

**BreastScreen Australia**  
**monitoring report 2003–2004**

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# **BreastScreen Australia monitoring report 2003–2004**

**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

AIHW	Australian Institute of Health and Welfare
AACR	Australasian Association of Cancer Registries
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 (see glossary)
DoHA	Australian Government Department of Health and Ageing
DCIS	ductal carcinoma in situ (see glossary)
ERP	estimated resident population
ICD	International Classification of Diseases
IRSD	Index of Relative Socio-economic Disadvantage
NAS	National Accreditation Standards
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
SES	socioeconomic status
SLA	statistical local area
Tas	Tasmania
Vic	Victoria
WA	Western Australia
WHO	World Health Organization

# Executive summary

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 and over may also be screened. This report shows that the Program appears to have been successful in reducing both mortality and morbidity. Mortality has declined from 69 deaths per 100,000 women aged 50–69 years in 1990 to 51 deaths per 100,000 in 2004. Various indicators showing improved early detection of ductal carcinoma in situ and small-diameter breast cancers suggest reduced morbidity from radical treatment of advanced disease.

The Program has performance objectives in National Accreditation Standards (NAS) agreed by the Department of Health and Ageing and BreastScreen Australia state and territory programs for individual screening services. These objectives include 70% participation by women in the target age group 50–69 years and rescreening rates of 75% after first screening and 90% after subsequent screening rounds.

This is the eighth national monitoring report for this program. It presents statistics on BreastScreen Australia screening activity and outcomes for 2003–2004 and trend data from 1996 onwards. A reporting interval of two years is used because it corresponds with the recommended interval between screens for asymptomatic women in the target age group of 50–69 years.

This edition of the report is published only on the Internet. In alternate years the report is provided as a printed copy, and also is made available electronically.

Highlights are as follows:

## Indicator 1. Participation

- In 2003–2004, of the 1.6 million Australian women screened by the BreastScreen Australia Program, just over 1.1 million (70%) were in the target age group of 50–69 years.
- Participation among women in Australia aged 50–69 years increased from 51.4% in 1996–1997 to 57.1% in 2001–2002 and decreased significantly to 55.6% in 2003–2004.
- In 2003–2004 participation by women living in the most socioeconomically advantaged areas of Australia was 56.3% compared with 53.6% by women living in the least advantaged areas. This difference is statistically significant.
- Participation by Indigenous Australian women (35.3%) was significantly lower than for non-Indigenous women (55.4%). However, participation by Indigenous Australian women has been increasing from 30.3% in 1998–1999.
- Participation by women whose main language spoken at home was not English (42.8%) was significantly lower than participation by women whose main language spoken at home was English (58.0%).

## Indicator 2. Detection of small invasive breast cancers

- In 2004, there were 3,851 invasive breast cancers detected by BreastScreen Australia, of which 2,735 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 significantly from 56 cancers detected per 10,000 women in 1996 to 78 per 10,000 women in 2004. For women screened who had previously attended the program the increase was from 35 cancers detected per 10,000 women in 1996 to 42 per 10,000 women in 2004.
- In 2004, there were 2,440 small-diameter breast cancers detected by BreastScreen Australia. Of these, 1,731 occurred in women aged 50–69 years.
- In 2004, 55.7% 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, 64.8% 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 43.4 per 10,000 women screened in 2004. This was significantly higher than the rate of 27.2 per 10,000 women screened aged 50–69 years in 2004 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 is two years.

- There were 4,585 interval cancers detected over the 24 months following a negative screening episode for women screened in the three-year period from 2000 to 2002. Of these, 3,242 were in women aged 50–69 years.
- For women aged 50–69 years attending their first screening round in 2000–2002, 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.
- For women aged 50–69 years attending subsequent screening rounds in 2000–2002, the age-standardised interval cancer rate was 10.1 interval cancers per 10,000 women-years.

### **Indicator 3b. Program sensitivity (screen detected cancers)**

‘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 two-year screening interval.

- For women screened over the period from 2000 to 2002 there were 10,993 screen detected cancers and 4,585 interval cancers in women aged 40 years and over, and 7,681 screen detected cancers and 3,242 interval cancers in women in the target age group.
- Program sensitivity has been improving for women aged 50–69 years. The sensitivity rate for women 24 months after their first screen was 77.1% during index years 1997–1999 and 78.6% during index years 2000–2002. These were significantly higher than the rates of 68.9% and 71.1% recorded during index years 1997–1999 and 2000–2002, respectively, for women attending subsequent screening rounds.

### **Indicator 4. Detection of ductal carcinoma in situ (DCIS)**

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 2004, of the 917 cases of DCIS detected in women participating in the BreastScreen Australia Program, 673 were in the 50–69 age group. The age-standardised detection rate for DCIS for women in this age group attending for their first screening round was 19.8 per 10,000 women screened. For women attending for their second or subsequent screening rounds in 2004 the rate decreased significantly to 10.4 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 11.2 cases per 10,000 women screened in 2004.

### **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 2004, 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 9.9% 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.
- The proportion of women attending their first screening round who were recalled for assessment increased significantly from 7.7% in 1999 to 9.9% in 2004. The proportion of women recalled for assessment who attended subsequent screening rounds remained stable at 4.0% in 1999 and 2004.

### **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 2003, there were 11,788 new breast cancer cases diagnosed. Of these, 716 (6.1%) were in women younger than 40 years, 2,218 (18.8%) occurred in women aged 40–49 years,

5,793 (49.1%) occurred in women in the target age group 50–69 years and 3,061 (26.0%) occurred in women aged 70 years and over.

- The breast cancer incidence rate for women of all ages rose from 112.9 per 100,000 women in 1994–1998 to 114.5 per 100,000 women in 1999–2003. The increase was not statistically significant.
- In 1994–1998 and 1999–2003 the age-standardised breast cancer incidence rate for women of all ages was significantly lower in outer regional (102.7 and 106.8 new cases per 100,000 women, respectively), remote (98.3 and 100.5 new cases per 100,000 women, respectively) and very remote areas (82.3 and 91.9 new cases per 100,000 women, respectively) compared with major cities (115.2 and 116.5 new cases per 100,000 women, respectively).
- The breast cancer incidence rate for women in the target age group 50–69 years increased significantly from 280.5 per 100,000 women in 1994–1998 to 295.4 per 100,000 women in 1999–2003.
- The age of women with the highest incidence of breast cancer has been falling. In 1998 the highest breast cancer incidence rate was in women aged 75–79 years (327.4 new cases per 100,000 women). In 2002 the incidence peak was for women aged 65–69 years (360.2 per 100,000 women). In 2003 the age groups with the highest breast cancer incidence rate were 60–64 and 65–69 years old with 327.5 and 327.8 new cases per 100,000 women.
- In 1994–1998 and 1999–2003 the age-standardised breast cancer incidence rate for women aged 50–69 years was significantly lower in outer regional (256.3 and 274.6 new cases per 100,000 women, respectively), remote (233.0 and 255.8 new cases per 100,000 women, respectively) and very remote areas (176.4 and 228.6 new cases per 100,000 women, respectively) compared with major cities (286.4 and 300.7 new cases per 100,000 women, respectively).

### **Indicator 7b. Incidence of ductal carcinoma in situ (DCIS)**

- In the five-year period 1999–2003 there were 6,722 new cases of DCIS detected in women of all ages. Of these, 4,053 (60%) were in women aged 50–69 years.
- The age-standardised DCIS incidence rate for women of all ages increased significantly from 10.5 new cases per 100,000 women in 1994–1998 to 13.5 new cases per 100,000 women in 1999–2003.
- The age-standardised DCIS incidence rate for women aged 50–69 years increased significantly from 31.2 per 100,000 women in 1994–1998 to 42.6 per 100,000 women in 1999–2003.

### **Indicator 8. Mortality**

- Breast cancer was the most common cause of cancer-related deaths in women in Australia in 2004, with 2,641 deaths. Of these, 1,070 deaths (40.5%) occurred in women aged 50–69 years.
- The age-standardised breast cancer mortality rate in women of all ages declined from 30.4 per 100,000 women in 1990 to 23.4 per 100,000 women in 2004, an average of 2.0% per annum.

- The age-standardised mortality rate for women aged 50–69 years declined significantly from 68.5 per 100,000 women in 1990 to 50.9 per 100,000 women in 2004, an average of 2.1% per annum.
- Mortality rates in 2000–2004 for women aged 50–69 years were similar for women in major cities (54.1 deaths per 100,000 women), inner regional areas (51.0) and outer regional areas (54.2). The rates in remote areas (45.2) and very remote areas (43.9) were lower, but these were not significant because of the small number of deaths in these areas.

## 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 five years ago and 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 five-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			Five years ago		
		Year	Rate	Year	Rate	Year	Rate	Year	Rate	
<b>Participation in 24-month period (%)</b>	70.0 <sup>(b)</sup>	2003–2004	55.6	2001–2002	57.1	1998–1999	55.7			
<b>Detection rate of small invasive cancers (≤ 15 mm)<sup>(c)</sup></b>	≥25									
First screening round		2004	43.4	2003	40.1	1999	37.7			
Subsequent screening rounds		2004	27.2	2003	27.2	1999	26.5			
<b>Interval cancer rate<sup>(c)</sup></b>										
First screening round 0–12 months following a negative screening episode	<7.5	Index years 2000, 2001 and 2002	6.8	Index years 1997, 1998 and 1999*	7.3	..	..			
Subsequent screening rounds 0–12 months following a negative screening episode	<7.5	Index years 2000, 2001 and 2002	7.9	Index years 1997, 1998 and 1999*	7.7	..	..			
<b>Program sensitivity (screen detected cancers)<sup>(c)</sup></b>										
First screening round 0–12 months following a negative screening episode	..	Index years 2000, 2001 and 2002	90.0	Index years 1997, 1998 and 1999*	88.5	..	..			
Subsequent screening rounds 0–12 months following a negative screening episode	..	Index years 2000, 2001 and 2002	84.3	Index years 1997, 1998 and 1999*	82.6	..	..			
<b>Detection of ductal carcinoma in situ (DCIS)<sup>(c)</sup></b>										
First screening round	≥12	2004	19.8	2003	16.8	1999	15.3			
Subsequent screening rounds	≥7	2004	10.4	2003	10.3	1999	8.9			
<b>Recall to assessment<sup>(d)</sup></b>										
First screening round	<10	2004	9.9	2003	9.4	1999	7.7			
Subsequent screening rounds	<5	2004	4.0	2003	4.0	1999	4.0			

(continued)

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

Indicator	Latest reporting period		Previous non-overlapping reporting period		Five years ago	
	Objective <sup>(e)</sup>	Year	Rate	Year	Rate	Year
<b>Rescreening for age group 50–67 years<sup>(d) (e)</sup></b>						
First screening round	≥75	Index year 2002	61.6	Index year 2001	62.9	..
Second screening round	≥90	Index year 2002	70.3	Index year 2001	71.9	..
Third and subsequent screening rounds	≥90	Index year 2002	80.7	Index year 2001	81.8	..
<b>Incidence of breast cancer<sup>(f)</sup></b>	..	2003	285.1	2002	303.7	1998
<b>Incidence of ductal carcinoma in situ (DCIS)<sup>(g)</sup></b>	..	1999–2003	42.6	..	..	1994–1998
<b>Mortality from breast cancer<sup>(h)</sup></b>	..	2004	50.9	2003	54.1	1999
..	Not applicable.					

.. Not applicable.

- (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 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) Prior to index year 2000, data for 50–69 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.
- \*The Australian figure includes data from NSW, Vic, Qld, WA, SA, Tas and ACT. NT data were unavailable at the time of publication of the *BreastScreen Australia monitoring report 2000–2001* from which the data for index years 1997, 1998 and 1999 were copied.