

BreastScreen Victoria
1999
Annual Statistical Report



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BreastScreen Victoria 1999 highlights

Breast cancer represents a significant burden to women and the wider community. The causes of breast cancer are not yet known but the most significant risk factor is increasing age. Mammography screening has been shown to be highly effective among women over the age of 50. The specialist multidisciplinary teams at BreastScreen services seek to discover breast cancer at an early stage when treatment is most likely to be effective.

It is thought that if 70% of Victorian women aged 50–69 years are screened by BreastScreen Victoria, the Program will be able to demonstrate a significant reduction in the impact of breast cancer in our community. In order to reach this objective, the BreastScreen Program must offer a high quality service and be sensitive to the varied needs of women.

Attendance

In 1999, more than 171,000 women attended the BreastScreen Victoria Program. Of these, 76% were aged 50–69 years, the age range in which mammography has been shown to be of the greatest benefit. Ten per cent of women screened were aged 40–49. For the majority of women screened in 1999, their screening visit was a subsequent attendance (81%). While rescreen rates overall are high, a study examining socio-economic, cultural and clinical reasons why women do not attend for their second screen¹ was recently completed. The study found that women from non-English speaking backgrounds, Indigenous women and women who reported symptoms at first screening were more likely not to attend for second round screening. These findings have prompted further investigation by BreastScreen Victoria of factors that discourage reattendance.

Of all Victorian women aged 50–69 years, 58.0% participated in the BreastScreen Program during the period 1 January 1998 to 31 December 1999. This is a small increase from the rates reported previously and there is still some way to go before realising the aim to screen 70% of women in this age group. In June 2000, BreastScreen Victoria was again granted access to the electoral roll, so that women in the 50–69 year age group who have not previously attended BreastScreen and have not already been invited to attend may be invited. This should have a positive effect on the number of first attenders in 2001.

Evidence from clinical trials of mammography screening indicates that to achieve the greatest benefit, a large proportion of women who are screened should return for rescreening every two years. In 1999, 81% of women aged 50–69 years who were screened in 1997 returned for rescreening within 27 months.

Equity and access

Information relating to the background and area of residence of the women who attend BreastScreen is carefully monitored to ensure that the service provided is equitable and accessible to women.

Area of residence

The breakdown by area of residence of women attending the BreastScreen Victoria Program continues to closely match that for the whole of Victoria. Previously, participation of women living in rural areas was higher than those living in urban areas, but reported participation rates are similar across areas. Rescreen rates are slightly higher in rural areas. These results indicate that the service is accessible to women regardless of their area of residence.

Socio-economic status

Although BreastScreen Victoria does not ask women for information about their socio-economic status, this can be inferred using an index developed by the Australian Bureau of Statistics which assigns a value relating to socio-economic status to Victorian postcodes².

Consistent participation and rescreen rates were seen across all categories of socio-economic status in 1999 with the exception of the lowest socio-economic group in which participation and rescreen rates were slightly lower.

1 O'Byrne A, Diver F, Kavanagh A, Krishnan C and Ugoni A (2000), 'Predictors of non-attendance for second round mammography in an Australian mammography screening programme', *J Med Screening* 7:190–194.

2 Australian Bureau of Statistics, *Socio-Economic Indexes for Areas 1996*.

Women of culturally and linguistically diverse backgrounds

The participation rate for women of non-English speaking backgrounds (NESB) aged 50–69 years was 57% for the period 1 January 1997 to 31 December 1998. This corresponds to 99% of the rate for the general population which is far greater than the required national accreditation standard of 50% of the rate for the general population. The rescreen rates for women of NESB aged 50–69 years continue to be slightly lower than the rate for the general population (77% versus 81% respectively, as per the 1998 Annual Statistical Report). While our performance is very encouraging in this area, we continue to focus on improving program access and acceptability to these women.

Specialist multidisciplinary assessment

In order to maximise the benefits and minimise potentially negative aspects of screening, the proportion of women for whom additional tests are recommended after screening should be low. It is preferable to minimise the proportion of women who do not have breast cancer being recalled for assessment where some undergo invasive procedures. Further, it is best that as far as possible women recommended for further investigations undergo simple, non-invasive tests to reach a definitive conclusion about the presence or absence of disease.

In 1999, 9.9% of women attending for their first screen and 4.8% of women attending for a subsequent screen were recalled for further assessment. This represents a small decrease from recall rates in 1998, which were 10% for first attenders and 5% for subsequent attenders. In 1997, these rates were 9.3% and 4.5%, and 6.9% and 3.8% in 1996. These rates are monitored on an ongoing basis in order to keep them as low as possible without compromising the quality of the service provided. A study is currently underway to examine the reasons for increased recall rates over time among women who ultimately receive a benign result after assessment. The effects of age, screening round, symptom status and hormone replacement therapy (HRT) on false positive recall rates will be analysed.

For the first time, data on outcome of assessment has been broken down by attendance round. Among women aged 50–69 years who attended *assessment*, 7.3% of first attenders and 10% of subsequent attenders were diagnosed with a malignant lesion. This is in contrast to the rate of diagnosis of breast cancer among women *screened*, which, as expected, is higher among first attenders than subsequent attenders.

Proportionately more first attenders were placed on early review (0.9% versus 0.5% for subsequent attenders). It is more difficult to ascertain whether appearances on the mammogram should be investigated if there are no previous mammograms for comparison. Examining current and past films together allows radiologists to identify whether something they pick up on a woman's mammogram is a change which may warrant investigation. This is why proportionately more women who are first attenders are recalled to assessment.

Of the women aged 50–69 years who were recommended to attend the BreastScreen Program for further assessment, 74% received a definitive diagnosis after further x-rays, ultrasound or clinical examination only. Of those women aged 50–69 years for whom a biopsy was required, the majority (85%) underwent a fine needle or core biopsy rather than an open surgical biopsy. This represents a decrease in the number of women undergoing open biopsy; in 1998, 81% of women undergoing biopsy had either a fine needle or core. These types of biopsy are considered to be less invasive than open biopsy.

For the first time, information on the positive predictive value of biopsy procedures performed within BreastScreen is presented. The positive predictive value for biopsy procedures overall (fine needle aspiration, core biopsy and open biopsy) was 0.39. This means that 61% of women who underwent a biopsy procedure proved not to have breast cancer. A study is in progress to examine predictors of recall in the hope of developing strategies to minimise these rates without compromising the accuracy of the Program.

BreastScreen aims to reach a diagnosis without the need for open biopsy, which involves general anaesthetic and hospitalisation. More than 86% of all women who were diagnosed with breast cancer received their diagnosis without requiring an open biopsy.

About the cancers diagnosed

There were 935 breast cancers diagnosed within the BreastScreen Victoria Program in 1999, corresponding to 6.6 cases for every 1,000 women screened in first attenders and 5.2 cases for every 1,000 women screened in subsequent attenders. In 1998, the cancer detection rates were 7.0 per 1,000 women screened among first attenders and 5.0 per 1,000 women screened among subsequent attenders. Cancer detection rates again increased with age as expected and exceeded the national accreditation standards.

Seventy-three per cent of cancers detected in 1999 were in women aged 50–69 years.

In addition to maximising the diagnosis of breast cancers within the BreastScreen Victoria Program, it is important that a large proportion of these cancers are found early. In general, if breast cancer is detected early and while the tumour is relatively small, the woman is less likely to require extensive surgery and has a better chance of successful recovery. In 1999, the rate of detection of invasive breast cancer less than 10 mm in diameter was 1.5 per 1,000 women screened in first attenders and 1.9 per 1,000 women screened in subsequent attenders. While the cancer detection rate among subsequent attenders remains the same as in 1998, there has been a slight decrease in cancer detection among first attenders (1.8 per 1,000 women screened in 1998). The rates for both first and subsequent attenders exceed the national accreditation standard which requires a rate of more than 0.8 cases per 1,000 women screened.

Tumour grade is an important prognostic indicator; tumours that are well differentiated are associated with better prognosis. In 1999, 44% of tumours for which information was available were classified as well differentiated.

Of breast cancers less than 10 mm where axillary dissection was performed and information was available, 95% were node negative.

Interval cancers

Interval cancers are cases of invasive breast cancer that are diagnosed in the time period after a negative screen and prior to the next scheduled screening examination. BreastScreen Australia recently adopted a new definition of interval cancers³ which differs from that previously used in this report. Notably, ductal carcinoma in situ (DCIS) is now excluded from reports of interval cancers.

An important task for the Program is to minimise interval cancers where possible and maximise the detection of breast cancers that are present at the time of screening. Interval cancer rates are reported here for women who were screened in 1997. In common with similar programs, BreastScreen Victoria's interval cancer rates are higher than the national accreditation standard, although the standard relates to women aged 50–69 and does not distinguish first and subsequent attenders or symptom status.

The sensitivity of the screening program is an important measure which takes into account both the accuracy and quality of the screening program and the length of the screening interval. A recently published study⁴ examined the sensitivity of screening mammography within BreastScreen Victoria by symptom status. The authors found that sensitivity was high among women with significant symptoms (breast lump and/or blood-stained or watery nipple discharge). They concluded that this may be due to more cautious radiological practice, which also caused lower specificity (more false positives) in this group. Sensitivity was lower in women reporting other symptoms than among women without symptoms. The reasons for this are being examined.

Management of screen-detected breast cancers

Treatment services are not provided within the BreastScreen Program. However, BreastScreen seeks to follow up information on any pathology and further management for all women who attend for screening. This includes information about surgical treatment and the subsequent use of adjuvant therapy, incorporating radiotherapy, chemotherapy, hormonal therapy or a combination of these.

3 Kavanagh AM, Amos AF and Marr GM (1999), The ascertainment and reporting of interval cancers within the BreastScreen Australia Program, NHMRC National Breast Cancer Centre.

4 Kavanagh A, Giles G, Mitchell H and Cawson J (2000), 'The sensitivity, specificity and positive predictive value of screening mammography and symptomatic status', *J Med Screening* 7:105–110.

The year 1999 saw the rates of mastectomy decrease for women with invasive tumours, with 77% of women undergoing breast-conserving surgery, compared with 73% of women in 1998 and 1997. Among women diagnosed with DCIS, the rates of mastectomy increased slightly, from 18% in 1998 to 20% in 1999. Eleven per cent of women diagnosed with DCIS underwent axillary node removal, which is similar to the rate of 10% in 1998 but is substantially lower than the rates of 20% in 1997 and 22% in 1996. As in previous years, none of these women were found to have positive nodes.

Again, data presented in this report relating to type of surgical treatment by area of residence indicate far greater proportions of women undergoing mastectomy in rural areas than in urban areas. Seventeen per cent of women diagnosed with breast cancer living in urban areas underwent mastectomy, compared with 40% of women living in rural areas.

Eighty-four per cent of women diagnosed with breast cancer within BreastScreen in 1999 received some form of adjuvant therapy. This figure comprised 93% of women diagnosed with invasive breast cancer and 41% of women diagnosed with DCIS (compared with 94% of invasive cases and 29% of DCIS in 1998). Women diagnosed with smaller tumours were less likely to receive adjuvant therapy.

Monitoring quality and outcomes

Mammography screening remains the best available tool for the early detection of breast cancer when delivered as part of an organised program with policies that reflect the evidence from randomised controlled trials. This yearly Statistical Report is developed in recognition of the need to continually monitor and evaluate the performance of the BreastScreen Program and to provide a service that is of the highest quality and is also accountable to the women we screen.

As the BreastScreen Program continues to mature, our focus moves towards review and evaluation of the Program to ensure the continued provision of a high-quality service in the long term. The data collection on which this report draws represents an invaluable tool to allow the Program to address key questions relating to screening practice and outcomes for the women of Victoria and Australia. With the accumulation of several years' data, a statistical report is currently in development which will present time series data on key aspects of Program performance from 1994 to 1999 and provide more robust data in areas typically subject to variation due to small numbers.

Monitoring quality requires a combination of quantitative and qualitative research. BreastScreen is committed to the provision of a service that meets the expectations of women who attend for screening. BreastScreen Victoria is currently refining a pilot consumer satisfaction instrument which seeks to highlight areas of the service that women feel could be improved upon.

Introduction

This Statistical Report provides information about BreastScreen Victoria, the Victorian breast cancer screening program, and relates only to women screened in the Victorian Program. It provides summary data on women who attended for screening during 1999⁵ and the results of their screening. In addition, interval cancer and rescreen data are presented for women screened in 1997. Participation data refers to the period 1 January 1998 to 31 December 1999.

Statistical Reports are produced annually and present comparable data so that time trends can be readily identified. Where appropriate, limitations of the data in this report are described. More detailed information about the structure and processes of BreastScreen Victoria can be found in its Annual Reports.

Reference to national accreditation standards⁶, where appropriate, is also included. A summary of BreastScreen Victoria's performance against selected standards is given in Appendix 2.

In some sections of this report, the numbers presented are quite small; it is important to recognise the limitations in terms of interpretation of results and comparison of trends over time. Simple descriptive statistics are provided as a 'snapshot' of the BreastScreen Victoria Program. A companion statistical report is currently being developed, which will allow more meaningful analysis to be conducted on a larger data set for women screened between 1994 and 1999.

Very sincere thanks are extended to all staff of BreastScreen Victoria without whom the production of this report would not have been possible.

This, the Program's sixth Annual Statistical Report, is the first report produced by the BreastScreen Registry under the auspices of BreastScreen Victoria. The task of bringing the BreastScreen Registry 'in-house' was made manageable by the goodwill and dedication of all Registry and Information Technology staff during the transition. We welcome to staff Ms Genevieve Chappell, Manager, BreastScreen Registry and Information Services and Dr Anne Kavanagh as Consultant Epidemiologist to BreastScreen Victoria.

5 All data in this Statistical Report exclude two women who attended for screening in 1999 but who were aged less than 40 years.

6 National Program for the Early Detection of Breast Cancer (1994), National Accreditation Requirements—March 1994, Canberra: Commonwealth Department of Human Services and Health.

BreastScreen Victoria

Victorian Breast Cancer Screening Program

BreastScreen Victoria provides free mammography to asymptomatic women through an organised screening service incorporating recruitment and recall for screening every two years. The Program's aim is to reduce morbidity and mortality associated with breast cancer through early detection.

BreastScreen Victoria is a joint initiative of the Victorian and Commonwealth Governments and is part of BreastScreen Australia. Victoria is serviced by a network of thirty-six screening centres, eight assessment centres, a mobile van and a relocatable unit. A system of accreditation is in place whereby each service is regularly assessed by an independent team to ensure that national accreditation standards are met.

BreastScreen Victoria focuses its Program on women aged 50–69 years. Women and their nominated general practitioners are notified of their screening results within two weeks.

Where an abnormality is found on screening, or where a woman reports a suspicious symptom at the screening visit, referral for specialist medical assessment at a BreastScreen Victoria centre provides free assessment to the point of definite diagnosis.

While a doctor's referral is not required to attend the service, BreastScreen Victoria liaises closely with general practitioners.

For further details refer to the website at www.breastscreen.org.au.

1 Participation by Victorian women

The following four tables show participation rates for Victorian women who were screened by BreastScreen Victoria during the period 1 January 1998 to 31 December 1999 (a period of 24 months).

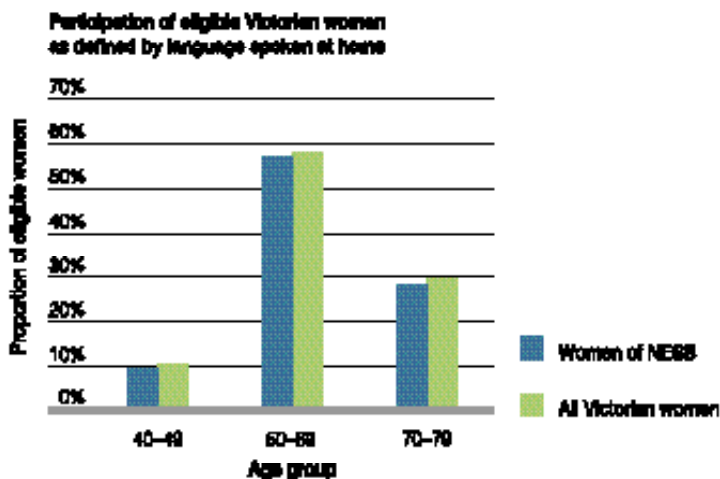
1.1 Participation rates by language spoken at home

The table below shows the participation rate for all Victorian women and for women of non-English speaking backgrounds (NESB) as defined by language usually spoken at home. The screening program directly targets women aged 50–69 years. The participation rate for women aged 50–69 years was 58.0%, an improvement on the 1998 figure of 56.5%. The participation rate among women aged 40–49 was 10.6%, the same as in 1998. The participation rate among women aged 70–79 has increased from 28.0% in 1998 to 29.6% in 1999⁷.

Participation among women of NESB aged 50–69 years was 57.2%, which is an increase from 54.0% in 1998, 50.5% in 1997 and 47.2% in 1996⁸.

Participation rates by language spoken at home 1 January 1998 to 31 December 1999	Age group		
	40–49	50–69	70–79
All women			
Estimated number of eligible women resident in Victoria ⁹	331819	432656	153872
Number of women screened	35219	250767	45491
Participation rate	10.6%	58.0%	29.6%
NESB women			
Estimated number of eligible NESB women resident in Victoria ¹⁰	65633	91004	23420
Number of NESB women screened	6394	52051	6680
Participation rate	9.7%	57.2%	28.5%

The national accreditation standard seeks to maximise the proportion of women aged 50–69 years who are screened, with the aim of screening 70% of this group. The national accreditation standard for participation by women of NESB in urban areas is at least 50% of the rate for the general population.



1.2 Participation rates by area of residence

The following table shows the participation rates by area of residence (capital city versus other) for all women and for women of NESB. The category 'capital city' includes Melbourne and surrounding suburbs.

Among women in the target age group, total participation continues to be lower in the capital city than in the remainder of Victoria; however, among NESB women, participation is slightly higher in the capital city.

Participation rates by language spoken at home 1 January 1998 to 31 December 1999	Age group		
	40-49	50-69	70-79
All women			
Capital city			
Estimated number of eligible women resident in Victoria ¹¹	245909	315081	108630
Number of women screened	24274	175860	30285
Participation rate	9.9%	55.8%	27.9%
Other than capital city			
Estimated number of eligible women resident in Victoria ¹¹	85910	117575	45242
Number of women screened	10945	74907	15206
Participation rate	12.7%	63.7%	33.6%
NESB women			
Capital city			
Estimated number of eligible NESB women resident in Victoria ¹²	60971	83555	20674
Number of NESB women screened	5911	47943	5865
Participation rate	9.7%	57.4%	28.4%
Other than capital city			
Estimated number of eligible NESB women resident in Victoria ¹²	4662	7449	2746
Number of NESB women screened	483	4108	815
Participation rate	10.4%	55.1%	29.7%

7 Participation rates were calculated using the average of the 1998 and 1999 Estimated Resident Populations (ERP) of Victoria as the denominator (eligible women).

8 This estimate of the participation rate among women of NESB was based on figures from the 1996 Census as projections for inter-Census years are not available specifically for women of NESB. Using 1996 Census data as the denominator may partly account for an increase in participation rates for women of NESB. Once 2001 Census data are available, more reliable estimates of participation by NESB will be calculated.

9 Australian Bureau of Statistics, Estimated Resident Population 1998; Australian Bureau of Statistics, Estimated Resident Population 1999.

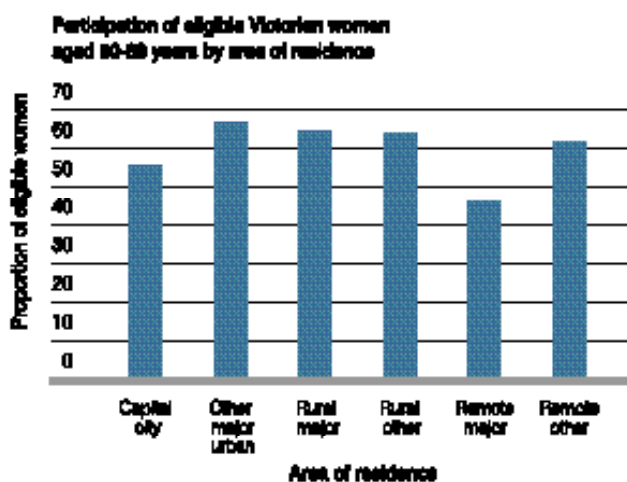
10 Australian Bureau of Statistics, Census of Population and Housing 1996.

11 Australian Bureau of Statistics, Estimated Resident Population 1998; Australian Bureau of Statistics, Estimated Resident Population 1999.

12 Australian Bureau of Statistics, Census of Population and Housing 1996.

The following table shows participation by area of residence classified according to the 'Rural/Remote Areas Classification' of the Commonwealth Department of Health and Family Services, January 1994. Among women aged 50–69 years, participation rates varied from 46% in remote major areas to 66.7% in other major urban areas. Participation in the capital city, at 55.8%, was slightly lower than the overall rate of 58.0%. Similar rates were found in major urban and major rural areas, and other rural and other remote areas.

Participation rates by area of residence 1 January 1998 to 31 December 1999 ¹³		Age group		
		40–49	50–69	70–79
Capital city	Estimated number of eligible women resident in Victoria	245909	315081	108630
	Number of women screened	24274	175860	30285
	Participation rate	9.9%	55.8%	27.9%
Other major urban	Estimated number of eligible women resident in Victoria	10198	14358	6038
	Number of women screened	1580	9581	2081
	Participation rate	15.5%	66.7%	34.5%
Rural major	Estimated number of eligible women resident in Victoria	22626	29728	12292
	Number of women screened	2625	19160	3976
	Participation rate	11.6%	64.5%	32.3%
Rural other	Estimated number of eligible women resident in Victoria	48762	67231	24531
	Number of women screened	5843	42959	8409
	Participation rate	12.0%	63.9%	34.3%
Remote major	Estimated number of eligible women resident in Victoria	3083	4228	1603
	Number of women screened	611	1945	404
	Participation rate	19.8%	46.0%	25.2%
Remote other	Estimated number of eligible women resident in Victoria	1241	2030	778
	Number of women screened	286	1262	336
	Participation rate	23.0%	62.2%	43.2%
Total	Estimated number of eligible women resident in Victoria	331819	432656	153872
	Number of women screened	35219	250767	45491
	Participation rate	10.6%	58.0%	29.6%



¹³ Australian Bureau of Statistics, Estimated Resident Population 1998; Australian Bureau of Statistics, Estimated Resident Population 1999. The classifications as capital city; other major urban; rural: major and other; and remote: major and other, are based on population size and density. In areas that are neither wholly rural nor remote; judgements about relative remoteness are applied.

1.3 Participation rates by socio-economic status

The following table presents participation rates by socio-economic status. An Index of Disadvantage¹⁴ value is allocated to a postcode, and is available for 99.5% of Victorian women screened during the period 1 January 1998 to 31 December 1999¹⁵. In the table, the index has been grouped into quintiles¹⁶, ranging from low to high socio-economic status. The first quintile, for example, indicates an area of relatively low income, low educational attainment, high unemployment and significant NESB population.

In women aged 50–69 years, participation rates were lowest in the group of lowest socio-economic status, with similar rates across other groups.

Participation rates by socio-economic status (SES) 1 January 1998 to 31 December 1999	Age group		
	40–49	50–69	70–79
1st quintile (1–20%); lowest SES			
Estimated number of eligible women resident in Victoria	58309	90147	33518
Number of women screened	6069	49855	9479
Participation rate	10.4%	55.3%	28.3%
2nd quintile (21–40%)			
Estimated number of eligible women resident in Victoria	63046	86271	33334
Number of women screened	6802	51284	10085
Participation rate	10.8%	59.4%	30.3%
3rd quintile (41–60%)			
Estimated number of eligible women resident in Victoria	69690	85856	29808
Number of women screened	7236	48281	8643
Participation rate	10.4%	56.2%	29.0%
4th quintile (61–80%)			
Estimated number of eligible women resident in Victoria	70886	82176	27522
Number of women screened	7263	47838	8093
Participation rate	10.2%	58.2%	29.4%
5th quintile (81–100%); highest SES			
Estimated number of eligible women resident in Victoria	69888	88206	29690
Number of women screened	7621	52176	9044
Participation rate	10.9%	59.2%	30.5%

14 Australian Bureau of Statistics, Socio-Economic Indexes for Areas 1996.

15 An Index of Disadvantage is not available for a small number of Victorian postcodes.

16 Index values for Victorian postcodes were arranged in ascending order and the number of eligible women in 1996 sorted by postcode of residence. The total number of eligible women was then divided into quintiles of approximately equal size to determine the cut-off points (index values) for each quintile. This methodology differs from that used in the 1998 report, where the data was grouped into quartiles on the basis of index value scores for each postcode.

1.4 Response to invitations based on the electoral roll

BreastScreen targets women in the age group 50–69 years as mammography has been found to be most effective in this group. BreastScreen has been permitted access to the electoral roll to invite for screening women who are approaching the age of 50 and who have not previously attended BreastScreen Victoria. Women are sent a written invitation for screening; if no response is received within one month, a second invitation letter is posted.

A total of 17,880 women were sent an invitation for screening during 1999. A total of 6,634 appointments for screening were made for this group of women, representing a response rate of 37%. It is not certain that all of these appointments were made solely in response to the invitation letter based on the electoral roll; some of the women may have responded to other recruitment initiatives such as newspaper articles or television advertisements.

This result of 37% is similar to the response rate of 36% in 1998.

Of all invitations sent, 3.0% were returned, unable to be delivered.

2 Rescreen rates

2.1 Rescreen rates by language spoken at home

The following table shows the proportion of women screened during 1997 who were rescreened by BreastScreen Victoria within 27 months of their previous attendance¹⁷. The nominated age ranges refer to the ages of the women at the time of their 1997 screen. Rates for all women and women of non-English speaking background (NESB) are given.

The rescreen rates are comparable to the rates presented last year. In the 1998 Annual Statistical Report, the rescreen rates were reported as 80.5% for women aged 50–59 years and 82.5% for women aged 60–69 years. The rescreen rate for women aged 50–69 years was 80.7% in 1999.

Rescreen rates among women of NESB were slightly lower than among all women aged 50 years and older.

Rescreen rates by language spoken at home Women screened 1 January to 31 December 1997	Age group				
	40–49	50–59	60–69	70–79	50–69
All women					
Women screened during 1997	16685	67282	45539	18966	112821
Women rescreened within following 27 months	6982	53641	37427	11128	91068
Rescreen rate	41.8%	79.7%	82.2%	58.7%	80.7%
NESB women					
NESB women screened during 1997	3089	14166	9628	2668	23794
NESB women rescreened within following 27 months	1319	10867	7416	1500	18283
Rescreen rate	42.7%	76.7%	77.0%	56.2%	76.8%

The national accreditation standard is that the rescreen rate for women aged 50–69 years should be at least 75%.

¹⁷ Rescreen rates correspond to women screened between 1 January 1997 and 31 December 1997. The table excludes women at high risk who were recommended for annual screening and women resident interstate at the time of their 1997 screening. A woman was counted as 'rescreened within the following 27 months' if she returned to be rescreened within 821 days of the previous 1997 mammogram.

2.2 Rescreen rates by area of residence

The following table presents rescreen rates for women living in urban and rural areas. The rescreen rates for women living in urban¹⁸ areas were very similar to those for women living in rural¹⁹ areas.

Rescreen rates by area of residence Women screened 1 January to 31 December 1997	Age group				
	40-49	50-59	60-69	70-79	50-69
Urban					
Women screened during 1997	11938	49546	32066	13334	81612
Women rescreened within following 27 months	4944	39292	26200	7833	65492
Rescreen rate	41.4%	79.3%	81.7%	58.7%	80.2%
Rural					
Women screened during 1997	4747	17736	13473	5632	31209
Women rescreened within following 27 months	2038	14349	11227	3295	25576
Rescreen rate	42.9%	80.9%	83.3%	58.5%	82.0%

¹⁸ References to 'urban' include capital city and other major urban according to the 'Rural/Remote Areas Classification' of the Commonwealth Department of Health and Family Services, January 1994.

¹⁹ References to 'rural' include rural major, rural other, remote major and remote other according to the 'Rural/Remote Areas Classification' of the Commonwealth Department of Health and Family Services, January 1994.

2.3 Rescreen rates by socio-economic status

The following table presents rescreen rates by socio-economic status. An Index of Disadvantage value is allocated to each postcode by the Australian Bureau of Statistics. In the following table, the index has been grouped into quintiles, ranging from low to high socio-economic status. The first quintile, for example, indicates an area of relatively low income, low educational attainment, high unemployment and significant NESB population.

Data is presented for 99.4% of Victorian women screened during 1997 where an Index of Disadvantage value is available. These data indicate consistent rescreen rates across different socio-economic groups, with slightly lower rates in women aged 50–69 years and older in the lowest quintile of socio-economic status.

Rescreen rates by socio-economic status (SES) Women screened 1 January to 31 December 1997	Age group				
	40–49	50–59	60–69	70–79	50–69
1st quintile (1–20%); lowest SES Women screened during 1997	3020	13207	10559	4157	23766
Women rescreened within following 27 months	1284	10200	8391	2363	18591
Rescreen rate	42.5%	77.2%	79.5%	56.8%	78.2%
2nd quintile (21–40%) Women screened during 1997	3175	13712	10496	4421	24208
Women rescreened within following 27 months	1313	11026	8686	2616	19712
Rescreen rate	41.4%	80.4%	82.8%	59.2%	81.4%
3rd quintile (41–60%) Women screened during 1997	3370	12373	7976	3312	20349
Women rescreened within following 27 months	1469	9966	6623	1954	16589
Rescreen rate	43.6%	80.5%	83.0%	59.0%	81.5%
4th quintile (61–80%) Women screened during 1997	3479	12905	8073	3407	20978
Women rescreened within following 27 months	1443	10398	6737	2059	17135
Rescreen rate	41.5%	80.6%	83.5%	60.4%	81.7%
5th quintile (81–100%) Women screened during 1997	3483	14636	8171	3599	22807
Women rescreened within following 27 months	1407	11686	6774	2092	18460
Rescreen rate	40.4%	79.8%	82.9%	58.1%	80.9%

2.4 Response to routine rescreen invitations

Women in the age group 50–74 years receive a reminder for rescreening 23 months after their last attendance if no further appointment has been made at the woman's initiative. For women aged 40–49 years, reminders are only sent if there is a strong family history of breast cancer, a personal history of breast cancer or a significant abnormality (defined as lobular carcinoma in situ or atypical ductal hyperplasia). If there is no response within six months, a second reminder letter is posted.

A total of 147,038 women were sent reminder letters for rescreening during 1999. Appointments for rescreening were made for 119,242 of these women, representing a response rate of 81%, which is comparable to the rate of 82% in 1998²⁰.

Of these invitations, 2.1% of the letters were returned, unable to be delivered.

3 Characteristics of women attending for screening

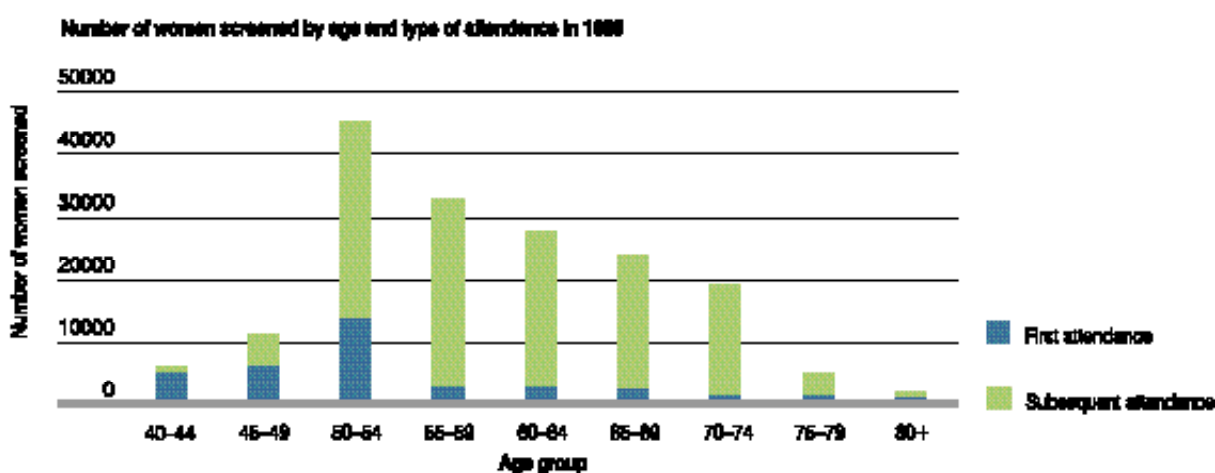
Most of the information in this section comes from a questionnaire that each woman completes prior to each mammography examination.

3.1 Type of attendance

The following table shows the type of attendance²¹ by age group for women who were screened during 1999. Classification of attendance status is based on attendance within BreastScreen Victoria; it is acknowledged that first attenders to BreastScreen may have had previous mammography outside of the Victorian Program. More than 171,000 women were screened by BreastScreen during 1999. The proportion of attendances accounted for by women who have previously attended BreastScreen continues to increase. During 1999, 80.9% of all attendances were subsequent attendances, compared with 76.5% in 1998, 71.3% in 1997, 56.8% in 1996, 16.5% in 1995 and 7.5% in 1994.

Among women aged 50–69, 84.8% of attendances were subsequent attendances in 1999, compared with 80.1% in 1998.

Type of attendance	Age group									50–69	Total
	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80+		
First attendance	4965 80.2%	6104 54.5%	13549 29.9%	2628 8.0%	2069 7.5%	1474 6.2%	871 4.6%	689 15.9%	304 37.4%	19720 15.2%	32653 19.1%
Subsequent attendance	1224 19.8%	5102 45.5%	31737 70.1%	30252 92.0%	25651 92.5%	22428 93.8%	18180 95.4%	3654 84.1%	509 62.6%	110068 84.8%	138737 80.9%
Total ²²	6189 100%	11206 100%	45286 100%	32880 100%	27720 100%	23902 100%	19051 100%	4343 100%	813 100%	129788 100%	171390 100%



²¹ Data in this Statistical Report is classified according to whether the woman's attendance was the first to BreastScreen Victoria or a subsequent attendance. The accuracy of this approach is greater than using the prevalent/incident round classification of the National Accreditation Requirements which are based on women's self-report about mammography during the previous five years.

²² In all tables, percentages may not add to 100% due to rounding.

3.2 Area of residence

The geographic distribution of women screened in 1999 was very similar to previous years and matches the profile for all Victorian women closely. Of all women screened, 72.3% live in urban areas (capital city and other major urban areas) and 25.9% live in rural areas. Among the eligible female population in Victoria, 74.3% live in urban areas and 24.2% live in rural areas.

3.3 Area/country of birth

This table shows the area/country of birth by age group for the women who attended for screening in 1999. In the 1996 Census, 62% of the female population of Victoria aged 40 years or more were identified as having been born in Australia.

A detailed breakdown of attendance by country of birth is given in Appendix 1.

Area/country of birth	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
Oceania and Antarctica	12016 69.1%	49483 63.3%	32730 63.4%	16788 71.8%	649 79.8%	82213 63.3%	111666 65.2%
Australia	11715 67.3%	48604 62.2%	32453 62.9%	16687 71.3%	646 79.5%	81057 62.5%	110105 64.2%
Europe and former USSR	3197 18.4%	22469 28.7%	15967 30.9%	5763 24.6%	135 16.6%	38436 29.6%	47531 27.7%
United Kingdom	1095 6.3%	7104 9.1%	4480 8.7%	1895 8.1%	73 9.0%	11584 8.9%	14647 8.5%
Italy	421 2.4%	3779 4.8%	3839 7.4%	1145 4.9%	13 1.6%	7618 5.9%	9197 5.4%
Greece	292 1.7%	3117 4.0%	2134 4.1%	320 1.4%	1 0.1%	5251 4.0%	5864 3.4%
South-East Asia	991 5.7%	2209 2.8%	877 1.7%	191 0.8%	6 0.7%	3086 2.4%	4274 2.5%
Southern Asia	269 1.5%	978 1.3%	529 1.0%	168 0.7%	8 1.0%	1507 1.2%	1952 1.1%
The Middle East and North Africa	169 1.0%	822 1.1%	503 1.0%	175 0.7%	1 0.1%	1325 1.0%	1670 1.0%
North-East Asia	304 1.7%	819 1.0%	465 0.9%	132 0.6%	5 0.6%	1284 1.0%	1725 1.0%
Africa excluding far North Africa	210 1.2%	615 0.8%	302 0.6%	95 0.4%	2 0.2%	917 0.7%	1224 0.7%
The Americas	209 1.2%	736 0.9%	226 0.4%	74 0.3%	7 0.9%	962 0.7%	1252 0.7%
Not stated	30 0.2%	35 <0.1%	23 <0.1%	8 <0.1%	0 0.0%	58 <0.1%	96 0.1%
Total	17395 100%	78166 100%	51622 100%	23394 100%	813 100%	129788 100%	171390 100%

3.4 Language spoken at home

Twenty per cent of all women who attended for screening in 1999 indicated that they usually speak a language other than English at home. In the 1996 Census, 21% of the Victorian female population aged 40 years or more identified that they spoke a language other than English at home²³. This proportion differed across age groups, with 21% of women aged 50–69 years, 18.0% of women aged 40–49 years and 15.2% of women aged 70–79 years usually speaking a language other than English at home.

3.5 Aboriginality

This table shows the number of women who attended for screening and identified themselves as being of Aboriginal or Torres Strait Islander (ATSI) descent. The figure of 253 is larger than the years prior: 1998 (223), 1997 (224), 1996 (168), 1995 (190) and 1994 (91).

In the 1996 Census, 0.2% of the female population of Victoria aged 40 years or more identified themselves as being of ATSI descent.

ATSI descent	Age group					50–69	Total
	40–49	50–59	60–69	70–79	80+		
Yes	54 0.3%	114 0.1%	68 0.1%	17 0.1%	0 0.0%	182 0.1%	253 0.1%
No	17321 99.6%	77970 99.7%	51469 99.7%	23323 99.7%	809 99.5%	129439 99.7%	170892 99.7%
Not stated	20 0.1%	82 0.1%	85 0.2%	54 0.2%	4 0.5%	167 0.1%	245 0.1%
Total	17395 100%	78166 100%	51622 100%	23394 100%	813 100%	129788 100%	171390 100%

²³ The data presented in Sections 3.2 to 3.5 show the proportion of women who attend BreastScreen by area of residence, area/country of birth, language spoken at home and Aboriginality. Comparisons between the profile of women attending BreastScreen Victoria and the total Victorian female population are made in the text; it would be ideal to calculate participation rates by these key variables. However, the only information currently available on area/country of birth, NESB and ATSI status is from the ABS Census of Population and Housing 1996. As the ABS does not make population projections for the Victorian population by these key variables, it is not possible to ascertain accurate denominators from which participation rates could be calculated.

3.6 Symptom status

The BreastScreen Program is designed for well women without symptoms of breast cancer; it differs from a diagnostic service designed to investigate breast symptoms which may or may not be suspicious of breast cancer. Women complete a questionnaire either before or when they arrive at the screening centre. The questionnaire asks, among other things, whether they have any breast symptoms and the nature of these. Although BreastScreen discourages women with symptoms from attending, services will screen women who arrive for their appointment reporting a symptom.

The table below shows the symptom status of women at the time of screening. The category 'breast lump and/or nipple discharge' includes women reporting a breast lump, or a blood-stained or watery nipple discharge. The category 'other symptoms' includes a variety of symptoms, particularly women with breast pain or tenderness.

A total of 94.8% of all women screened reported no breast symptoms at the time of screening. As in previous years, younger women report symptoms more frequently than older women.

Symptom status	Age group						Total
	40-49	50-59	60-69	70-79	80+	50-69	
Breast lump and/or nipple discharge	759 4.4%	1546 2.0%	546 1.1%	210 0.9%	20 2.5%	2092 1.6%	3081 1.8%
Other breast symptoms	1097 6.3%	2669 3.4%	1395 2.7%	571 2.4%	72 8.9%	4064 3.1%	5804 3.4%
No breast symptoms	15539 89.3%	73951 94.6%	49681 96.2%	22613 96.7%	721 88.7%	123632 95.3%	162505 94.8%
Total	17395 100%	78166 100%	51622 100%	23394 100%	813 100%	129788 100%	171390 100%

Among the 3,081 women with a breast lump and/or nipple discharge, there were 584 women with symptoms (19%) that were considered suspicious of breast cancer and for which recall for assessment was recommended under the policies of BreastScreen Victoria. This number comprises 448 women with a lump that had been present for less than 12 months which had not been investigated by a medical practitioner, and 136 women with a current blood-stained or watery nipple discharge. The proportion of women reporting a breast lump and/or nipple discharge who were recommended for assessment remained stable between 1997 and 1999, the period for which this BreastScreen Victoria policy has been in place.

3.7 Family history of breast cancer

In this table, a 'strong family history' is defined as a woman whose mother, sister or daughter was diagnosed with breast cancer before 50 years of age. Women who nominate other family members with breast cancer are classified as 'other family history'.

Women aged 40–49 years who attended for screening reported a family history of breast cancer more often than women aged 50 years and older.

Family history	Age group					50–69	Total
	40–49	50–59	60–69	70–79	80+		
Yes							
Strong family history	1178 6.8%	2290 2.9%	1649 3.2%	1018 4.4%	47 5.8%	3939 3.0%	6182 3.6%
Other family history	3276 18.8%	10310 13.2%	6346 12.3%	2802 12.0%	130 16.0%	16656 12.8%	22864 13.3%
No	12822 73.7%	65069 83.2%	43387 84.0%	19447 83.1%	629 77.4%	108456 83.6%	141354 82.5%
Not stated	119 0.7%	497 0.6%	240 0.5%	127 0.5%	7 0.9%	737 0.6%	990 0.6%
Total	17395 100%	78166 100%	51622 100%	23394 100%	813 100%	129788 100%	171390 100%

3.8 Personal history of breast cancer

In general, women with a personal history of breast cancer are discouraged from attending BreastScreen Victoria as it is felt that the screening program is not suitable for their particular needs. However, a small number of women with a personal history do attend for screening. The data in the following table should not be interpreted as representing the prevalence of breast cancer among the female population of Victoria.

The proportion of attenders nominating a personal history of breast cancer (0.3%) is the same as in the previous two years. As in earlier years, the proportion of women with a personal history of breast cancer increased with age.

Personal history	Age group						Total
	40-49	50-59	60-69	70-79	80+	50-69	
Yes	10 0.1%	81 0.1%	160 0.3%	179 0.8%	25 3.1%	241 0.2%	455 0.3%
No	17385 99.9%	78085 99.9%	51462 99.7%	23215 99.2%	788 96.9%	129547 99.8%	170935 99.7%
Total	17395 100%	78166 100%	51622 100%	23394 100%	813 100%	129788 100%	171390 100%

3.9 Breast implant status

The proportion of women who nominated that they had breast implants at the time of attending for screening is the same as for 1998.

Breast implant status	Age group						Total
	40-49	50-59	60-69	70-79	80+	50-69	
Yes	115 0.7%	572 0.7%	108 0.2%	20 0.1%	1 0.1%	680 0.5%	816 0.5%
No	17280 99.3%	77594 99.3%	51514 99.8%	23374 99.9%	812 99.9%	129108 99.5%	170574 99.5%
Total	17395 100%	78166 100%	51622 100%	23394 100%	813 100%	129788 100%	171390 100%

3.10 Hormone replacement therapy use

This table shows the number of women by age group who nominated that they were taking hormone replacement therapy (HRT) at the time of attending for screening.

A total of 25.5% of women attending for screening reported HRT use at the time of screening. HRT use was most prevalent in women aged 50–59 years (33.1%) and 60–69 years (23.9%).

A small but steady decrease in the proportion of women reporting HRT use is occurring in women aged 40–49 years (15.8% in 1999, 16.5% in 1998, 18.1% in 1997, 19.6% in 1996 and 20.4% in 1995). Among women aged 50–59 years, there was a small increase in HRT use in 1999 (33.1%); previous years had shown a steady decrease (32.7% in 1998, 34.0% in 1997, 35.0% in 1996 and 37.8% in 1995).

Among women aged 60 years and older screened in 1999, 19.9% reported HRT use. This proportion has increased over time (18.2% in 1998, 16.6% in 1997 and 15.5% in 1996).

HRT use	Age group					50–69	Total
	40–49	50–59	60–69	70–79	80+		
Yes	2753 15.8%	25877 33.1%	12335 23.9%	2681 11.5%	63 7.7%	38212 29.4%	43709 25.5%
No	14627 84.1%	52198 66.8%	39223 76.0%	20671 88.4%	742 91.3%	91421 70.4%	127461 74.4%
Not stated	15 0.1%	91 0.1%	64 0.1%	42 0.2%	8 1.0%	155 0.1%	220 0.1%
Total	17395 100%	78166 100%	51622 100%	23394 100%	813 100%	129788 100%	171390 100%

4 Results of screening

4.1 Number of films

Women who attend for screening generally have two x-rays of each breast, giving a total of four films.

The following table shows the number of women by age group who had four or more films taken or recommended to be taken. 'Technical reasons' for additional films include over- and under-exposure of films. 'Other reasons' for additional films include large breasts, positioning problems and breast implants. Results are highly comparable with previous years.

Number of women by films taken or recommended to be taken	Age group						Total
	40-49	50-59	60-69	70-79	80+	50-69	
Four films	14555 83.7%	64338 82.3%	41916 81.2%	18717 80.0%	644 79.2%	106254 81.9%	140170 81.8%
More than four films							
Technical reasons	901 5.2%	3871 5.0%	2484 4.8%	1267 5.4%	39 4.8%	6355 4.9%	8562 5.0%
Other reasons	1939 11.1%	9957 12.7%	7222 14.0%	3410 14.6%	130 16.0%	17179 13.2%	22658 13.2%
Total	17395 100%	78166 100%	51622 100%	23394 100%	813 100%	129788 100%	171390 100%

The percentage of films taken as technical repeat films is shown in the following table. Overall, 1.4% of all films taken were technical repeat films, with the percentage varying little among women of different age groups.

Technical repeat films	Age group						Total
	40-49	50-59	60-69	70-79	80+	50-69	
Films taken	75767	341916	225858	102064	3515	567774	749120
Technical repeat films taken	1171	4968	3111	1561	48	8079	10859
Proportion of technical repeat films	1.5%	1.5%	1.4%	1.5%	1.4%	1.4%	1.4%

The national accreditation standard requires that less than 3% of total films taken are technical repeat films. As distinct from total films, the first table shows the number of women who were recommended for four or more films and is not the same as the national accreditation standard for technical repeats.

4.2 Outcome of screening

This table²⁴ shows, among first attenders and subsequent attenders, the number of women within each age group who were recommended for routine rescreening and the number recommended for further assessment. 'Assessment recommended – other' mainly comprises women with breast implants and women with a personal history of breast cancer. It also includes a small number of women who were called back for repeat mammography because of technical reasons but who were not subsequently cleared for routine rescreen, and women with 'other' symptoms (defined in Section 3.6) but normal mammography.

While 9.9% of first attenders had assessment recommended, the comparable figure for subsequent attenders was 4.8%. These figures are similar to 1998 when 10.0% of first attenders and 5.0% of subsequent attenders were recommended for assessment.

Outcome of screening	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
First attendance							
Routine rescreen recommended	10020 90.5%	14499 89.6%	3216 90.8%	1426 91.4%	270 88.8%	17715 89.9%	29431 90.1%
Assessment recommended							
Abnormal mammography	831 7.5%	1427 8.8%	293 8.3%	117 7.5%	30 9.9%	1720 8.7%	2698 8.3%
Symptoms/signs of possible breast cancer	98 0.9%	53 0.3%	5 0.1%	5 0.3%	1 0.3%	58 0.3%	162 0.5%
Abnormal mammography and symptoms/signs	18 0.2%	18 0.1%	4 0.1%	5 0.3%	0 0.0%	22 0.1%	45 0.1%
Other	102 0.9%	176 1.1%	25 0.7%	7 0.4%	3 1.0%	201 1.0%	313 1.0%
Subtotal for assessment recommended	1049 9.5%	1674 10.4%	327 9.2%	134 8.6%	34 11.2%	2001 10.1%	3218 9.9%
Total	11069 100%	16173 100%	3543 100%	1560 100%	304 100%	19716 100%	32649 100%
Subsequent attendance							
Routine rescreen recommended	5925 93.7%	58795 94.9%	45923 95.5%	20964 96.0%	493 96.9%	104718 95.1%	132100 95.2%
Assessment recommended							
Abnormal mammography	298 4.7%	2526 4.1%	1919 4.0%	792 3.6%	12 2.4%	4445 4.0%	5547 4.0%
Symptoms/signs of possible breast cancer	44 0.7%	160 0.3%	87 0.2%	30 0.1%	2 0.4%	247 0.2%	323 0.2%
Abnormal mammography and symptoms/signs	5 0.1%	30 <0.1%	10 <0.1%	8 <0.1%	1 0.2%	40 <0.1%	54 <0.1%
Other	54 0.9%	476 0.8%	139 0.3%	36 0.2%	1 0.2%	615 0.6%	706 0.5%
Subtotal for assessment recommended	401 6.3%	3192 5.1%	2155 4.5%	866 4.0%	16 3.1%	5347 4.9%	6630 4.8%
Total	6326 100%	61987 100%	48078 100%	21830 100%	509 100%	110065 100%	138730 100.0%

The national accreditation standard is that less than 10% of women screened should be recalled for mammographic assessment at the prevalent round, and less than 5% at the incident round.

²⁴ The information in the above table excludes data for four first attenders and seven subsequent attenders where the outcome of screening is unknown. These women were requested to return for further films but elected not to attend.

5 Results of assessment

5.1 Range of assessment procedures

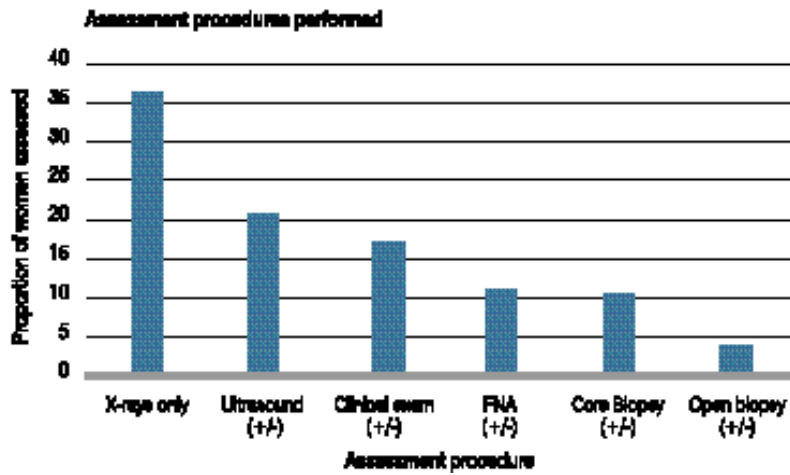
Of the 9,848 women who were recommended for assessment (see Section 4.2), 75 women either declined or failed to attend for assessment, and 440 women were assessed privately. This left 9,333 women assessed within the BreastScreen Victoria Program; 26 of these women were cleared for routine rescreen without any further investigations being performed.

For the 9,307 women who underwent assessment investigations within BreastScreen Victoria, this table shows the investigations performed for these women. Women aged 40–49 years required biopsy less often, with the frequency of biopsy increasing with age. These figures are similar to those for 1998 and 1997.

Range of assessment	Number of women by age group						Total
	40–49	50–59	60–69	70–79	80+	50–69	
X-rays only	458 33.4%	1657 36.5%	893 37.4%	354 36.7%	12 27.9%	2550 36.8%	3374 36.3%
Ultrasound +/- x-rays	289 21.0%	945 20.8%	486 20.4%	197 20.4%	5 11.6%	1431 20.7%	1922 20.7%
Clinical examination +/- ultrasound +/- x-rays	339 24.7%	839 18.5%	310 13.0%	117 12.1%	7 16.3%	1149 16.6%	1612 17.3%
Fine needle aspiration +/- clinical examination +/- ultrasound +/- x-rays	127 9.2%	496 10.9%	285 11.9%	104 10.8%	8 18.6%	781 11.3%	1020 11.0%
Core biopsy +/- fine needle aspiration +/- clinical examination +/- ultrasound +/- x-rays	107 7.8%	425 9.4%	316 13.2%	144 14.9%	7 16.3%	741 10.7%	999 10.7%
Open biopsy ²⁵ +/- core biopsy +/- fine needle aspiration +/- clinical examination +/- ultrasound +/- x-rays	53 3.9%	179 3.9%	95 4.0%	49 5.1%	4 9.3%	274 4.0%	380 4.1%
Total	1373 100%	4541 100%	2385 100%	965 100%	43 100%	6926 100%	9307 100%

²⁵ Of the 380 women who had an open biopsy, 243 (64%) had the procedure performed within the BreastScreen Victoria Program and 137 (36%) had the procedure performed elsewhere.

The graph below shows the range of assessment procedures performed, using the same sequence of investigations as in the table above. For example, if a woman underwent a core biopsy but not an open biopsy, she is counted in the core biopsy column; she may also have undergone a combination of further x-rays, ultrasound, clinical examination and fine needle aspiration prior to the core biopsy.



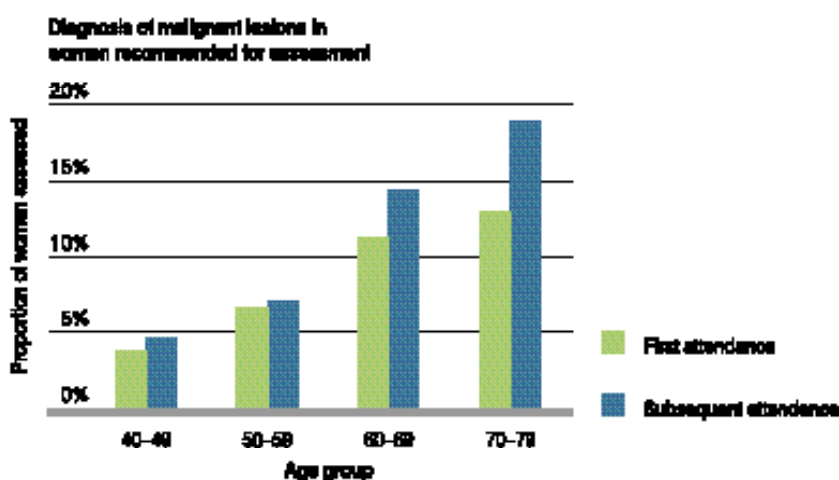
More than one-third of the women (36.3%) received only further x-rays. An additional 20.7% had ultrasound ± x-rays and 17.3% received clinical examination ± ultrasound ± x-rays. Thus, 74% of the 9,333 women were able to have their status ascertained without the need for an invasive procedure, namely fine needle aspiration or tissue biopsy.

5.2 Outcome of assessment

A total of 9,848 women were recommended for assessment for reasons that are listed in Section 4.2. This table shows, among first and subsequent attenders, the final outcome of assessment, and includes outcomes for women assessed within and outside the BreastScreen Program²⁶. Where a woman was determined to have multiple lesions, only the most significant of these is counted. 'Malignant lesion' includes a diagnosis of invasive cancer or DCIS.

Outcome of assessment	Age group						Total
	40-49	50-59	60-69	70-79	80+	50-69	
First attendance							
No malignant lesion	1006 95.9%	1549 92.5%	287 87.8%	114 86.4%	24 70.6%	1836 91.8%	2980 92.7%
Malignant lesion	40 3.8%	110 6.6%	37 11.3%	17 12.9%	10 29.4%	147 7.3%	214 6.7%
Early review	3 0.3%	15 0.9%	3 0.9%	1 0.8%	0 0.0%	18 0.9%	22 0.7%
Total	1049 100%	1674 100%	327 100%	132 100%	34 100%	2001 100%	3216 100%
Subsequent attendance							
No malignant lesion	379 94.5%	2954 92.6%	1829 84.9%	701 80.9%	14 87.5%	4783 89.5%	5877 88.7%
Malignant lesion	19 4.7%	225 7.1%	311 14.4%	164 18.9%	2 12.5%	536 10.0%	721 10.9%
Early review	3 0.7%	11 0.3%	14 0.6%	1 0.1%	0 0.0%	25 0.5%	29 0.4%
Total	401 100%	3190 100%	2154 100%	866 100%	16 100%	5344 100%	6627 100%

A total of 935 malignant lesions were diagnosed. Among women recommended for assessment, the proportion for whom a malignancy was diagnosed increased with age, as shown in the following graph.



The positive predictive value²⁷ measures the probability of disease given a positive test result. It can be used to ascertain what proportion of women who were recommended to undergo biopsy procedures received a positive diagnosis.

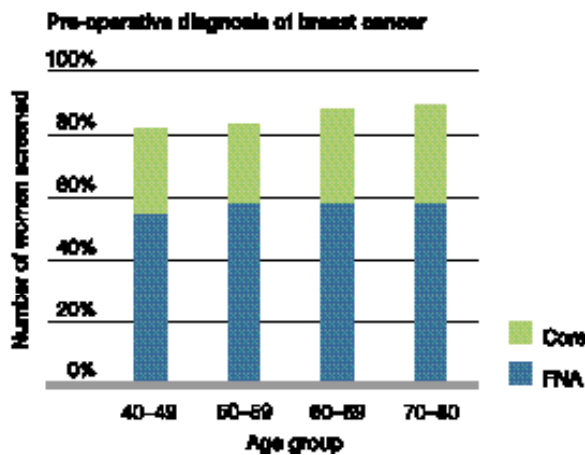
BreastScreen seeks to minimise investigations, particularly invasive procedures, in women who prove not to have breast cancer. This must be balanced against the need to ascertain with as much accuracy as possible whether suspicious lesions are benign or not. The following table shows, for the most serious biopsy procedure performed, the outcome of biopsy.

Range of assessment	Outcome of biopsy		Total
	No Malignant lesion	Malignant lesion	
40–49 years			
Fine needle aspiration	110 86.6%	17 13.4%	127 100%
Core biopsy +/- fine needle aspiration	73 69.5%	32 30.5%	105 100%
Open biopsy +/- core biopsy +/- fine needle aspiration	43 81.1%	10 18.9%	53 100%
50–59 years			
Fine needle aspiration	410 82.8%	85 17.2%	495 100%
Core biopsy +/- fine needle aspiration	223 53.5%	194 46.5%	417 100%
Open biopsy +/- core biopsy +/- fine needle aspiration	125 70.2%	53 29.8%	178 100%
60–69 years			
Fine needle aspiration	178 63.1%	104 36.9%	282 100%
Core biopsy +/- fine needle aspiration	115 36.5%	200 63.5%	315 100%
Open biopsy +/- core biopsy +/- fine needle aspiration	54 56.8%	41 43.2%	95 100%
70–79 years			
Fine needle aspiration	47 45.2%	57 54.8%	104 100%
Core biopsy +/- fine needle aspiration	41 28.5%	103 71.5%	144 100%
Open biopsy +/- core biopsy +/- fine needle aspiration	30 61.2%	19 38.8%	49 100%
Total	1449	915	2364

²⁷ The positive predictive value is calculated by dividing the number of true positives (malignant lesions detected) by the sum of true positives and false positives (women assessed who receive a benign result). Values closer to 1 are desirable.

The positive predictive value for biopsy procedures in general (fine needle aspiration, core and open biopsy) was 0.39 across all age groups. This means that 61% of women who underwent some form of biopsy did not have breast cancer. Positive predictive value is related to the accuracy of the procedure (sensitivity and specificity) and to the prevalence of disease and so is higher among older age groups. The proportion of malignant lesions diagnosed following biopsy increased with age for all biopsy types, except in the case of open biopsy.

For women who have breast cancer, it is preferable that a definitive diagnosis is reached without the need for open biopsy, otherwise described as a pre-operative diagnosis. The following graph shows the proportion of women who received their final malignant diagnosis by fine needle aspiration or core biopsy²⁸. Of women of all ages diagnosed within BreastScreen Victoria in 1999, over 86% received their diagnosis without requiring open biopsy. The proportion of women receiving a pre-operative diagnosis increased with age.



5.3 Recommendation for routine rescreening

Of the 171,390 women who attended for screening, 161,531 were recommended for routine rescreening without requiring assessment (see Section 4.2). Of the 9,848 women who were recommended for assessment, the 8,857 women who were assessed as having no malignant lesion were also recommended for routine rescreening (see Section 5.2). Thus, a total of 170,388 (99.4%) women were ultimately recommended for routine rescreening.

This table shows the distribution by age group of the recommendations for routine rescreening. The usual recommendation is for routine rescreening at two years. Only 0.4% of all women screened were advised to return at one year. Older women were comparatively more frequently recommended for annual screening. These figures are similar to those in 1998. Reasons for a recommendation for rescreening at one year include a diagnosis within the Program of atypical ductal hyperplasia or lobular carcinoma in situ, or a personal history of mastectomy for breast cancer.

Recommendation for routine rescreen	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
Rescreen at 2 years	17299 99.8%	77612 99.8%	51017 99.5%	22994 99.1%	772 96.4%	128629 99.7%	169694 99.6%
Rescreen at 1 year	31 0.2%	185 0.2%	238 0.5%	211 0.9%	29 3.6%	423 0.3%	694 0.4%
Total	17330 100%	77797 100%	51255 100%	23205 100%	801 100%	129052 100%	170388 100%

28 If a woman had more than one biopsy procedure performed, she is recorded only once as core biopsy.

6 Breast cancer detection

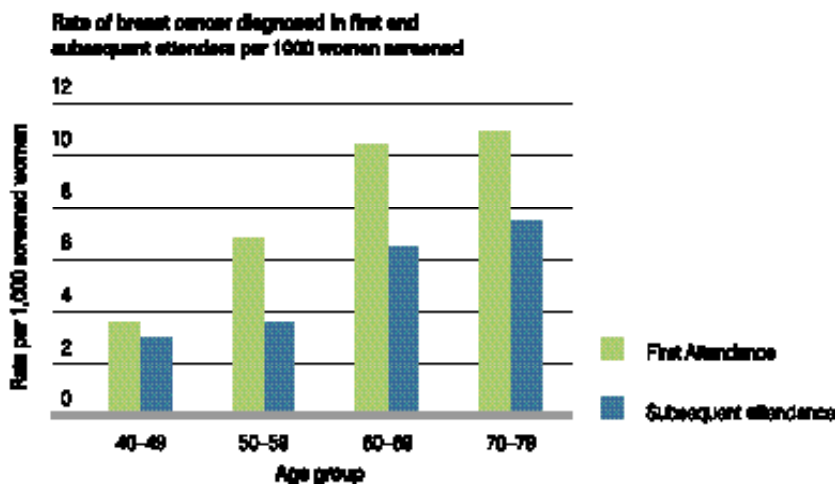
6.1 Breast cancer diagnosis rate by attendance round

The following table shows the rate of breast cancer²⁹ per 1,000 women screened by attendance round, mammographic status, symptom status and personal history of breast cancer for each ten-year age group. As in Section 3.6, a symptomatic woman was defined as a woman with a breast lump and/or blood-stained or watery nipple discharge.

Among asymptomatic women with no personal history of breast cancer who were attending BreastScreen Victoria for the first time, the crude rate of breast cancer diagnosis was 5.8 per 1,000 women screened. The crude rate among asymptomatic subsequent attenders was 4.9 per 1,000 attenders. In 1998, the comparable figures for asymptomatic attenders were 6.3 per 1,000 first round attenders and 4.8 per 1,000 subsequent round attenders.

The category 'other breast symptoms' includes a variety of symptoms, most commonly breast pain and tenderness. In this group, the crude rate of breast cancer diagnosed was 10.3 per 1,000 women screened among first attenders, and 7.2 per 1,000 women screened among subsequent attenders (compared with 9.1 per 1,000 women screened among first attenders and 6.1 per 1,000 women screened among subsequent attenders in 1998).

As in previous years, symptomatic women with or without a personal history of breast cancer have rates of breast cancer diagnosis that are three to four times higher than asymptomatic women. The rate of diagnosis of breast cancer is lower among subsequent attenders because women at first round screening may have cancers that have recently developed or cancers that have been present for some years.



²⁹ For consistency with BreastScreen Australia the general term 'breast cancer' includes cases of invasive cancer as well as cases of ductal carcinoma in situ (DCIS). In Section 6.4 (interval cancer rate) a new national definition for interval cancers has been implemented which excludes DCIS. Details of the new definition are provided in Appendix 4.

Breast cancer detection rate per 1,000 women screened	Age group					50-69	Total av. rate (95% C.I.) ³⁰
	40-49	50-59	60-69	70-79	80+		
First attendance							
Radiographic abnormality; asymptomatic women with no personal history of breast cancer							
Number of cancers	27	91	33	14	8	124	173
Rate per 1,000 women screened	2.7	6.1	10.1	10.0	31.0	6.8	5.8 (5.0-6.7)
Symptomatic and/or personal history of breast cancer ³¹							
Number of cancers	7	9	4	3	0	13	23
Rate per 1,000 women screened	13.7	20.7	43.0	50.0	0.0	24.7	20.7 (13.7-31.1)
'Other breast symptoms', no personal history of breast cancer and radiographic abnormality							
Number of cancers	6	10	0	0	2	10	18
Rate per 1,000 women screened	8.3	13.9	0.0	0.0	62.5	11.2	10.3 (6.5-16.3)
Subsequent attendance							
Radiographic abnormality; asymptomatic women with no personal history of breast cancer							
Number of cancers	14	197	289	150	2	486	652
Rate per 1,000 women screened	2.5	3.3	6.2	7.1	4.5	4.6	4.9 (4.6-5.3)
Symptomatic and/or personal history of breast cancer ³¹							
Number of cancers	3	17	11	9	0	28	40
Rate per 1,000 women screened	11.7	14.3	17.9	27.4	0.0	15.5	16.5 (12.1-22.6)
'Other breast symptoms', no personal history of breast cancer and radiographic abnormality							
Number of cancers	2	11	11	5	0	22	29
Rate per 1,000 women screened	5.3	5.6	9.0	10.8	0.0	6.9	7.2 (5.0-10.3)

The national accreditation standard is that at least 5 cancers per 1,000 women screened should be detected at the prevalent screening round and at least 2 cancers per 1,000 women screened at incident screening rounds.

³⁰ The 95% confidence interval (C.I.) provides a measure of the extent of variation that might be expected by chance for a given estimate. The larger the number of observations, the narrower the confidence interval and thus the more meaningful the estimate. Wider confidence intervals indicate less stability in the estimate and hamper comparison of data across years.

³¹ These women may or may not have had a radiographic abnormality.

6.2 Size of breast cancer

These tables show the number and rate of breast cancer diagnosis by size of tumour for each ten-year age group and by attendance round. This information is only presented for invasive breast cancers as dimensions of ductal carcinoma in situ (DCIS) are not usually given.

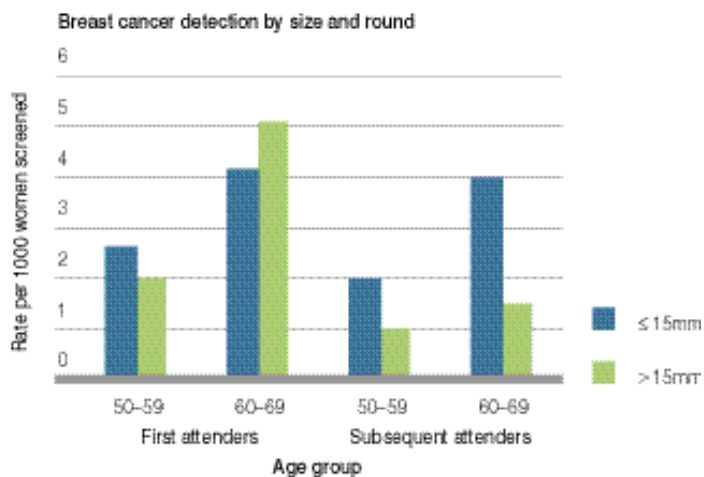
Among first round attenders, 29.7% of the cancers were 10 mm or less in diameter and 51% were 15 mm or less in diameter. This represents a slight decrease on the previous year when 31.4% of cancers were 10 mm or less and 58% were 15 mm or less. Among subsequent attenders, 41.8% of the cancers detected in 1999 were 10 mm or less in diameter and 70% were 15 mm or less in diameter. The proportions of cancers 10 mm or less are slightly lower than last year when 45.5% of cancers were 10 mm or less and 71% were 15 mm or less. A small diameter tumour at diagnosis is generally considered predictive of an improved prognosis.

The corresponding rates of invasive cancers 10mm or less in size were 1.5 and 1.8 per 1,000 women screened for first and subsequent attenders respectively.

Breast cancer detection rate by size of invasive breast cancer	Age group						Total av. rate (95% C.I.)
	40-49	50-59	60-69	70-79	80+	50-69	
First attendance							
10 mm or less							
Number of cancers	9	26	9	4	1	35	49
	31.0%	32.9%	26.5%	26.7%	12.5%	31.0%	29.7%
Rate per 1,000 women screened	0.8	1.6	2.5	2.6	3.3	1.8	1.5 (1.1-2.0)
11 mm to 15 mm							
Number of cancers	7	16	6	3	3	22	35
	24.1%	20.3%	17.6%	20.0%	37.5%	19.5%	21.2%
Rate per 1,000 women screened	0.6	1.0	1.7	1.9	9.9	1.1	1.1 (0.8-1.5)
More than 15 mm							
Number of cancers	12	33	18	8	3	51	74
	41.4%	41.8%	52.9%	53.3%	37.5%	45.1%	44.8%
Rate per 1,000 women screened	1.1	2.0	5.1	5.1	9.9	2.6	2.3 (1.8-2.8)
Unknown							
Number of cancers	1	4	1	0	1	5	7
	3.4%	5.1%	2.9%	0.0%	12.5%	4.4%	4.2%
Rate per 1,000 women screened	0.1	0.2	0.3	0.0	3.3	0.3	0.2 (0.1-0.4)
Subtotal							
Number of cancers	29	79	34	15	8	113	165
	100%	100%	100%	100%	100%	100%	100%
Rate per 1,000 women screened	2.6	4.9	9.6	9.6	26.3	5.7	5.1 (4.3-5.9)

Breast cancer detection rate by size of invasive breast cancer	Age group						Total av. rate (95% C.I.)
	40-49	50-59	60-69	70-79	80+	50-69	
Subsequent attendance							
10 mm or less							
Number of cancers	4	67	114	71	0	181	256
	25.0%	35.8%	43.7%	48.3%	0.0%	40.4%	41.8%
Rate per 1,000 women screened	0.6	1.1	2.4	3.3	0.0	1.6	1.8 (1.6-2.1)
<hr/>							
11 mm to 15 mm							
Number of cancers	5	59	72	37	0	131	173
	31.3%	31.6%	27.6%	25.2%	0.0%	29.2%	28.2%
Rate per 1,000 women screened	0.8	1.0	1.5	1.7	0.0	1.2	1.2 (1.1-1.4)
<hr/>							
More than 15 mm							
Number of cancers	7	58	73	36	2	131	176
	43.8%	31.0%	28.0%	24.5%	100.0%	29.2%	28.7%
Rate per 1,000 women screened	1.1	0.9	1.5	1.6	3.9	1.2	1.3 (1.1-1.5)
<hr/>							
Unknown							
Number of cancers	0	3	2	3	0	5	8
	0.0%	1.6%	0.8%	2.0%	0.0%	1.1%	1.3%
Rate per 1,000 women screened	0.0	0.0	0.0	0.1	0.0	0.0	0.1 (0.03-0.1)
<hr/>							
Subtotal							
Number of cancers	16	187	261	147	2	448	613
	100%	100%	100%	100%	100%	100%	100%
Rate per 1,000 women screened	2.5	3.0	5.4	6.7	3.9	4.1	4.4 (4.1-4.8)
<hr/>							
Total							
Number of invasive cancers	45	266	295	162	10	561	778
	100%	100%	100%	100%	100%	100%	100%
Rate per 1,000 women screened	2.6	3.4	5.7	6.9	12.3	4.3	4.5 (4.2-4.9)

The national accreditation standard is that at least 0.8 cancers per 1,000 women screened have a diameter of 10 mm or less.



6.3 Histologic type of breast cancer

Of the 935 cases of breast cancer diagnosed in total, 778 (83%) were invasive and 157 (17%) were DCIS.

Of the 214 cases of breast cancer among first attenders, 77% were invasive in nature; 23% were diagnosed as DCIS. Among subsequent attenders, 85% of the 721 cases were invasive in nature; 15% were DCIS.

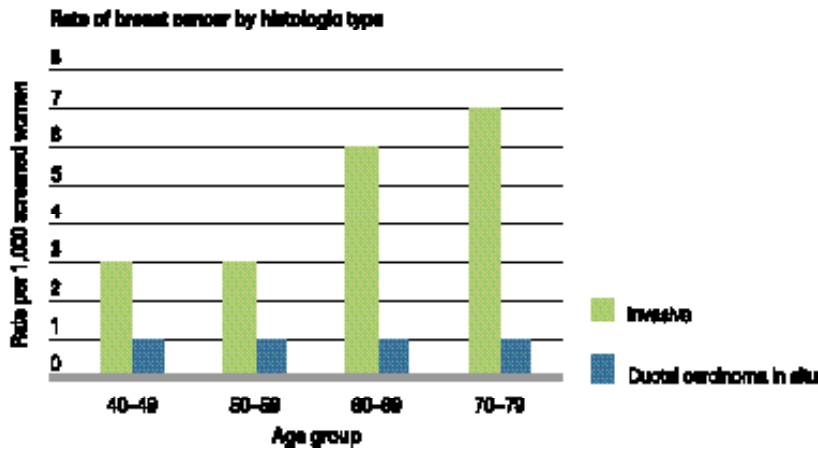
The following table shows the number and rate of breast cancer diagnosis by type (invasive or DCIS) for each ten-year age group.

Among women aged 50–69 years, the rate of invasive cancer detection was 5.7 per 1,000 women screened for first attenders and 4.1 for subsequent attenders. Diagnosis of DCIS was 1.7 per 1,000 women screened among first attenders in the target age group, and 0.8 among subsequent attenders.

Breast cancer detection rate by histologic type per 1,000 women screened	Age group					50-69	Total av. rate (95% C.I.)
	40-49	50-59	60-69	70-79	80+		
First attendance							
Invasive							
Number of cancers	29	79	34	15	8	113	165
Rate per 1,000 women screened	2.6	4.9	9.6	9.6	26.3	5.7	5.1 (4.3-5.9)
Ductal carcinoma in situ							
Number of cancers	11	31	3	2	2	34	49
Rate per 1,000 women screened	1.0	1.9	0.8	1.3	6.6	1.7	1.5 (1.1-2.0)
Subsequent attendance							
Invasive							
Number of cancers	16	187	261	147	2	448	613
Rate per 1,000 women screened	2.5	3.0	5.4	6.7	3.9	4.1	4.4 (4.1-4.8)
Ductal carcinoma in situ							
Number of cancers	3	38	50	17	0	88	108
Rate per 1,000 women screened	0.5	0.6	1.0	0.8	0.0	0.8	0.8 (0.6-0.9)
Total							
Number of cancers	59	335	348	181	12	683	935
Rate per 1,000 women screened	3.4	4.3	6.7	7.7	14.8	5.3	5.5 (5.1-5.8)

The national accreditation standard is that 10–20% of the cancers detected should be ductal carcinoma in situ.

Among the 157 cases of DCIS diagnosed, 79 (50%) were classified as high grade, 43 (27%) as intermediate grade and 35 (22%) as low grade.



The following table shows invasive breast cancer diagnoses by histologic type and size. The distribution is very similar to that reported in previous years.

Invasive breast cancer diagnosis by histologic type	0-10 mm	11-15 mm	>15 mm	Unknown	Total
Invasive ductal carcinoma not otherwise stated	247 41.2%	165 27.5%	176 29.4%	11 1.8%	599 100%
Lobular classical carcinoma	19 22.1%	22 25.6%	42 48.8%	3 3.5%	86 100%
Mixed ductal/lobular carcinoma	8 21.6%	12 32.4%	17 45.9%	0 0.0%	37 100%
Tubular carcinoma	21 77.8%	4 14.8%	1 3.7%	1 3.7%	27 100%
Lobular variant carcinoma	4 36.4%	2 18.2%	5 45.5%	0 0.0%	11 100%
Mucinous carcinoma	1 14.3%	3 42.9%	3 42.9%	0 0.0%	7 100%
Other	5 45.5%	0 0.0%	6 54.5%	0 0.0%	11 100%
Total	305 39.2%	208 26.7%	250 32.1%	15 1.9%	778 100%

6.4 Interval cancer rate

Interval cancers are cases of invasive breast cancer that are diagnosed during the time interval after a negative screen and prior to the next scheduled screening examination. This period is usually 24 months.

The following points are relevant to the interval cancer rates that are presented in this section:

- The interval cancer rates in the tables relate to women screened at BreastScreen Victoria during 1997³².
- Interval cancer rates are calculated separately for women who were first round attenders in 1997 and for women who were subsequent attenders in 1997.
- Within each table, separate rates are presented for three groups of women:
 - women who were asymptomatic at the time of their 1997 screening
 - women who indicated a breast lump and/or a blood-stained or watery nipple discharge at the time of their 1997 screening (see Section 3.6)
 - women who indicated ‘other’ breast symptoms at the time of their 1997 screening.

These rates are presented separately as it is expected that the interval cancer rate will differ between women who were symptomatic and asymptomatic at the time of screening.

For the first time, interval cancer rates are reported using the national definition endorsed by the BreastScreen Australia National Advisory Committee in November 1998³³. The national definition excludes DCIS for reporting purposes and differs slightly in other respects from the method used in the three previous BreastScreen Victoria Annual Statistical Reports pertaining to interval cancer rates for women screened in 1994, 1995 and 1996. The new definition and comparisons with the definition previously applied are provided in Appendix 4.

32 Measurement of interval cancer rates is made possible by the generous assistance of the staff of the Cancer Epidemiology Centre at the Anti-Cancer Council of Victoria.

33 Kavanagh AM, Amos AF and Marr GM (1999), The ascertainment and reporting of interval cancers within the BreastScreen Australia Program, NHMRC National Breast Cancer Centre.

Using the national definition, 87 interval cancers were identified among the first round attenders in 1997. Of these, 32 were diagnosed during the first year and 55 during the second year. The following table shows the interval cancer rate for the three groups of first attenders during the first and second years after their 1997 screening.

Interval cancer rate in first attenders in 1997 per 10,000 women screened	Age group						Total av. rate (95% C.I.)
	40-49	50-59	60-69	70-79	80+	50-69	
Year 1							
Asymptomatic women							
Number of women years at risk	9620	19693	5829	3123	462	25522	38727
Number of interval cancers	4	12	4	1	0	16	21
Rate per 10,000 women years	4.2	6.1	6.9	3.2	0.0	6.3	5.4 (3.5-8.3)
Symptoms – lump or discharge							
Number of women years at risk	578	633	127	71	21	760	1430
Number of interval cancers	0	1	2	0	0	3	3
Rate per 10,000 women years	0.0	15.8	157.5	0.0	0.0	39.5	21.0 (6.8-65.1)
Symptoms – ‘other’							
Number of women years at risk	934	974	335	234	59	1309	2536
Number of interval cancers	3	3	0	1	1	3	8
Rate per 10,000 women years	32.1	30.8	0.0	42.7	169.5	22.9	31.5 (15.8-63.0)
Year 2							
Asymptomatic women							
Number of women years at risk	9614	19681	5826	3121	462	25507	38704
Number of interval cancers	14	26	7	1	1	33	49
Rate per 10,000 women years	14.6	13.2	12.0	3.2	21.6	12.9	12.7 (9.6-16.8)
Symptoms – lump or discharge							
Number of women years at risk	578	632	127	71	21	759	1429
Number of interval cancers	0	3	0	0	0	3	3
Rate per 10,000 women years	0.0	47.5	0.0	0.0	0.0	39.5	21.0 (6.8-65.1)
Symptoms – ‘other’							
Number of women screened	934	973	333	234	59	1306	2533
Number of interval cancers	3	0	0	0	0	0	3
Rate per 10,000 women screened	32.1	0.0	0.0	0.0	0.0	0.0	11.8 (3.8-36.7)

Among asymptomatic first round attenders aged 50-69 years in 1997, 16 invasive breast cancers were diagnosed during the first 12 months after screening, giving an interval cancer rate of 6.27 cancers per 10,000 women (95% C.I. 3.8-10.2). During the second year after the 1997 screening, 33 invasive breast cancers were diagnosed among asymptomatic first round attenders aged 50-69 years, giving an interval cancer rate of 12.94 cancers per 10,000 women (95% C.I. 9.2-18.2). Refer to Appendix 4 for results using the definition previously used to calculate interval cancers.

A total of 213 interval cancers were identified among subsequent attenders in 1997. Of these, 64 were diagnosed during the first year and 149 during the second year.

The following table shows the interval cancer rate for the three groups of subsequent attenders during the first and second years after their 1997 screening. As in the previous table, the interval cancer rate among asymptomatic women during the second year after screening was two to three times that found during the first year after screening.

Interval cancer rate in subsequent attenders during 1997 per 10,000 women screened	Age group						Total av. rate (95% C.I.)
	40-49	50-59	60-69	70-79	80+	50-69	
Year 1							
Asymptomatic women							
Number of women years at risk	4947	43551	37920	14941	412	81471	101771
Number of interval cancers	3	26	16	7	0	42	52
Rate per 10,000 women years	6.1	6.0	4.2	4.7	0.0	5.2	5.1 (3.9-6.7)
Symptoms – lump or discharge							
Number of women years at risk	233	868	393	157	6	1261	1657
Number of interval cancers	1	3	2	0	0	5	6
Rate per 10,000 women years	42.9	34.6	50.9	0.0	0.0	39.7	36.2 (16.3-80.6)
Symptoms – ‘other’							
Number of women years at risk	394	1607	982	459	31	2589	3473
Number of interval cancers	1	3	1	1	0	4	6
Rate per 10,000 women years	25.4	18.7	10.2	21.8	0.0	15.4	17.3 (7.8-38.5)
Year 2							
Asymptomatic women							
Number of women years at risk	4928	43483	37864	14916	412	81347	101603
Number of interval cancers	4	60	55	19	0	115	138
Rate per 10,000 women years	8.1	13.8	14.5	12.7	0.0	14.1	13.6 (11.5-16.1)
Symptoms – lump or discharge							
Number of women years at risk	232	867	391	157	6	1258	1653
Number of interval cancers	0	4	1	0	0	5	5
Rate per 10,000 women years	0.0	46.1	25.6	0.0	0.0	39.7	30.2 (12.6-72.7)
Symptoms – ‘other’							
Number of women years at risk	392	1600	977	457	31	2577	3457
Number of interval cancers	0	3	1	2	0	4	6
Rate per 10,000 women years	0.0	18.8	10.2	43.8	0.0	15.5	17.4 (7.8-38.6)

Among asymptomatic subsequent round attenders aged 50–69 years in 1997, 42 invasive breast cancers were diagnosed during the first 12 months after screening, giving an interval cancer rate of 5.2 cancers per 10,000 women (95% C.I. 3.8–7.0). During the second year after the 1997 screening, 115 invasive breast cancers were diagnosed among asymptomatic subsequent round attenders aged 50–69 years, giving an interval cancer rate of 14 cancers per 10,000 women (95% C.I. 11.8–17.0).

The national accreditation standard is that less than 6 per 10,000 women screened are diagnosed with breast cancer (including DCIS but excluding LCIS) in the 12 months following screening. There is currently no national accreditation standard for interval cancers diagnosed in the 12 to 24 month period following screening. This standard is being revised to reflect the change in national definition.

7 Breast cancer characteristics and treatment

7.1 Nodal status

The following table shows nodal status by tumour type and size.

Ten per cent of the 778 women diagnosed with invasive breast cancer did not undergo axillary node dissection, compared with 10% in 1998, 12% in 1997 and 8% in 1996.

Among the women who had an axillary node dissection, nodes were positive for 5.1% of the women whose breast cancer was 10 mm or less in diameter, for 18.2% of the women whose breast cancer was 11–15 mm in diameter, and for 42.3% of the women whose breast cancer was more than 15 mm in diameter.

Just under 10% of the 157 women diagnosed with DCIS underwent axillary node dissection, compared with 10% in 1998, 20% in 1997 and 22% in 1996. All women with DCIS who underwent axillary dissection were node negative.

Nodes	Invasive			Unknown	Invasive total	DCIS	Total
	0-10 mm	11-15 mm	>15 mm				
No dissection	51	10	11	4	76	142	218
Dissection performed							
Node negative	241 94.9%	162 81.8%	138 57.7%	7 63.6%	548 78.1%	15 100.0%	563 78.5%
Node positive	13 5.1%	36 18.2%	101 42.3%	4 36.4%	154 21.9%	0 0.0%	154 21.5%
Subtotal	254 100%	198 100%	239 100%	11 100%	702 100%	15 100%	717 100%

7.2 Tumour grade

Information about tumour grade was known for 94% of the 778 women diagnosed with invasive breast cancer in 1999. The following table shows the grade by tumour size. The tumour grade is one indicator of prognosis, indicating better to poorer prognosis from well differentiated to poorly differentiated tumours respectively. A greater proportion of smaller tumours are well differentiated.

Tumour grade	0-10 mm	11-15 mm	Invasive >15 mm	Unknown	Total
Grade unknown	18	8	15	4	45
Grade known					
Well differentiated	126 43.9%	71 35.5%	45 19.1%	3 27.3%	245 33.4%
Moderately differentiated	130 45.3%	91 45.5%	128 54.5%	7 63.6%	356 48.6%
Poorly differentiated	31 10.8%	38 19.0%	62 26.4%	1 9.1%	132 18.0%
Subtotal	287 100%	200 100%	235 100%	11 100%	733 100%

7.3 Type of treatment

Treatment details were recorded for all women diagnosed with invasive breast cancer. There is a continued increase in the use of breast-conserving surgery, with 77% of women undergoing breast-conserving surgery compared with 73% in 1998 and 1997, and 65% in 1996.

Treatment details were recorded for all of the women who were diagnosed with DCIS. Twenty per cent of these women underwent a mastectomy compared with 18% in 1998, 22% in 1997 and 30% in 1996.

Treatment	0-10 mm	Invasive		Unknown	Invasive total	DCIS	Total
		11-15 mm	>15 mm				
No surgery	0 0.0%	0 0.0%	0 0.0%	3 20.0%	3 0.4%	0 0.0%	3 0.3%
Local diagnostic excision	17 5.6%	2 1.0%	1 0.4%	0 0.0%	20 2.6%	15 9.6%	35 3.7%
Wide local excision	239 78.4%	170 81.7%	163 65.2%	6 40.0%	578 74.3%	110 70.1%	688 73.6%
Mastectomy	49 16.1%	36 17.3%	86 34.4%	6 40.0%	177 22.8%	32 20.4%	209 22.4%
Total	305 100%	208 100%	250 100%	15 100%	778 100%	157 100%	935 100%

The majority of women (74%) with a diagnosis of invasive cancer or DCIS underwent a wide local excision.

Of the 778 cases of invasive breast cancer, 579 (74%) were diagnosed among women living in urban³⁴ areas and 199 (26%) among women living in rural³⁵ areas. Of the 157 cases of DCIS, 126 (80%) were diagnosed among women living in urban areas and 31 (20%) were diagnosed among women living in rural areas.

The following table shows surgical treatment by area of residence. A greater proportion of women living in rural areas (40.0%) underwent mastectomy than women living in urban areas (16.6%).

Treatment by area of residence	0-10 mm	Invasive 11-15 mm	Invasive >15 mm	Unknown	Invasive total	DCIS	Total
Urban							
No surgery	0 0.0%	0 0.0%	0 0.0%	3 33.3%	3 0.5%	0 0.0%	3 0.4%
Local diagnostic excision	10 4.3%	1 0.7%	1 0.5%	0 0.0%	12 2.1%	13 10.3%	25 3.5%
Wide local excision	196 83.8%	138 90.2%	129 70.5%	4 44.4%	467 80.7%	93 73.8%	560 79.4%
Mastectomy	28 12.0%	14 9.2%	53 29.0%	2 22.2%	97 16.8%	20 15.9%	117 16.6%
Subtotal	234 100%	153 100%	183 100%	9 100%	579 100%	126 100%	705 100%
Rural							
No surgery	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
Local diagnostic excision	7 9.9%	1 1.8%	0 0.0%	0 0.0%	8 4.0%	2 6.5%	10 4.3%
Wide local excision	43 60.6%	32 58.2%	34 50.7%	2 33.3%	111 55.8%	17 54.8%	128 55.7%
Mastectomy	21 29.6%	22 40.0%	33 49.3%	4 66.7%	80 40.2%	12 38.7%	92 40.0%
Subtotal	71 100%	55 100%	67 100%	6 100%	199 100%	31 100%	230 100%

34 References to 'urban' include capital city and other major urban according to the 'Rural/Remote Areas Classification' of the Commonwealth Department of Health and Family Services, January 1994.

35 References to 'rural' include rural major, rural other, remote major and remote other according to the 'Rural/Remote Areas Classification' of the Commonwealth Department of Health and Family Services, January 1994.

Information about the use of adjuvant therapy was available for 95% of the 925 women who were diagnosed with breast cancer. Adjuvant therapy is given in addition to the primary treatment (usually surgery) to try to destroy any remaining cancer cells. Radiotherapy, chemotherapy and hormonal therapy may be used as adjuvant therapy.

Of the women with known information, 84% of women with breast cancer received some type of adjuvant therapy. Among women with invasive breast cancer, 93% received adjuvant therapy, compared with 94% in 1998 and 90% in 1997. Of the women diagnosed with DCIS, 41% received adjuvant therapy, compared with 29% in 1998 and 27% in 1997.

The following table shows the range of adjuvant therapy used for women with invasive breast cancer of known size.

Adjuvant therapy	0-10 mm	Invasive 11-15 mm	>15 mm
Unknown	17	8	14
Information available			
No adjuvant therapy	32 11.1%	9 4.5%	9 3.8%
Radiotherapy only	39 13.5%	21 10.5%	17 7.2%
Chemotherapy only	4 1.4%	7 3.5%	24 10.2%
Hormonal therapy only	92 31.9%	43 21.5%	37 15.7%
Radiotherapy & hormonal therapy	107 37.2%	85 42.5%	61 25.8%
Radiotherapy & chemotherapy	9 3.1%	16 8.0%	43 18.2%
Chemotherapy & hormonal therapy	2 0.7%	3 1.5%	13 5.5%
Radiotherapy & chemotherapy & hormonal therapy	3 1.0%	16 8.0%	32 13.6%
Subtotal	288 100%	200 100%	236 100%

Of the 148 women with DCIS for whom information about the use of adjuvant therapy was available, 34 (23%) received radiotherapy alone, 20 (14%) received hormonal therapy, seven (5%) received a combination of radiotherapy and hormonal therapy, and 87 (59%) received no adjuvant therapy.

The following table shows the use of radiotherapy for women with invasive cancer and known nodal status who underwent breast-conserving surgery or mastectomy³⁶. The majority of women who underwent breast-conserving surgery received adjuvant radiotherapy: 82% of women with node positive breast cancer (93% in 1998) and 78% of women with node negative breast cancer (73% in 1998). Most women (89%) who underwent a mastectomy did not receive radiotherapy.

Adjuvant radiotherapy	Breast-conserving surgery		Invasive Mastectomy	
	Node positive	Node negative	Node positive	Node negative
Unknown	4	15	2	11
Information available				
Radiotherapy	73 82.0%	338 78.2%	13 22.0%	3 3.3%
No Radiotherapy	16 18.0%	94 21.8%	46 78.0%	87 96.7%
Subtotal	89 100%	432 100%	59 100%	90 100%

The next table shows the use of radiotherapy for women with invasive cancer of known size who underwent breast-conserving surgery³⁶. Seventy-six per cent of these women received radiotherapy. Of women with tumours 11 mm or greater in diameter, 86% underwent radiotherapy (76% in 1998) as opposed to 64% of women with tumours 10 mm or less in diameter (67% in 1998).

Adjuvant radiotherapy in women treated by breast-conserving surgery	Invasive			Total
	0-10 mm	11-15 mm	> 15 mm	
Unknown	10	6	8	24
Information available				
Radiotherapy	157 63.8%	136 81.9%	140 89.7%	433 76.2%
No Radiotherapy	89 36.2%	30 18.1%	16 10.3%	135 23.8%
Subtotal	246 100%	166 100%	156 100%	568 100%

The following table shows systemic adjuvant therapy for women with invasive breast cancer by known nodal status and age group³⁷. The age groups given are used to approximate menopausal status; 50 years or less for pre-menopause and more than 50 years for post-menopause. Almost all women had some form of systemic adjuvant therapy.

³⁶ These women may or may not have had systemic therapy in addition to radiotherapy.

³⁷ These women may or may not have had radiotherapy in addition to systemic therapy. Table excludes 68 women with invasive cancer and known nodal status who had radiotherapy only.

Systemic adjuvant therapy for invasive cancers	Node positive		Node negative	
	50 years	>50 years	50 years	>50 years
Unknown	0	6	1	25
Information available				
No systemic therapy	1 3.8%	7 5.9%	1 2.1%	36 8.8%
Chemotherapy	13 50.0%	48 40.7%	13 27.7%	30 7.3%
Hormonal therapy	0 0.0%	36 30.5%	23 48.9%	325 79.1%
Chemotherapy & hormonal therapy	12 46.2%	27 22.9%	10 21.3%	20 4.9%
Subtotal	26 100%	118 100%	47 100%	411 100%

Appendix 1

Additional information about country of birth for attenders to BreastScreen Victoria

Country of birth	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
Australia	11715 67.3%	48604 62.2%	32453 62.9%	16687 71.3%	646 79.5%	81057 62.5%	110105 64.2%
United Kingdom	1095 6.3%	7104 9.1%	4480 8.7%	1895 8.1%	73 9.0%	11584 8.9%	14647 8.5%
Italy	421 2.4%	3779 4.8%	3839 7.4%	1145 4.9%	13 1.6%	7618 5.9%	9197 5.4%
Greece	292 1.7%	3117 4.0%	2134 4.1%	320 1.4%	1 0.1%	5251 4.0%	5864 3.4%
The former Yugoslavia	337 1.9%	1801 2.3%	1276 2.5%	258 1.1%	2 0.2%	3077 2.4%	3674 2.1%
Germany	101 0.6%	1382 1.8%	790 1.5%	475 2.0%	9 1.1%	2172 1.7%	2757 1.6%
Netherlands	180 1.0%	1202 1.5%	756 1.5%	313 1.3%	7 0.9%	1958 1.5%	2458 1.4%
Malta	206 1.2%	1150 1.5%	574 1.1%	144 0.6%	0 0.0%	1724 1.3%	2074 1.2%
Vietnam	514 3.0%	779 1.0%	367 0.7%	83 0.4%	3 0.4%	1146 0.9%	1746 1.0%
Poland	105 0.6%	463 0.6%	372 0.7%	370 1.6%	8 1.0%	835 0.6%	1318 0.8%
New Zealand	262 1.5%	733 0.9%	225 0.4%	92 0.4%	2 0.2%	958 0.7%	1314 0.8%
China	130 0.7%	492 0.6%	335 0.6%	96 0.4%	5 0.6%	827 0.6%	1058 0.6%
India	122 0.7%	466 0.6%	271 0.5%	76 0.3%	5 0.6%	737 0.6%	940 0.5%
Sri Lanka	120 0.7%	463 0.6%	240 0.5%	89 0.4%	3 0.4%	703 0.5%	915 0.5%
Malaysia	177 1.0%	522 0.7%	170 0.3%	31 0.1%	1 0.1%	692 0.5%	901 0.5%

Egypt	64 0.4%	414 0.5%	271 0.5%	104 0.4%	1 0.1%	685 0.5%	854 0.5%
Philippines	142 0.8%	408 0.5%	111 0.2%	28 0.1%	0 0.0%	519 0.4%	689 0.4%
Cyprus	54 0.3%	376 0.5%	193 0.4%	54 0.2%	0 0.0%	569 0.4%	677 0.4%
Republic of Ireland	43 0.2%	278 0.4%	209 0.4%	91 0.4%	4 0.5%	487 0.4%	625 0.4%
Turkey	122 0.7%	353 0.5%	103 0.2%	21 0.1%	1 0.1%	456 0.4%	600 0.4%
Other	1193 6.9%	4280 5.5%	2453 4.8%	1022 4.4%	29 3.6%	6733 5.2%	8977 5.2%
Total	17395 100%	78166 100%	51622 100%	23394 100%	813 100%	129788 100%	171390 100%

Appendix 2

Performance against national accreditation standards in 1999

Minimum standards and requirements are in place for accredited services operating within BreastScreen Australia. Notwithstanding present limitations of the data, this table summarises the performance of BreastScreen Victoria for a selection of standards measurable using the information in this report.

Standard	Performance objective	Minimum standard	BreastScreen Victoria
1.2	To maximise the number of women screened who are aged 50–69 with the aim of screening 70% of this group.	Participation by 60% of the target group (50–69) after five years in the Program ³⁸ .	Standard yet to be achieved. 58.0% of eligible Victorian women aged 50–69 years were screened during the 24 months from 1 January 1998 to 31 December 1999. This is an improvement on the rate of 56.5% in 1998.
1.3	To maximise participation by women of non-English speaking background.	Participation for women of non-English speaking background in urban areas will be at least 50% of the rate for the general population.	Standard achieved. Participation of women aged 50–69 years of non-English speaking background across Victoria was 99% of the rate for all Victorian women ³⁹ .
2.9	To minimise the number of women recalled for mammographic assessment.	Assessment recalls <10% of women screened at prevalent round and <5% at incident round.	Standard achieved. Assessment was recommended for 9.9% of women attending for first screens and 4.8% of subsequent attenders. If confined to women recommended for assessment on the basis of abnormal mammography, the percentages are 8.4% for first attenders and 4.0% for subsequent attenders ⁴⁰ .
2.23	To maximise the number of cancers detected.	>5 cancers per 1,000 screened women should be detected at the prevalent screening round. At incident rounds, at least 2 cancers per 1,000 women screened should be detected.	Standard achieved. The average rate of breast cancer diagnosis ⁴¹ was 5.8 per 1,000 among first attenders and 4.9 per 1,000 among subsequent attenders.
2.24	To maximise the number of minimal invasive cancers detected.	>0.8 cancers per 1,000 screened women will have a diameter of 10 mm.	Standard achieved. The average rate of cancers 10 mm or less in diameter was 1.78 per 1,000 women screened.
2.25	To detect a representative proportion of ductal carcinoma in situ (DCIS) at the prevalent screening round.	10–20% of cancers detected will be DCIS.	Standard not achieved. 23% of cancers detected in first attenders were DCIS.

38 This standard applies only to screening and assessment services established for five years and granted full accreditation. In 1999, five of eight BreastScreen Victoria services had been operating for five years.

39 Comparison in national accreditation standard 1.3 is not accurate because NESB Census 1996 counts are being compared with an average of ERP 1998/1999 counts. This is likely an overestimate of the true proportion.

40 Data by prevalent and incident screening round, as distinct from first and subsequent attendance, are not utilised in this publication.

41 Rates given are for asymptomatic women with no personal history of breast cancer.

2.26	To minimise the number of interval cancers.	<6 per 10,000 screened women develop breast cancer (including DCIS but excluding LCIS) in the 12 months following screening.	Standard yet to be achieved. Average rate of interval cancers for women aged 50–69 years was 7.97 per 10,000 among first attenders and 5.98 per 10,000 among subsequent attenders during the first 12 months after screening ⁴² .
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42 This rate is given for all women screened, asymptomatic and symptomatic at the time of screening and excludes cases of DCIS.

Appendix 3

National comparisons

The BreastScreen Australia Program has released its second national monitoring report⁴³. Some of the results for 1997 and 1998 are provided below. While there is some variation in the definitions applied for the reporting of key indicators between the national report and the BreastScreen Victoria Annual Statistical Report, data presented in this Appendix by state and territory BreastScreen Programs as derived from the national report are comparable.

Participation rate

Participation rates for each state and territory for the period 1 January 1997 to 31 December 1998 are presented in the next table⁴⁴. The rates are standardised to the 1998 Australian population.

State/Territory	Participation rate (age standardised)	
	Women aged 50–69 years screened 1997–1998	95% C.I.
Victoria	55.4	(55.2–55.6)
New South Wales	52.6	(52.4–52.8)
Queensland	52.7	(52.5–52.9)
Western Australia	54.6	(54.2–54.9)
South Australia	59.5	(59.2–59.9)
Tasmania	58.2	(57.6–58.8)
Australian Capital Territory	58.9	(58.0–59.7)
Northern Territory	48.6	(47.4–49.9)
Australia	54.3	(54.2–54.4)

43 Australian Institute of Health and Welfare (AIHW) (2000), BreastScreen Australia Achievement Report 1997 and 1998, AIHW Cat. No. CAN8. Canberra: Australian Institute of Health and Welfare (Cancer Series number 13).

44 The participation rate for BreastScreen Victoria in the national report is lower than that reported in the BreastScreen Victoria 1999 Annual Statistical Report (ASR). The national report uses age-standardised participation rates; the BreastScreen Victoria ASR presents non age-standardised rates. The ASR only reports on women resident in Victoria who were screened by BreastScreen Victoria. The national report includes all eligible women resident in Victoria in the denominator for participation rates.

Detection rate for small breast cancers

The detection rate for small invasive breast cancers (10 mm or less) in first and subsequent attenders in 1998 for each Australian state and territory Program is shown in the next two tables. The rates are standardised to the 1998 Australian population.

State/Territory	Small invasive breast cancer detection rate per 10,000 women (age standardised)	
	Women aged 50–69 years First screening round 1998	95% C.I.
Victoria	24.4	(17.5–32.1)
New South Wales	20.4	(16.1–24.7)
Queensland	13.6	(10.1–17.0)
Western Australia	16.5	(8.0–26.2)
South Australia	15.8	(7.4–25.3)
Tasmania	36.0	(17.5–56.9)
Australian Capital Territory	42.0	(12.7–84.7)
Northern Territory	28.3	(0.0–70.9)
Australia	18.6	(16.3–20.8)

State/Territory	Small invasive breast cancer detection rate per 10,000 women (age standardised)	
	Women aged 50–69 years Subsequent screening round 1998	95% C.I.
Victoria	16.6	(14.4–18.7)
New South Wales	12.6	(10.9–14.2)
Queensland	12.6	(10.2–15.0)
Western Australia	17.4	(13.9–20.8)
South Australia	15.0	(11.6–18.3)
Tasmania	15.9	(9.8–22.5)
Australian Capital Territory	15.5	(7.9–23.9)
Northern Territory	14.3	(0.0–34.7)
Australia	14.6	(13.6–15.6)

Detection rate for invasive breast cancers

The detection rate for all-size invasive breast cancers in first and subsequent attenders in 1998 for each Australian state and territory Program is shown in the next two tables. The rate is standardised to the 1998 Australian population.

State/Territory	All-size invasive breast cancer detection rate per 10,000 women (age standardised)	
	Women aged 50–69 years First screening round 1998	95% C.I.
Victoria	75.8	(63.5–88.2)
New South Wales	57.6	(50.5–64.7)
Queensland	51.0	(44.2–57.5)
Western Australia	60.1	(43.1–77.5)
South Australia	67.1	(49.0–85.7)
Tasmania	71.9	(47.1–101.0)
Australian Capital Territory	100.0	(44.7–155.4)
Northern Territory	66.6	(23.4–119.5)
Australia	59.3	(55.4–63.1)

State/Territory	All-size invasive breast cancer detection rate per 10,000 women (age standardised)	
	Women aged 50–69 years Subsequent screening round 1998	95% C.I.
Victoria	37.7	(34.6–40.9)
New South Wales	32.4	(29.7–35.2)
Queensland	33.7	(29.5–37.9)
Western Australia	39.5	(34.4–44.8)
South Australia	42.9	(37.3–48.7)
Tasmania	36.4	(26.8–46.1)
Australian Capital Territory	36.9	(24.7–50.5)
Northern Territory	30.5	(6.8–62.9)
Australia	35.9	(34.3–37.5)

Interval cancer rate

The interval cancer rate for all-size invasive breast cancers in first and subsequent attenders in 1996 for each state and territory Program is shown in the next two tables. The rate is standardised to the 1998 Australian population.

State/Territory	Interval cancer rate per 10,000 women (age standardised)	
	0-12 months follow up Asymptomatic women aged 50-69 years First screening round 1996	95% C.I.
Victoria	5.5	(3.6-7.5)
New South Wales	n/a	n/a
Queensland	2.4	(0.5-4.4)
Western Australia	5.0	(2.0-8.4)
South Australia	6.5	(2.5-11.5)
Tasmania	3.4	(0.0-10.2)
Australian Capital Territory	12.8	(0.0-32.1)
Northern Territory	0.0	n/a

State/Territory	Interval cancer rate per 10,000 women (age standardised)	
	0-12 months follow up Asymptomatic women aged 50-69 years subsequent screening round 1996	95% C.I.
Victoria	7.5	(5.7-9.2)
New South Wales	n/a	n/a
Queensland	5.2	(3.3-7.3)
Western Australia	5.5	(3.2-7.9)
South Australia	6.8	(4.3-9.7)
Tasmania	5.1	(1.2-10.1)
Australian Capital Territory	7.9	(2.5-16.2)
Northern Territory	0.0	n/a

Appendix 4

Definition of interval cancer

In November 1998 the BreastScreen Australia National Advisory Committee endorsed a revised definition of interval cancers⁴⁵. This definition has been adopted by BreastScreen Victoria for this report. To assist in understanding the differences between the definition previously applied and the current definition, as well as impacts on rates using the two definitions, the following information is provided.

	Current definition	Former definition
DCIS	<ul style="list-style-type: none"> Excluded for reporting purposes <p>Rationale: Predominantly a screen-detected lesion and evidence for impact on mortality unclear so not considered useful to monitor the effectiveness of screening.</p>	<ul style="list-style-type: none"> Included
<p>Early review</p> <p>Recall of a woman less than 12 months after her initial screening date and following an inconclusive assessment visit.</p>	<ul style="list-style-type: none"> Diagnoses made at early review within six months of a screening exam are considered screen-detected cancers. Diagnoses made at early review between six and 12 months of a screening exam are considered interval cancers. <p>Rationale: Since a diagnosis was unable to be made at screening or subsequent assessment within a reasonable time period, an opportunity for early diagnosis may have been missed.</p>	<ul style="list-style-type: none"> Diagnoses made at early review within 12 months of screening exam are classified as screen-detected cancers. Diagnoses at early review more than 12 months after screening exam are classified as interval cancers.
<p>Early rescreen</p> <p>Woman attends for rescreen by BreastScreen Victoria within 24 months of a previous screen (or within 12 months for women recommended for annual rescreen).</p>	<ul style="list-style-type: none"> Diagnoses made in women who were rescreened within 24 months (or within 12 months for annual screens) and declared at the time of the second screening that they had a current breast lump and/or a blood-stained or watery nipple discharge and a cancer was diagnosed in the same breast are classified as interval cancers. Diagnoses made in asymptomatic women rescreened less than 24 months (or within 12 months for annual screens) are classified as screen-detected cancers. <p>Rationale: The woman had interval symptoms at the time of her second screen.</p>	<ul style="list-style-type: none"> Diagnoses made in women rescreened within 21 months (within 11 months for annual rescreen) where a cancer was diagnosed are classified as interval cancers regardless of symptomatic status. Diagnoses made in women rescreened between 21 and 24 months (or between 11 and 12 months for annual rescreen) who declared at the second screening that they currently had a breast lump and/or a blood-stained or watery nipple discharge and a cancer was diagnosed in the same breast are classified as interval cancers.

In order to allow comparison with interval cancer data from the three previous Annual Statistical Reports relating to performance against the *National Accreditation Requirements*, interval cancer rates have been calculated using the former definition of interval cancers. Among asymptomatic first round attenders in 1997 aged 50–69 years, the interval cancer rate for the first 12 months remains unchanged at 6.27 cancers per 10,000 women (95% C.I. 3.8–10.2). The interval cancer rate for the second year is 13.72 cancers per 10,000 women (95% C.I. 9.9–19.1).

⁴⁵ Kavanagh AM, Amos AF and Marr GM (1999), The ascertainment and reporting of interval cancers within the BreastScreen Australia Program, NHMRC National Breast Cancer Centre.

Appendix 5

Staff of BreastScreen Victoria

SCREENING AND ASSESSMENT SERVICES

Bendigo Regional BreastScreen

Director	Dr Neale Walters
Manager	Mrs Philippa Hartney
Data Manager	Ms Kaye Boyle

Central Highlands and Wimmera BreastScreen

Director	Dr Clifford Trotman
Manager	Ms Jennifer Slattery
Data Manager	Mrs Glenda Cairns

Geelong Screening and Assessment Service⁴⁶

Director	Dr Linda West
Manager	Ms Carol Belfrage-Richmond (resigned August 1999) Dr Lyn Turney
Data Manager	Ms Naomi Benney

Gippsland BreastScreen

Director	Mr Iain Miller
Manager	Ms Erin Verhoeven
Data Manager	Ms Ann Bomers

Maroondah BreastScreen

Director	Dr Rodney Taft
Manager	Ms Angelia Dixon (resigned December 1999) Ms Michelle Muldowney
Data Manager	Ms Alison Jones

Monash BreastScreen

Director	Mr Stewart Hart
Manager	Ms Louise Bowen
Data Manager	Ms Janita Bettio

North Western BreastScreen⁴⁷

Director	Dr Allison Rose
Manager	Ms Patsy Morrison
Data Manager	Ms Susy Alessandri

St Vincent's BreastScreen⁴⁸

Director	Dr Jennifer Cawson
Manager	Dr Catherine Galbraith
Data Manager	Ms Toni Barbetti

BREASTSCREEN VICTORIA INC.

Coordination Unit

Director	Ms Onella Stagoll
Deputy Director	Ms Pauline Sanders
Consultant	
Epidemiologist	Dr Anne Kavanagh
Manager, Policy and Evaluation	Alison Amos
Policy Officer	Ms Lisa Lane
Administrative Officer	Ms Julie-Anne Lillenthal

Registry, Information Services and Information Technology

Registry Manager	Ms Genevieve Chappell
Information Manager	Ms Suzen Maljevac
Data Manager	Ms Esther Cukier
IT Staff	Mr John Siddham Mr Darren Firth Mr Wayne Benjamin

46 Known as Geelong and South West BreastScreen since October 2000.

47 Known as Royal Melbourne Hospital Essendon BreastScreen until August 1999.

48 Known as City and North Eastern BreastScreen until June 1999.