

**BreastScreen Victoria**  
Annual Statistical Report



2005



# 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 which 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 more than 60 fixed and mobile screening sites across metropolitan and regional Victoria, thus 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 2005 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 BreastScreen Victoria's operational activity and cancer detection for 2005. Where relevant, the exclusions and limitations of the data presented are noted.

Further information about BreastScreen Victoria is available on our website: [www.breastscreen.org.au](http://www.breastscreen.org.au)

## Executive summary

During 2005 the new *Gecko* client information management system was introduced into BreastScreen Victoria. The new system brought with it a significant change in the way that data was collected and entered by the Screening and Assessment Services and how data is extracted for reporting purposes.

During 2005, 197,666 women attended for screening at BreastScreen Victoria. Women in the 50-69 year old target age group made up 76.6% of the women screened. 85.2% of all women screened returned for their second or subsequent screen.

Of the women screened, 93.8% received results indicating that no signs of breast cancer had been detected. Assessment was recommended for the remaining 6.2% of women screened and of these 90.7% were found to not have a malignant lesion.

Most women undergoing assessment (66.7%) received an outcome after further imaging. Only 2.4% of the women assessed required a surgical open biopsy to achieve a diagnosis.

Of the 1,126 women diagnosed with screen detected breast cancer during 2005, 885 (78.6%) were invasive cancers and 241 (21.4%) were ductal carcinoma in-situ (DCIS).

The National Accreditation Standards require that for women aged 50-69 years invasive cancer detection rates are  $\geq 50$  women per 10,000 women who attend for their first screen, and  $\geq 35$  women per 10,000 women attending for a subsequent screen. In 2005 the invasive cancer detection rate for the first screening round was 67.5 per 10,000 and for the subsequent screening rounds it was 40.3 per 10,000.

Tumor 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 2005, 63.1% of the invasive cancers detected were less than or equal to 15mm in size.

Following the cohort of target age group women aged 50-67 screened during 2005, 73.3% 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.

## Technical notes

The 2005 Annual Statistical Report contains all screening episodes performed by BreastScreen Victoria on women aged over 40 years of age during the 2005 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 purpose 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 are 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, whether the data are from within the Program, or whether the data is 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 3<sup>1</sup>/<sub>2</sub> years after the end date in the reporting period. This is due to the need to monitor the cohort for 2 years, the delay in cancer registrations 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

The recommendation for the client at the conclusion of the assessment visit, is that the client has an open diagnostic biopsy performed to achieve a diagnosis.

#### Preoperative diagnosis

A diagnosis is 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  $\geq 6$  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.

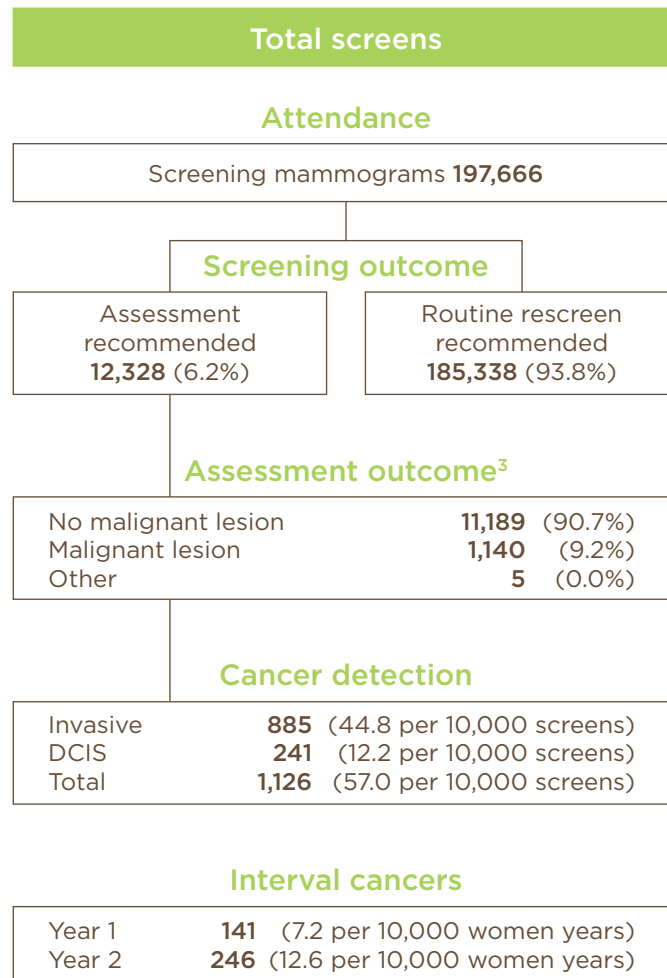
#### Year 1

The interval cancer rate for the first 12 months after the woman's 2005 screen.

#### Year 2

The interval cancer rate for the second 12 months after the woman's 2005 screen.

**Figure 1 – Summary of outcomes for all women attending for breast cancer screening in 2005<sup>1,2</sup>**

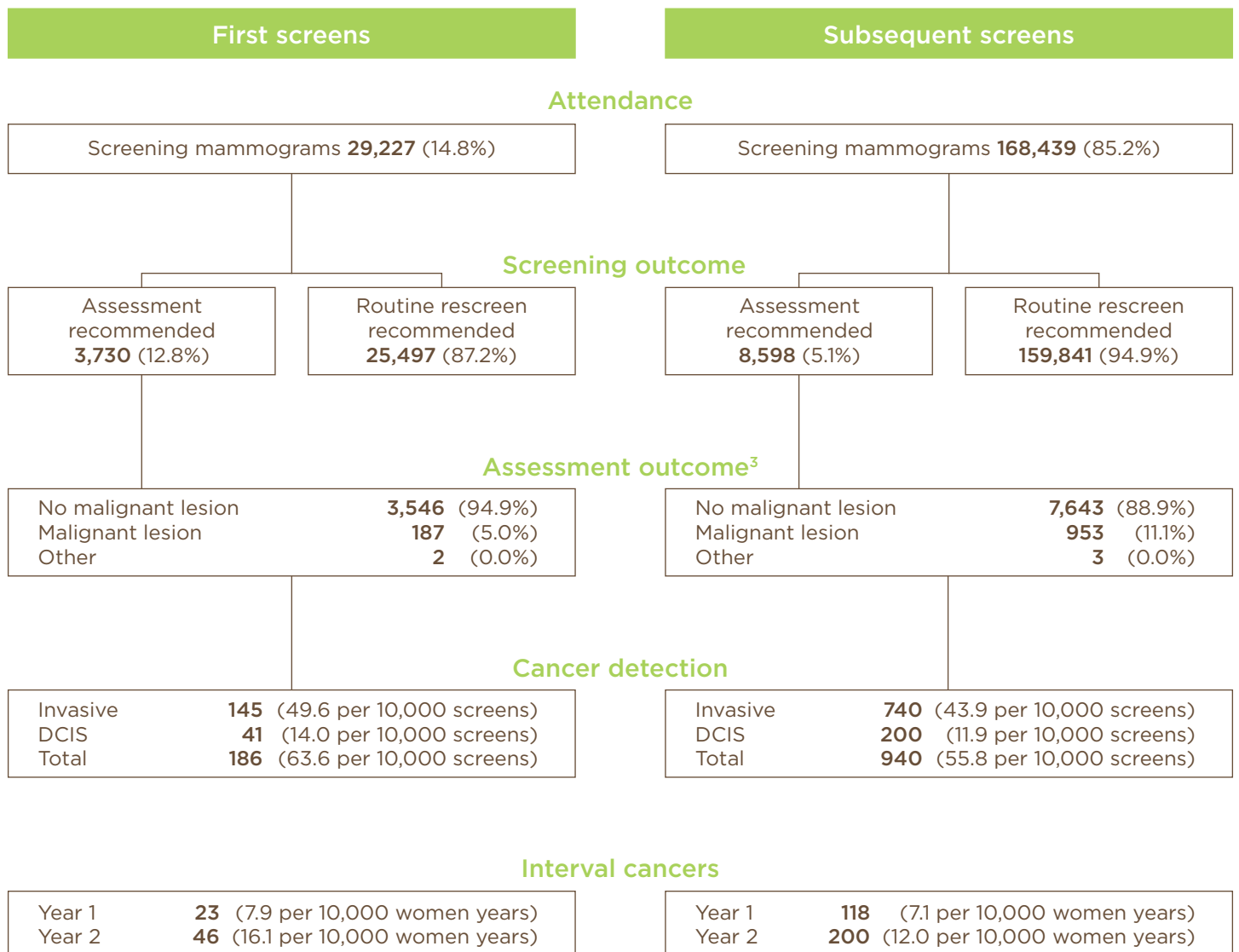


1 The source tables used may exclude data for a small number of women. Details are provided in footnotes to the tables.

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 outcomes by screening round for all women attending for breast cancer screening in 2005<sup>1,2</sup>**



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 197,666 screening mammograms were performed by BreastScreen Victoria during 2005. 14.8% of these women attended for their first screening mammogram within the Program and the remaining 85.2% 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 for 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 2005, 151,423 or 76.6% of women screened were in the target age group.

The breakdown of screening round by age demonstrates that women attending for their first screening mammogram tend to be younger than those attending for subsequent screening round mammograms.

All women							
Age at screening	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Total women screened	17,878	87,212	64,211	27,222	1,143	197,666	151,423
Percentage of screening	9.0 %	44.1 %	32.5 %	13.8 %	0.6 %	100%	76.6%

First round women								
Age at screening	40-49	50-59	60-69	70-79	80+	Total	% of ALL women screened	Target age group 50-69
Total women screened	11,725	15,152	1,730	490	130	29,227	14.8 %	16,882
Percentage of screening	40.1 %	51.8 %	5.9 %	1.7 %	0.4 %	100%		57.8 %

Subsequent round women								
Age at screening	40-49	50-59	60-69	70-79	80+	Total	% of ALL women screened	Target age group 50-69
Total women screened	6,153	72,060	62,481	26,732	1,013	168,439	85.2 %	134,541
Percentage of screening	3.7 %	42.8 %	37.1 %	15.9 %	0.6 %	100%		79.9 %

Inclusions:  
 Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.  
 Women were aged ≥ 40 years at the time of screening appointment.  
 The woman attended the screening appointment and the readings data is 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 2005, 185,338 (93.8%) were recommended for routine rescreen and

12,328 (6.2%) were recommended to attend for assessment.

The National Accreditation Standards relating to recall rates for women aged 50-69 is designed to minimise women undergoing unnecessary investigations. The Standard states that recall rates are <10% for women attending for their first screen and <5% for women attending for a subsequent screen. In 2005 the recall rate for women aged 50-69 having their first screening mammogram was 13.0% and for subsequent screening rounds was 5.1%.

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Routine rescreen	15,915 89.0%	81,421 93.4%	61,010 95.0%	25,929 95.3%	1,063 93.0%	185,338 93.8%	142,431 94.1%
Assessment recommended	1,963 11.0%	5,791 6.6%	3,201 5.0%	1,293 4.7%	80 7.0%	12,328 6.2%	8,992 5.9%
Total	17,878 100%	87,212 100%	64,211 100%	27,222 100%	1,143 100%	197,666 100%	151,423 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Routine rescreen	10,280 87.7%	13,174 86.9%	1,512 87.4%	427 87.1%	104 80.0%	25,497 87.2%	14,686 87.0%
Assessment recommended	1,445 12.3%	1,978 13.1%	218 12.6%	63 12.9%	26 20.0%	3,730 12.8%	2,196 13.0%
Total	11,725 100%	15,152 100%	1,730 100%	490 100%	130 100%	29,227 100%	16,882 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Routine rescreen	5,635 91.6%	68,247 94.7%	59,498 95.2%	25,502 95.4%	959 94.7%	159,841 94.9%	127,745 94.9%
Assessment recommended	518 8.4%	3,813 5.3%	2,983 4.8%	1,230 4.6%	54 5.3%	8,598 5.1%	6,796 5.1%
Total	6,153 100%	72,060 100%	62,481 100%	26,732 100%	1,013 100%	168,439 100%	134,541 100%

Inclusions:  
 Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.  
 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.

Overall 11,850 women were assessed by BreastScreen Victoria during 2005. 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.

It is important that the Program is able to reach a diagnosis without the need for an open diagnostic

biopsy being performed. Over 70% of women being assessed during 2005 had an assessment outcome determined without the need for an invasive procedure being performed. This means their assessment visit involved further imaging, including both magnified mammography and/or ultrasound examination and clinical examination.

Just over 16% of women assessed in 2005 had core biopsy and 3.6% had fine needle aspiration as their most significant assessment procedure. Only 2.4% of women had an open diagnostic biopsy as their most significant assessment procedure.

The proportion of assessment procedures performed is fairly consistent 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	35 1.9%	137 2.5%	69 2.2%	45 3.7%	3 4.1%	289 2.4%	206 2.4%
Core biopsy	230 12.2%	875 15.7%	579 18.8%	256 20.9%	18 24.3%	1,958 16.5%	1,454 16.8%
Fine needle aspiration	72 3.8%	204 3.7%	119 3.9%	23 1.9%	3 4.1%	421 3.6%	323 3.7%
Clinical examination	344 18.2%	562 10.1%	277 9.0%	101 8.2%	4 5.4%	1,288 10.9%	839 9.7%
Ultrasound	658 34.9%	2,049 36.7%	1,047 33.9%	392 32.0%	20 27.0%	4,166 35.2%	3,096 35.7%
Mammography	549 29.1%	1,752 31.4%	993 32.2%	408 33.3%	26 35.1%	3,728 31.5%	2,745 31.7%
Total	1,888 100%	5,579 100%	3,084 100%	1,225 100%	74 100%	11,850 100%	8,663 100%

## Assessment procedures performed (continued)

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Open biopsy	26 1.9%	48 2.6%	3 1.5%	5 10.2%	1 4.3%	83 2.3%	51 2.5%
Core biopsy	183 13.2%	345 18.4%	41 20.4%	8 16.3%	7 30.4%	584 16.5%	386 18.6%
Fine needle aspiration	56 4.0%	62 3.3%	11 5.5%	1 2.0%	1 4.3%	131 3.7%	73 3.5%
Clinical examination	250 18.0%	176 9.4%	22 10.9%	8 16.3%	0	456 12.9%	198 9.5%
Ultrasound	488 35.1%	753 40.1%	72 35.8%	13 26.5%	4 17.4%	1,330 37.6%	825 39.7%
Mammography	386 27.8%	492 26.2%	52 25.9%	14 28.6%	10 43.5%	954 27.0%	544 26.2%
Total	1,389 100%	1,876 100%	201 100%	49 100%	23 100%	3,538 100%	2,077 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Open biopsy	9 1.8%	89 2.4%	66 2.3%	40 3.4%	2 3.9%	206 2.5%	155 2.4%
Core biopsy	47 9.4%	530 14.3%	538 18.7%	248 21.1%	11 21.6%	1,374 16.5%	1,068 16.2%
Fine needle aspiration	16 3.2%	142 3.8%	108 3.7%	22 1.9%	2 3.9%	290 3.5%	250 3.8%
Clinical examination	94 18.8%	386 10.4%	255 8.8%	93 7.9%	4 7.8%	832 10.0%	641 9.7%
Ultrasound	170 34.1%	1,296 35.0%	975 33.8%	379 32.2%	16 31.4%	2,836 34.1%	2,271 34.5%
Mammography	163 32.7%	1,260 34.0%	941 32.6%	394 33.5%	16 31.4%	2,774 33.4%	2,201 33.4%
Total	499 100%	3,703 100%	2,883 100%	1,176 100%	51 100%	8,312 100%	6,586 100%

Inclusions:  
 Women screened during the period 1/1/2005 and 31/12/2005.  
 Women were aged ≥ 40 years at the time of screening appointment.  
 Assessment was attended in BreastScreen Victoria.

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 women assessed by the Program during 2005, 1,140 (9.2%) women were found to have a malignant lesion, while 11,189 (90.7%) 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 6.1% compared to 10.5% of subsequent round women.

The cancer detection rate for women in the target age group of 50-69 is 9.4% of assessed women.

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
No malignant lesion	1,910 97.2%	5,373 92.7%	2,771 86.6%	1,072 82.8%	63 78.8%	11,189 90.7%	8,144 90.5%
Malignant lesion	55 2.8%	420 7.2%	426 13.3%	222 17.2%	17 21.3%	1,140 9.2%	846 9.4%
Other	0	2 0.0%	3 0.1%	0	0	5 0.0%	5 0.0%
Total	1,965 100%	5,795 100%	3,200 100%	1,294 100%	80 100%	12,334 100%	8,995 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
No malignant lesion	1,410 97.4%	1,868 94.4%	193 88.1%	58 92.1%	17 65.4%	3,546 94.9%	2,061 93.8%
Malignant lesion	38 2.6%	110 5.6%	25 11.4%	5 7.9%	9 34.6%	187 5.0%	135 6.1%
Other	0	1 0.1%	1 0.5%	0	0	2 0.0%	2 0.0%
Total	1,448 100%	1,979 100%	219 100%	63 100%	26 100%	3,735 100%	2,198 100%



## Assessment outcome (continued)

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
No malignant lesion	500 96.7%	3,505 91.9%	2,578 86.5%	1,014 82.4%	46 85.2%	7,643 88.9%	6,083 89.5%
Malignant lesion	17 3.3%	310 8.1%	401 13.5%	217 17.6%	8 14.8%	953 11.1%	711 10.5%
Other	0	1 0.0%	2 0.0%	0	0	3 0.0%	3 0.0%
Total	517 100%	3,816 100%	2,981 100%	1,231 100%	54 100%	8,599 100%	6,797 100%

**Inclusions:**

Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.  
 Women aged ≥ 40 years at the time of screening appointment  
 Assessment was recommended following screening by BreastScreen Victoria.  
 Assessment was attended either within BreastScreen Victoria or by another organisation.  
 Includes women screened interstate but assessed within BreastScreen Victoria.

**Exclusions:**

Women who were recommended for assessment but were not assessed.

## Preoperative diagnosis

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

The National Accreditation Standards state that for all women assessed,  $\geq 75\%$  of invasive cancers and DCIS are diagnosed without the need for an open diagnostic biopsy. In 2005, of the 1,112 cases of invasive cancer and DCIS diagnosed within the Program, 1,034 or 93.0% achieved a diagnosis without an open diagnostic biopsy being performed. For women in the target age group 50-69, 94.2% 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	5 9.4%	28 6.8%	20 4.8%	24 11.1%	1 5.9%	78 7.0%	48 5.8%
Preoperative diagnosis	48 90.6%	383 93.2%	395 95.2%	192 88.9%	16 94.1%	1,034 93.0%	778 94.2%
Total	53 100%	411 100%	415 100%	216 100%	17 100%	1,112 100%	826 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Recommended for open diagnostic biopsy	5 13.5%	7 6.5%	1 4.2%	2 40.0%	1 11.1%	16 8.8%	8 6.1%
Preoperative diagnosis	32 86.5%	100 93.5%	23 95.8%	3 60.0%	8 88.9%	166 91.2%	123 93.9%
Total	37 100%	107 100%	24 100%	5 100%	9 100%	182 100%	131 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Recommended for open diagnostic biopsy	0	21 6.9%	19 4.9%	22 10.4%	0	62 6.7%	40 5.8%
Preoperative diagnosis	16 100%	283 93.1%	372 95.1%	189 89.6%	8 100%	868 93.3%	655 94.2%
Total	16 100%	304 100%	391 100%	211 100%	8 100%	930 100%	695 100%

**Inclusions:**

Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.

Women aged  $\geq 40$  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 the BreastScreen Victoria Program.

## Cancer detection

Of the women screened by BreastScreen Victoria during 2005 and recommended for assessment, 1,126 women were diagnosed with breast cancer. Of these screen detected cancers, 885 (78.6%) were invasive cancers and 241 (21.4%) were Ductal carcinoma in situ (DCIS).

The National Accreditation Standards have specific cancer detection requirements for both invasive breast cancer and DCIS. These standards state that invasive cancer detection rates should be  $\geq 50$  women per 10,000 for women aged 50-69 years who attend for their first screen, and  $\geq 35$  women per 10,000 women attending for a subsequent screen. In 2005 the invasive cancer detection rate for the first screening round was 67.5 per 10,000 and for the subsequent screening rounds it was 40.3 per 10,000.

The National Accreditation Standards require that for women aged 50-69 years DCIS detection rates are  $\geq 12$  women per 10,000 women who attend for their first screen, and  $\geq 7$  women per 10,000 women attending for a subsequent screen. In 2005, 11.8 women per 10,000 were diagnosed with DCIS in the first screening round and 11.7 per 10,000 in the subsequent screening round.

BreastScreen Victoria aims to detect invasive cancers when they are small and low grade, prior to spread to the regional lymph nodes. In 2005, 320 (36.2%) of the invasive cancers which were detected in the Program, were  $\leq 10$ mm in size. Overall 558 (63.1%) of the invasive cancers were  $\leq 15$ 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	34	318	338	182	13	885	656
Invasive cancer rate per 10,000	19.0	36.5	52.6	66.9	113.6	44.8	43.3 (40.1-46.8)

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Invasive cancers	21	92	22	4	6	145	114
Invasive cancer rate per 10,000	17.9	60.7	127.2	81.6	458.0	49.6	67.5 (55.7-81.1)

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Invasive cancers	13	226	316	178	7	740	542
Invasive cancer rate per 10,000	21.1	31.4	50.6	66.6	69.1	43.9	40.3 (37.0-43.9)

**Inclusions:**

- Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.
- Women aged  $\geq 40$  years at the time of screening appointment.
- Women screened within BreastScreen Victoria.

**Exclusions:**

- Women who were 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	21	95	82	39	4	241	177
DCIS rate per 10,000	11.7	10.9	12.8	14.3	35.0	12.2	11.7 (10.0-13.5)

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
DCIS	17	17	3	1	3	41	20
DCIS rate per 10,000	14.5	11.2	17.3	20.4	229.0	14.0	11.8 (7.2-18.3)

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
DCIS	4	78	79	38	1	200	157
DCIS rate per 10,000	6.5	10.8	12.6	14.2	9.9	11.9	11.7 (9.9-13.6)

**Inclusions:**  
 Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.  
 Women aged ≥ 40 years at the time of screening appointment.  
 Women screened within BreastScreen Victoria.

**Exclusions:**  
 Women who were 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	55	413	420	221	17	1,126	833
Total rate per 10,000	30.8	47.4	65.4	81.2	148.6	57.0	55.0 (51.3-58.9)

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	38	109	25	5	9	186	134
Total rate per 10,000	32.4	71.9	144.5	102.0	687.0	63.6	79.4 (66.5-93.9)

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	17	304	395	216	8	940	699
Total rate per 10,000	27.6	42.2	63.2	80.8	79.0	55.8	52.0 (48.2-55.9)

### Invasive cancers and DCIS by size

	Invasive					DCIS	Total (invasive and DCIS)
	≤ 10 mm	11-15 mm	>15 mm	Unknown	Total		
First round women	35	43	64	3	145	41	186
Subsequent round women	285	195	250	10	740	200	940
Total	320	238	314	13	885	241	1,126
Percentage	36.2%	26.9%	35.5%	1.5%	100%		

**Inclusions:**

Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.  
 Women aged ≥ 40 years at the time of screening appointment.  
 Women screened within BreastScreen Victoria.

**Exclusions:**

Women who were diagnosed with an interval cancer.

## Surgical treatment

Surgical treatment is performed outside of the BreastScreen Program. Surgical treatment data is obtained from the woman's elected surgeon by the data staff at each screening and assessment service. Surgical treatment data was available for all the 1,123 women diagnosed with breast cancer by the Program during 2005.

Eleven women elected to have no surgical treatment. Breast conserving surgery was performed for 699 (79.2%) of the women diagnosed

with invasive cancer and 82.5% (198) of the women with DCIS. Mastectomy rates were higher for women with invasive cancers (20.0%) than for women with DCIS (15.8%). Mastectomy rates were higher for first round women for both invasive cancers (24.3%) and DCIS (22.0%) compared to invasive cancers (19.2%) and DCIS (14.6%) for subsequent round women.

For the women in the target age group of 50-69, 665 (80.0%) had breast conserving surgery, a slightly higher rate than that reported for all women (79.9%).

### All surgical treatment

All women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	15 27.3%	87 21.1%	74 17.7%	35 15.9%	4 23.5%	215 19.1%	161 19.4%
Breast conserving surgery	40 72.7%	322 78.2%	343 81.9%	181 82.3%	11 64.7%	897 79.9%	665 80.0%
No surgery	0	3 0.7%	2 0.5%	4 1.8%	2 11.8%	11 1.0%	5 0.6%
Total	55 100%	412 100%	419 100%	220 100%	17 100%	1,123 100%	831 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	15 39.5%	21 19.4%	5 20.0%	1 20.0%	2 22.2%	44 23.8%	26 19.5%
Breast conserving surgery	23 60.5%	86 79.6%	19 76.0%	4 80.0%	7 77.8%	139 75.1%	105 78.9%
No surgery	0	1 0.9%	1 4.0%	0	0	2 1.1%	2 1.5%
Total	38 100%	108 100%	25 100%	5 100%	9 100%	185 100%	133 100%

## 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	0	66 21.7%	69 17.5%	34 15.8%	2 25.0%	171 18.2%	135 19.3%
Breast conserving surgery	17 100%	236 77.6%	324 82.2%	177 82.3%	4 50.0%	758 80.8%	560 80.2%
No surgery	0	2 0.7%	1 0.3%	4 1.9%	2 25.0%	9 1.0%	3 0.4%
Total	17 100%	304 100%	394 100%	215 100%	8 100%	938 100%	698 100%

**Inclusions:**

Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.

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

Women screened within BreastScreen Victoria.

**Exclusions:**

Women who were 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	8 23.5%	78 24.6%	58 17.2%	30 16.6%	3 23.1%	177 20.0%	136 20.8%
Breast conserving surgery	26 76.5%	238 75.1%	279 82.5%	148 81.8%	8 61.5%	699 79.2%	517 78.9%
No surgery	0	1 0.3%	1 0.3%	3 1.7%	2 15.4%	7 0.8%	2 0.3%
Total	34 100%	317 100%	338 100%	181 100%	13 100%	883 100%	655 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	8 38.1%	21 23.1%	4 18.2%	1 25.0%	1 16.7%	35 24.3%	25 22.1%
Breast conserving surgery	13 61.9%	69 75.8%	17 77.3%	3 75.0%	5 83.3%	107 74.3%	86 76.1%
No surgery	0	1 1.1%	1 4.5%	0	0	2 1.4%	2 1.8%
Total	21 100%	91 100%	22 100%	4 100%	6 100%	144 100%	113 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	0	57 25.2%	54 17.1%	29 16.4%	2 28.6%	142 19.2%	111 20.5%
Breast conserving surgery	13 100%	169 74.8%	262 82.9%	145 81.9%	3 42.9%	592 80.1%	431 79.5%
No surgery	0	0	0	3 1.7%	2 28.6%	5 0.7%	0
Total	13 100%	226 100%	316 100%	177 100%	7 100%	739 100%	542 100%

**Inclusions:**

Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.

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

Women screened within BreastScreen Victoria.

**Exclusions:**

Women who were 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	7 33.3%	9 9.5%	16 19.8%	5 12.8%	1 25.0%	38 15.8%	25 14.2%
Breast conserving surgery	14 66.7%	84 88.4%	64 79.0%	33 84.6%	3 75.0%	198 82.5%	148 84.1%
No surgery	0	2 2.1%	1 1.2%	1 2.6%	0	4 1.7%	3 1.7%
Total	21 100%	95 100%	81 100%	39 100%	4 100%	240 100%	176 100%

First round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	7 41.2%	0	1 33.3%	0	1 33.3%	9 22.0%	1 5.0%
Breast conserving surgery	10 58.8%	17 100%	2 66.7%	1 100%	2 66.7%	32 78.0%	19 95.0%
No surgery	0	0	0	0	0	0	0
Total	17 100%	17 100%	3 100%	1 100%	3 100%	41 100%	20 100%

Subsequent round women	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69
Mastectomy	0	9 11.5%	15 19.2%	5 13.2%	0	29 14.6%	24 15.4%
Breast conserving surgery	4 100%	67 85.9%	62 79.5%	32 84.2%	1 100%	166 83.4%	129 82.7%
No surgery	0	2 2.6%	1 1.3%	1 2.6%	0	4 2.0%	3 1.9%
Total	4 100%	78 100%	78 100%	38 100%	1 100%	199 100%	156 100%

**Inclusions:**

Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.  
 Women aged ≥ 40 years at the time of screening appointment.  
 Women screened within BreastScreen Victoria.

**Exclusions:**

Women who were diagnosed with an interval cancer.

## Rescreen rates

The long term effectiveness of the Program depends on women in the target age group continuing to be screened at regular intervals<sup>1</sup>. The rescreen rate measures the proportion of women who return for screening in the Program within the recommended screening interval. Production of the rescreen rates are delayed due to the need to wait for 27 months after the end of the reporting period.

For all the women in the target age group 50-67 screened during 2005 who were eligible to be rescreened, 73.3% were rescreened by the Program within 27 months of their previous screening mammogram. This figure rises to 88.1% within 36 months.

The National Accreditation Standards require that  $\geq 75\%$  of women aged 50-67 who attend for their first screen within the Program are rescreened within 27 months, and  $\geq 90\%$  of those attending for a second or subsequent screening round are rescreened within 27 months. The rescreen rate for 2005 for first round women aged 50-67 was 59.7% and for subsequent round women it was 75.1%.

All women	40-49	50-59	60-69	70-79	Total	Target age group 50-67
Total screens	17,713	86,261	63,414	26,831	194,219	139,215
Rescreened within 24 months	2,543 14.4%	23,876 27.7%	19,062 30.1%	5,215 19.4%	50,696 26.1%	40,529 29.1%
Rescreened within 27 months	6,202 35.0%	61,330 71.1%	46,883 73.9%	12,525 46.7%	126,940 65.4%	102,030 73.3%
Rescreened within 36 months	9,233 52.1%	75,020 87.0%	54,833 86.5%	14,681 54.7%	153,767 79.2%	122,601 88.1%

First round women	40-49	50-59	60-69	70-79	Total	Target age group 50-67
Total screens	11,613	14,921	1,670	470	28,674	16,391
Rescreened within 24 months	1,188 10.2%	3,470 23.3%	412 24.7%	58 12.3%	5,128 17.9%	3,851 23.5%
Rescreened within 27 months	3,022 26.0%	8,949 60.0%	911 54.6%	138 29.4%	13,020 45.4%	9,787 59.7%
Rescreened within 36 months	4,822 41.5%	11,349 76.1%	1,130 67.7%	174 37.0%	17,475 60.9%	12,386 75.6%

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	6,100	71,340	61,744	26,361	165,545	122,824
Rescreened within 24 months	1,355 22.2%	20,406 28.6%	18,650 30.2%	5,157 19.6%	45,568 27.5%	36,678 29.9%
Rescreened within 27 months	3,180 52.1%	52,381 73.4%	45,972 74.5%	12,387 47.0%	113,920 68.8%	92,243 75.1%
Rescreened within 36 months	4,411 72.3%	63,671 89.3%	53,703 87.0%	14,507 55.0%	136,292 82.3%	110,215 89.7%

**Inclusions:**

Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.

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

Women rescreened within BreastScreen Victoria.

Women who are recommended to be set to routine rescreen from their previous screening round.

**Exclusions:**

Women who have died.

Women who have been 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.<sup>2</sup>

The Year 1 figure reports the breast cancer rate for the period between 0 and 12 months after the 2005 mammogram and Year 2 reports the rate for the period between 12 and 24 months after the 2005 mammogram. A total of 141 interval cancers were found in Year 1 and 246 in Year 2.

The National Accreditation Standards have specified an interval cancer rates for Year 1.

A figure for Year 2 has not yet been determined. The standards state that <7.5 per 10,000 women who attend for screening are diagnosed with an invasive interval breast cancer in the period between 0 and less than 12 months following a negative screening episode. In 2005 for Year 1, 7.2 interval cancers occurred for each 10,000 women screened. For first round women the rate was 7.9 per 10,000 and 7.1 per 10,000 subsequent round women. The results for Year 2 are 12.5 per 10,000 for women in the target age group, 16.1 per 10,000 for first round women and 12.0 per 10,000 for subsequent round women.

The interval breast cancer rates for Year 1 and 2 for first round women are higher than those reported for subsequent round women.

All women							
Year 1	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Interval cancers	19	59	48	13	2	141	107
Screens	17,775	86,770	63,727	26,897	1,098	196,267	150,497
Interval cancer rate (per 10,000)	10.7	6.8	7.5	4.8	18.2	7.2	7.1 (5.8-8.6)
Year 2	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Interval cancers	27	105	83	30	1	246	188
Screens	17,727	86,434	63,373	26,731	1,094	195,359	149,807
Interval cancer rate (per 10,000)	15.2	12.1	13.1	11.2	9.1	12.6	12.5 (10.8-14.5)

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 (95% C.I.)
Interval cancers	13	9	1	0	0	23	10
Screens	11,656	15,068	1,689	465	125	29,003	16,757
Interval cancer rate (per 10,000)	11.2	6.0	5.9	0	0	7.9	6.0 (2.9-11.0)
Year 2							
Year 2	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Interval cancers	15	22	8	1	0	46	30
Screens	11,632	14,900	1,512	382	123	28,549	16,412
Interval cancer rate (per 10,000)	12.9	14.8	52.9	26.2	0	16.1	18.3 (12.3-26.1)
Subsequent round women							
Year 1	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Interval cancers	6	50	47	13	2	118	97
Screens	6,119	71,702	62,038	26,432	973	167,264	133,740
Interval cancer rate (per 10,000)	9.8	7.0	7.6	4.9	20.6	7.1	7.3 (5.9-8.8)
Year 2							
Year 2	40-49	50-59	60-69	70-79	80+	Total	Target age group 50-69 (95% C.I.)
Interval cancers	12	83	75	29	1	200	158
Screens	6,095	71,534	61,861	26,349	971	166,810	133,395
Interval cancer rate (per 10,000)	19.7	11.6	12.1	11.0	10.3	12.0	11.8 (10.1-13.8)

**Inclusions:**

Women screened by BreastScreen Victoria during the period 1/1/2005 and 31/12/2005.  
 Women aged ≥ 40 years at the time of screening appointment.  
 Women screened within BreastScreen Victoria.

**Exclusions:**

Women with a previous diagnosis of breast cancer.