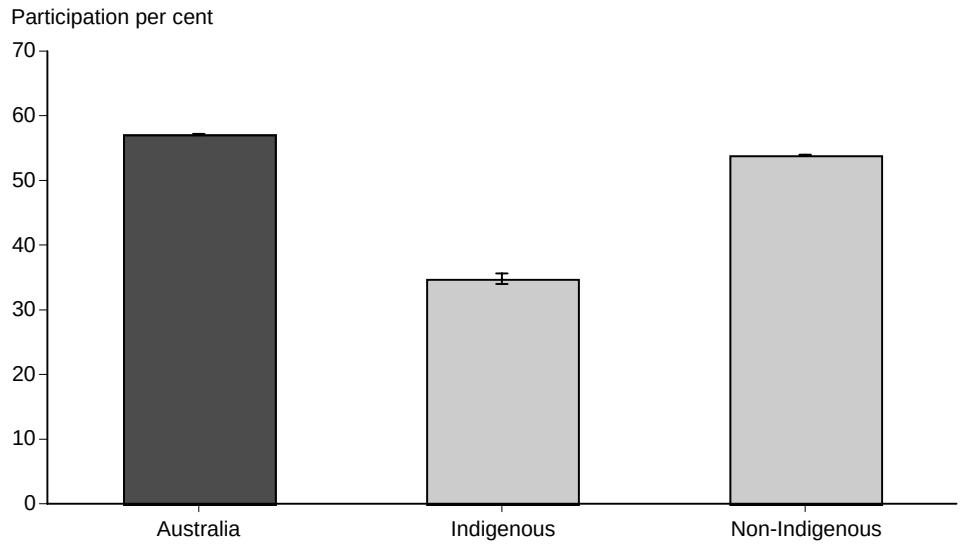
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2001 to 31 December 2002.
3. The first quintile corresponds to the highest socioeconomic status and the fifth to the lowest socioeconomic status.

- Women in the target age group living in postcodes with the lowest socioeconomic status had the lowest age-standardised participation rate (55.7%) in 2001–2002. The socioeconomic groups with the highest participation rates were the third and fourth quintiles, both 58.4%.
- The participation rate for women living in postcodes with the highest socioeconomic status (57.0%) was significantly higher than women in the lowest socioeconomic group.

For more information, see:

Table 4

Participation of women aged 50–69 years in BreastScreen Australia by Indigenous status, 2001–2002



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	Indigenous	Non-Indigenous
Rate (%)	57.1	34.8*	53.9
95% CI	57.0–57.2	34.0–35.6	53.8–54.0

* Significantly different from the non-Indigenous rate.

Notes

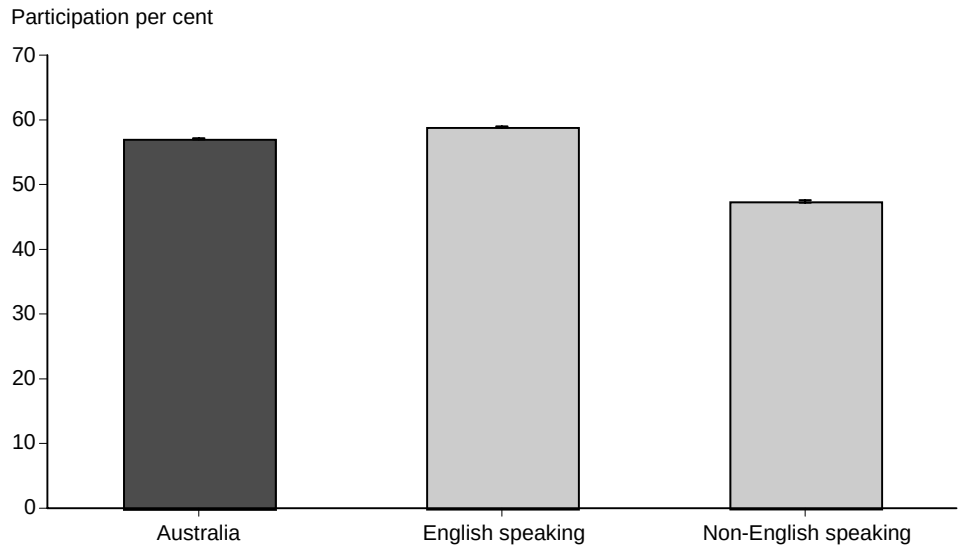
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2001 to 31 December 2002.
3. Women whose Indigenous status was recorded as 'not stated' were included in the analysis for all women but excluded from the analysis by Indigenous status.

- At the 2001 national population Census, 1.1% of the female population aged 50–69 years were Aboriginal and Torres Strait Islander people.
- Of the 1,611,262 women aged 40 and over participating in screening through the BreastScreen Australia Program in 2001–2002, there were 11,542 (0.7%) who identified themselves as Indigenous. While 85,037 women were classified as not stating their Indigenous status, the true figure is higher because some jurisdictions classified these women as 'non-Indigenous' (see Appendix A for coding of Indigenous status). The comparison of participation rates between Indigenous and non-Indigenous women should therefore be treated with caution.
- The age-standardised participation rate for Indigenous women (34.8%) was significantly lower than both the non-Indigenous rate (53.9%) and the national rate (57.1%).

For more information, see:

Table 5

Participation of women aged 50–69 years in BreastScreen Australia by language spoken at home, 2001–2002



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	English speaking	Non-English speaking
Rate (%)	57.1	58.9*	47.4*
95% CI	57.0–57.2	58.8–59.0	47.2–47.7

* Significantly different from the all-Australia rate.

Notes

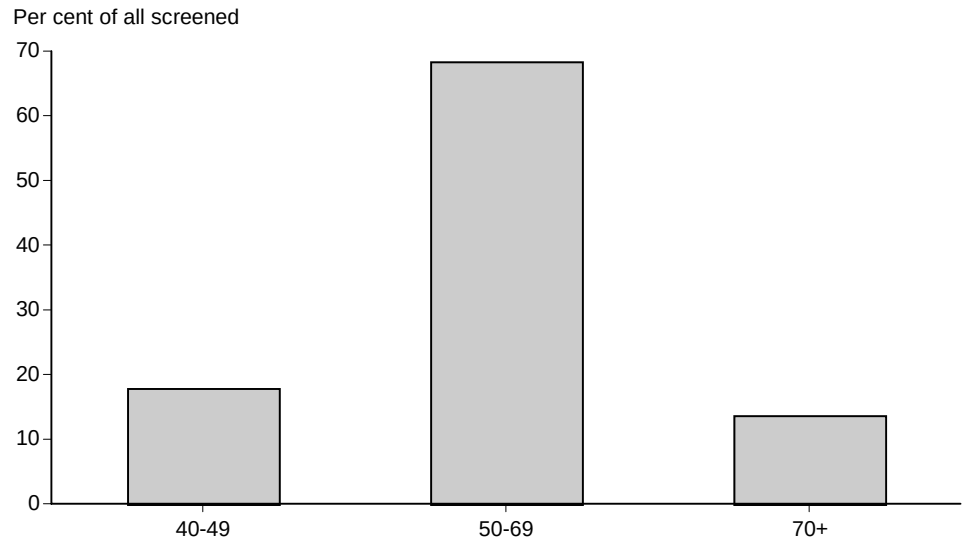
1. Rates are the number of women screened as a percentage of the eligible female population and age-standardised to the Australian population at 30 June 2001.
2. Period covers 1 January 2001 to 31 December 2002.
3. Women who were recorded as not stating their language spoken at home are included in the analysis for all women but excluded from the analysis by language.

- Of the 1,611,262 women aged 40 and over participating in screening through the BreastScreen Australia Program in 2001–2002, there were 214,986 (13%) who identified as non-English speaking. While 3,944 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 participation rate for women in the target age group from a non-English speaking background (47.4%) than for English speaking women (58.9%). English speaking women had a significantly higher participation rate, at 58.9%, than the national rate of 57.1% (age-standardised).

For more information, see:

Table 6

Age distribution of women aged 40 years and over screened by BreastScreen Australia, 2001–2002



Source: AIHW analysis of BreastScreen Australia data.

Age	40–49	50–69	70+
%	17.9	68.4	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 2001 to 31 December 2002.

- Two-thirds (64.4%) of women participating in the BreastScreen Australia Program in 2001–2002 were in the target age group (50–69 years). Of all women screened, 17.9% 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 (≤ 15 mm) 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 women with invasive breast cancers that are 15 mm or less in size detected at a BreastScreen Australia service. This is expressed as the number of women with 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 desired 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 2002, 63% 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 2002.

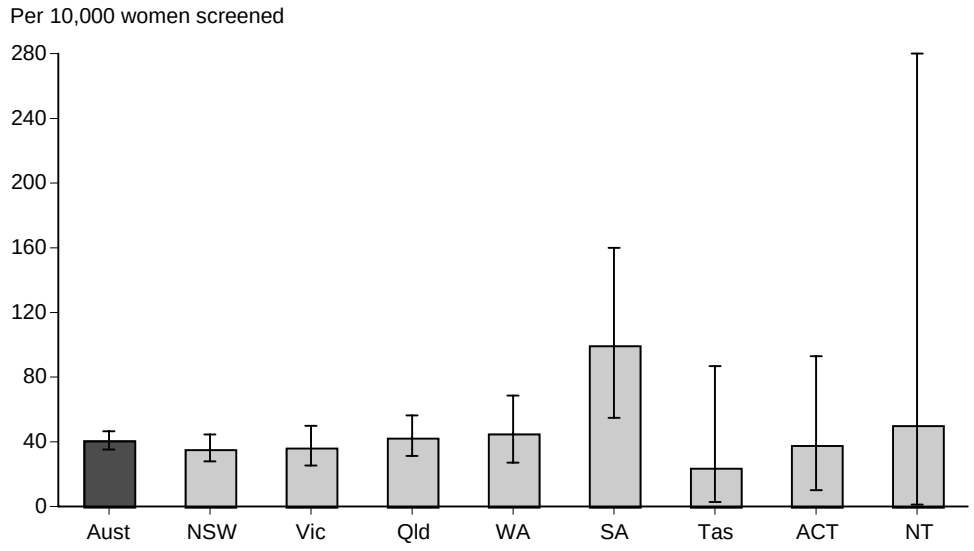
Percentage of invasive cancers detected that were small (≤ 15 mm) in diameter, 2002

Age group	First screening round	Subsequent screening rounds
50–69 years	55.7	65.2
40 years and over	54.0	65.8

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, 2002



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	40.5	35.5	36.4	42.5	45.2	99.7*	24.0	38.0	50.3
95% CI	35.1–46.4	27.9–44.5	25.5–50.0	31.2–56.4	27.2–68.6	54.8–159.8	2.9–86.8	10.2–93.0	1.3–280.0

* Significantly different from the all-Australia rate.

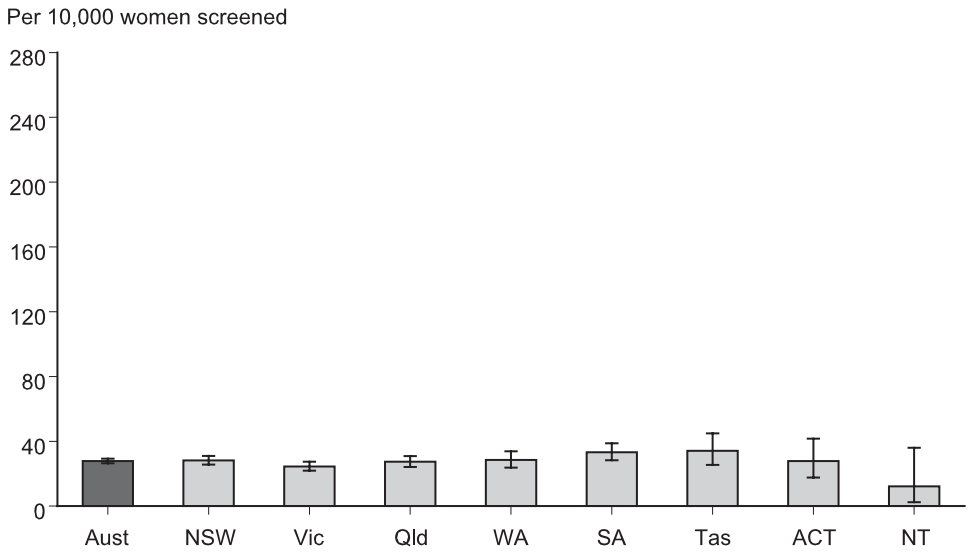
Note: Rates are the number of women with small invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.

- In 2002, small-diameter invasive cancers were found in 394 women aged 40 and over attending a BreastScreen Australia service for their first screen. Of these women, 256 were in the target age group (50–69 years). The age-standardised detection rate was 40.5 per 10,000 women screened for women in the target age group and 39.1 per 10,000 women screened for all women aged 40 and over.
- Across the states and territories, the age-standardised detection rate for small invasive cancers in women in the target age group ranged from 24.0 per 10,000 women screened in Tasmania to 99.7 per 10,000 women screened in South Australia. Large confidence intervals can be observed in the smaller states and territories due to the small number of cases detected in these jurisdictions.

For more information, see:

Tables 7 and 8

Small (≤ 15 mm) invasive breast cancer detection in women aged 50–69, subsequent screening rounds, 2002



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	27.8	28.2	24.5	27.4	28.5	33.2	34.1	27.8	12.2
95% CI	26.3–29.3	25.6–31.0	21.9–27.4	24.3–30.9	23.9–33.8	28.2–38.7	25.3–44.8	17.7–41.6	2.3–36.0

Notes

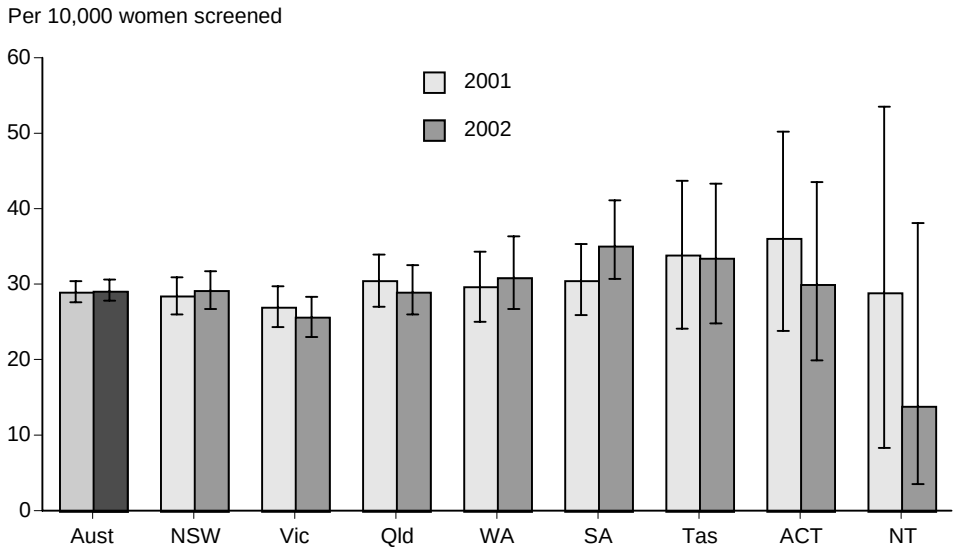
1. Rates are the number of women with small invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.
2. None of the rates was significantly different from the all-Australia rate.

- In 2002, small-diameter invasive cancers were found in 1,963 women aged 40 and over attending a BreastScreen Australia service for their second or subsequent screen. Of these women, 1,408 were in the target age group (50–69 years). The age-standardised detection rate was 27.8 per 10,000 women screened for women in the target age and 26.2 for all women aged 40 and over. 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 12.2 per 10,000 women screened in the Northern Territory to 34.1 in Tasmania. However, this difference is not statistically significant. The large confidence intervals observed in the smaller states and territories are due to the small number of cases detected in these jurisdictions.

For more information, see:

Tables 9 and 10

Small (≤ 15 mm) invasive breast cancer detection in women aged 50–69, all screening rounds, 2001 and 2002



Note: Bars on columns represent 95% confidence intervals.

Source: AIHW analysis of BreastScreen Australia data.

	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
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
2002 rate	29.1	29.1	25.6	29.1	31.2	35.7	33.1	30.1	14.6
95% CI	27.7–30.5	26.6–31.7	23.0–28.3	26.0–32.4	26.6–36.3	30.7–41.2	24.8–43.3	20.0–43.5	3.6–38.1

Notes

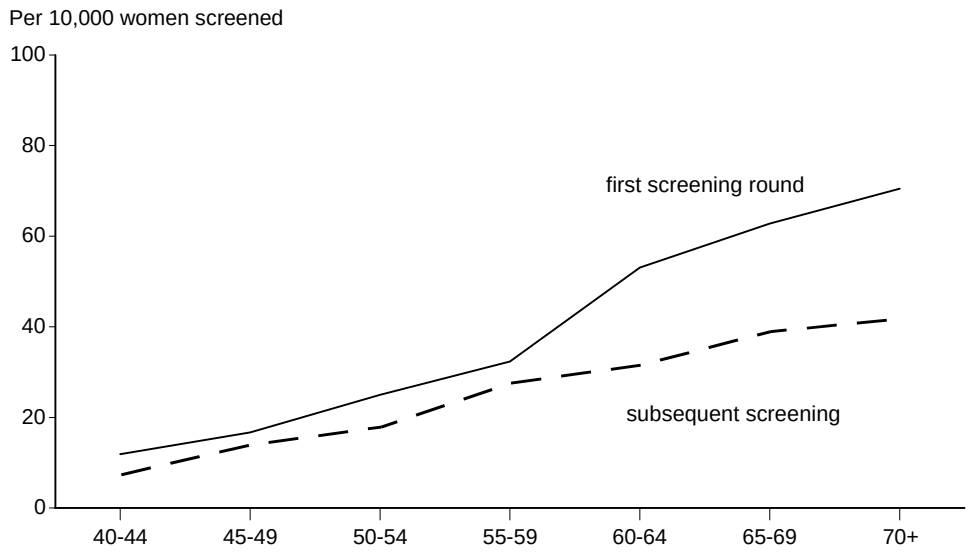
1. Rates are the number of women with small invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.
2. None of the 2002 rates was significantly different from the 2001 rates.

- There was no significant change in the detection rate of small invasive cancers from 2001 to 2002. The national age-standardised detection rate was 29.0 per 10,000 women screened in 2001 and 29.1 per 10,000 women screened in 2002.
- In 2002, small invasive cancers were detected in 2,357 women. Of these women, 1,664 (71%) were in the target age group. Small invasive cancers made up 64% of all cancers detected in 2002. For women in the target age group, the proportion of small invasive cancers out of all cancers was also 64%.

For more information, see:

Tables 7, 8, 9, 10, 11 and 12

Small (≤ 15mm) invasive breast cancer detection by age, 2002



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	11.9	16.7	25.0	32.3	53.1	62.8	70.5
Subsequent screening rounds	7.6	14.1	18.1	27.8	31.8	39.2	42.0

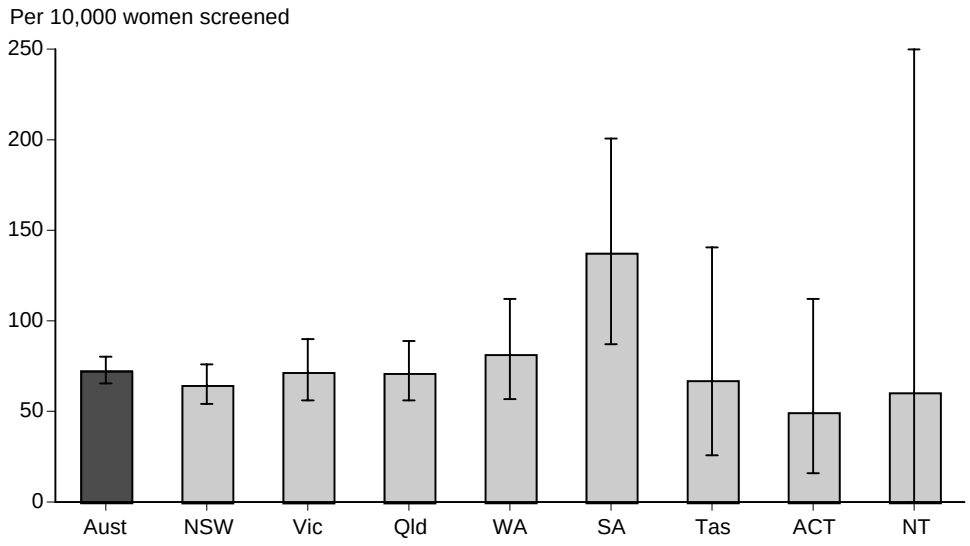
Note: Rates are the number of women with small invasive cancers detected per 10,000 women screened.

- The steady increase in the detection of small (≤ 15 mm diameter) invasive cancers with age reflects the greater incidence of breast cancer with age (Table 43). The detection rate for women aged 40–44 years making a first round attendance at a BreastScreen Australia service in 2002 was 11.9 per 10,000 women screened. This rate increased to 70.5 per 10,000 women screened for women aged 70 and over. 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 43

All-size invasive breast cancer detection in women aged 50–69 years, first screening round, 2002



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	72.2	64.4	71.7	71.2	81.6	137.5*	67.1	49.5	60.4
95% CI	65.0–80.0	54.1–76.0	56.0–89.8	56.2–88.9	56.7–112.1	87.0–200.6	25.8–140.5	15.8–112.1	0.0–249.9

* Significantly different from the all-Australia rate.

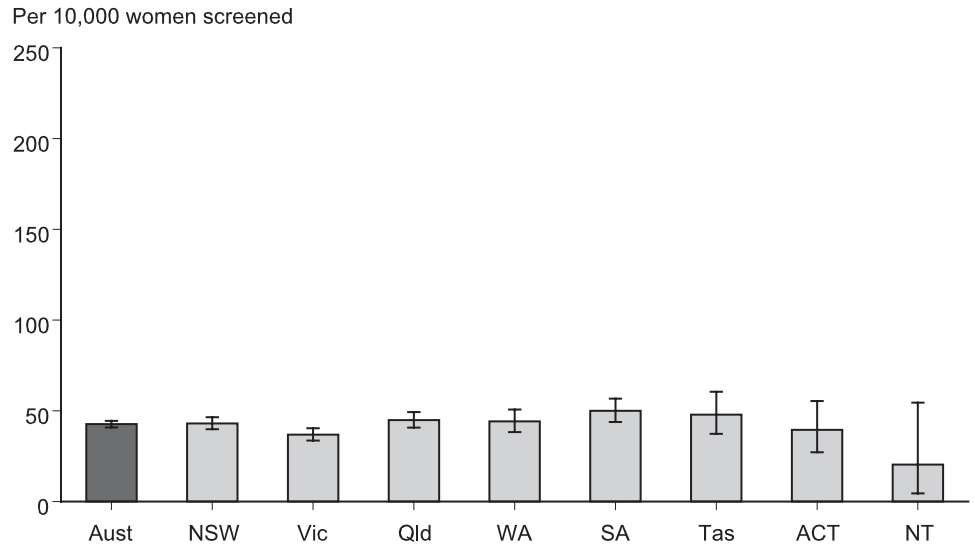
Note: Rates are the number of women with invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.

- In 2002, the age-standardised invasive cancer detection rate for women attending a BreastScreen Australia Service for the first time was 72.2 per 10,000 women screened. Across the states and territories, the Australian Capital Territory had the lowest age-standardised detection rate, at 49.5 per 10,000 women screened, and South Australia had the highest rate, at 137.5 per 10,000 women screened.
- The invasive cancer detection rate for all women aged 40 and over (70.6 per 10,000 women screened) was not significantly different from the rate for women in the target age group (72.2 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, 2002



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	42.7	43.1	36.9*	44.9	44.2	50.0	47.9	39.5	20.4
95% CI	40.9–44.5	39.9–46.5	33.7–40.4	40.9–49.3	38.3–50.7	43.9–56.7	37.4–60.5	27.2–55.5	4.5–54.5

* Significantly different from the all-Australia rate.

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

- In 2002, the age-standardised invasive cancer detection rate for women in the target age group attending a BreastScreen Australia service for their second or subsequent screen was 42.7 per 10,000 women screened. This is significantly lower than the detection rate for first round attendances (72.2 per 10,000 women screened).
- The age-standardised invasive cancer detection rate for all women aged 40 and over, attending for their second or subsequent screen, was 40.1 per 10,000 women screened. This is not significantly different from the rate for women in the target group (42.7 per 10,000 women screened).
- Across the states and territories, the age-standardised invasive cancer detection rate for women in the target age group ranged from 20.4 per 10,000 women screened in the Northern Territory to 50.0 per 10,000 women screened in South Australia.

For more information, see:

Tables 15 and 16