BreastScreen Aotearoa

MONITORING REPORT No. 9

Women screened
between 1 April and 30 June 2001

BreastScreen Aotearoa Independent Monitoring Group
Report to the Ministry of Health

20 December 2001

Technical Report No. 36
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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 are specified by 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 is in 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 August 28, 2001. The draft report was written in September and October 2001 and was sent to the Ministry of Health on October 25, 2001 for comment.

Technical terms are used throughout the report, and an understanding of these terms is likely to be necessary to interpret some parts of the report.

DISCLAIMER
BSAIMG results within monitoring reports are obtained from the National Monitoring Data Set, which has been received from the National Screening Unit of the Ministry of Health. BSAIMG results are calculated by lead provider and cumulatively for BreastScreen Aotearoa. The monitoring group does not monitor the results for individual women within BreastScreen Aotearoa.

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Executive Summary

This quarterly report relates to women screened during 1 April to 30 June 2001, and also includes data on assessment and investigations carried out for these women following their screening mammograms. Some women will have received their first screens during this period, while many other women will have received their second or subsequent screens, since it is now more than two years since the start of BreastScreen Aotearoa. When a population is screened for the first time this is called prevalence screening. Second and subsequent screening is called incidence screening. Until now, all lead providers (except BreastScreen HealthCare and BreastScreen Midland, which included the regions covered by the pilot programmes in which many women had been screened previously) had been performing prevalence screening.

All lead providers are to be congratulated on continuing to screen large numbers of women in BreastScreen Aotearoa. The timeliness of providing screening results and offering further investigations to women is improving overall.

Areas, which continue to require attention, include coverage in the North Island, and the coverage of Maori and Pacific women. Lower than expected coverage does not reduce the quality of screening received by individual women, but it does mean that the potential for BreastScreen Aotearoa to reduce breast cancer deaths among New Zealand women will be less than expected.

As part of routine quality assurance, all lead providers should be undertaking regular reviews of the films of women who have been referred for assessment. Such reviews are essential for maintaining adequate specificity, and reducing the number of women receiving false positive test results.

BSAIMG considers that treatment data are required for 90% of women diagnosed with breast cancer or DCIS, in order to monitor important indicators such as stage distribution, and size distribution. If more than 10% of data are not complete, bias could result. The 90% threshold for treatment data is consistent with the 90% threshold adopted by BSAIMG as a requirement for all data reported in these quarterly reports. Data for 90% of breast cancers or DCIS detected, and the treatment offered to women with breast cancer, were available in sufficient detail for monitoring from only one lead provider. These data are essential for monitoring the performance of BreastScreen Aotearoa.

BreastScreen Coast to Coast has been able to provide sufficient data about tumours detected to indicate that their results are, so far, compatible with a reduction in breast cancer mortality for women screened.

Recommendations

1. Recommendations in previous monitoring reports to improve coverage continue to be relevant, because the impact of screening on breast cancer mortality in a population is proportional to coverage. The processes used by BreastScreen Auckland and North, BreastScreen Midland, BreastScreen Coast to Coast and BreastScreen Central to identify eligible women and invite them for screening need to be improved. There may be problems with the identification and invitation processes, or the acceptance rate following invitations. These factors may be beyond the direct control of the National Screening Unit of the Ministry of Health.

2. Efforts should be made to improve coverage for Maori and Pacific women.

3. The elevated technical recall rate at the fixed mammography sites of BreastScreen Central, BreastScreen South and BreastScreen HealthCare and the mobile sites for BreastScreen Midland, BreastScreen Coast to Coast and BreastScreen Central should be investigated and effective measures to reduce the recall rate instituted.

4. Continued reduction in the referral to assessment rate for prevalent screening of BreastScreen HealthCare should be encouraged.

5. The National Screening Unit should review with BreastScreen HealthCare the results of any systematic review of films conducted by BreastScreen HealthCare of women referred to assessment.

6. BSAIMG recommends that the benign biopsy weight indicator no longer be reported.

7. The current indicator of greater than 93% for specificity should apply only to prevalence screening. A new indicator of greater than 96% should be considered for incidence screening. It would be appropriate to adopt this indicator for specificity, because the indicator for the false positive rate in incidence screening is less than four percent. The false positive rate equals one minus specificity, so a different indicator for the false positive rate in incidence screens requires a change in the indicator for specificity in incidence screens. Specificity normally increases in incidence screening because film readers have baseline films (from the previous screen) with which to compare the most recent films taken.

8. BreastScreen Coast to Coast is the only lead provider able to report 90% of treatment data for women diagnosed with breast cancer or DCIS. The National Screening Unit should consider recommending that lead providers consider adopting the strategies used by BreastScreen Coast to Coast for the inclusion of cancer detail and treatment records in the national monitoring data set because this may result in more timely collection of treatment data.

9. BSAIMG recommends that consistent staging of breast cancer is used throughout BreastScreen Aotearoa.

10. Efforts should be made to continue the improvements made to the timely reporting of assessment results.

11. Data required to assess the indicator for the timely offer of primary treatment need to be included in the national monitoring data set.

Table 1. Summary of Lead Provider and BreastScreen Aotearoa results against indicators from 1 January 2001 to 30 June 2001.

Indicator	LEAD PROVIDERS BSAN	BSM	BSCtoC	BSC	BSS	BSHC	BSA
Coverage (%) for 1 January to 30 June 2001 *- Indicator > 70% (>8.75% per quarter; 17.5% for the period 1.1.01 to 30.6.01)*							
Overall	12.0	15.4	14.7	14.6	20.6	19.3	15.3
Maori	7.6	8.0	8.6	7.9	14.6	11.4	8.6
Pacific	7.9	8.1	8.5	4.3	19.7	10.2	7.8
Other	12.7	16.7	15.5	15.6	20.7	19.1	16.1
(not stated)	75	85	28	7	91	124	410
Technical recall (%) *- Indicator (Fixed < 0.5%; Mobile <3%)*							
Fixed	0.3	0.2	0.1	1.7	0.4	0.5	0.5
Mobile	0.5	4.2	5.7	4.5	0.4	1.3	2.7
Technical repeat (definition 2) (%) *Indicator <3%*							
Fixed	0.7	1.2	1.2	1.9	1.3	1.5	1.2
Mobile	0.1	0.5	1.9	1.2	0.2	0.4	0.6
Assessment (%) *Indicator – prevalence screen – indicator is <10%, expected indicator is <7%* *- incidence screen - indicator is <5%, expected indicator is <4%*							
Prevalence	8.2	5.5	6.7	9.2	8.9	13.5	8.1
Incidence	4.0	2.8	3.6	4.2	4.8	3.0	3.8
False positive rate (%) *Indicator – prevalence round, indicator is <9%, expected indicator <6%* *- incidence round, indicator is <4%, expected indicator <3%*							
Prevalence	6.8	4.5	5.6	8.2	8.2	11.9	7.0
Incidence	3.3	1.9	3.0	3.0	4.2	2.6	3.1
Open surgical biopsy rate (%) *Indicator <1%*							
	0.2	0.1	0.2	0.3	0.2	0.2	0.2
Benign biopsy weight (%) *Indicator 80% or more of benign open biopsies should weigh <20g*							
	50.0	25.0	*	50.0	46.7	85.7	51.9

....continued

Table 1 (*continued*).
Summary of Lead Provider and BreastScreen Aotearoa results against indicators from 1 January 2001 to 30 June 2001.

Indicator	LEAD PROVIDERS BSAN	BSM	BSCtoC	BSC	BSS	BSHC	BSA
Needle biopsy rate (%) *Indicator – none; *Women who have both FNA and core needle procedures.*							
FNA only	0.1	0.1	0.1	0.2	0.8	0.3	0.3
Core needle only	1.2	0.9	1.2	1.5	1.7	0.6	1.3
Both*	0.1	0.0	0.0	0.4	0.2	0.0	0.1
Other	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total	1.5	1.1	1.3	2.0	2.8	0.9	1.7
Specificity (%) *Indicator >93%*							
Prevalence	93.1	95.4	94.4	91.8	91.8	87.9	92.9
Incidence	96.7	98.1	97.0	97.0	95.7	97.4	96.9
Detection rate of DCIS and invasive cancer (per thousand women screened) *Indicator – prevalence - ≥ 6 per 1000 women screened* *- incidence - ≥ 3 per 1000 women screened*							
Prevalence	10.8	6.1	7.5	7.3	6.4	10.6	8.1
Incidence	5.6	4.7	5.2	11.6	5.5	3.1	5.7
Time taken providing results of screening (%) *Indicator – at least 95% notified within 10 days*							
	98.0	97.9	98.9	99.3	99.3	91.5	97.9
Time taken from screening visit to first offer of an assessment appointment (%) *Indicator – at least 90% offered an assessment appointment within 14 working days of their final screening visit*							
	89.1	85.9	88.1	92.7	95.5	64.9	88.7
Time taken from assessment to final diagnostic biopsy (%) *Indicator 1 – at least 90% of women requiring* ***needle biopsy*** *procedure have that procedure completed within 7 days of their assessment*							
	83.5	88.2	95.8	92.6	86.8	89.5	87.9
Indicator 2 – at least 90% of women requiring ***open biopsy*** *procedure offered that procedure within 3 weeks of their assessment*							
	56.0	62.5	45.5	75.0	72.2	80.0	64.3
Time taken from final diagnostic biopsy to reporting assessment result (%) *Indicator – results reported to at least 90% of women within 7 days of final diagnostic biopsy*							
	84.9	81.0	86.3	86.6	93.4	88.1	87.9
Time taken from reporting assessment results to first date offered for primary treatment (%) *Indicator – at least 90% of women offered primary treatment within 3 weeks of the final diagnosis being reported to the women*							
	#	#	71.4	#	#	#	#

* Default values entered where actual weights unavailable.
\# 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 and 1.2 Registration rate – ethnicity

The data provided in the national monitoring data set does not provide useful information about the number of women registered with BreastScreen Aotearoa or the invitation process. BSAIMG has calculated registration figures by subtracting the cumulative number of women registered in the latest enrolment detail table of the national monitoring data set from previous quarterly figures. Unfortunately, some lead providers can only register women within their information system when they attend for screening (Monitoring Report no 7). As lead providers may be entering registration data at different times in the process and there is no data field to record the actual date of registration BSAIMG has ceased reporting registration rates (Recommendation 1, Monitoring Report no 8).

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.

Overall coverage of eligible women is shown in Table 1.3.

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 Round 2 (% of projected population)	
BSAN	6,784	7.0	11,616	12.0
BSM	3,915	8.6	6,985	15.4
BSCtoC	3,601	9.4	5,643	14.7
BSC	2,360	7.5	4,588	14.6
BSS	5,522	10.9	10,412	20.6
BSHC	2,003	9.4	4,132	19.3
TOTAL	24,185	8.5	43,376	15.3

In this, the second quarter of 2001, 24,185 women were screened. This was 8.5% of the eligible population. To achieve 70% coverage of eligible women over a two-year period, lead providers need to screen approximately 9% of the population per quarter. BreastScreen South and BreastScreen HealthCare achieved this coverage in the first and second quarters of 2001 and BreastScreen Coast to Coast in the second quarter of 2001. The quarterly coverage increased from the previous quarter for all lead providers except BreastScreen HealthCare, which had a small decrease of 0.1% in this quarter.

Table 1.3a shows the number of women screened at fixed and mobile sites by lead provider.

Table 1.3a. Overall number of women screened at each screening site by lead provider.

Lead provider	Quarterly number screened		Cumulative number screened Round 2	
	Fixed	Mobile	Fixed	Mobile
BSAN	5,966	818	10,454	1,162
BSM	2,733	1,182	4,953	2,032
BSCtoC	2,896	705	4,851	792
BSC	2,012	348	3,757	831
BSS	4,749	773	9,272	1,140
BSHC	1,523	480	2,932	1,200
TOTAL	19,879	4,306	36,219	7,157

Recommendations of previous monitoring reports to improve coverage continue to be relevant. Reasons for low coverage include an inability to identify all eligible women, an inability to invite all eligible women, and a low acceptance rate following an invitation. The processes used by BreastScreen Auckland and North, BreastScreen Midland, BreastScreen Coast to Coast and BreastScreen Central to identify and invite eligible women need to be improved. There may be problems with the identification and invitation processes or the acceptance rate following invitations. These factors may be beyond the direct control of the National Screening Unit of the Ministry of Health (Recommendation 1).

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 are shown for the quarter (Table 1.4a) and cumulative numbers (Table 1.4b) are shown below. Coverage by age continues to be consistent across each of the three age groups.

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

Lead provider	Quarterly number screened (% of projected population)			
	50-54	55-59	60-64	Total
BSAN	2,627 (6.1)	2,222 (6.5)	1,935 (7.2)	6,784 (6.5)
BSM	1,426 (7.7)	1,051 (6.7)	1,438 (10.5)	3,915 (8.1)
BSCtoC	1,340 (8.3)	1,175 (8.9)	1,086 (9.5)	3,601 (8.8)
BSC	905 (6.7)	796 (9.5)	659 (7.7)	2,360 (7.2)
BSS	2,363 (10.8)	1,657 (5.5)	1,502 (10.2)	5,522 (10.2)
BSHC	643 (7.2)	694 (9.9)	666 (10.7)	2,003 (9.0)
TOTAL	9,304 (7.6)	7,595 (7.7)	7,286 (8.9)	24,185 (8.0)

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

Lead provider	Cumulative number screened – Round 2. (% of projected population)			
	50-54	55-59	60-64	Total
BSAN	4,780 (11.2)	3,711 (10.8)	3,125 (11.6)	11,616 (11.2)
BSM	2,749 (14.8)	1,923 (12.3)	2,313 (16.8)	6,985 (14.5)
BSCtoC	2,172 (13.4)	1,810 (13.8)	1,661 (14.5)	5,643 (13.8)
BSC	1,774 (13.2)	1,546 (14.5)	1,268 (14.8)	4,588 (14.0)
BSS	4,419 (20.2)	3,159 (18.1)	2,834 (19.2)	10,412 (19.3)
BSHC	1,535 (17.1)	1,331 (19.0)	1,266 (20.4)	4,132 (18.6)
TOTAL	17,429 (14.3)	13,480 (13.7)	12,467 (15.3)	43,376 (14.4)

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. Maori and Pacific women continue to have lower coverage rates than other women. Efforts should be made to improve coverage of these women (Recommendation 2).

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	334 (4.1)	289 (4.8)	6,118 (7.4)	43	6,784 (7.0)
BSM	295 (4.5)	18 (4.2)	3,595 (9.4)	7	3,915 (8.6)
BSCtoC	314 (6.5)	13 (4.4)	3,257 (9.8)	17	3,601 (9.4)
BSC	77 (3.6)	33 (2.5)	2,247 (8.1)	3	2,360 (7.5)
BSS	149 (8.0)	40 (12.3)	5,288 (10.9)	45	5,522 (10.9)
BSHC	51 (5.9)	4 (3.7)	1,903 (9.3)	45	2,003 (9.4)
TOTAL	1,220 (5.0)	397 (4.7)	22,408 (8.9)	160	24,185 (8.5)

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

Lead provider	Cumulative number screened – Round 2 (% of projected population)				
	Maori	Pacific	Other	Not stated	Total
BSAN	623 (7.6)	475 (7.9)	10,443 (12.7)	75	11,616 (12.0)
BSM	521 (8.0)	35 (8.1)	6,419 (16.7)	10	6,985 (15.4)
BSCtoC	412 (8.6)	25 (8.5)	5,178 (15.5)	28	5,643 (14.7)
BSC	170 (7.9)	57 (4.3)	4,354 (15.6)	7	4,588 (14.6)
BSS	273 (14.6)	64 (19.7)	9,984 (20.7)	91	10,412 (20.6)
BSHC	99 (11.4)	11 (10.2)	3,898 (19.1)	124	4,132 (19.3)
TOTAL	2,098 (8.6)	667 (7.8)	40,276 (16.1)	335	43,376 (15.3)

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	84.6	91.8	84.7	94.0
BSM	89.2	86.3	88.8	87.6
BSCtoC	87.0	91.2	88.1	91.4
BSC	74.5	92.0	79.1	93.5
BSS	84.2	87.8	85.3	87.4
BSHC	71.8	70.6	72.8	72.8
TOTAL	83.5	87.1	84.3	87.7

The proportion of women having four films at screening continues to be influenced by lead providers' choice of large or small films for screening. BreastScreen Central fell below the indicator at the fixed site during this quarter but the mobile screening site maintained a result above the indicator.

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 definition 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	0.4	0.6	0.3	0.5
BSM	0.1	4.5	0.2	4.2
BSCtoC	0.1	6.2	0.1	5.7
BSC	1.4	5.5	1.7	4.5
BSS	0.6	0.5	0.4	0.4
BSHC	0.7	2.3	0.5	1.3
TOTAL	0.5	3.2	0.5	2.7

Three lead providers, BreastScreen Central, BreastScreen South and BreastScreen HealthCare have exceeded the indicator for technical recalls related to the fixed site. Three lead providers, BreastScreen Midland, BreastScreen Coast to Coast and BreastScreen Central have exceeded the indicator for technical recalls related to the mobile site.

Technical recalls should be logged to the site at which the original films were taken. For instance, if a woman has her screening films taken on a mobile unit, and then is recalled to a fixed unit for technical repeat films, this recall should be logged to the mobile unit.

Lead providers have identified a problem with MRT recruitment and training. There is a worldwide shortage of highly qualified MRTs. This makes it difficult to maintain low recall rates. Although this difficulty is recognised, it is important to keep recall rates as low as possible. High recall rates cause inconvenience to women, and may make the programme less acceptable to women. High recall rates also cause women to be exposed to extra radiation (although any risk associated with this is very small), increase costs for BreastScreen Aotearoa and consume valuable resources which might be used for screening new women.

The elevated technical recall rate at the fixed mammography sites of BreastScreen Central, BreastScreen South and BreastScreen HealthCare and the mobile sites for BreastScreen Midland, BreastScreen Coast to Coast and BreastScreen Central should be investigated and effective measures to reduce the recall rate instituted (Recommendation 3).

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 not useful. This will be addressed in the Ministry of Health review of the Interim National Quality Standards. The definition preferred by BSAIMG, is Definition 2, the number of technical repeat films as a percentage of the total number of films taken.

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	0.7	0.0	0.7	0.1
BSM	1.1	0.3	1.2	0.5
BSCtoC	1.3	2.1	1.2	1.9
BSC	2.1	1.5	1.9	1.2
BSS	1.4	0.2	1.3	0.2
BSHC	1.4	0.7	1.5	0.4
TOTAL	1.2	0.7	1.2	0.6

All lead providers met this performance indicator for both quarterly and cumulative results.

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)	
	Prevalence	Incidence	Prevalence	Incidence
BSAN	8.8 (225)	3.9 (165)	8.2 (472)	4.0 (236)
BSM	6.4 (92)	3.0 (75)	5.5 (162)	2.8 (114)
BSCtoC	6.2 (82)	3.8 (86)	6.7 (161)	3.6 (116)
BSC	9.5 (81)	4.2 (64)	9.2 (176)	4.2 (113)
BSS	9.9 (230)	5.0 (162)	8.9 (446)	4.8 (259)
BSHC	11.9 (40)	2.5 (41)	13.5 (127)	3.0 (95)
TOTAL	8.5 (750)	3.9 (593)	8.1 (1,544)	3.8 (933)

The referral to assessment rate is reported by prevalence and incidence screen. All lead providers achieved results within the indicator range for referral of women to assessment for incidence screening except BreastScreen South at 5%. BSAIMG has been informed that this lead provider is reviewing these assessments.

Five lead providers met the referral to assessment performance indicator for prevalence screening. The quarterly result for BreastScreen Central and BreastScreen South are close to the upper range of the indicator. BreastScreen HealthCare (11.9%) exceeded the referral rate to assessment for prevalence screening of less than 10% and the expected rate of less than 7% but this result was lower than the rate of 14.5% achieved in the previous quarter. Continued reduction in the referral rate to assessment for prevalent screening of BreastScreen HealthCare should be encouraged (Recommendation 4).

2.5 Outstanding assessment records of the National Monitoring Data Set

The National Screening Unit advised BSAIMG that there were 48 outstanding assessment records in the National Monitoring Data Set for the second quarter of 2001. Of these, 20 assessments have since been completed and the record sent to NZHIS for inclusion in the data set. Seven records remained incomplete, 13 women had been placed on extended assessment (BreastScreen Auckland and North – 1; BreastScreen Midland – 6; BreastScreen Coast to Coast – 4; BreastScreen South – 1 and BreastScreen HealthCare 1); four women had exited the programme and two women had exited to be assessed by a private provider.

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%

False positive rates are shown in Table 2.6.

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

Lead provider	Quarterly false positive rate (n)		Cumulative false positive rate (n)	
	Prevalence	Incidence	Prevalence	Incidence
BSAN	7.1 (182)	3.3 (140)	6.8 (389)	3.3 (195)
BSM	5.2 (75)	2.5 (63)	4.5 (134)	1.9 (77)
BSCtoC	5.0 (66)	3.2 (73)	5.6 (134)	3.0 (96)
BSC	8.8 (75)	3.0 (45)	8.2 (156)	3.0 (79)
BSS	8.9 (206)	4.5 (145)	8.2 (408)	4.2 (229)
BSHC	10.1 (34)	2.1 (35)	11.9 (112)	2.6 (82)
TOTAL	7.3 (638)	3.3 (501)	7.0 (1,333)	3.1 (758)

All lead providers except BreastScreen HealthCare met the prevalence screening indicator for quarterly and cumulative results. BreastScreen Midland achieved a rate below the expected indicator for prevalent and incidence screening. BreastScreen HealthCare's high false positive rate is the result of the high referral to assessment rate for prevalent screens. Overall, the false positive rate for BreastScreen HealthCare has dropped. In Monitoring Report no 8, BSAIMG recommended routine quality assurance and review of films at BreastScreen HealthCare should be used to investigate the high assessment and false positive rates for prevalence screens. BSAIMG now recommends that the National Screening Unit should seek the results of any systematic review of films conducted by BreastScreen HealthCare of women referred to assessment (Recommendation 5).

All lead providers, except BreastScreen South, met the indicator for false positive incidence screening. BreastScreen Midland and BreastScreen HealthCare achieved rates below the expected indicator of less than three percent for incidence screening.

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	0.2 (11)	0.2 (25)
BSM	0.1 (4)	0.1 (8)
BSCtoC	0.2 (8)	0.2 (11)
BSC	0.3 (6)	0.3 (12)
BSS	0.1 (8)	0.2 (18)
BSHC	0.1 (3)	0.2 (10)
TOTAL	0.2 (40)	0.2 (84)

All lead providers met the indicator for open surgical biopsies.

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 the number with benign open biopsy.

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

The number of women having benign open biopsy where the lesion weighed less than 20 gm is recorded in Table 2.8.

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	33.3 (3)	50.0 (10)
BSM	33.3 (1)	25.0 (1)
BSCtoC	*	*
BSC	66.7 (2)	50.0 (3)
BSS	25.0 (2)	46.7 (7)
BSHC	100.0 (2)	85.7 (6)
TOTAL	40.0 (10)	51.9 (27)

* 80% of the benign open biopsies from BreastScreen Coast to Coast had a default weight recorded within the national monitoring data set therefore the record has been excluded.

Lead providers have difficulty in achieving this performance indicator. The indicator for benign open biopsy is under review by the National Quality Standards Review Committee and internationally. BSAIMG recommends that the benign biopsy weight indicator no longer be reported (Recommendation 6). This indicator was initially adopted by the NHS Breast Screening Programme in England, to avoid cosmetic deformity for women relating to large biopsies. Changes in diagnostic techniques used in screening programmes mean that large benign biopsies are now less likely.

2.9 Needle biopsy rates

Definition

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

Indicator - None set

The number of women having needle biopsies per 100 women screened for the quarter and the cumulative total for Round 2 is shown in Tables 2.9a and Table 2.9b.

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 only % (n)	Core needle only % (n)	Both* % (n)	Other % (n)	Total
BSAN	0.0 (2)	0.9 (64)	0.1 (7)	0.1 (10)	1.2 (83)
BSM	0.1 (5)	0.9 (37)	0.0 (0)	0.0 (0)	1.1 (42)
BSCtoC	0.1 (3)	1.1 (38)	0.0 (0)	0.0 (0)	1.1 (41)
BSC	0.2 (5)	1.4 (32)	0.2 (4)	0.0 (0)	1.7 (41)
BSS	0.9 (47)	1.8 (97)	0.2 (13)	0.0 (0)	2.8 (157)
BSHC	0.0 (1)	0.4 (9)	0.0 (0)	0.0 (0)	0.5 (10)
Total	0.3 (63)	1.1 (277)	0.1 (24)	0.0 (10)	1.5 (374)

* Women who have both FNA and core needle procedures.

BreastScreen Central decreased the number of women having both fine needle biopsy and core needle biopsy procedures in the quarter. This is consistent with our recommendation in Monitoring Report no 7.

Table 2.9b. Cumulative rate of needle biopsy per 100 women screened and numbers of women undergoing needle biopsy (n) by lead provider for Round 2.

Lead Provider	Cumulative Totals				
	FNA only % (n)	Core needle only % (n)	Both* % (n)	Other % (n)	Total % (n)
BSAN	0.1 (8)	1.2 (137)	0.1 (11)	0.2 (20)	1.5 (176)
BSM	0.1 (9)	0.9 (66)	0.0 (0)	0.0 (1)	1.1 (76)
BSCtoC	0.1 (4)	1.2 (68)	0.0 (0)	0.0 (0)	1.3 (72)
BSC	0.2 (8)	1.5 (69)	0.4 (17)	0.0 (0)	2.0 (94)
BSS	0.8 (87)	1.7 (182)	0.2 (19)	0.0 (0)	2.8 (288)
BSHC	0.3 (12)	0.6 (26)	0.0 (0)	0.0 (0)	0.9 (38)
TOTAL	0.3 (128)	1.3 (548)	0.1 (47)	0.0 (21)	1.7 (744)

* Women who have both FNA and core needle procedures

The number of women who had needle or open biopsy procedures as a percentage of the number of women referred to assessment for the quarter and cumulatively is shown in Table 2.9c.

Table 2.9c Number of women having biopsy procedures as a percentage of the women referred to assessment.

Lead provider	Percentage of women with biopsy procedures (number of women)	
	Quarterly total	Cumulative total
BSAN	22.6 (88)	26.1 (185)
BSM	25.7 (43)	27.9 (77)
BSCtoC	27.4 (46)	28.9 (80)
BSC	29.7 (43)	33.6 (97)
BSS	40.1 (157)	40.9 (288)
BSHC	13.6 (11)	18.9 (42)
Total	28.9 (388)	31.0 (769)

BreastScreen South has a higher percentage of women who attend assessment proceeding to either needle or open biopsy than other lead providers. Fewer women attending assessment at BreastScreen HealthCare proceed to needle or open biopsy. Assuming all biopsy records are complete within the national monitoring data set the variation may be a reflection of the use of other assessment procedures such as detailed mammographic views, ultrasound or clinical assessment and will depend on the number of women referred for assessment.

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%

Specificity results are recorded in Table 2.10.

Table 2.10. Specificity of the programme by lead provider.

Lead provider	Quarterly specificity (%)		Cumulative specificity (%)	
	Prevalence	Incidence	Prevalence	Incidence
BSAN	92.7	96.7	93.1	96.7
BSM	94.7	97.5	95.4	98.1
BSCtoC	94.9	96.8	94.4	97.0
BSC	91.1	97.0	91.8	97.0
BSS	91.0	95.5	91.8	95.7
BSHC	89.7	97.9	87.9	97.4
TOTAL	92.7	96.7	92.9	96.9

All lead providers achieved the specificity rate for incidence screening for the quarter. BreastScreen Auckland and North, BreastScreen Central, BreastScreen South and BreastScreen HealthCare did not achieve the indicator for prevalence screening.

High specificity is facilitated in incidence screening because of the availability of baseline films from previous screens.

The current indicator of greater than 93% for specificity should apply only to prevalence screening. A new indicator of greater than 96% should be considered for incidence screening. It would be appropriate to adopt this indicator for specificity, because the false positive rate in incidence screening is less than four percent, since the false positive rate equals one minus specificity (Recommendation 7).

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 invasive breast cancer is recorded in Table 3.1.

Table 3.1. Detection rate of DCIS and invasive breast cancer by lead provider per 1000 women screened for the period 1.4.01 – 30.6.01.

Lead provider	Quarterly cancer detection rate (n)		Cumulative cancer detection rate Round 2 (n)	
	Prevalence	Incidence	Prevalence	Incidence
BSAN	11.4 (29)	5.0 (21)	10.8 (62)	5.6 (33)
BSM	7.0 (10)	3.2 (8)	6.1 (18)	4.7 (19)
BSCtoC	6.8 (9)	4.8 (11)	7.5 (18)	5.2 (17)
BSC	4.7 (4)	10.6 (16)	7.3 (14)	11.6 (31)
BSS	8.7 (20)	5.6 (18)	6.4 (32)	5.5 (30)
BSHC	5.9 (2)	2.4 (4)	10.6 (10)	3.1 (10)
TOTAL	8.4 (74)	5.1 (78)	8.1 (154)	5.7 (140)

BreastScreen Central achieved a result (4.7 per thousand women screened detected with breast cancer) below the indicator of greater than or equal to six per thousand for prevalence screening and had a high cancer detection rate (10.6 per thousand women screened) for incidence screening in this quarter. This may be chance variation as over the last two quarters BreastScreen Central exceeded this indicator.

The quarterly referral to assessment, specificity, false positive rate and detection rate of DCIS and invasive breast cancer by prevalence and incidence screen are summarised in Table 3.1.1a and Table 3.1.1b.

Table 3.1.1a. Referral to assessment, specificity, false positive rate and detection rate for prevalence screening of DCIS and invasive cancer rate by lead provide for the quarter 1.4.01 – 30.6.01.

Lead provider	Referral to assessment per 100 women screened	Specificity (%)	False positive rate per 100 women screened	Detection rate per 1000 women screened
BSAN	8.8	92.7	7.1	11.4
BSM	6.4	94.7	5.2	7.0
BSCtoC	6.2	94.9	5.0	6.8
BSC	9.5	91.1	8.8	4.7
BSS	9.9	91.0	8.9	8.7
BSHC	11.9	89.7	10.1	5.9
TOTAL	8.5	92.7	7.3	8.4

The assessment and false positive rates for BreastScreen HealthCare are high, and specificity is lower than expected. The referral rate to assessment increased in this quarter for BreastScreen Auckland and North, BreastScreen Central and BreastScreen South, specificity decreased and the false positive rate increased. The cancer detection rate for BreastScreen Central and BreastScreen South also decreased. BSAIMG supports this regular review of films undertaken by lead providers as part of routine quality assurance. Film reading is a complex task, and reviewing films is internationally accepted as the appropriate way to increase specificity and reduce the false positive rate.

Table 3.1.1b. Referral to assessment, specificity, false positive rate and detection rate for incidence screening of DCIS and invasive breast cancer by lead provider for the quarter 1.4.01 – 30.6.01.

Lead provider	Referral to assessment per 100 women screened	Specificity (%)	False positive rate per 100 women screened	Detection rate per 1000 women screened
BSAN	3.9	96.7	3.3	5.0
BSM	3.0	97.5	2.5	3.2
BSCtoC	3.8	96.8	3.2	4.8
BSC	4.2	97.0	3.0	10.6
BSS	5.0	95.5	4.5	5.6
BSHC	2.5	97.9	2.1	2.4
TOTAL	3.9	96.7	3.3	5.1

Overall results for referral to assessment and specificity for incidence screening are similar to quarterly results reported in Monitoring Report no 8. The false positive rate has increased from 2.9 per 100 women screened to 3.3. The cancer detection rate has decreased from 6.5 to 5.1 per 1000 women screened.

The cumulative referral to assessment, specificity, false positive rate and detection rate of DCIS and invasive breast cancer by prevalence and incidence screen are summarised in Table 3.1.1c and Table 3.1.1d.

Table 3.1.1c. Referral to assessment, specificity, false positive rate and detection rate for prevalence screening of DCIS and invasive cancer rate by lead provide for the period 1.1.01 – 30.6.01.

Lead provider	Referral to assessment per 100 women screened	Specificity (%)	False positive rate per 100 women screened	Detection rate per 1000 women screened
BSAN	8.2	93.1	6.8	10.8
BSM	5.5	95.4	4.5	6.1
BSCtoC	6.7	94.4	5.6	7.5
BSC	9.2	91.8	8.2	7.3
BSS	8.9	91.8	8.2	6.4
BSHC	13.5	87.9	11.9	10.6
TOTAL	8.1	92.9	7.0	8.1

Overall results for referral to assessment and specificity for prevalence screening are similar to cumulative results reported in Monitoring Report no 8. The false positive rate has increased from 6.7 to 7.0 per 100 women screened. The cancer detection rate has increased from 6.5 to 8.1 per 1000 women screened.

Table 3.1.1d. Referral to assessment, specificity, false positive rate and detection rate for incidence screening of DCIS and invasive breast cancer by lead provider for the period 1.1.01 – 30.6.01.

Lead provider	Referral to assessment per 100 women screened	Specificity (%)	False positive rate per 100 women screened	Detection rate per 1000 women screened
BSAN	4.0	96.7	3.3	5.6
BSM	2.8	98.1	1.9	4.7
BSCtoC	3.6	97.0	3.0	5.2
BSC	4.2	97.0	3.0	11.6
BSS	4.8	95.7	4.2	5.5
BSHC	3.0	97.4	2.6	3.1
TOTAL	3.8	96.9	3.1	5.7

Overall results for referral to assessment and specificity for incidence screening are the same, as cumulative results reported in Monitoring Report no 8. The false positive rate has increased from 2.9 to 3.1 per 100 women screened. The cancer detection rate has decreased from 6.5 to 5.7 per 1000 women screened.

3.2 DCIS and invasive cancer

There is an inevitable delay in the recording of details about DCIS or invasive breast cancer diagnosed as a result of screening, due to the time required to arrange treatment and the subsequent recording of treatment data by lead providers. To make allowance for this delay cancer details recorded within quarterly monitoring reports have been reported for women screened up to the end of the previous quarter. Lead providers have indicated that it is very difficult for them to obtain treatment data from treatment providers within three months of the woman being diagnosed. From the next quarterly report (Monitoring Report No. 10) BSAIMG will report treatment data if data can be provided for 90% of women within six months of their diagnosis. This will give lead providers an extra three months to obtain the treatment data from treatment providers.

Table 3.2 shows the available data for each lead provider.

Table 3.2 Completion status of pTMN staging for women with DCIS and invasive breast cancer detected for the period 1.12.1998 - 31.3.2001.

Lead provider	Number of cancers with pTMN staging completed (total number of cancers)	Percentage
BSAN	265 (403)	65.8
BSM	85 (170)	50.0
BSCtoC	141 (155)	91.0
BSC	62 (133)	46.6
BSS	227 (274)	82.9
BSHC	47 (101)	46.5
Total	827 (1,236)	66.9

Only four lead providers managed to report staging and grading for over 50% of the cancers detected to the end of March 2001. BreastScreen Coast to Coast recorded staging and grading details for over 90% of DCIS and cancer identified from the beginning of the national programme to the end of March 2001. This is the first time a lead provider has achieved this level of reporting and it enables BSAIMG to include detailed assessment of DCIS or cancer detected for this lead provider. As stated in Monitoring Report no 8, the lack of complete information about DCIS and cancers detected by other lead providers in BreastScreen Aotearoa needs to be addressed as a priority by the Ministry of Health. More data should be available for the next quarterly report, because treatment data will be accepted if it is available up to 6 months following diagnosis rather than only three months. Nonetheless, the National Screening Unit should now consider recommending that other lead providers consider adopting the strategies used by BreastScreen Coast to Coast for the inclusion of cancer detail and treatment records in the national monitoring data set, because this may result in more timely collection of treatment data. (Recommendation 8).

Of the 1,236 women recorded with a diagnosis of DCIS or cancer from the commencement of BreastScreen Aotearoa to the 31 March 2001, only 827, or 66.9%, 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 (Table 3.2). In addition, to these records five women had an entry of pT0.

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. Only then can results from BreastScreen Aotearoa be compared with the results of randomised controlled trials of breast screening and overseas programmes. As the data are incomplete it is impossible to do this, since the information available is probably not representative of all the cancers detected. 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.

Details of the cancers recorded in the national monitoring data set are summarised below. The UICC/pTNM system shown below and used by lead providers classifies the DCIS and breast cancers detected:

- TX Primary tumour cannot be assessed
- T0 No evidence of primary tumour
- Tis Carcinoma in situ: intraductal carcinoma, lobular carcinoma in situ or Pagets disease of the nipple with no tumour
- T1 Tumour 2cm or less in greatest dimension
  - pT1a 0.5 cm or smaller
  - pT1b more than 0.5cm but not more than 1cm in greatest dimension
  - pT1c more than 1cm but not more than 2cm in greatest dimension
- T2 Tumour more than 2cm but not more than 5cm in greatest dimension
- T3 Tumour more than 5cm in greatest dimension
- T4 Tumour of any size with direct extension to chest wall or skin
- T4a Extension to chest wall
- T4b Edema (including peau d'orange), ulceration of the skin of the breast, or satellite skin nodules confined to the same breast
- T4c Both (T4a and T4b)
- T4c Inflammatory carcinoma.

It has been brought to our attention that the T4 categories are not included in the Data Management Manual, and that some lead providers have to rely on clinical rather than pathological staging. It is essential that consistent staging of breast cancer is used throughout BreastScreen Aotearoa, and we urge the National Screening Unit to address this with lead providers (Recommendation 9).

The pathological stage of disease of DCIS and cancers detected for which information was available is shown in Table 3.2.1.

Table 3.2.1 Reported primary tumour classification by pathological stage and lead provider for the period 1.12.98 – 31.3.01.

Pathological stage	BSAN	BSM	BSCtoC n (%)	BSC	BSS	BSHC	Total (%)
pTX			1 (0.7)				
pT0			3 (2.1)				
pTis			24 (17.0)				
pT1a			38 (27.0)				
pT1b			10 (7.1)				
pT1c			28 (19.9)				
pT2			34 (24.1)				
pT3			3 (2.1)				
pT4			0 (0)				
Total			141 (100)				

* Data for fourteen women are not recorded in this table as these details were not included in the national monitoring data set.

For the purposes of BSAIMG monitoring reports the number of invasive breast cancers has been calculated by combining pT0, pTX, pT1a, pT1b, pT1c, pT2 and pT3. PTis (non invasive DCIS) is not invasive breast cancer.

Of the 707 women with invasive breast cancer recorded in the national monitoring data set 702 (99.3%) had the size of the invasive component recorded. The results for BreastScreen Coast to Coast are shown in Table 3.2.2.

Of women screened by BreastScreen Coast to Coast with DCIS or invasive breast cancer about 16% had DCIS only and 76% had invasive breast cancer detected. Of the 117 women known to have invasive breast cancer detected, 48 (41%) had tumours less than or equal to 10mm in size and 65 (56%) had tumours less than or equal to 20mm in size. These are encouraging results.

3.3 Invasive cancer

Definition – number of women screened who are diagnosed with invasive breast cancer per 1000 women screened.

Indicator - 4.8 per 1000 women screened

The detection rate per 1000 women screened for BreastScreen Coast to Coast is shown in Table 3.3.1.

Table 3.3.1. Invasive cancer detection rate by lead provider per 1000 women screened for the period 1.12.98 – 31.3.01.

Lead Provider	Cumulative invasive cancer detection rate per 1000 women screened (number with invasive cancer detected)
BSAN BSM BSCtoC BSC BSS BSHC	5.3 (117)
TOTAL	

BreastScreen Coast to Coast met the indicator for the invasive cancer detection rate for the period December 1, 1998 to March 31, 2001.

The number of women with invasive cancer with the invasive component recorded in the National Monitoring Data Set is shown in Table 3.3.2.

Table 3.3.2 Percentage of invasive cancers with the size of the invasive component recorded for the period 1.12.98 – 31.3.01.

Lead provider	Invasive cancers with the invasive size recorded	Percentage
BSAN BSM BSCtoC BSC BSS BSHC	116	99.2
Total		

Size of the invasive component of breast cancer is an important determinant of the effectiveness of the national screening programme and must be recorded in the National Monitoring Data Set.

Table 3.3.3 shows the nodal involvement of women with breast cancer recorded in the National Monitoring Data Set.

The regional lymph nodes are classified as follows:

pNX Regional lymph node metastasis cannot be assessed
pN0 No regional lymph node metastasis
pN1 Metastasis to one or more movable ipsilateral axillary nodes
pN1a Only micro metastasis (none larger than 0.2cm)
pN1b Metastasis to one or more lymph nodes, any of which is larger than 0.2cm
pN1bii Metastasis in one to three lymph nodes, any of which is larger than 0.2cm and all less than 2cm in greatest dimension
pN1biii Extension of tumour beyond the capsule of a lymph node metastasis less than 2cm in greatest dimension
pN1biv Metastasis to a lymph node 2cm or more in greatest dimension
pN2 Metastasis to ipsilateral axillary lymph nodes that are fixed to one another or to other structures
pN3 Metastasis to one ore more ipisilateral internal mammary

Table 3.3.3 Nodal status of women with invasive breast cancer by lead provider for the period 1.12.98 – 31.3.01.

Lead provider	pNX n (%)	pN0 n (%)	pN1 n (%)	pN2 n (%)	Total n (%)
BSAN BSM BSCtoC BSC BSS BSHC	1 (0.9)	86 (73.5)	29 (24.8)	1 (0.9)	117 (100)
Total					

Eighty-six of the 117 (73.5%) women with invasive breast cancer detected by BreastScreen Coast to Coast had no nodal involvement.

BSAIMG is aware of inconsistent coding of nodal status particularly the recording of node positive nodes when axillary dissection has not been undertaken. It would appear more appropriate to classify nodal status as pNX (unknown) in this situation.

Table 3.3.4 shows distant metastatic disease for women with breast cancer.

Distant metastasis (M) is classified as follows:

MX	Presence of distant metastasis cannot be assessed
M0	No distant metastasis
M1	Distant metastasis (including metastases to one or more ipsilateral supraclavicular nodes)

Table 3.3.4 Distant metastasis disease for women with invasive breast cancer by lead provider for the period 1.12.98 – 31.3.01.

Lead provider	pMX n (%)	pM0 n (%)	pM1 n (%)	Total n (%)
BSAN BSM BSCtoC BSC BSS BSHC	6 (5.1)	111 (94.9)	0 (0)	117 (100)
Total				

Of the 117 women with invasive breast cancer detected by BreastScreen Coast to Coast, no women had metastatic disease.

Histological grade of the breast cancer detected is shown in Table 3.3.5 for BreastScreen Coast to Coast for whom TNM stage was available. Histological grade has been classified using the modified Bloom and Richardson grading system.[1,2] A target for breast screening programmes is that at least 30% of grade 3 tumours should be less than 15mm in size.[3] BreastScreen Coast to Coast met this target with ten grade 3 tumours (58.8%) with a size of the invasive cancer recorded as less than 15mm in size.

Table 3.3.5 Grade of invasive breast cancer by lead provider for the period 1.12.98 – 31.3.01.

Lead provider	Grade 1 n (%)	Grade 2 n (%)	Grade 3 n (%)	Total n (%)
BSAN BSM BSCtoC BSC BSS BSHC	51 (42.9)	48 (40.3)	20 (16.8)	119 (100)
Total				

3.4 Nodal involvement

Definition – number with invasive breast cancer detected which involve axillary nodes as a percentage of the number with diagnosed invasive cancer.

Indicator - At least 70% of women with invasive breast cancers detected by the programme should be node negative.

For those women with breast cancer for which nodal status was recorded in the national monitoring data set, the percentage that were node negative is shown in Table 3.4 for BreastScreen Coast to Coast.

Table 3.4. Percentage of women with invasive breast cancer who did not have nodal involvement for the period 1.12.98 – 31.3.01.

Lead Provider	Cumulative percentage with no nodal involvement (number with invasive cancer detected)
BSAN BSM BSCtoC BSC BSS BSHC	73.5 (86)
TOTAL	

Note: the five women with breast cancer who had pT0 cancers have been included in the denominator. pNX (regional lymph nodes can not be assessed) have not been included.

For the women with breast cancer details recorded, BreastScreen Coast to Coast met this indicator.

3.5 Ductal carcinoma in situ

Definition – number with DCIS as a percentage of the number with diagnosed cancer.

Indicator 10 – 25% of all cancers detected by the programme.

The number of women with DCIS detected by BreastScreen Coast to Coast is shown in Table 3.5.

Table 3.5. Women with ductal carcinoma in situ as a percentage of women detected with cancer by lead provider for the period 1.12.1998 – 31.3.2001.

Lead Provider	Cumulative percentage of ductal carcinoma in situ (number with DCIS detected)
BSAN BSM BSCtoC BSC BSS BSHC	15.5 (24)
TOTAL	

BreastScreen Coast to Coast met this important performance indicator.

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. The data received on cancer detail and treatment was incomplete for the majority of women detected with cancer or DCIS to September 30, 2000 and therefore results were not reported in Monitoring Report no 7. The majority of cancer and treatment data was also incomplete with the transfer of the National Monitoring Data Set on May 28, 2001 and could not be included in Monitoring Report no 8.

One lead provider, BreastScreen Coast to Coast, has recorded more than 90% of the cancer and treatment detail in the national monitoring data set for women screened to the end of March 2001. BreastScreen Coast to Coast is to be congratulated on providing this important information, and on the results, which met performance indicators and are encouraging with respect to an eventual impact of the programme on breast cancer mortality. The results for this lead provider have been included in Monitoring Report no 9.

For BreastScreen Coast to Coast 60% of the women who underwent surgery had mastectomy (Table 4.1) and 86% had axillary sampling or axillary dissection of level one, two or three (Table 4.2).

Table 4.1 Last surgical treatment procedure on the breast containing the primary tumour by lead provider for the period 1.12.98 – 31.3.01.

Lead provider	Excision biopsy n (%)	Wide local excision n (%)	Sector resection n (%)	Mastectomy n (%)	Other n (%)	Total n (%)
BSAN BSM BSCtoC BSC BSS BSHC	6 (4.3)	49 (35.0)	0 (0)	84 (60.0)	1 (0.7)	140 (100)
TOTAL						

Axillary dissection is usually performed as part of surgical treatment for invasive breast cancer to order to stage the disease and assist in subsequent planning of adjuvant therapy and to reduce the risk of loco-regional recurrence. The following classification of the levels of axillary dissection procedures is used:

Level 1 is up to the lateral border of the pectoralis minor;
Level 2 is up to the medial border of the pectoralis minor;
Level 3 is up to the apex of the axilla.

Table 4.2 records the details of axillary sampling and dissection for women from BreastScreen Coast to Coast with breast cancer.

Table 4.2 Axillary sampling and dissection by lead provider for the period 1.12.98 – 31.3.01.

Lead provider	Axillary sampling n (%)	Axillary dissection level 1 n (%)	Axillary dissection level 1 & 2 n (%)	Axillary dissection level 1, 2 & 3 n (%)	No axillary dissection n (%)	Total n (%)
BSAN BSM BSCtoC BSC BSS BSHC	10 (7.1)	9 (6.4)	96 (68.6)	6 (4.3)	19 (13.6)	140 (100)
Total						

Seventy nine percent of women with DCIS or invasive breast cancer detected through BreastScreen Coast to Coast had axillary dissection.

Table 4.3 shows the number of women who chose breast reconstruction at BreastScreen Coast to Coast.

Table 4.3 Breast reconstruction by lead provider for the period 1.12.1998 – 31.3.2001.

Lead provider	Immediate n (%)	Decision delayed n (%)	No reconstruction n (%)	Blank n (%)	Total n (%)
BSAN BSM BSCtoC BSC BSS BSHC	7 (5.0)	4 (2.9)	129 (92.1)	0 (0)	140 (100)
Total					

Breast reconstruction was undertaken for 7.9% of women detected through BreastScreen Coast to Coast.

Table 4.4 shows the number of women who underwent endocrine manipulation.

Table 4.4 Endocrine manipulation by lead provider for the period 1.12.1998 – 31.3.2001.

Lead provider	SERM* (%)	Progestogen (%)	Aromatose inhibitor (%)	Other** (%)	None (%)	Total (%)
BSAN BSM BSCtoC BSC BSS BSHC	85 (63.0)	0 (0)	0 (0)	0 (0)	50 (37.0)	135 (100)
Total						

* Selective estrogen receptor modulator, for example, tamoxifen.
** Other – type unspecified.

No endocrine therapy was recorded for 37% of women detected through BreastScreen Coast to Coast.

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 Round 2* (number of women)
BSAN	97.5 (6,617)	98.0 (11,380)
BSM	97.4 (3,815)	97.9 (6,841)
BSCtoC	98.4 (3,543)	98.9 (5,580)
BSC	99.4 (2,346)	99.3 (4,558)
BSS	99.2 (5,479)	99.3 (10,341)
BSHC	93.6 (1,874)	91.5 (3,779)
TOTAL	97.9 (23,674)	97.9 (42,479)

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

All lead providers met this performance indicator except BreastScreen HealthCare. However, BreastScreen HealthCare's reporting of screening results to women has shown further improvement from 89.6% in Monitoring Report No 8 to 93.6% in the current quarter. This represents ongoing improvement and the lead provider is to be commended for their efforts to improve this aspect of their service to women. Work should continue to achieve appropriate timeliness of reporting results to women (refer Recommendation 8, Monitoring Report no 8).

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 Round 2* (number of women)
BSAN	91.8 (358)	89.1 (631)
BSM	85.6 (143)	85.9 (237)
BSCtoC	83.3 (140)	88.1 (244)
BSC	91.0 (132)	92.7 (268)
BSS	94.6 (371)	95.5 (673)
BSHC	75.3 (61)	64.9 (144)
Total	89.7 (1,205)	88.7 (2,197)

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

Four lead providers achieved the indicator for offering timely assessment appointments to women. All lead providers except BreastScreen Coast to Coast increased the percentage of women being offered a timely assessment appointment from the previous quarter. BreastScreen HealthCare continued to improve their performance against this indicator.

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.

Timeliness of completing needle biopsies and offering appointments for open surgical biopsies 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 Round 2	
	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	89.2 (74)	63.6 (7)	83.5 (147)	56.0 (14)
BSM	85.7 (36)	50.0 (2)	88.2 (67)	62.5 (5)
BSCtoC	95.1 (39)	25.0 (2)	95.8 (69)	45.5 (5)
BSC	92.7 (38)	83.3 (5)	92.6 (87)	75.0 (9)
BSS	87.9 (138)	75.0 (6)	86.8 (250)	72.2 (13)
BSHC	80.0 (8)	66.7 (2)	89.5 (34)	80.0 (8)
Total	89.0 (333)	60.0 (24)	87.9 (654)	64.3 (54)

These indicators continue to require attention. BreastScreen Coast to Coast and BreastScreen Central are to be commended on the timeliness of offering needle biopsies to women.

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 Round 2 (number of women)
BSAN	89.9 (116)	84.9 (220)
BSM	84.1 (37)	81.0 (64)
BSCtoC	80.4 (37)	86.3 (69)
BSC	90.7 (39)	86.6 (84)
BSS	93.6 (147)	93.4 (269)
BSHC	81.8 (9)	88.1 (37)
Total	89.5 (385)	87.9 (743)

Only BreastScreen Central and BreastScreen South were able to meet the performance indicator for the timely reporting of assessment results for this quarter. Efforts should be made to continue the improvements made to the timely reporting of assessment results (Recommendation 10).

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.

Table 5.5 reports the time from reporting assessment results to the first date offered primary treatment for women.

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 (n)	Cumulative % women offered primary treatment within 3 weeks 1.12.1998 – 31.3.2001 (n)
BSAN BSM BSCtoC BSC BSS BSHC		71.4 (100)
Total		

BreastScreen Coast to Coast is the only lead provider for whom this result can be reported and the result shows that the indicator was not reached.

Data required to assess the indicator for the timely offer of primary treatment needs to be included in the national monitoring data set (Recommendation 11).

References

1. Blamey RW, Wilson ARM, Patnick J. Screening for breast cancer. BMJ 2000; 321689-93.

2. O'Byrne AM, Kavanagh AM, Ugoni A, Diver F. Predictors of non-attendance for second round mammography in an Australian mammographic screening programme. J Med Screen 2000; 7: 190-4.

3. Blanks RG, Moss SM, Patnick J. Results from the UK NHS breast screening programme 1994-1999. J Med Screen 2000; 7: 195-8.

Appendix A

The BreastScreen Aotearoa Independent Monitoring Group (BSAIMG) provides information routinely to the Ministry of Health (MOH) and lead providers in the form of quarterly and annual reports. Reports include information about the key parameters of BreastScreen Aotearoa, as outlined below. Each report also will make comment on any problems with data collection, the consistency and interpretation of the data, and will make recommendations for improving collection processes.

The reports will assess the data of BreastScreen Aotearoa, and of individual providers, with respect to the National Monitoring Indicator Set (NMIS). The reports will also indicate when revision of the NMIS is required, and the MOH will be informed of these new requirements, together with a justification for any change to the NMIS.

National averages will be stated within each individual lead provider report to enable performance comparisons. Recommendations to lead providers and the MOH will also be included when action is required to improve or maintain the performance of BreastScreen Aotearoa.

Information to be included routinely in quarterly reports is identified with an asterisk. Other information will be provided six-monthly or annually but some results cannot be provided until the end of a screening round. The BSAIMG will also report on other issues of importance as and when they arise.

A2.0 KEY PARAMETERS

These parameters relate to the screening pathway, from registration of eligible women, screening, and assessment, to diagnosis and treatment. Within each stage of the screening pathway certain parameters will be measured. These parameters have been chosen because they can be used as indicators of the acceptability, effectiveness, and efficiency of BSA.

A2.1 IDENTIFICATION AND INVITATION

Identification and invitation of eligible women are essential components of a national breast cancer screening programme. Irrespective of the quality of the other aspects of the programme, a programme that fails to identify and invite a high proportion of the eligible population will also fail to have the desired impact on breast cancer morbidity and mortality. Current identification and invitation processes do not allow the BSAIMG to accurately assess these aspects of the national programme.

A2.1.1 Registration rate *

This rate will be measured by dividing the number of registered women (from provider records) as a percentage of the number of eligible women according to projected population numbers. Registration rates, with 95% confidence intervals, will be calculated for each provider area, and for the whole country, by age group. The target registration rate is 85% by the end of the prevalence round, and the performance of BSA against this target will be reported after the end of the prevalence screening round.

A2.1.2 Coverage rate *

Coverage will be measured by dividing the number of women screened (from provider records) by the number of eligible women according to projected population numbers. Coverage rates will be calculated for each provider area, and for the whole country (if data is available from Health Benefits Ltd for private sector screening of women), by age group. Coverage rates for BSA and for the private sector will also be calculated separately. The target is >70% of women aged 50-64 years in BSA. The performance of BSA with respect to this target will be measured at the end of the prevalence screening round.

A2.2 SCREENING TEST

The validity of the screening test will be examined by calculating its sensitivity and specificity. The screening test is the point of entry for a woman with breast cancer. If her cancer is missed, she cannot benefit from early detection. Because the test is not perfect, some women will have false positive or false negative tests. These should be kept to a minimum in order to avoid unnecessary anxiety and investigations, or false reassurance.

A2.2.1 Radiation dose/Optical density

The mean absorbed dose to glandular tissue (MGD) for a test object (routinely collected as part of equipment calibration and maintenance) will be obtained from provider records and reported in each annual report. Optical density, a measure of film density and mammographic quality will be obtained from provider records and reported in each annual report.

A2.2.2 Number of films taken *

The number of films taken for each woman screened will be obtained from provider records. This will be compared against the target of a minimum of 80% of women having 4 or fewer films. Numbers of films per woman will be calculated by provider, and for mobile versus fixed screening centres.

A2.2.3 Technical recall rate *

The number of women recalled for extra films for technical reasons (from provider records) will be divided by the number of women screened (from provider records). Technical recall rates will be calculated according to screening round, by provider, and for mobile versus fixed screening centres. Targets are <3% for mobile units and <0.5% for fixed units.

A2.2.4 Technical repeat rate *

The number of technical repeat films will be divided by the total number of films taken (from provider records). Technical repeat rates will be calculated according to screening round, by provider, and for mobile versus fixed screening centres. The target is <3%.

A2.2.5 Sensitivity (estimate)

Sensitivity will be estimated by dividing the number of women with screen-detected breast cancer by the sum of this number and the number of women with interval cancers in the year following a negative screen. The target is 90%. Sensitivity will be estimated for each screening round by age group and by region and provider.

A2.2.6 Specificity (actual)

Specificity will be calculated after a complete screening round, by dividing the number of women with true negative screening tests by the sum of this number and the number of women with false positive tests. In order to measure the number of women with true negative tests, it will be important to measure the number of women with false negative tests (interval cancers). This information will have to be obtained from provider records (negative tests) and also from the Cancer Registry of the NZHIS (women diagnosed with interval cancers following a negative test). Specificity will be calculated by age group and by region and provider. The target is >93%.

A2.2.7 Specificity (approximate)*

Specificity can be estimated before the second screening round by dividing all negative tests (including false negatives) by the sum of all negatives and false positives. This is an adequate estimate of specificity (although false negatives have been included in the numerator and the denominator) because the number of false negatives is very small in relation to the number of true negatives. This information will be obtained from provider records. Specificity will be estimated by age group and by provider. The target is >93%.

A2.2.8 Positive predictive value (PPV)

The number of women with breast cancer diagnosed through the screening programme will be divided by the sum of this number and the number of women with false positive screening tests (i.e.: the number of women with screen-detected cancer as a percentage of all women referred for assessment). This information will be obtained from provider records. The positive predictive value will be calculated by screening round, by age group, and by region and provider, and will be reported in each annual report. The target PPV is ≥9%.

A2.3 ASSESSMENT

Women with positive screening tests will be referred for assessment. The number referred will be determined by the underlying prevalence of breast cancer in the population and by the sensitivity and specificity of the screening test. Ideally the assessment process will determine which women with positive screening tests actually have breast cancer and require treatment, while minimising unnecessary anxiety and investigations in the other women.

A2.3.1 Assessment rate *

The assessment rate will be calculated by dividing the number of women referred for assessment by the total number of women screened. Assessment rates will be calculated by screening round, by age group, and by provider. Targets for the prevalence screening round are <7% (expected) and <10% (minimum). Targets for the incidence screening rounds are <4% (expected) and <5% (minimum). These targets will not be measured until after the end of each screening round.

A2.3.2 False positive rate of mammograms *

The false positive rate will be calculated by dividing the number of women with false positive screening results (women referred for assessment but who do not have breast cancer diagnosed as a result) divided by the total number of women screened. This information will be obtained from provider records. The false positive rate will be calculated by age group, and by provider. Targets for the prevalence screening round are <6% (expected) and <9% (minimum). Targets for the incidence screening rounds are <3% (expected) and <4% (minimum). These targets will not be measured until after the end of each screening round

A2.3.3 Needle biopsy rate *
The needle biopsy rate will be calculated by dividing the number of women undergoing FNA divided by the number of women screened. This information will be obtained from provider records. The needle biopsy rate will be calculated by age group, and by provider. No target has been set for the needle biopsy rate.

A2.3.4 Benign biopsy weight
The weight of benign biopsy is measured to ensure 80% weigh less than 20g. The rate is calculated by the number of benign biopsies, which weigh less than 20g as a percentage of the number of benign open biopsies.

A2.3.5 Open surgical biopsy rate *
The open surgical biopsy rate will be calculated by dividing the number of women undergoing open surgical biopsy divided by the number of women screened. This information will be obtained from provider records. The open surgical biopsy rate will be calculated by age group, and by provider. The target for the open surgical biopsy rate is 1% or less.

A2.3.6 Benign biopsy rate *
The benign biopsy rate will be calculated by dividing the number of women with benign open surgical biopsy divided by the number of women screened. This information will be obtained from provider records. The benign biopsy rate will be calculated by age group, and by provider. The targets are <10 per 1,000 women screened in the prevalence round and <5 per 1,000 women screened in the incidence rounds. The performance of BSA with respect to these targets will be summarised in the annual reports.

A2.4 DIAGNOSIS

The number of women diagnosed with breast cancer as a result of BSA will be partly determined by the underlying prevalence of breast cancer in the eligible population, but also by the quality of the screening and assessment procedures. After diagnosis, the size and node status of cancers detected can be used as an indicator of the effectiveness of BSA.

A2.4.1 Pre-operative diagnosis rate
This will be calculated by dividing the number of women whose breast cancers were diagnosed by needle biopsy by the total number of women with breast cancer diagnosed through the screening programme. This information will be obtained from provider records. The target is ≥70%. The pre-operative diagnosis rate will be calculated by age group, and by region and provider, and will be reported annually.

A2.4.2 Cancer detection rate *

The cancer detection rate will be calculated by dividing the number of women with breast cancer diagnosed through the screening programme by the number of women screened. This information will be obtained from provider records. The cancer detection rate and 95% confidence interval will be calculated by age group, and by region and provider. The targets are <6 per 1,000 women screened in the prevalence round and <3 per 1,000 women screened in the incidence rounds. The performance of the programme with respect to these targets will be reported in the annual reports.

In the prevalent round the cancer detection rate is expected to be at least three times the expected breast cancer incidence rate in the absence of screening. In the incident round it is expected to be at least 1.5 times the expected breast cancer incidence rate in the absence of screening. The expected incidence rate in the absence of screening will be estimated based on historical data from the Cancer Registry, taking into account relevant demographic trends.

A2.4.3 Invasive cancer rate

This will be calculated by dividing the number of women with invasive breast cancer detected through the screening programme by the number of women screened. This information will be obtained from provider records. The invasive cancer rate and 95% confidence interval will be calculated by age group, and by region and provider, and reported six-monthly. The target is 4.8 per 1,000 women screened.

A2.4.4 Small invasive cancer detection rate

As above, but for cancers ≤ 10mm. The target is 1.2 per 1,000 women screened per incident round.

A2.4.5 Proportion of women diagnosed with nodal involvement

The proportion of women with nodal involvement will be calculated by dividing the number of women with breast cancer involving axillary nodes diagnosed through the screening programme by the total number of women diagnosed with breast cancer diagnosed through the screening programme. This information will be obtained from provider records. The proportion will be calculated by age group, and by region and provider, and will be reported six-monthly. The target is that at least 70% of women with cancers detected by BSA should be node negative (i.e. less than 30% node positive).

A2.4.6 Proportion of DCIS

As above, but for DCIS. The target is that 10-25% of all cancers detected by BSA should be DCIS.

A2.4.7 Interval cancer rate

The interval cancer rate will be calculated by dividing the number of women with breast cancer detected within 12 months of a negative screen by the total number of women with negative screening tests during that screening round. This information will be obtained from the providers and from the Cancer Registry. The interval cancer rate, and 95% confidence interval, will be calculated by screening round and by region, and reported annually. The targets are <0.6 per 1,000 women screened within 1 calendar year of a negative screen, and <1.2 per 1,000 women screened between the 1st and 2nd year of a negative screen.

A2.4.8 Proportion of women with cancers detected by the programme

The proportion of women with cancers detected by the programme will be calculated by dividing the number of women with breast cancer diagnosed through the programme by the total number of women in the eligible age-range diagnosed with breast cancer in a given period. This information will be obtained from the providers and from the Cancer Registry. The proportion will be calculated by screening round, by age, and by region, and reported annually.

A2.5 TIMELINESS

The following relate to the requirement for the programme to ensure prompt and appropriate treatment for women who take part in the National Breast Cancer Screening Programme. The information will be collected from the providers, and where appropriate, from NZHIS. The dates of screening, providing results of screening, assessment, providing assessment results, date of biopsy, providing biopsy result, date of final diagnostic biopsy, result of final biopsy, and date first offered for primary treatment will be collected. The time taken for the following indicators will be calculated according to screening round and by region. The indicators will be reported quarterly.

A2.5.1 Time to recall after a negative screen

Eligible women should be offered mammograms at two-yearly intervals. The percentage of eligible women recalled within 24 months of their previous screen will be measured.

A2.5.2 Time taken to provide results of screening *

The target is for 95% of women to be notified within 10 working days of the screening examination.

A2.5.3 Time taken from screening visit to first assessment appointment *

The target is for 90% of women to be offered their assessment appointment within 14 working days of their final mammogram.

A2.5.4 Time taken from final assessment to final diagnostic biopsy *

The target is for 90% of women requiring needle biopsy to have that procedure completed within 7 days of their assessment, and for 90% of women requiring open surgical biopsy to be offered that procedure within 3 weeks of their assessment.

A2.5.5 Time taken from final diagnostic biopsy to reporting assessment results *

The target is that 90% of women should have received their results within 7 days of their final diagnostic biopsy.

A2.5.6 Time taken from reporting assessment results to first date offered for primary treatment*

The target is that 90% of women are offered primary treatment within 3 weeks of the final diagnosis being reported to them.

A3.0 QUARTERLY REPORT PROCESS

A3.1 BSAIMG receives cleaned data in agreed format from NZHIS within one month of quarter end.

A3.2 BSAIMG drafts quarterly report as agreed proforma within two months of quarter end.

A3.3 BSAIMG discusses the draft with lead providers (own report) before it is finalised. Subsequently it was decided by the National Screening Unit (NSU) that communication between lead providers and BSAIMG would occur via the NSU. Lead providers send feedback about quarterly reports to the NSU and the feedback is collated and NSU feedback added, as in A3.4 below.

A3.4 MOH and lead providers' review draft reports and feed back (via the NSU) within one month of receiving reports.

A3.5 BSAIMG assesses feedback and finalises its report.

A3.6 BSAIMG electronically transfers final quarterly report to the MOH within two weeks of receiving feedback. If a serious issue becomes apparent it will be discussed with the MOH prior to this transfer.

A3.7 MOH circulates reports to each lead provider (own report).

A3.8 BSAIMG forwards a copy of the report directly to the MOH Screening Advisory Group chair.

A4.0 DATA

A4.1 Lead providers have responsibility to collect data in such a way as to ensure that an accurate timely and consistent set of health data is available for comparative purposes (Chapter 1, DMM p1.5).

A4.2 Lead providers have responsibility to adhere to the minimum standards for the collection and management of data as set out in Chapter 2, Minimum Standards, BreastScreen Aotearoa, and DMM.

A4.3 The funder, lead providers, and BSAIMG are to adhere to the guiding principles of data collection and management described in the document "NZHIS Guide to Data Requirements".

A4.4 BSAIMG will utilise the same title, definition, numbering and lettering for indicators as outlined in the DMM.

A4.5 All quantitative information will be provided directly to BSAIMG by NZHIS as agent for the MOH.

A4.6 BSAIMG will utilise projected population figures for calculation of the registration rate and population coverage.

A4.7 Quarterly and annual reports will include women screened and assessed in that quarter who have a screening and final diagnosis recorded. Reports may include details of a previous screening quarter's assessment data – if this occurs it will state which screening quarter the assessment data relates to.

A4.8 Round reports will include all women screened and assessed in a defined 24-month period.

Appendix B

Population Projections BreastScreen Aotearoa (2001/2002)

Population denominator data

The eligible populations in these reports have been calculated from projected resident populations in each lead provider district, provided by Statistics New Zealand. The projections are based on the New Zealand Census 1996, assuming medium fertility, medium mortality, medium inter-ethnic mobility and medium migration. The populations have been calculated as the mean of the projected populations for the years 2001 and 2002.

Table 1. Population projections BreastScreen Aotearoa (2001/2002).

Population Projections BreastScreen Aotearoa (2001/2002)	
BreastScreen Auckland & North	104,002
BreastScreen Midland	48,051
BreastScreen Coast to Coast	40,792
BreastScreen Central	32,664
BreastScreen South	54,074
BreastScreen HealthCare	22,215
TOTAL	**301,798**
70% coverage over two years	**211,259**

Table 2. Population projections (2001/2002) by age group.

Population Projections (2001/2002) - Summary by age group				
	50-54	**55-59**	**60-64**	**Total**
BreastScreen Auckland & North	42,824	34,287	26,891	104,002
BreastScreen Midland	18,629	15,692	13,730	48,051
BreastScreen Coast to Coast	16,181	13,146	11,465	40,792
BreastScreen Central	13,430	10,675	8,559	32,664
BreastScreen South	21,878	17,432	14,764	54,074
BreastScreen HealthCare	8,983	7,015	6,217	22,215
Total	**121,925**	**98,247**	**81,626**	**301,798**

Ethnic group denominators

The denominators for each ethnic group are also taken from the census and calculated from projected resident populations in each lead provider district, provided by Statistics New Zealand. Statistics New Zealand utilise a confidentiality assurance technique of randomly rounding census statistics to base three. This enables the greatest amount of census data to be released without compromising the privacy of individual responses. As a consequence the ethnicity denominator in Table 3 differs from the overall coverage denominator in Table 1.

In the census it is possible to choose more than one ethnic group. Where more than one category has been chosen, priority is given to certain ethnic groups for the purposes of classification by the New Zealand Health Information Service (NZHIS). Thus, if a woman chooses more than one category and one of these is Maori, she is counted as Maori.

Table 3. Population projections (2001/2002) by ethnicity.

Population Projections (2001/2002) - Summary by ethnicity				
	Maori	**Pacific**	**Other**	**Total**
BreastScreen Auckland & North	8,860	6,655	89,485	10,5000
BreastScreen Midland	7,060	483	40,875	48,418
BreastScreen Coast to Coast	5,220	338	35,095	40,653
BreastScreen Central	2,330	1,498	29,225	33,053
BreastScreen South	2,110	365	51,645	54,120
BreastScreen HealthCare	950	113	21,265	22,328
Total	26,530	9,452	267,590	**303,572**

The priority for multiple ethnic group reporting is shown below:

Table 4 Multiple ethnic group reporting priority list.

Ethnic group	**Priority for multiple ethnic group reporting**
European not further defined	20
NZ European / Pakeha	21
Other European	19
Maori	1
Pacific Island not further defined	9
Samoan	7
Cook Island Maori	6
Tongan	5
Niuean	4
Toleauan	2
Fijian	3
Other Pacific	8
Asian not further defined	14
South East Asian	10
Chinese	12
Indian	11
Other Asian	13
Middle Eastern	17
Latin American / Hispanic	15
African	16
Other	18
Not stated	99

Source: New Zealand Health Information Service. Data Dictionary Appendix Revision 4.3. Wellington: NZHIS, 1997.