

BreastScreen Aotearoa
MONITORING REPORT No. 7

Women screened
between 1 October and 31 December 2000

BreastScreen Aotearoa Independent Monitoring Group
Report to the Ministry of Health

28 June 2001

Technical Report No. 32
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Under contract with the Ministry of Health the monitoring group is required to monitor and evaluate aspects of BreastScreen Aotearoa, the national breast-screening programme. The measures of performance assessed by the monitoring group were specified by the Health Funding Authority (now the Ministry of Health). The list of agreed measures of performance to be included in quarterly and annual monitoring reports to the Ministry of Health was stated in Monitoring Report no 1, Appendix A. The monitoring group can also recommend to the Ministry of Health additional monitoring and evaluation that it considers to be required.

The monitoring group received data for this report on March 8, 2001. The draft report was written in April 2001 and was sent to the Ministry of Health on May 7, 2001 for comment.

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Executive Summary

By 31 December 2000, 153,637 women had been screened in BreastScreen Aotearoa. This represented 54.2% of women aged 50-64 in New Zealand. Two years from the start of BreastScreen Aotearoa, the target of screening 70% of eligible women has not been met. This is partly because some screening units had a delayed start and have yet to complete two full years of screening, but even taking this into account, coverage has been lower than the level required to achieve a 30% reduction in breast cancer mortality among eligible women. However, two lead providers, BreastScreen HealthCare and BreastScreen South, are likely to meet the target coverage of 70% of eligible women in two years. In general, the impact of a breast screening programme on breast cancer mortality among eligible women will be proportional to its coverage so it is important to ensure that all eligible women have the opportunity to participate in the programme. This means that, although the programme has the potential to reduce breast cancer mortality among women who are screened, the reduction in breast cancer mortality among the total population of New Zealand women aged 50-64 is likely to be lower than anticipated.

As many women approach two years since their previous screens, some lead providers will still be trying to screen eligible women unscreened from round one. If coverage is to be improved, these lead providers will have to schedule appointments for the women who are due for their two-yearly re-screening as well as women who have not yet been screened within the programme, and also women who have recently aged into the eligible age-range. Lead providers would be expected to have planned their scheduling and screening capacity to take this into account, so that disruption to re-screening at the appropriate two-year interval is avoided for women already in the programme.

All lead providers met the performance indicators for technical repeat rate, open surgical biopsy rate, specificity (cumulative results), and the detection rate of breast cancer or DCIS. All lead providers met the performance indicators for assessment rate and false positive rate, except BreastScreen HealthCare. However the results for BreastScreen HealthCare continued to improve. A summary of the results is shown in Table 1.

Recommendations:

1. Registration rates for all ethnic groups were lower during this quarter than the previous quarter. Registration of Maori and Pacific women continued to be lower than for other women. This should be monitored by lead providers and by the Ministry of Health to ensure equity of access to screening and the acceptability of the programme for Maori and Pacific women.
2. Lead providers who will not achieve 70% coverage of eligible women in the first two years will need to plan for the increased workload associated with re-screening at the appropriate two-year interval while also trying to complete screening women unscreened from round one.
3. The availability of an accurate list of the eligible population, and the invitation process used by lead providers who have not met the 70% coverage indicator should be reviewed and compared with lead providers who were successful in meeting the indicator.

4. BSAIMG recommends that the government consider the use of the electoral roll to identify eligible women.
5. BreastScreen Central continues to have a relatively high proportion of women undergoing both FNA and core needle biopsy. This problem has been highlighted since data for this performance indicator first became available. BSAIMG would like to see a reduction in the number of women undergoing both procedures.
6. All lead providers met the performance indicator for timely notification of results to screened women except BreastScreen HealthCare. The failure of BreastScreen HealthCare to notify at least 95% of women of their screening results within 10 working days has been highlighted previously in BSAIMG quarterly reports. There has been significant improvement in BreastScreen HealthCare's ability to notify screening results in a timely manner. BSAIMG recommends that the Ministry of Health works with BreastScreen HealthCare to ensure this improvement continues.
7. Only BreastScreen Central met the cumulative performance indicator for the timeliness of assessment appointments. BreastScreen South and BreastScreen Auckland and North met the performance indicator in this quarter. Other lead providers should endeavour to offer earlier assessment appointments.
8. Cumulative percentages do not match the performance indicators for timely open biopsy. BreastScreen HealthCare is the most successful lead provider in this respect. All other lead providers need to make significant improvements to meet the performance indicator for timely open biopsy, and should investigate ways to carry out open biopsies with less delay.
9. One of the most important ways to monitor the programme, and estimate its likely impact on breast cancer mortality, is to examine the stage distribution, size, nodal involvement, and histological grade of tumours detected, and the absolute rate of advanced cancers detected in BreastScreen Aotearoa. At present, the National monitoring data set cannot be used to assess the effectiveness of the programme since information on cancer stage, nodal status and the presence of distant metastatic disease is available for only 41.1% of the 984 women recorded with a diagnosis of DCIS or invasive breast cancer from the commencement of BreastScreen Aotearoa to the 30 September 2000. Interpretation of the information on stage distribution, histological grade, or size of tumours detected will be difficult until complete information for a chronological period is available. The lack of complete information about the cancers detected within BreastScreen Aotearoa needs to be addressed urgently by the Ministry of Health.

Table 1. Summary of Lead Provider and BreastScreen Aotearoa results against indicators to 31 December 2000.

Indicator	LEAD PROVIDERS						
	BSAN	BSM	BSCtoC	BSC	BSS	BSHC	BSA
Coverage (%)							
<i>Indicator > 70% in two years</i>							
Overall	44.8	56.9	53.3	48.2	67.8	69.5	54.2
Maori	41.1	34.2	30.0	29.9	37.1	27.6	35.3
Pacific	34.9	40.2	30.0	27.8	42.5	35.2	34.2
Other	45.0	60.5	56.6	50.2	65.8	70.8	55.6
(not stated)†	706	166	109	117	1,591	140	2,829
Technical recall (%)							
<i>Indicator (Fixed < 0.5%; Mobile <3%)</i>							
Fixed	0.1	0.3	0.3	0.8	0.4	0.3	0.3
Mobile	0.4	4.1	5.8	1.5	1.4	0.8	2.5
Technical repeat (definition 2) (%)							
<i>Indicator <3%</i>							
Fixed	1.2	0.9	1.2	2.2	1.7	1.2	1.4
Mobile	0.3	0.9	1.3	0.8	0.5	0.1	0.6
Assessment (%)							
<i>Indicator – prevalence screen - indicator is <10%, expected indicator is <7% – incidence screen - indicator is <5%, expected indicator is <4%</i>							
	7.8	5.4	5.4	6.8	7.2	7.9	6.8
False positive rate (%)							
<i>Indicator – prevalence round, indicator is <9%, expected indicator <6% – incidence round, indicator is <4%, expected indicator <3%</i>							
	6.8	4.7	4.7	6.0	6.4	7.3	6.0
Open surgical biopsy rate (%)							
<i>Indicator <1%</i>							
	0.3	0.2	0.3	0.3	0.2	0.6	0.3
Benign biopsy weight (%) #							
<i>Indicator 80% or more benign open biopsy should weigh <20g</i>							
	49.6	#	63.2	#	34.9	75.0	55.7

† Number of women where ethnicity was not recorded

Default values entered by some lead providers when actual weights unavailable

....continued

Table 1 (continued).

Summary of Lead Provider and BreastScreen Aotearoa results against indicators to 31 December, 2000.

Indicator	LEAD PROVIDERS						BSA
	BSAN	BSM	BSCtoC	BSC	BSS	BSHC	
Needle biopsy rate (%)							
<i>Indicator – none; *Women who have both FNA and core needle procedures.</i>							
FNA	0.3	0.3	0.1	0.2	0.8	0.5	0.4
Core needle	1.7	1.1	1.1	0.7	1.5	0.7	1.3
Both*	0.2	0.0	0.0	1.3	0.0	0.0	0.2
Total	2.1	1.3	1.2	2.3	2.3	1.3	1.8
Specificity (%)							
<i>Indicator >93%</i>							
	93.2	95.3	95.3	94.0	93.5	92.7	93.9
Cancer detection rate (per thousand women screened)							
<i>Indicator – prevalence - ≥ 6 per 1000 women screened</i>							
<i>- incidence - ≥ 3 per 1000 women screened</i>							
	8.4	5.2	6.8	7.1	7.3	5.9	7.0
Time taken providing results of screening (%)							
<i>Indicator – at least 95% notified within 10 days</i>							
	97.6	98.8	99.0	98.0	97.8	62.0	94.6
Time taken from screening visit to first offer of an assessment appointment (%)							
<i>Indicator – at least 90% offered an assessment appointment within 14 working days of their final screening visit</i>							
	73.2	84.3	87.4	93.3	83.6	38.1	76.6
Time taken from assessment to final diagnostic biopsy (%)							
<i>Indicator 1 – at least 90% of women requiring needle biopsy procedure have that procedure completed within 7 days of their assessment</i>							
	87.2	77.4	94.3	93.6	86.8	97.9	88.0
<i>Indicator 2 – at least 90% of women requiring open biopsy procedure offered that procedure within 3 weeks of their assessment</i>							
	48.6	22.0	29.8	65.2	60.3	89.2	55.5
Time taken from final diagnostic biopsy to reporting assessment result (%)							
<i>Indicator – results reported to at least 90% of women within 7 days of final diagnostic biopsy</i>							
	87.2	72.5	84.1	86.0	66.1	71.5	79.1
Time taken from reporting assessment results to first date offered for primary treatment (%)							
<i>Indicator – at least 90% of women offered primary treatment within 3 weeks of the final diagnosis being reported to the women</i>							
	*	*	*	*	*	*	*

* Invalid or insufficient data available for reporting.

1. Data Summary

The key to the tables which appear in this document is:

BSAN = BreastScreen Auckland and North

BSM = BreastScreen Midland

BSCtoC = BreastScreen Coast to Coast

BSC = BreastScreen Central

BSS = BreastScreen South

BSHC = BreastScreen HealthCare

1.1 Registration rate - overall

The numbers of women registered with BreastScreen Aotearoa are shown in Table 1.1.

Table 1.1. Overall registration rates by lead provider.

Lead provider	Quarterly number registered (% of projected population)		Cumulative number registered (% of projected population)	
BSAN	3,023	3.1	44,974	46.6
BSM	1,023	2.3	35,773	79.0
BSCtoC	1,810	4.7	21,220	55.2
BSC	1,083	3.5	15,487	49.4
BSS	2,292	4.5	35,135	69.5
BSHC	1,068	5.0	15,248	71.4
TOTAL	10,296	3.6	167,837	59.2

In this quarter, registration with BreastScreen Aotearoa has increased from 55.6% to 59.2% of eligible women (Table 1.1).

1.2 Registration rate – ethnicity

Lead provider	Quarterly number registered (% of projected population)				Cumulative number registered (% of projected population)			
	Maori	Pacific	Other	Not stated	Maori	Pacific	Other	Not stated
BSAN*	277 (3.4)	169 (2.8)	3,085 (3.7)		3,503 (42.8)	2236 (37.0)	38,494 (46.8)	741
BSM	105 (1.6)	10 (2.3)	792 (2.1)	116	3,554 (54.6)	279 (64.4)	31,007 (80.8)	933
BSCtoC*	200 (4.2)	15 (5.1)	2,671 (8.0)		1,488 (30.9)	96 (32.8)	19,523 (58.6)	113
BSC*	87 (4.1)	44 (3.3)	1,764 (6.3)		651 (30.4)	379 (28.4)	14,337 (51.5)	120
BSS	65 (3.5)	15 (5.1)	2,188 (4.5)	24	711 (38.1)	147 (45.2)	32,667 (67.6)	1,610
BSHC*	46 (5.3)	8 (7.4)	1,198 (5.9)		257 (29.6)	38 (35.2)	14,787 (72.6)	166
TOTAL	780 (3.2)	261 (3.1)	11,698 (4.7)		10,164 (41.7)	3175 (37.2)	150,815 (60.2)	3,683

*BreastScreen Auckland and North, BreastScreen Coast to Coast, BreastScreen Central and BreastScreen HealthCare retrospectively improved the collection of ethnic affiliation and the total number of women with no stated ethnicity was lower at the end of this quarter than previously. As a consequence the quarterly figure has been excluded from the table.

Registration rates for all ethnic groups were lower during this quarter than the previous quarter. Registration of Maori and Pacific women continued to be lower than for other women (Table 1.2).

At present, the registration rate (Tables 1.1 and 1.2) does not provide useful information about the invitation process for BSA. Unfortunately, some lead providers can only register women when they attend for screening, because this is the first contact the lead provider has with each woman.

Ideally, registration should give an indication of the number of eligible women who have been identified and whose names have been registered with BSA. In the Otago/Southland and Waikato pilot programmes, the electoral roll and general practice age-sex registers were used to identify and register eligible women. Women who self-referred were also registered. Once registered, a woman would be invited to participate in the screening programme. If registration with BSA could be achieved in a similar way, it would be possible to calculate the proportion of women aged 50-64 (based on census data) who had been identified by BSA. This would allow determination of whether most women aged 50-64 were given the opportunity to participate in BSA. It would also be possible to assess the response to the invitation to screening by dividing the number of women screened by the number of women registered. This would provide an indication of the acceptability of the programme.

Registration will only be a useful measure for monitoring BSA if lead providers have access to a population register so that they can identify and register eligible women.

1.3 Coverage - overall

Definition – this is a population-based measure of the proportion of women 50-64 years of age who have had a screening mammogram in the programme.

Indicator - > 70% of women aged 50-64 are to be screened by the programme within each two year screening cycle.

Table 1.3. Overall number of women screened and per cent coverage by lead provider.

Lead provider	Quarterly number screened (% of projected population)		Cumulative number screened since December 1998 (% of projected population)	
	Number	Percentage	Number	Percentage
BSAN	3,205	3.3	43,196	45.1
BSM	3,135	7.0	25,761	57.1
BSCtoC	1,645	4.3	20,480	53.0
BSC	1,190	3.9	15,116	48.9
BSS	3,278	6.5	34,242	67.8
BSHC	1,472	7.0	14,842	70.2
TOTAL	13,925	4.9	153,637	54.5

Coverage in this quarter is lower for all lead providers except BreastScreen Midland and BreastScreen South, compared with the same quarter for the previous year (Table 1.3).

By 31 December 2000, 153,637 women had been screened in BreastScreen Aotearoa. This represents 54.5% of women aged 50-64 in New Zealand. BreastScreen South and BreastScreen HealthCare have achieved very good coverage rates, which were close to 70%. To achieve the target coverage of 70% of eligible women in two years is a considerable achievement in a programme without population registers. This target was set for the Australian, New Zealand and British breast screening programmes because at least 70% of eligible women need to be screened for a breast screening programme to make a significant impact on breast cancer mortality.¹⁻³

Breast screening programmes without access to population registers such as BreastScreen Australia, have difficulty in achieving satisfactory coverage. Programmes with access to population registers such as the NHS breast screening programme (NHSBSP) in Britain can achieve 70% coverage,³ with 75.6% coverage for women aged 55-64.⁴ Coverage for women aged 50-54 in the NHSBSP is lower (at 59.8%), partly due to the procedure of calling women for their first screen between their 50th and 53rd birthdays). BreastScreen Aotearoa lead providers could potentially increase their coverage if they had access to an accurate population register. The success of BreastScreen HealthCare and BreastScreen South in achieving their level of coverage should be able to be replicated elsewhere.

In New Zealand the closest thing we have to a population register is the electoral roll. Although the electoral roll is published, only the computerised version held by the Electoral Office holds the age of people listed. This is required to ensure that only the appropriate age group of women are invited. It would be appropriate for BreastScreen Aotearoa to have access to the electoral roll to identify eligible women. One way to increase coverage is to combine the information from the electoral roll with general practice age-sex registers, as occurred in the Otago/Southland and Waikato pilot programmes. This is likely to improve coverage nationally and also to encourage equity of access to screening for eligible women.

Lack of use of the electoral roll also creates other problems for BreastScreen Aotearoa, in that there is no record of women who decline an invitation to participate in the programme. If coverage rates are lower than expected in some regions or among some groups, it will be impossible for BSA to determine whether this is because women have declined to take part, or because the programme has failed to identify and invite eligible women. The latter possibility has ethical implications, with respect to equity of access for all eligible women.

BSAIMG recommends that the government consider the use of the electoral roll to identify eligible women.

1.4 Coverage - by age group

The number of women screened and coverage for the 50-54, 55-59 and 60-64 year age groups for the quarter (Table 1.4a) and cumulative numbers (Table 1.4b) are shown below.

Table 1.4.a Age specific number of women screened and quarterly per cent coverage by lead provider.

Lead provider	Quarterly number screened (% of projected population)			
	50-54	55-59	60-64	Total
BSAN	1,575 (3.9)	901 (2.9)	729 (3.0)	3,205 (3.3)
BSM	1,286 (7.2)	1,009 (6.9)	840 (6.7)	3,135 (7.0)
BSCtoC	785 (5.0)	450 (3.7)	410 (3.8)	1,645 (4.3)
BSC	602 (4.6)	331 (3.4)	257 (3.3)	1,190 (3.9)
BSS	1,443 (6.9)	1,032 (6.5)	803 (5.9)	32,78 (6.5)
BSHC	560 (6.5)	483 (7.2)	429 (7.4)	1,472 (7.0)
TOTAL	6,251 (5.3)	4,206 (4.7)	3,468 (4.6)	13,925 (4.9)

Table 1.4.b Age specific number of women screened and cumulative per cent coverage by lead provider.

Lead provider	Cumulative number screened (% of projected population)			
	50-54	55-59	60-64	Total
BSAN	19,003 (46.6)	13,455 (43.5)	10,738 (44.4)	43,196 (45.1)
BSM	9,250 (51.7)	8,667 (59.2)	7,844 (62.4)	25,761 (57.1)
BSCtoC	8,522 (54.7)	6,359 (51.6)	5,599 (52.2)	20,480 (53.0)
BSC	6,490 (49.3)	4,897 (49.7)	3,729 (47.4)	15,116 (48.9)
BSS	14,399 (68.5)	10,618 (66.5)	9,225 (68.2)	34,242 (67.8)
BSHC	5,812 (67.0)	4,870 (72.8)	4,160 (71.8)	14,842 (70.2)
TOTAL	63,476 (54.2)	48,866 (54.0)	41,295 (55.3)	153,637 (54.5)

No major difference in the cumulative coverage between age groups was apparent.

1.5 Coverage - ethnicity

The number of women screened and coverage by ethnic group for the quarter (Table 1.5a) and cumulative numbers (Table 1.5b) are shown below.

Table 1.5a. Quarterly number of women screened and per cent coverage by ethnic group.

Lead provider	Quarterly number screened (% of projected population)				
	Maori	Pacific	Other	Not stated	Total
BSAN	260 (3.2)	201 (3.3)	2,730 (3.3)	14	3,205 (3.3)
BSM	219 (3.4)	13 (3.0)	2,894 (7.5)	9	3,135 (6.9)
BSCtoC	100 (2.1)	6 (2.0)	1,533 (4.6)	6	1,645 (4.3)
BSC	44 (2.1)	31 (2.3)	1,111 (4.0)	4	1,190 (3.8)
BSS	88 (4.7)	14 (4.3)	3,125 (6.5)	51	3,278 (6.5)
BSHC	31 (3.6)	4 (3.7)	1,410 (6.9)	27	1,472 (6.9)
TOTAL	742 (3.0)	269 (3.2)	12,803 (5.1)	111	13,925 (4.9)

Table 1.5b. Cumulative number of women screened and per cent coverage by ethnic group.

Lead provider	Cumulative number screened (% of projected population)				
	Maori	Pacific	Other	Not stated	Total
BSAN	3,363 (41.1)	2,110 (34.9)	37,017 (45.0)	706	43,196 (44.8)
BSM	2,226 (34.2)	174 (40.2)	23,195 (60.5)	166	25,761 (56.9)
BSCtoC	1,445 (30.0)	88 (30.0)	18,838 (56.6)	109	20,480 (53.3)
BSC	641 (29.9)	370 (27.8)	13,988 (50.2)	117	15,116 (48.2)
BSS	692 (37.1)	138 (42.5)	31,821 (65.8)	1,591	34,242 (67.8)
BSHC	240 (27.6)	38 (35.2)	14,424 (70.8)	140	14,842 (69.5)
TOTAL	8,607 (35.3)	2,918 (34.2)	139,283 (55.6)	2,829	153,637 (54.2)

Coverage for all ethnic groups was lower during this quarter than the previous quarter (Table 1.5a). Low coverage among some ethnic groups may be real or due to differences in the process of establishing ethnicity between the population census (self reporting) and the national monitoring data set.

2. Provision of high quality screening and assessment

2.1 Screened women who have no more than four films taken.

Indicator - Minimum of 80% of women screened have four films or less.

From the data available, the number of films per women by lead provider and mobile and fixed screening centres are shown in Table 2.1.

Table 2.1. Proportion of women having four films or less at screening by lead provider.

Lead Provider	Quarter (%)		Cumulative rate (%)	
	Fixed	Mobile	Fixed	Mobile
BSAN	81.7	86.4	88.3	95.5
BSM	89.1	88.6	87.8	84.2
BSCtoC	88.6	91.5	87.5	85.4
BSC	87.8	93.3	89.1	96.5
BSS	80.9	78.3	70.9	72.7
BSHC	76.0	69.4	74.6	73.1
TOTAL	83.6	85.2	83.0	83.8

The proportion of women having four or fewer films at screening continues to be influenced by the choice by providers of large or small films for screening mammography.

2.2 Technical recall rate

Definition - Number of women recalled for technical repeats as a percentage of number screened.

Indicator - Mobile < 3%
- Fixed < 0.5%

The indicator given above has been taken from the Data Management Manual and is different from that listed in the Interim National Quality Standards. The number of women recalled for technical reasons as a percentage of the number of women screened is shown in Table 2.2.

Table 2.2. Technical recall rates per 100 women screened (per cent) by lead provider.

Lead Provider	Quarter (%)		Cumulative rate (%)	
	Fixed	Mobile	Fixed	Mobile
BSAN	0.1	0.6	0.1	0.4
BSM	0.3	4.2	0.3	4.1
BSCtoC	0.3	3.6	0.3	5.8
BSC	0.6	4.0	0.8	1.5
BSS	0.4	0.7	0.4	1.4
BSHC	0.5	1.1	0.3	0.8
TOTAL	0.3	2.8	0.3	2.5

There is some uncertainty about whether appropriate data is captured in the national monitoring data set for this indicator. For example, if a woman, whose initial films were taken at a mobile unit, is recalled to a fixed unit for extra films, this should be counted as a technical recall for the mobile unit, not the fixed unit. BSAIMG understands that this is being investigated by the Ministry of Health information technology personnel. From the available data it appears that BreastScreen Midland, BreastScreen Central, and BreastScreen Coast to Coast have higher than expected technical recall rates at their mobile units in this quarter. BreastScreen Coast to Coast have reduced their quarterly recall rate to the mobile screening unit from a high of 7.0% in Monitoring Report Number 5 to 3.6% in this quarter. This is a significant improvement and efforts should continue to ensure that the number of women recalled to the mobile is reduced to less than 3%. BreastScreen Central and BreastScreen Midland should also reduce their recall rates to the mobile screening units.

2.3 Technical repeat rate

2.3.1 Technical repeat rate – Definition 1

Definition 1 (from the Data Management Manual) – Number of women with technical repeats (including technical recalls) as a percentage of number screened.

Indicator - <3%

BSAIMG consider that the definition of technical repeats in the Data Management Manual is incorrect. This will be addressed in the review of the Interim National Quality Standards and development of National Quality Standards for BSA. The definition preferred by BSAIMG, is Definition 2, the number of technical repeat films as a percentage of the total number of films taken. This is the definition in the current interim National Quality Standards and the revised draft National Quality Standards document.

2.3.2 Technical repeat rate – Definition 2

Definition 2 - Number of technical repeat films as a percentage of the total number of films taken.

Indicator - < 3%.

The technical repeat rate as defined by the monitoring group (definition 2) is shown in Table 2.3.2.

Table 2.3.2. Technical repeat rate per 100 films taken by lead provider.

Lead Provider	Quarterly technical repeat rate		Cumulative technical repeat rate	
	Fixed	Mobile	Fixed	Mobile
BSAN	1.0	0.3	1.2	0.3
BSM	1.0	1.0	0.9	0.9
BSCtoC	0.6	1.1	1.2	1.3
BSC	1.9	1.1	2.2	0.8
BSS	1.6	0.7	1.7	0.5
BSHC	1.2	0.1	1.2	0.1
TOTAL	1.2	0.8	1.4	0.6

All lead providers met this performance indicator.

2.4 Assessment rate

Definition - Number referred to assessment as a percentage of number screened.

Indicator – prevalence screen: indicator is < 10% and the expected indicator is < 7%
- incidence screen: indicator is < 5% and the expected indicator is < 4%

The rates of referral to assessment are shown in Table 2.4 below.

Table 2.4. The rate of referral to assessment per 100 women screened by lead provider.

Lead Provider	Quarterly assessment rate % (n)	Cumulative assessment rate % (n)
BSAN	7.4 (237)	7.8 (3,354)
BSM	4.5 (141)	5.4 (1,379)
BSCtoC	6.9 (114)	5.4 (1,106)
BSC	9.7 (116)	6.8 (1,026)
BSS	9.9 (323)	7.2 (2,459)
BSHC	6.6 (97)	7.9 (1,177)
TOTAL	7.4 (1,028)	6.8 (10,501)

The assessment rate for BreastScreen HealthCare continued to improve in this quarter with less women referred for assessment. The four lead providers conducting prevalent screens met the performance indicator.

2.5 Assessment records of the National Monitoring Data Set

The Ministry of Health in liaison with lead providers have investigated the number of women with outstanding assessment results up to 31 December 2000. Incomplete assessments and extended assessment greater than six months are now routinely reviewed by the National Screening Unit to ensure that women are being appropriately followed up by lead providers. BSAIMG have been advised that further information on the outcome for these women has been requested from BreastScreen Auckland and North (6 extended assessment, 1 incomplete assessment), BreastScreen Midland (6 extended assessment), and BreastScreen Central (6 extended assessments). The number of women placed on extended assessment has reduced since BreastScreen Aotearoa commenced. BSAIMG view this as a major improvement in the screening programme.

2.6 False positive rate

Definition - Number with false positive screening results as a percentage of number screened.

Indicator -prevalence round: indicator is < 9% and the expected indicator is < 6%
-incidence round: indicator is < 4% and the expected indicator is < 3%

Table 2.6. False positive rate per 100 women screened by lead provider.

Lead Provider	Quarterly false positive rate (per 100 women)	Cumulative false positive rate (per 100 women)
BSAN	6.9	6.8
BSM	3.5	4.7
BSCtoC	6.2	4.7
BSC	8.8	6.0
BSS	9.0	6.4
BSHC	6.1	7.3
TOTAL	6.6	6.0

All lead providers except BreastScreen HealthCare have met the performance indicators for prevalence or incidence screening. Four lead providers undertaking prevalence screening (BreastScreen Auckland and North, BreastScreen Coast to Coast, BreastScreen Central, and BreastScreen South) have met the performance indicators for prevalence screening. The other two lead providers are undertaking a combination of incidence and prevalence screening, since they include some women who were part of the pilot programmes. These lead providers would, therefore, be expected to easily meet the expected indicator for prevalence screening, if not the indicator for incidence screening. BreastScreen Midland has met the performance indicator for incidence screening. BreastScreen HealthCare has not met the performance indicator for incidence screening or the expected indicator for prevalence screening. BreastScreen HealthCare has reduced its false positive rate.

2.7 Open surgical biopsy rate

Definition - Number of women having open biopsy as a percentage of women screened.

Indicator - < 1%

The open surgical biopsy rate is shown in Table 2.7.

Table 2.7. Number and rate of open surgical biopsy per 100 women screened by lead provider.

Lead Provider	Quarterly open surgical biopsy rate per 100 women screened (number of women)	Cumulative open surgical biopsy rate per 100 women screened (number of women)
BSAN	0.5 (17)	0.3 (148)
BSM	0.1 (4)	0.2 (41)
BSCtoC	0.0 (0)	0.3 (57)
BSC	0.4 (5)	0.3 (46)
BSS	0.1 (4)	0.2 (58)
BSHC	0.0 (0)	0.6 (93)
TOTAL	0.2 (30)	0.3 (443)

All lead providers met this performance indicator. BSAIMG has been advised that not all data regarding open surgical biopsies carried out by lead providers and recorded in the national monitoring data set, have been transferred to the monitoring group.

2.8 Benign biopsy weight

Definition - Number with benign open biopsy where weight of benign lesion is less than 20 grams as a percentage of number with benign open biopsy.

Indicator - 80% or more of open biopsies (benign result) should weigh < 20gm.

Table 2.8. Number and percent of benign open biopsies, which weigh <20gm by lead provider.

Lead Provider	Quarterly percent of benign biopsies weighing less than 20gm (n)	Cumulative percent of benign biopsies weighing less than 20gm (n)
BSAN	28.6 (4)	49.6 (56)
BSM	33.3 (1)	*
BSCtoC	#	63.2 (24)
BSC	0 (0)	*
BSS	33.3 (1)	34.9 (15)
BSHC	#	75.0 (51)
TOTAL	28.6 (6)	55.7 (146)

No benign open surgical biopsy recorded for the quarter.

* BreastScreen Midland and BreastScreen Central cumulative records excluded because specimen weights were not available for more than 90% of specimens.

BreastScreen HealthCare recorded the highest cumulative percentage of open biopsy weighing less than 20 gm (Table 2.8).

BSAIMG has been advised that not all data regarding open surgical biopsies carried out by lead providers and recorded in the national monitoring data set, have been transferred to the monitoring group.

2.9 Needle biopsy rates

Definition

- Number of women undergoing fine needle aspiration (FNA) as a percentage of number screened.
- Number of women undergoing core biopsy as a percentage of number screened.

Indicator - None set

Table 2.9a. Quarterly rate of needle biopsy per 100 women screened and numbers of women undergoing needle biopsy (n) by lead provider.

Lead Provider	Quarterly Totals			
	FNA % (n)	Core needle % (n)	Both* % (n)	Total
BSAN	0.2 (6)	1.2 (37)	0.1 (4)	1.5 (47)
BSM	0.1 (2)	0.5 (17)	0.0 (0)	0.6 (19)
BSCtoC	0.0 (0)	0.4 (6)	0.0 (0)	0.4 (6)
BSC	0.3 (3)	1.5 (18)	1.0 (12)	2.8 (33)
BSS	0.3 (10)	0.9 (28)	0.1 (3)	1.3 (41)
BSHC	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
TOTAL	0.2 (21)	0.8 (106)	0.1 (19)	1.1 (146)

* Women who have both FNA and core needle procedures

Table 2.9b. Cumulative rate of needle biopsy per 100 women screened and numbers of women undergoing needle biopsy (n) by lead provider.

Lead Provider	Cumulative totals			
	FNA % (n)	Core needle % (n)	Both* % (n)	Total
BSAN	0.3 (111)	1.7 (720)	0.2 (89)	2.1 (920)
BSM	0.3 (65)	1.1 (274)	0 (0)	1.3 (341)
BSCtoC	0.1 (12)	1.1 (232)	0 (0)	1.2 (244)
BSC	0.2 (36)	0.7 (108)	1.3 (199)	2.3 (343)
BSS	0.8 (267)	1.5 (512)	0 (0)	2.3 (796)
BSHC	0.5 (76)	0.7 (109)	0 (0)	1.3 (190)
TOTAL	0.4 (567)	1.3 (1,955)	0.2 (312)	1.8 (2,834)

*Women who have both FNA and core needle procedures

BreastScreen Central continues to have a relatively high proportion of women undergoing both FNA and core needle biopsy in both the quarterly (Table 2.9a) and cumulative (Table 2.9b) results. This issue has been highlighted since data for this performance indicator first became available. BSAIMG would like to see a reduction in the number of women undergoing both procedures.

BSAIMG have been advised that not all needle biopsies carried out by lead providers and transferred to the National monitoring data set, have been transferred to the monitoring group.

2.10 Specificity of the Programme

Definition - Number with true negative screening results as a percentage of this number plus the number with false positive screening results.

Indicator - > 93%

Table 2.10. Specificity of the programme by lead provider.

Lead Provider	Quarterly specificity (%)	Cumulative specificity (%)
BSAN	93.6	93.2
BSM	96.4	95.3
BSCtoC	93.8	95.3
BSC	91.1	94.0
BSS	91.1	93.5
BSHC	93.9	92.7
TOTAL	93.5	93.9

All lead providers met the cumulative performance indicator (Table 2.10). BreastScreen Central and BreastScreen South at 91.1% did not meet the indicator for this quarter. Specificity for both of these lead providers has been declining since Monitoring Report number 4.

3. Early detection of DCIS or breast cancer

3.1 Detection rate of DCIS or breast cancer

Definition – number with diagnosed DCIS or breast cancer per 1000 women screened.

Indicator - prevalence round: indicator is ≥ 6 per 1000 women screened
- incidence round: indicator is ≥ 3 per 1000 women screened

The number of women recorded with a final diagnosis of DCIS or cancer is recorded in Table 3.1.

Table 3.1. Cancer detection rate by lead provider per 1000 women screened and the number of women with DCIS or cancer detected.

Lead Provider	Quarterly detection rate (number detected 1.10.00 – 31.12.00)	Cumulative detection rate (number detected 1.12.98 – 31.12.00)
BSAN	7.5 (24)	8.4 (363)
BSM	4.8 (15)	5.2 (133)
BSCtoC	6.1 (10)	6.8 (140)
BSC	8.4 (10)	7.1 (108)
BSS	9.5 (31)	7.3 (249)
BSHC	4.8 (7)	5.9 (87)
TOTAL†	7.0 (97)	7.0 (1080)

BreastScreen Midland and BreastScreen HealthCare have lower detection rates of DCIS or cancer than the other lead providers. This is to be expected since these lead providers are undertaking a combination of prevalence and incidence screening. All lead providers have met the performance indicators specified.

Lead providers are expected to ensure that symptomatic women are not being included within the screening programme.

The quarterly referral to assessment, specificity, false positive rate and DCIS or cancer detection rate are summarised in Table 3.1.1.

Table 3.1.1. Referral to assessment, specificity, false positive rate and DCIS or cancer detection rate by lead provider for the October to December 2000 quarter.

Lead provider	Referral to assessment per 100 women screened	Specificity(%)	False positive rate per 100 women screened	Detection rate per 1000 women screened
BSAN	7.4	93.6	6.9	7.5
BSM	4.5	96.4	3.5	4.8
BSCtoC	6.9	93.8	6.2	6.1
BSC	9.7	91.1	8.8	8.4
BSS	9.9	91.1	9.0	9.5
BSHC	6.6	93.9	6.1	4.8
TOTAL	7.4	93.5	6.6	7.0

Low specificity is associated with an increased referral to assessment and false positive rate.

3.2 DCIS and invasive breast cancer

There is a necessary delay in the recording of detail about DCIS or invasive breast cancer diagnosed due to the time required to arrange treatment and the subsequent recording of treatment data by lead providers. As this is an ongoing issue, cancer details recorded within quarterly monitoring reports will be reported up to the end of the previous quarter. It was anticipated that complete information on cancers detected until the end of the previous quarter would be available, and could be reported, however, insufficient data was available for this report.

Of the 984 women recorded with a diagnosis of DCIS or invasive breast cancer from the commencement of BreastScreen Aotearoa to the 30 September 2000, only 404, or 41.1%, have the UICC TNM Classification of the cancer stage, nodal status and the presence of distant metastatic disease recorded in the national monitoring data set. The lack of information about the majority of DCIS and breast cancers detected makes monitoring vital aspects of BreastScreen Aotearoa relevant to the assessment of the effectiveness of the programme difficult and the detection rate of invasive cancers separately from that for DCIS can not be calculated.

One of the most important ways to monitor the programme, and estimate its likely impact on breast cancer mortality, is to examine the stage distribution, size, and grade of tumours detected, and the absolute rate of advanced cancers detected. The data from BreastScreen Aotearoa can then be compared with the results of randomised controlled trials of breast screening and other overseas programmes. Interpretation of the information on stage distribution, histological grade, or size of tumours detected will be difficult until complete information for a chronological period is available.

4. Summary of treatment

The Ministry of Health had advised BSAIMG that lead providers were collecting treatment data and that it would be forwarded to BSAIMG with the transfer of the national monitoring data set on the 28 February 2001. As previously stated in Section 3.2 of this report, the data received on cancer detail was incomplete for the majority of women detected with cancer or DCIS to September 30, 2000. Treatment data for these women was also incomplete. Of the 984 women with breast cancer and DCIS detected to 30 September 2000, only 404 had staging of their cancer and DCIS recorded. Of these 404 women, 346 had the last surgical treatment procedure recorded within the national monitoring data set. Of these women, only 325 had detail of radiotherapy recorded, 337 had chemotherapy details recorded and 338 had endocrine manipulation details recorded.

5. Provision of an appropriate and acceptable service

5.1 Time taken providing results of screening

Definition - Date of providing results to women minus date of final screening visit.

Indicator - 95% notified within 10 working days.

From the national monitoring data set, the time taken to provide the results of screening to women for each lead provider is shown in Table 5.1.

Table 5.1. Time taken to provide results of screening to women for each lead provider.

Lead Provider	Quarterly % notified within 10 working days* (number of women)	Cumulative % notified within 10 working days* (number of women)
BSAN	99.2 (3,179)	97.6 (42,185)
BSM	98.5 (3,088)	98.8 (25,451)
BSCtoC	99.2 (1,632)	99.0 (20,266)
BSC	97.4 (1,159)	98.0 (14,814)
BSS	98.3 (3,222)	97.8 (33,473)
BSHC	65.6 (965)	62.0 (9,206)
TOTAL	95.1 (13,245)	94.6 (145,395)

* A five-day working week is used to calculate this indicator.

All lead providers met this performance indicator except BreastScreen HealthCare. The failure of BreastScreen HealthCare to notify at least 95% of women of their screening results within ten working days has been highlighted in previous BSAIMG quarterly reports. In this quarter there has been significant improvement in time taken by BreastScreen HealthCare to notify screening results to women. BSAIMG recommends that the Ministry of Health continue to encourage BreastScreen HealthCare to meet this indicator.

5.2 Time taken from screening visit to first offer of an assessment appointment

Definition - Date of first available appointment offered for assessment minus date of final screening visit.

Indicator – At least 90% of women offered an assessment appointment within 14 working days of their final screening mammogram.

The time taken from screening visit to first offer of an assessment appointment is shown in Table 5.2.

Table 5.2. Time taken from screening visit to first offer of an assessment appointment for the women screened by each lead provider.

Lead Provider	Quarterly % offered assessment within 14 working days* (number of women)	Cumulative % offered assessment within 14 working days* (number of women)
BSAN	94.1 (223)	73.2 (2,454)
BSM	80.9 (114)	84.3 (1,163)
BSCtoC	78.9 (90)	87.4 (967)
BSC	94.0 (109)	93.3 (957)
BSS	90.7 (293)	83.6 (2,056)
BSHC	57.7 (56)	38.1 (449)
TOTAL	86.1 (885)	76.6 (8,046)

* A five-day working week is used to calculate this indicator.

Several lead providers failed to provide timely assessment appointments in this quarter. BreastScreen South has met the performance indicator, and this represents an improvement over the previous quarter. BreastScreen HealthCare has improved the timeliness of assessment appointments in this quarter, but is still some way from meeting the performance indicator. This may be related to delays in providing the results of screening to women (Table 5.1).

5.3 Time taken from assessment to final diagnostic biopsy.

Definition

- Date of needle biopsy minus date of first level assessment.
- Date first offered for open surgical biopsy minus date of first level assessment.

Indicator

- At least 90% of women requiring needle biopsy procedure have that procedure completed within 7 days of their assessment.
- At least 90% of women requiring open biopsy procedure are offered that procedure within 3 weeks of their assessment.

This measure of performance is shown in Table 5.3.

Table 5.3. Percentage and numbers of women (n) receiving biopsy within 7 days of the date of first level of assessment for needle biopsy and 3 weeks for open surgical biopsy.

Lead Provider	Quarterly		Cumulative	
	Percentage for which needle biopsy completed within 7 days of assessment (n)	Percentage for which open biopsy offered within 3 weeks of assessment (n)	Percentage for which needle biopsy completed within 7 days of assessment (n)	Percentage for which open biopsy offered within 3 weeks of assessment (n)
BSAN	85.7(48)	41.2 (7)	87.2 (844)	48.6 (72)
BSM	94.7 (18)	50.0 (2)	77.4 (264)	22.0 (9)
BSCtoC	100 (6)	0 (0)	94.3 (230)	29.8 (17)
BSC	97.0 (32)	80.0 (4)	93.6 (321)	65.2 (30)
BSS	78.0 (32)	50.0 (2)	86.8 (691)	60.3 (35)
BSHC	0 (0)	0 (0)	97.9 (186)	89.2 (83)
TOTAL	87.7 (136)	50.0 (15)	88.0 (2,536)	55.5 (246)

The number of women undergoing open biopsy in each quarter is small. Cumulative percentages recorded within the national monitoring data set do not meet the performance indicators for timely open biopsy. BreastScreen HealthCare is the most successful lead provider in this respect. All other lead providers are a long way from meeting the performance indicator for the timeliness of open biopsy.

BSAIMG has been advised that not all data regarding open surgical biopsies carried out by lead providers and recorded in the national monitoring data set, have been transferred to the monitoring group.

5.4 Time taken from final diagnostic biopsy to reporting assessment results.

Definition - Date of reporting final biopsy results to woman minus date of final diagnostic biopsy.

Indicator - Results reported to at least 90% of women within 7 days of final diagnostic biopsy.

For all lead providers, the percentage of women receiving results within 7 days of their final diagnostic biopsy is shown in Table 5.4.

Table 5.4. Time taken from final diagnostic biopsy to reporting assessment results for women of each lead provider.

Lead Provider	Quarterly % results within 7 days (number of women)	Cumulative % results within 7 days (number of women)
BSAN	84.8 (78)	87.2 (1,574)
BSM	53.3 (24)	72.5 (295)
BSCtoC	92.5 (37)	84.1 (301)
BSC	87.9 (29)	86.0 (332)
BSS	97.2 (137)	66.1 (711)
BSHC	100.0 (17)	71.5 (206)
TOTAL	87.5 (322)	79.1 (3,419)

BreastScreen South, BreastScreen HealthCare, and BreastScreen Coast to Coast have successfully met this performance indicator for this quarter.

5.5 Time taken from reporting assessment results to first date offered for primary treatment.

Definition - Date first offered primary treatment minus date of reporting final biopsy results to woman.

Indicator – At least 90% of women offered primary treatment within 3 weeks of the final diagnosis being reported to the woman.

As treatment data is incomplete Table 5.5 has been left blank.

Table 5.5. Time from reporting assessment results to first date offered primary treatment for women of each lead provider.

Lead Provider	Quarterly % women offered Primary treatment within 3 weeks	Cumulative % women offered primary treatment within 3 weeks
BSAN BSM BSCtoC BSC BSS BSHC		
TOTAL		

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