

**BreastScreen Australia**  
**monitoring report 2004–2005**

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# **BreastScreen Australia monitoring report 2004–2005**

**The Australian Institute of Health and Welfare and  
the Australian Government Department of Health and Ageing  
for the BreastScreen Australia Program**

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# Abbreviations

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ARIA	Accessibility/Remoteness Index for Australia
ASGC	Australian Standard Geographical Classification
ASR	age-standardised rate
ASR(A)	age-standardised rate, standardised to the Australian standard population
BSANAC	BreastScreen Australia National Advisory Committee
CD	(Census) Collection District
CI	confidence interval
DHAC	Department of Health and Aged Care (former name of DoHA)
DoHA	Australian Government Department of Health and Ageing
DCIS	ductal carcinoma in situ
ERP	estimated resident population
ICD	International Classification of Diseases
IRSD	Index of Relative Socio-economic Disadvantage
NBCC	National Breast Cancer Centre
NQMC	National Quality Management Committee
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
RRMA	Rural, Remote and Metropolitan Areas classification
SA	South Australia
SLA	statistical local area
Tas	Tasmania
Vic	Victoria
WA	Western Australia
WHO	World Health Organization

# Symbols

..	not applicable
≤	less than or equal to
<	less than
>	more than



# Summary

This is the ninth national monitoring report for the BreastScreen Australia Program. It presents statistics on BreastScreen Australia screening activity and outcomes for 2004–2005, and trend data from 1996 onwards. A reporting interval of 2 years is used because it corresponds with the recommended interval between screens for asymptomatic women in the target age group (50–69 years). In 2004–2005, 1.6 million women were screened by the Program, with just over 1.2 million in the target age group (50–69 years), a participation rate of 56.2%.

The BreastScreen Australia Program commenced in 1991. It aims to reduce mortality and morbidity from breast cancer by actively recruiting and screening women aged 50–69 years, using mammography for early detection of the disease. Women aged 40–49 years and 70 years or over may also be screened.

This report shows a reduction in both mortality and morbidity associated with breast cancer. A comprehensive evaluation of the BreastScreen Australia Program is currently being undertaken by the Australian Department of Health and Ageing. This will assess the extent to which screening by the Program is contributing to falling mortality. Mortality has declined from 62 deaths per 100,000 women aged 50–69 years in 1996 to 52 deaths per 100,000 in 2005. There is evidence of reduced morbidity in the target age group (50–69 years) through early detection of small-diameter cancers and ductal carcinoma in situ (DCIS). This early detection can lead to reduced morbidity from radical treatment of advanced disease.

Of all new invasive breast cancers detected in 2004 in women aged 50–69 years in Australia, 46% were detected within the Program. This has improved since 1996, the first year of national statistics, when 40% of all new invasive breast cancers were Program-detected. The proportion of invasive breast cancers detected in the Program that were small-diameter was relatively unchanged, with 63.5% of cancers detected in 2004 and 63.1% in 2005 compared with 64.7% in 1996. In 2005, the Program detected 2,823 new cases of invasive breast cancer.

As well as small cancers, screening also aims to detect DCIS, a non-invasive cancerous condition restricted to the ducts. This condition may become invasive in some women if untreated. The DCIS detection rate for women in the target age group (50–69 years) has increased significantly from 9.1 cases per 10,000 women screened in 1996 to 11.5 cases per 10,000 women screened in 2005.

The Program also aims to minimise the number of interval cancers detected within 12 months of a screening episode. An interval cancer is an invasive breast cancer diagnosed after a screening episode that detected no cancer and before the next scheduled screening episode. The age-standardised rate of interval cancer between screening years 1998–2000 and 2001–2003 decreased from 8.0 per 10,000 screens to 7.0 per 10,000 screens for women aged 50–69 years during 0–12 months follow-up.

The Program has eight performance indicators presented in this report. Key points for each indicator are as follows.

## **Indicator 1                      Participation**

- In 2004–2005, of the 1.6 million women screened by the BreastScreen Australia Program, just over 1.2 million (74%) were in the target age group (50–69 years). This was an increase from 70% in the previous reporting period, 2003–2004.

- Participation among women in Australia aged 50–69 years increased from 51.4% in 1996–1997 to 57.1% in 2001–2002 and decreased to 56.2% in 2002–2003. In 2004–2005 this participation rate was unchanged at 56.2%.
- Across states and territories in 2004–2005, the age-standardised participation rate for women aged 50–69 years ranged from 41.5% in the Northern Territory to 61.9% in South Australia.
- In 2004–2005, participation by women aged 50–69 years living in the most socioeconomically advantaged areas of Australia was 56.7% compared with 54.6% by women living in the least advantaged areas. This difference is statistically significant.
- Participation by Aboriginal and Torres Strait Islander women (35.8%) was significantly lower than for non-Indigenous women (55.9%). However, participation by Aboriginal and Torres Strait Islander women has increased significantly from 31.8% in 1999–2000, the period of first reporting.
- Participation by women whose main language spoken at home was not English (43.1%) was significantly lower than participation by women whose main language spoken at home was English (58.6%).

## **Indicator 2    Detection of all-size and small invasive breast cancers**

- In 2005, BreastScreen Australia detected 3,680 invasive breast cancers, of which 2,823 were in women aged 50–69 years.
- The age-standardised invasive breast cancer detection rate for women aged 50–69 years attending the Program for the first time increased from 56 cancers detected per 10,000 women screened in 1996 to 74 per 10,000 women in 2005. For women screened who had previously attended the Program the detection rate increased from 35 cancers detected per 10,000 women screened in 1996 to 41 per 10,000 women in 2005. Both changes were statistically significant.
- In 2005, BreastScreen Australia detected 2,308 small-diameter breast cancers, 1,780 of which occurred in women aged 50–69 years.
- In 2005, 52.1% of invasive breast cancers detected in women aged 50–69 years attending their first screening round were small-diameter cancers. For women attending who had previously been screened, 65.2% of cancers detected were small-diameter.
- For women aged 50–69 years attending their first screening round, the age-standardised rate of small-diameter invasive cancer detection was 37.8 per 10,000 women screened in 2005. This was significantly higher than the rate of 26.7 per 10,000 for women who attended in subsequent screening rounds.

## **Indicator 3a    Interval cancer rate**

An interval cancer is an invasive breast cancer that is diagnosed after a screening episode that detected no cancer and before the next scheduled screening episode. The recommended screening interval of 2 years must have elapsed for interval cancer data to be available, so the most current interval cancer data are for women screened in 2003.

- There were 4,515 interval cancers detected over the 24 months following a negative screening episode for women screened in the 3-year period of 2001–2003. Of these, 3,156 were in women aged 50–69 years.

- For women aged 50–69 years attending their first screening round in 2001–2003, the age-standardised interval cancer rate was 9.2 interval cancers per 10,000 women-years over the 24 months following a negative screening episode.
- For women aged 50–69 years attending subsequent screening rounds in 2001–2003, the age-standardised interval cancer rate was 9.6 interval cancers per 10,000 women-years over the 24 months following a negative screening episode.

### **Indicator 3b Program sensitivity**

Program sensitivity is the proportion of invasive breast cancers that are detected within the BreastScreen Australia Program out of all invasive breast cancers (interval cancers plus screen-detected cancers) diagnosed in program-screened women in the 2-year screening interval.

- For women screened over the period of 2001–2003, there were 11,304 screen-detected cancers and 4,515 interval cancers in women aged 40 years or over, and 7,943 screen-detected cancers and 3,156 interval cancers in women in the target age group (50–69 years).
- Program sensitivity has been improving for women aged 50–69 years. The sensitivity rate for women 24 months after their first screen was 74.8% during index years 1998–2000 and 79.2% during index years 2001–2003. These were significantly higher than the rates of 66.6% and 71.0% recorded during index years 1998–2000 and 2001–2003, respectively, for women attending subsequent screening rounds.

### **Indicator 4 Detection of ductal carcinoma in situ**

Ductal carcinoma in situ (DCIS) is a disease that involves changes in the cells in the lining of the ducts of the breast. Although the changes are like those seen in breast cancer, DCIS has not spread beyond the ducts.

- In 2005, of the 925 cases of DCIS detected in women participating in the BreastScreen Australia Program, 725 were in women aged 50–69 years. The age-standardised detection rate for DCIS for women in this age group attending for their first screening round was 14.5 per 10,000 women screened. For women attending for their second or subsequent screening rounds in 2005, the rate decreased to 11.0 per 10,000 women screened.
- The DCIS detection rate for women aged 50–69 years over all screening rounds increased significantly from 9.1 DCIS cases per 10,000 women screened in 1996 to 11.5 cases per 10,000 women screened in 2005.

### **Indicator 5 Recall to assessment**

The recall to assessment indicator measures the rate of women who are recalled for assessment following attendance for a routine screening at a BreastScreen Australia service. In most cases, the recall is made because a woman's screening mammogram shows signs that there may be breast cancer.

Women attending the Program for the first time have a significantly higher all-size cancer detection rate than those who have previously been screened. This is reflected in a higher recall to assessment rate for women who attend for their first screening round compared with those who attend for a subsequent round.

- In 2005, the proportion of women aged 50–69 years recalled for assessment was significantly higher for women being screened for the first time compared with women who had previously been screened. While 9.8% of women attending their first round of screening were recalled for further testing, only 4.0% of women attending for a subsequent round of screening were recalled.
- Recall to assessment rates have increased over time. The proportion of women aged 50–69 years attending their first screening round who were recalled for assessment increased significantly from 5.8% in 1996 to 9.8% in 2005. The proportion recalled for assessment who attended subsequent screening rounds also increased significantly from 3.2% in 1996 to 4.0% in 2005.

## **Indicator 6                      Rescreening**

The rescreen indicator measures the proportion of women who return for screening in the Program within the recommended screening interval. The interval between screens is an important factor influencing the level of detection of cancers within the Program. Intervals that are too long may allow tumours to grow to the point where symptoms become evident, thus eliminating the advantage of screening. The recommended interval of 27 months includes an additional 3 months to allow for potential delays in screening availability and data transfer. Although the BreastScreen Australia target age group is 50–69 years, only women aged 50–67 years are reported for the rescreen indicator.

- The age-standardised rescreen rate for women attending a BreastScreen Australia service in 2002 for the first time was 61.6%. The rescreen rate increased significantly to 70.3% for women attending for their second screen and to 80.7% for women attending for a third or subsequent screen.

## **Indicator 7a                      Incidence of breast cancer**

- In 2004, there were 12,126 new cases of invasive breast cancer diagnosed. Of these, 694 (5.7%) were in women younger than 40 years, 2,234 (18.4%) in women aged 40–49 years, 6,031 (49.7%) in women aged 50–69 years and 3,167 (26.1%) in women aged 70 years or over.
- The breast cancer incidence rate for women in all age groups rose from 109.1 per 100,000 women in 1996 to 112.8 per 100,000 in 2004. The increase was not statistically significant.
- The breast cancer incidence rate for women aged 50–69 years increased significantly from 269.0 per 100,000 women in 1996 to 288.8 per 100,000 in 2004.
- The age of women with the highest incidence of breast cancer has been increasing. In 1999, the highest breast cancer incidence rate was in women aged 60–64 years (324.0 new cases per 100,000 women). In 2003 and 2004, the incidence peak shifted to the 65–69 year age group with 330.5 and 334.1 new cases per 100,000 women, respectively.
- In 1995–1999 and 2000–2004, the age-standardised breast cancer incidence rate for women of all ages was significantly lower in outer regional areas (103.5 and 106.4 new cases per 100,000 women, respectively), remote areas (96.9 and 99.1 new cases per 100,000 women, respectively) and very remote areas (89.6 and 88.3 new cases per 100,000 women, respectively) compared with major cities (114.5 and 116.7 new cases per 100,000 women, respectively).

**Indicator 7b****Incidence of ductal carcinoma in situ**

- In 2004, there were 1,542 new cases of DCIS diagnosed in women of all ages. Of these, 939 (60.9%) were in women aged 50–69 years. In comparison, in 1996, there were 890 new cases of DCIS diagnosed in women of all ages, 487 (54.7%) of which were in women aged 50–69 years.
- The age-standardised DCIS incidence rate for women of all ages increased significantly from 10.2 new cases per 100,000 women in 1996 to 14.4 per 100,000 in 2004.
- The rate for women aged 50–69 years also increased significantly, from 30.1 per 100,000 women in 1996 to 45.1 per 100,000 in 2004.

**Indicator 8****Mortality**

- Breast cancer was the most common cause of cancer mortality in women in Australia in 2005, with 2,719 deaths. Of these, 1,117 deaths (41.1%) occurred in women aged 50–69 years.
- The age-standardised breast cancer mortality rate in women of all ages declined significantly from 28.1 per 100,000 women in 1996 to 23.7 per 100,000 in 2005.
- The rate for women aged 50–69 years also declined significantly, from 61.5 per 100,000 women in 1996 to 51.8 per 100,000 in 2005.
- By geographic regions, mortality rates in 2001–2005 for women aged 50–69 years were similar for women in major cities (53.4 deaths per 100,000 women), inner regional areas (52.3) and outer regional areas (53.0). The rates in remote areas (50.2) and very remote areas (44.9) were lower, but these were not statistically significant because of the small number of deaths in these areas.
- Mortality for non-Indigenous women aged 50–69 years decreased significantly from 67.2 per 100,000 women in 1996–2000 to 51.8 deaths per 100,000 women in 2001–2005.
- For Aboriginal and Torres Strait Islander women, in Queensland, Western Australia, South Australia and the Northern Territory the mortality rate decreased from 55.7 to 45.4 deaths per 100,000 women between these periods. This change was not statistically significant.

**Summary table**

The following table provides a comparison of national data for all indicators for the target age group (50–69 years). The latest reporting period is compared with the previous reporting period and with the reporting period from 5 years ago, as well as with the Program performance objectives.

The performance objectives listed in the following table are National Accreditation Standards agreed by the Department of Health and Ageing and BreastScreen Australia state and territory programs for individual screening services (NQMC 2004).

One-year to 5-year comparison table for national data for all indicators for the target age group (50–69 years)

Indicator	Objective <sup>(e)</sup>	Latest reporting period		Previous non-overlapping reporting period		5 years ago	
		Year	Rate	Year	Rate	Year	Rate
Participation in 24-month period (%)	70.0 <sup>(b)</sup>	2004–2005	56.2	2002–2003	56.2	1999–2000	55.9
Detection rate of small invasive cancers ( $\leq 15$ mm) <sup>(c)</sup>	$\geq 25$						
First screening round		2005	37.8	2004	45.2	2000	38.5
Subsequent screening rounds		2005	26.7	2004	27.6	2000	28.6
<b>Interval cancer rate<sup>(c)</sup></b>							
First screening round 0–12 months following a negative screening episode	$< 7.5$	Index years 2001, 2002 and 2003	6.9	Index years 1998, 1999 and 2000*	7.2	..	..
Subsequent screening rounds 0–12 months following a negative screening episode	$< 7.5$	Index years 2001, 2002 and 2003	7.0	Index years 1998, 1999 and 2000*	8.0	..	..
<b>Program sensitivity (screen detected cancers)<sup>(c)</sup></b>							
First screening round 0–12 months following a negative screening episode	..	Index years 2001, 2002 and 2003	90.4	Index years 1998, 1999 and 2000*	89.3	..	..
Subsequent screening rounds 0–12 months following a negative screening episode	..	Index years 2001, 200 and 2003	85.8	Index years 1998, 1999 and 2000*	83.0	..	..
<b>Detection of ductal carcinoma in situ (DCIS)<sup>(c)</sup></b>							
First screening round	$\geq 12$	2005	14.5	2004	20.3	2000	13.7
Subsequent screening rounds	$\geq 7$	2005	11.0	2004	10.5	2000	10.4
<b>Recall to assessment<sup>(d)</sup></b>							
First screening round	$< 10$	2005	9.8	2004	9.9	2000	8.2
Subsequent screening rounds	$< 5$	2005	4.0	2004	4.0	2000	4.1

(continued)

(continued) One-year to 5-year comparison table for national data for all indicators for the target age group (50–69 years)

Indicator	Objective <sup>(e)</sup>	Latest reporting period		Previous non-overlapping reporting period		5 years ago	
		Year	Rate	Year	Rate	Year	Rate
<b>Rescreening for age group 50–67 years<sup>(a)(e)</sup></b>							
First screening round	≥75	Index year 2003	60.5	Index year 2002	61.6	..	..
Second screening round	≥90	Index year 2003	69.5	Index year 2002	70.3	..	..
Third and subsequent screening rounds	≥90	Index year 2003	80.1	Index year 2002	80.7	..	..
<b>Incidence of breast cancer<sup>(f)</sup></b>	..	2004	288.8	2003	285.6	1999	286.9
<b>Incidence of ductal carcinoma in situ (DCIS)<sup>(g)</sup></b>	..	2000–2004	43.9	..	..	1995–1999	34.0
<b>Mortality from breast cancer<sup>(h)</sup></b>	..	2005	51.8	2004	51.1	2000	52.5

(a) Performance objective of the BreastScreen Australia Program as set out in the National Accreditation Standards (NQMC 2004). Although these objectives were developed for individual screening services rather than for the national program as a whole, they do provide an indication of the national program's performance.

(b) Target formally agreed by the former BreastScreen National Advisory Committee.

(c) 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.

(d) Rates are the number of women recalled for assessment as a percentage of women screened and age-standardised to the population of women attending a BreastScreen Australia service in 1998.

(e) Before index year 2000, data for the 50–69 years age group were reported. Although the BreastScreen Australia target age group is 50–69 years, only women aged 50–67 years are reported for the rescreen indicator. This is because women aged 68–69 years in the index year were outside the target age group 27 months after their index screen and, therefore, were not expected to return for screening.

(f) Rates are the number of new cases of breast cancer per 100,000 women and age-standardised to the Australian population at 30 June 2001.

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

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

<sup>a</sup>Data for the index years 1998, 1999 and 2000 (0–12 months) which were originally supplied for the *BreastScreen Australia monitoring reports 2001–2002, 2002–2003 and 2003–2004*, respectively, were re-used in this report.

