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BreastScreen Victoria 1998 highlights

In order to reduce the impact of a disease on the health and lives of a population, a screening program must be able to provide a high-quality screening service to a large proportion of that population. The BreastScreen Victoria Program aims to reduce the impact of breast cancer in our community through achieving excellence in the provision of screening mammography and follow-up of any suspicious lesions to the point of diagnosis.

Attendance

The year 1998 saw almost 169,000 women attend the BreastScreen Victoria Program. For the majority of these women (77%), their screening visit in 1998 was a subsequent attendance. Of all women attending for screening in 1998, 75% were aged 50–69 years, the age range in which mammography has been shown to be of the greatest benefit.

Of all Victorian women aged 50–69 years, 56.5% participated in the BreastScreen Program during the period 1 January 1997 to 31 December 1998. While this is a small increase from the rates reported previously, there is still some way to go before realising the aim to screen 70% of women in this age group.

In addition to the attendance of women, 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 1998, 81% of women aged 50–69 years who were screened in 1996 returned for rescreening within 27 months. A study investigating the reasons why women may or may not return for further screening examinations is underway to assist in the development of strategies to improve this rate.

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. More detailed information relating to participation and rescreen rates by these factors is presented for the first time in this report.

Area of residence

The breakdown by area of residence of women attending the BreastScreen Victoria Program closely matches that for the whole of Victoria. Participation of women living in rural areas continues to be higher than those living in urban areas, although rescreen rates are the same for these two groups, indicating that the service is accessible to women regardless of their area of residence.

Socio-economic status

Consistent participation and rescreen rates were seen across all categories of socio-economic status in 1998. The distribution of women attending the Program matches closely the breakdown by socio-economic status for all Victorian women which indicates that socio-economic status does not represent a significant barrier to screening for women.

Women of culturally and linguistically diverse backgrounds

The rescreen rates for women of non-English speaking backgrounds (NESB) aged 50–69 years are slightly lower than the rate for the general population (77% versus 81% respectively). The participation rate for women of NESB aged 50–69 years is 54% for the 24-month period covered by this report. This rate corresponds to 96% of the rate for the general population and is far greater than the required national accreditation standard of 50%. 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 the negative aspects of screening, the proportion of women for whom additional tests are recommended after screening should be low. Further, it is best that women recommended to have further investigations should require simple, non-invasive tests to reach a definitive conclusion about the presence or absence of disease.

In 1998, 10% of women attending for their first screen and 5% of women attending for a subsequent screen were recalled for further assessment. These rates of recall were higher than those in 1997 (9.3% and 4.5%) and 1996 (6.9% and 3.8%). 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.

Of the women recommended to attend the BreastScreen Program for further assessment, 76% received a definitive diagnosis after further x-rays, ultrasound or clinical examination only. Of those women for whom a biopsy was required, the majority (81%) underwent a fine needle or core biopsy rather than an open surgical biopsy.

About the cancers diagnosed

There were 923 breast cancers diagnosed within the BreastScreen Victoria Program in 1998, corresponding to 7.0 cases for every 1,000 women screened in first attenders and 5.0 cases for every 1,000 women screened in subsequent attenders. Cancer detection rates increased with age as expected and exceeded the national accreditation standards.

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, a woman has a better chance of a successful recovery and a reduced likelihood of extensive surgery if her breast cancer is detected early and while the tumour is relatively small. In 1998, the rate of detection of invasive breast cancer less than 10mm in diameter was 1.8 per 1,000 women screened in first attenders and 1.9 per 1,000 women screened in subsequent attenders. These rates exceed the national accreditation standard which requires a rate of more than 0.8 cases per 1,000 women screened.

Other indicators of Program performance include tumour palpability and grade, aiming for the detection of non-palpable low-grade tumours. In 1998, more than half of all the invasive cancers diagnosed at BreastScreen were not palpable by clinical examination. Further, 76% of tumours 10mm or less in size were not palpable by clinical examination. This confirms the important role of mammography in detecting cases of breast cancer in women without symptoms. The vast majority of smaller tumours, for which information was available, were node negative and 49% of tumours less than 10mm were classified as Grade 1 tumours.

Interval cancers are cases of breast cancer that are diagnosed in the time period after a negative screen and prior to the next scheduled screening examination. 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 1996, with rates for subsequent attenders presented for the first time. In common with similar programs, BreastScreen Victoria's interval cancer rates are higher than the national accreditation standard, although the rate for first attenders is lower than that reported in 1997. An internal radiological review of interval cancers from women screened in 1994 indicated that the majority of interval cancers were not present or detectable at the time of screening¹. Further, evidence from this study suggests that interval cases are more likely to be smaller, poorly defined masses and thus likely to be more difficult to detect. In addition, an independent study has found that the sensitivity of mammography is reduced in women who take hormone replacement therapy, most probably due to the increase in breast density which occurs in these women². Further research into breast density and mammographic accuracy is now in progress.

1 Amos AF, Kavanagh AM, Cawson J and the Radiology Quality Assurance Group of BreastScreen Victoria (2000). 'Radiological review of interval cancers in an Australian breast cancer screening program'. *J Med Screening*, submitted for publication.

2 Kavanagh AM, Mitchell H, Giles GG (2000). 'Hormone replacement therapy and accuracy of mammography screening'. *Lancet* 355:270-274.

Management of screen-detected breast cancers

While treatment services are not provided within the BreastScreen Program, with the agreement of women we collect basic information about further management of screen-detected breast cancers for evaluation purposes. This includes information about surgical treatment and the subsequent use of adjuvant therapy, incorporating radiotherapy, chemotherapy, hormonal therapy or a combination of these.

The year 1998 saw the rates of mastectomy level out for women with invasive tumours, with 73% of women undergoing breast-conserving surgery compared with 73% in 1997 and 65% in 1996. Among women diagnosed with ductal carcinoma in situ (DCIS), the rates of mastectomy also declined in 1998 to 17.6% from 22% in 1997. Ten percent of women diagnosed with DCIS underwent axillary node dissection or sampling; this rate is substantially lower than the rate of 20% in 1997 and 22% in 1996. As in previous years, none of these women were found to have positive nodes.

Data presented in this report for the first time relating to type of surgical treatment by area of residence indicate far greater proportions of women undergoing mastectomy in rural than urban areas. This correlates with the findings of a recent Australian study where women living in rural areas were more likely to be treated by mastectomy than women in urban areas, even when the severity of disease was accounted for³.

Eighty-three percent of women diagnosed at BreastScreen in 1998 received some form of adjuvant therapy (94% of invasive cases and 29% of DCIS). Women diagnosed with smaller tumours were less likely to receive adjuvant therapy. Among women with invasive tumours who underwent breast-conserving surgery, the majority (73%) received radiotherapy alone or in combination with hormonal therapy or chemotherapy.

Monitoring quality and outcomes

Mammography screening remains the best tool we have available for the early detection of breast cancer when delivered as part of an organised program with policies which reflect the best available evidence from randomised controlled trials. This annual report is developed in recognition of the need to continually monitor and evaluate the performance of the BreastScreen Program and 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. With each passing year, significant additions are made to the large and comprehensive collection of high-quality data. This 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.

Introduction

This Statistical Report provides information about BreastScreen Victoria, the Victorian Breast Screening Program, and relates only to women screened in the Victorian Program. It is intended to provide summary data on women who attended for screening during 1998 and the results of their screening. More detailed information about the structure and processes of BreastScreen Victoria can be found in its Annual Reports.

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. Comparative data from the 1996 Census of Population and Housing and the average of the 1997 and 1998 Estimated Resident Populations of Victoria are provided for some demographic characteristics.

Reference to national accreditation standards⁴, where appropriate, is also included. A summary of BreastScreen Victoria's performance against selected standards is given in Appendix 2.

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 fifth Annual Statistical Report, is the final report that will be produced by the Victorian BreastScreen Registry under the auspices of the Victorian Cytology Service Inc. (VCS). The task of establishing the BreastScreen Registry was only possible because of the Victorian Cytology Service's generous support and willingness to take on such an enormous task. Over the last five years, enormous efforts have been made and the BreastScreen Victoria Program now has high-quality data collection about all aspects of its important work.

Particular thanks are extended to Dr Gabriele Medley, Director of VCS; to Dr Heather Mitchell, Director of the Victorian BreastScreen Registry; and to all Registry staff. Dr Mitchell and her Registry team have made an outstanding contribution to the BreastScreen Program. This report is a tribute to their dedication.

BreastScreen Victoria looks forward to publishing future reports, including a five-year statistical report currently being planned.

⁴ 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 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 32 screening centres, eight assessment centres, a relocatable unit and a mobile van. 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 is targeted to 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

Characteristics of women attending for screening

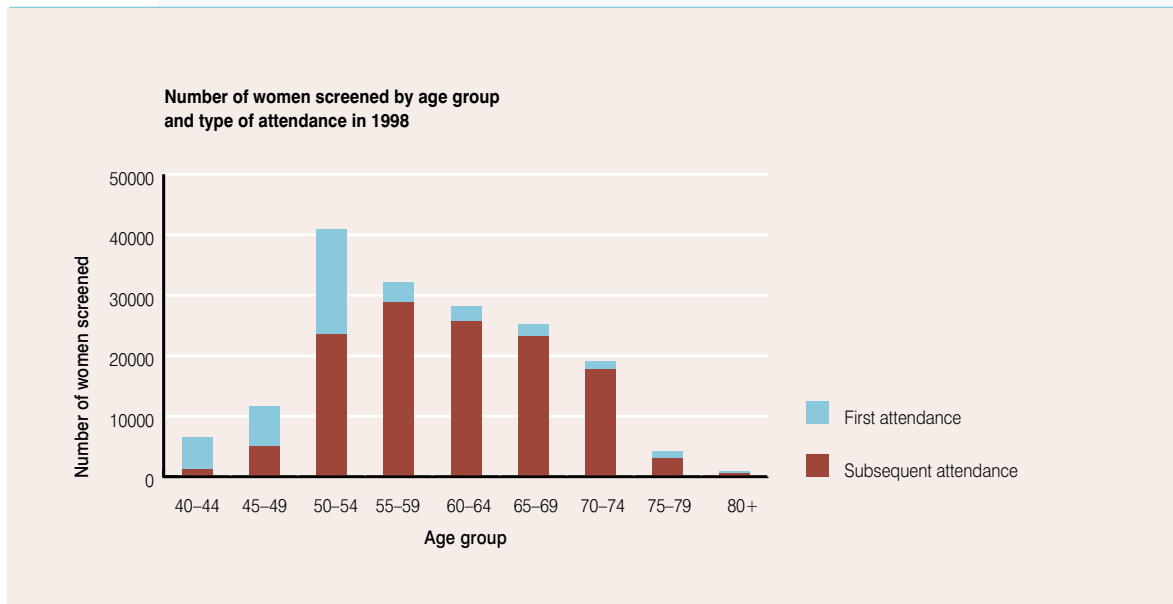
The information in Sections 1.1 to 1.10 (inclusive) comes from a self-completed questionnaire that each woman completes prior to her mammography examination.

1.1 Type of attendance

This table shows the type of attendance by age group for women who were screened during 1998⁵. 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.

Almost 169,000 women were screened by BreastScreen during 1998. The proportion of attendances accounted for by women who have previously attended BreastScreen continues to increase. During 1998, 76.5% of all attenders were subsequent attendances, compared with 71.3% in 1997, 56.8% during 1996, 16.5% during 1995 and 7.5% during 1994.

Type of attendance ⁶	Age group										Total
	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	50-69	
First attendance	5193	6698	17399	3252	2501	1973	1285	1050	392	25125	39743
	80.5%	57.3%	42.5%	10.1%	8.9%	7.8%	6.7%	25.1%	41.3%	19.9%	23.5%
Subsequent attendance	1260	4997	23587	28885	25646	23201	17792	3128	558	101319	129054
	19.5%	42.7%	57.5%	89.9%	91.1%	92.2%	93.3%	74.9%	58.7%	80.1%	76.5%
Total ⁷	6453	11695	40986	32137	28147	25174	19077	4178	950	126444	168797
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



⁵ All data in this Statistical Report excludes two women who attended for screening in 1998 but who were aged less than 40 years.

⁶ Data in this Statistical Report is classified according to whether the woman's attendance was the first to BreastScreen Victoria or a later attendance. The validity 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.

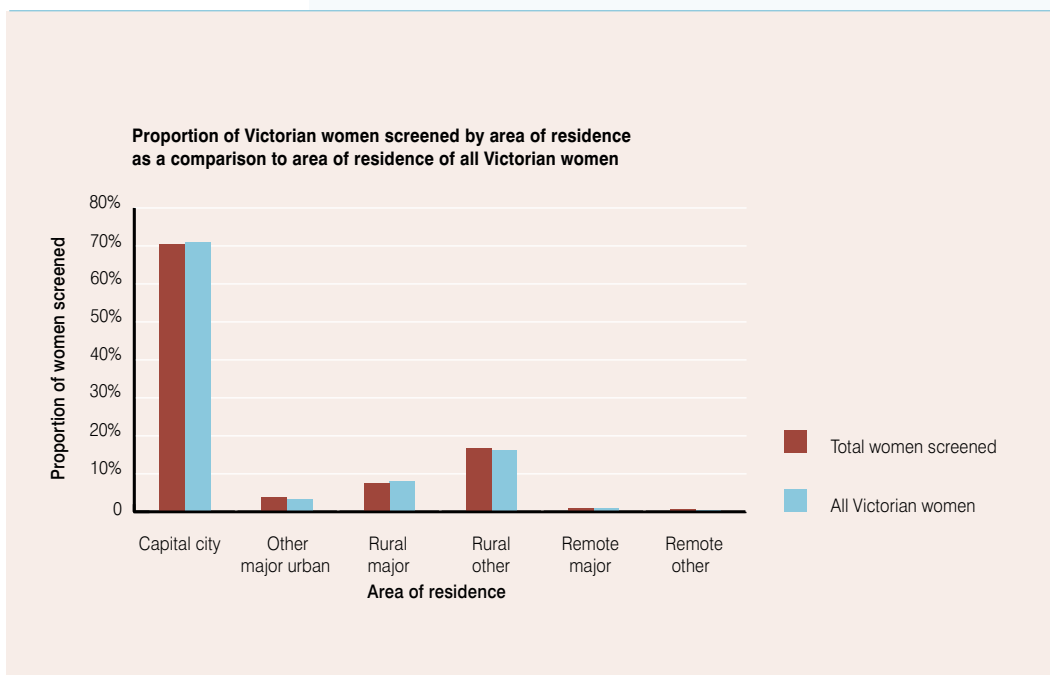
⁷ In all tables, percentages may not add to 100% due to rounding.

1.2 Area of residence

This table shows the area of residence of the women who attended for screening. Classification of the geographic areas of Victoria is according to the 'Rural/Remote Areas Classification' of the Commonwealth Department of Health and Family Services, January 1994. For comparison, the area of residence for all Victorian women from the 1996 Census is listed⁸.

The geographic distribution of the women screened is very similar to previous years and matches the profile for all Victorian women closely.

Area of residence	Age group						Total	All Victorian women
	40-49	50-59	60-69	70-79	80+	50-69		
Capital city	12567 69.2%	52868 72.3%	36826 69.1%	15724 67.6%	605 63.7%	89694 70.9%	118590 70.3%	71.0%
Other major urban	820 4.5%	2586 3.5%	2052 3.8%	974 4.2%	38 4.0%	4638 3.7%	6470 3.8%	3.3%
Rural major	1320 7.3%	5312 7.3%	3968 7.4%	1882 8.1%	90 9.5%	9280 7.3%	12572 7.4%	7.9%
Rural other	2787 15.4%	11339 15.5%	9601 18.0%	4240 18.2%	185 19.5%	20940 16.6%	28152 16.7%	16.3%
Remote major	421 2.3%	549 0.8%	432 0.8%	210 0.9%	15 1.6%	981 0.8%	1627 1.0%	1.0%
Remote other	146 0.8%	323 0.4%	302 0.6%	162 0.7%	9 0.9%	625 0.5%	942 0.6%	0.5%
Interstate	87 0.5%	146 0.2%	140 0.3%	63 0.3%	8 0.8%	286 0.2%	444 0.3%	
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%	100%



1.3 Area/country of birth

This table shows the area/country of birth by age group for the women who attended for screening in 1998. 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 listing of country of birth is shown in Appendix 1.

Area/country of birth	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
Oceania and Antarctica	12274 67.6%	46449 63.5%	34518 64.7%	16802 72.3%	756 79.6%	80967 64.0%	110799 65.6%
Australia	11982 66.0%	45645 62.4%	34209 64.2%	16686 71.8%	752 79.2%	79854 63.2%	109274 64.7%
Europe and former USSR	3803 21.0%	21337 29.2%	15991 30.0%	5648 24.3%	165 17.4%	37328 29.5%	46944 27.8%
United Kingdom	1282 7.1%	7087 9.7%	5053 9.5%	2015 8.7%	79 8.3%	12140 9.6%	15516 9.2%
Italy	544 3.0%	3582 4.9%	3572 6.7%	1017 4.4%	18 1.9%	7154 5.7%	8733 5.2%
Greece	274 1.5%	2857 3.9%	1792 3.4%	225 1.0%	5 0.5%	4649 3.7%	5153 3.1%
South-East Asia	888 4.9%	1746 2.4%	842 1.6%	195 0.8%	8 0.8%	2588 2.0%	3679 2.2%
Southern Asia	245 1.4%	944 1.3%	558 1.0%	168 0.7%	6 0.6%	1502 1.2%	1921 1.1%
Mid-East Asia and far North Africa	212 1.2%	725 1.0%	455 0.9%	159 0.7%	4 0.4%	1180 0.9%	1555 0.9%
North-East Asia	257 1.4%	630 0.9%	386 0.7%	104 0.4%	2 0.2%	1016 0.8%	1379 0.8%
Africa excluding far North Africa	209 1.2%	598 0.8%	311 0.6%	76 0.3%	1 0.1%	909 0.7%	1195 0.7%
The Americas	230 1.3%	606 0.8%	227 0.4%	87 0.4%	3 0.3%	833 0.7%	1153 0.7%
Not stated	30 0.2%	88 0.1%	33 0.1%	16 0.1%	5 0.5%	121 0.1%	172 0.1%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

1.4 Language spoken at home

This table presents information on the language that is usually spoken at home for the women who were screened. In the 1996 Census, 79% of the Victorian female population aged 40 years or more were identified as speaking only English at home.

Language spoken at home	Age group						Total
	40-49	50-59	60-69	70-79	80+	50-69	
Usually English	14911 82.2%	58764 80.4%	42299 79.3%	19984 85.9%	873 91.9%	101063 79.9%	136831 81.1%
Usually other than English	3237 17.8%	14359 19.6%	11022 20.7%	3271 14.1%	77 8.1%	25381 20.1%	31966 18.9%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

1.5 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 is similar to 1997 (224) and larger than the years prior (168 in 1996, 190 in 1995, 91 in 1994).

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						Total
	40-49	50-59	60-69	70-79	80+	50-69	
Yes	39 0.2%	103 0.1%	56 0.1%	24 0.1%	1 0.1%	159 0.1%	223 0.1%
No	18093 99.7%	72931 99.7%	53203 99.8%	23194 99.7%	948 99.8%	126134 99.8%	168369 99.7%
Not stated	16 0.1%	89 0.1%	62 0.1%	37 0.2%	1 0.1%	151 0.1%	205 0.1%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

1.6 Symptom status

This table 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 94.5% of women screened reported no breast symptoms at the time of screening. Younger women continue to report symptoms more frequently than older women.

Symptom status	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
Breast lump and/or nipple discharge	782 4.3%	1508 2.1%	566 1.1%	185 0.8%	33 3.5%	2074 1.6%	3074 1.8%
Other breast symptoms	1265 7.0%	2644 3.6%	1500 2.8%	651 2.8%	90 9.5%	4144 3.3%	6150 3.6%
No breast symptoms	16101 88.7%	68971 94.3%	51255 96.1%	22419 96.4%	827 87.1%	120226 95.1%	159573 94.5%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

Among the 3,074 women with a breast lump and/or nipple discharge, there were 562 women with symptoms (18%) that were considered suspicious for breast cancer and for which recall for assessment was recommended under the policies of BreastScreen Victoria. This number comprises 411 women with a lump that had been present for less than 12 months which had not been investigated by a medical practitioner, and 151 women with a current blood-stained or watery nipple discharge.

1.7 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. All other women who nominate one or more family members with breast cancer are classified as 'other family history'.

Women aged 40–49 years who attended for screening were more likely to report a family history of breast cancer than older women.

Family history	Age group					50–69	Total
	40–49	50–59	60–69	70–79	80+		
Yes							
Strong family history	1137 6.3%	2099 2.9%	1712 3.2%	1050 4.5%	47 4.9%	3811 3.0%	6045 3.6%
Other family history	3305 18.2%	9565 13.1%	6390 12.0%	2779 12.0%	143 15.1%	15955 12.6%	22182 13.1%
No	13554 74.7%	61011 83.4%	44975 84.3%	19293 83.0%	755 79.5%	105986 83.8%	139588 82.7%
Not stated	152 0.8%	448 0.6%	244 0.5%	133 0.6%	5 0.5%	692 0.5%	982 0.6%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

1.8 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 may not be suitable for their particular needs. Therefore, 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 is the same as for 1997. As in earlier years, the proportion of women with a personal history of breast cancer increased with age.

Personal history	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
Yes	8 <0.1%	86 0.1%	163 0.3%	141 0.6%	31 3.3%	249 0.2%	429 0.3%
No	18140 100.0%	73037 99.9%	53158 99.7%	23114 99.4%	919 96.7%	126195 99.8%	168368 99.7%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

1.9 Breast implant status

This table shows the number of women by age group who nominated that they had breast implants at the time of attending for screening. These proportions are comparable to those in previous years.

Breast implant status	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
Yes	118 0.7%	552 0.8%	108 0.2%	18 0.1%	1 0.1%	660 0.5%	797 0.5%
No	18030 99.3%	72571 99.2%	53213 99.8%	23237 99.9%	949 99.9%	125784 99.5%	168000 99.5%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

1.10 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 24.3% of women attending for screening reported HRT use at the time of screening. HRT use was most prevalent in women aged 50–59 years (32.7%) and 60–69 years (21.8%). A small but steady decrease in the proportion of women reporting HRT use is seen in women aged 40–49 years (20.4% in 1995, 19.6% in 1996, 18.1% in 1997) and 50–59 years (37.8% in 1995, 35.0% in 1996, 34.0% in 1997). A corresponding increase in the reporting of HRT use is noted in women aged 60 years or more.

HRT use	Age group					50–69	Total
	40–49	50–59	60–69	70–79	80+		
Yes	2987 16.5%	23946 32.7%	11612 21.8%	2412 10.4%	63 6.6%	35558 28.1%	41020 24.3%
No	15145 83.5%	49109 67.2%	41644 78.1%	20805 89.5%	886 93.3%	90753 71.8%	127589 75.6%
Not stated	16 0.1%	68 0.1%	65 0.1%	38 0.2%	1 0.1%	133 0.1%	188 0.1%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

1.11 Response to invitations based on the electoral roll

Women in the age range 50–69 years who are listed on the electoral roll and who appear never to have been screened are sent an invitation for screening. If no response is made within one month of this invitation being sent, a second invitation letter is posted.

A total of 26,475 women were sent an invitation for screening during 1998. A total of 9,625 appointments for screening were made for this group of women, representing a response rate of 36%. 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 response rate of 36% is an improvement on 1997 when the comparable figure was 32%.

Of these invitations, 3.0% of the letters were returned unable to be delivered.

1.12 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 135,125 women were sent reminder letters for rescreening during 1998. Appointments for rescreening were made for 111,041 of these women, representing a response rate of 82%.

This response rate of 82% is an improvement on 1997 when the comparable figure was 79%.

Of these invitations, 2.2% of the letters were returned unable to be delivered.

1.13 Rescreen rates

The following table shows the proportion of women screened during 1996 who were rescreened by BreastScreen Victoria within 27 months of their previous attendance. For the first time rescreen rates for women of non-English speaking background (NESB) are also presented for the same period. The nominated age ranges refer to the ages of the women at the time of their 1996 screen.

An increase in rescreen rates is evident in every age group compared with the rates presented previously. In 1997, the rescreen rates were reported as 36.5% for women aged 40–49 years, 77.6% for women aged 50–59 years, 79.3% for women aged 60–69 years and 55.3% for women aged 70–79 years.

The rescreen rates among women of NESB were slightly lower in all age groups than among all women⁹.

Rescreen rates ⁹ for women screened from 1 January 1996 to 31 December 1996	Age group					
	40–49	50–59	60–69	70–79	80+	50–69
All women						
Women screened during 1996	15977	63398	51983	18365	945	115381
Women rescreened within following 27 months	6745	51038	42867	11084	113	93905
Rescreen rate	42.2%	80.5%	82.5%	60.4%	12.0%	81.4%
NESB women						
NESB women screened during 1996	2837	12409	9670	2409	72	22079
NESB women rescreened within following 27 months	1132	9585	7481	1383	4	17066
Rescreen rate	39.9%	77.2%	77.4%	57.4%	5.6%	77.3%

⁹ Rescreen rates correspond to a 'crude' rescreen rate for women screened between 1 January 1996 and 31 December 1996. The table excludes women at high risk who were recommended for annual screening and women resident interstate at the time of their 1996 screening. A woman was counted as 'rescreened within the following 27 months' if she returned to be rescreened within 821 days from the previous 1996 mammogram.

The following table presents, for the first time, rescreen rates for women living in urban and rural areas. The rescreen rates for women living in urban¹⁰ areas were very similar to those for women living in rural¹¹ areas.

Rescreen rates ¹² for women screened from 1 January 1996 to 31 December 1996	Age group					
	40-49	50-59	60-69	70-79	80+	50-69
Urban						
Women screened during 1996	11612	47248	37327	13338	627	84575
Women rescreened within following 27 months	4853	37886	30805	7990	71	68691
Rescreen rate	41.8%	80.2%	82.5%	59.9%	11.3%	81.2%
Rural						
Women screened during 1996	4365	16150	14656	5027	318	30806
Women rescreened within following 27 months	1892	13152	12062	3094	42	25214
Rescreen rate	43.3%	81.4%	82.3%	61.5%	13.2%	81.8%

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

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

12 See footnote 9.

The following table presents rescreen rates by socio-economic status. An Index of Disadvantage¹³ value is allocated to each postcode by the Australian Bureau of Statistics. In the following table, the index has been grouped into quartiles, ranging from low to high socio-economic status. The first quartile (1–25%), for example, indicates an area of relatively low income, low educational attainment, high unemployment and significant NESB population.

Data is presented for 99.5% of Victorian women screened during 1996 where an Index of Disadvantage value is available¹⁴. This data indicates consistent rescreen rates among women of different socio-economic groups¹⁵.

Rescreen rates ¹⁶ for women screened from 1 January 1996 to 31 December 1996	Age group					50–69
	40–49	50–59	60–69	70–79	80+	
Socio-economic index (1–25%) Women screened during 1996	4110	17272	15666	5353	275	32938
Women rescreened within following 27 months	1765	13688	12625	3155	31	26313
Rescreen rate	42.9%	79.2%	80.6%	58.9%	11.3%	79.9%
Socio-economic index (26–50%) Women screened during 1996	2906	11760	10390	3474	167	22150
Women rescreened within following 27 months	1213	9465	8517	2130	17	17982
Rescreen rate	41.7%	80.5%	82.0%	61.3%	10.2%	81.2%
Socio-economic index (51–75%) Women screened during 1996	3580	13880	10594	3726	183	24474
Women rescreened within following 27 months	1525	11353	8850	2290	27	20203
Rescreen rate	42.6%	81.8%	83.5%	61.5%	14.8%	82.5%
Socio-economic index (76–100%) Women screened during 1996	5272	20153	15153	5776	318	35306
Women rescreened within following 27 months	2212	16271	12727	3489	38	28998
Rescreen rate	42.0%	80.7%	84.0%	60.4%	11.9%	82.1%

13 Australian Bureau of Statistics, *Socio-Economic Indexes For Areas 1996*.

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

15 The proportion of women attending for screening by socio-economic index matched closely the attendance breakdown for all Victorian women.

16 Rescreen rates correspond to a 'crude' rescreen rate for women screened between 1 January 1996 and 31 December 1996. The table excludes women at high risk who were recommended for annual screening, women resident interstate at the time of their 1996 screening and women resident at postcodes where an Index of Disadvantage is not available. A woman was counted as 'rescreened within the following 27 months' if she returned to be rescreened within 821 days from the previous 1996 mammogram.

1.14 Participation rates

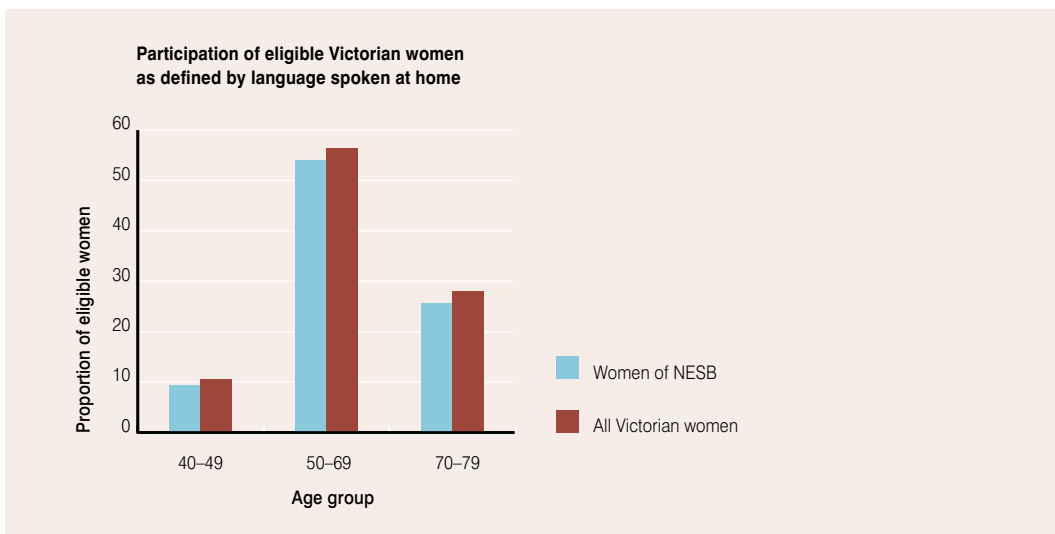
The following three tables show participation rates for Victorian women who were screened by BreastScreen Victoria during the period 1 January 1997 to 31 December 1998 (a period of 24 months).

The table below shows the participation rate for all Victorian women and for women of NESB. The screening program directly targets women aged 50–69 years. The participation rate for women aged 50–69 years was 56.5%. Participation rates across all age groups have increased since 1997 where the corresponding rates were 10.0%, 54.9% and 25.3% in women aged 40–49, 50–69 and 70–79 years respectively¹⁷.

Participation among women of NESB aged 50–69 years at 54.0% was lower than among all women, but increased from the rate of 50.5% in 1997 and 47.2% in 1996 and exceeds the relevant national accreditation standard. This estimate of the participation rate among women of NESB was based on figures from the 1996 Census as the Estimated Resident Population figures for inter-census years are not available specifically for women of NESB.

Participation rates 1 January 1997 to 31 December 1998	40–49	Age group 50–69	70–79
All women			
Estimated number of eligible women resident in Victoria ¹⁸	327242	421273	150201
Number of women screened	34641	238177	42099
Participation rate	10.6%	56.5%	28.0%
NESB women			
Estimated number of eligible NESB women resident in Victoria ¹⁹	65633	91004	23420
Number of NESB women screened	6316	49102	5941
Participation rate	9.6%	54.0%	25.4%

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 non-English speaking background in urban areas is at least 50% of the rate for the general population.



¹⁷ Participation rates were calculated using the average of the 1997 and 1998 Estimated Resident Populations (ERP) of Victoria as the denominator (eligible women). Note that this denominator is lower than the estimate used in 1997 based on the 1997 ERP alone. This difference may account for the increase in participation rates from 1997 to 1998.

¹⁸ Australian Bureau of Statistics, *Estimated Resident Population 1997*; Australian Bureau of Statistics, *Estimated Resident Population 1998*.

¹⁹ Australian Bureau of Statistics, *Census of Population and Housing 1996*. The estimated resident population for women of NESB differs from that presented in previous statistical reports due to altered inclusion criteria. Only women who indicated that they usually spoke a language other than English at home were included as women of NESB. The rates for 1997 and 1996 presented above have been recalculated with this revised denominator to allow comparison with the 1998 figures.

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

Among all women in every age group, including women of NESB, participation continues to be lower in the capital city than in the remainder of Victoria.

Participation rates 1 January 1997 to 31 December 1998	40-49	Age group 50-69	70-79
All women			
Capital city			
• Estimated number of eligible women resident in Victoria ²⁰	242465	305941	106034
• Number of women screened	23752	166199	28079
• Participation rate	9.8%	54.3%	26.5%
Other than capital city			
• Estimated number of eligible women resident in Victoria ²¹	84777	115332	44167
• Number of women screened	10889	71978	14020
• Participation rate	12.8%	62.4%	31.7%
NESB women			
Capital city			
• Estimated number of eligible NESB women resident in Victoria ²²	60971	83555	20674
• Number of NESB women screened	5831	44987	5194
• Participation rate	9.6%	53.8%	25.1%
Other than capital city			
• Estimated number of eligible NESB women resident in Victoria ²³	4662	7449	2746
• Number of NESB women screened	485	4115	747
• Participation rate	10.4%	55.2%	27.2%

²⁰ Australian Bureau of Statistics, *Estimated Resident Population 1997*; Australian Bureau of Statistics, *Estimated Resident Population 1998*.

²¹ *ibid.*

²² Australian Bureau of Statistics, *Census of Population and Housing 1996*.

²³ *ibid.*

The following table presents participation rates by socio-economic status. An Index of Disadvantage²⁴ value is allocated to a postcode, and is available for 99.5% of Victorian women screened during the period 1 January 1997 to 31 December 1998²⁵. In the following table, the index has been grouped into quartiles, ranging from low to high socio-economic status.

These data indicate consistent participation rates among women of different socio-economic groups²⁶.

Participation rates 1 January 1997 to 31 December 1998	40–49	Age group 50–69	70–79
Socio-economic index (1–25%) Estimated number of eligible women resident in Victoria	80825	121239	45395
Number of women screened	8923	68958	12602
Participation rate	11.0%	56.9%	27.8%
Socio-economic index (26–50%) Estimated number of eligible women resident in Victoria	63615	81825	30391
Number of women screened	6490	45355	8567
Participation rate	10.2%	55.4%	28.2%
Socio-economic index (51–75%) Estimated number of eligible women resident in Victoria	72026	87351	29525
Number of women screened	7511	47871	7999
Participation rate	10.4%	54.8%	27.1%
Socio-economic index (76–100%) Estimated number of eligible women resident in Victoria	110776	130858	44890
Number of women screened	11455	74717	12802
Participation rate	10.3%	57.1%	28.5%

24 Australian Bureau of Statistics, *Socio-Economic Indexes For Areas 1996*.

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

26 The proportion of women attending for screening by socio-economic index matched closely the attendance breakdown for all Victorian women.

2

Results of screening

2.1 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.

Number of women by films taken or recommended to be taken	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
Four films	15430 85.0%	61037 83.5%	43739 82.0%	19006 81.7%	799 84.1%	104776 82.9%	140011 82.9%
More than four films							
Technical reasons	816 4.5%	3327 4.5%	2341 4.4%	1086 4.7%	40 4.2%	5668 4.5%	7610 4.5%
Other reasons	1902 10.5%	8759 12.0%	7241 13.6%	3163 13.6%	111 11.7%	16000 12.7%	21176 12.5%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

The percentage of films taken as technical repeat films is shown in the following table. Overall, 1.3% of all films taken were technical repeat films, with the percentage varying little among women of different age groups.

Technical repeat films	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
Films taken	78420	318488	232774	101119	4028	551262	734829
Technical repeat films taken	1055	4267	2835	1290	49	7102	9496
Proportion of technical repeat films	1.3%	1.3%	1.2%	1.3%	1.2%	1.3%	1.3%

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 does not equate to the national accreditation standard for technical repeats.

2.2 Outcome of screening

This table²⁷ shows, among first attenders and among 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 as per Section 1.6) but normal mammography.

While 10% of first attenders had assessment recommended, the comparable figure for subsequent attenders was 5%. These figures are slightly higher than in 1997 when 9.3% of first attenders and 4.5% of subsequent attenders were recommended for assessment. In 1996, the comparable figures were 6.9% for first attenders and 3.8% for subsequent attenders.

Outcome of screening	Age group					50-69	Total
	40-49	50-59	60-69	70-79	80+		
First attendance							
Routine rescreen recommended	10723 90.2%	18468 89.4%	4097 91.6%	2115 90.7%	345 88.0%	22565 89.8%	35748 90.0%
Assessment recommended							
• Abnormal mammography	934 7.9%	1822 8.8%	338 7.6%	199 8.5%	40 10.2%	2160 8.6%	3333 8.4%
• Symptoms/signs of possible breast cancer	81 0.7%	80 0.4%	12 0.3%	5 0.2%	1 0.3%	92 0.4%	179 0.5%
• Abnormal mammography and symptoms/signs	26 0.2%	23 0.1%	3 0.1%	5 0.2%	5 1.3%	26 0.1%	62 0.2%
• Other	126 1.1%	254 1.2%	22 0.5%	9 0.4%	1 0.3%	276 1.1%	412 1.0%
Subtotal for assessment recommended	1167 9.8%	2179 10.6%	375 8.4%	218 9.3%	47 12.0%	2554 10.2%	3986 10.0%
Total	11890 100%	20647 100%	4472 100%	2333 100%	392 100%	25119 100%	39734 100%
Subsequent attendance							
Routine rescreen recommended	5848 93.5%	49561 94.5%	46615 95.4%	20095 96.1%	531 95.2%	96176 94.9%	122650 95.0%
Assessment recommended							
• Abnormal mammography	300 4.8%	2362 4.5%	2041 4.2%	773 3.7%	15 2.7%	4403 4.3%	5491 4.3%
• Symptoms/signs of possible breast cancer	53 0.8%	142 0.3%	64 0.1%	12 0.1%	5 0.9%	206 0.2%	276 0.2%
• Abnormal mammography and symptoms/signs	9 0.1%	24 <0.1%	5 <0.1%	5 <0.1%	2 <0.4%	29 <0.1%	45 <0.1%
• Other	47 0.8%	382 0.7%	121 0.2%	34 0.2%	5 0.9%	503 0.5%	589 0.5%
Subtotal for assessment recommended	409 6.5%	2910 5.5%	2231 4.6%	824 3.9%	27 4.8%	5141 5.1%	6401 5.0%
Total	6257 100%	52471 100%	48846 100%	20919 100%	558 100%	101317 100%	129051 100%

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.

²⁷ The information in the above table excludes data for nine first attenders and three subsequent attenders where the outcome of screening is unknown. These women were requested to return for further films but elected not to attend.

3

Results of assessment

3.1 Types of assessment procedures

This table gives a count of the number of assessment procedures performed within BreastScreen Victoria during 1998. In this first table, an individual woman may be counted in more than one category if she had multiple procedures performed at assessment. A small number of additional assessment procedures are performed outside the screening program; exact numbers of these are unknown and they have been excluded from the following table.

Type of assessment	Number of assessments by age group						Total
	40-49	50-59	60-69	70-79	80+	50-69	
Further x-rays	1087 41.4%	3685 42.4%	2134 43.0%	883 41.7%	53 37.1%	5819 42.6%	7842 42.3%
Ultrasound	625 23.8%	1979 22.8%	1108 22.3%	479 22.6%	26 18.2%	3087 22.6%	4217 22.7%
Clinical examination	553 21.0%	1725 19.8%	882 17.8%	380 17.9%	39 27.3%	2607 19.1%	3579 19.3%
Biopsy							
Fine needle aspiration	177 6.7%	595 6.8%	347 7.0%	156 7.4%	12 8.4%	942 6.9%	1287 6.9%
Core biopsy	127 4.8%	511 5.9%	365 7.3%	169 8.0%	12 8.4%	876 6.4%	1184 6.4%
Open biopsy	59 2.2%	203 2.3%	132 2.7%	50 2.4%	1 0.7%	335 2.5%	445 ²⁸ 2.4%
Total number of procedures	2628 100%	8698 100%	4968 100%	2117 100%	143 100%	13666 100%	18554 100%

As in earlier years, core biopsies continued to be the dominant type of tissue biopsy performed. In 1998, core biopsies comprised 73% of these investigations, compared with 76% in 1997 and 73% in 1996.

Of the 10,387 women who were recommended for assessment (see Section 2.2), 82 women either declined assessment or failed to attend for assessment, and 429 women were assessed privately. This left 9,876 women to be assessed within the BreastScreen Victoria Program; 46 of these women were cleared for routine rescreen without any further investigations being performed.

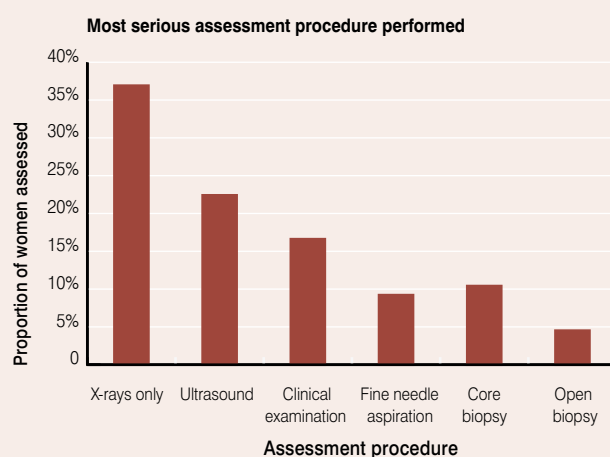
For the 9,830 women who underwent assessment investigations within BreastScreen Victoria, the next table shows the most 'serious' investigation performed for each woman.

More than one-third of the women (36.9%) received only further x-rays. An additional 22.4% had ultrasound ± x-rays and 16.6% received clinical examination ± ultrasound ± x-rays. Thus 76% of the 9,830 women were able to have their status ascertained without the need for an invasive procedure, namely fine needle aspiration or tissue biopsy.

28 Of the 445 women who had an open biopsy, 300 (67%) had the procedure performed within the BreastScreen Victoria Program and 145 (33%) had the procedure performed elsewhere.

There was little variation in the type of assessment procedure by age with the exception of women aged 40–49 years who were less likely to have core or open biopsy. These figures are similar to 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	520 35.1%	1742 36.7%	981 39.0%	370 36.4%	19 28.4%	2723 37.5%	3632 36.9%
Ultrasound +/- x-rays	344 23.2%	1072 22.6%	555 22.1%	219 21.6%	9 13.4%	1627 22.4%	2199 22.4%
Clinical examination +/- ultrasound +/- x-rays	326 22.0%	868 18.3%	297 11.8%	119 11.7%	18 26.9%	1165 16.0%	1628 16.6%
Fine needle aspiration +/- clinical examination +/- ultrasound +/- x-rays	128 8.6%	432 9.1%	228 9.1%	104 10.2%	9 13.4%	660 9.1%	901 9.2%
Core biopsy +/- fine needle aspiration +/- clinical examination +/- ultrasound +/- x-rays	104 7.0%	434 9.1%	322 12.8%	154 15.2%	11 16.4%	756 10.4%	1025 10.4%
Open biopsy +/- core biopsy +/- fine needle aspiration +/- clinical examination +/- ultrasound +/- x-rays	59 4.0%	203 4.3%	132 5.2%	50 4.9%	1 1.5%	335 4.6%	445 ²⁹ 4.5%
Total	1481 100%	4751 100%	2515 100%	1016 100%	67 100%	7266 100%	9830 100%

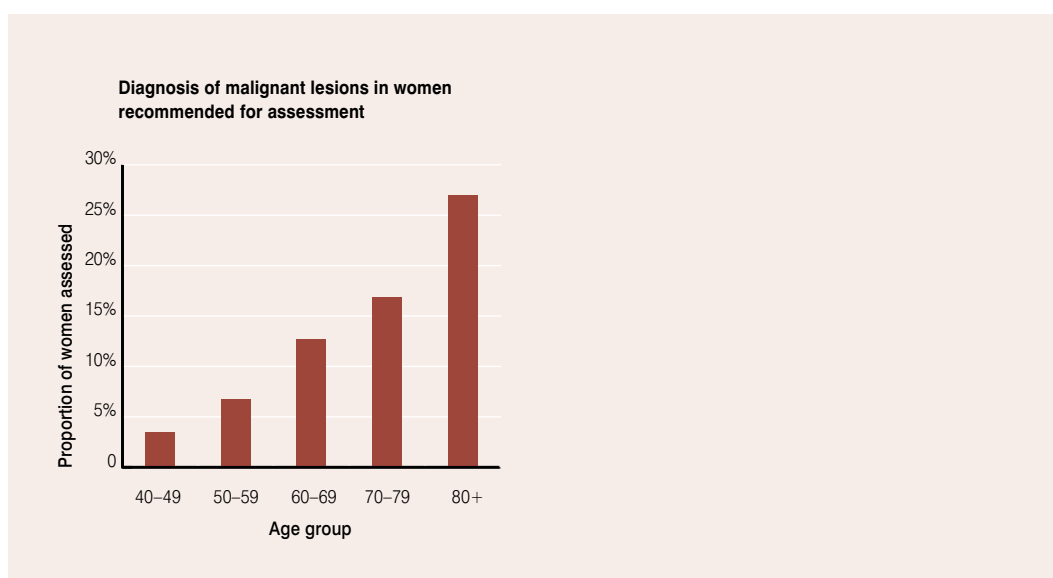


3.2 Outcome of assessment

A total of 10,387 women were recommended for assessment for reasons that are listed in Section 2.2. This table shows the final outcome of assessment for each of these women. 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					50-69	Total
	40-49	50-59	60-69	70-79	80+		
No malignant lesion	1517 96.3%	4702 92.4%	2251 86.4%	853 81.9%	53 71.6%	6953 90.4%	9376 90.3%
Malignant lesion	55 3.5%	341 6.7%	331 12.7%	176 16.9%	20 27.0%	672 8.7%	923 8.9%
Early review	3 0.2%	41 0.8%	22 0.8%	12 1.2%	1 1.4%	63 0.8%	79 0.8%
Other	1 0.1%	5 0.1%	2 0.1%	1 0.1%	0 0.0%	7 0.1%	9 ³⁰ 0.1%
Total	1576 100%	5089 100%	2606 100%	1042 100%	74 100%	7695 100%	10387 100%

A total of 923 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.



³⁰ These women mainly comprised women where the biopsy results were still awaited.

3.3 Recommendation for routine rescreening

Of the 168,797 women who attended for screening, 158,398 were recommended for routine rescreening without requiring assessment (see Section 2.2). Of the 10,387 women who were recommended for assessment, the 9,376 women who were assessed as having no malignant lesion were also recommended for routine rescreening (see Section 3.2). Thus a total of 167,774 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 the women were advised to return at one year, with older women being more likely to be represented in this category. These proportions are very similar to 1997. Reasons for a recommendation for rescreening at one year include a personal history of mastectomy for breast cancer, atypical ductal hyperplasia or lobular carcinoma in situ.

Recommendation for routine rescreen	Age group						Total
	40-49	50-59	60-69	70-79	80+	50-69	
Rescreen at 2 years	18061 99.9%	72565 99.8%	52749 99.6%	22905 99.3%	899 96.8%	125314 99.7%	167179 99.6%
Rescreen at 1 year	27 0.1%	166 0.2%	214 0.4%	158 0.7%	30 3.2%	380 0.3%	595 0.4%
Total	18088 100%	72731 100%	52963 100%	23063 100%	929 100%	125694 100%	167774 100%

4

Breast cancer detection rate

4.1 Breast cancer diagnosis rate

With 923 breast cancers³¹ being diagnosed among the 168,797 women who attended for screening in 1998, the crude rate of breast cancer was 5.5 per 1,000 women screened. In 1997, the crude rate of breast cancer was 5.4 per 1,000 women screened.

	Age group										Total 95% (C.I.) ³²
	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	50-69	
Number of women diagnosed with breast cancer	9	46	184	157	161	170	133	43	20	672	923
Rate of breast cancer per 1,000 women screened	1.4	3.9	4.5	4.9	5.7	6.8	7.0	10.3	21.1	5.3	5.5 (5.1-5.8)

4.2 Breast cancer diagnosis rate by attendance round

The following table shows the rate of breast cancer per 1,000 women screened by attendance round, mammographic status, symptom status and personal history of breast cancer for each 10-year age group. As in Section 1.6, a symptomatic woman was defined as a woman with a breast lump and/or blood-stained or watery nipple discharge. The category 'other breast symptoms' includes a variety of symptoms, most commonly breast pain and tenderness.

Among asymptomatic women with no personal history of breast cancer who were attending BreastScreen Victoria for the first time, the average rate of breast cancer diagnosis was 6.3 per 1,000 attenders. The average rate among asymptomatic subsequent attenders was 4.8 per 1,000 attenders. In 1997, the comparable figures for asymptomatic attenders were 6.0 per 1,000 first round attenders and 4.6 per 1,000 subsequent round attenders.

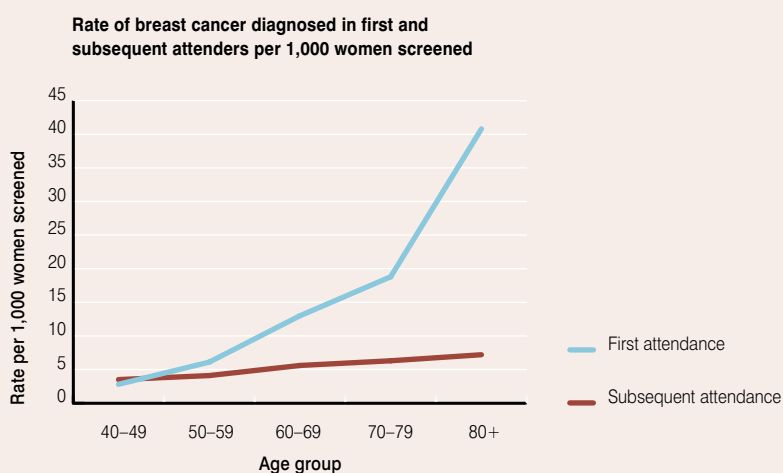
As in previous years, symptomatic women with or without a personal history of breast cancer have rates of breast cancer diagnosis that are up to four times higher than asymptomatic women. The rate of diagnosis of breast cancer is lower among subsequent attenders because, with only two years on average since their last screening, it is less likely that new cancers will develop.

These rates of diagnosis of breast cancer fulfil the national accreditation standard that at least five cancers per 1,000 women screened should be detected at the prevalent screening round and at least two cancers per 1,000 women screened at incident screening rounds.

31 For consistency with BreastScreen Australia the general term 'breast cancer' includes cases of invasive cancer as well as cases of ductal carcinoma in situ.

32 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.

Breast cancer detection rate per 1,000 women screened	Age group						Total Av. rate 95% (C.I.)
	40-49	50-59	60-69	70-79	80+	50-69	
For first attendance							
Radiographic abnormality; asymptomatic women with no personal history of breast cancer							
• Number of cancers	28	113	45	36	5	158	227
• Rate per 1,000 women screened	2.7	5.9	10.9	16.9	15.5	6.8	6.3 (5.5-7.1)
Symptomatic and/or personal history of breast cancer ³³							
• Number of cancers	3	7	9	4	8	16	31
• Rate per 1,000 women screened	5.6	12.4	76.9	51.9	320.0	23.5	23.6 (15.3-31.8)
'Other breast symptoms', no personal history of breast cancer and radiographic abnormality							
• Number of cancers	2	7	4	4	3	11	20
• Rate per 1,000 women screened	2.3	7.7	17.2	32.0	66.7	9.6	9.1 (5.1-13.1)
For subsequent attendance							
Radiographic abnormality; asymptomatic women with no personal history of breast cancer							
• Number of cancers	17	196	261	118	3	457	595
• Rate per 1,000 women screened	3.0	3.9	5.6	5.9	6.2	4.7	4.8 (4.5-5.2)
Symptomatic and/or personal history of breast cancer ³³							
• Number of cancers	3	14	3	5	1	17	26
• Rate per 1,000 women screened	11.7	13.6	4.9	20.3	28.6	10.4	11.9 (7.3-16.5)
'Other breast symptoms', no personal history of breast cancer and radiographic abnormality							
• Number of cancers	2	4	9	9	0	13	24
• Rate per 1,000 women screened	5.2	2.3	7.1	17.2	0.0	4.3	6.1 (3.6-8.5)



4.3 Size of breast cancer

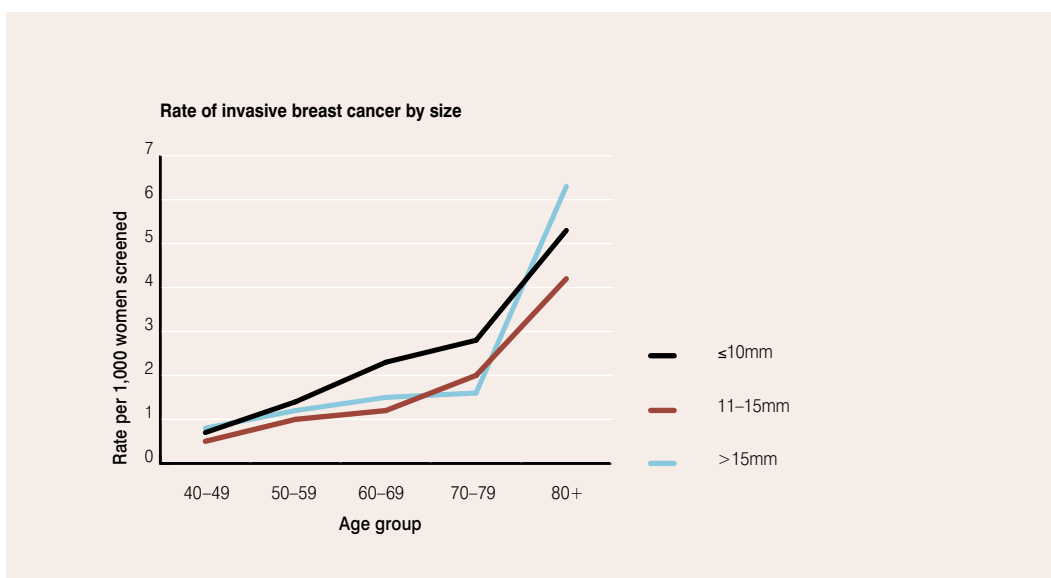
These tables show the number and rate of breast cancer diagnosis by size of tumour for each 10-year age group and by attendance round. This information is only presented for invasive breast cancers as dimensions of DCIS are usually not given.

Among first round attenders, 31.4% of the cancers were 10mm or less in diameter and 58% were 15mm or less in diameter. Among subsequent attenders, the proportions were much higher, with 45.5% of the cancers being 10mm or less in diameter and 71% being 15mm or less in diameter. A small diameter tumour at diagnosis is generally considered predictive of an improved prognosis.

Breast cancer detection rate by size of invasive breast cancer	Age group					50-69	Total Av. rate 95% (C.I.)
	40-49	50-59	60-69	70-79	80+		
First attendance							
10mm or less							
• Number of cancers	7	32	18	10	4	50	71
	30.4%	32.0%	36.7%	25.0%	28.6%	33.6%	31.4%
• Rate per 1,000 women screened	0.59	1.55	4.02	4.28	10.20	1.99	1.79 (1.37-2.20)
11mm to 15mm							
• Number of cancers	5	29	6	18	2	35	60
	21.7%	29.0%	12.2%	45.0%	14.3%	23.5%	26.5%
• Rate per 1,000 women screened	0.42	1.40	1.34	7.71	5.10	1.39	1.51 (1.13-1.89)
More than 15mm							
• Number of cancers	10	36	24	12	6	60	88
	43.5%	36.0%	49.0%	30.0%	42.9%	40.3%	38.9%
• Rate per 1,000 women screened	0.84	1.74	5.36	5.14	15.31	2.39	2.21 (1.75-2.68)
Unknown							
• Number of cancers	1	3	1	0	2	4	7
	4.3%	3.0%	2.0%	0.0%	14.3%	2.7%	3.1%
• Rate per 1,000 women screened	0.08	0.15	0.22	0.00	5.10	0.16	0.18 (0.05-0.31)
Subtotal							
Number of cancers	23	100	49	40	14	149	226
	100%	100%	100%	100%	100%	100%	100%
Rate per 1,000 women screened	1.93	4.84	10.95	17.13	35.71	5.93	5.69 (4.95-6.43)

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							
10mm or less							
• Number of cancers	6	71	106	56	1	177	240
	40.0%	41.3%	47.1%	50.0%	25.0%	44.6%	45.5%
• Rate per 1,000 women screened	0.96	1.35	2.17	2.68	1.79	1.75	1.86 (1.62-2.09)
11mm to 15mm							
• Number of cancers	4	46	57	28	2	103	137
	26.7%	26.7%	25.3%	25.0%	50.0%	25.9%	25.9%
• Rate per 1,000 women screened	0.64	0.88	1.17	1.34	3.58	1.02	1.06 (0.88-1.24)
More than 15mm							
• Number of cancers	4	54	57	26	0	111	141
	26.7%	31.4%	25.3%	23.2%	0.0%	28.0%	26.7%
• Rate per 1,000 women screened	0.64	1.03	1.17	1.24	0.00	1.10	1.09 (0.91-1.27)
Unknown							
• Number of cancers	1	1	5	2	1	6	10
	6.7%	0.6%	2.2%	1.8%	25.0%	1.5%	1.9%
• Rate per 1,000 women screened	0.16	0.02	0.10	0.10	1.79	0.06	0.08 (0.03-0.13)
Subtotal							
Number of cancers	15	172	225	112	4	397	528
	100%	100%	100%	100%	100%	100%	100%
Rate per 1,000 women screened	2.40	3.28	4.61	5.35	7.17	3.92	4.09 (3.74-4.44)
Total							
Number of invasive cancers	38	272	274	152	18	546	754
	100%	100%	100%	100%	100%	100%	100%
Rate per 1,000 women screened	2.09	3.72	5.14	6.54	18.95	4.32	4.47 (4.15-4.79)

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



The following table shows information about the size of the invasive breast cancer according to whether or not the tumour was palpable as determined by clinical examination at the time of assessment. A total of 55.3% of tumours were not palpable. As the size of the cancers increased, a greater proportion were palpable. While 21.2% of the tumours with a diameter of 10mm or less were palpable, this figure increased to 45.7% if the diameter was 11 to 15mm, and to 61.6% if the diameter was 15mm or more.

Invasive tumour size by palpability	Palpable	Not palpable	Unknown ³⁴	Total
10mm or less	66 21.2%	237 76.2%	8 2.6%	311 100%
11mm to 15mm	90 45.7%	101 51.3%	6 3.0%	197 100%
More than 15mm	141 61.6%	74 32.3%	14 6.1%	229 100%
Unknown	11 64.7%	5 29.4%	1 5.9%	17 100%
Total	308 40.8%	417 55.3%	29 3.8%	754 100%

³⁴ The unknown category includes both women for whom the palpable status was unknown and those for whom a clear decision regarding palpability could not be made.

4.4 Histologic type of breast cancer

Of the 923 cases of breast cancer diagnosed, 754 (82%) were diagnosed at an invasive stage and 167 (18%) as DCIS. Histologic type for two cases was not known.

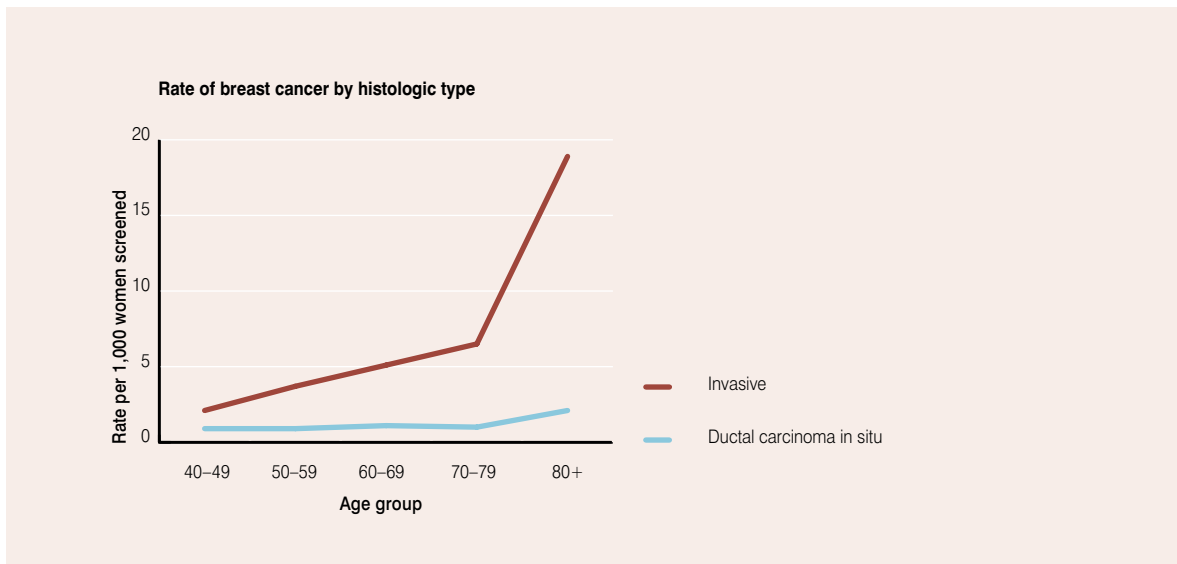
Of the 278 cases of breast cancer among first attenders, 81% were invasive in nature; 19% were diagnosed as DCIS. Among subsequent attenders, of the 643 cases with known histologic type, 82% were invasive in nature; 18% were DCIS.

This table shows the number and rate of breast cancer diagnosis by type for each 10-year age group.

Breast cancer detection rate by histologic type per 1,000 women screened	Age group						Total Av. rate 95% (C.I.)
	40–49	50–59	60–69	70–79	80+	50–69	
First attendance							
Invasive							
• Number of cancers	23	100	49	40	14	149	226
• Rate per 1,000 women screened	1.93	4.84	10.95	17.13	35.71	5.93	5.69 (4.95–6.43)
Ductal carcinoma in situ							
• Number of cancers	10	27	9	4	2	36	52
• Rate per 1,000 women screened	0.84	1.31	2.01	1.71	5.10	1.43	1.31 (0.95–1.66)
Subsequent attendance							
Invasive							
• Number of cancers	15	172	225	112	4	397	528
• Rate per 1,000 women screened	2.40	3.28	4.61	5.35	7.17	3.92	4.09 (3.74–4.44)
Ductal carcinoma in situ							
• Number of cancers	7	41	48	19	0	89	115
• Rate per 1,000 women screened	1.12	0.78	0.98	0.91	0.00	0.88	0.89 (0.73–1.05)
Total							
Number of cancers	55	340	331	175	20	671	921 ³⁵
Rate per 1,000 women screened	3.03	4.65	6.21	7.53	21.05	5.31	5.46 (5.10–5.81)

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

Among the 167 cases of ductal carcinoma in situ diagnosed, 100 (60%) were classified as high grade, 36 (22%) as intermediate grade, 28 (17%) as low grade and three were of unknown grade.



The following table shows the frequency of diagnosis of the various types of invasive breast cancer by size. The distribution is very similar to that reported in previous years.

Invasive breast cancer diagnosis by histologic type	0-10mm	11-15mm	>15mm	Unknown	Total
Invasive ductal carcinoma not otherwise stated	248 44.0%	151 26.8%	158 28.1%	6 1.1%	563 100%
Lobular classical carcinoma	14 18.2%	18 23.4%	41 53.2%	4 5.2%	77 100%
Mixed ductal/lobular carcinoma	13 31.0%	5 11.9%	20 47.6%	4 9.5%	42 100%
Tubular carcinoma	19 57.6%	13 39.4%	1 3.0%	0 0.0%	33 100%
Mucinous carcinoma	11 68.8%	3 18.8%	2 12.5%	0 0.0%	16 100%
Lobular variant carcinoma	1 9.1%	4 36.4%	6 54.5%	0 0.0%	11 100%
Other	5 41.7%	3 25.0%	1 8.3%	3 25.0%	12 100%
Total	311 41.2%	197 26.1%	229 30.4%	17 2.3%	754 100%

4.5 Interval cancer rate

Interval cancers are cases of invasive breast cancer or DCIS that are not diagnosed as a result of attending for screening but which 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 1996³⁶.
- Interval cancer rates are calculated separately for women who were first round attenders in 1996 and for women who were subsequent attenders in 1996. Information on the latter is presented for the first time.
- Within each table, separate rates are presented for three groups of women:
 - women who were asymptomatic at the time of their 1996 screening
 - women who indicated 'other' breast symptoms at the time of their 1996 screening
 - women who indicated a breast lump and/or a blood-stained or watery nipple discharge at the time of their 1996 screening (see Section 1.6)³⁷

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 purpose of defining interval cancers the following distinctions were made³⁸:

- Cancers diagnosed among women recommended for early review were not counted as interval cancers unless the woman had been cleared for routine rescreening before the cancer diagnosis or the cancer was diagnosed after 12 months had elapsed from the date of the first attendance in 1996, whichever was earlier. While women are under early review, they technically have not completed their screening episode. Therefore, in general they are ineligible to be counted as an interval cancer should a cancer be diagnosed during this period. As the National Accreditation Requirements state that the screening episode should be completed within six months, in this report cancers diagnosed when review extends beyond 12 months are regarded as interval cancers.
- If a woman was rescreened by BreastScreen Victoria between 21 and 24 months after the 1996 screening and declared at the time of the second screening that she currently had a breast lump and/or a blood-stained or watery nipple discharge and a cancer was diagnosed at this second screening, then this cancer was classified as an interval cancer. Implicit in this definition is the assumption that although the woman was attending for screening, an interval cancer was already present.

Using this approach, a total of 113 interval cancers were identified among the first round attenders in 1996. This number comprises 102 women with invasive breast cancer and 11 women with DCIS. Of the 102 invasive breast cancers, 35 were diagnosed during the first year and 67 during the second year. Of the 11 cases of DCIS, two were diagnosed in the first year and nine during the second year.

³⁶ 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.

³⁷ At the time of publication of the *1996 Annual Statistical Report*, all women who reported a nipple discharge were counted under the category 'breast lump and/or nipple discharge'. From 1997 onwards, only women with a blood-stained or watery nipple discharge have been counted under the category 'breast lump and/or nipple discharge' and women with other types of nipple discharge have been counted under 'other breast symptoms'. For the analysis in Section 4.5 of this report, the current classification of nipple discharge has been used.

³⁸ This definition differs slightly from the national definition adopted by BreastScreen Australia in 1999. For the purpose of this report, this method was used to allow comparison with previous BreastScreen Victoria Annual Statistical Reports.

The following table shows the interval cancer rate for the three groups of first attenders during the first and second years after their 1996 screening.

Interval cancer rate in first attenders during 1996 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 screened	10087	23537	17544	6557	559	41081	58284
• Number of interval cancers	5	17	9	1	1	26	33
• Rate per 10,000 women screened	4.96	7.22	5.13	1.53	17.89	6.33	5.66 (4.0-8.0)
Symptoms – lump or discharge							
• Number of women screened	680	679	263	86	19	942	1727
• Number of interval cancers	0	1	1	0	0	2	2
• Rate per 10,000 women screened	0.00	14.73	38.02	0.00	0.00	21.23	11.58 (2.9-46.3)
Symptoms – 'other'							
• Number of women screened	1363	1613	881	440	81	2494	4378
• Number of interval cancers	1	0	0	0	1	0	2
• Rate per 10,000 women screened	7.34	0.00	0.00	0.00	123.46	0.00	4.57 (1.1-18.3)
Year 2							
Asymptomatic women							
• Number of women screened	10075	23503	17516	6539	553	41019	58186
• Number of interval cancers	7	34	15	12	0	49	68
• Rate per 10,000 women screened	6.95	14.47	8.56	18.35	0.00	11.95	11.69 (9.2-14.8)
Symptoms – lump or discharge							
• Number of women screened	679	678	262	85	19	940	1723
• Number of interval cancers	0	1	0	0	0	1	1
• Rate per 10,000 women screened	0.00	14.75	0.00	0.00	0.00	10.64	5.80 (0.8-41.2)
Symptoms – 'other'							
• Number of women screened	1362	1613	880	440	80	2493	4375
• Number of interval cancers	4	1	1	1	0	2	7
• Rate per 10,000 women screened	29.37	6.20	11.36	22.73	0.00	8.02	16.00 (7.6-33.6)

Among asymptomatic first round attenders aged 50-69 years in 1996, 26 cancers were diagnosed during the first 12 months after screening, giving an interval cancer rate of 6.33 cancers per 10,000 women (95% C.I. 4.3-9.3). During the second year after the 1996 screening, 49 cancers were diagnosed among asymptomatic first round attenders aged 50-69 years, giving an interval cancer rate of 11.95 cancers per 10,000 women (95% C.I. 9.0-15.8).

A total of 187 interval cancers were identified among the subsequent round attenders in 1996. This number comprises 169 women with invasive breast cancer and 18 women with DCIS. Of the 169 invasive breast cancers, 57 were diagnosed during the first year and 112 during the second year. Of the 18 cases of DCIS, five were diagnosed in the first year and 13 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 1996 screening. As in the previous table, the interval cancer rate among asymptomatic women during the second year after screening was approximately double that found during the first year after screening.

Interval cancer rate in subsequent attenders during 1996 per 10,000 women screened	Age group					50-69	Total Av. rate 95% (C.I.)
	40-49	50-59	60-69	70-79	80+		
Year 1							
Asymptomatic women							
• Number of women screened	3314	34906	31490	10631	250	66396	80591
• Number of interval cancers	2	31	18	3	0	49	54
• Rate per 10,000 women screened	6.04	8.88	5.72	2.82	0.00	7.38	6.70 (5.1-8.8)
Symptoms – lump or discharge							
• Number of women screened	168	717	332	93	5	1049	1315
• Number of interval cancers	0	2	2	0	0	4	4
• Rate per 10,000 women screened	0.00	27.89	60.24	0.00	0.00	38.13	30.42 (11.4-81.1)
Symptoms – 'other'							
• Number of women screened	324	1709	1180	417	18	2889	3648
• Number of interval cancers	1	2	1	0	0	3	4
• Rate per 10,000 women screened	30.86	11.70	8.47	0.00	0.00	10.38	10.96 (4.1-29.2)
Year 2							
Asymptomatic women							
• Number of women screened	3305	34826	31419	10611	250	66245	80411
• Number of interval cancers	5	59	42	7	0	101	113
• Rate per 10,000 women screened	15.13	16.94	13.37	6.60	0.00	15.25	14.05 (11.7-16.9)
Symptoms – lump or discharge							
• Number of women screened	168	714	328	93	5	1042	1308
• Number of interval cancers	0	4	0	0	0	4	4
• Rate per 10,000 women screened	0.00	56.02	0.00	0.00	0.00	38.39	30.58 (11.5-81.5)
Symptoms – 'other'							
• Number of women screened	323	1700	1174	416	18	2874	3631
• Number of interval cancers	2	4	2	0	0	6	8
• Rate per 10,000 women screened	61.92	23.53	17.04	0.00	0.00	20.88	22.03 (11.0-44.1)

The national accreditation standard is that less than six 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 13 to 24 month period following screening.

Among asymptomatic subsequent round attenders aged 50-69 years in 1996, 49 cancers were diagnosed during the first 12 months after screening, giving an interval cancer rate of 7.38 cancers per 10,000 women (95% C.I. 5.6-9.8). During the second year after the 1996 screening, 101 cancers were diagnosed among asymptomatic subsequent round attenders aged 50-69 years, giving an interval cancer rate of 15.25 cancers per 10,000 women (95% C.I. 12.6-18.5).

5

Breast cancer characteristics and treatment

5.1 Nodal status

Ninety percent of the 754 women diagnosed with invasive breast cancer underwent axillary node dissection. The following table shows the nodal status by tumour type and size.

Ten percent of the 754 women diagnosed with invasive breast cancer did not undergo axillary node dissection, compared with 12% in 1997 and 8% in 1996.

Among the women who had an axillary node dissection, nodes were positive for 8.5% of the women whose breast cancer was 10mm or less in diameter, for 20.4% of the women whose breast cancer was 11–15mm in diameter, and for 43.6% of the women whose breast cancer was more than 15mm in diameter. Corresponding proportions in 1997 were 5.4%, 23.6% and 41.4%, and, in 1996, 12.4%, 17.8% and 41.1% respectively.

Ten percent of the 167 women diagnosed with DCIS underwent axillary node dissection, compared with 20% in 1997 and 22% in 1996. As in 1997 and 1996, none of these women were found to have positive nodes.

Nodes	0-10mm	11-15mm	Invasive >15mm	Unknown	Invasive total	DCIS	Total
No dissection	41	16	9	7	73	151	224
Dissection performed							
Node negative	247 91.5%	144 79.6%	124 56.4%	6 60.0%	521 76.5%	16 100.0%	537 77.0%
Node positive	23 8.5%	37 20.4%	96 43.6%	4 40.0%	160 23.5%	0 0.0%	160 23.0%
Subtotal	270 100%	181 100%	220 100%	10 100%	681 100%	16 100%	697 ³⁹ 100%

³⁹ This table excludes data for two women who were discharged with breast cancer of an unknown type; histology for these two women was not available.

Of women with invasive breast cancer diagnosed in 1998, information regarding palpability was known for 96% of women as determined by clinical examination at the time of assessment.

Among women with tumours of known size, for those whose breast cancer was more than 10mm in diameter and who underwent an axillary node dissection, palpability did not affect nodal status, with 32.1% of the women with clinically palpable tumours and positive nodes compared with 31.3% of the women with impalpable tumours.

Palpability by nodal status	0-10mm	Invasive >10mm	Total
Palpable			
No dissection	7	13	20
Dissection performed			
• Node negative	52 88.1%	148 67.9%	200 72.2%
• Node positive	7 11.9%	70 32.1%	77 27.8%
Subtotal	59 100%	218 100%	277 100%
Not palpable			
No dissection	33	12	45
Dissection performed			
• Node negative	191 93.6%	112 68.7%	303 82.6%
• Node positive	13 6.4%	51 31.3%	64 17.4%
Subtotal	204 100%	163 100%	367 100%

5.2 Tumour grade

Ninety-two percent of the women with invasive breast cancer had their tumour grade classified. The following table shows the grade by tumour size. The tumour grade provides an indicator of prognosis indicating good to poor prognosis from well differentiated to poorly differentiated tumours respectively. Tumours which were smaller tended to be well differentiated.

Tumour grades	0-10mm	11-15mm	Invasive >15mm	Unknown	Total
Grades unknown	27	13	10	9	59
Grades known					
Grade 1 (well differentiated)	138 48.6%	74 40.2%	45 20.5%	2 25.0%	259 37.3%
Grade 2 (moderately differentiated)	120 42.3%	85 46.2%	114 52.1%	5 62.5%	324 46.6%
Grade 3 (poorly differentiated)	26 9.2%	25 13.6%	60 27.4%	1 12.5%	112 16.1%
Subtotal	284 100%	184 100%	219 100%	8 100%	695 100%

5.3 Type of treatment

Treatment details were recorded for all women diagnosed with invasive breast cancer. Seventy-three percent of these women had breast-conserving surgery compared with 73% in 1997 and 65% in 1996. Twenty-six percent of women diagnosed with invasive breast cancer underwent a mastectomy, compared with 26% in 1997 and 35% in 1996.

Treatment	Invasive				Invasive total	DCIS	Total
	0-10mm	11-15mm	>15mm	Unknown			
Unknown	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	2 1.2%	2 0.2%
Information available							
No surgery	0 0.0%	0 0.0%	0 0.0%	4 23.5%	4 0.5%	1 0.6%	5 0.5%
Local diagnostic excision	15 4.8%	1 0.5%	2 0.9%	2 11.8%	20 2.7%	24 14.5%	44 4.8%
Wide local excision	250 80.4%	151 76.6%	123 53.7%	6 35.3%	530 70.3%	111 67.3%	641 69.7%
Mastectomy	46 14.8%	45 22.8%	104 45.4%	5 29.4%	200 26.5%	29 17.6%	229 24.9%
Subtotal	311 100%	197 100%	229 100%	17 100%	754 100%	165 100%	919 ⁴⁰ 100%

Treatment details were recorded for 99% of the women who were diagnosed with DCIS. Just under 18% of these women underwent a mastectomy compared with 22% in 1997 and 30% in 1996⁴⁰.

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

Of the 754 cases of invasive breast cancer, 574 (76%) were diagnosed among women living in urban⁴¹ areas and 180 (24%) among women living in rural⁴² areas. Of the 167 cases of DCIS, 128 (77%) were diagnosed among women living in urban areas and 39 (23%) were diagnosed among women living in rural areas.

The tables on the next page show treatment details for women by area of residence. Women living in rural areas were more likely to undergo mastectomy compared with women living in urban areas. Women living in rural areas who had tumours greater than 15mm in diameter were almost twice as likely to undergo mastectomy than women with similar sized tumours who lived in urban areas. Rural women with tumours less than 10mm in diameter were more than three times as likely to undergo mastectomy. Rural women with DCIS were more than twice as likely to undergo mastectomy than urban women with DCIS.

⁴⁰ This table excludes data for two women who were discharged with breast cancer of an unknown type; histology for these two women was not available.

⁴¹ Includes capital city and other major urban according to the 'Rural/Remote Areas Classification' of the Commonwealth Department of Health and Family Services, January 1994.

⁴² Includes rural major, rural other and remote other according to the 'Rural/Remote Areas Classification' of the Commonwealth Department of Health and Family Services, January 1994.

Treatment by area of residence	Invasive				Invasive total	DCIS	Total
	0-10mm	11-15mm	>15mm	Unknown			
Urban							
Unknown	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	2 1.6%	2 0.3%
Information available							
• No surgery	0 0.0%	0 0.0%	0 0.0%	2 33.3%	2 0.3%	0 0.0%	2 0.3%
• Local diagnostic excision	11 4.3%	0 0.0%	2 1.2%	1 16.7%	14 2.4%	18 14.3%	32 4.6%
• Wide local excision	218 84.8%	119 82.6%	100 59.9%	3 50.0%	440 76.7%	91 72.2%	531 75.9%
• Mastectomy	28 10.9%	25 17.4%	65 38.9%	0 0.0%	118 20.6%	17 13.5%	135 19.3%
Subtotal	257 100%	144 100%	167 100%	6 100%	574 100%	126 100%	700 ⁴³ 100%
Rural							
Unknown	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
Information available							
• No surgery	0 0.0%	0 0.0%	0 0.0%	2 18.2%	2 1.1%	1 2.6%	3 1.4%
• Local diagnostic excision	4 7.5%	1 1.9%	0 0.0%	1 9.1%	6 3.3%	6 15.4%	12 5.5%
• Wide local excision	31 58.5%	33 61.1%	23 37.1%	3 27.3%	90 50.0%	20 51.3%	110 50.2%
• Mastectomy	18 34.0%	20 37.0%	39 62.9%	5 45.5%	82 45.6%	12 30.8%	94 42.9%
Subtotal	53 100%	54 100%	62 100%	11 100%	180 100%	39 100%	219 100%

⁴³ This table excludes data for two women who were discharged with breast cancer of an unknown type; histology for these two women was not available.

Information about the use of adjuvant therapy was available for 92% of the 923 women who were diagnosed with breast cancer.

Of the women with known information, 83% of women with breast cancer received some type of adjuvant therapy. Among women with invasive breast cancer, 94% received adjuvant therapy; 29% of the women with DCIS received adjuvant therapy. In 1997, among women with invasive cancer, 90% received adjuvant therapy and just over one-quarter of the women with DCIS received adjuvant therapy.

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

Adjuvant therapy	0-10mm	Invasive 11-15mm	>15mm
Unknown	23	16	13
Information available			
No adjuvant therapy	25 8.7%	4 2.2%	12 5.6%
Radiotherapy only	58 20.1%	21 11.6%	13 6.0%
Chemotherapy only	6 2.1%	3 1.7%	24 11.1%
Hormonal therapy only	84 29.2%	59 32.6%	56 25.9%
Radiotherapy and hormonal therapy	94 32.6%	63 34.8%	49 22.7%
Radiotherapy and chemotherapy	15 5.2%	15 8.3%	34 15.7%
Chemotherapy and hormonal therapy	1 0.3%	3 1.7%	9 4.2%
Radiotherapy and chemotherapy and hormonal therapy	5 1.7%	13 7.2%	19 8.8%
Subtotal	288 100%	181 100%	216 100%

Of the 146 women with DCIS for whom information about the use of adjuvant therapy was available, 26 women (18%) received radiotherapy alone, 16 women (11%) received hormonal therapy alone and 104 women (71%) received no adjuvant therapy.

Information about the use of adjuvant radiotherapy was available for 92% of women diagnosed with invasive breast cancer or DCIS and who underwent breast-conserving surgery or mastectomy.

The following table shows the use of radiotherapy for women with invasive cancer and known nodal status who underwent breast-conserving surgery or mastectomy. The majority of women who underwent breast-conserving surgery received adjuvant radiotherapy (93% of women with node positive and 73% of women with node negative breast cancer). Conversely, most women who underwent a mastectomy did not receive radiotherapy.

Adjuvant radiotherapy	Invasive			
	Breast-conserving surgery		Mastectomy	
	Node positive	Node negative	Node positive	Node negative
Unknown	8	20	7	15
Information available				
Radiotherapy ⁴⁴	78 92.9%	278 73.4%	18 29.5%	8 7.5%
No radiotherapy ⁴⁴	6 7.1%	101 26.6%	43 70.5%	99 92.5%
Subtotal	84 100%	379 100%	61 100%	107 100%

The next table shows the use of radiotherapy for women with invasive cancer of known size who underwent breast conserving surgery. Seventy-three percent of these women received radiotherapy. Of women with tumours 11mm or greater in diameter, 79% underwent radiotherapy as opposed to 68% of women with tumours 10mm or less in diameter.

Adjuvant radiotherapy in women treated by breast-conserving surgery	Invasive			Total
	0-10mm	11-15mm	>15mm	
Unknown	16	11	4	31
Information available				
Radiotherapy ⁴⁴	168 67.5%	107 75.9%	99 81.8%	374 73.2%
No radiotherapy ⁴⁴	81 32.5%	34 24.1%	22 18.2%	137 26.8%
Subtotal	249 100%	141 100%	121 100%	511 100%

⁴⁴ These women may or may not have had systemic therapy in addition to radiotherapy.

The following table shows systemic adjuvant therapy for women with invasive breast cancer by nodal status and age group. The age groups given are used to approximate menopausal status; 50 years or less for pre-menopause and 50 years or more for post-menopause.

Information was available about the use of systemic adjuvant therapy for 93% of women diagnosed with invasive breast cancer and for whom nodal status was known. Among these, almost all women with node positive breast cancer had some form of systemic adjuvant therapy (100% of women aged 50 years or less and 98% of those over 50 years). These figures are similar to 1997.

Most women with node negative cancer also had systemic therapy (86% of younger and 94% of older women). The comparable figure in 1997 was 77% of younger and 90% of older women.

Systemic adjuvant therapy	Invasive			
	Node positive		Node negative	
	≤50 years	>50 years	≤50 years	>50 years
Unknown	3	12	4	31
Information available				
No systemic therapy	0 0.0%	2 1.7%	5 13.5%	22 5.9%
Chemotherapy ⁴⁵	14 66.7%	42 35.9%	11 29.7%	29 7.8%
Hormonal therapy ⁴⁵	2 9.5%	41 35.0%	20 54.1%	310 83.1%
Chemotherapy and hormonal therapy ⁴⁵	5 23.8%	32 27.4%	1 2.7%	12 3.2%
Subtotal	21 100%	117 100%	37 100%	373 100%

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	11982 66.0%	45645 62.4%	34209 64.2%	16686 71.8%	752 79.2%	79854 63.2%	109274 64.7%
United Kingdom	1282 7.1%	7087 9.7%	5053 9.5%	2015 8.7%	79 8.3%	12140 9.6%	15516 9.2%
Italy	544 3.0%	3582 4.9%	3572 6.7%	1017 4.4%	18 1.9%	7154 5.7%	8733 5.2%
Greece	274 1.5%	2857 3.9%	1792 3.4%	225 1.0%	5 0.5%	4649 3.7%	5153 3.1%
The former Yugoslavia	379 2.1%	1630 2.2%	1058 2.0%	209 0.9%	5 0.5%	2688 2.1%	3281 1.9%
Germany	168 0.9%	1312 1.8%	895 1.7%	418 1.8%	6 0.6%	2207 1.7%	2799 1.7%
Netherlands	193 1.1%	1144 1.6%	860 1.6%	335 1.4%	15 1.6%	2004 1.6%	2547 1.5%
Malta	274 1.5%	1065 1.5%	652 1.2%	130 0.6%	0 0.0%	1717 1.4%	2121 1.3%
Vietnam	365 2.0%	541 0.7%	414 0.8%	80 0.3%	3 0.3%	955 0.8%	1403 0.8%
Poland	113 0.6%	409 0.6%	406 0.8%	432 1.9%	12 1.3%	815 0.6%	1372 0.8%
New Zealand	244 1.3%	660 0.9%	260 0.5%	103 0.4%	2 0.2%	920 0.7%	1269 0.8%
India	90 0.5%	491 0.7%	301 0.6%	92 0.4%	2 0.2%	792 0.6%	976 0.6%
Sri Lanka	141 0.8%	413 0.6%	247 0.5%	73 0.3%	4 0.4%	660 0.5%	878 0.5%
China	117 0.6%	366 0.5%	294 0.6%	78 0.3%	2 0.2%	660 0.5%	857 0.5%
Malaysia	146 0.8%	442 0.6%	140 0.3%	37 0.2%	1 0.1%	582 0.5%	766 0.5%
Egypt	69 0.4%	344 0.5%	254 0.5%	87 0.4%	4 0.4%	598 0.5%	758 0.4%

Republic of Ireland	83 0.5%	280 0.4%	263 0.5%	97 0.4%	3 0.3%	543 0.4%	726 0.4%
Cyprus	80 0.4%	294 0.4%	215 0.4%	42 0.2%	1 0.1%	509 0.4%	632 0.4%
Philippines	167 0.9%	356 0.5%	79 0.1%	17 0.1%	1 0.1%	435 0.3%	620 0.4%
Hungary	30 0.2%	199 0.3%	219 0.4%	119 0.5%	2 0.2%	418 0.3%	569 0.3%
Other	1407 7.8%	4006 5.5%	2138 4.0%	963 4.1%	33 3.5%	6144 4.9%	8547 5.1%
Total	18148 100%	73123 100%	53321 100%	23255 100%	950 100%	126444 100%	168797 100%

Appendix 2

Performance against national accreditation standards in 1998

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 years with the aim of screening 70% of this group.	Participation by 60% of the target group (50–69) after five years in the Program ⁴⁶ .	Standard yet to be achieved. 56.5% of eligible Victorian women aged 50–69 years were screened during the 24 months from 1 January 1997 to 31 December 1998. Improvement in comparison to 1997 (54.9%).
1.3	To maximise participation by women of non-English speaking background (NESB).	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 for women aged 50–69 years of NESB across Victoria was 96.0% of the rate for all Victorian women.
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. The recall rate for assessment on the basis of abnormal mammography was 8.5% for first attenders and 4.3% for subsequent attenders ⁴⁷ .
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 screened women should be detected.	Standard achieved. The average rate of breast cancer diagnosis ⁴⁸ was 6.3 per 1,000 among first attenders and 4.8 per 1,000 among subsequent attenders ⁴⁷ .
2.24	To maximise the number of minimal invasive cancers detected.	>0.8 cancers per 1,000 screened women will have a diameter of ≤10mm.	Standard achieved. The average rate of cancers 10mm or less in diameter was 1.84 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 achieved. 19% of cancers detected in first attenders were DCIS ⁴⁷ .
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 6.29 per 10,000 among first attenders during the first 12 months after screening ⁴⁹ . Improvement in comparison to 1997 (7.31 per 10,000).

⁴⁶ This standard applies only to screening and assessment services established for five years and granted full accreditation. In 1998 only two BreastScreen Victoria services had been operating for five years.

⁴⁷ Data by prevalent and incident screening round, as distinct from first and subsequent attendance, are not utilised in this publication.

⁴⁸ Rates given are for asymptomatic women with no personal history of breast cancer.

⁴⁹ This rate is given for all women screened, asymptomatic and symptomatic at the time of screening.

Appendix 3

Staff of BreastScreen Victoria

SCREENING AND ASSESSMENT CENTRES

Bendigo Regional BreastScreen

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

Central Highlands & Wimmera BreastScreen

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

Geelong Screening & Assessment Service

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

Gippsland BreastScreen

Director Mr Iain Miller
Manager Ms Erin Verhoeven
Data Manager Mr Geoff Duffell
(resigned July 1998)
Ms Ann Bomers

Maroondah BreastScreen

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

Monash BreastScreen

Director Mr Stewart Hart
Manager Ms Louise Bowen
Data Manager Ms Janita Bettio
(on leave May 1999)
Ms Philippa Robertson

North Western BreastScreen⁵⁰

Director Mr Ian Russell
(resigned December 1998)
Dr Allison Rose
Manager Ms Mary Hevern
(resigned January 1998)
Ms Anna Keating
(acting until June 1998)
Ms Victoria Cuevas
(acting until November 1998)
Ms Patsy Morrison
Data Manager Ms Susy Alessandri

St Vincent's BreastScreen⁵¹

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

VICTORIAN BREASCREEN COORDINATION UNIT

Director Ms Onella Stagoll
Deputy Director Ms Pauline Sanders
Policy Officer Ms Alison Amos
Administrative Officer Ms Julie-Anne Lilienthal

VICTORIAN BREASCREEN REGISTRY

Medical Director Dr Heather Mitchell
Coordinator Ms Vicky Higgins
Information Manager Ms Suzen Maljevac
Data Manager Ms Esther Cukier
Computer Staff Mr John Siddham
Mr Darren Firth
Mr Ross Irvine
(resigned January 1999)
Mr Wayne Benjamin

⁵⁰ Known as Royal Melbourne Hospital Essendon BreastScreen until August 1999.

⁵¹ Known as City and North Eastern BreastScreen until June 1999.