

BreastScreen Victoria
Annual Statistical Report



2006



BreastScreen Victoria

Caring about Women

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Introduction

BreastScreen Victoria is an accredited part of BreastScreen Australia, a national program jointly funded by the state and federal governments that invites women aged 50-69 who do not have any breast symptoms or changes to have a free screening mammogram once every two years. The Program aims to reduce deaths from breast cancer through early detection of the disease.

Around 75% of all breast cancers occur in women over the age of 50. Current research shows that screening has the greatest potential to reduce mortality from breast cancer in women aged 50-69 years. This is the reason why women in that age group are primarily targeted for screening. Although women in their 40s and over 70 are outside the BreastScreen program's target age range, they are still at risk of breast cancer and are eligible for free screening mammograms with BreastScreen Victoria.

BreastScreen Victoria is made up of two components: the Coordination Unit and the Screening and Assessment Services. The Coordination Unit is an independently incorporated association that administers funding for eight Screening and Assessment Services, manages the centralised appointment registry, coordinates the Mobile Screening Service, manages client screening and assessment data, develops and reviews Program policy, monitors service provision, coordinates special projects and supports state-wide recruitment. The Screening and Assessment Services provide all clinical services from the initial

screening mammogram to any further procedures required to the point of diagnosis. Screening is conducted at 57 fixed and mobile sites across metropolitan and regional Victoria, ensuring accessibility to all Victorian women.

The BreastScreen Australia Quality Improvement Program ensures that all BreastScreen services delivered in Victoria operate under and comply with national standards. Performance monitoring and evaluation against the standards is conducted quarterly by the State Accreditation Committee and the National Quality Management Committee. Screening and Assessment Services are assessed regularly by an independent multidisciplinary team.

The Annual Statistical Report provides summary data on women who attended for screening and/or assessment in the Victorian program during 2006 and the results of their screening and/or assessment. This report is produced annually and presents data consistent with previous years so that figures can be compared between the reported screening years. The simple descriptive statistics contained in this report are intended to provide a snapshot of the BreastScreen Victoria's operational activity and cancer detection for 2006. Where relevant, the exclusions and limitations of the data presented are noted.

Further information about BreastScreen Victoria can be obtained from our website at www.breastscreen.org.au

Executive summary

During 2006, 202,470 women attended for screening at BreastScreen Victoria. Women in the 50-69 year old target age group made up 77.6% of the women screened and 15.7% of the screening activity was for women who were new to the Program.

Of the women screened, 94.1% received results indicating that no signs of breast cancer had been detected. Assessment was recommended for 5.9% of women screened. Of the women recommended for further assessment, 12.6% were women who had not been screened before (first round), and 4.7% were women returning to screen (subsequent round).

Most women undergoing assessment (78.6%) received a result after further imaging or clinical assessment. Only 2.6% of the women assessed required a surgical open biopsy to achieve a diagnosis. For all the women assessed within the Program 1,125 (9.3%) were found to have a malignancy.

Of the 1,115 women diagnosed with screen detected breast cancer during 2006, 910 (81.6%) were invasive cancers and 205 (18.4%) were ductal carcinoma in situ (DCIS).

The National Accreditation Standards require that, for women aged 50-69 years, invasive cancer detection rates are ≥ 50 women per 10,000 who attend for their first screen, and ≥ 35 women per 10,000 women attending for a subsequent screen. In 2006 these standards were exceeded, with the invasive cancer detection rate for the first screening round at 52.0 per 10,000 and for the subsequent screening rounds at 41.2 per 10,000.

Tumour size is also an important factor for the Program, as it aims to detect invasive cancers when they are small and low grade, prior to their spread to the regional lymph nodes. In 2006, 64.3% of the invasive cancers detected were ≤ 15 mm in size.

Following the cohort of target age group women aged 50-67 screened during 2006, 65.1% were rescreened by the Program within 27 months. Rescreening rates are an important factor in achieving a higher participation rate and in the Program achieving its potential in terms of mortality benefit, by increasing the likelihood of breast cancers being detected as early as possible. The rescreen rate for first round women was 45.9% and rose to 68.1% for subsequent round women.

Technical notes

The 2006 Annual Statistical Report contains all screening episodes performed by BreastScreen Victoria on women aged over 40 years of age during the 2006 calendar year, across all eight Screening and Assessment Services. Clients screened interstate are included in the assessment outcome figures, as their assessment occurred within the Program.

For the purposes of this report 'women/clients screened' refers to the **number of screening appointments** attended NOT individual women. For example, if a client on annual recall attends two screening appointments within the 12-month reporting period, both screening attendances would be counted for the total for that year.

All clients' screening and assessment data is entered into the BreastScreen Victoria Client Information System by the data services staff based at each Screening and Assessment Service. Data are then extracted centrally by the Information Services team from the data warehouse using Business Objects software. The availability of the data items varies depending on: where in the screening and assessment cycle the data is coming from and whether the data is from within the Program or obtained outside the Program (eg. The provision of histology information following surgery).

Not all of the data items required to produce the Annual Statistical Report are available by the end of the screening reporting period. This means that all of the tables in the report are not able to be populated with data at the same time.

If a data item is not able to be reported yet, the table will be clearly marked with the following text. 'Data not yet available'.

For example interval cancer data will not be available until 3¹/₂ years after the end data in the reporting period. This is due to the need to monitor the cohort for 2 years, the time for cancer registrations to be sent to the Victorian Cancer Registry and the time taken to accurately match clients to identify when an interval cancer has occurred.

The range of variables used to create the data in this report is extensive. Detailed technical notes have been created to ensure consistency in the approach to the extraction of data for each of the reporting years.

Notes are provided for each table to detail inclusions and exclusions from the dataset which are relevant for that individual table.

Definition of terms used in the report

Attendance

Presentation by a woman for a screening appointment.

Screening

Examination, or testing, of people who have no symptoms of a particular disease, to identify anyone who may have that disease. This enables the disease to be treated at an early stage.

Screening round

A complete screening (and/or assessment cycle) within the Program.

First screen/first round women

The client's first complete screening cycle within the Program.

Subsequent screens/subsequent round women

The client attends for a second or subsequent screening cycle within the Program.

Screening outcome

Following the completion of the screening episode, two radiologists review the images and determine the outcome for the client.

Assessment recommended

When the recommendation is that the client has further assessment procedures performed.

Routine rescreen recommended

When the recommendation is that the client is invited back for screening within the Program. This may be within 24-27 months of a previous mammogram, or earlier if the client is considered high risk.

Assessment

A BreastScreen Victoria multidisciplinary team (including surgeons, pathologists, radiologists, nurses, radiographers and nurse counsellors) examine the screening results and decide upon appropriate further investigations. These can include magnified X-rays, ultrasound, clinical examination, fine needle aspiration and core biopsy.

Assessment procedures performed

At the assessment appointment a number of possible assessment procedures can be performed. There is no requirement that all procedures are performed for each client, just those that are appropriate for the lesions identified. This information relates to assessment performed inside of BreastScreen Victoria.

Mammography

Magnified images are taken of the areas of concern.

Ultrasound

Use of ultrasound to obtain additional images of the area of concern.

Clinical examination

Physical examination of the breast and axilla by a surgeon.

Fine needle aspiration (FNA)

Taking a sample of cells from breast tissue using a needle. This tissue is then examined by a pathologist.

Core biopsy

The removal of a core of breast tissue using an automated device. This may be undertaken with the assistance of stereotaxis, or ultrasound, to accurately locate and sample the lesion of concern. This tissue is then examined by a pathologist.

Open biopsy

Surgical procedure performed after the completion of the assessment process whereby a tissue sample is removed from the breast under anaesthetic.

Definition of terms used in the report (continued)

Assessment outcome

Following the completion of the assessment episode, the outcome is determined for each client. The outcome is calculated for clients assessed both within, and outside of, BreastScreen Victoria.

No malignant lesion

The lesion/s identified were benign.

Malignant lesion

The lesion was identified as being breast cancer or 'other' cancers discovered in the breast tissue.

Other

The client was recommended for early review, or the assessment outcome has not been able to be determined.

Outcome undetermined

Includes clients who were awaiting early review but have now been discharged for some reason.

Preoperative diagnosis

The ability to produce an assessment diagnosis for a women, without the use of an open diagnostic biopsy.

Recommended for open diagnostic biopsy

At the conclusion of the assessment visit, the recommendation to the client was that an open diagnostic biopsy be performed to achieve a diagnosis.

Preoperative diagnosis

A diagnosis was achieved for the client without the need for an open diagnostic biopsy or surgical procedure.

Cancer detection

When a malignancy is identified during assessment, the lesions are classified according to their pathology.

Invasive cancer

A primary malignancy invading surrounding tissue within the breast.

DCIS

Ductal carcinoma in situ (DCIS) is an abnormal proliferation of cells in the mammary ducts. While cells display abnormal cytological features similar to those of invasive breast cancer, unlike invasive breast cancer, DCIS is confined within the duct system. If left untreated, DCIS may increase the risk of developing invasive breast cancer in the future.

Rate per 10,000

The number of women who are diagnosed with breast cancer for every 10,000 women aged 50-69 years who attend for screening in a defined 12 month period.

Surgical treatment

Following diagnosis there are a number of possible surgical treatments that can be performed. This information relates to the most significant surgery performed for each client and relates to surgical treatment performed outside of BreastScreen Victoria.

No surgery

No surgical treatment is performed.

Breast conserving surgery

Surgery where the breast cancer is excised, together with a margin of normal breast tissue. The whole breast is not removed.

Mastectomy

Surgical removal of the whole breast.

Definition of terms used in the report (continued)

Rescreen rate

The cohort of women screened within the calendar year are monitored to report the proportion who are rescreened by the Program.

24 months

The proportion of women from the cohort who are rescreened by BreastScreen Victoria within 24 months of their previous screening mammogram.

27 months

The proportion of women from the cohort who are rescreened by BreastScreen Victoria within 27 months of their previous screening mammogram.

36 months

The proportion of women from the cohort who are rescreened by BreastScreen Victoria within 36 months of their previous screening mammogram.

Interval cancer

Any invasive breast cancer diagnosed in the interval following a negative screening episode and before the next scheduled screening episode.

This includes:

- Invasive breast cancers diagnosed at early review, or in the interval between assessment and early review where the recommendation for early review is six months or more from the screening date.
- Invasive breast cancers diagnosed at open biopsy if the date of diagnosis is ≥ 6 months from the date of screening.

- Invasive breast cancers diagnosed at early rescreen are classified as interval breast cancers if the woman presents with a breast lump and/or clear or blood-stained nipple discharge in the breast in which the breast cancer was diagnosed.
- Invasive breast cancers diagnosed during the screening interval between a negative screening episode and the next screening episode of a woman who is on annual rescreen are only included as interval breast cancers for the year of screen, 0-<12 months.
- Invasive breast cancers diagnosed between 6-24 months after recommendation is made for assessment and the woman fails to attend.
- Invasive breast cancers diagnosed outside the Program within 24 months of a negative screen.

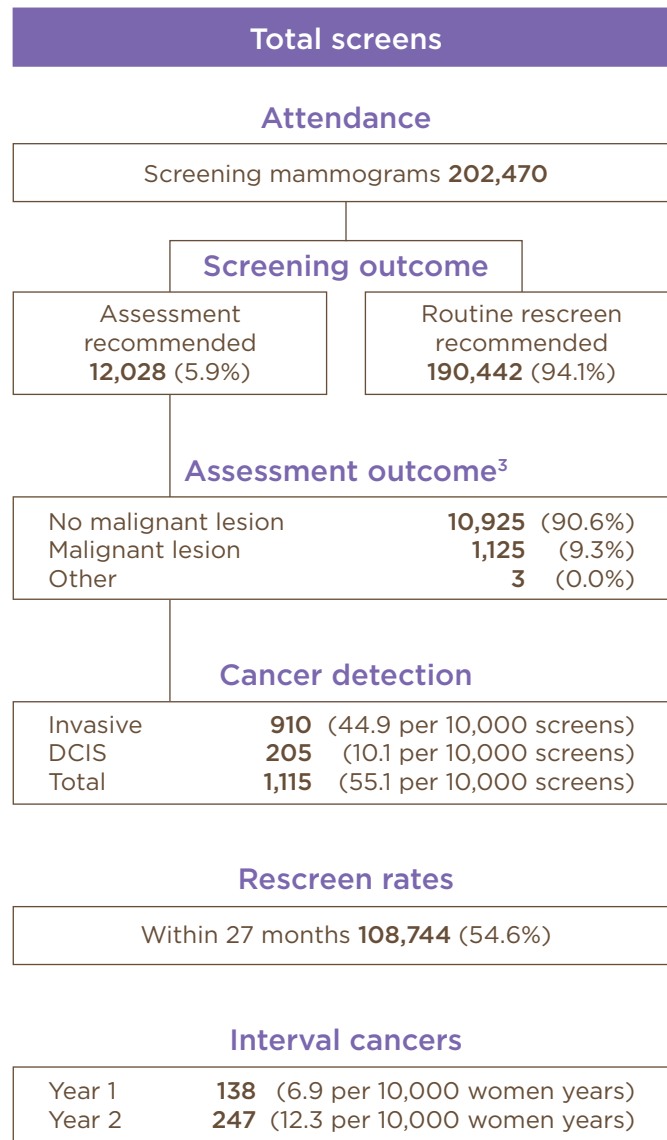
Year 1

The interval cancer rate for the first 12 months after the woman's 2006 screen.

Year 2

The interval cancer rate for the second 12 months after the woman's 2006 screen.

Figure 1 – Summary of outcomes for all women attending for breast cancer screening in 2006^{1,2}

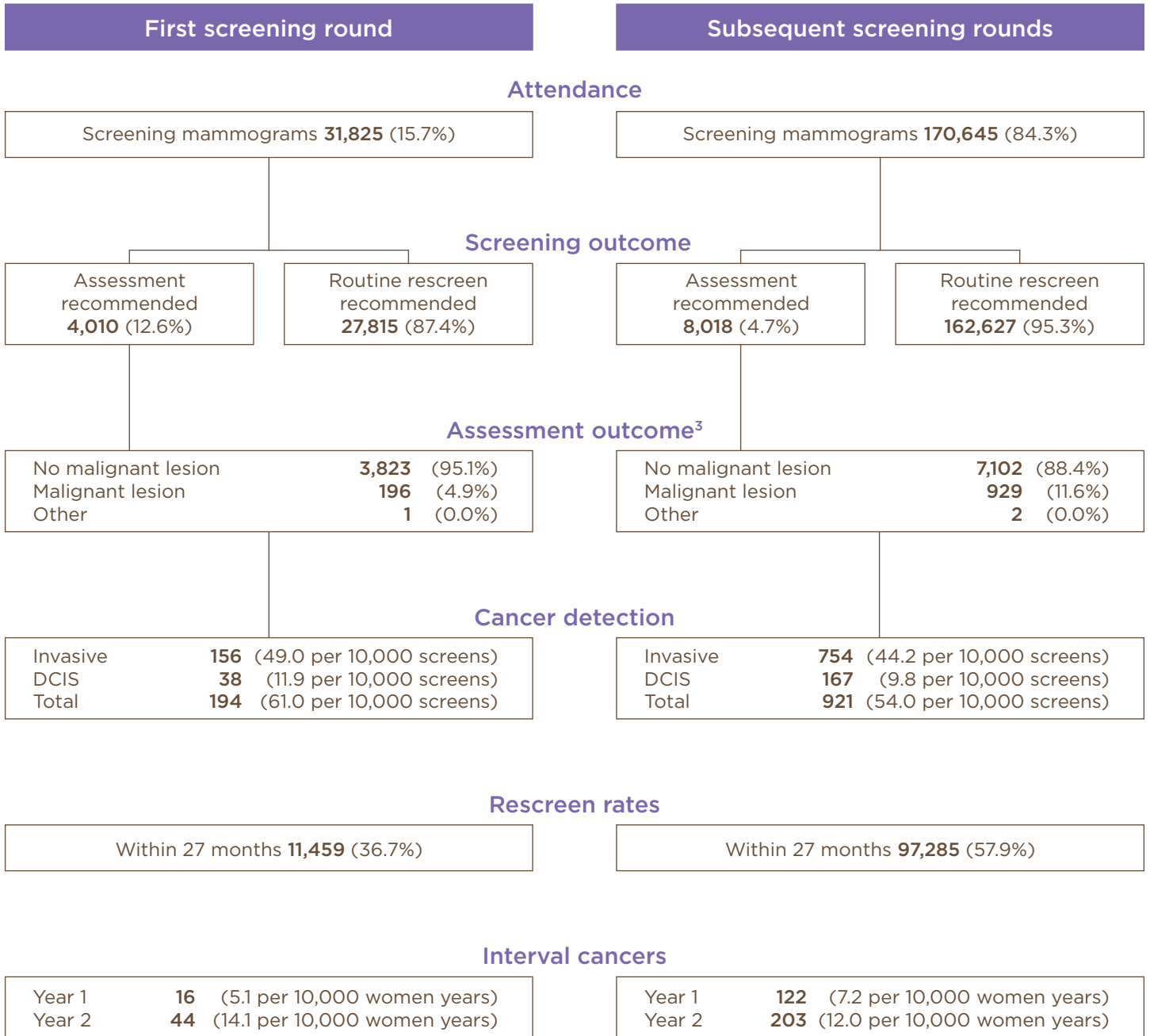


1 The source tables used may exclude data for a small number of women. Details are provided in footnotes to the tables.

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

3 Assessment outcome includes all women assessed by BreastScreen Victoria including those screened outside of the Program.

Figure 2 – Summary of outcome by screening round for all women attending for breast cancer screening in 2006^{1,2}



1 The source tables used may exclude data for a small number of women. Details are provided in footnotes to the tables.

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

3 Assessment outcome includes all women assessed by BreastScreen Victoria including those screened outside of the Program.

Screening attendance

A total of 202,470 screening mammograms were performed by BreastScreen Victoria during 2006. 15.7% of these women attended for their first screening mammogram within the Program and the remaining 84.3% attended for their second or subsequent mammogram.

The target age group for the Program is women aged 50-69 as current research shows that breast cancer screening is most effective in reducing breast cancer mortality in this age group. Ensuring

that we maintain a higher proportion of screening activity within the target age group is an important focus of the Program. In 2006, 157,144 or 77.6% of women screened were in the target age group.

Women attending for their first screening mammogram tend to be younger than those attending for subsequent screening round mammograms. 33.8% of first round women are 40 to 49 years, compared to 3.4% of subsequent round women.

All women						
Age at screening	40-49	50-59	60-69	70-79	80+	Total
Total women screened	16,503	92,586	64,559	27,736	1,086	202,470
Percentage of screening	8.2 %	45.7 %	31.9 %	13.7 %	0.5 %	100%

Target age group 50-69
157,145
77.6%

First round women							
Age at screening	40-49	50-59	60-69	70-79	80+	Total	% of ALL women screened
Total women screened	10,744	18,073	2,300	613	95	31,825	15.7 %
Percentage of screening	33.8 %	56.8 %	7.2 %	1.9 %	0.3 %	100%	

Target age group 50-69
20,373
64.0 %

Subsequent round women							
Age at screening	40-49	50-59	60-69	70-79	80+	Total	% of ALL women screened
Total women screened	5,759	74,513	62,259	27,123	991	170,645	84.3 %
Percentage of screening	3.4 %	43.7 %	36.5 %	15.9 %	0.6 %	100%	

Target age group 50-69
136,772
80.2 %

Inclusions:
 Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.
 Women were aged ≥ 40 years at the time of screening appointment.
 The woman attended the screening appointment and the readings data was complete.

Screening outcome

Following completion of the screening episode, a screening outcome is determined for each woman. Each woman is either recommended to be routinely rescreened within the Program at the appropriate screening interval (yearly for high risk women and biennially for all other women), or they are recommended to attend for assessment. Reasons that women are recalled to assessment include abnormal mammography and symptoms of possible breast cancer.

Of all women screened in 2006, 190,442 (94.1%) were recommended for routine rescreen and

12,028 (5.9%) were recommended to attend for assessment.

The National Accreditation Standards aim to minimise women undergoing unnecessary investigations. The Standards for recall rates are < 10% for women aged 50-69 attending for their first screen and < 5% for women aged 50-69 attending for a subsequent screen. In 2006 the recall rate for women aged 50-69 having their first screening mammogram was 12.5% and for subsequent screening rounds was 4.7%.

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Routine rescreen	14,687 89.0%	86,611 93.5%	61,581 95.4%	26,542 95.7%	1,021 94.0%	190,442 94.1%	148,192 94.3%
Assessment recommended	1,816 11.0%	5,975 6.5%	2,978 4.6%	1,194 4.3%	65 6.0%	12,028 5.9%	8,953 5.7%
Total	16,503 100%	92,586 100%	64,559 100%	27,736 100%	1,086 100%	202,470 100%	157,145 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Routine rescreen	9,369 87.2%	15,777 87.3%	2,051 89.2%	541 88.3%	77 81.1%	27,815 87.4%	17,828 87.5%
Assessment recommended	1,375 12.8%	2,296 12.7%	249 10.8%	72 11.7%	18 18.9%	4,010 12.6%	2,545 12.5%
Total	10,744 100%	18,073 100%	2,300 100%	613 100%	95 100%	31,825 100%	20,373 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Routine rescreen	5,318 92.3%	70,834 95.1%	59,530 95.6%	26,001 95.9%	944 95.3%	162,627 95.3%	130,364 95.3%
Assessment recommended	441 7.7%	3,679 4.9%	2,729 4.4%	1,122 4.1%	47 4.7%	8,018 4.7%	6,408 4.7%
Total	5,759 100%	74,513 100%	62,259 100%	27,123 100%	991 100%	170,645 100%	136,772 100%

Inclusions:

Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.

Women were aged ≥ 40 years at the time of screening appointment.

The woman attended the screening appointment and the readings data is complete.

Assessment procedures performed

When a woman attends for an assessment appointment there is a range of further investigations which may be performed to determine if she has a malignancy. The procedures are detailed in the tables below. Each woman is counted only once against the most significant assessment procedure performed during her assessment.

During 2006, 11,729 women were assessed by BreastScreen Victoria. This figure includes women both screened and assessed by BreastScreen Victoria, and women screened by other state programs and then assessed by BreastScreen Victoria. It does not include women screened by BreastScreen Victoria and assessed outside of the Program.

Over 78% of women assessed during 2006 had an assessment outcome determined without the need for an invasive procedure being performed.

This means their assessment visit involved further imaging, including further mammography and/or ultrasound examination and clinical examination.

It is important that the Program is able to reach a diagnosis without the need for an open diagnostic biopsy to be performed. Core biopsy was performed as their most significant procedure for 16.1% of women assessed in 2006. Fine needle aspiration was performed as the most significant assessment procedure for 2.7% of women and only 2.6% of women had an open biopsy as their most significant assessment procedure.

A slightly higher proportion of ultrasound examinations were reported for first round women while a higher proportion of subsequent round women were reported as having further mammography. The proportion of the remaining assessment procedures performed were similar between first and subsequent screening rounds.

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Open biopsy	44 2.5%	135 2.3%	92 3.2%	34 2.9%	0	305 2.6%	227 2.6%
Core biopsy	225 12.9%	867 14.8%	526 18.1%	258 22.2%	15 25.0%	1,891 16.1%	1,393 15.9%
Fine needle aspiration	47 2.7%	160 2.7%	85 2.9%	22 1.9%	0	314 2.7%	245 2.8%
Clinical examination	266 15.3%	560 9.6%	233 8.0%	101 8.7%	8 13.3%	1,168 10.0%	793 9.0%
Ultrasound	634 36.4%	2,201 37.6%	1,010 34.7%	384 33.1%	19 31.7%	4,248 36.2%	3,211 36.6%
Mammography	526 30.2%	1,937 33.1%	961 33.1%	361 31.1%	18 30.0%	3,803 32.4%	2,898 33.1%
Total	1,742 100%	5,860 100%	2,907 100%	1,160 100%	60 100%	11,729 100%	8,767 100%

Assessment procedures performed (continued)

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Open biopsy	34 2.6%	54 2.4%	5 2.1%	2 3.1%	0	95 2.4%	59 2.4%
Core biopsy	186 14.1%	373 16.6%	43 17.8%	12 18.5%	3 18.8%	617 15.9%	416 16.7%
Fine needle aspiration	39 3.0%	65 2.9%	4 1.7%	0	0	108 2.8%	69 2.8%
Clinical examination	202 15.3%	196 8.7%	13 5.4%	9 13.8%	1 6.3%	421 10.8%	209 8.4%
Ultrasound	469 35.6%	914 40.7%	117 48.5%	22 33.8%	6 37.5%	1,528 39.3%	1,031 41.4%
Mammography	389 29.5%	646 28.7%	59 24.5%	20 30.8%	6 37.5%	1,120 28.8%	705 28.3%
Total	1,319 100%	2,248 100%	241 100%	65 100%	16 100%	3,889 100%	2,489 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Open biopsy	10 2.4%	81 2.2%	87 3.3%	32 2.9%	0	210 2.7%	168 2.7%
Core biopsy	39 9.2%	494 13.7%	483 18.1%	246 22.5%	12 27.3%	1,274 16.3%	977 15.6%
Fine needle aspiration	8 1.9%	95 2.6%	81 3.0%	22 2.0%	0	206 2.6%	176 2.8%
Clinical examination	64 15.1%	364 10.1%	220 8.3%	92 8.4%	7 15.9%	747 9.5%	584 9.3%
Ultrasound	165 39.0%	1,287 35.6%	893 33.5%	362 33.1%	13 29.5%	2,720 34.7%	2,180 34.7%
Mammography	137 32.4%	1,291 35.7%	902 33.8%	341 31.1%	12 27.3%	2,683 34.2%	2,193 34.9%
Total	423 100%	3,612 100%	2,666 100%	1,095 100%	44 100%	7,840 100%	6,278 100%

Inclusions:
 Women screened during the period 1/1/2006 and 31/12/2006.
 Women were aged ≥40 years at the time of screening appointment.
 Assessment was attended in the BreastScreen Victoria program.

Exclusions:
 Women who attended assessment but did not have any assessment procedures performed.
 Women screened by BreastScreen Victoria but assessed outside of the Program.

Assessment outcome

Following completion of the assessment process a final assessment outcome is determined for each woman. For the women assessed by the Program during 2006, a total of 1,125 (9.3%) women were found to have a malignant lesion, while 10,925 (90.6%) were found to have no malignant lesion.

The proportion of first round women in the target age group of 50-69 who were found to have a malignancy was 5.4% compared to 10.9% of subsequent round women.

The cancer detection rate for women in the target age group of 50-69 was 9.3% of assessed women.

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
No malignant lesion	1,745 96.1%	5,568 92.9%	2,570 86.0%	987 82.6%	55 84.6%	10,925 90.6%	8,138 90.6%
Malignant lesion	69 3.8%	422 7.0%	417 14.0%	207 17.3%	10 15.4%	1,125 9.3%	839 9.3%
Other	1 0.1%	1 0.0%	0	1 0.1%	0	3 0.0%	1 0.0%
Total	1,815 100%	5,991 100%	2,987 100%	1,195 100%	65 100%	12,053 100%	8,978 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
No malignant lesion	1,328 96.5%	2,190 95.1%	228 90.5%	60 84.5%	17 94.4%	3,823 95.1%	2,418 94.6%
Malignant lesion	47 3.4%	113 4.9%	24 9.5%	11 15.5%	1 5.6%	196 4.9%	137 5.4%
Other	1 0.1%	0	0	0	0	1 0.0%	0
Total	1,376 100%	2,303 100%	252 100%	71 100%	18 100%	4,020 100%	2,555 100%

Assessment outcome (continued)

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
No malignant lesion	417 95.0%	3,378 91.6%	2,342 85.6%	927 82.5%	38 80.9%	7,102 88.4%	5,720 89.1%
Malignant lesion	22 5.0%	309 8.4%	393 14.4%	196 17.4%	9 19.1%	929 11.6%	702 10.9%
Other	0	1 0.0%	0	1 0.1%	0	2 0.0%	1 0.0%
Total	439 100%	3,688 100%	2,735 100%	1,124 100%	47 100%	8,033 100%	6,423 100%

Inclusions:

Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.

Women aged ≥ 40 years at the time of screening appointment

Assessment was recommended following screening by BreastScreen Victoria.

Assessment was attended either within the BreastScreen Victoria Program or at another organisation.

Includes women screened interstate but assessed within BreastScreen Victoria.

Exclusions:

Women who were recommended for assessment but were not assessed.

Preoperative diagnosis

BreastScreen Victoria aims to minimise the number of unnecessary investigations performed on women recalled to assessment. Establishing a diagnosis of invasive cancer or DCIS without performing an open diagnostic biopsy is highly desirable, as it demonstrates the extent to which the Program is effective at minimising invasive investigations.

The National Accreditation Standard states that for all women assessed, ≥ 75% of invasive cancers

and DCIS are diagnosed without the need for an open diagnostic biopsy. In 2006, of the 1,100 cases of invasive cancer and DCIS diagnosed within the Program, 1,028 or 93.5% achieved a diagnosis without an open diagnostic biopsy being performed. For women in the target age group 50-69, 93.2% had a preoperative diagnosis.

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Recommended for open diagnostic biopsy	4 5.9%	27 6.6%	29 7.0%	12 6.0%	0	72 6.5%	56 6.8%
Preoperative diagnosis	64 94.1%	385 93.4%	383 93.0%	187 94.0%	9 100%	1,028 93.5%	768 93.2%
Total	68 100%	412 100%	412 100%	199 100%	9 100%	1,100 100%	824 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Recommended for open diagnostic biopsy	2 4.3%	9 8.3%	2 8.3%	0	0	13 6.9%	11 8.3%
Preoperative diagnosis	45 95.7%	100 91.7%	22 91.7%	7 100%	1 100%	175 93.1%	122 91.7%
Total	47 100%	109 100%	24 100%	7 100%	1 100%	188 100%	133 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Recommended for open diagnostic biopsy	2 9.5%	18 5.9%	27 7.0%	12 6.3%	0	59 6.5%	45 6.5%
Preoperative diagnosis	19 90.5%	285 94.1%	361 93.0%	180 93.8%	8 100%	853 93.5%	646 93.5%
Total	21 100%	303 100%	388 100%	192 100%	8 100%	912 100%	691 100%

Inclusions:

Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.

Women aged ≥ 40 years at the time of screening appointment

Assessment was attended in BreastScreen Victoria.

Includes women screened interstate but assessed within BreastScreen Victoria.

Diagnosed with invasive cancer and DCIS.

Exclusions:

Women who were recommended for assessment but were not assessed.

Women assessed outside of BreastScreen Victoria.

Cancer detection

Of the women screened by BreastScreen Victoria during 2006 and recommended for assessment, 1,115 were diagnosed with breast cancer. Of these screen detected cancers, 910 (81.6%) were invasive cancers and 205 (18.4%) were ductal carcinoma in situ (DCIS).

The National Accreditation Standards require invasive cancer detection rates of ≥ 50 women per 10,000 women aged 50-69 years who attend for their first screen, and ≥ 35 women per 10,000 women attending for a subsequent screen. In 2006 the invasive cancer detection rate for the first screening round was 52.0 per 10,000 and for the subsequent screening rounds it was 41.2 per 10,000.

The National Accreditation Standards for DCIS detection rates are ≥ 12 women per 10,000 women aged 50-69 years who attend for their first screen, and ≥ 7 women per 10,000 women attending for a subsequent screen. In 2006, 13.7 women per 10,000 were diagnosed with DCIS in the first screening round and 9.7 per 10,000 in subsequent screening rounds.

BreastScreen Victoria aims to detect invasive cancers when they are small and low grade, prior to spread to the regional lymph nodes. In 2006, 322 (35.4%) of the invasive cancers which were detected in the Program, were ≤ 10 mm in size. Overall 585 (64.3%) of the invasive cancers were ≤ 15 mm in size.

All invasive cancers

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Invasive cancers	54	332	338	176	10	910	670
Invasive cancer rate per 10,000	32.8	35.8	52.4	63.4	92.1	44.9	42.6 (39.5-46.0)

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Invasive cancers	40	86	20	9	1	156	106
Invasive cancer rate per 10,000	37.3	47.6	87.0	146.8	105.3	49.0	52.0 (42.6-62.9)

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Invasive cancers	14	246	318	167	9	754	564
Invasive cancer rate per 10,000	24.5	33.0	51.1	61.5	90.8	44.2	41.2 (37.9-44.8)

Inclusions:

- Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.
- Women aged ≥ 40 years at the time of screening appointment.
- Women screened within BreastScreen Victoria.

Exclusions:

- Women diagnosed with an interval cancer.

Cancer detection (continued)

DCIS

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
DCIS	15	84	77	29	0	205	161
DCIS rate per 10,000	9.1	9.1	11.9	10.5	0	10.1	10.2 (8.7-12.0)

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
DCIS	8	24	4	2	0	38	28
DCIS rate per 10,000	7.5	13.3	17.4	32.6	0	11.9	13.7 (9.1-19.9)

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
DCIS	7	60	73	27	0	167	133
DCIS rate per 10,000	12.2	8.0	11.7	10.0	0	9.8	9.7 (8.1-11.5)

Inclusions:
 Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.
 Women aged ≥ 40 years at the time of screening appointment.
 Women screened within BreastScreen Victoria.

Exclusions:
 Women diagnosed with an interval cancer.

Cancer detection (continued)

All invasive cancers and DCIS

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Total cancers - invasive and DCIS	69	416	415	205	10	1,115	831
Total rate per 10,000	41.9	44.9	64.3	73.9	92.1	55.1	52.9 (49.4-56.6)

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Total cancers - invasive and DCIS	48	110	24	11	1	194	134
Total rate per 10,000	44.7	60.9	104.4	179.4	105.3	61.0	65.8 (55.1-77.9)

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Total cancers - invasive and DCIS	21	306	391	194	9	921	697
Total rate per 10,000	36.7	41.1	62.8	71.5	90.8	54.0	50.9 (47.2-54.9)

Invasive cancers and DCIS by size

	Invasive					DCIS	Total (invasive and DCIS)
	≤ 10 mm	11-15 mm	> 15 mm	Unknown	Total		
First round women	41	47	64	4	156	38	194
Subsequent round women	281	216	249	8	754	167	921
Total	322	263	313	12	910	205	1,115
Percentage	35.4%	28.9%	34.4%	1.3%	100%		

Inclusions:

Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.
 Women aged ≥ 40 years at the time of screening appointment.
 Women screened within BreastScreen Victoria.

Exclusions:

Women diagnosed with an interval cancer.

Surgical treatment

Surgical treatment is performed outside of the BreastScreen Victoria Program. Surgical treatment data is followed up with each woman's elected surgeon by the data staff at each screening and assessment service. Surgical treatment data was available for 1,110 women diagnosed with breast cancer by the Program during 2006.

A total of 15 women elected to have no surgical treatment. Breast conserving surgery was performed for 714 (78.8%) of all of the women diagnosed with invasive cancer and 81.4% (166) of all of the women

with DCIS. Mastectomy rates were higher for women with invasive cancers (20.0%) than for women with DCIS (16.7%). First round women had higher mastectomy rates for both invasive cancers (31.4%) and DCIS (18.4%). Comparable mastectomy rates for subsequent round women were 17.6% for invasive cancers and 16.3% for DCIS.

For the women in the target age group of 50-69, 662 (80.0%) had breast conserving surgery, a slightly higher rate than that reported for all women (79.3%).

All surgical treatment

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	27 39.1%	79 19.0%	76 18.4%	31 15.2%	2 20.0%	215 19.4%	155 18.7%
Breast conserving surgery	42 60.9%	333 80.2%	329 79.9%	169 82.8%	7 70.0%	880 79.3%	662 80.0%
No surgery	0	3 0.7%	7 1.7%	4 2.0%	1 10.0%	15 1.4%	10 1.2%
Total	69 100%	415 100%	412 100%	204 100%	10 100%	1,110 100%	827 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	22 45.8%	22 20.0%	8 33.3%	3 27.3%	1 100%	56 28.9%	30 22.4%
Breast conserving surgery	26 54.2%	85 77.3%	14 58.3%	8 72.7%	0	133 68.6%	99 73.9%
No surgery	0	3 2.7%	2 8.3%	0	0	5 2.6%	5 3.7%
Total	48 100%	110 100%	24 100%	11 100%	1 100%	194 100%	134 100%

Surgical treatment (continued)

All surgical treatment

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	5 23.8%	57 18.7%	68 17.5%	28 14.5%	1 11.1%	159 17.4%	125 18.0%
Breast conserving surgery	16 76.2%	248 81.3%	315 81.2%	161 83.4%	7 77.8%	747 81.6%	563 81.2%
No surgery	0	0	5 1.3%	4 2.1%	1 11.1%	10 1.1%	5 0.7%
Total	21 100%	305 100%	388 100%	193 100%	9 100%	916 100%	693 100%

Inclusions:

Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.

Women aged ≥ 40 years at the time of screening appointment.

Women screened within BreastScreen Victoria.

Exclusions:

Women diagnosed with an interval cancer.

Surgical treatment (continued)

Invasive cancer

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	25 46.3%	68 20.5%	62 18.5%	24 13.7%	2 20.0%	181 20.0%	130 19.5%
Breast conserving surgery	29 53.7%	261 78.9%	269 80.1%	148 84.6%	7 70.0%	714 78.8%	530 79.5%
No surgery	0	2 0.6%	5 1.5%	3 1.7%	1 10.0%	11 1.2%	7 1.0%
Total	54 100%	331 100%	336 100%	175 100%	10 100%	906 100%	667 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	20 50.0%	18 20.9%	7 35.0%	3 33.3%	1 100%	49 31.4%	25 23.6%
Breast conserving surgery	20 50.0%	66 76.7%	12 60.0%	6 66.7%	0	104 66.7%	78 73.6%
No surgery	0	2 2.3%	1 5.0%	0	0	3 1.9%	3 2.8%
Total	40 100%	86 100%	20 100%	9 100%	1 100%	156 100%	106 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	5 35.7%	50 20.4%	55 17.4%	21 12.7%	1 11.1%	132 17.6%	105 18.7%
Breast conserving surgery	9 64.3%	195 79.6%	257 81.3%	142 85.5%	7 77.8%	610 81.3%	452 80.6%
No surgery	0	0	4 1.3%	3 1.8%	1 11.1%	8 1.1%	4 0.7%
Total	14 100%	245 100%	316 100%	166 100%	9 100%	750 100%	561 100%

Inclusions:

Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.

Women aged ≥ 40 years at the time of screening appointment.

Women screened within BreastScreen Victoria.

Exclusions:

Women diagnosed with an interval cancer.

Surgical treatment (continued)

DCIS

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	2 13.3%	11 13.1%	14 18.4%	7 24.1%	0	34 16.7%	25 15.6%
Breast conserving surgery	13 86.7%	72 85.7%	60 78.9%	21 72.4%	0	166 81.4%	132 82.5%
No surgery	0	1 1.2%	2 2.6%	1 3.4%	0	4 2.0%	3 1.9%
Total	15 100%	84 100%	76 100%	29 100%	0	204 100%	160 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	2 25.0%	4 16.7%	1 25.0%	0	0	7 18.4%	5 17.9%
Breast conserving surgery	6 75.0%	19 79.2%	2 50.0%	2 100%	0	29 76.3%	21 75.0%
No surgery	0	1 4.2%	1 25.0%	0	0	2 5.3%	2 7.1%
Total	8 100%	24 100%	4 100%	2 100%	0	38 100%	28 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	0	7 11.7%	13 18.1%	7 25.9%	0	27 16.3%	20 15.2%
Breast conserving surgery	7 100%	53 88.3%	58 80.6%	19 70.4%	0	137 82.5%	111 84.1%
No surgery	0	0	1 1.4%	1 3.7%	0	2 1.2%	1 0.8%
Total	7 100%	60 100%	72 100%	27 100%	0	166 100%	132 100%

Inclusions:

Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.
 Women aged ≥ 40 years at the time of screening appointment.
 Women screened within BreastScreen Victoria.

Exclusions:

Women diagnosed with an interval cancer.

Rescreen rates

The long term effectiveness of the screening program depends on women in the target age group continuing to be screened at regular intervals¹. The rescreen rate measures the proportion of women who return for screening in the Program within the recommended screening interval.

For the 144,718 women screened during 2006 who were eligible to be rescreened, 65.1% were rescreened by the Program within 27 months of their previous screening mammogram. This figure rose to 86.1% after 36 months.

The National Accreditation Standards require that ≥ 75% of women aged 50-67 who attend for their first screen within the Program are rescreened within 27 months and ≥ 90% of those attending for a second or subsequent screening round are rescreened within 27 months. The rescreen rate for 2006 for first round women aged 50-67 was 45.9% and for subsequent round women it was 68.1%.

All women	40-49	50-59	60-69	70-79	Total	Target age group 50-67
Total screens	16,295	91,792	63,816	27,415	199,315	144,718
Rescreened within 24 months	1,458 8.9%	13,161 14.3%	9,881 15.5%	1,251 4.6%	25,751 12.9%	22,530 15.6%
Rescreened within 27 months	5,078 31.2%	57,382 62.5%	40,300 63.2%	5,985 21.8%	108,744 54.6%	94,178 65.1%
Rescreened within 36 months	8,313 51.0%	77,957 84.9%	52,017 81.5%	8,982 32.8%	147,267 73.9%	124,645 86.1%

First round women	40-49	50-59	60-69	70-79	Total	Target age group 50-67
Total screens	10,618	17,837	2,214	570	31,238	19,768
Rescreened within 24 months	622 5.9%	1,817 10.2%	181 8.2%	25 4.4%	2,645 8.5%	1,987 10.1%
Rescreened within 27 months	2,285 21.5%	8,353 46.8%	760 34.3%	61 10.7%	11,459 36.7%	9,078 45.9%
Rescreened within 36 months	4,220 39.7%	13,194 74.0%	1,477 66.7%	164 28.8%	19,055 61.0%	14,562 73.7%

Footnote:

1. BreastScreen Australia National Accreditation Standards. Pg 14.

Rescreen rates (continued)

Subsequent round women	40-49	50-59	60-69	70-79	Total	Target age group 50-67
Total screens	5,677	73,955	61,602	26,845	168,077	124,950
Rescreened within 24 months	836 14.7%	11,344 15.3%	9,700 15.7%	1,226 4.6%	23,106 13.7%	20,543 16.4%
Rescreened within 27 months	2,793 49.2%	49,029 66.3%	39,540 64.2%	5,924 22.1%	97,285 57.9%	85,100 68.1%
Rescreened within 36 months	4,093 72.1%	64,763 87.6%	50,540 82.0%	8,818 32.8%	128,212 76.3%	110,083 88.1%

Inclusions:

Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.
 Women aged ≥ 40 years at the time of screening appointment.
 Women rescreened within BreastScreen Victoria.
 Women recommended to be set to Routine Rescreen from their previous screening round.

Exclusions:

Women who died.
 Women diagnosed with cancer.
 Women who live interstate.

Interval cancers

Interval cancers are breast cancers diagnosed in the interval following the woman’s screening mammogram, and prior to their next scheduled screening examination. They are identified through a matching process between the BreastScreen Victoria client information system and the Victorian Cancer Registry, and follow the national definition as specified in the BreastScreen Australia Data Dictionary.²

The year 1 figure reports the breast cancer rate for the period between 0 and 12 months after the 2006 mammogram and year 2 reports the rate for the period between 12 and 24 months after their 2006 mammogram. A total of 138 interval cancers were found in year 1 and 247 in year 2.

The National Accreditation Standards have specified an interval cancer rate for year 1. A figure for year 2 has not yet been determined. The standards states that < 7.5 per 10,000 women aged 50-69 who attend for screening should be diagnosed with an invasive interval breast cancer in the period between 0 and less than 12 months following a negative screening episode. In 2006 for year 1, 7.2 interval cancers occurred for each 10,000 women aged 50-69 screened. For first round women the rate was 7.4 per 10,000 and 7.2 per 10,000 for subsequent round women. The results for year 2 are 12.2 per 10,000 for all women in the target age group, 14.1 per 10,000 for first round women and 12.0 per 10,000 for subsequent round women.

All women							
Year 1	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Interval cancers	5	62	51	19	1	138	113
Screens	16,379	92,249	64,153	27,485	1,039	201,305	156,400
Interval cancer rate per 10,000	3.1	6.7	7.9	6.9	9.6	6.9	7.2

Year 2	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Interval cancers	23	116	75	33	0	247	191
Screens	16,335	91,889	63,789	27,309	1,031	200,353	155,676
Interval cancer rate per 10,000	14.1	12.6	11.8	12.1	0	12.3	12.2

Footnote:
2. BreastScreen Australia Data Dictionary 2005: Indicator 3a - Interval cancer rate. Pg 155.

Interval cancers (continued)

First round women							
Year 1	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Interval cancers	0	15	0	1	0	16	15
Screens	10,681	17,973	2,243	574	91	31,562	20,216
Interval cancer rate per 10,000	0	8.3	0.0	17.4	0	5.1	7.4

Year 2	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Interval cancers	15	24	4	1	0	44	28
Screens	10,659	17,793	2,061	486	87	31,086	19,854
Interval cancer rate per 10,000	14.1	13.5	19.4	20.6	0	14.1	14.1

Subsequent round women							
Year 1	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Interval cancers	5	47	51	18	1	122	98
Screens	5,698	74,276	61,910	26,911	948	169,743	136,184
Interval cancer rate per 10,000	8.8	6.3	8.2	6.7	10.5	7.2	7.2

Year 2	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Interval cancers	8	92	71	32	0	203	163
Screens	5,676	74,096	61,728	26,823	944	169,267	135,822
Interval cancer rate per 10,000	14.1	12.4	11.5	11.9	0	12.0	12.0

Inclusions:

Women screened by BreastScreen Victoria during the period 1/1/2006 and 31/12/2006.
 Women aged ≥ 40 years at the time of screening appointment.
 Women screened within BreastScreen Victoria.

Exclusions:

Women with a previous diagnosis of breast cancer.