

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 for women aged 40 years and over 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).

The National Accreditation Standards for the detection of small (≤ 15 mm) invasive breast cancers require:

- ≥ 25 per 10,000 women aged 50–69 years who attend for screening are diagnosed with small (≤ 15 mm) invasive breast cancer.

The following table shows the detection rate of small-diameter invasive breast cancers achieved by the BreastScreen Australia Program in 1999, 2003 and 2004. In 1999, 2003 and 2004, more than 25 small-diameter (≤ 15 mm) cancers per 10,000 women screened were found for all screening rounds and age groups.

Small (≤ 15 mm) invasive breast cancer detection rate per 10,000 women, first and subsequent rounds, 1999, 2003 and 2004

	Objective ^(a)	1999	2003	2004
First screening round				
Rate for women aged 50–69 years	≥ 25	37.7	40.1	43.4
95% CI		33.1–42.6	34.3–46.5	37.2–50.2
Rate for women aged 40 years and over	..	37.0	42.5	39.1
95% CI		33.3–40.9	37.3–48.0	34.1–44.7
Subsequent screening rounds				
Rate for women aged 50–69 years	..	26.5	27.2	27.2
95% CI		25.0–28.1	25.8–28.7	25.8–28.6
Rate for women aged 40 years and over	..	25.0	25.8	26.8
95% CI		23.8–26.3	24.7–27.0	25.6–28.0

(a) Performance objective for BreastScreen services as set out in the National Accreditation Standards (NQMC 2004).

.. Not applicable.

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.

The table below shows the percentage of all invasive cancers detected that were small-diameter (≤ 15 mm) invasive breast cancers, by screening round, for women screened in 1999, 2003 and 2004.

Percentage of invasive cancers detected that were small (≤ 15 mm) in diameter, 1999, 2003 and 2004

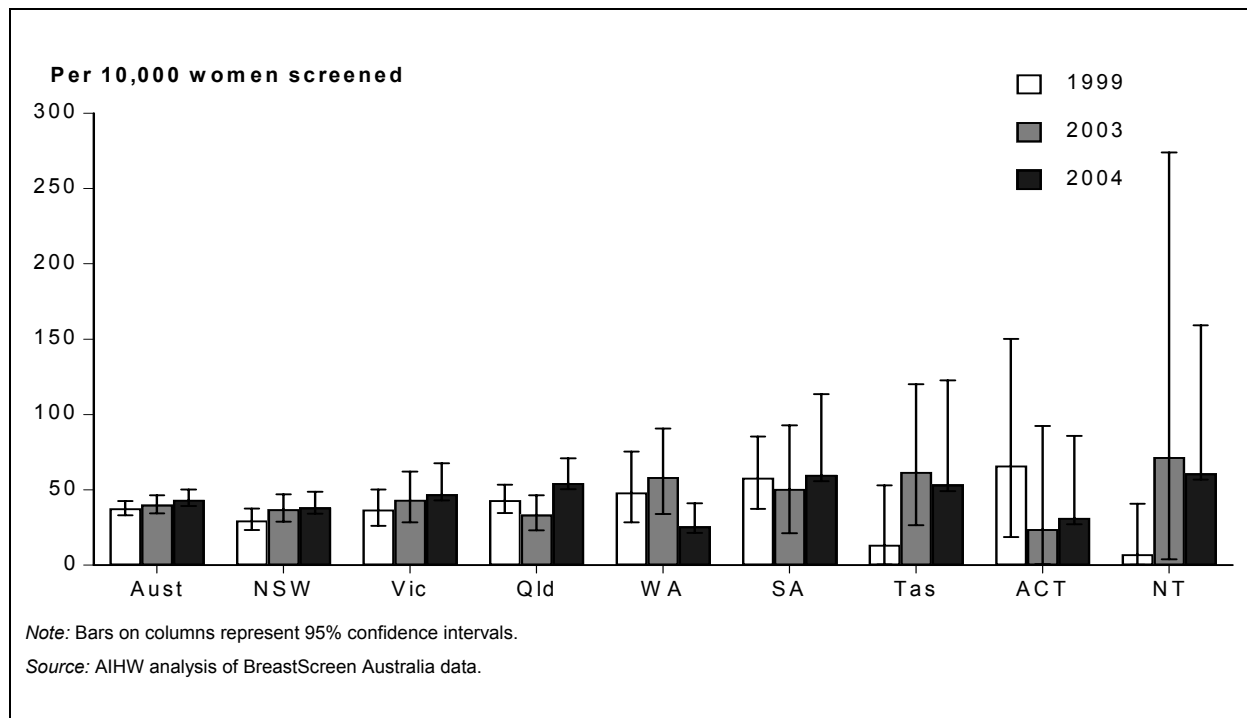
	1999	2003	2004
First screening round			
Women aged 50–69 years	55.6	54.8	55.7
Women aged 40 years and over	55.5	53.5	52.3
Subsequent screening rounds			
Women aged 50–69 years	67.4	63.7	64.8
Women aged 40 years and over	67.6	64.8	65.7

Source: AIHW analysis of BreastScreen Australia data.

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 shows that mammography was successful at detecting the majority of large cancers in the first round and most of the remaining cases have not had time to develop into large cancers in the two years before the second round.

States and territories

Small (≤ 15 mm) invasive breast cancer detection in women aged 50–69 years, first screening round, 1999, 2003 and 2004



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2004 rate	43.4	38.2	47.1	54.5	25.6	59.9	53.3	31.4	60.9
95% CI	37.2–50.2	29.4–48.7	30.2–67.5	40.8–71.0	14.0–41.2	22.7–113.5	16.0–122.7	6.0–85.8	15.0–159.2
2003 rate	40.1	37.1	43.5	33.4	58.5	50.7	61.8	23.9	71.8
95% CI	34.3–46.5	28.8–47.0	28.6–62.0	23.2–46.4	34.0–90.6	21.2–92.7	26.5–120.1	0.8–92.4	3.9–273.9
1999 rate	37.7	29.8	36.9	43.2	48.3	58.0	13.7	66.1	7.3
95% CI	33.1–42.6	23.3–37.5	26.0–50.3	34.6–53.3	28.5–75.5	37.3–85.3	0.4–52.9	18.7–150.3	0.2–40.8

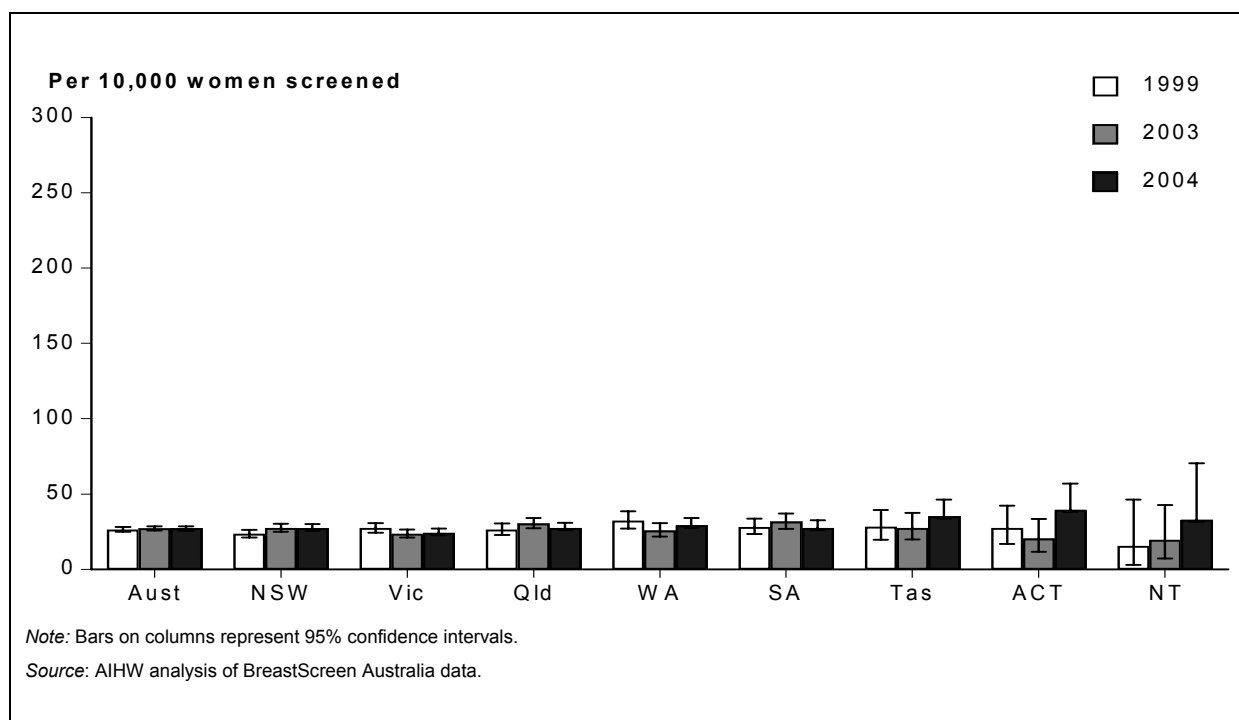
Note: Rates are the number of women with small invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.

- In 2004, the age-standardised detection rate for small invasive cancers in women in the target age group attending for their first screening round ranged from 25.6 to 60.9 per 10,000 women screened across the states and territories. The small numbers of cases contributed to the wide variations in the rates.
- In 2004, small-diameter invasive cancers were found in 358 women aged 40 years and over attending a BreastScreen Australia service for their first screen. Of these women, 253 were in the target age group (50–69 years). The age-standardised detection rate was 43.4 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 years and over. The detection rate for small-diameter invasive cancers for women in the target age group increased from 37.7 per 10,000 women screened in 1999 to 43.4 in 2004. The increase was not statistically significant.

For more information, see: Tables 7 to 10 beginning on page 82. Tables with data other than for the latest reporting period can be found on the AIHW's website at <www.aihw.gov.au>.

States and territories

Small (≤ 15 mm) invasive breast cancer detection in women aged 50–69 years, subsequent screening rounds, 1999, 2003 and 2004



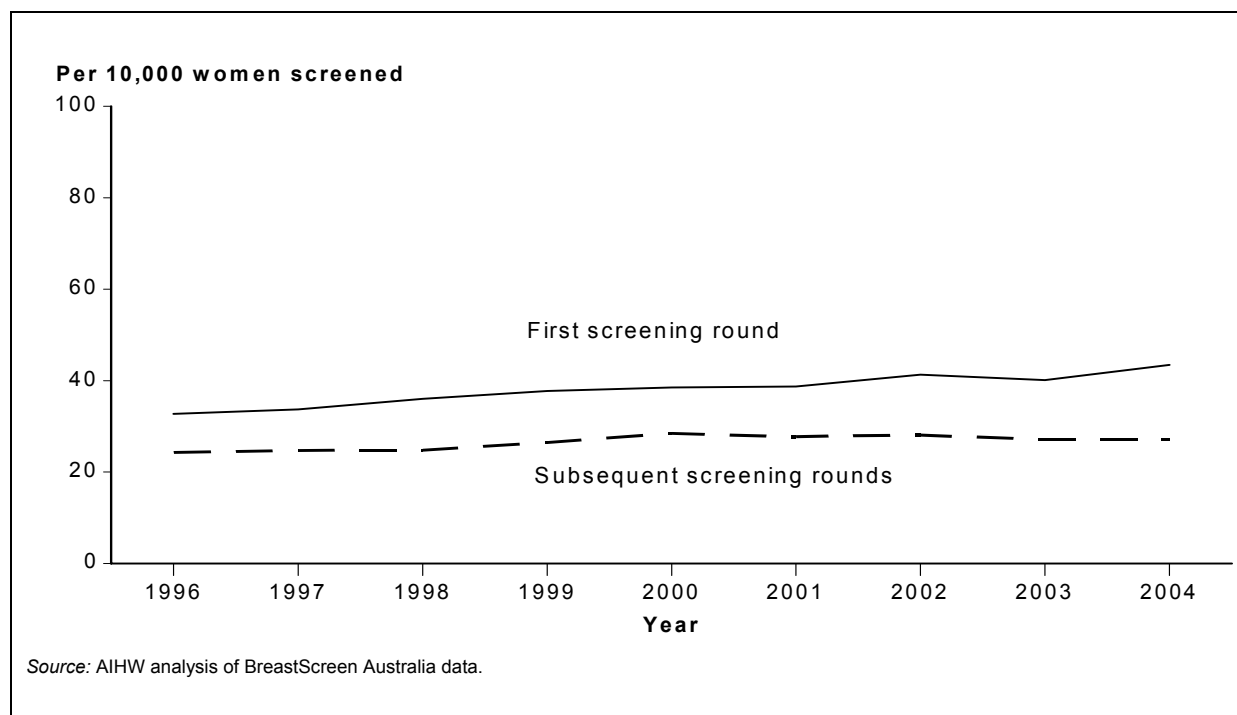
	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2004 rate	27.2	27.3	24.3	27.6	29.2	27.6	35.2	39.6	33.1
95% CI	25.8–28.6	24.8–30.0	21.7–27.1	24.5–30.9	24.8–34.1	23.2–32.6	26.1–46.4	26.5–56.9	12.0–70.5
2003 rate	27.2	27.5	23.7	30.5	25.9	31.7	27.6	20.5	19.6
95% CI	25.8–28.7	25.0–30.1	21.2–26.5	27.2–34.0	21.8–30.7	26.9–37.1	19.8–37.3	11.6–33.4	7.1–42.8
1999 rate	26.5	23.6	27.4	26.5	32.4	28.2	28.3	27.6	15.6
95% CI	25.0–28.1	21.1–26.2	24.4–30.7	22.9–30.5	27.1–38.5	23.4–33.7	19.7–39.5	17.1–42.3	3.0–46.3

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 2004, small-diameter invasive cancers were found in 2,082 women aged 40 years and over attending a BreastScreen Australia service for their second or subsequent screen. Of these women, 1,478 were in the target age group (50–69 years). The age-standardised detection rate was 27.2 per 10,000 women screened for women in the target age group and 26.8 per 10,000 women for all women aged 40 years and over. In both age categories, the small-diameter cancer detection rates for Australia for women attending their second or subsequent screen were lower than the rates for women attending their first screen.

For more information, see: Tables 7 to 10 beginning on page 82. Tables with data other than for the latest reporting period can be found on the AIHW's website at <www.aihw.gov.au>.

Small (≤ 15 mm) invasive breast cancer detection in women aged 50–69 years, first and subsequent screening rounds, 1996–2004



	1996	1997	1998	1999	2000	2001	2002	2003	2004
First screening round									
Rate	32.7*	33.7*	36.0*	37.7*	38.5*	38.7*	41.3*	40.1*	43.4*
95% CI	29.9–35.7	30.4–37.3	32.3–40.0	33.1–42.6	33.6–43.8	34.0–43.9	35.8–47.3	34.3–46.5	37.2–50.2
Subsequent screening rounds									
Rate	24.3	24.7	24.8	26.5	28.5	27.8	28.1	27.2	27.2
95% CI	22.5–26.3	23.0–26.4	23.3–26.4	25.0–28.1	27.0–30.1	26.4–29.3	26.7–29.6	25.8–28.7	25.8–28.6

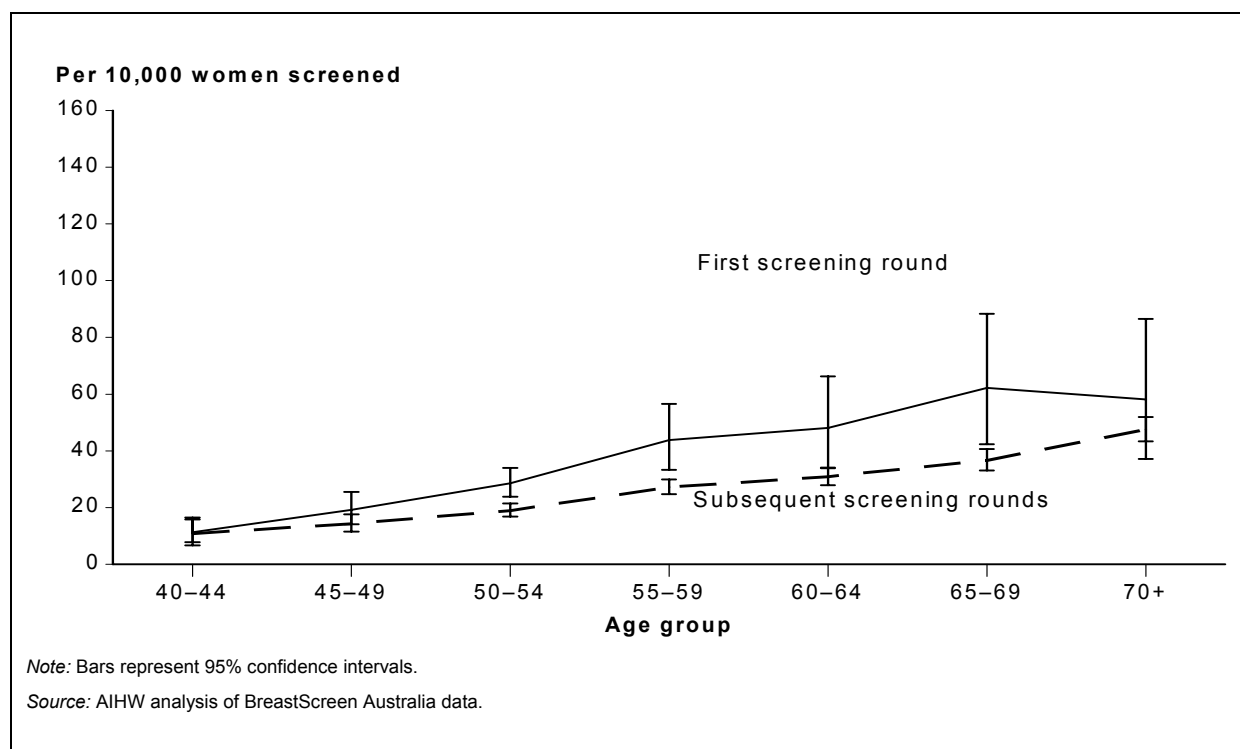
* Significantly different from subsequent screening rounds.

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.

- Detection of small invasive breast cancers in women aged 50–69 years increased significantly from 1996 to 2004 in the first screening round – from 32.7 to 43.4 per 10,000 women screened. In subsequent screening rounds the increase from 24.3 in 1996 to 27.2 per 10,000 was not significant.

For more information, see: Tables 7 to 10 beginning on page 82. Tables with data other than for the latest reporting period can be found on the AIHW's website at <www.aihw.gov.au>.

Small (≤ 15 mm) invasive breast cancer detection by age, 2004



Age-specific rate	Age						
	40-44	45-49	50-54	55-59	60-64	65-69	70+
First screening round							
Rate	11.3	19.2	28.6*	43.8*	48.1	62.2*	58.1
95% CI	7.8-15.8	14.1-25.5	23.8-34.0	33.2-56.6	33.9-66.3	42.3-88.3	37.2-86.5
Subsequent screening rounds							
Rate	10.8	14.3	19.0	27.2	30.9	36.7	47.5
95% CI	6.7-16.5	11.5-17.6	16.8-21.4	24.7-29.8	27.9-34.1	33.2-40.6	43.4-51.9

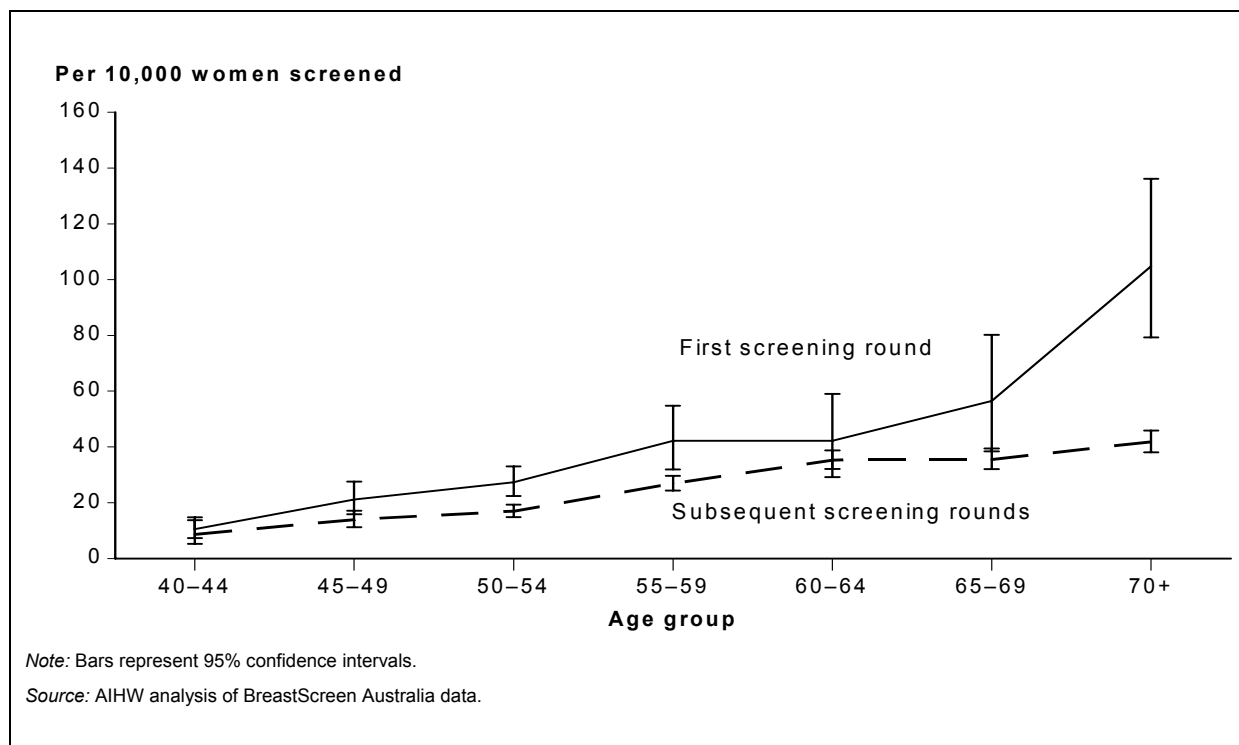
* Significantly different from subsequent screening rounds.

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

- The rate of detection of small-diameter (≤ 15 mm) invasive cancers increases with age. This reflects rising incidence of breast cancer with age (Table 44 on page 115). The detection rate for women aged 40-44 years making a first round attendance at a BreastScreen Australia service in 2004 was 11.3 per 10,000 women screened. This rate increased to 58.1 per 10,000 women screened for women aged 70 years and over. A similar pattern occurred for women making a second or subsequent round attendance, although the level of increase, from 10.8 to 47.5 per 10,000 women screened, was not as great.

For more information, see: Tables 7 to 10 beginning on page 82. Tables with data other than for the latest reporting period can be found on the AIHW's website at <www.aihw.gov.au>.

Small (≤ 15 mm) invasive breast cancer detection by age, 2003



Age-specific rate	Age						
	40-44	45-49	50-54	55-59	60-64	65-69	70+
First screening round							
Rate	10.5	21.1	27.3*	42.2*	42.2	56.5	104.8*
95% CI	7.3-14.7	15.8-27.5	22.4-33.0	31.9-54.8	29.2-58.9	38.4-80.2	79.2-136.1
Subsequent screening rounds							
Rate	8.7	13.9	17.0	26.9	35.3	35.6	41.9
95% CI	5.1-13.7	11.2-17.1	14.9-19.4	24.4-29.6	32.0-38.7	32.0-39.4	38.1-45.9

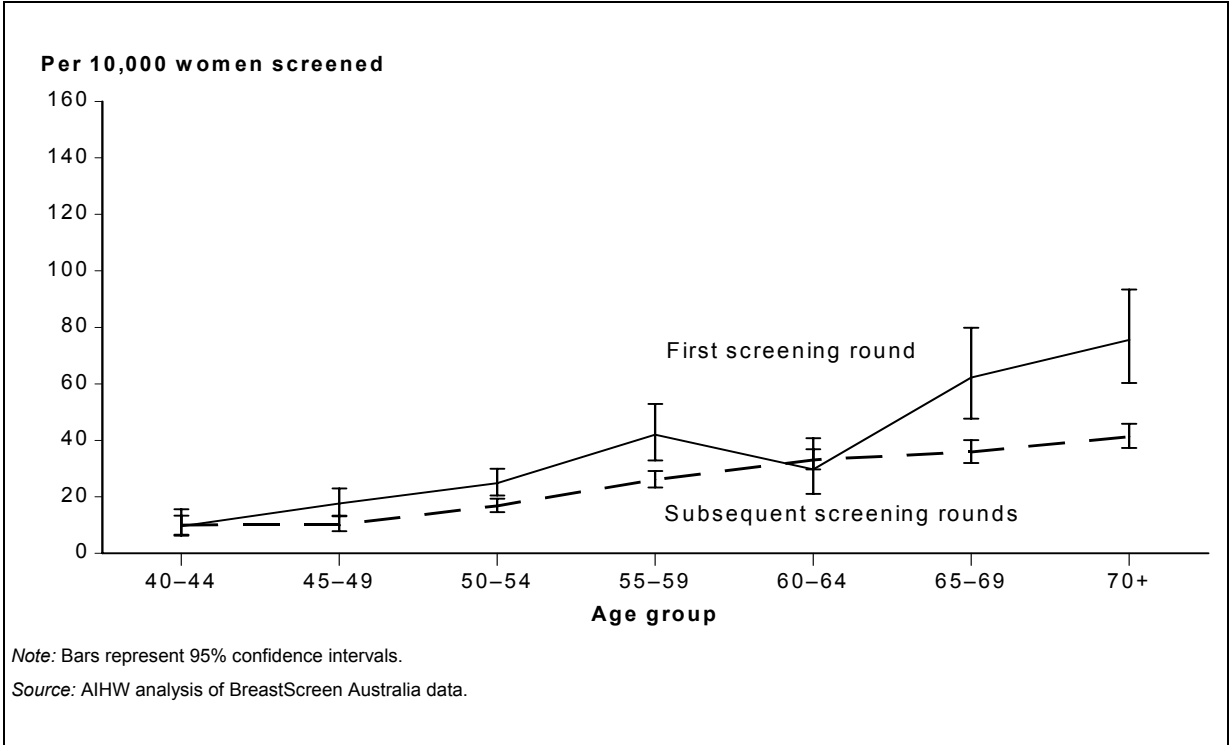
* Significantly different from subsequent screening rounds.

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

- In 2003, the rate of detection of small (≤ 15 mm) invasive cancers was not significantly different to the rate in 2004 for each age group and each screening round.

For more information, see: Tables 7 to 10 beginning on page 82. Tables with data other than for the latest reporting period can be found on the AIHW's website at <www.aihw.gov.au>.

Small (≤ 15 mm) invasive breast cancer detection by age, 1999



Age-specific rate	Age						
	40-44	45-49	50-54	55-59	60-64	65-69	70+
First screening round							
Rate	9.6	17.7*	24.9*	42.0*	29.7	62.2*	75.5*
95% CI	6.7-13.4	13.4-22.9	20.5-30.0	32.8-52.9	21.0-40.8	47.7-79.8	60.3-93.3
Subsequent screening rounds							
Rate	10.1	10.2	16.8	26.1	33.1	35.9	41.4
95% CI	6.2-15.6	7.8-13.1	14.6-19.3	23.3-29.2	29.7-36.9	32.0-40.1	37.3-45.9

* Significantly different from subsequent screening rounds.

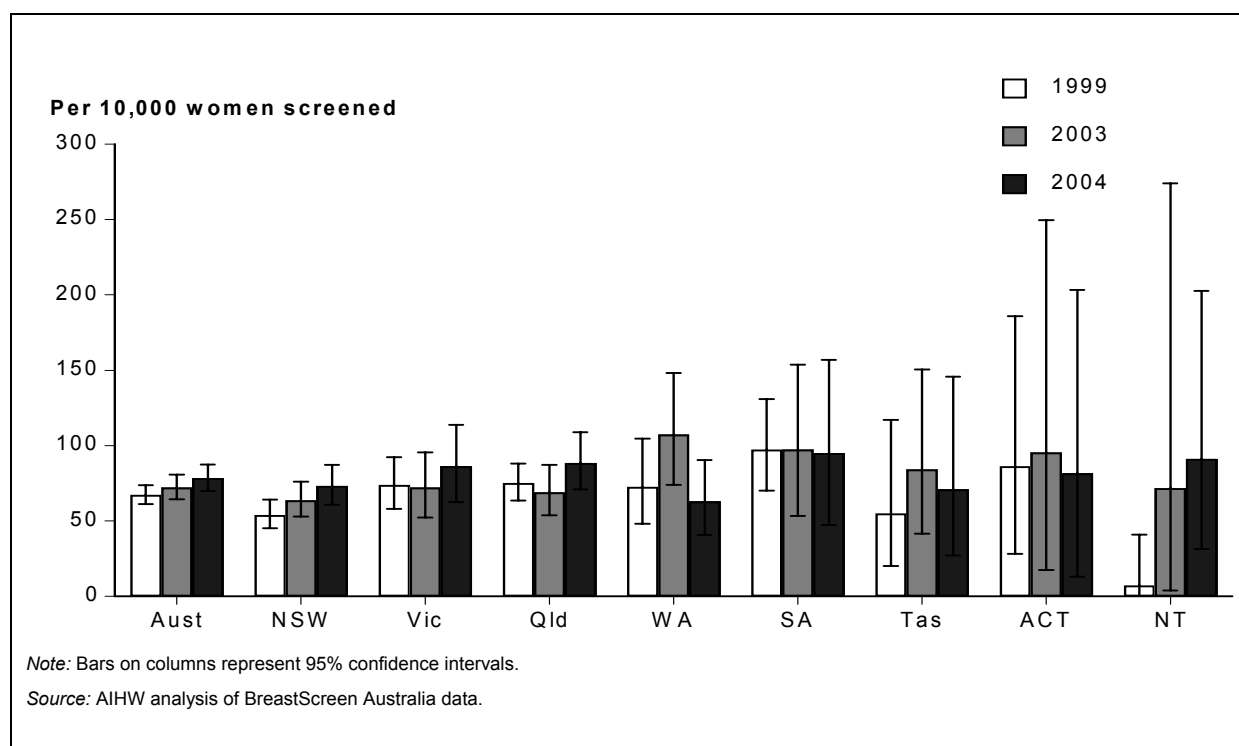
Note: Rates are the number of women with small invasive cancers detected per 10,000 women screened.

- In 1999, the detection rate of small (≤ 15 mm) invasive cancers was slightly lower than the rates in 2004 and 2003 but not statistically significant.

For more information, see: Tables 7 to 10 beginning on page 82. Tables with data other than for the latest reporting period can be found on the AIHW's website at <www.aihw.gov.au>.

States and territories

All-size invasive breast cancer detection in women aged 50–69 years, first screening round, 1999, 2003 and 2004



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2004 rate	78.4	73.2	86.3	88.5	62.9	95.0	70.9	81.6	91.3
95% CI	69.9–87.5	60.7–87.3	62.5–113.7	71.0–108.7	40.6–90.5	47.3–156.9	27.1–145.7	13.0–203.4	31.4–202.6
2003 rate	72.2	63.8	72.2	69.1	107.4	97.4	84.3	95.5	71.8
95% CI	64.4–80.6	52.9–76.1	52.2–95.5	53.8–87.1	73.9–148.2	53.5–153.8	41.4–150.5	17.6–249.5	3.9–273.9
1999 rate	67.3	54.1	74.0	75.1	72.7	97.3	55.1	86.4	7.3*
95% CI	61.2–73.9	45.2–64.1	58.1–92.2	63.5–88.1	48.0–104.6	70.0–131.0	20.2–116.9	28.2–185.8	0.2–40.8

* Statistically different from the 1999 Australian rate.

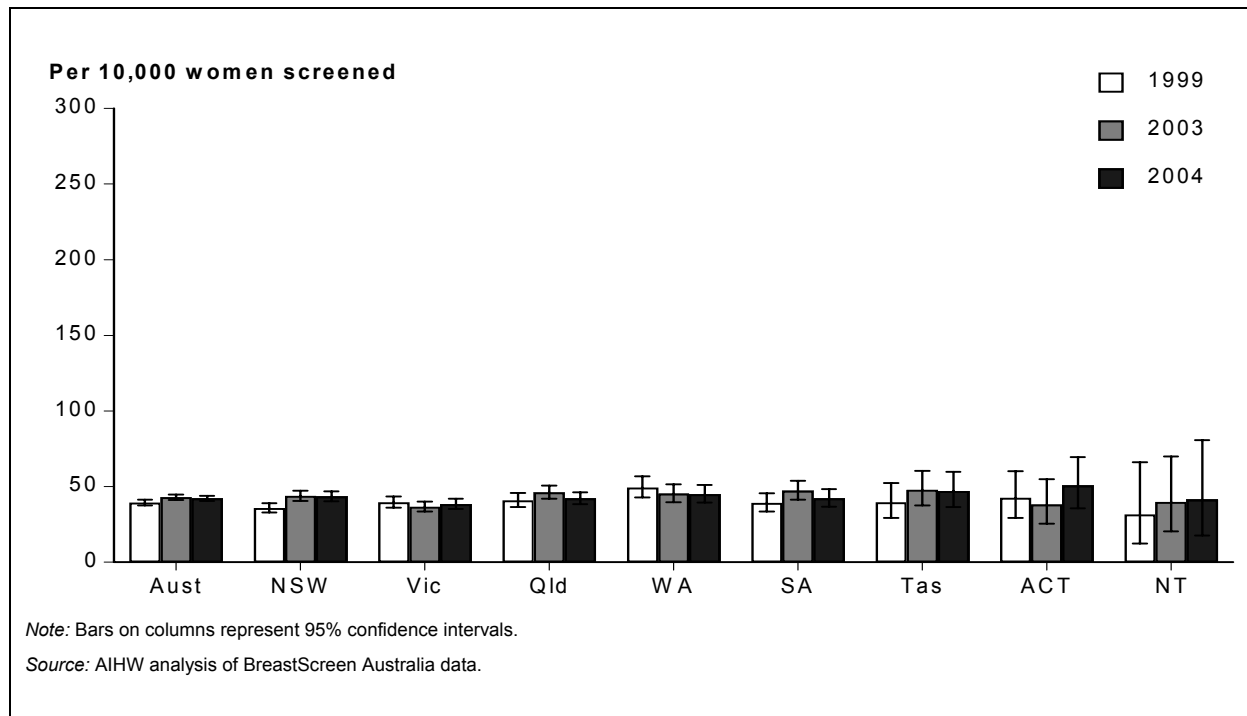
Note: Rates are the number of women with invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.

- In 2004, the age-standardised invasive breast cancer detection rate for women attending a BreastScreen Australia Service for the first time was 78.4 per 10,000 women screened.
- Across the states and territories, Western Australia had the lowest age-standardised detection rate, at 62.9 per 10,000 women screened, and South Australia had the highest rate, at 95.0 per 10,000 women screened, but this difference was not statistically significant.

For more information, see: Tables 11 to 14 beginning on page 86. Tables with data other than for the latest reporting period can be found on the AIHW's website at <www.aihw.gov.au>.

States and territories

All-size invasive breast cancer detection in women aged 50–69 years, subsequent screening rounds, 1999, 2003 and 2004



	Australia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2004 rate	42.2	43.5	38.5	42.2	44.9	42.3	47.1	50.6	41.4
95% CI	40.4–43.9	40.3–46.9	35.3–42.0	38.5–46.3	39.4–51.0	36.8–48.4	36.5–59.8	35.8–69.5	17.7–80.7
2003 rate	43.0	43.8	36.7*	46.2	45.3	47.3	48.0	38.1	39.9
95% CI	41.2–44.8	40.6–47.1	33.5–40.1	42.2–50.6	39.7–51.5	41.5–53.8	37.5–60.6	25.4–54.8	20.5–69.9
1999 rate	39.5	35.8	39.6	40.9	49.4 [#]	39.3	39.6	42.7	31.7
95% CI	37.7–41.4	32.8–39.0	36.0–43.5	36.3–45.8	42.8–56.8	33.6–45.8	29.2–52.4	29.1–60.3	12.3–66.1

* Statistically different from the 2003 Australian rate.

[#] Statistically different from the 1999 Australian rate.

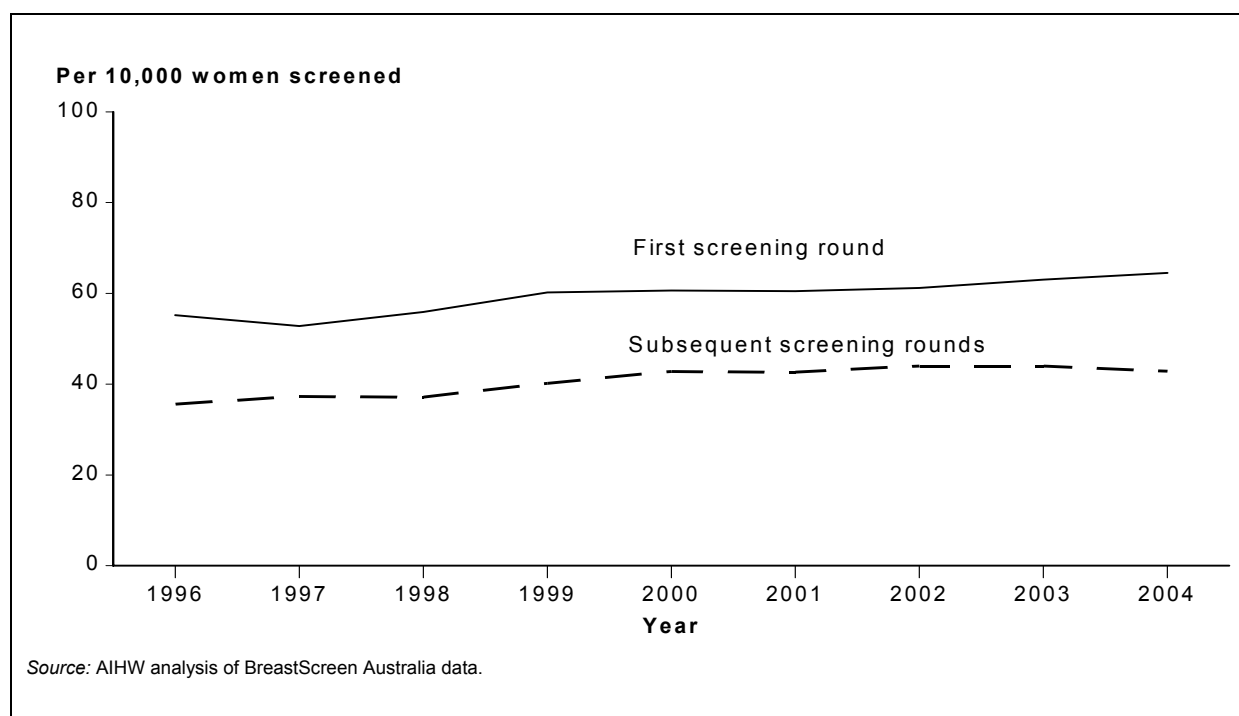
Note: Rates are the number of women with invasive cancers detected per 10,000 women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.

- In 2004, 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 42.2 per 10,000 women screened. This is significantly lower than the detection rate for first round attendances (78.4 per 10,000 women screened).
- In 2004, the detection rate for all women aged 40 years and over attending for their second or subsequent screen was 40.8 per 10,000 women screened. This is lower than the rate for women in the target age group (42.2 per 10,000 women screened), although the difference is not statistically significant.
- Across the states and territories, the age-standardised invasive cancer detection rate for women in the target age group in 2004 ranged from 38.5 per 10,000 women screened in Victoria to 50.6 per 10,000 women screened in the Australian Capital Territory.

- The increase in the detection rate of all invasive cancers for Australia from 39.5 in 1999 to 42.2 in 2004 was not statistically significant.

For more information, see: Tables 11 to 14 beginning on page 86. Tables with data other than for the latest reporting period can be found on the AIHW's website at <www.aihw.gov.au>.

All-size invasive breast cancer detection in women aged 50–69 years, first and subsequent screening rounds, 1996–2004



	1996	1997	1998	1999	2000	2001	2002	2003	2004
First screening round									
Rate	55.6*	57.5*	61.2*	67.3*	67.8*	67.9*	73.4*	72.2*	78.4*
95% CI	52.0–59.5	53.1–62.2	56.4–66.3	61.2–73.9	61.2–74.8	61.6–74.7	66.1–81.1	64.4–80.6	69.9–87.5
Subsequent screening rounds									
Rate	34.7	36.6	36.4	39.5	42.3	42.0	43.1	43.0	42.2
95% CI	32.4–37.0	34.5–38.7	34.5–38.4	37.7–41.4	40.4–44.2	40.2–43.9	41.3–45.0	41.2–44.8	40.4–43.9

* Statistically different from subsequent rounds.

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.

- The detection rate of all invasive breast cancers in the first screening round was significantly higher than it was for subsequent screening rounds for all years from 1996 to 2004.
- The rate of detection in the first screening round increased significantly from 55.6 in 1996 to 78.4 per 10,000 women screened in 2004. The detection rate also rose significantly in subsequent screening rounds, from 34.7 per 10,000 women screened in 1996 to 42.2 per 10,000 women screened in 2004.

For more information, see: Tables 11 to 14 beginning on page 86. Tables with data other than for the latest reporting period can be found on the AIHW's website at <www.aihw.gov.au>.