



BreastScreen WA

1997 - 1998

STATISTICAL

REPORT



BreastScreen WA
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Foreword

I am pleased to present the BreastScreen WA 1997/1998 Statistical Report.

Breast cancer is the most common cancer, and the most common cause of cancer death, in Australian women. Early detection has been shown to reduce the morbidity and mortality associated with this type of cancer. BreastScreen WA provides equitable access to free screening mammograms for all women over the age of 40 in Western Australia. The program also provides multidisciplinary teams of experienced specialists at dedicated breast assessment centres to assess screen-detected lesions.

BreastScreen WA underwent major infrastructure and organisational changes in 1997/1998 when the screening component of the program was put out to public tender, the State Coordination Unit was restructured and the mammography screening registry was upgraded. By April 1999 the assessment service had also been reorganised so that workup was provided by Breast Assessment WA at two public hospital sites. Future reports will reflect the new structure of the program.

Although 1997/1998 was a challenging year, the program recorded the highest number of screens and cancers detected since its inception in 1989. To date, it has conducted over 473,000 screening examinations on 179,000 women and diagnosed nearly 2,000 breast cancers.

The collection of high quality data is integral to ongoing program monitoring and evaluation, processes vital to provision of a service characterised by excellence and accountability. In October 2000 BreastScreen WA was granted full accreditation with the national program, evidence that it provides the highest quality service to the women of this state. Testimonies to this high standard are the outstanding performance outcomes illustrated in this Report.

The data reflects the dedication of staff and the continuous support from clients. BreastScreen WA takes pride in its culture of continuous quality improvement and uncompromising commitment to the women of Western Australia and their families.



Dr Elizabeth Wylie
Medical Director

Introduction

This is the fourth BreastScreen WA Annual Statistical Report and provides summary data on women who attended for screening for the year 1 July 1997 to 30 June 1998 and the outcome of their screening.

The collection and analysis of data about the screening program is central to performance monitoring and evaluation. The stringent quality assurance procedures, both manual and automatic, ensure high accuracy and reliability of information.

The Australian Bureau of Statistics 1997 Estimated Resident Population figures were used for all general population data for this reporting period. The 1996 Census data was used to derive figures for indigenous women, that is women from Aboriginal or Torres Strait Islander background, and for women from culturally and linguistically diverse backgrounds. A comparison of BreastScreen WA's performance against a selected number of performance standards included in BreastScreen Australia's 1994 National Accreditation Requirements is also presented in the Appendix.

Where relevant, comparisons between assessments performed inside and outside the program are included. That is, procedures and outcomes of women who had at least some investigations and/or diagnostic open biopsy performed within the program were compared with those for women who had all of their assessment privately. Such comparisons, however, exclude diagnostic mammographic views, because in 1997/98 all such further views were performed at the screening units. Further views are, however, included in calculations for overall assessment outcomes.

Very sincere thanks are extended to all staff of BreastScreen WA and the radiologists, pathologists and surgeons for their continuing dedication and commitment to the program and to the women of Western Australia. BreastScreen WA would like to thank the Public Reporting Working Group for their expert advice and guidance in the production of this report.



BreastScreen WA Key Results for 1997/98

ATTENDANCE

- ❖ BreastScreen WA performed 61,556 screens, of which 28% were first screens and 72% subsequent screens. Over 72% of screens were in women in the 50-69 year target age group.
- ❖ Of the women aged 50-69 years screened between July 1995 and June 1996 for whom a 2 yearly rescreen was recommended, 73% returned to BreastScreen WA for a rescreen within the following 27 months.
- ❖ The 24-month participation rate for the target age group has steadily increased from 34% in 1993/95 to 44% in 1994/96 and to 53% in 1996/98.

DEMOGRAPHY

- ❖ For the period 1996/98, the participation rate amongst those aged 50-69 years living in the metropolitan areas of Perth was 48% for women from culturally and linguistically diverse backgrounds and 21% for indigenous women.

RECALL TO ASSESSMENT

- ❖ Ninety four percent of screens resulted in a normal outcome while 6% were referred on for diagnostic further views or other assessment procedures such as ultrasound, fine needle aspiration or core biopsy.
- ❖ The overall recall rate for the period was 6% of all screens, or 10% for first and 5% for subsequent screens. These recall rates met the minimum performance standards set by BreastScreen Australia.
- ❖ Of those women attending for assessment, 91% had a benign outcome, 8% had a malignancy detected and 0.4% had an incomplete or unknown assessment outcome.

ASSESSMENT PROCEDURES

- ❖ On average, each woman recalled for assessment underwent 2.2 assessment procedures. Seventy six percent required only further mammographic views, clinical examination and/or ultrasound to confirm an outcome indicating no significant abnormality.
- ❖ Seventy nine percent of all cancers were diagnosed preoperatively. Sixty three percent were diagnosed by fine needle aspiration and 16% by core biopsy. The proportions diagnosed using cytological or histological analysis of the fine needle aspirate or core biopsy sample have increased by 13% and 2%, respectively, compared with 1996/97.
- ❖ The proportion of women requiring surgical biopsy for diagnostic purposes has fallen from 36% in 1996/97 to 20% this reporting year. Only 5% of all women assessed, or 0.3% of all women screened, required a diagnostic open biopsy to confirm diagnosis. This rate was well within the BreastScreen Australia accreditation minimum standard requiring <2% of screens to be referred for open diagnostic biopsy.

CANCER DETECTION RATE

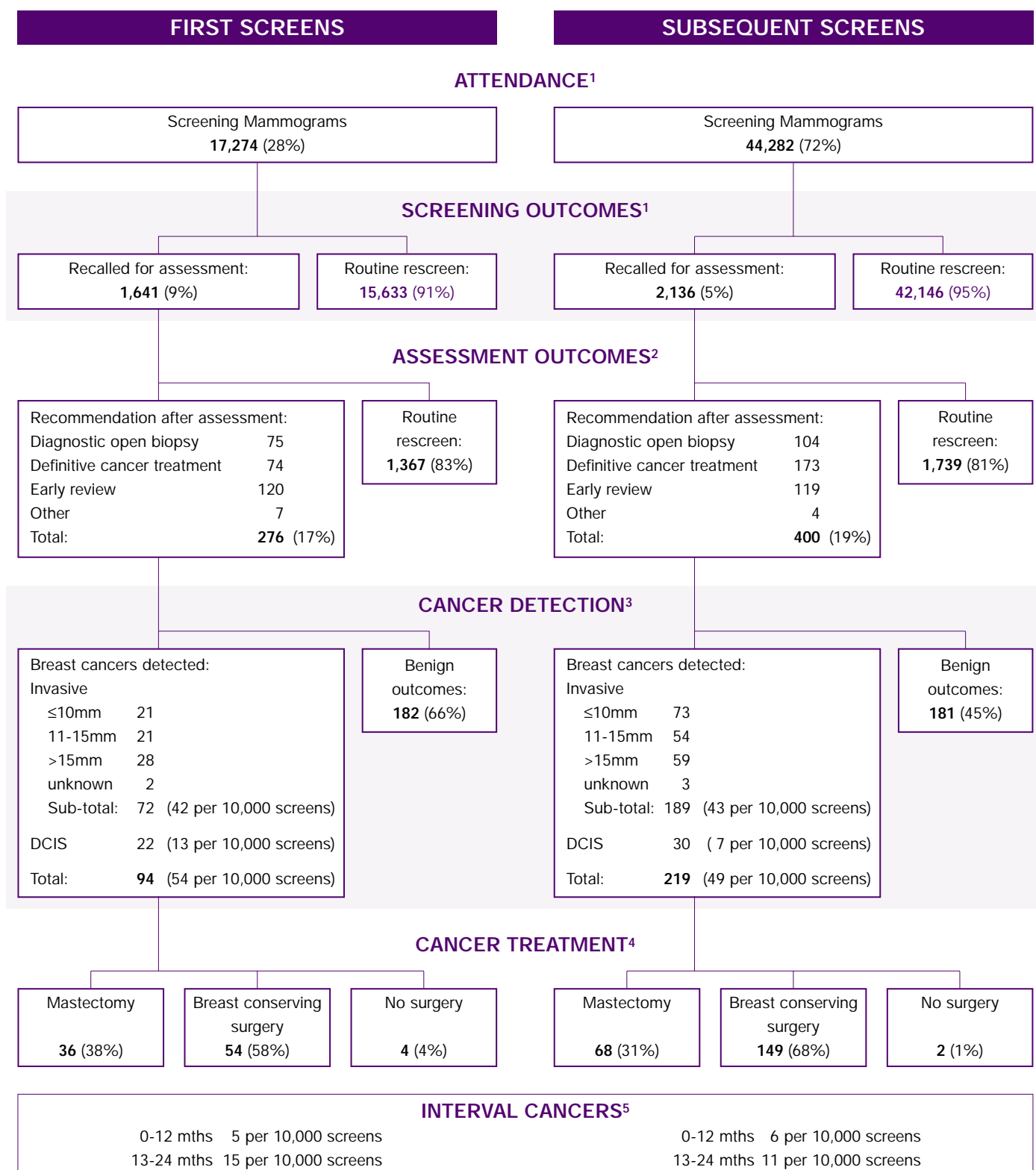
- ❖ A total of 313 breast cancers were detected, which represents 0.5% of all women screened. The overall cancer detection rate was 51 per 10,000 women screened. Of these, 17% were *in situ* cancers and 83% were invasive, with 36% of the latter being less than or equal to 10mm diameter on pathology.
- ❖ Interval cancer rates for the period were 5.1 and 6.0 per 10,000 for first and subsequent screens, respectively, for the 12 months following a normal mammogram. The combined rate for all screens was 5.6 per 10,000 screens. This rate met the national accreditation minimum standard that no more than 6 invasive cancers per 10,000 women screened will be detected in the first 12 months following screening.
- ❖ The cancer detection rates for first and subsequent screens, and the small cancer detection rate, easily met the minimum performance standards set by BreastScreen Australia.

TREATMENT

- ❖ Diagnostic open biopsy and/or therapeutic localised excision were used to remove 55% of malignancies detected and a further 10% required some further excisional surgery. One third of all women with breast cancer chose to have a mastectomy, and it was more frequently chosen by those living in country areas compared with those women resident in the Perth metropolitan area.
- ❖ Approximately 75% of women with a malignancy underwent some type of adjuvant therapy. Radiotherapy alone, or combined with Tamoxifen, was the preferred follow-up treatment regardless of the nature of the cancer.

Summary of the outcomes of breast cancer screening in 1997/98

The key outcomes from screening and assessment for 1997/98 are summarised in the table below. Assessment outcomes are included for all women assessed, whether the assessment was done within the program or privately, and include details from five women who underwent assessment despite a normal mammogram. The 'other' category includes unknown or incomplete assessment information.



SOURCE: ¹ Table 12; ² Table 16; ³ Table 25; ⁴ Table 28; ⁵ Table 32.

BreastScreen WA

BreastScreen WA was established in 1989 as part of BreastScreen Australia (formerly the National Program for the Early Detection of Breast Cancer). The aim of the program is to reduce mortality and morbidity attributable to breast cancer by providing free mammography screening for asymptomatic women and follow-up assessment to the point of diagnosis for any suspicious lesions identified at screening. Although women aged over 40 years are eligible for screening, the program actively recruits women aged 50 to 69 years, as it is this age group which has been shown to obtain the most benefit from mammography screening programs.

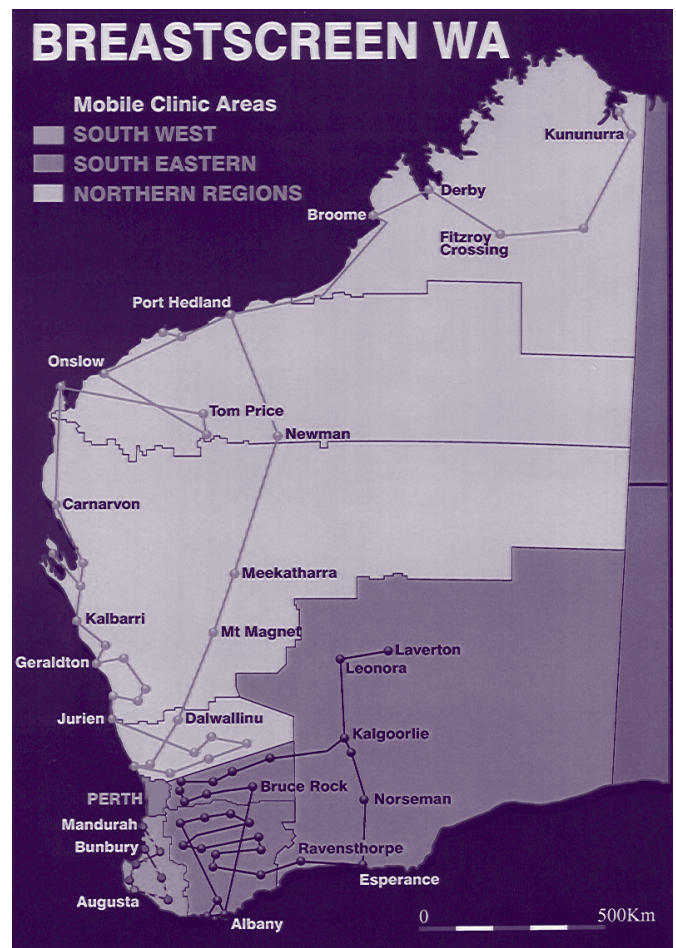
BreastScreen WA is part of Public Health Services, Health Department of WA. BreastScreen WA is responsible for managing the statewide screening service through the State Coordination Unit (SCU) in Perth.

Recruitment strategies are developed by the SCU in consultation with consumer and health professional reference groups. The SCU has a central booking system for screening appointments, which are coordinated with recruitment initiatives, clinic capacities and schedules. The SCU is also responsible for film reading, record and data handling and for mailing all invitation, reminder and result letters.

BreastScreen WA aims to make the screening service available and accessible to all eligible women in the state. There are six fixed-site clinics in the metropolitan area and one mobile unit for the outer metropolitan area. Three other mobile units service the south west, south eastern and northern regions, covering the whole of the state and over 100 towns, within a two-year cycle. *See map at right.*

The program also provides assessment of screen-detected abnormalities up to definitive diagnosis, including diagnostic open biopsy. In 1997/98, women recalled for further mammograms had their diagnostic views at the screening unit they attended for their initial views. Women who were referred on for other assessment procedures could attend one of four multi-disciplinary centres in Perth. Medical Officers at the SCU managed the personalised recall procedures required for informing women and their nominated general practitioner of the need for further assessment and made the appointments at the program assessment centres.

Some women chose to be assessed privately, outside the program, under the direction of their general practitioner. The assessment outcomes of these women were followed up by BreastScreen WA to ensure that a satisfactory outcome was obtained. Details of these non-funded procedures were entered into the mammography screening registry for monitoring purposes. In 1997/98 approximately 14% of all women recalled for assessment had no assessment procedures, other than further diagnostic mammograms, within the program. All their assessment details and outcomes are nevertheless included in this report so that the whole-of-state breast cancer screening and assessment outcomes may be determined. Thus, unlike in previous BreastScreen WA Annual Statistical Reports, the outcomes and recommendations of all assessment procedures, including diagnostic further mammographic views, have been included. As a result, comparisons between previous years have not been made with regard to this data.



Characteristics of women screened

Details of a range of characteristics of the women attending for screening are routinely collected at each screen. These include a personal and/or family history of breast cancer, the use of hormone replacement therapy and any previous breast procedures such as mastoplasty, or surgery that may affect the accurate assessment of the mammogram. This is the first time these characteristics have been reported in the BreastScreen WA Annual Statistical Report.

TYPE OF ATTENDANCE

Classification of attendance type is based on attendance within BreastScreen WA. First screens refer to the first screen with BreastScreen WA; some of these women may have had a previous screen outside the WA program.

Table 1 shows the type of attendance, by age group, for women who were screened between 1st July 1997 and 30th June 1998. Of the 61,556 screens, 28% (17,274) were for first time attendees, whilst the remaining 72% (44,282) were in women attending for subsequent screens. The target age group (50-69 years) made up 72% of the total screens for the year.

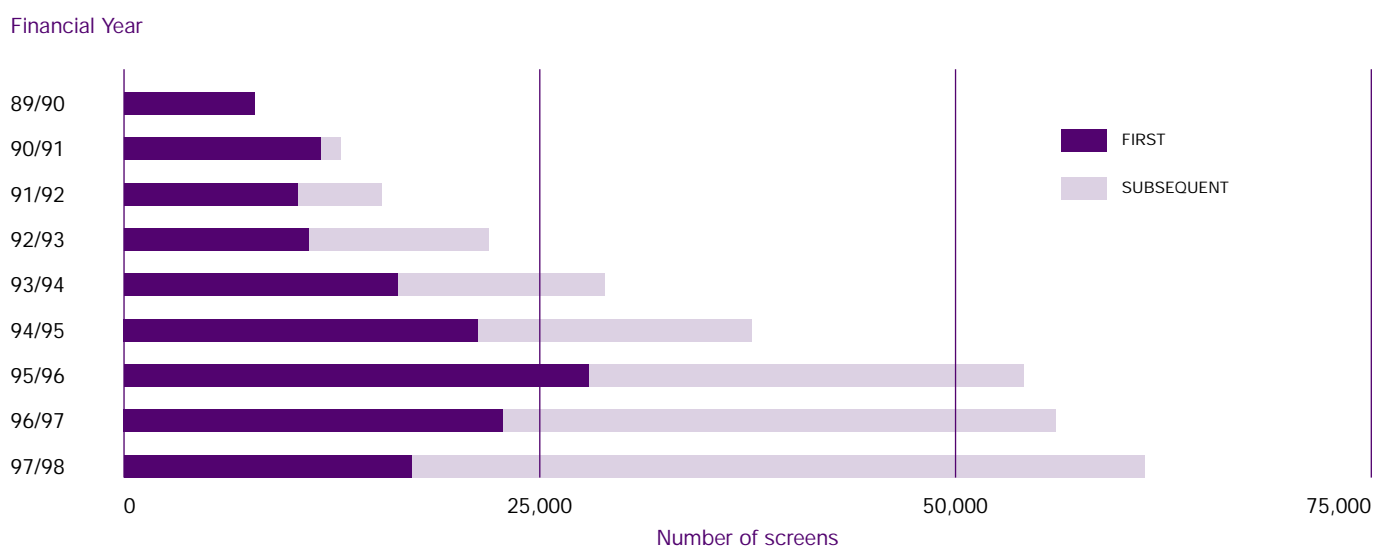
TABLE 1. NUMBER OF SCREENS BY ROUND BY AGE, JULY 1997 TO JUNE 1998

	Age Group						50-69	Total
	<40	40-49	50-59	60-69	70-79	80+		
TYPE OF ATTENDANCE								
First Screens	45	6,688	6,377	2,806	1,195	163	9,183	17,274
% of first screens	0.3%	38.7%	36.9%	16.2%	6.9%	0.9%	53.2%	100%
Subsequent screens	18	6,445	19,832	15,498	2,366	123	35,330	44,282
% of subsequent screens	0.0%	14.6%	44.8%	35.0%	5.3%	0.3%	79.8%	100%
TOTAL								
% of all screens	63	13,133	26,209	18,304	3,561	286	44,513	61,556
	0.1%	21.3%	42.6%	29.7%	5.8%	0.5%	72.3%	100%

Source: BreastScreen WA, Mammography Screening Registry

To June 1998, over 148,200 Western Australian women had participated at least once in the program since its inception. The proportion of women attending for rescreening continued to increase annually (Figure 1) and is an indication of high acceptance of the program amongst women in this state.

FIGURE 1. NUMBER OF SCREENS BY ROUND BY TWO-YEAR PERIOD BETWEEN 1989/1990 AND 1997/1998



Source: BreastScreen WA, Mammography Screening Registry

Characteristics of women screened

AREA OF RESIDENCE

Western Australia is geographically the largest state of Australia. It is estimated that 76% of all women aged over 40 years, and 75% of the program's target age group, live within the metropolitan area.^{1, 2} Table 2 and Figure 2 below show the areas of residence of the women screened in 1997/98.

Seventy two percent of all women screened lived in the metropolitan area, including the outer metropolitan area serviced by a mobile screening clinic. Similarly, 73% of screened women in the target age group resided in the metropolitan area compared with 27% in the country areas. These percentages were comparable to the proportion of all women aged over 40 years living in the metropolitan area.²

Women screened under the age of 40 years predominantly resided in rural areas. It is BreastScreen WA policy that, in remote areas, women aged 35-39 years with a strong family or personal history of breast cancer can be accepted for screening providing they have a doctor's referral. In exceptional circumstances, women aged less than 40 years living in an area not classified as remote may be screened. Such exceptional circumstances include disability or being a carer of a disabled person, provided these women also fulfil the other criteria of family or personal history and have a doctor's referral.

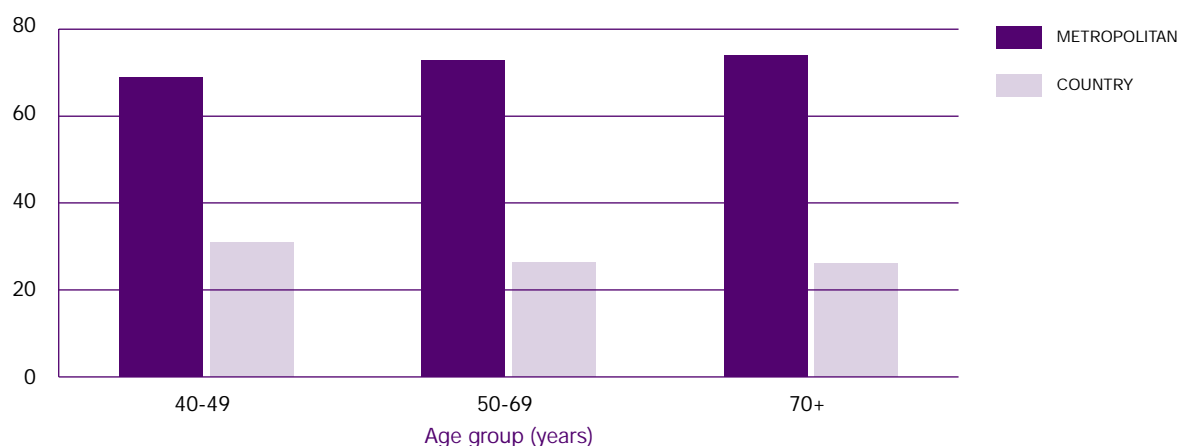
TABLE 2. NUMBER OF WOMEN SCREENED BY PLACE OF RESIDENCE, JULY 1997 TO JUNE 1998

Place of residence	Age group									
	<40		40-49		50-69		70+		Total	
	No. women	%	No. women	%	No. women	%	No. women	%	No. women	%
Metropolitan	7	11.5%	9,036	68.9%	32,486	73.0%	2,826	73.5%	44,355	72.1%
Country	54	88.5%	4,088	31.1%	12,019	27.0%	1,019	26.5%	17,180	27.9%
TOTAL	61	100%	13,124	100%	44,505	100%	3,845	100%	61,535	100%

Source: BreastScreen WA, Mammography Screening Registry

FIGURE 2. PERCENTAGE OF WOMEN SCREENED BY PLACE OF RESIDENCE, JULY 1997 TO JUNE 1998

Percentage of women screened



Source: BreastScreen WA, Mammography Screening Registry

¹ Metropolitan and rural/remote (i.e. country) classifications are according to the "Rural, Remote and Metropolitan Areas Classification" of the Commonwealth Departments of Health and Family Services and Primary Industries and Energy, January 1994 and based on concordance with statistical local areas.

² Australian Bureau of Statistics, Estimated Residential Population, June 1997 (based on the 1996 Census).

INDIGENOUS WOMEN

In the 1996 Census, 1% (5090) of all Western Australian women over the age of 40 years identified themselves as being of Aboriginal or Torres Strait Islander (ATSI) descent, with 74% of these indigenous women living in rural and remote areas.³

In 1997/98 BreastScreen WA screened 723 indigenous women, approximately 1% of all screens for the year (Table 3) and similar to the percentage of indigenous women aged 40 years and over in the state's population. Sixty four percent of these screens were in women in the target age group.

TABLE 3. NUMBER OF ABORIGINAL OR TORRES STRAIT ISLANDER (ATSI) WOMEN SCREENED BY AGE GROUP, JULY 1997 TO JUNE 1998

	Age Group				Total
	<40	40-49	50-69	70+	
ABORIGINAL OR TORRES STRAIT ISLANDER (ATSI) WOMEN					
Number of women screened	2	210	463	48	723
% of women screened	0.3%	29.0%	64.0%	6.6%	100%
ALL WOMEN					
Number of women screened	63	13,133	44,513	3,847	61,556
% of women screened	0.1%	21.3%	72.3%	6.2%	100%

Source: BreastScreen WA, Mammography Screening Registry

WOMEN FROM CULTURALLY AND LINGUISTICALLY DIVERSE BACKGROUNDS

An estimated 12% of the women in Western Australia are from culturally and linguistically diverse (CALD) backgrounds, speaking a language other than English at home. Eighty eight percent of these women live in the metropolitan area.³

Table 4 shows that in the 12 months to June 1998, the program screened 6006 CALD women, or nearly 10% of all women screened. Seventy seven percent of these women were in the 50-69 year age group. Amongst those attending for a breast screen in 1997/98, the most common languages other than English spoken at home were Italian, Chinese languages and Dutch.

For those women not born in Australia, the majority came from the United Kingdom and Wales, followed by Italy, the Netherlands, Germany and India. Over 90 different nationalities were represented in the numbers screened.

TABLE 4. NUMBER OF WOMEN SCREENED BY LANGUAGE SPOKEN AT HOME BY AGE GROUP, JULY 1997 TO JUNE 1998

	Age Group				Total
	<40	40-49	50-69	70+	
WOMEN SPEAKING LANGUAGE OTHER THAN ENGLISH AT HOME					
Number of women screened	2	1,300	4,624	80	6,006
% of women screened	0.0%	21.6%	77.0%	1.3%	100%
ALL WOMEN					
Number of women screened	63	13,133	44,513	3,847	61,556
% of women screened	0.1%	21.3%	72.3%	6.2%	100%

Source: BreastScreen WA, Mammography Screening Registry

³ Australian Bureau of Statistics, Census of Population and Housing 1996.

Characteristics of women screened

PERSONAL HISTORY OF BREAST CANCER

Included in this category are women who stated at the time of screening that they have had breast cancer detected outside the BreastScreen WA program and women who had a previous malignancy diagnosed within the program. These women are invited for annual rescreening. They receive an annual reminder letter even though the program recognizes that it may be difficult for women living outside the metropolitan area to attend a BreastScreen WA screening clinic.

In 1997/98, 1% (751) of all women screened reported a personal history of breast cancer (Table 5).

TABLE 5. NUMBER OF SCREENS WHERE WOMEN REPORTED PERSONAL HISTORY OF BREAST CANCER BY AGE GROUP, JULY 1997 TO JUNE 1998

	Age group														Total	
	<40		40-49		50-59		60-69		70-79		80+		50-69		Total	
	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%
PERSONAL HISTORY REPORTED	1	1.6%	45	0.3%	255	1.0%	318	1.7%	116	3.3%	16	5.6%	573	1.3%	751	1.2%
NO PERSONAL HISTORY REPORTED	62	98.4%	13,088	99.7%	25,954	99.0%	17,986	98.3%	3,445	96.7%	270	94.4%	43,940	98.7%	60,805	98.8%
ALL WOMEN SCREENED	63	100%	13,133	100%	26,209	100%	18,304	100%	3,561	100%	286	100%	44,513	100%	61,556	100%

Source: BreastScreen WA, Mammography Screening Registry

FAMILY HISTORY OF BREAST CANCER

In 1997/98, BreastScreen WA invited all women with a family history of breast cancer in any first degree relative for annual rescreening. The first degree relative of the women may be a mother, daughter, sister, brother, son or father. In 1997/98, 16% of women reported some family history of breast cancer.

It is the policy of BreastScreen WA that women aged 35-39 years living in remote areas and with a strong family history of breast cancer be accepted for screening provided they have a doctor's referral. This is reflected in the table below where a high percentage of women aged under 40 years reported family history of breast cancer.

TABLE 6. NUMBER OF SCREENS WHERE WOMEN REPORTED FAMILY HISTORY OF BREAST CANCER BY AGE GROUP, JULY 1997 TO JUNE 1998

	Age group														Total	
	<40		40-49		50-59		60-69		70-79		80+		50-69		Total	
	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%
FAMILY HISTORY REPORTED	49	77.8%	2,042	15.5%	3,790	14.5%	3,156	17.2%	648	18.2%	54	18.9%	6,946	15.6%	9,739	15.8%
NO FAMILY HISTORY REPORTED	14	22.2%	11,091	84.5%	22,419	85.5%	15,148	82.8%	2,913	81.8%	232	81.1%	37,567	84.4%	51,817	84.2%
ALL WOMEN SCREENED	63	100%	13,133	100%	26,209	100%	18,304	100%	3,561	100%	286	100%	44,513	100%	61,556	100%

Source: BreastScreen WA, Mammography Screening Registry

WOMEN REPORTING SYMPTOMS AT SCREEN

The number of episodes at which women reported symptoms at the time of screening is shown below in Table 7. The category 'nipple discharge' includes blood stained, clear or non-specific discharge. The 'pain/other' category includes new, prolonged and/or severe pain and any other significant symptoms reported.

Because the screening program is aimed at asymptomatic women, those who indicate that they have a symptom at the time of booking are encouraged to visit their general practitioner for a clinical examination, as are those who present at screening with a symptom. Details of the symptom are included in the result letter sent to the woman's general practitioner. Symptomatic women with an abnormal mammogram have a clinical examination at the time of assessment.

Ninety nine percent of all screens were in asymptomatic women. Breast lumps or nipple discharge were reported in 0.4% of screened women aged 50-69 years, or in 0.5% of all screens. Most of these symptoms were reported in the 40-49 year age group. The high percentage in this latter age group is likely due to self-selection of such women into the screening program. These figures are based on self-reporting data and may be an over-estimate of the number of such women in the population as they are not necessarily clinically confirmed symptoms. For all ages combined, the percentage of women reporting pain and/or other significant symptoms was also 0.5%.

TABLE 7. NUMBER OF SCREENS WHERE WOMEN REPORTED SYMPTOMS BY AGE GROUP, JULY 1997 TO JUNE 1998

	Age group														Total	
	<40		40-49		50-59		60-69		70-79		80+		50-69			
	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%		
SYMPTOMS REPORTED																
Breast lump	0		93		86		26		12		2		112		219	
Nipple discharge	0		40		34		23		5		0		57		102	
Breast lump + nipple discharge	0		3		2		0		0		0		2		5	
Sub-total	0	0.0%	136	1.0%	122	0.5%	49	0.3%	17	0.5%	2	0.7%	171	0.4%	326	0.5%
Pain / other	2	3.2%	91	0.7%	119	0.5%	81	0.4%	18	0.5%	2	0.7%	200	0.4%	313	0.5%
TOTAL SYMPTOMS	2		227		241		130		35		4		371		639	
NO SYMPTOMS REPORTED																
	61	96.8%	12,906	98.3%	25,968	99.1%	18,174	99.3%	3,526	99.0%	282	98.6%	44,142	99.2%	60,917	99.0%
ALL WOMEN SCREENED	63	100%	13,133	100%	26,209	100%	18,304	100%	3,561	100%	286	100%	44,513	100%	61,556	100%

Source: BreastScreen WA, Mammography Screening Registry

Characteristics of women screened

HORMONE REPLACEMENT THERAPY STATUS

Women are asked at the time of screening whether they have had hormone replacement therapy (HRT) within the previous 3 months, and for how many months they have been using HRT. The use of HRT is known to be associated with increased breast tissue density and may make breast cancer detection more difficult.

HRT was in use at the time of screening in 36% women in the target age group (Table 8) and in 31% of all women. Women aged 50-59 years reported the highest use (40%) in any age group.

TABLE 8. NUMBER OF SCREENS WHERE WOMEN REPORTED USING HRT BY AGE GROUP, JULY 1997 TO JUNE 1998

	Age group														50-69		Total	
	<40		40-49		50-59		60-69		70-79		80+		50-69		Total			
	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%		
HRT REPORTED	4	6.3%	2,385	18.2%	10,360	39.5%	5,463	29.8%	638	17.9%	27	9.4%	15,823	35.5%	18,877	30.7%		
NO HRT REPORTED	59	93.7%	10,748	81.8%	15,849	60.5%	12,841	70.2%	2,923	82.1%	259	90.6%	28,690	64.5%	42,679	69.3%		
ALL WOMEN SCREENED	63	100%	13,133	100%	26,209	100%	18,304	100%	3,561	100%	286	100%	44,513	100%	61,556	100%		

Source: BreastScreen WA, Mammography Screening Registry

WOMEN WITH BREAST IMPLANTS

Table 9 shows that there were 470 screens (0.8% of all screens) in women who had breast implants. Prior to their screening, these women are sent a pamphlet that contains information about mammography and breast implants. In addition, the result letter to the women and to their nominated general practitioner contains advice about regular self- and clinical breast examination.

TABLE 9. NUMBER OF SCREENS WHERE WOMEN HAD BREAST IMPLANTS BY AGE GROUP, JULY 1997 TO JUNE 1998

	Age group														50-69		Total	
	<40		40-49		50-59		60-69		70-79		80+		50-69		Total			
	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%		
BREAST IMPLANTS	0	0.0%	140	1.1%	259	1.0%	68	0.4%	3	0.1%	0	0.0%	327	0.7%	470	0.8%		
NO BREAST IMPLANTS	63	100%	12,993	98.9%	25,950	99.0%	18,236	99.6%	3,558	99.9%	286	100%	44,186	99.3%	61,086	99.2%		
ALL WOMEN SCREENED	63	100%	13,133	100%	26,209	100%	18,304	100%	3,561	100%	286	100%	44,513	100%	61,556	100%		

Source: BreastScreen WA, Mammography Screening Registry

Participation

BreastScreen Australia's National Accreditation Requirements state that, for services operating for at least five years, participation rates of women in the 50-69 year age group should reach a minimum of 60%, with the overall aim of the program being to screen 70% of this target group. The participation rate is calculated as the proportion of eligible women in the target age group screened at least once over a 27-month period. However, since 1999, national reporting requirements have been amended to the number of screens over a 24-month period, so this new reporting standard has been used in the current report. Previous BreastScreen WA Annual Statistical Reports presented rates based on a 27-month period, so those rates have been recalculated for the 24-month period for the purposes of comparison in this report.

The statewide participation rate of the target age group was 53% for the 24 months to June 1998 (Table 10). With regard to this reporting period, not all clinics had yet been operating for a full 5 years, the two most recent beginning service in the Perth City centre and outer metropolitan areas in 1995. Fifty percent of women in the target age group resident in the metropolitan area, and 62% of those residing in country areas, participated in the program at least once in the 24 months period.

TABLE 10. PARTICIPATION RATES BY PLACE OF RESIDENCE BY AGE GROUP, JULY 1996 TO JUNE 1998

Place of residence	Age Group			Total
	40-49	50-69	70+	
METROPOLITAN				
Number of women screened	17,206	57,347	4,536	79,089
Estimated Resident Population*	100,874	114,127	58,375	273,376
<i>% of target population screened</i>	17.0%	50.2%	7.7%	28.9%
COUNTRY				
Number of women screened	7,695	23,066	1,927	32,688
Estimated Resident Population*	31,658	37,284	16,059	85,001
<i>% of target population screened</i>	24.3%	61.9%	12.0%	38.4%
TOTAL				
Number of women screened	24,901	80,413	6,463	111,777
Estimated Resident Population*	132,532	151,411	74,434	358,377
<i>% of target population screened</i>	18.8%	53.1%	8.7%	31.1%

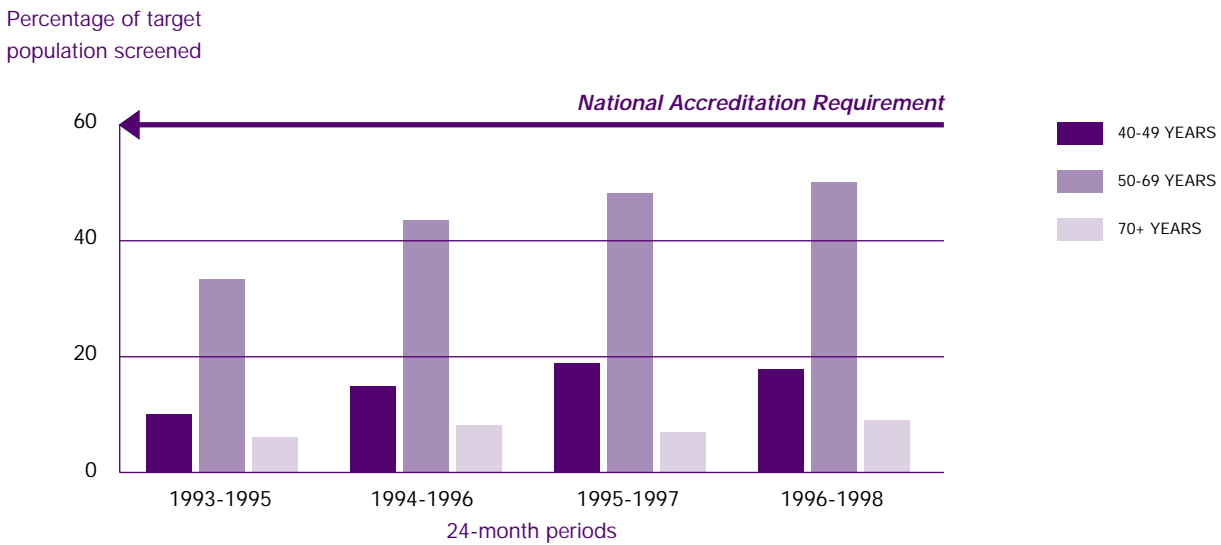
* ABS 1997 Estimated female resident population

Source: BreastScreen WA, Mammography Screening Registry

Participation

Rates for the whole of the state have steadily increased since the program's inception. Figures for the target age group (59-69 years) for four consecutive 24-month periods, through to June 1998, are illustrated below (Figure 3), with data for the two other age groups (40-49 years and 70+ years) also shown for comparison.

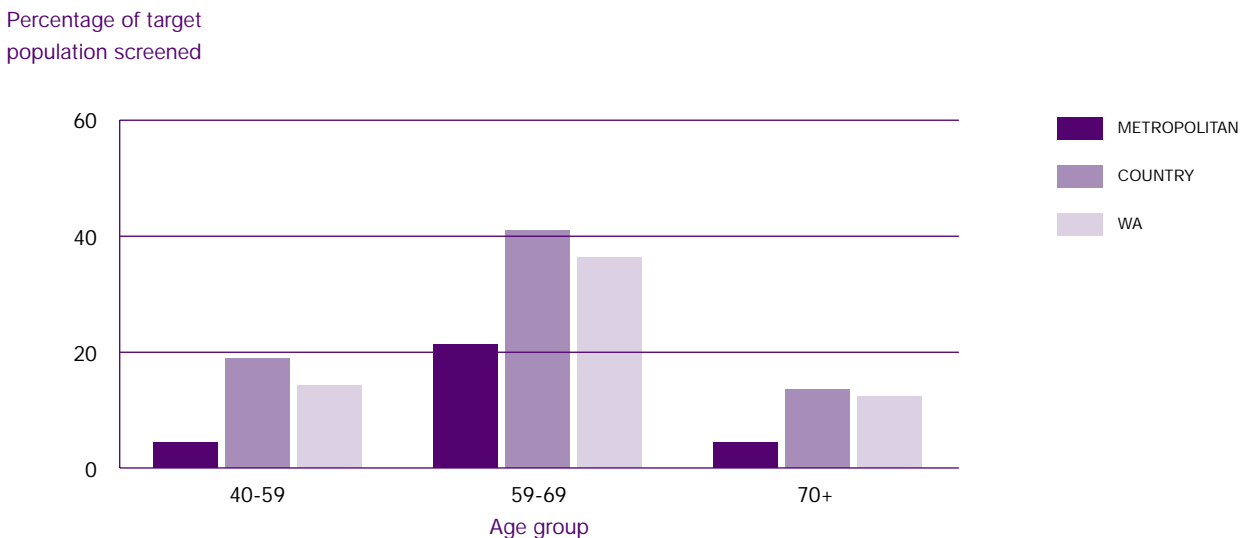
FIGURE 3. PARTICIPATION RATES BY AGE GROUP FROM 1993/95 TO 1996/98



Source: BreastScreen WA, Mammography Screening Registry

The metropolitan and country participation rates for indigenous women aged 50-69 years for the 24 months to June 1998 were 21% and 41%, respectively (Figure 4). The National Accreditation Requirements state that the participation rate for 50-69 year-old urban indigenous women should be at least 50% of the rate for the general urban population. For the period July 1996 to June 1998 the rate for those indigenous women resident in the metropolitan area represented 42% of the rate for the general metropolitan population of women in this age group.

FIGURE 4. PARTICIPATION RATES OF INDIGENOUS WOMEN BY PLACE OF RESIDENCE BY AGE GROUP, JULY 1996 TO JUNE 1998

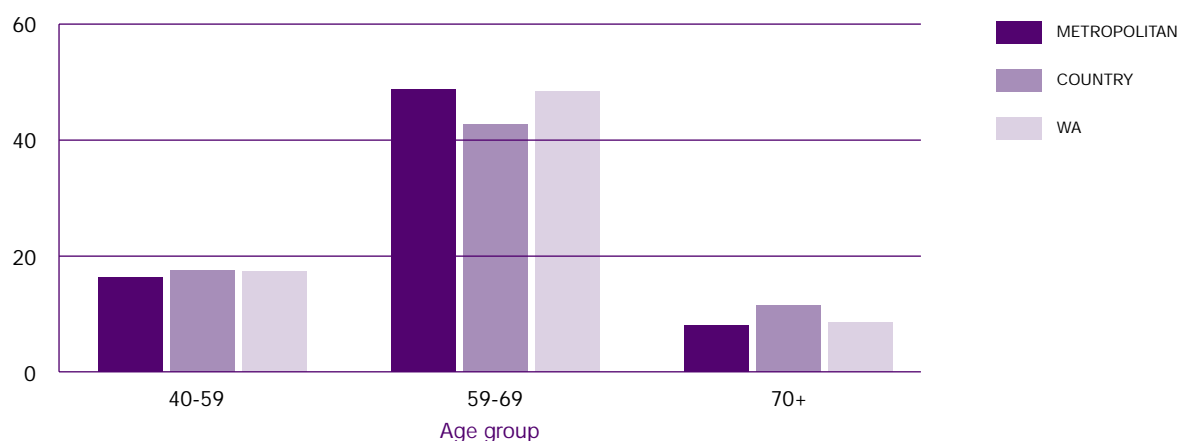


Source: BreastScreen WA, Mammography Screening Registry

Approximately 48% (7,739) of CALD women aged 50-69 years living in the metropolitan area attended the program at least once in the 24 months to June 1998 (Figure 5). A slightly lower percentage (42%) of these women living in rural or remote areas attended for a screen over the same period. As for urban indigenous women, the National Accreditation Requirements state that the participation rate for 50-69 year-old urban CALD women be at least 50% of the rate for the general urban population. The metropolitan participation rate for this group of women was 96% of the rate for the general urban population.

FIGURE 5. PARTICIPATION RATES OF WOMEN SPEAKING A LANGUAGE OTHER THAN ENGLISH AT HOME BY PLACE OF RESIDENCE BY AGE GROUP, JULY 1996 TO JUNE 1998

Percentage of target population screened



Source: BreastScreen WA, Mammography Screening Registry

Rescreen Rates

The rescreen rate is expressed as the percentage of women attending in 1995/96 who were recommended for two-yearly screening and returned for a rescreen within 21 to 27 months. BreastScreen Australia's National Accreditation Requirements minimum standard requires that more than 75% of women aged 50-69 years be rescreened within the recommended interval.

Table 11 shows that 73% of women in the target age group returned to the program for routine rescreens. The age at the time of the index year screen (that is, in 1995/96) is shown. In the target age group, relatively more women (79%) returned if they had a subsequent screen in 1995/96, compared to 67% of first attendees in that year.

TABLE 11. NUMBER OF WOMEN SCREENED BETWEEN JULY 1995 AND JUNE 1996 WHO WERE RECOMMENDED FOR A TWO-YEAR ROUTINE SCREEN AND WHO RETURNED FOR RESCREENING WITHIN 27 MONTHS

Type of screening	Age group			Total
	40-49	50-69	70+	
FIRST SCREENS				
Number of women screened	8,657	14,205	1,463	24,325
Number of women rescreened within 27mths	5,634	9,487	250	15,371
<i>% of women rescreened</i>	<i>65.1%</i>	<i>66.8%</i>	<i>17.1%</i>	<i>63.2%</i>
SUBSEQUENT SCREENS				
Number of women screened	2,864	17,554	756	21,174
Number of women rescreened within 27mths	2,253	13,841	316	16,410
<i>% of women rescreened</i>	<i>78.7%</i>	<i>78.8%</i>	<i>41.8%</i>	<i>77.5%</i>
TOTAL SCREENS				
Number of women screened	11,521	31,759	2,219	45,499
Number of women rescreened within 27mths	7,887	23,328	566	31,781
<i>% of women rescreened</i>	<i>68.5%</i>	<i>73.5%</i>	<i>25.5%</i>	<i>69.8%</i>

Source: BreastScreen WA, Mammography Screening Registry

Outcomes of Screening

Table 12 shows the outcomes of screening by round, for each age group. Of the 61,556 screens, 94% showed no mammographic abnormality and the women were returned to routine rescreen. The remaining 6% were referred on for diagnostic further views or other assessment procedures such as ultrasound, fine needle aspiration or core biopsy. The 40-49 year age group had the highest recall rate (8%) whilst those in the target age group had a recall rate of 6%.

The National Accreditation Requirements state that in the process of achieving a high cancer detection rate, the service must also minimise negative effects such as unnecessary anxiety to the woman and unnecessary biopsy. It is therefore not appropriate for Services to recall a large proportion of women to assessment. Accordingly, the performance standard for recall rates is set at no more than 10% of first screens and 5% of subsequent screens.

In 1997/98, BreastScreen WA met this requirement with just under 10% (first) and 5% (subsequent) of screens being recalled for assessment.

TABLE 12. OUTCOMES OF SCREENING BY ROUND BY AGE GROUP, JULY 1997 TO JUNE 1998

Outcome of screening	Age group					50-69		All ages	
	<40	40-49	50-59	60-69	70+	No. screens	%	No. screens	%
FIRST SCREENS									
Routine rescreening	43	5,987	5,789	2,584	1,230	8,373	91.2%	15,633	90.5%
Referred for assessment	2	701	588	222	128	810	8.8%	1,641	9.5%
Sub-total	45	6,688	6,377	2,806	1,358	9,183	100%	17,274	100%
SUBSEQUENT SCREENS									
Routine rescreening	18	6,060	18,852	14,850	2,366	33,702	95.4%	42,146	95.2%
Referred for assessment	0	385	980	648	123	1,628	4.6%	2,136	4.8%
Sub-total	18	6,445	19,832	15,498	2,489	35,330	100%	44,282	100%
ALL SCREENS									
Routine rescreening	61	12,047	24,641	17,434	3,596	42,075	94.5%	57,779	93.9%
Referred for assessment	2	1,086	1,568	870	251	2,438	5.5%	3,777	6.1%
TOTAL	63	13,133	26,209	18,304	3,847	44,513	100%	61,556	100%

Source: BreastScreen WA, Mammography Screening Registry

Outcomes of Assessment

ASSESSMENT PROCEDURES

Table 13 below shows the number of assessment procedures, by age group, performed on women who attended assessment either within the program or privately. BreastScreen WA followed up the assessment outcomes of all 3,777 women recalled for assessment following a suspicious mammogram, including those assessed privately, to ensure a satisfactory outcome was obtained. Included in the following pages are a number of tables comparing outcomes for funded versus non-funded assessment, where relevant.

An individual woman may be counted more than once if she had more than one procedure performed. Details from five women who underwent assessment despite a normal mammogram are also included for completeness.⁴

In 1997/98 diagnostic further views were done at the screening clinics whilst other procedures were undertaken at a program assessment centre or privately, in consultation with the woman's general practitioner. A small number of women declined to have further views but nevertheless had appropriate assessment work-up outside of the program. The number counted under "other mammography" includes these women, as the full details of their diagnostic mammograms such as the number and type of views could not be determined. Other mammography also includes other x-rays taken after an excisional or needle biopsy, or x-rays taken at an early review visit.

The procedure most commonly undertaken was diagnostic further mammographic views, performed on 3006 (80%) of all women assessed and making up 36% of all assessment procedures, followed by clinical examination (21%) and ultrasound (17%). Despite the fact that most women only required diagnostic further views to reach a normal outcome, each woman underwent on average 2.2 assessment investigations. Most women who required assessment other than further views had at least two other procedures, such as a clinical examination and ultrasound.

TABLE 13. NUMBER OF ASSESSMENT PROCEDURES PERFORMED, JULY 1997 TO JUNE 1998

Assessment investigations	First screens		Subsequent screens		All screens		
	No. procedures	%	No. procedures	%	No. procedures	%	
Diagnostic Further Views	1,340	37.5%	1,666	35.0%	3,006	36.1%	
Clinical examination	743	20.8%	1,038	21.8%	1,781	21.4%	
Ultrasound	594	16.6%	846	17.8%	1,440	17.3%	
Fine needle aspiration	457	12.8%	631	13.3%	1,088	13.1%	
Core biopsy	164	4.6%	226	4.8%	390	4.7%	
Other mammography	196	5.5%	238	5.0%	434	5.2%	
Diagnostic open biopsy	80	2.2%	111	2.3%	191	2.3%	
TOTAL PROCEDURES	3,574	100%	4,756	100%	8,330	100%	
TOTAL WOMEN ATTENDING FOR ASSESSMENT						3,782	
AVERAGE NUMBER OF INVESTIGATIONS PER WOMAN						2.2	

Source: BreastScreen WA, Mammography Screening Registry

⁴ This and subsequent tables include details from five women who underwent some procedures although they were not referred for assessment. Three women were referred to assessment by their general practitioner because of symptoms at screening, another was recalled for technical further views but chose to attend for an ultrasound at an assessment centre and the last had some procedures despite a normal screen

Table 14 compares the number of procedures where the assessment was within the BreastScreen WA program with the number of investigations outside the program. Many women had a mixture of in-program and non-funded assessment visits. For example, some women had a clinical examination performed by a general practitioner, then attended a program assessment centre for further workup. The 'Procedures within program' category counts women who had at least one of their assessment visits funded by the program. Conversely, the 'Procedures outside program' category counts women who had none of their assessment visits funded by the program. The program funded diagnostic open biopsies if the procedure was carried out as part of a funded assessment.

Table 14 excludes counts of diagnostic further views, which are always program-funded. The number of procedures classed as 'other mammography' has also been excluded because, being made up of a small number of "further views" performed outside the program plus other mammography, its interpretation in the overall number of procedures performed at assessment becomes somewhat complex.

In 1997/98, 43% (2103) of assessment procedures, excluding diagnostic further views/further mammography, were performed within the program. Across all age groups, clinical examination was the most common procedure whether the assessment was funded or not. Core biopsies were more commonly used during program funded assessments whilst diagnostic open biopsies were more frequent in non-funded assessments.

TABLE 14. NUMBER OF ASSESSMENT PROCEDURES BY FUNDING, JULY 1997 TO JUNE 1998

Procedure	Procedures within Program		Procedures outside Program		All procedures	
	50-69 years	All ages	50-69 years	All ages	50-69 years	All ages
Clinical examination	461	691	705	1,090	1,166	1,781
<i>% of clinical examinations</i>	39.5%	38.8%	60.5%	61.2%	100%	100%
Ultrasound	334	518	585	922	919	1,440
<i>% of ultrasounds</i>	36.3%	36.0%	63.7%	64.0%	100%	100%
Fine needle aspiration	364	544	359	544	723	1,088
<i>% of fine needle aspirations</i>	50.3%	50.0%	49.7%	50.0%	100%	100%
Core biopsy	195	286	76	104	271	390
<i>% of core biopsies</i>	72.0%	73.3%	28.0%	26.7%	100%	100%
Diagnostic open biopsy	44	62	84	129	128	191
<i>% of diagnostic open biopsies</i>	34.4%	32.5%	65.6%	67.5%	100%	100%
TOTAL PROCEDURES	1,400	2,103	1,812	2,792	3,212	4,895
<i>% all procedures</i>	43.6%	43.0%	56.4%	57.0%	100%	100%

Source: BreastScreen WA, Mammography Screening Registry

Outcomes of Assessment

THE DEFINITIVE DIAGNOSTIC PROCEDURE

Table 15 shows the combinations of the various assessment procedures required to reach a diagnosis and the number of women who underwent them. Other mammography (OM), as shown in Table 13, has not been included here as a separate category because of the complexity of its interpretation in the overall number of procedures performed in any one assessment. However, it is noted where it may have been used in combination with the six diagnostic procedures listed in the table below.

Of the 3,782 women who attended for assessment, 2142 (57%) required only diagnostic further views to reach a definitive decision, and for most women these took place at the screening clinic where she had her initial mammographic views. A further 558 (15%) women required only non-invasive procedures to obtain a diagnosis; these women may have had any combination of further views, clinical examination and/or ultrasound.

Of the women undergoing needle biopsy, 596 had a fine needle aspiration whilst about half that number had a core biopsy either with or without FNA. Only 191 women, or 5% of all women assessed, required a diagnostic open biopsy to confirm diagnosis.

TABLE 15. ASSESSMENT PROCEDURES YIELDING A DEFINITIVE DIAGNOSIS BY ROUND BY AGE GROUP, JULY 1997 TO JUNE 1998

Outcome of Assessment	Age group														Total	
	<40		40-49		50-59		60-69		70-79		80+		50-69		Total	
	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%	No. screens	%
FURTHER VIEWS ONLY (FV)																
First screens	0		426		347		120		55		8		467		956	
Subsequent screens	0		224		584		324		51		3		908		1,186	
Sub-total	0	0.0%	650	59.7%	931	59.3%	444	51.0%	106	48.6%	11	39.3%	1,375	56.3%	2,142	56.6%
CLINICAL EXAMINATION (CE)																
+/- FV																
First screens	1		4		4		4		1		0		8		14	
Subsequent screens	0		1		6		6		2		0		12		15	
Sub-total	1	50.0%	5	0.5%	10	0.6%	10	1.1%	3	1.4%	0	0.0%	20	0.8%	29	0.8%
ULTRASOUND (US)																
+/- FV, CE																
First screens	0		105		74		21		12		3		95		215	
Subsequent screens	0		65		136		93		20		0		229		314	
Sub-total	0	0.0%	170	15.6%	210	13.4%	114	13.1%	32	14.7%	3	10.7%	324	13.3%	529	14.0%
FINE NEEDLE ASPIRATION (FNA)																
+/- FV, CE, US, OM																
First screens	1		108		90		34		19		4		124		256	
Subsequent screens	0		59		132		127		18		4		259		340	
Sub-total	1	50.0%	167	15.3%	222	14.1%	161	18.5%	37	17.0%	8	28.6%	383	15.7%	596	15.8%
CORE BIOPSY (CB)																
+/- FV, CE, US, OM, FNA																
First screens	0		35		46		25		12		4		71		122	
Subsequent screens	0		21		83		57		10		2		140		173	
Sub-total	0	0.0%	56	5.1%	129	8.2%	82	9.4%	22	10.1%	2	7.1%	211	8.6%	295	7.8%
DIAGNOSTIC OPEN BIOPSY (DOB)																
+/- any of the above procedures																
First screens	0		26		27		19		7		2		46		82	
Subsequent screens	0		15		41		41		11		2		82		109	
Sub-total	0	0.0%	41	3.8%	68	4.3%	60	6.9%	18	8.3%	4	14.3%	128	5.2%	191	5.1%
TOTAL PROCEDURES																
First screens	2		704		588		223		106		21		811		1,644	
Subsequent screens	0		385		982		648		112		11		1,630		2,138	
TOTAL	2	100%	1,089	100%	1,570	100%	871	100%	218	100%	28	100%	2,441	100%	3,782	100%

Source: BreastScreen WA, Mammography Screening Registry

RECOMMENDATION AFTER ASSESSMENT

Table 16 lists the recommendations after all assessment visits up to any needle biopsy, but prior to any surgical biopsy or early review visit.

The outcome of assessment may be a return to routine screening, a recommendation for definitive treatment for breast cancer or, in the case of an equivocal lesion, a diagnostic surgical biopsy. A return to normal screening is usually a return in two years, but may be a return at one year if the woman has a family or personal history of breast cancer.

Of the 3782 women who were assessed, 3106 (82%) had a normal or benign outcome without the need for surgical biopsy. Diagnostic open biopsy was recommended for 179 women, who represented 5% of all women assessed or 0.3% of the 61,556 women screened. This figure is well within the National Accreditation Requirement that less than 2% of women screened be referred for open biopsy.

Seven percent (247) of all the women assessed had a diagnosis of breast cancer without the need for surgical biopsy. The next stage of their management involved treatment, usually by surgery such as a wider local excision or mastectomy often in conjunction with adjuvant therapy. Details of their treatment are listed in the section on management of breast cancer in this Report (from page 35).

A recommendation may also be made to return in six months for an early review. To comply with the National Accreditation Requirements, every effort is made to minimise the number of visits by the woman for further investigations following the assessment visit and within six months of the initial mammogram – this number should normally not exceed 5% of the total women assessed. Some women may be recalled for early review if they are found to have an asymmetric density considered likely to be normal tissue, which is not visible on ultrasound, or missed calcifications where the woman declines further biopsy. In 1997/98, 239 women, or 6% of the women assessed, were asked to return for early review.

The category 'Other' includes unusual cases such as therapeutic excisions for a benign lesion, incomplete assessments, or a leaking prosthesis where the women will be under the future care of the surgeon. A woman who has, by her own choice, an incomplete assessment is usually assigned a rescreen period of one year for her next screening round.

TABLE 16. RECOMMENDATIONS AFTER ASSESSMENT VISITS BY ROUND BY AGE GROUP, JULY 1997 TO JUNE 1998

Recommendation after assessment	Age group						50-69		All ages	
	<40	40-49	50-59	60-69	70-79	80+	screens	%	screens	%
FIRST SCREENS										
Definitive Treatment for Cancer	0	15	19	23	15	2	42	5.2%	74	4.5%
Diagnostic Open Biopsy	0	24	25	18	6	2	43	5.3%	75	4.6%
Early Review	0	43	51	14	9	3	65	8.0%	120	7.3%
Other	0	5	2	0	0	0	2	0.2%	7	0.4%
Return to routine screening	2	617	491	167	76	14	658	81.2%	1367	83.2%
Sub-total	2	704	588	222	106	21	810	100%	1643	100%
SUBSEQUENT SCREENS										
Definitive Treatment for Cancer	0	8	65	84	14	2	149	9.1%	173	8.1%
Diagnostic Open Biopsy	0	15	38	38	11	2	76	4.7%	104	4.9%
Early Review	0	14	52	45	6	2	97	5.9%	119	5.6%
Other	0	1	1	1	1	0	2	0.1%	4	0.2%
Return to routine screening	0	347	826	481	80	5	1307	80.1%	1739	81.3%
Sub-total	0	385	982	649	112	11	1631	100%	2139	100%
ALL SCREENS										
Definitive Treatment for Cancer	0	23	84	107	29	4	191	7.8%	247	6.5%
Diagnostic Open Biopsy	0	39	63	56	17	4	119	4.9%	179	4.7%
Early Review	0	57	103	59	15	5	162	6.6%	239	6.3%
Other	0	6	3	1	1	0	4	0.2%	11	0.3%
Return to routine screening	2	964	1317	648	156	19	1965	80.5%	3106	82.1%
TOTAL	2	1089	1570	871	218	32	2441	100%	3782	100%

Source: BreastScreen WA, Mammography Screening Registry

Outcomes of Assessment

Table 17 classifies the recommendations after assessment into program-funded and those conducted outside the program. The latter category includes women who may have had diagnostic further views within the Program but chose to have further assessment done privately. Because diagnostic further views are always program-funded, the 2144 women who returned to routine screening after further views have been excluded as their numbers would have heavily biased the “assessment within the program” totals.

There were proportionally more pre-surgical decisions for definitive treatment for cancer in program-funded assessments (157 or 25%) compared with non-funded assessments (90 or 9%). Conversely, more women outside the program were recommended for diagnostic open biopsy (12% vs 9%) and early review (17% vs 11%), compared with assessments within the program.

TABLE 17. RECOMMENDATIONS AFTER ASSESSMENT VISITS BY FUNDING, JULY 1997 TO JUNE 1998

Recommendation after further assessment	Assessment within the Program			Assessment outside the Program			All outcomes		
	50-69	All ages	%	50-69	All ages	%	50-69	All ages	%
FIRST SCREENS									
Definitive Treatment for Cancer	24	45	17.9%	18	29	6.7%	42	74	10.8%
Diagnostic Open Biopsy	15	25	10.0%	28	50	11.5%	43	75	10.9%
Early Review	11	29	11.6%	54	91	20.9%	65	120	17.5%
Other	0	0	0.0%	2	7	1.6%	2	7	1.0%
Return to routine screening	78	152	60.6%	113	259	59.4%	191	411	59.8%
Sub-total	128	251	100%	215	436	100%	343	687	100%
SUBSEQUENT SCREENS									
Definitive Treatment for Cancer	98	112	29.6%	51	61	10.6%	149	173	18.2%
Diagnostic Open Biopsy	27	34	9.0%	49	70	12.2%	76	104	10.9%
Early Review	30	38	10.1%	67	81	14.1%	97	119	12.5%
Other	0	0	0.0%	2	4	0.7%	2	4	0.4%
Return to routine screening	138	194	51.3%	260	357	62.3%	398	551	57.9%
Sub-total	293	378	100%	429	573	100%	722	951	100%
ALL SCREENS									
Definitive Treatment for Cancer	122	157	25.0%	69	90	8.9%	191	247	15.1%
Diagnostic Open Biopsy	42	59	9.4%	77	120	11.9%	119	179	10.9%
Early Review	41	67	10.7%	121	172	17.0%	162	239	14.6%
Other	0	0	0.0%	4	11	1.1%	4	11	0.7%
Return to routine screening	216	346	55.0%	373	616	61.1%	589	962	58.7%
TOTAL	421	629	100%	644	1,009	100%	1,065	1,638	100%

Source: BreastScreen WA, Mammography Screening Registry

DEFINITIVE DIAGNOSIS

Of the 3782 women who underwent assessment, 3450 (91%) had a benign diagnosis, 316 (8%) had a diagnosis of cancer and 16 (0.4%) declined to complete their assessment. The assessment of 2142 (62%) of those with a benign outcome required only further mammographic views, whilst the remaining 1308 required ultrasound or biopsy to reach a diagnosis. The proportions undergoing further views only or other procedures to reach a benign outcome were the same regardless of screening round.

TABLE 18. OUTCOMES OF ASSESSMENT BY ROUND, JULY 1997 TO JUNE 1998

Outcome of assessment	First screens			Subsequent screens			Total		
	No. assessments	% of outcome	% of total assessments	No. assessments	% of outcome	% of total assessments	No. assessments	% of outcome	% of total assessments
BENIGN OUTCOME									
After further views	956	62.0%		1,186	62.1%		2,142	62.1%	
After further assessment	585	38.0%		723	37.9%		1,308	37.9%	
TOTAL	1,541	100%	93.7%	1,909	100%	89.3%	3,450	100%	91.2%
MALIGNANT OUTCOME									
Malignant – breast	94	100%		219	98.6%		313	99.1%	
Malignant – other	0	0.0%		3	1.4%		3	0.9%	
TOTAL	94	100%	5.7%	222	100%	10.4%	316	100%	8.4%
Incomplete / unknown	9		0.5%	7		0.3%	16		0.4%
TOTAL ASSESSMENTS	1,644		100%	2,138		100%	3,782		100%

Source: BreastScreen WA, Mammography Screening Registry

Outcomes of Assessment

METHOD OF PATHOLOGICAL DIAGNOSIS

The procedures that provided the definitive pathological diagnosis for the detected breast cancers are listed below in Table 19. The sample taken by fine needle aspiration was used to diagnose the majority (63%) of breast cancers, with diagnostic open biopsy and core biopsy the next most common diagnostic procedures.

The ranking of procedures detecting the cancers remains the same as in 1996/97 but the number of cancers diagnosed by fine needle aspiration has increased by 13% and the number diagnosed by core biopsy has increased by 2%. Conversely, the use of surgical biopsy to determine outcomes has fallen by almost half from 36% in 1996/97 to 20% in 1997/98 (Figure 6).

Of the remaining assessments, one case of prophylactic mastectomy yielded evidence of DCIS and the other involved analysis of a nipple discharge where malignant cells were found to be present.

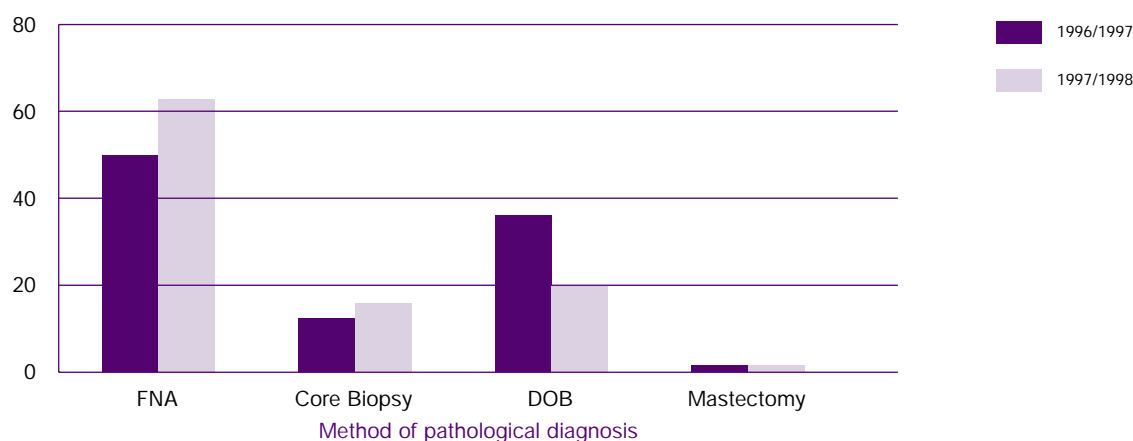
TABLE 19. NUMBER OF BREAST CANCERS DETECTED, BY ASSESSMENT INVESTIGATION YIELDING THE PATHOLOGICAL DIAGNOSIS BY ROUND, JULY 1997 TO JUNE 1998

Assessment investigation	First screens		Subsequent screens		All screens	
	No. cancers	%	No. cancers	%	No. cancers	%
Fine needle aspiration	56	59.6%	140	63.9%	196	62.6%
Core biopsy	18	19.1%	33	15.1%	51	16.3%
Diagnostic open biopsy	18	19.1%	46	21.0%	64	20.4%
Mastectomy	1	1.1%	0	0.0%	1	0.3%
Other	1	1.1%	0	0.0%	1	0.3%
TOTAL CANCERS	94	100%	219	100%	313	100%

Source: BreastScreen WA, Mammography Screening Registry

FIGURE 6. METHOD OF PATHOLOGICAL DIAGNOSIS, 1996/97 AND 1997/98

Percentage of target population screened



Source: BreastScreen WA, Mammography Screening Registry

Table 20 and Figure 7 below compare the investigations that yielded a pathological diagnosis of breast cancer within and outside the program. The 'outside the program' category counts women who had no program-funded assessment other than diagnostic further views, which are always program-funded.

Fine needle aspiration was used to reach a diagnosis in 72% of cases funded by the program, in comparison with 50% of non-funded assessments. Thirty four percent of women assessed outside the program needed surgical biopsy before a definite diagnosis could be given, compared with 10% of assessments within the program.

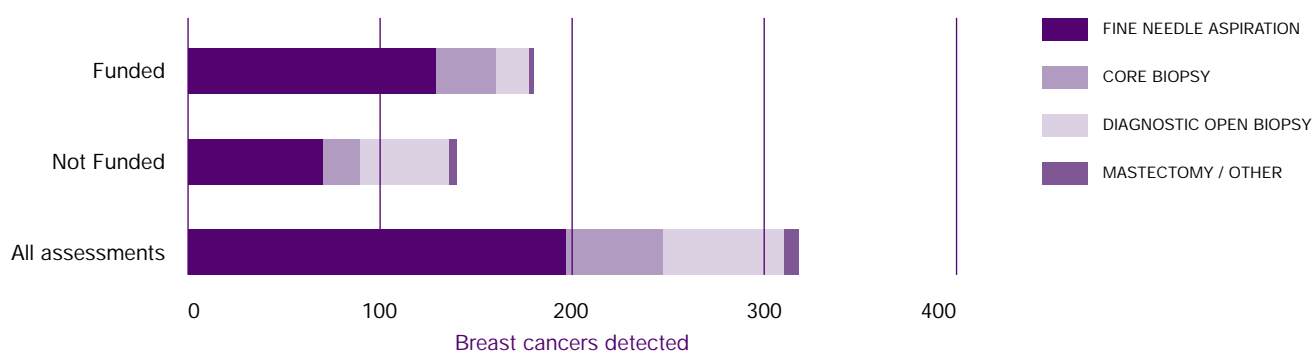
TABLE 20. NUMBER OF BREAST CANCERS DETECTED, BY ASSESSMENT INVESTIGATION YIELDING THE PATHOLOGICAL DIAGNOSIS BY FUNDING, JULY 1997 TO JUNE 1998

Assessment procedure	Assessment within the Program		Assessment outside the Program		All assessments	
	No. cancers	%	No. cancers	%	No. cancers	%
Fine needle aspiration	128	72.3%	68	50.0%	196	62.6%
Core biopsy	30	16.9%	21	15.4%	51	16.3%
Diagnostic open biopsy	18	10.2%	46	33.8%	64	20.4%
Mastectomy	1	0.6%	0	0.0%	1	0.3%
Other	0	0.0%	1	0.7%	1	0.3%
TOTAL CANCERS	177	100%	136	100%	313	100%

Source: BreastScreen WA, Mammography Screening Registry

FIGURE 7. HISTOLOGICAL METHOD OF DIAGNOSIS OF BREAST CANCER BY FUNDING, JULY 1997 TO JUNE 1998

Funding of assessment leading to diagnosis



Source: BreastScreen WA, Mammography Screening Registry

Outcomes of Assessment

BENIGN TO MALIGNANT OPEN BIOPSY RATIO

Table 21 summarises the results for all women who underwent a diagnostic surgical procedure. The benign:malignant open biopsy ratio expresses the number of benign open biopsy results compared to all malignancies detected in the period. As needle biopsy procedures have become the primary tool for the detection of breast cancer, fewer women now need a surgical procedure to obtain a diagnosis. Only those where the presence of cancer cannot be ruled out on core or fine needle biopsy are recommended for diagnostic open biopsy. As a result, the number of benign outcomes of the procedure should be low with a correspondingly low benign:malignant ratio.

The National Accreditation Requirements specify that the benign:malignant ratio should be less than 2:1 for first rounds and 1:1 for subsequent rounds. The BreastScreen WA service comfortably met this requirement with ratios of 0.6:1 for first attendees and 0.3:1 for subsequent attendees.

TABLE 21. OUTCOMES OF DIAGNOSTIC OPEN BIOPSY (DOB) PROCEDURES BY ROUND BY AGE GROUP, JULY 1997 TO JUNE 1998

Outcome of diagnostic open biopsy	Age group												Total	
	40-49		50-59		60-69		70-79		80+		50-69		Total	
	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%
BENIGN OUTCOMES														
First screens	21		23		13		6		0		36		63	
Subsequent screens	15		25		21		3		0		46		64	
Sub-total	36	87.8%	48	70.6%	34	56.7%	9	50.0%	0	0%	82	64.1%	127	66.5%
MALIGNANT OUTCOMES														
First screens	4		5		6		1		2		11		18	
Subsequent screens	1		15		20		8		2		35		46	
Sub-total	5	12.2%	20	29.4%	26	43.3%	9	50.0%	4	100%	46	35.9%	64	33.5%
TOTAL DOBS PERFORMED														
First screens	25		28		19		7		2		47		81	
Subsequent screens	16		40		41		11		2		81		110	
TOTAL	41	100%	68	100%	60	100%	18	100%	4	100%	128	100%	191	100%
ALL CANCERS DETECTED														
First screens	20		25		29		16		4		54		94	
Subsequent screens	10		81		103		23		5		184		222	
TOTAL	30		106		132		39		9		238		316	
BENIGN DOB: ALL MALIGNANCIES														
First screens	1.1:1		0.9:1		0.4:1		0.4:1		0:1		0.6:1		0.6:1	
Subsequent screens	1.3:1		0.3:1		0.2:1		0.1:1		0:1		0.2:1		0.3:1	
TOTAL	1.1:1		0.4:1		0.2:1		0.2:1		0:1		0.3:1		0.4:1	

Source: BreastScreen WA, Mammography Screening Registry

Assessments within the program resulted in an even lower benign:malignant ratio when compared with those outside the program (Table 22). The difference in the ratio between program-funded and non-funded assessments is a reflection of the twenty-five percent lower cancer detection rate outside the program, despite a three-fold higher rate of diagnostic open biopsies.

TABLE 22. OUTCOMES OF DIAGNOSTIC OPEN BIOPSY (DOB) PROCEDURES BY ROUND BY FUNDING, JULY 1997 TO JUNE 1998

Outcomes	Assessment within Program				Assessment outside Program				All biopsies			
	50-69		All ages		50-69		All ages		50-69		All ages	
	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%
BENIGN OUTCOMES												
First screens	14		22		22		41		36		63	
Subsequent screens	18		25		28		39		46		64	
Sub-total	32	69.6%	47	71.2%	50	61.0%	80	64.0%	82	64.1%	127	66.5%
MALIGNANT OUTCOMES												
First screens	1		5		10		13		11		18	
Subsequent screens	13		14		22		32		35		46	
Sub-total	14	30.4%	19	28.8%	32	39.0%	45	36.0%	46	35.9%	64	33.5%
TOTAL DOBS PERFORMED												
First screens	15		27		32		54		47		81	
Subsequent screens	31		39		50		71		81		110	
TOTAL	46	100%	66	100%	82	100%	125	100%	128	100%	191	100%
ALL CANCERS DETECTED												
First screens			51				43				94	
Subsequent screens			126				96				222	
TOTAL			177				139				316	
BENIGN DOB : ALL MALIGNANCIES												
First screens			0.4 : 1				0.9 : 1				0.6 : 1	
Subsequent screens			0.2 : 1				0.4 : 1				0.3 : 1	
TOTAL			0.3 : 1				0.6 : 1				0.4 : 1	

Source: BreastScreen WA, Mammography Screening Registry

Breast Cancer Detection

DETECTION RATES

Table 23 and Figure 8 below show all breast cancers detected in the BreastScreen WA program in 1997/98. The numbers include all malignancies, whether invasive or ductal carcinoma *in situ* (DCIS), but do not include two cases of lymphoma and one case which was a recurrence of a previous breast cancer. There were no cancers detected in women under the age of 40 years.

The cancer detection rate for all breast cancers in the 50-69 year age group was 237 cancers detected from 44,521 screens, or 53 per 10,000 screens. Although more breast cancers were detected in subsequent screens (219, 70%) than in first screens (94, 30%) the rate of detection per 10,000 screens is slightly lower in subsequent than in first screens (50 vs. 54 per 10,000 screens, respectively).

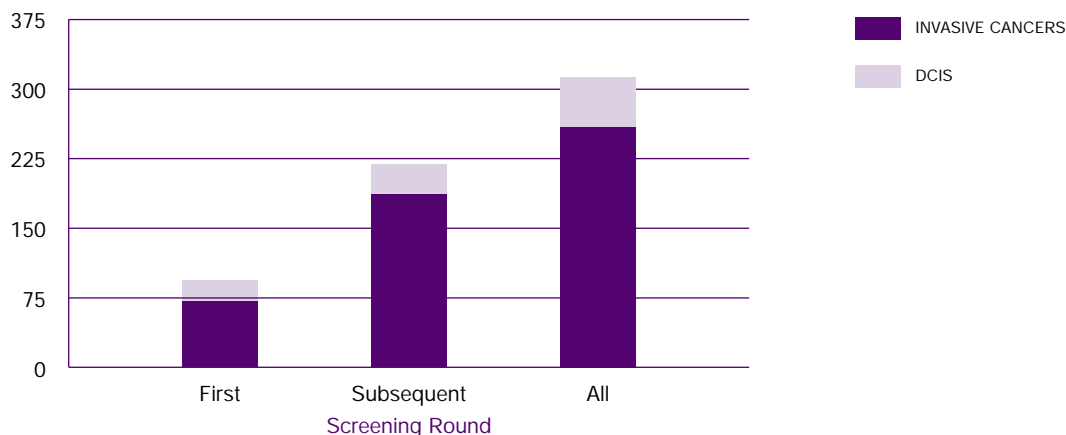
TABLE 23. BREAST CANCER DETECTION RATE BY ROUND BY AGE GROUP, JULY 1997 TO JUNE 1998

Type of cancer	Age group (years)												Total	
	40-49		50-59		60-69		70-79		80+		50-69		Total	
	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%	No. DOBs	%
INVASIVE CANCERS														
First screens	15		17		24		13		3		41		72	
Subsequent screens	10		65		90		20		4		155		189	
Sub-total	25	83.3%	82	78.1%	114	86.4%	33	86.8%	7	87.5%	196	82.7%	261	83.4%
DCIS														
First screens	5		8		5		3		1		13		22	
Subsequent screens	0		15		13		2		0		28		30	
Sub-total	5	16.7%	23	21.9%	18	13.6%	5	13.2%	1	12.5%	41	17.3%	52	16.6%
ALL BREAST CANCERS														
First screens	20		25		29		16		4		54		94	
Subsequent screens	10		80		103		22		4		183		219	
TOTAL	30	100%	105	100%	132	100%	38	100%	8	100%	237	100%	313	100%
RATE PER 10,000 SCREENS														
First screens	29.9		39.1		103.3		133.8		245.4		58.7		54.4	
Subsequent screens	15.5		40.3		66.1		93.0		324.2		51.8		49.5	
All screens	22.9		40.1		72.1		106.7		279.7		53.2		50.8	

Source: BreastScreen WA, Mammography Screening Registry

FIGURE 8. BREAST CANCERS DETECTED BY ROUND, JULY 1997 TO JUNE 1998

Number of cancers detected



Source: BreastScreen WA, Mammography Screening Registry

HISTOLOGIC TYPE OF BREAST CANCERS

Of the 313 breast cancers detected, 83% (261) were classified as invasive and 17% (52) as *in situ* ductal cancers (DCIS). The number of *in situ* ductal carcinomas met the National Accreditation Requirement recommendation that these types make up 10-20% of all cancers detected. Three cancers classified as either non-breast or secondary malignancies are included in Table 24 below.

For both first and subsequent screening rounds, more than three quarters of the invasive cancers were invasive ductal types, whilst mucinous lesions were the least common. Comedo and non-Comedo ductal *in situ* cancers were found in similar number in both first and subsequent rounds, but mixed DCIS types (comedo/non-comedo) were more common in subsequent screens.

TABLE 24. NUMBER OF CANCERS DETECTED BY HISTOLOGY BY ROUND, JULY 1997 TO JUNE 1998

Type of cancer	First screens		Subsequent screens		All screens	
	No. cancers	%	No. cancers	%	No. cancers	%
INVASIVE CANCERS						
Invasive Duct N.O.S.	55	76.4%	145	76.7%	200	76.6%
Tubular	3	4.2%	18	9.5%	21	8.0%
Cribriform	0	0.0%	0	0.0%	0	0.0%
Mucinous (Colloid)	1	1.4%	3	1.6%	4	1.5%
Medullary	0	0.0%	0	0.0%	0	0.0%
Lobular Classical	6	8.3%	10	5.3%	16	6.1%
Lobular Variant	3	4.2%	4	2.1%	7	2.7%
Mixed Ductal/Lobular	4	5.6%	9	4.8%	13	5.0%
TOTAL INVASIVE CANCERS	72	100%	189	100%	261	100%
NON-INVASIVE CANCERS						
Comedo DCIS	10	45.5%	9	30.0%	19	36.5%
Non Comedo DCIS	10	45.5%	10	33.3%	20	38.5%
Mixed DCIS	2	9.1%	11	36.7%	13	25.0%
TOTAL INVASIVE CANCERS	22	100%	30	100%	52	100%
OTHER NON-BREAST CANCERS						
Other primary/secondary malignancy	0		3		3	
TOTAL CANCERS	94		222		316	

Source: BreastScreen WA, Mammography Screening Registry

Breast Cancer Detection

CANCER SIZE AND LYMPH NODE INVOLVEMENT

The aim of mammographic screening is to diagnose cancers early in their development to minimise the risk of spread of invasive cancers, which made up 83% of all the cancers detected in 1997/98, and to reduce the morbidity associated with surgical intervention.

Table 25 shows cancers by type and size of tumor. Dimensions of DCIS are usually not available.

Of all invasive cancers detected, 94 (36%) were ≤ 10 mm in diameter. This equates to 15 cases per 10,000 women, well above the National Accreditation Requirement that a service detects more than 8 invasive cancers smaller than 10mm per 10,000 women screened.

TABLE 25. NUMBER OF CANCERS DETECTED BY SIZE OF TUMOR, JULY 1997 TO JUNE 1998

Type of cancer	First Screens	Subsequent Screens	All cancers	% invasive cancers	% all cancers
NON-INVASIVE BREAST CANCERS					
Ductal Cancer in situ (DCIS)	22	30	52		16.5%
INVASIVE BREAST CANCERS					
≤ 10 mm	21	73	94	36.0%	
11-15 mm	21	54	75	28.7%	
>15 mm	28	59	87	33.3%	
Size unknown	2	3	5	1.9%	
TOTAL INVASIVE BREAST CANCERS	72	189	261	100%	82.6%
OTHER NON-BREAST CANCERS					
Other primary/secondary malignancy		3		0.9%	
TOTAL CANCERS	94	219	316		100%

Source: BreastScreen WA, Mammography Screening Registry

Nodes were excised in 214 (82%) of the 261 women with invasive cancers and of those 50 (23%) showed metastatic involvement (Table 26). There was a clear relationship between the size of the breast cancer and metastases in the lymph nodes. Metastatic lymph nodes were discovered in 8% of cases where the cancer was less than 10mm but in 36% of those with cancers larger than 15mm.

As expected, no cases of *in situ* cancer showed evidence of spread to the lymph nodes. The relatively high rate of lymph node excision in cases diagnosed with DCIS is due to twelve of these women having mastectomies with concomitant lymph node sampling/clearance. The remaining five had lymph node sampling during lumpectomy.

TABLE 26. NUMBER OF LYMPH NODES EXCISED AND THEIR METASTATIC STATUS, JULY 1997 TO JUNE 1998

Type of cancer	No. of cancers (A)	No. lymph nodes excised (B)	% of cancers where lymph nodes were excised (B / A)	No. lymph nodes showing metastasis (C)	% of excised lymph nodes with metastasis (C / B)
NON-INVASIVE BREAST CANCERS					
Ductal Cancer in situ (DCIS)	52	17	32.7%	0	0.0%
INVASIVE BREAST CANCERS					
≤10 mm	94	66	70.2%	5	7.6%
11-15 mm	75	68	90.7%	16	23.5%
>15 mm	87	80	92.0%	29	36.3%
Size unknown	5	0	0.0%	0	0.0%
TOTAL INVASIVE BREAST CANCERS	261	214	82.0%	50	23.4%
OTHER NON-BREAST CANCERS					
Other primary/secondary malignancy	3	0	0.0%	0	0.0%
TOTAL LYMPH NODES	316	231	73.1%	50	90.7%

Source: BreastScreen WA, Mammography Screening Registry

Breast Cancer Detection

GRADE OF CANCERS

Table 27 and Figure 9 show the histological grade of screen-detected invasive cancers relative to the size of the cancer. The grade is assigned according to the method originally described by Bloom and Richardson and subsequently modified by Elston (1987).⁵ Tubule formation, nuclear pleomorphism and the number of mitoses are assessed. Grade 1 represents a well differentiated, grade 2 a moderately differentiated and grade 3 a poorly differentiated, tumor. The higher the grade, the poorer the prognosis.

Information on tumor grade was available for all but 7 (3%) of the cancers. Two of these cases were diagnosed at core biopsy where tumor grading was not done.

In general, the smaller the size of the cancer the lower the grade. Figure 9 shows that 47% of cancers less than 10mm were found to be grade 1 and 9% grade 3. By comparison, 23% of cancers larger than 15mm were found to be grade 1 and 23% were grade 3.

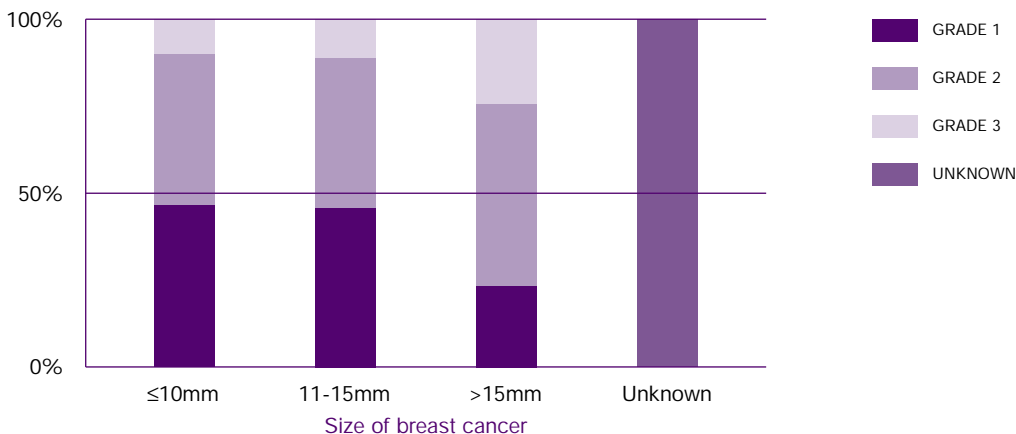
TABLE 27. NUMBER OF INVASIVE BREAST CANCERS DETECTED BY HISTOLOGICAL GRADE BY SIZE, JULY 1997 TO JUNE 1998

Histological grade	Size of breast cancers detected									
	≤10mm		11-15mm		>15mm		Unknown		Total	
	No. cancers	%	No. cancers	%	No. cancers	%	No. cancers	%	No. cancers	%
Grade 1	44	46.8%	34	45.3%	20	23.0%	0	0%	98	37.5%
Grade 2	41	43.6%	33	44.0%	46	52.9%	0	0%	120	46.0%
Grade 3	8	8.5%	8	10.7%	20	23.0%	0	0%	36	13.8%
Unknown	1	1.1%	0	0%	1	1.1%	5	100%	7	2.7%
TOTAL BREAST CANCERS	94	100%	75	100%	87	100%	5	100%	261	100%

Source: BreastScreen WA, Mammography Screening Registry

FIGURE 9. PROPORTION OF BREAST CANCERS DETECTED BY HISTOLOGICAL GRADE, JULY 1997 TO JUNE 1998

Proportion of cancers detected



Source: BreastScreen WA, Mammography Screening Registry

⁵ Elston, CW. Grading of invasive carcinoma of the breast. In 'Diagnostic Histopathology of the Breast'. DL Page and TJ Anderson. Churchill Livingstone 1987.

Management of Breast Cancer

CANCER TREATMENT BY SCREENING ROUND AND CANCER TYPE

The surgical treatments undertaken to remove malignant lesions are shown in Table 28. Breast conserving surgery (diagnostic open biopsies or wide local excisions) comprises those cases where the lesion was completely removed at the time of a diagnostic open biopsy and no further surgery was required, or where localised excision or lumpectomy was performed to remove a lesion already identified as malignant. Some women may have also undergone re-excision to ensure greater clearance around the lesion. The majority (65%) of malignancies was removed using breast conservation techniques.

A total of 105 women (34%) elected to have a mastectomy, either as a first option or after localised excisional surgery. Five women either chose alternative therapies or their treatment was unknown.

TABLE 28. NUMBER OF SURGICAL PROCEDURES PERFORMED FOR TREATMENT OF BREAST CANCER BY ROUND, JULY 1997 TO JUNE 1998

Surgical procedure for treatment	First screens		Subsequent screens		All screens	
	No. procedures	%	No. procedures	%	No. procedures	%
Breast conserving surgery	54	57.4%	149	68.0%	203	64.9%
Mastectomy	36	38.3%	69	31.5%	105	33.5%
No surgery / unknown	4	4.3%	1	0.5%	5	1.6%
TOTAL BREAST CANCERS	94	100%	219	100%	313	100%

Source: BreastScreen WA, Mammography Screening Registry

Table 29 shows that for either invasive or *in situ* cancers, breast conserving surgery was the treatment of choice by the majority of women – 67% of those with an invasive cancer and 56% of those with DCIS. However, relatively more women with DCIS (42%) had a mastectomy compared with those with an invasive cancer (32%).

TABLE 29. NUMBER OF SURGICAL PROCEDURES PERFORMED FOR TREATMENT OF BREAST CANCER BY TYPE OF CANCER, JULY 1997 TO JUNE 1998

Surgical procedure for treatment	Invasive cancers		DCIS		Total	
	No. procedures	%	No. procedures	%	No. procedures	%
Breast conserving surgery	174	66.7%	29	55.8%	203	64.9%
Mastectomy	83	31.8%	22	42.3%	105	33.5%
No surgery / unknown	4	1.5%	1	1.9%	5	1.6%
TOTAL BREAST CANCERS	261	100%	52	100%	313	100%

Source: BreastScreen WA, Mammography Screening Registry

Management of Breast Cancer

CANCER TREATMENT BY PLACE OF RESIDENCE

Table 30 shows the type of cancer treatment by place of residence for metropolitan and rural/remote areas. As in previous years, treatment by mastectomy was more common in women resident in rural or remote regions of the state (41%) than in women living in the metropolitan area (31%). The 10% higher rate in country residents was similar to previous years (8% in 1995/96 and 6% in 1996/97).

TABLE 30. NUMBER OF SURGICAL PROCEDURES PERFORMED FOR TREATMENT OF BREAST CANCER BY PLACE OF RESIDENCE, JULY 1997 TO JUNE 1998

Surgical procedure for treatment	Metropolitan		Country		Total	
	No. procedures	%	No. procedures	%	No. procedures	%
Breast conserving surgery	162	68.1%	41	54.7%	203	64.9%
Mastectomy	74	31.1%	31	41.3%	105	33.5%
No surgery / unknown	2	0.8%	3	4.0%	5	1.6%
TOTAL BREAST CANCERS	238	100%	75	100%	313	100%

Source: BreastScreen WA, Mammography Screening Registry

ADJUVANT THERAPY USE

Where adjuvant therapy information was available it is shown in relation to cancer type in Table 31. Radiotherapy and Tamoxifen, or a combination of both, were the most common follow-up treatments for the majority of women, regardless of the nature of the cancer.

TABLE 31. ADJUVANT THERAPY FOR TREATMENT OF BREAST CANCER BY TYPE OF CANCER, JULY 1997 TO JUNE 1998

Adjuvant therapy	Invasive		DCIS		Total	
	No. procedures	%	No. procedures	%	No. procedures	%
Chemotherapy	5	1.9%	0	0.0%	5	1.6%
Radiotherapy	50	19.2%	5	9.6%	55	17.6%
Tamoxifen	63	24.1%	8	15.4%	71	22.7%
Chemotherapy & Radiotherapy	16	6.1%	0	0.0%	16	5.1%
Chemotherapy & Tamoxifen	3	1.1%	0	0.0%	3	1.0%
Radiotherapy & Tamoxifen	75	28.7%	2	3.8%	77	24.6%
Chemotherapy & Radiotherapy & Tamoxifen	4	1.5%	0	0.0%	4	1.3%
Radiotherapy & Other	2	0.8%	0	0.0%	2	0.6%
Other	1	0.4%	2	3.8%	3	1.0%
Unknown	42	16.1%	35	67.3%	77	24.6%
TOTAL BREAST CANCERS	261	100%	52	100%	313	100%

Source: BreastScreen WA, Mammography Screening Registry

Management of Breast Cancer

INTERVAL CANCER RATE

An interval cancer is an invasive breast cancer that is diagnosed between routine screenings, that is, after a mammogram that detected no abnormality and before the next screening episode. In 1999 BreastScreen Australia outlined new interval cancer definitions that included only data from women with no personal history of cancer and stratified by age, symptomatic status and screening round. In October 2000, the Australian Institute of Health and Welfare published the first report on interval cancers across the program, for screens in 1996 and interval cancers detected up to December 1998.⁶ BreastScreen WA data from that publication is reproduced here as it covered the period of this 1997/98 Report.

Interval cancers are classified according to the risk status of the women. Women who are screened at one year intervals (for example, in the BreastScreen WA program those with a family history of breast cancer) are "at risk" for 12 months after their last normal screen. They are only included in the interval cancer count for those first 12 months. Conversely, those screened every 2 years are included in the interval cancer count for both the first 12 month period as well as the 13-24 month period post-screening. Given the above conditions, interval cancers for 0 to 12 months and 13 to 24 months are calculated per 10,000 screens as:

$$\frac{\text{Number of interval breast cancers}}{\text{Number of women years at risk}}$$

The current National Accreditation Requirements state that <6 per 10,000 women screened develop breast cancer in the 12 months following screening.

The interval cancer rate for the first 12 months following a normal screen in 1995/96 was 5.1 per 10,000 in women screened for the first time and 6.0 per 10,000 screens for women who had a subsequent screen. The corresponding rates for women in the target age group were 5.4 and 5.6, respectively. For all screens and all ages combined the rate was 5.6 per 10,000 screens. These cancers were detected in women who were asymptomatic at their last screen. Only one interval cancer was detected in a symptomatic screen, making the calculation of an interval cancer rate meaningless in this circumstance. Table 32 shows the interval cancers detected in the first 12 months, and between 13 and 24 months after a normal 1995/96 screen in asymptomatic women, by age group and for first and subsequent screens.

TABLE 32. INTERVAL CANCER RATES FOR NORMAL SCREENS BY ROUND BY AGE GROUP, JULY 1995 TO JUNE 1996

Screen type and time since last screen	Age Group					Total
	40-49	50-59	60-69	70+	50-69	
FIRST SCREENS						
Cancers detected between 0-12 months						
Number of interval cancers	5	6	1	0	7	12
Number of women years at risk	9,506	8,599	4,372	1,150	12,971	23,627
Interval Cancer Rate	5.3	7.0	2.3	0.0	5.4	5.1
Cancers detected between 13-24 months						
Number of interval cancers	13	13	4	1	17	31
Number of women years at risk	8,592	7,846	3,937	1,013	11,783	21,388
Interval Cancer Rate	15.1	16.6	10.2	9.9	14.4	14.5
SUBSEQUENT SCREENS						
Cancers detected between 0-12 months						
Number of interval cancers	4	6	8	0	14	18
Number of women years at risk	3,857	13,719	11,300	1,222	25,019	30,098
Interval Cancer Rate	10.4	4.4	7.1	0.0	5.6	6.0
Cancers detected between 13-24 months						
Number of interval cancers	3	17	8	0	25	28
Number of women years at risk	3,032	11,585	9,422	934	21,007	24,973
Interval Cancer Rate	9.9	14.7	8.5	0.0	11.9	11.2

Source: BreastScreen WA, Mammography Screening Registry

⁶ Australian Institute of Health and Welfare (AIHW) 2000. BreastScreen Australia Achievement Report 1997 and 1998. AIHW Cat No. CAN 8. Canberra. Australian Institute of Health and Welfare (Cancer Series number 13).

Appendix – Minimum Performance Standards

Minimum standards and requirements are in place for accredited services operating within BreastScreen Australia. The table below summarises the performance of BreastScreen WA against selected standards using the information presented in this report.

Standard	Performance Objectives	Minimum Standards	BreastScreen WA
1.2	To maximise the number of women screened who are aged 50-69 with the aim of screening 70% of this group.	Participation by 60% of the target group after five years in the program.	Participation to June 1998 was 53%. Includes all services although some have not been operational for five years.
1.3	To maximise participation by Aboriginal and Torres Strait Islander women and women from non-English speaking backgrounds.	In urban areas, participation by Aboriginal and Torres Strait Islander women and women from non-English speaking backgrounds will be at least 50% of the rate for the general population.	Participation to June 1998 of these groups accounted for 42% & 91%, respectively, of the rate for the general population.
1.5	To maximise client acceptance of the Service as evidenced by high participation rates among those invited for routine rescreening.	≥ 75% of women aged 50-69 years screened will be rescreened within the recommended interval.	73% of women aged 50-69 screened in 1995/96 and recommended for a 2 yearly rescreen had a rescreen within 27 months.
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.	10% of first screens and 5% of subsequent screens were recalled for assessment.
2.18	To minimise the proportion of women referred for open biopsy.	Referrals for open biopsy will be <2% of all women screened.	From 61,556 women screened, 0.3% were referred for diagnostic open biopsy.
2.19	To minimise unnecessary invasive procedures (that is, surgical biopsies for histology on benign cases).	Benign:Malignant biopsy ratio of ≤2:1 for prevalent round ≤1:1 in incident rounds	The benign to malignant ratio for the 1997/98 period was 0.6:1 for first and 0.3:1 for subsequent rounds.
2.23	To maximise the number of cancers detected.	At least 50 cancers per 10,000 women screened will be detected in prevalent rounds, and at least 20 per 10,000 women screened in incident rounds.	A total of 313 cancers were detected within the program. This represents 54 and 50 cancers per 10,000 women screened in first and subsequent rounds, respectively.
2.24	To maximise the number of minimal invasive cancers detected.	At least 8 per 10,000 women screened will be found to have invasive cancers ≤10mm diameter on pathology.	94 women, or 15 per 10,000 women screened, were diagnosed with invasive cancers ≤10mm diameter.
2.25	To detect a representative proportion of ductal carcinoma <i>in situ</i> (DCIS) at the prevalent screening round.	10-20% of cancers detected will be DCIS.	A total of 52 or 17% of all cancers detected were DCIS.
2.26	To minimise the number of interval cancers.	No more than 6 per 10 000 women screened will develop breast cancer (including DCIS, but excluding LCIS) in the 12 months following screening.	The interval cancer rate for the period was 5.6 in the 12 months following a normal screening outcome.

