

BreastScreen Aotearoa

Independent Māori Monitoring Report 5b:
Treatment of Women with BSA Detected
Cancers, ages 45–69 years
(Women screened July 2007 to June 2012)

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This document will be available on the National Screening Unit website: <http://www.nsu.govt.nz>

CONTENTS

Overview	4
Summary of key findings	4
Discussion points	6
Individual Lead Provider Profiles	7
Introduction	7
All BreastScreen Aotearoa	8
BreastScreen Waitemata and Northland (BSWN)	9
BreastScreen Counties Manukau (BSCM)	10
BreastScreen Auckland Limited (BSAL)	11
BreastScreen Midland (BSM)	12
BreastScreen Coast to Coast (BSCtoC)	13
BreastScreen Central (BSC)	14
BreastScreen South Limited (BSSL)	15
BreastScreen Health Care (BSHC)	16
Introduction.....	17
Background	18
BreastScreen Aotearoa	18
BSA monitoring process	22
Technical notes for interpreting this report	24
Section 3: Early detection of DCIS or invasive breast cancer	26
3a.3t Treatment data completeness, 5 years.....	26
3a.2 Detection of invasive breast cancer, 5 years.....	27
3c Proportion of invasive cancers that are less than or equal to 15mm in size	29
3d Nodal involvement	33
3e Ductal carcinoma.....	35
Section 4: Treatment	36
4a Proportion of invasive cancers having a surgical axillary procedure.....	36
4b Proportion of invasive cancers having a single excisional procedure	37
4c Proportion of DCIS where no axillary dissection was carried out.....	38
4e Proportion of DCIS having breast conserving surgery	39
4f Proportion of invasive cancers having breast conserving surgery	40
4g Proportion of women with invasive cancer having radiotherapy.....	41
4h Proportion of women with DCIS having radiotherapy	42
4i Proportion of women with invasive cancer having chemotherapy.....	43
4j Proportion of women with invasive cancer having endocrine therapy	46
Section 5: Provision of an appropriate and acceptable service	48
5e First surgical treatment within 20 working days.....	48

List of Tables

Table 1: BSA Lead Providers’ abbreviations and period in programme19

Table 3a.3t: Treatment data completeness, 5 years (July 2007–June 2012)26

Table 3a.2a: Detection rate of invasive breast cancer per 1,000 screens, 5 years (July 2007–June 2012), women aged 45–49 years.....27

Table 3a.2b: Detection rate of invasive breast cancer per 1,000 screens, 5 years (July 2007–June 2012), women aged 50–69 years.....28

Table 3c.1a: Proportion of invasive cancers less or equal to 15mm, 5 years (July 2007–June 2012), women aged 45–49 years.....29

Table 3c.1b: Proportion of invasive cancers less than or equal to 15mm, 5 years (July 2007–June 2012), women aged 50–69 years.....30

Table 3c.2a: Rate of invasive cancers less than or equal to 15mm, per 10,000 screens, 5 years (July 2007–June 2012), women aged 45–49 years31

Table 3c.2b: Rate of invasive cancers less than or equal to 15mm, per 10,000 screens, 5 years (July 2007–June 2012), women aged 50–69 years32

Table 3da: Invasive cancers without nodal involvement, 5 years (July 2007–June 2012), women aged 45–49 years33

Table 3db: Invasive cancers without nodal involvement, 5 years (July 2007–June 2012), women aged 50–69 years34

Table 3e: Women with DCIS as a percentage of all screen detected cancers, 5 years (July 2007–June 2012)35

Table 4a: Percentage of invasive cancers having a surgical axillary procedure, 5 years (July 2007–June 2012)36

Table 4b: Proportion of invasive cancers having a single excisional breast treatment procedure, 5 years (July 2007–June 2012).....37

Table 4c: Proportion of women with DCIS not having axillary dissection, 5 years (July 2007–June 2012)38

Table 4e: Proportion of DCIS ≤ 20mm having BCS, 5 years (July 2007–June 2012).....39

Table 4f: Proportion of invasive cancers ≤20mm, without DCIS, having BCS, 5 years (July 2007–June 2012)40

Table 4g: Proportion of invasive cancers, having BCS and having radiotherapy, 5 years (July 2007–June 2012)41

Table 4h: Proportion of women with DCIS, having BCS and having radiotherapy, 5 years (July 2007–June 2012)42

Table 4i.1: The proportion of women aged 45–49 years with invasive cancers who have chemotherapy, by disease character group, 5 years (July 2007–June 2012)43

Table 4i.2: The proportion of women aged 50–69 years with invasive cancers who have chemotherapy, by disease character group, 5 years (July 2007–June 2012)44

Table 4j.1: Proportion of women aged 45–49 years diagnosed with invasive cancer who had endocrine therapy by disease character group, 5 years (July 2007–June 2012)46

Table 4j.2: Proportion of women aged 50–69 years diagnosed with invasive cancer who had endocrine therapy by disease character group, 5 years (July 2007–June 2012)47

Table 5e: Proportion of women receiving first surgical treatment within 20 working days, 5 years (July 2007–June 2012)48

List of Figures

Figure 1: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, all BSA8

Figure 2: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSWN.....9

Figure 3: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSCM.....10

Figure 4: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSAL.....11

Figure 5: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSM.....12

Figure 6: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSCtoC.....13

Figure 7: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSC.....14

Figure 8: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSSL.....15

Figure 9: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSHC.....16

Figure 10: Map of BSA Lead Provider Regions.....20

Figure 11: Distribution of Māori and non-Māori women aged 45 to 69 years by Lead Provider region 2012.....20

Figure 12: The Breast Screening Pathway22

OVERVIEW

Breast cancer is the most common cancer diagnosed among Māori and non-Māori women in New Zealand. Māori mortality rates from breast cancer are disproportionately higher than non-Māori rates and more equitable outcomes could be achieved if more Māori women were diagnosed at an earlier stage. Screening aims to detect cancers at an early stage when tumours are more amenable to treatment and a properly organised breast screening programme can significantly reduce mortality from the disease. BreastScreen Aotearoa (BSA) offers free two-yearly mammographic screening to women aged 45 to 69 years and plays a crucial part in reducing breast cancer mortality.

This report is the second report on treatment indicators in a new time series of independent Māori monitoring reports that include indicators for Māori women aged 45 to 49 years and 50 to 69 years. Targets are set for women aged 50 to 69 years only. Earlier independent Māori monitoring reports reported only on women aged 50 to 64 years.

Data are presented for women screened during the five-year period July 2007 to June 2012. Because these reports are produced annually, four of the five years of data in this report overlap with the first report in this series. Trends over time are therefore not presented in this report, but will be in future reports.

Summary of key findings

Although targets for the early detection and treatment indicators were generally met or exceeded for Māori women, the targets for the timeliness of treatment were not met. Māori women had higher invasive cancer detection rates than non-Māori women, including rates of small tumours. The proportion of cancers diagnosed as DCIS was smaller for Māori compared to non-Māori. Treatment indicators were similar for Māori and non-Māori women.

The proportion of women receiving their first surgical treatment within 20 working days was well below target and deserves further investigation, including by District Health Board. No Lead Provider met the target for this indicator. The proportion of Māori women receiving timely surgical treatment was also lower than the proportion of non-Māori women for total BSA.

Early detection of DCIS or invasive breast cancer

Women aged 45 to 49 years

Among women aged 45 to 49 years, Māori women were 85% more likely than non-Māori women to have invasive breast cancer detected from their initial screen, and twice as likely as non-Māori from a subsequent screen. The detection rate in this age group was around half the rate of detection in women aged 50 to 69 years from an initial screen, and just over two-thirds the rate of detection from a subsequent screen.

For both Māori and non-Māori women, around half the invasive cancers were less than or equal to 15mm diameter or had no nodal involvement.

Compared to non-Māori, the detection rate of small cancers (≤ 15 mm) was 80% higher for Māori women having an initial screen and 90% higher for those having a subsequent screen.

The percentage of screen detected cancers that were diagnosed as DCIS among Māori women in this age group was half that of non-Māori (15% compared to 30%).

Women aged 50 to 69 years

The five year invasive cancer detection rates for Māori women aged 50 to 69 years exceeded the target values for initial and subsequent screens. Among women having initial screens the invasive cancer detection rate for Māori women (12.7 per 1,000 screens) was 82% higher than the non-Māori rate (7.0 per 1,000 screens). For those having subsequent screens the detection rate was 59% higher for Māori (6.2 per 1,000 screens) compared to non-Māori women (3.9 per 1,000 screens).

The proportions of screen-detected cancers that were small ($\leq 15\text{mm}$), or had no nodal involvement, were on or above target for Māori women. These indicators were similar for Māori and non-Māori women.

The rates of screen-detected invasive cancers $\leq 15\text{mm}$ per 10,000 screens were twice the target values, and were significantly higher among Māori women than non-Māori women having initial or subsequent screens.

The proportion of cancers detected among Māori women that were DCIS was 16% compared to 22% of cancers detected among non-Māori women (target range 10% to 25%).

Treatment

Women aged 45 to 49 years

Almost all women aged 45 to 49 years who were diagnosed with invasive cancer had a surgical axillary procedure (99%) and 80% had a single excisional treatment procedure. Of those whose invasive cancer was $\leq 20\text{mm}$ 90% of Māori and 80% of non-Māori women had breast conserving surgery (BCS). 90% of Māori and 94% of non-Māori women who had BCS went on to have radiotherapy. There were no significant differences in the proportions of Māori and non-Māori women in this age group who had chemotherapy or endocrine therapy.

No women in this age group who were diagnosed with DCIS had an axillary dissection. Of the 18 Māori women who had DCIS $\leq 20\text{mm}$, 12 were treated with BCS (67% compared with 90% of non-Māori women). Of those who had BCS, 47% of Māori women and 59% of non-Māori women went on to have radiotherapy.

Women aged 50 to 69 years

In general, targets for treatment indicators were met for Māori women aged 50 to 69 years who were diagnosed with invasive breast cancer or DCIS, and there was little difference between the indicators for Māori and non-Māori women.

Of women aged 50 to 69 years who were diagnosed with invasive cancer, 98% of Māori and non-Māori women had a surgical axillary procedure (target $>95\%$); 83% of Māori women and 84% of non-Māori women had a single excisional breast treatment procedure (no target). Of women without DCIS whose invasive cancers were $\leq 20\text{mm}$ 81% of Māori and 80% of non-Māori had BCS (target $>50\%$), with most going on to have radiotherapy (93% of Māori and 94% of non-Māori women, target $\geq 95\%$).

No targets have been set for the receipt of chemotherapy or endocrine therapy. There were no differences between Māori and non-Māori in the proportions of women in each diagnostic group who received endocrine therapy. There were statistically significant differences between Māori and non-Māori women in the proportions receiving chemotherapy in two of the four diagnostic groups, with Māori more likely to receive chemotherapy in one group, and less likely in another.

Of women who were diagnosed with DCIS, 95% of Māori women and 99% of non-Māori did not have an axillary dissection (target >95%). Of those whose screen-detected DCIS was ≤20mm, 84% of both Māori and non-Māori had BCS (target >50%); 59% of Māori women and 63% of non-Māori women with DCIS only, who had BCS went on to have radiotherapy (no target).

Timeliness of first surgical treatment

Overall, only 54% of Māori women and 63% of non-Māori women aged 45 to 49 years received their first surgical treatment within 20 working days of receiving their final diagnostic results. Among women aged 50 to 69 years, only 54% of Māori and 62% of non-Māori women received surgery within 20 working days (target 90%). BSCM had the lowest proportions of Māori women (19%) and non-Māori women (28%) receiving timely surgery. No Lead Provider reached the target.

Discussion points

The positive impact on survival of early detection of breast cancer through screening is dependent on women receiving timely and high quality treatment. The low proportions of women receiving surgical treatment within 20 working days show a need for more detailed analysis by DHB, and investigation of any barriers to timely treatment. Regular reporting of this indicator by DHB and discussions between BSA and DHBs could help to improve this indicator. The new national cancer treatment target will influence this indicator in the future and should be monitored for Māori and non-Māori women screened by BSA. Monitoring the proportion of women receiving timely adjuvant therapies by ethnicity could also be considered.

Apart from the differential proportions of women receiving their first surgical treatment in a timely manner, the treatment indicators were on target for Māori women and there were few differences between Māori and non-Māori women. This suggests that a well-organised, high quality programme that is monitored by ethnicity can deliver equitable services for Māori and non-Māori.

INDIVIDUAL LEAD PROVIDER PROFILES

Introduction

The intention of this section is to provide a clear overview for each Lead Provider of how well they are achieving the targets for Māori women, and which indicators require continued focus.

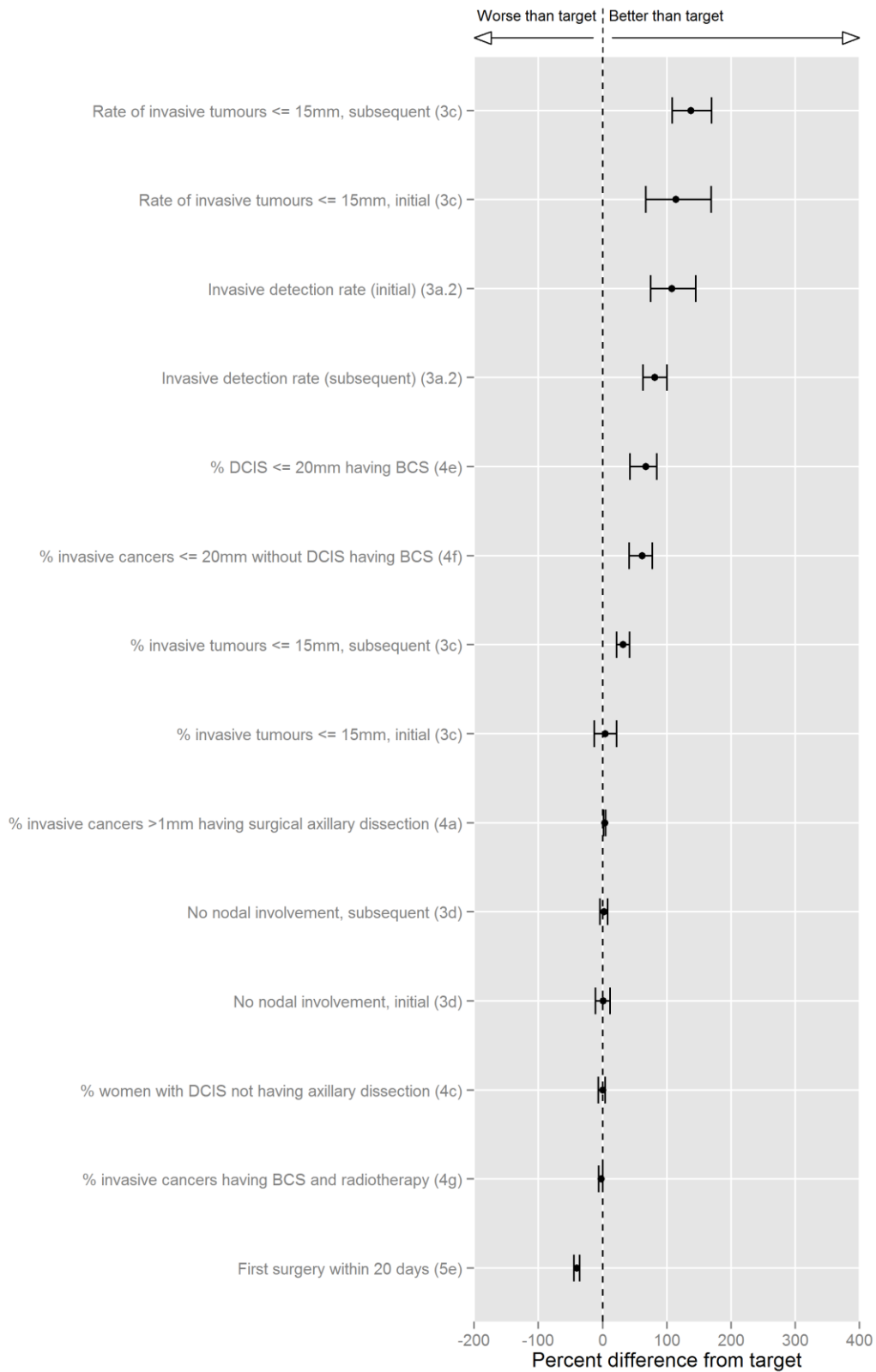
The section provides a summary for each Lead Provider of their indicators against the targets, for Māori women screened in their region, aged 50 to 69 years. Data is provided for the five-year period 1 July 2007 to 30 June 2012 in order to maximise numbers and increase statistical precision. Indicators which do not have targets are not included.

The data presented in the graphs demonstrates whether the target for each indicator was achieved for Māori women, and the proportional 'distance' of each indicator from the target.¹ The central line of the graph represents the target and all indicators with bars to the right of this line achieved the target, those to the left did not achieve the target, although for many the target lies within the confidence interval.

¹ DCIS results (3e) have not been included in the graphs. All providers met the target range of 10% to 25%.

All BreastScreen Aotearoa

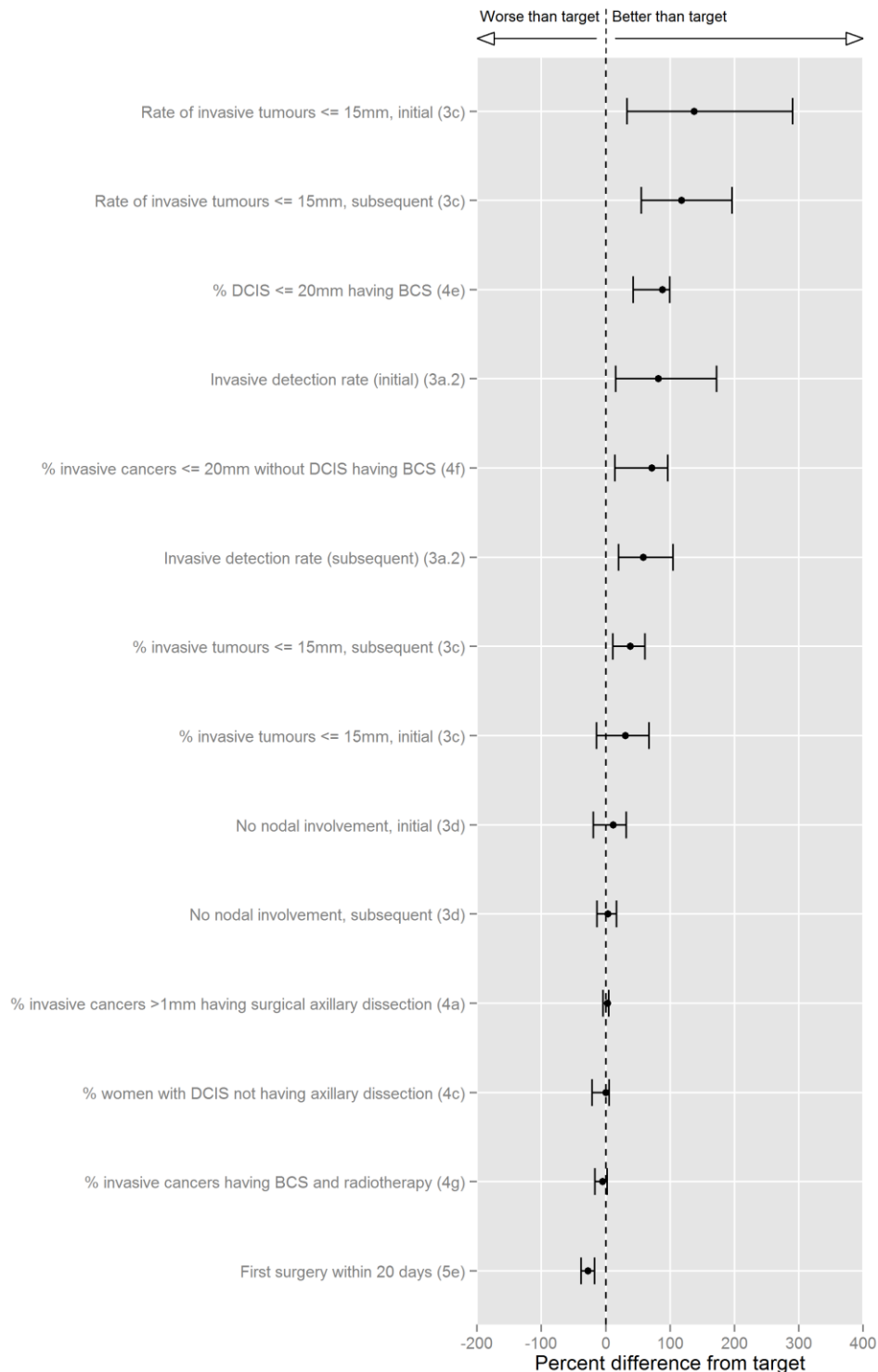
Figure 1: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, all BSA



BreastScreen Waitemata and Northland (BSWN)

Over the 5-year period, BSWN was either on target or exceeded targets for Māori and non-Māori women aged 50–69 years for all early detection and treatment indicators. The only target not achieved was the percentage of women receiving their first surgical treatment within 20 working days (65% of Māori women and 70% of non-Māori women, target 90%).

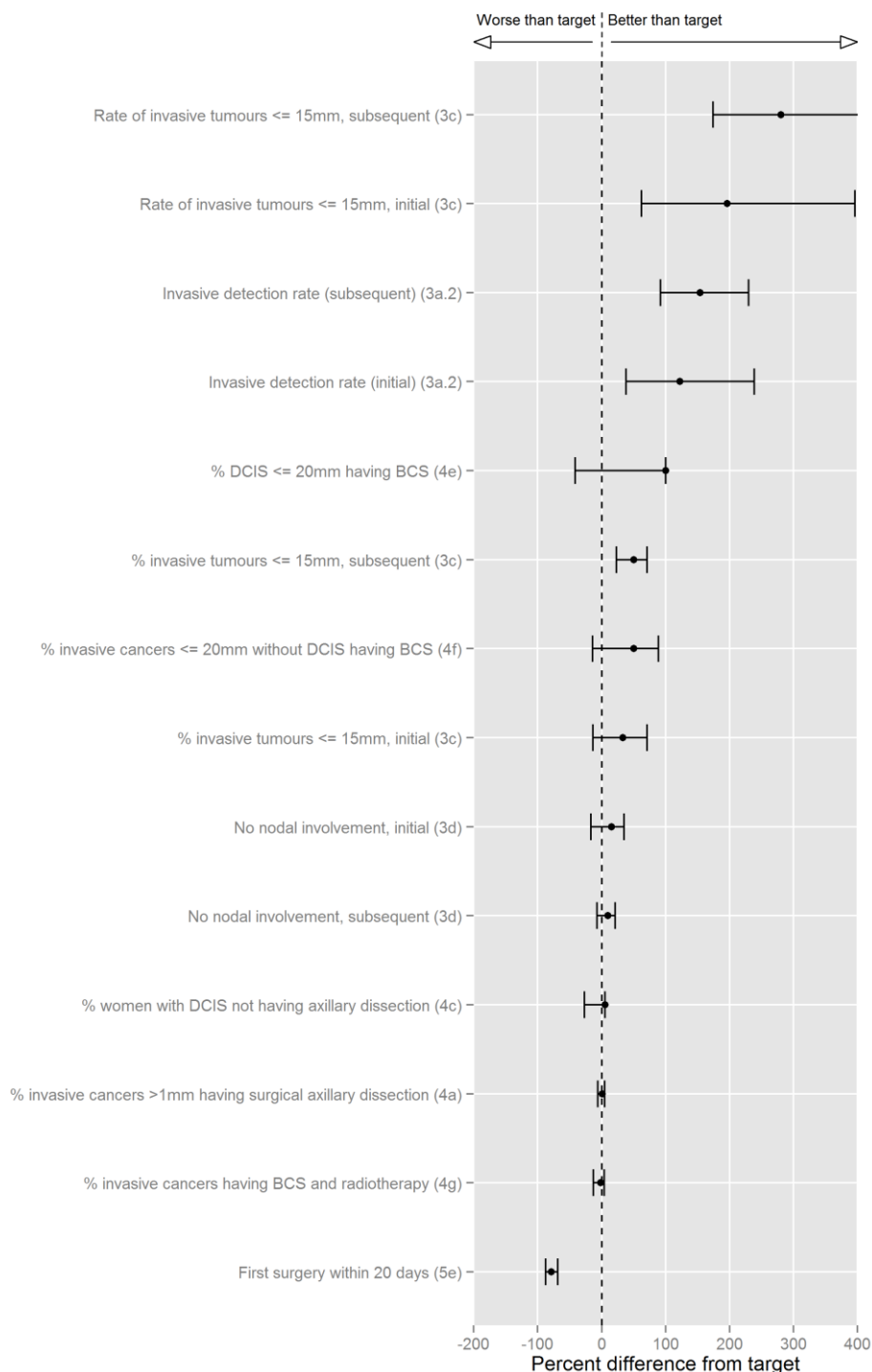
Figure 2: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSWN



BreastScreen Counties Manukau (BSCM)

BSCM met or exceeded the target values for Māori and non-Māori women aged 50–69 years for all early detection and treatment indicators during the 5-year period. However, only 19% of Māori women and 28% of non-Māori women aged 50–69 years received their first surgical treatment within 20 working days, well below the target of 90%. Among women aged 45–49 years only 17% of Māori women and 28% of non-Māori women received timely surgery.

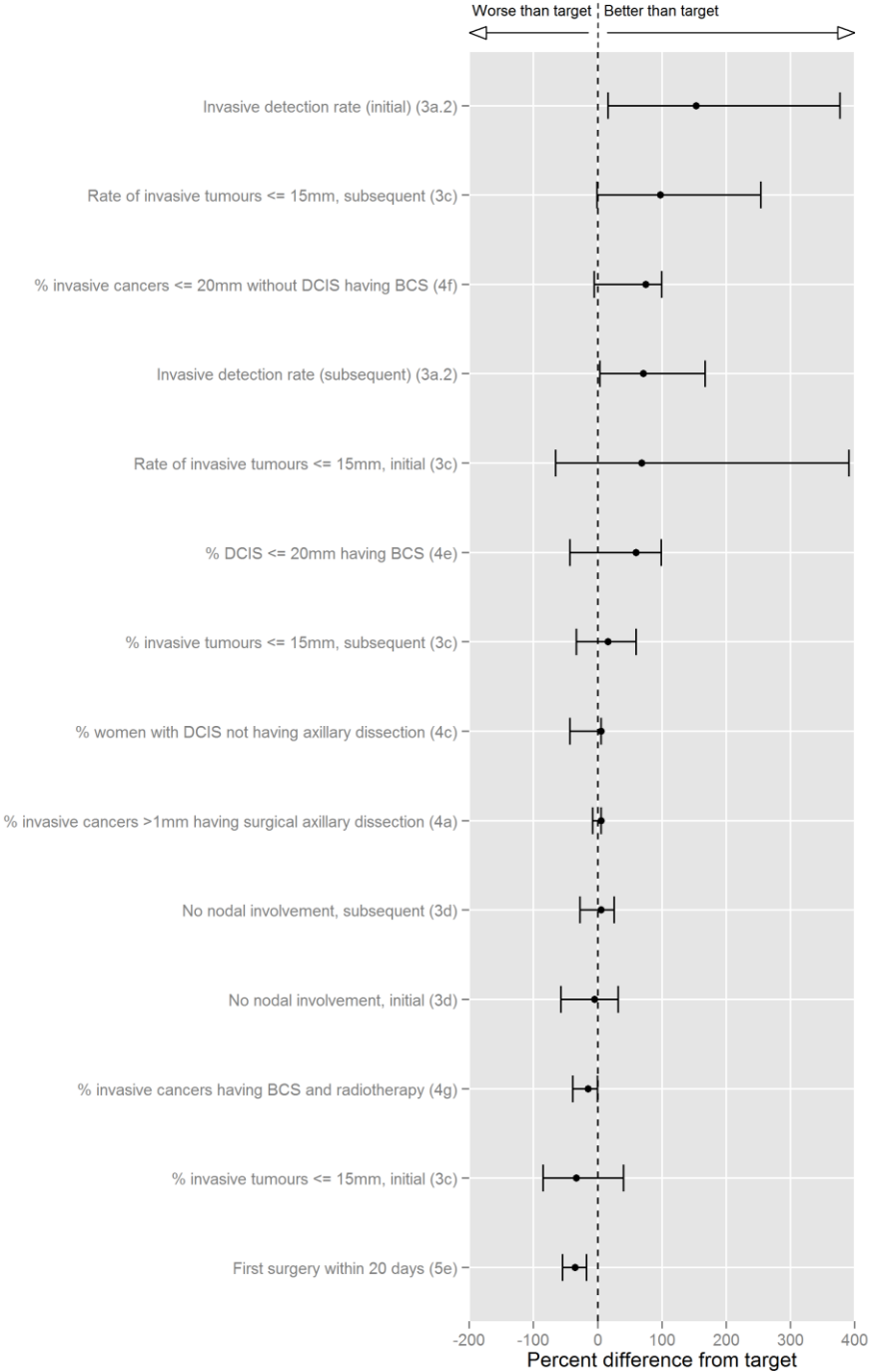
Figure 3: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSCM



BreastScreen Auckland Limited (BSAL)

Almost all detection and treatment targets were met or were within the confidence interval for Māori and non-Māori women aged 50–69 years screened by BSAL during the 5-year period. The target of 95% was not met for the percentage of women who had breast conserving surgery and went on to have radiotherapy (81% for Māori and 83% for non-Māori). Only 9 cancers were detected among Māori women having initial screens, three of which were ≤15mm in diameter. The target was not achieved for the percentage of women who received their first surgical treatment within 20 working days (58% of Māori women and 60% of non-Māori women, target 90%).

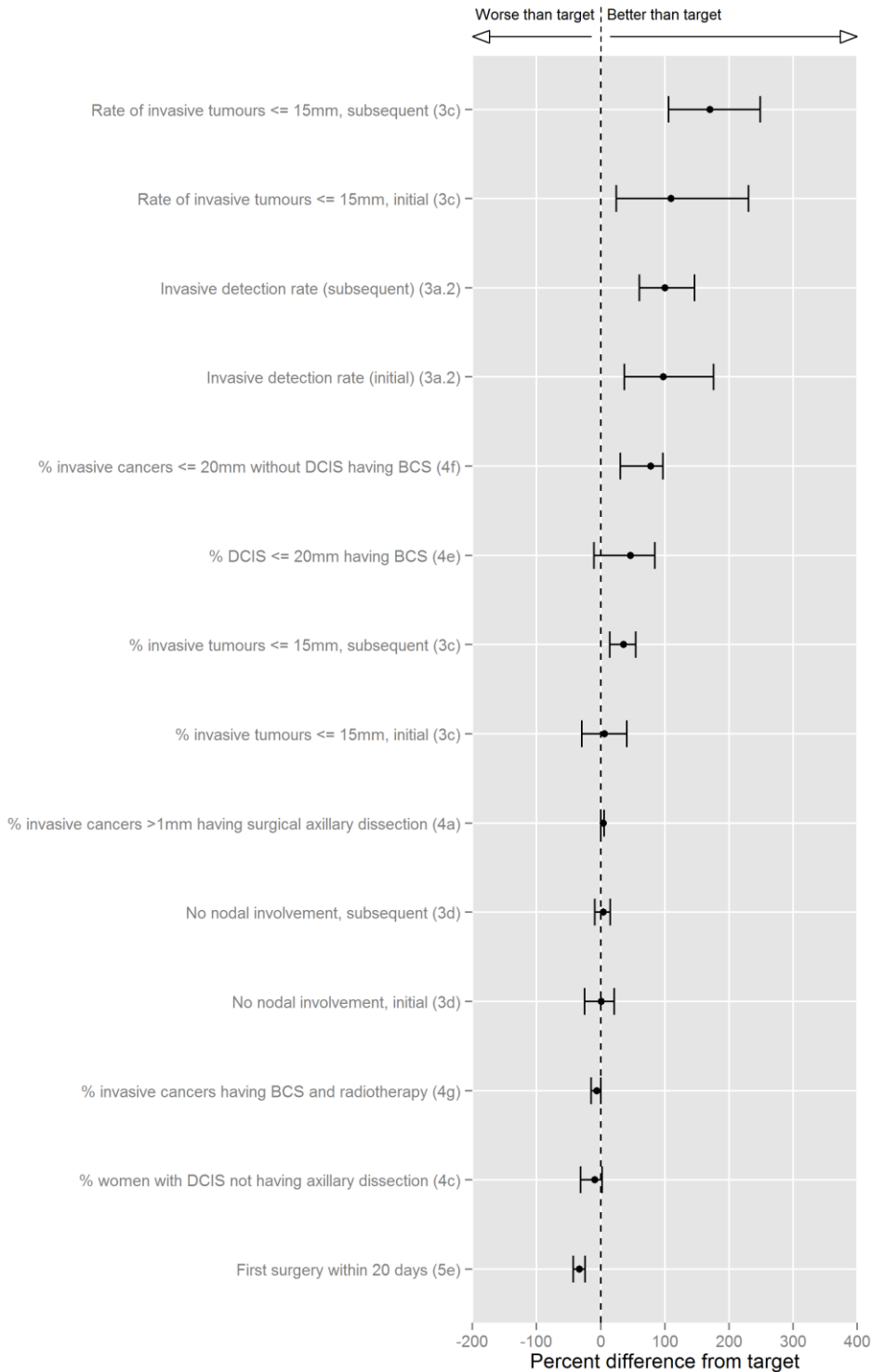
Figure 4: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSAL



BreastScreen Midland (BSM)

All detection and treatment targets were met or were within the confidence interval for Māori and non-Māori women aged 50–69 years screened by BSM during the 5-year period. The target of 90% was not achieved for the percentage of women receiving their first surgical treatment within 20 working days (60% of Māori women and 66% of non-Māori women).

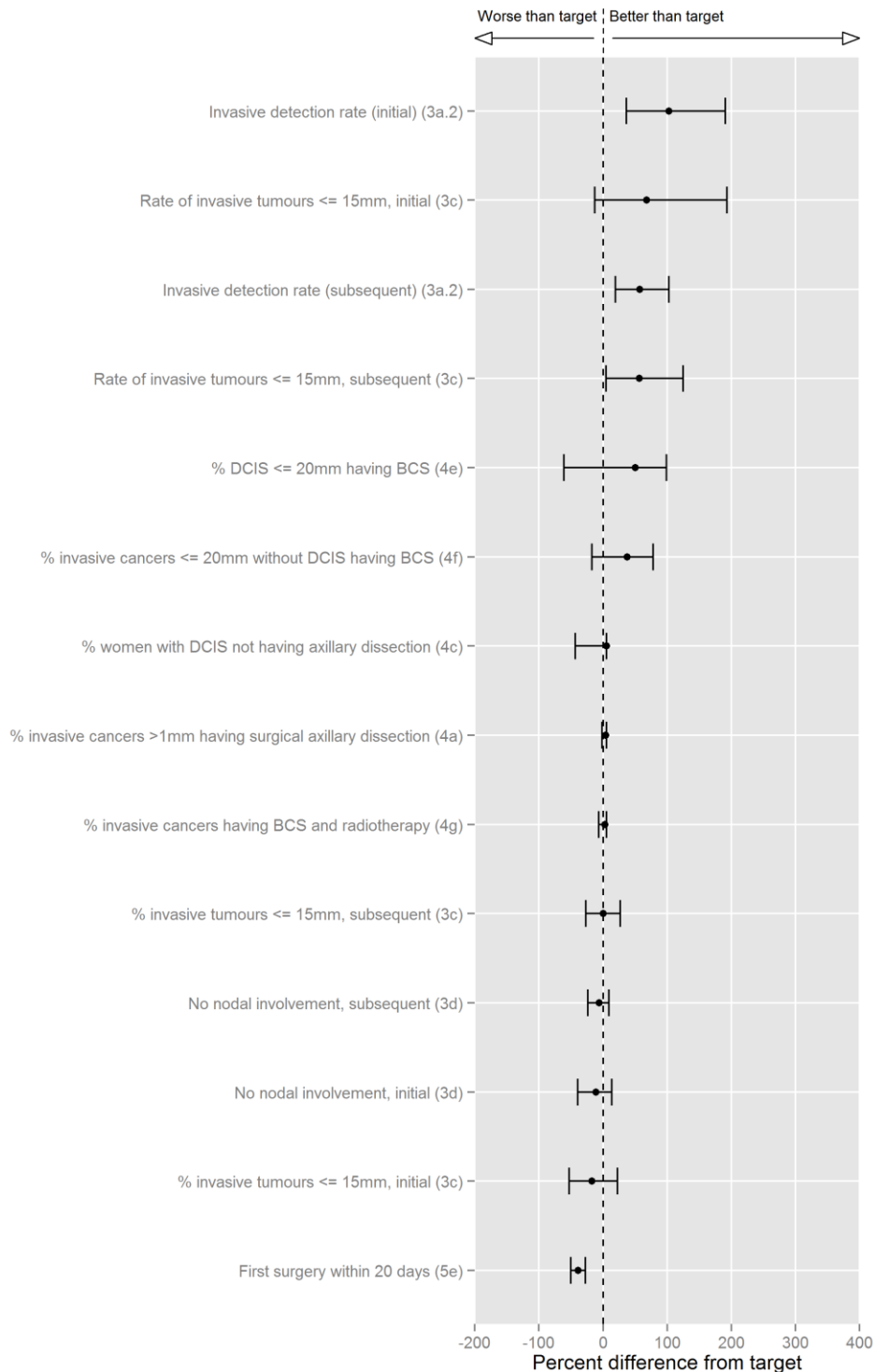
Figure 5: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSM



BreastScreen Coast to Coast (BSCtoC)

All detection and treatment targets were met or were within the confidence interval for Māori and non-Māori women aged 50–69 years during the 5-year period. The target of 90% was not met for the percentage of women having their first surgical treatment within 20 working days (55% of Māori women and 67% of non-Māori women).

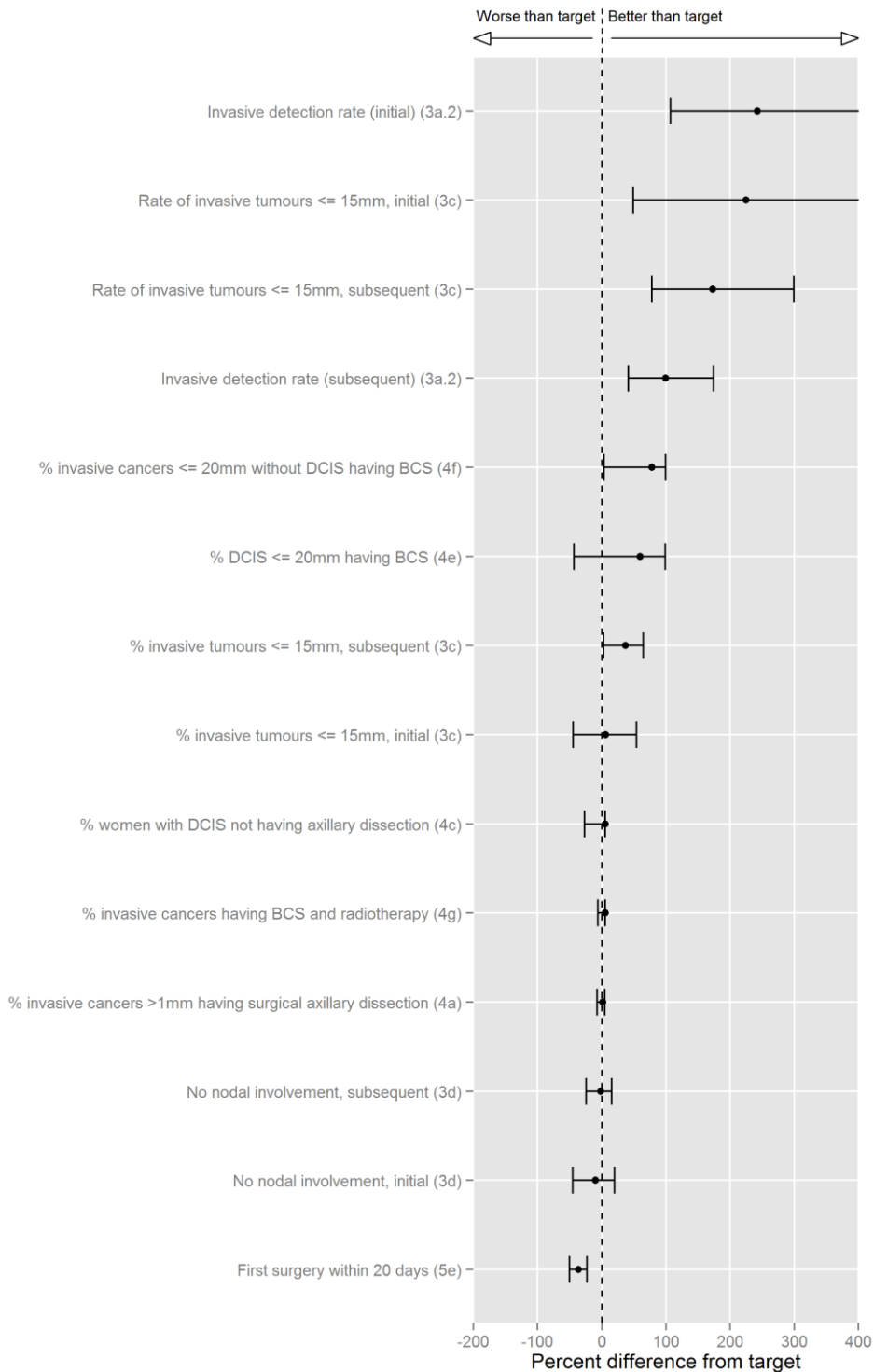
Figure 6: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSCtoC



BreastScreen Central (BSC)

The detection and treatment targets were all met or were within the confidence interval for Māori and non-Māori women aged 50–69 years who were screened during the five-year period. The target for the percentage of women receiving their first surgical treatment within 20 days was not met (57% of Māori and 56% of non-Māori women, target 90%).

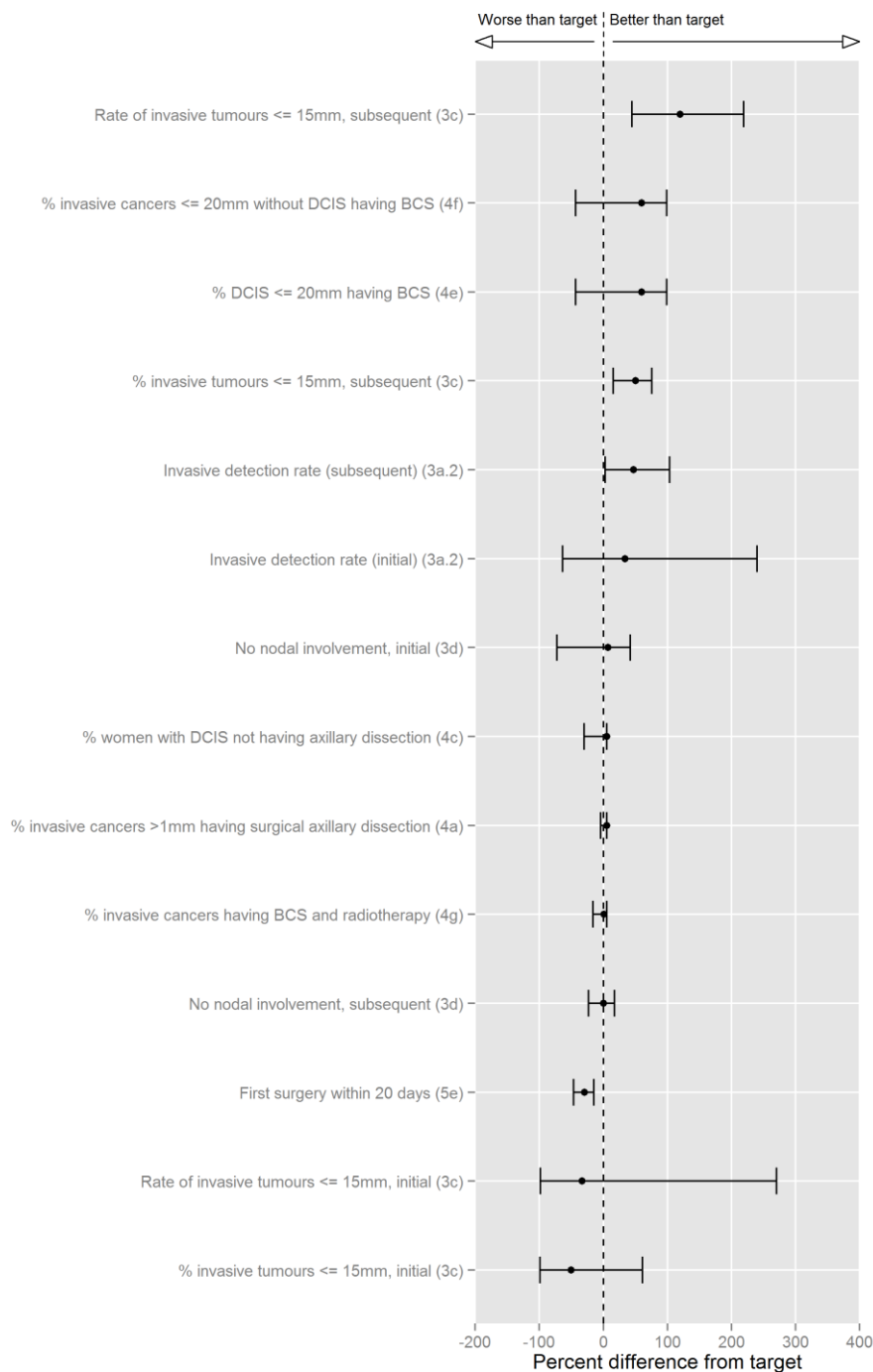
Figure 7: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSC



BreastScreen South Limited (BSSL)

BSSL met or exceeded all detection and treatment indicators for Māori and non-Māori women aged 50–69 years, screened during the five-year period, despite the disruption of the Christchurch earthquakes. The target of 90% was not achieved for the percentage of women receiving their first surgical treatment within 20 working days (63% of Māori and 69% of non-Māori women). Due to the high coverage of Māori women in BSSL, there were relatively few initial screens in the 50–69 year age group. And only 4 Māori women were diagnosed with invasive cancer from initial screens during this 5-year period, one of which was $\leq 15\text{mm}$.

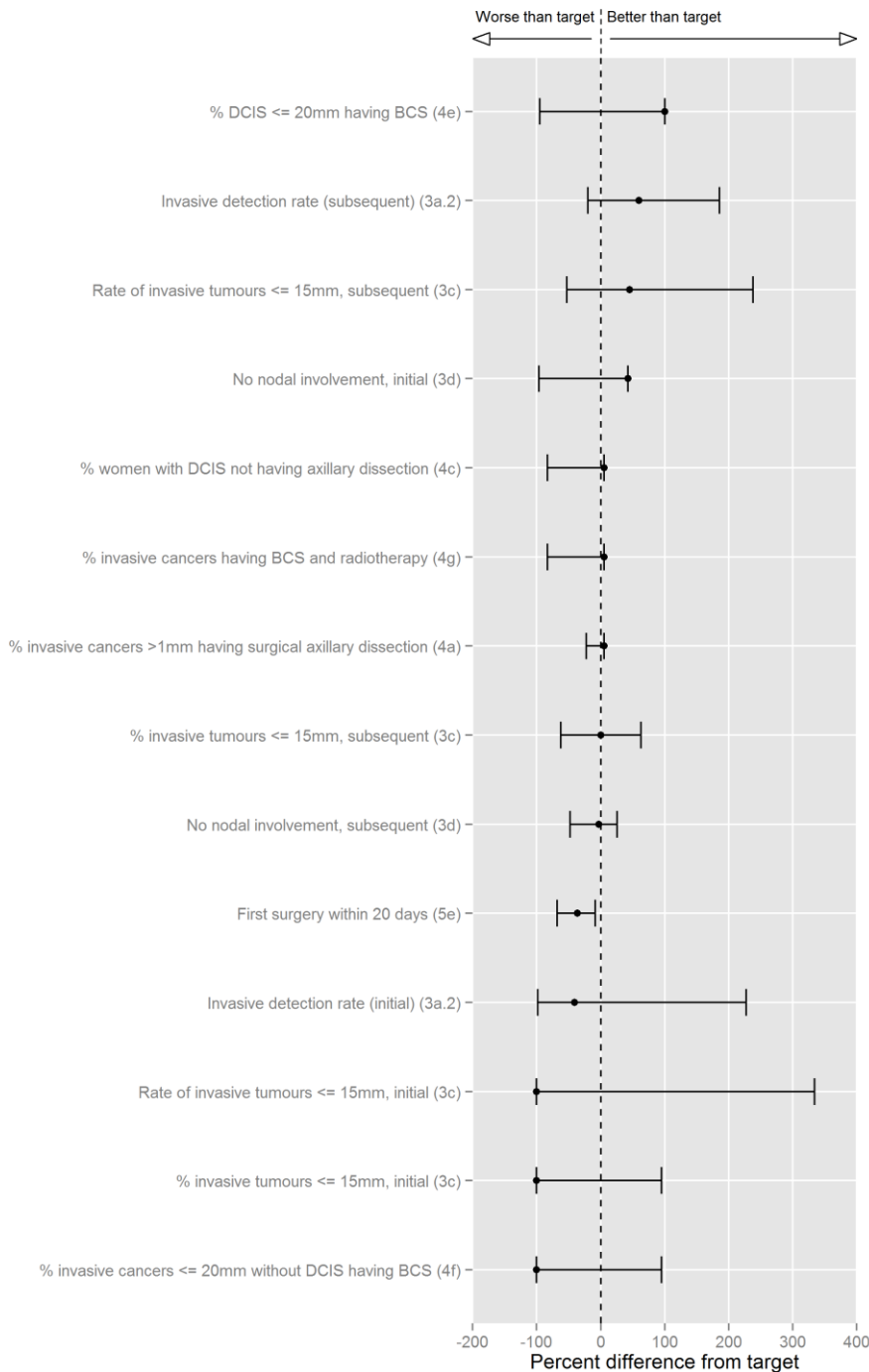
Figure 8: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSSL



BreastScreen Health Care (BSHC)

The targets were met or were within the confidence interval for almost all indicators for Māori women aged 50–69 years screened during the 5-year period. The exception was the proportion of Māori women (57%) who received their first surgical treatment within 20 working days (target 90%). Only one invasive cancer was detected from initial screens among Māori and it was not less than 15mm in diameter. Only one Māori women had invasive cancer ≤ 20 mm without DCIS and she did not have breast conserving surgery.

Figure 9: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2007–June 2012, BSHC



INTRODUCTION

This report is the second in a new time series of independent Māori monitoring reports commissioned to measure the quality of BreastScreen Aotearoa (BSA) services for Māori women aged 45–49 years and 50–69 years. Earlier Māori monitoring reports presented data on women aged 50–64 years only. Using the standard indicators and targets developed by the National Screening Unit, the reports present the results for Māori and non-Māori women and the Māori/non-Māori ratios for each indicator as a measure of equality or inequality. Quality indicators on breast cancer detection, treatment, and timeliness of surgical treatment are presented for women screened during the five-year period 1 July 2007 to 30 June 2012. This report on Treatment indicators accompanies the Screening and Assessment Māori Monitoring report which describes indicators for the two-year period 1 July 2011 to 30 June 2013.

The right to the highest attainable standard of health for all is reflected in the overarching aim of the New Zealand Cancer Control Strategy to reduce inequalities with respect to cancer. The vision of the National Screening Unit is to save lives, reduce inequalities and build health by leading the delivery of high quality screening programmes, including BSA. Screening contributes to reduced morbidity and mortality from breast cancer by identifying cancers at an early stage, allowing treatment to be commenced sooner than might otherwise have been possible².

Disparities in breast cancer outcomes between Māori and non-Māori women are substantial. During the years 2005 to 2007 the breast cancer registration rate for Māori women aged 50 to 64 years was 66% higher than that of non-Māori women, while the breast cancer mortality rate was 84% higher³. During the period 2000–2004, New Zealand Cancer Registry data shows that Māori women were significantly less likely than non-Māori to be diagnosed at localised stage and more likely to be diagnosed at distant stage of disease spread.⁴ Earlier diagnosis, prompt follow-up and timely treatment of breast cancers among Māori women could contribute substantially to reduced disparities in breast cancer outcomes.

BreastScreen Aotearoa plays a vital role in improving breast cancer outcomes and eliminating inequalities, firstly by finding breast cancer tumours at a very early and treatable stage, and, secondly by systematic follow-up of women whose cancer is found by the screening programme to ensure timely pathways through the cancer care continuum. BSA's commitment to reducing inequalities is reflected in its identification of Māori women as a priority group for invitation, screening, re-screening and treatment.⁵

Appropriate monitoring of BSA quality indicators for Māori women is fundamental to improving the effectiveness of the service in reducing Māori women's morbidity and mortality from breast cancer and reducing disparities in outcomes. Without good quality information, plans and actions taken to improve quality may not lead to more equitable and effective screening service delivery.

This series of Māori monitoring reports tracks progress towards the equity goals of the programme. It illuminates those areas where effective breast screening and treatment is being provided to Māori women. We hope it will also inform Māori communities in our considerations of how the right to health might best be fulfilled in regard to breast cancer and screening.

² National Screening Unit. 2003. *Strategic Plan 2003-2008*. Auckland: Ministry of Health.

³ Ministry of Health. 2011. *Tatau Kura Tangata: Health of Older Māori Chartbook 2011*. Wellington: Ministry of Health.

⁴ Cormack D, Purdie G, Robson B. 2007. Cancer. In B. Robson, R. Harris (eds). *Hauora: Māori Standards of Health IV. A study of the years 2000-2005*. Wellington: Te Rōpū Rangahau Hauora a Eru Pōmare.

⁵ BSA 2004. *BSA National Policy and Quality Standards* Version 1A. Introduction page 11.

BACKGROUND

BreastScreen Aotearoa⁶

Prior to 1991 there was an ad hoc approach to screening for breast cancer. Women who were aware of the importance of mammography screening, and could afford it, sought out services if they were available in the region. In 1991, two pilot mammography programmes were conducted in the Waikato and Otago regions, and in June 1995 the Minister of Health announced that the Government would be introducing a nationwide breast cancer screening programme for women aged 50 to 64 years of age. Between 1996 and 1998 work was undertaken on the development of national targets and indicators, a national monitoring and evaluation system and an information system to support the programme.

It was decided that BSA services would be delivered through six Lead Provider organisations. Two-yearly, two-view mammography screening for asymptomatic women would be offered to women aged 50 to 64 years. The age range was to be reviewed at a later date. The decision to restrict screening to this age range was in response to concerns that the health service may not have had sufficient trained staff such as MRTs and radiologists to operate a breast screening programme, and that there may have been major flow-on effects for breast surgery and radiation oncology departments.

In June 1996 the Ministry of Health (MoH) published the Interim National Quality Standards. Following a tendering process for the services in 1997, contracts were entered into with six main Lead Providers in 1998.

BreastScreen Aotearoa was launched nationally in December 1998 with services being offered in each of the Lead Provider regions from that time.

Age extension

Since 1999, BSA has offered free mammography screening for all eligible women aged 50–64 years. The age range of women screened by BSA was extended in June 2004 to include the age groups 45–49 years and 65–69 years. Following this extension, a prioritisation system was put into place. Providers needed to screen in the following order: rescreens, age 65–69, 50–69 then 45–49 years. This meant that many providers were unable to start inviting women aged 45–49 to register until July 2005. For the 65–69 year age group, invitations commenced July 2004.

The National Screening Unit

The National Screening Unit (NSU) is a separate unit of the Ministry of Health and is responsible for:

- National management and oversight of BreastScreen Aotearoa
- Funding of BSA providers
- National co-ordination of Providers
- National recruitment and retention activities
- National strategy and policy development
- National monitoring, evaluation and audit

⁶ Extracted from BreastScreen Aotearoa National Policy and Quality Standards, February 2004

BSA Providers

A BreastScreen Aotearoa Provider is defined as being any Lead Provider, subcontracted Provider or Independent Service Provider that delivers services on behalf of BreastScreen Aotearoa.

Independent Service Providers

Independent Service Providers (ISPs) are contracted by the NSU to provide health promotion, invitation and support services directly to specific groups of women who might otherwise not be reached by Lead Providers, that is, Māori and Pacific women. Lead Providers and ISPs work in partnership with each other while being accountable to the NSU.

BSA Lead Providers

Each Lead Provider is responsible for services in their region such as health promotion, invitation to the screening programme, screening, assessment, referral to treatment and quality assurance. A Lead Provider may provide these services directly or subcontract to another provider, except those services provided by an Independent Service Provider in their region. Screening is provided at both fixed and mobile sites throughout each region. Originally in 1998, six Lead Providers were established (see Table 1).

Changes to Lead Providers

In July 2005 BreastScreen Auckland and North (BSAN) was restructured into three Lead Providers: BreastScreen Auckland Limited (BSAL), BreastScreen Counties Manukau (BSCM), and BreastScreen Waitemata Northland (BSWN). BSCM began screening in September 2005.

Table 1: BSA Lead Providers' abbreviations and period in programme

Abbreviation	Lead Provider	Inception and period of programme
BSAN	BreastScreen Auckland and North	1999 to June 2005
BSAL	BreastScreen Auckland Limited	July 2005 to present
BSCM	BreastScreen Counties Manukau	October 2005 to present
BSWN	BreastScreen Waitemata Northland	February 2006 to present
BSM	BreastScreen Midland	1999 to present
BSCtoC	BreastScreen Coast to Coast	1999 to present
BSC	BreastScreen Central	1999 to present
BSSL	BreastScreen South Limited	Dec 1998 to present
BSHC	BreastScreen HealthCare	1999 to present

Figure 10: Map of BSA Lead Provider Regions

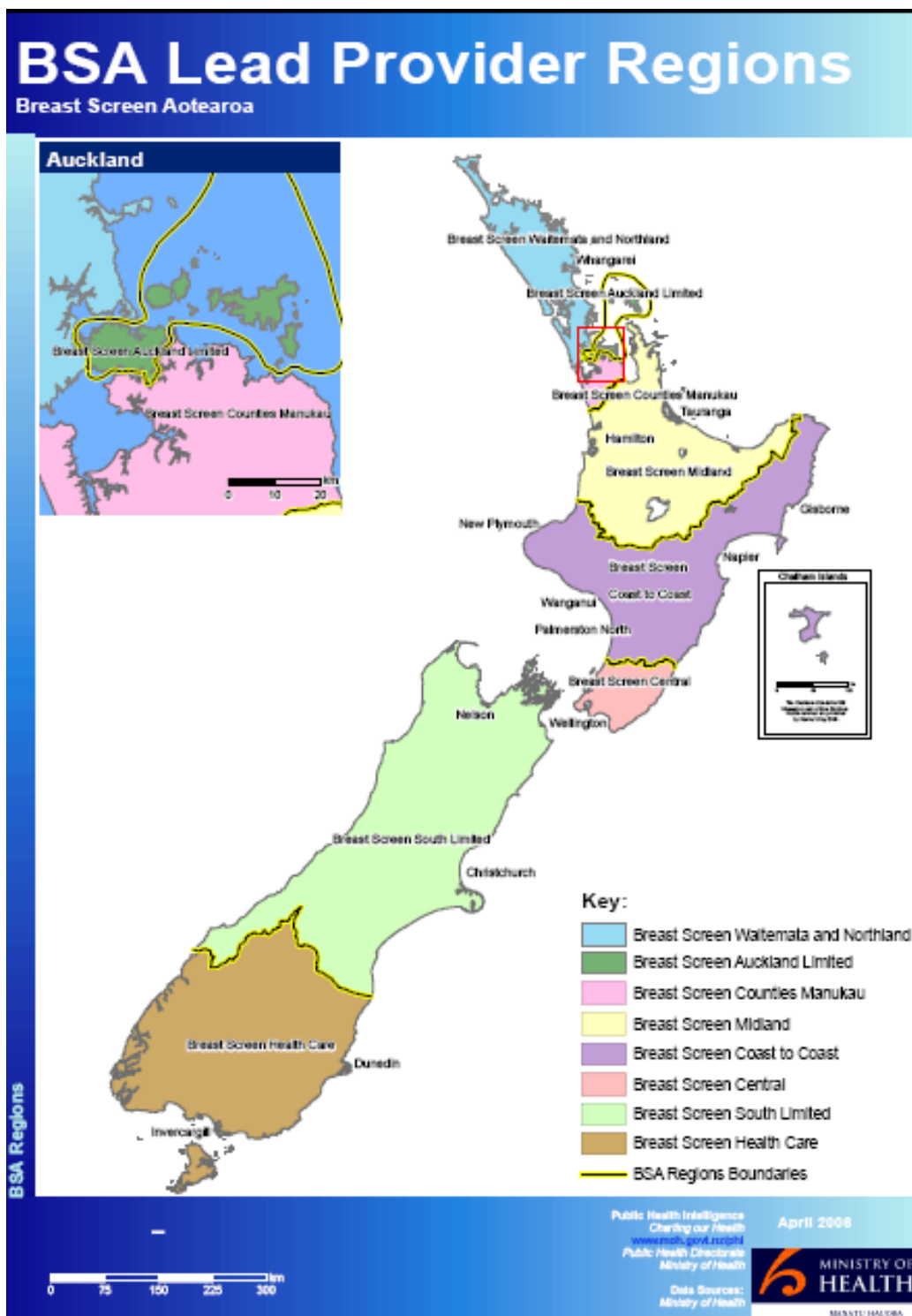
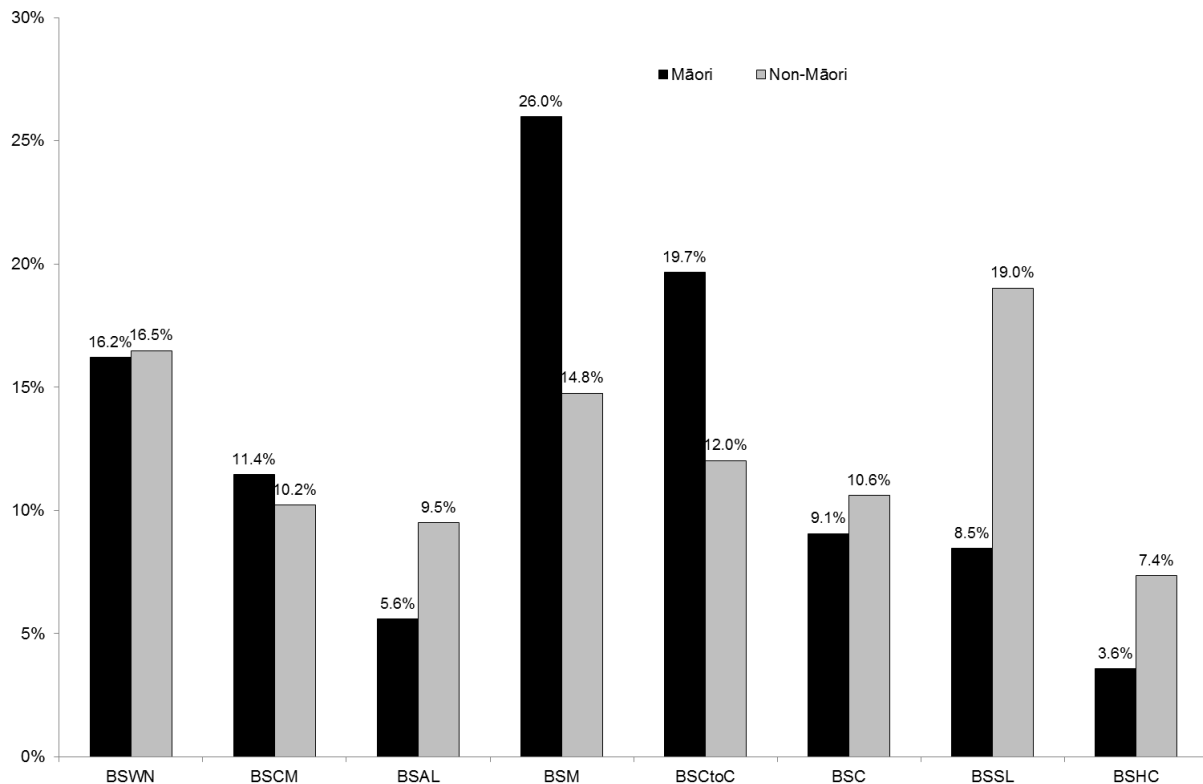


Figure 11: Distribution of Māori and non-Māori women aged 45 to 69 years by Lead Provider region 2012



Source: Statistics NZ Population Projections mid-year 2012 (provided by BSA)

Figure 11 shows the national distribution of Māori and non-Māori women aged 45–69 years by the regions covered by each Lead Provider. This is the potential population for BreastScreen Aotearoa, and does not necessarily reflect the numbers enrolled in a provider.

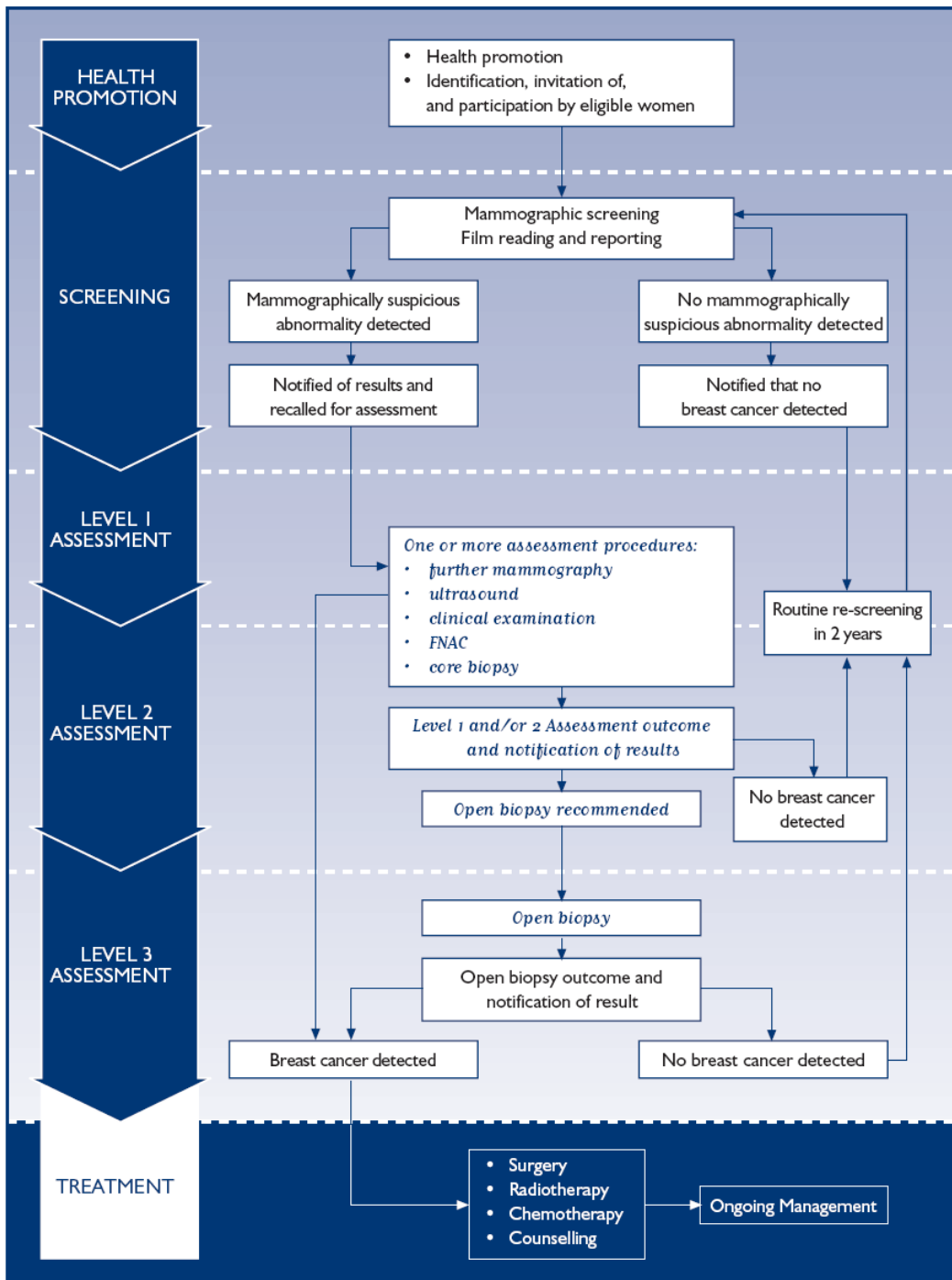
It is important to recognise the Lead Providers that serve large proportions of Māori women in the target age group, as the performance of BSA in these regions will have considerable impact on the Māori population as a whole. In 2012 the BSM region included 26% of the eligible Māori population, BSCToC 20%, and BSWN 16%.

Treatment providers

District Health Boards (DHBs) are responsible for providing treatment to women with breast cancer detected by BSA. Some Lead Providers have more than one DHB in their region. For example, BSWN includes Northern DHB and Waitemata DHB. Most breast cancers can be treated in a secondary care hospital. But if a woman requires a tertiary cancer centre level of care, the treatment centre may be outside of the LP region. The main Cancer Centres providing oncology services are in Auckland, Waikato, Palmerston North, Wellington, Christchurch and Dunedin hospitals. In some regions, private providers also treat breast cancer.

The Breast Screening pathway⁷

Figure 12: The Breast Screening Pathway



⁷ June 2008 – BreastScreen Aotearoa National Policy & Quality Standards VERSION 2

BSA monitoring process

This section describes the process used to produce the independent Māori monitoring reports for BSA.

Data are sent monthly from the eight BSA Lead Providers (LPs) to the Information Directorate of the Ministry of Health. The data are checked at the Information Directorate, amalgamated into a single file, and sent to the National Screening Unit (NSU). The NSU runs further checks, then sends anonymised unit record data to the Eru Pōmare Māori Health Research Centre at the University of Otago, Wellington - the Independent Māori Monitoring Group (IMMG). The IMMG produces the indicator tables, including ratios of Māori:non-Māori data, and calculates confidence intervals. The report is then produced, including an analysis of actual data against national indicators and targets, explanatory notes and commentary.

The IMMG sends the first draft of the Independent Māori Monitoring Reports (IMMR) to BSA for verification and review. After discussion of any factual errors, inaccuracies or omissions, the draft IMMR is updated and sent back to BSA. The updated IMMR draft is sent to members of the NSU Māori Monitoring and Equity Group (MMEG) prior to a collective meeting, where it is presented and discussed. The MMEG provides consumer and provider context for the report and makes recommendations for programme improvement. The final draft report is then circulated to Lead Providers (LPs) for comment. Any factual errors are corrected prior to publication.

Māori Monitoring and Equity Group

In 2003 the NSU established the Māori Advisory Group in order to support the NSU to achieve its mission. The group comprises up to 12 members who have particular expertise on Māori health issues and screening programmes. In 2011 the group's title changed and they became the NSU's Māori Monitoring and Equity Group (MMEG). The members are:

- **Beth Quinlan** - Ngāti Whātua, Ngāpuhi, Primary Health Whānau Ora Nurse (Cervical Screening) Ki A Ora Ngatiwai Health Trust, Whangarei, Smear Taker Representative
- **Sandra Corbett** - Te Arawa, Kaiwhakahaere/Māori co-ordinator, National Cervical Screening Programme, Hawkes Bay DHB, Kaimahi Representative
- **Hinarata Campin** - Ngāti Porou, Ngāpuhi, Ngāti Wai, Health Promotion Co-ordinator, BreastScreen South, Kaimahi Representative, MMEG Deputy Chair
- **Barbara Greer** - Kāi Tahu, Kāti Māmoe, Ngāti Porou, Ngāti Apa, Member of Quality Improvement Committee (QIC), Māori Women's Welfare League Representative
- **Deborah Rowe** - Ngāi Tahu, Nurse Consultant/Lecturer, joint appointment between Auckland DHB and University of Auckland, Clinical Representative, MMEG Chairperson
- **Gary Thompson** - Ngāti Paoa Ngāti Haua – Midland Smokefree Programme Director – Midland DHB HealthShare Ltd
- **Whaea Jo Barnaby** - Ngāti Awa, Te Arawa, Manager Te Teko Hauora, Ex-NCSP Health Promoter/Smear Taker, Kaumātua representative
- **Pania Coote** – Ngāi Tahu, Ngāti Kauwhata, Ngāti Porou, Tumu Whakarae Representative, Southern DHB, District Manager Māori Health
- **Donna Cormack** - Kāi Tahu, Kāti Māmoe, University of Auckland/University of Otago

Technical notes for interpreting this report

Ethnicity classification

Ethnicity data is derived from the BSA registration form. The BSA policy is that providers use the standard ethnicity question as outlined in the Ministry of Health Ethnicity Data Protocols and for data entry systems to allow for coding multiple ethnic groups. Most indicators use ethnicity data collected from the most recent screening episode, apart from the re-screening indicator. This means that some women who were coded as non-Māori in a previous report may be classified as Māori in this report. For example, in the data extracted for this report, there were approximately 300 more women coded as Māori who were classified as non-Māori in the previous report.

In this report, non-Māori data is derived from the total number of women minus those classified as Māori. This means that records with missing ethnicity data are counted as non-Māori. However, it is estimated that less than 1% of records have ethnicity missing.

Calculation of five year cancer detection rates

The indicators in this report cover the five year period 1 July 2007 to 30 June 2012. This provides some stability in the indicators that have small numbers. Reporting the rates of cancers detected for a *five year period* requires that the denominator be changed from *number of distinct women screened* (which works reasonably well for any two year period since most women are only screened once in the period) to *number of screens performed*.

Confidence intervals

In this report, 95% confidence intervals were calculated for all indicators assuming they are being considered individually. Values in this report (rates, ratios) are calculated estimates of the ‘true’ values in the population. The 95% confidence interval indicates that there is a 5% chance that the ‘true’ value lies outside the range of values contained by the confidence interval (CI). Therefore, the wider the CI, the less precise the estimate is to the true population parameter.

All calculations were conducted in R3.01. All reported confidence intervals are 95% coverage confidence intervals.

Confidence intervals for the indicators (estimates for Māori and non-Māori) were calculated based on the binomial distribution (using the binom.exact function.)

Ratios of Māori to non-Māori values are provided throughout this report as an indicator of ethnic disparity for each of the targets. A ratio of 1.0 indicates no difference between the two ethnic groups. For each target, a footnote beneath each table helps to interpret that ratio or, where relevant, states whether a ratio above or below 1.0 is unfavourable to Māori. 95% confidence intervals are provided for ratios. Should the CI include 1.0, it is possible that the ‘true’ ratio for the population is 1.0 and therefore does not indicate a disparity between Māori and non-Māori. Such ratios are considered to be not statistically significant.

Confidence intervals for ratios were calculated using the binomial distribution⁸. For ratios with no women in either numerator, the Poisson distribution was used to construct confidence intervals

⁸ Standard error for the ratios here is calculated on the log scale; resulting 95% Wald confidence intervals for the log(ratio) are then exponentiated for reporting as ratios.

$$se(\ln(RR)) = \sqrt{\frac{1}{Māori_{IND}} + \frac{1}{Māori_{TOTAL}} + \frac{1}{Non-Māori_{IND}} + \frac{1}{Non-Māori_{TOTAL}}}$$

where e.g. Māori_{IND} is numerator for Māori (i.e. count of Māori women with indicator); and Māori_{TOTAL} is denominator (i.e. count of Māori women both with and without indicator.)

using the `poisson.exact` function in R. This provides a wider confidence interval than would be expected using the binomial distribution (if it was possible to use it in these cases).

For confidence intervals for ratios where either the Māori or non-Māori group had 100% on the indicator (for a given provider for the reporting period), Bayesian Monte Carlo estimates were used, based on the expected joint distribution of the two proportions (and constrained by a prior regarding the relative difference between groups). These indicators tend to be treatment indicators where there are relatively few women in the denominator. Ratios where this method was used have been marked with the symbol #.

Targets

Targets for detection and treatment have been set for women aged 50 to 69 years, but not for women aged 45 to 49 years. Proportions or rates that have not met the BSA targets have been shaded in each table throughout this report. They are only shaded if the confidence interval does not include the target.

Changes to indicator calculations

Since the previous report, minor changes have been made to the way data is extracted or calculated for the following indicators:

- 3e Proportion of screen detected cancers that are DCIS
- 4b Invasive cancers treated by a single excision
- 4c Percentage of DCIS having no axillary dissections
- 4e Percentage of women with DCIS having BCS
- 4f Invasive cancers treated with BCS

In addition, indicator 3b, the proportion and rate of invasive cancers $\leq 10\text{mm}$, is no longer reported

SECTION 3: EARLY DETECTION OF DCIS OR INVASIVE BREAST CANCER

3a.3† Treatment data completeness, 5 years

Description:

Lead Providers have 9 months to complete data entry for women referred to treatment.

Target:

≥ 90%

Table 3a.3†: Treatment data completeness, 5 years (July 2007–June 2012)

Lead Provider	Māori								Non-Māori							
	BSWN	BSCM	BSAL	BSM	BSCtoC	BSC	BSSL	BSHC	BSWN	BSCM	BSAL	BSM	BSCtoC	BSC	BSSL	BSHC
45–49 years																
No. of women referred for Treatment	38	25	16	40	27	15	18	4	185	94	108	123	94	117	191	65
% Staging Complete	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% Surgical Complete	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% Endocrine Complete	100	100	100	100	100	100	100	100	100	100	100	99.2	100	100	100	100
% Radiotherapy Complete	100	100	100	100	100	100	100	100	100	100	100	99.2	98.9	100	100	100
% Chemotherapy Complete	100	100	100	100	100	100	100	100	100	100	100	99.2	100	100	100	100
50–69 years																
No. of women referred for Treatment	107	92	38	150	98	69	49	15	737	426	390	602	483	489	823	299
% Staging Complete	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% Surgical Complete	100	100	100	100	100	100	100	100	100	100	100	100	100	99.8	100	100
% Endocrine Complete	100	100	100	100	100	100	100	100	100	100	99.7	100	99.6	100	100	100
% Radiotherapy Complete	100	100	100	100	100	100	100	100	100	100	99.7	100	99.6	99.8	100	100
% Chemotherapy Complete	100	100	100	100	100	100	100	100	100	100	99.7	100	99.6	99.8	100	100

Shaded boxes show confidence interval excludes target.

All Lead Providers exceeded the target of ≥ 90% treatment data completeness for all treatment indicators.

3a.2 Detection of invasive breast cancer, 5 years

Description:

The number of women who have invasive breast cancer detected within BSA, expressed as a rate per 1,000 women screened.

Target for women aged 50–69 years:

Initial (prevalent) round: ≥ 6.1 per 1,000 screens

Subsequent (incident) round: ≥ 3.45 per 1,000 screens

Table 3a.2a: Detection rate of invasive breast cancer per 1,000 screens, 5 years (July 2007–June 2012), women aged 45–49 years

Lead provider	Māori		Non-Māori		Māori/non-Māori ratio (95% CI)
	Number with breast cancer	Rate per 1,000 screens (95% CI)	Number with breast cancer	Rate per 1,000 screens (95% CI)	
Initial screens					
BSWN	18	5.4(3.2, 8.5)	75	3.3(2.6, 4.1)	1.66(0.99, 2.77)
BSCM	13	5.6(3.0, 9.5)	51	3.4(2.5, 4.4)	1.65(0.90, 3.03)
BSAL	9	9.1(4.1, 17.1)	42	3.2(2.3, 4.4)	2.81(1.37, 5.76)
BSM	27	7.7(5.1, 11.2)	46	3.0(2.2, 4.0)	2.58(1.61, 4.15)
BSCtoC	16	5.2(3.0, 8.5)	42	3.0(2.1, 4.0)	1.76(0.99, 3.12)
BSC	10	6.4(3.1, 11.7)	50	3.8(2.8, 5.0)	1.67(0.85, 3.29)
BSSL	5	2.9(1.0, 6.8)	69	2.8(2.2, 3.5)	1.05(0.43, 2.60)
BSHC	1	1.6(0.0, 8.7)	25	2.6(1.7, 3.9)	0.59(0.08, 4.37)
Total	99	5.8(4.7, 7.0)	400	3.1(2.8, 3.4)	1.85(1.49, 2.30)
Subsequent screens					
BSWN	14	6.6(3.6, 11.0)	43	2.4(1.7, 3.3)	2.72(1.49, 4.96)
BSCM	5	4.6(1.5, 10.8)	13	1.5(0.8, 2.5)	3.16(1.13, 8.85)
BSAL	4	5.6(1.5, 14.2)	23	2.3(1.5, 3.4)	2.44(0.85, 7.03)
BSM	7	3.4(1.4, 7.0)	36	2.8(2.0, 3.9)	1.21(0.54, 2.71)
BSCtoC	5	2.4(0.8, 5.5)	22	1.6(1.0, 2.5)	1.45(0.55, 3.81)
BSC	3	2.5(0.5, 7.3)	31	2.6(1.8, 3.7)	0.95(0.29, 3.10)
BSSL	12	6.2(3.2, 10.8)	63	1.9(1.4, 2.4)	3.30(1.78, 6.11)
BSHC	1	2.3(0.1, 12.9)	25	3.0(1.9, 4.4)	0.79(0.11, 5.80)
Total	51	4.4(3.3, 5.7)	256	2.2(1.9, 2.5)	1.99(1.48, 2.69)

A ratio above 1.0 shows Māori women have a higher rate of detection than non-Māori women. No targets have been set for this age group. Ratios in italics show a statistically significant difference between Māori and non-Māori.

Māori women aged 45–49 years were 85% more likely than non-Māori women to be diagnosed with invasive breast cancer on their initial screen during the 5-year period July 2007 to June 2012.

Among those having subsequent screens, Māori women were twice as likely to be diagnosed with invasive cancer as non-Māori women.

Table 3a.2b: Detection rate of invasive breast cancer per 1,000 screens, 5 years (July 2007–June 2012), women aged 50–69 years

Lead provider	Māori		Non-Māori		Māori/non-Māori ratio (95% CI)
	Number with breast cancer	Rate per 1,000 screens (95% CI)	Number with breast cancer	Rate per 1,000 screens (95% CI)	
Initial					
BSWN	23	11.1(7.0, 16.6)	125	7.9(6.6, 9.4)	1.41(0.91, 2.19)
BSCM	21	13.6(8.4, 20.7)	78	7.3(5.7, 9.1)	1.87(1.16, 3.02)
BSAL	9	15.4(7.1, 29.1)	66	6.9(5.3, 8.8)	2.23(1.12, 4.46)
BSM	34	12.1(8.4, 16.8)	59	6.2(4.7, 8.0)	1.95(1.28, 2.97)
BSCtoC	29	12.4(8.3, 17.7)	51	5.9(4.4, 7.8)	2.08(1.32, 3.28)
BSC	19	20.9(12.6, 32.4)	61	8.1(6.2, 10.4)	2.58(1.55, 4.30)
BSSL	4	8.1(2.2, 20.7)	46	6.6(4.8, 8.7)	1.24(0.45, 3.43)
BSHC	1	3.6(0.1, 19.9)	23	5.3(3.3, 7.9)	0.69(0.09, 5.06)
Total	140	12.7(10.7, 14.9)	509	7.0(6.4, 7.6)	1.82(1.51, 2.20)
Subsequent					
BSWN	58	5.5(4.1, 7.0)	435	4.1(3.8, 4.5)	1.32(1.00, 1.73)
BSCM	56	8.8(6.6, 11.4)	235	4.3(3.7, 4.8)	2.05(1.54, 2.75)
BSAL	19	5.9(3.6, 9.2)	194	3.6(3.1, 4.2)	1.63(1.02, 2.60)
BSM	87	6.9(5.5, 8.5)	399	4.2(3.8, 4.6)	1.66(1.31, 2.09)
BSCtoC	58	5.4(4.1, 7.0)	351	3.9(3.5, 4.3)	1.39(1.05, 1.83)
BSC	38	6.9(4.9, 9.4)	305	4.1(3.6, 4.6)	1.69(1.21, 2.36)
BSSL	36	5.1(3.5, 7.0)	606	3.7(3.4, 4.0)	1.38(0.99, 1.93)
BSHC	11	5.5(2.8, 9.9)	216	3.7(3.2, 4.2)	1.50(0.82, 2.75)
Total	363	6.2(5.6, 6.9)	2,741	3.9(3.8, 4.1)	1.59(1.42, 1.77)

A ratio above 1.0 shows Māori have a higher rate of screen detected cancers than non-Māori. The target values are ≥ 6.1 per 1,000 initial screens and ≥ 3.45 per 1,000 subsequent screens. Ratios in italics show a statistically significant difference between Māori and non-Māori.

The rate of invasive cancer detected among Māori women aged 50–69 years having an initial screen during the 5-year period July 2007 to June 2012 was around 80% higher than the non-Māori rate of detection.

Among women having subsequent screens, the rate of detection among Māori women was 60% higher than the non-Māori rate.

The cancer detection rate among Māori women was around twice the target value for total BSA for both initial and subsequent screens. For non-Māori women the detection rate was just over the target values.

3c Proportion of invasive cancers that are less than or equal to 15mm in size

Description:

Rate and proportion of primary invasive breast cancer of diameter ≤ 15 mm.

Target for women aged 50–69 years:

Initial (prevalent) round: $>50\%$, which gives a rate of >30.5 per 10,000 women screened.

Subsequent (incident) round: $>50\%$, which gives a rate of > 17.3 per 10,000 women screened

Table 3c.1a: Proportion of invasive cancers less or equal to 15mm, 5 years (July 2007–June 2012), women aged 45–49 years

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	Invasive cancers ≤ 15 mm	Total invasive cancers	% of invasive cancers ≤ 15 mm	Invasive cancers ≤ 15 mm	Total invasive cancers	% of invasive cancers ≤ 15 mm	
Initial screens							
BSWN	10	18	55.6(30.8, 78.5)	44	75	58.7(46.7, 69.9)	0.95(0.60, 1.49)
BSCM	4	12	33.3(9.9, 65.1)	17	49	34.7(21.7, 49.6)	0.96(0.40, 2.33)
BSAL	5	9	55.6(21.2, 86.3)	18	41	43.9(28.5, 60.3)	1.27(0.64, 2.50)
BSM	15	26	57.7(36.9, 76.6)	25	44	56.8(41.0, 71.7)	1.02(0.67, 1.54)
BSCtoC	5	16	31.2(11.0, 58.7)	18	42	42.9(27.7, 59.0)	0.73(0.33, 1.63)
BSC	4	9	44.4(13.7, 78.8)	28	48	58.3(43.2, 72.4)	0.76(0.35, 1.64)
BSSL	4	5	80.0(28.4, 99.5)	32	68	47.1(34.8, 59.6)	1.70(1.03, 2.82)
BSHC	1	1	100.0(2.5, 100.0)	17	25	68.0(46.5, 85.1)	1.47(0.23, 1.74) #
Total	48	96	50.0(39.6, 60.4)	199	392	50.8(45.7, 55.8)	0.98(0.79, 1.23)
Subsequent screens							
BSWN	10	14	71.4(41.9, 91.6)	32	43	74.4(58.8, 86.5)	0.96(0.66, 1.40)
BSCM	4	5	80.0(28.4, 99.5)	6	13	46.2(19.2, 74.9)	1.73(0.83, 3.61)
BSAL	2	4	50.0(6.8, 93.2)	16	23	69.6(47.1, 86.8)	0.72(0.26, 1.99)
BSM	2	7	28.6(3.7, 71.0)	21	36	58.3(40.8, 74.5)	0.49(0.15, 1.63)
BSCtoC	0	5	0.0(0.0, 52.2)	15	22	68.2(45.1, 86.1)	0.00(0.00, 1.23)
BSC	3	3	100.0(29.2, 100.0)	16	31	51.6(33.1, 69.8)	1.94(0.74, 2.53) #
BSSL	7	12	58.3(27.7, 84.8)	33	61	54.1(40.8, 66.9)	1.08(0.63, 1.83)
BSHC	0	1	0.0(0.0, 97.5)	8	24	33.3(15.6, 55.3)	0.00(0.00, 14.06)
Total	28	51	54.9(40.3, 68.9)	147	253	58.1(51.8, 64.3)	0.94(0.72, 1.24)

Ratios below one are unfavourable to Māori. No targets have been set for this age group. Ratios in italics show a statistically significant difference between Māori and non-Māori.

Half of the invasive breast cancer tumours detected by initial screens were 15mm or less for both Māori and non-Māori women aged 45–49 years.

Just over half of the invasive cancers detected by subsequent screens were 15 mm or less among Māori (55%) and non-Māori (58%).

Table 3c.1b: Proportion of invasive cancers less than or equal to 15mm, 5 years (July 2007–June 2012), women aged 50–69 years

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	Invasive cancers ≤15mm	Total invasive cancers	% of invasive cancers ≤15mm	Invasive cancers ≤15mm	Total invasive cancers	% of invasive cancers ≤15mm	
Initial screens							
BSWN	15	23	65.2(42.7, 83.6)	76	125	60.8(51.7, 69.4)	1.07(0.77, 1.49)
BSCM	14	21	66.7(43.0, 85.4)	38	76	50.0(38.3, 61.7)	1.33(0.91, 1.94)
BSAL	3	9	33.3(7.5, 70.1)	48	66	72.7(60.4, 83.0)	0.46(0.18, 1.17)
BSM	18	34	52.9(35.1, 70.2)	33	58	56.9(43.2, 69.8)	0.93(0.63, 1.37)
BSCtoC	12	29	41.4(23.5, 61.1)	23	51	45.1(31.1, 59.7)	0.92(0.54, 1.56)
BSC	9	17	52.9(27.8, 77.0)	34	59	57.6(44.1, 70.4)	0.92(0.56, 1.51)
BSSL	1	4	25.0(0.6, 80.6)	23	46	50.0(34.9, 65.1)	0.50(0.09, 2.80)
BSHC	0	1	0.0(0.0, 97.5)	7	23	30.4(13.2, 52.9)	0.00(0.00, 15.96)
Total	72	138	52.2(43.5, 60.7)	282	504	56.0(51.5, 60.3)	0.93(0.78, 1.11)
Subsequent screens							
BSWN	40	58	69.0(55.5, 80.5)	305	434	70.3(65.7, 74.5)	0.98(0.82, 1.18)
BSCM	42	56	75.0(61.6, 85.6)	135	235	57.4(50.9, 63.9)	1.31(1.08, 1.57)
BSAL	11	19	57.9(33.5, 79.7)	124	193	64.2(57.0, 71.0)	0.90(0.61, 1.34)
BSM	59	87	67.8(56.9, 77.4)	276	396	69.7(64.9, 74.2)	0.97(0.83, 1.14)
BSCtoC	29	58	50.0(36.6, 63.4)	212	349	60.7(55.4, 65.9)	0.82(0.63, 1.08)
BSC	26	38	68.4(51.3, 82.5)	200	303	66.0(60.4, 71.3)	1.04(0.82, 1.31)
BSSL	27	36	75.0(57.8, 87.9)	431	604	71.4(67.6, 74.9)	1.05(0.86, 1.28)
BSHC	5	10	50.0(18.7, 81.3)	139	213	65.3(58.5, 71.6)	0.77(0.41, 1.43)
Total	239	362	66.0(60.9, 70.9)	1,822	2,727	66.8(65.0, 68.6)	0.99(0.91, 1.07)

Ratios below one are unfavourable to Māori. Target values are >50% for both initial and subsequent screens. Ratios in italics show a statistically significant difference between Māori and non-Māori.

For women aged 50–69 years the proportion of cancers detected by initial screens that were less than or equal to 15mm was 52% for Māori women and 56% for non-Māori women, meeting the target of greater than 50%.

Of the cancers detected from subsequent screens, two-thirds were 15mm or less among both Māori (66%) and non-Māori (67%) women, well above the 50% target.

Table 3c.2a: Rate of invasive cancers less than or equal to 15mm, per 10,000 screens, 5 years (July 2007–June 2012), women aged 45–49 years

Lead provider	Māori		Non-Māori		Māori/non-Māori ratio (95% CI)
	Number with breast cancer ≤15mm	Rate per 10,000 screens (95% CI)	Number with breast cancer ≤15mm	Rate per 10,000 screens (95% CI)	
Initial screens					
BSWN	10	30.0(14.4, 55.2)	44	19.1(13.9, 25.6)	1.57(0.79, 3.12)
BSCM	4	17.1(4.7, 43.7)	17	11.2(6.5, 18.0)	1.52(0.51, 4.52)
BSAL	5	50.3(16.4, 117.0)	18	13.8(8.2, 21.8)	3.64(1.36, 9.80)
BSM	15	42.8(24.0, 70.6)	25	16.2(10.5, 23.9)	2.64(1.39, 5.00)
BSCtoC	5	16.3(5.3, 38.0)	18	12.7(7.6, 20.1)	1.28(0.48, 3.44)
BSC	4	25.5(7.0, 65.2)	28	21.4(14.2, 30.9)	1.19(0.42, 3.40)
BSSL	4	23.4(6.4, 59.8)	32	12.9(8.8, 18.2)	1.82(0.64, 5.13)
BSHC	1	15.7(0.4, 87.0)	17	18.0(10.5, 28.8)	0.87(0.12, 6.54)
Total	48	28.0(20.7, 37.1)	199	15.5(13.5, 17.8)	1.80(1.32, 2.47)
Subsequent screens					
BSWN	10	46.9(22.5, 86.0)	32	18.0(12.3, 25.4)	2.61(1.28, 5.29)
BSCM	4	37.0(10.1, 94.5)	6	6.7(2.5, 14.7)	5.48(1.55, 19.40)
BSAL	2	27.9(3.4, 100.4)	16	15.9(9.1, 25.8)	1.75(0.40, 7.61)
BSM	2	9.7(1.2, 35.1)	21	16.5(10.2, 25.2)	0.59(0.14, 2.52)
BSCtoC	0	0.0(0.0, 17.5)	15	11.2(6.3, 18.4)	0.00(0.00, 1.77)
BSC	3	25.0(5.2, 72.9)	16	13.6(7.8, 22.1)	1.84(0.54, 6.30)
BSSL	7	36.1(14.5, 74.2)	33	9.8(6.8, 13.8)	3.68(1.63, 8.30)
BSHC	0	0.0(0.0, 85.8)	8	9.5(4.1, 18.7)	0.00(0.00, 11.54)
Total	28	24.0(16.0, 34.7)	147	12.6(10.6, 14.8)	1.91(1.27, 2.85)

Ratios above 1.0 show Māori have a higher rate than non-Māori of screen-detected cancers ≤15mm. No targets have been set for this age group. Ratios in italics show a statistically significant difference between Māori and non-Māori.

Among women aged 45–49 years having an initial screen the rate of cancers per 10,000 screens that were less than or equal to 15mm in diameter was 80% higher for Māori than for non-Māori women.

Among those having subsequent screens, the rate for Māori was 90% higher than the rate for non-Māori women.

Table 3c.2b: Rate of invasive cancers less than or equal to 15mm, per 10,000 screens, 5 years (July 2007–June 2012), women aged 50–69 years

Lead provider	Māori		Non-Māori		Māori/non-Māori ratio (95% CI)
	Number with breast cancer ≤15mm	Rate per 10,000 screens (95% CI)	Number with breast cancer ≤15mm	Rate per 10,000 screens (95% CI)	
Initial screens					
BSWN	15	72.3(40.5, 119.0)	76	47.8(37.7, 59.9)	1.51(0.87, 2.62)
BSCM	14	90.4(49.5, 151.3)	38	35.4(25.0, 48.5)	2.56(1.39, 4.71)
BSAL	3	51.5(10.6, 149.6)	48	50.3(37.1, 66.6)	1.02(0.32, 3.28)
BSM	18	63.9(37.9, 100.8)	33	34.6(23.8, 48.6)	1.85(1.04, 3.27)
BSCtoC	12	51.2(26.5, 89.3)	23	26.8(17.0, 40.2)	1.91(0.95, 3.84)
BSC	9	99.0(45.4, 187.1)	34	45.2(31.3, 63.1)	2.19(1.05, 4.56)
BSSL	1	20.4(0.5, 112.9)	23	32.8(20.8, 49.2)	0.62(0.08, 4.58)
BSHC	0	0.0(0.0, 132.3)	7	16.0(6.4, 33.0)	0.00(0.00, 10.94)
Total	72	65.2(51.0, 82.0)	282	38.5(34.2, 43.3)	1.69(1.31, 2.19)
Subsequent screens					
BSWN	40	37.6(26.9, 51.2)	305	29.0(25.8, 32.4)	1.30(0.93, 1.80)
BSCM	42	65.7(47.4, 88.8)	135	24.5(20.6, 29.0)	2.68(1.90, 3.79)
BSAL	11	34.2(17.1, 61.2)	124	23.2(19.3, 27.7)	1.47(0.80, 2.73)
BSM	59	46.8(35.7, 60.3)	276	28.8(25.5, 32.4)	1.62(1.23, 2.15)
BSCtoC	29	27.1(18.1, 38.8)	212	23.6(20.5, 27.0)	1.15(0.78, 1.69)
BSC	26	47.2(30.8, 69.0)	200	26.8(23.2, 30.7)	1.76(1.17, 2.65)
BSSL	27	38.0(25.0, 55.2)	431	26.1(23.7, 28.7)	1.46(0.99, 2.15)
BSHC	5	25.1(8.2, 58.4)	139	23.7(19.9, 27.9)	1.06(0.43, 2.58)
Total	239	41.1(36.1, 46.6)	1,822	26.1(24.9, 27.3)	1.57(1.38, 1.80)

Ratios above 1.0 show Māori have a higher rate than non-Māori of screen-detected cancers ≤15mm. Target values are >30.5 per 10,000 initial screens and >17.3 per 10,000 subsequent screens. Ratios in italics show a statistically significant difference between Māori and non-Māori.

The rate of invasive cancers less than or equal to 15mm was 65 per 10,000 initial screens for Māori women aged 50 to 69 years, twice the target of >30.5 per 10,000 and 70% higher than the non-Māori rate.

For women having subsequent screens, the Māori rate was 41 per 10,000, over twice the target value of 17.3 per 10,000 screens and 57% higher than the non-Māori rate.

3d Nodal involvement

Description:

The proportion of women with invasive screen detected breast cancer that do not have nodal involvement. Note: this is calculated as 1 minus the proportion of women with invasive screen detected breast cancer who have nodal involvement.

Target for women aged 50–69 years:

Initial (prevalent) round: >70%

Subsequent (incident) round: >75%

Table 3da: Invasive cancers without nodal involvement, 5 years (July 2007–June 2012), women aged 45–49 years

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	Women with invasive cancers with no nodal involvement	Total invasive cancers	% of invasive cancers with no nodal involvement	Women with invasive cancers with no nodal involvement	Total invasive cancers	% of invasive cancers with no nodal involvement	
Initial screens							
BSWN	15	18	83.3(58.6, 96.4)	55	75	73.3(61.9, 82.9)	1.14(0.89, 1.46)
BSCM	8	13	61.5(31.6, 86.1)	30	51	58.8(44.2, 72.4)	1.05(0.64, 1.70)
BSAL	7	9	77.8(40.0, 97.2)	26	42	61.9(45.6, 76.4)	1.26(0.82, 1.92)
BSM	17	27	63.0(42.4, 80.6)	36	46	78.3(63.6, 89.1)	0.80(0.58, 1.12)
BSCtoC	9	16	56.2(29.9, 80.2)	30	42	71.4(55.4, 84.3)	0.79(0.49, 1.26)
BSC	6	10	60.0(26.2, 87.8)	35	50	70.0(55.4, 82.1)	0.86(0.50, 1.47)
BSSL	3	5	60.0(14.7, 94.7)	44	69	63.8(51.3, 75.0)	0.94(0.45, 1.97)
BSHC	1	1	100.0(2.5, 100.0)	16	25	64.0(42.5, 82.0)	1.56(0.25, 1.88) #
Total	66	99	66.7(56.5, 75.8)	272	400	68.0(63.2, 72.5)	0.98(0.84, 1.14)
Subsequent screens							
BSWN	9	14	64.3(35.1, 87.2)	30	43	69.8(53.9, 82.8)	0.92(0.60, 1.43)
BSCM	3	5	60.0(14.7, 94.7)	8	13	61.5(31.6, 86.1)	0.97(0.42, 2.25)
BSAL	4	4	100.0(39.8, 100.0)	19	23	82.6(61.2, 95.0)	1.21(0.59, 1.45) #
BSM	3	7	42.9(9.9, 81.6)	22	36	61.1(43.5, 76.9)	0.70(0.29, 1.71)
BSCtoC	3	5	60.0(14.7, 94.7)	13	22	59.1(36.4, 79.3)	1.02(0.46, 2.25)
BSC	3	3	100.0(29.2, 100.0)	16	31	51.6(33.1, 69.8)	1.94(0.74, 2.53) #
BSSL	10	12	83.3(51.6, 97.9)	44	63	69.8(57.0, 80.8)	1.19(0.88, 1.61)
BSHC	0	1	0.0(0.0, 97.5)	15	25	60.0(38.7, 78.9)	0.00(0.00, 6.97)
Total	35	51	68.6(54.1, 80.9)	167	256	65.2(59.1, 71.1)	1.05(0.86, 1.29)

Ratios below one are unfavourable to Māori. No targets have been set for this age group. Ratios in italics show a statistically significant difference between Māori and non-Māori.

Two-thirds of initial or subsequent screen-detected invasive cancers among both Māori and non-Māori women aged 45–49 years had no nodal involvement.

Table 3db: Invasive cancers without nodal involvement, 5 years (July 2007–June 2012), women aged 50–69 years

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	Women with invasive cancers with no nodal involvement	Total initial invasive cancers	% of initial invasive cancers with no nodal involvement	Women with invasive cancers with no nodal involvement	Total invasive cancers	% of invasive cancers with no nodal involvement	
Initial screens							
BSWN	18	23	78.3(56.3, 92.5)	96	125	76.8(68.4, 83.9)	1.02(0.80, 1.29)
BSCM	17	21	81.0(58.1, 94.6)	55	78	70.5(59.1, 80.3)	1.15(0.89, 1.48)
BSAL	6	9	66.7(29.9, 92.5)	55	66	83.3(72.1, 91.4)	0.80(0.50, 1.29)
BSM	24	34	70.6(52.5, 84.9)	39	59	66.1(52.6, 77.9)	1.07(0.80, 1.42)
BSCtoC	18	29	62.1(42.3, 79.3)	33	51	64.7(50.1, 77.6)	0.96(0.68, 1.36)
BSC	12	19	63.2(38.4, 83.7)	43	61	70.5(57.4, 81.5)	0.90(0.61, 1.31)
BSSL	3	4	75.0(19.4, 99.4)	32	46	69.6(54.2, 82.3)	1.08(0.59, 1.96)
BSHC	1	1	100.0(2.5, 100.0)	16	23	69.6(47.1, 86.8)	1.44(0.23, 1.71) #
Total	99	140	70.7(62.4, 78.1)	369	509	72.5(68.4, 76.3)	0.98(0.87, 1.10)
Subsequent screens							
BSWN	45	58	77.6(64.7, 87.5)	343	435	78.9(74.7, 82.6)	0.98(0.85, 1.14)
BSCM	46	56	82.1(69.6, 91.1)	180	235	76.6(70.7, 81.9)	1.07(0.93, 1.23)
BSAL	15	19	78.9(54.4, 93.9)	157	194	80.9(74.7, 86.2)	0.98(0.77, 1.24)
BSM	68	87	78.2(68.0, 86.3)	313	399	78.4(74.1, 82.4)	1.00(0.88, 1.13)
BSCtoC	41	58	70.7(57.3, 81.9)	267	351	76.1(71.3, 80.4)	0.93(0.78, 1.11)
BSC	28	38	73.7(56.9, 86.6)	231	305	75.7(70.5, 80.4)	0.97(0.80, 1.19)
BSSL	27	36	75.0(57.8, 87.9)	485	606	80.0(76.6, 83.1)	0.94(0.77, 1.14)
BSHC	8	11	72.7(39.0, 94.0)	159	216	73.6(67.2, 79.4)	0.99(0.68, 1.43)
Total	278	363	76.6(71.9, 80.8)	2,135	2,741	77.9(76.3, 79.4)	0.98(0.93, 1.04)

Ratios below one are unfavourable to Māori. Target values are >70% for initial screens and >75% for subsequent screens. Ratios in italics show a statistically significant difference between Māori and non-Māori.

Among women aged 50–69 years the target of >70% of cancers detected by initial screens having no nodal involvement was met for Māori and non-Māori women. Similarly the target of >75% for subsequent screens was met for Māori and non-Māori women overall. There were no differences between the proportions for Māori and non-Māori women.

3e Ductal carcinoma

Description:

The percentage of all women with screen detected cancer who are diagnosed as having Ductal Carcinoma in Situ (DCIS) as their primary lesion.

Target for women aged 50–69 years:

10-25% of all cancers detected by the programme are DCIS.

Table 3e: Women with DCIS as a percentage of all screen detected cancers, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	Number of DCIS	Total number of cancers	% of total cancer that are DCIS (95% CI)	Number of DCIS	Total number of cancers	% of total cancers that are DCIS (95% CI)	
45–49 years							
BSWN	5	38	13.2(4.4, 28.1)	59	185	31.9(25.2, 39.1)	0.41(0.18, 0.96)
BSCM	6	25	24.0(9.4, 45.1)	26	94	27.7(18.9, 37.8)	0.87(0.40, 1.87)
BSAL	2	16	12.5(1.6, 38.3)	36	108	33.3(24.6, 43.1)	0.38(0.10, 1.41)
BSM	5	40	12.5(4.2, 26.8)	41	123	33.3(25.1, 42.4)	0.38(0.16, 0.88)
BSCtoC	5	27	18.5(6.3, 38.1)	30	96	31.2(22.2, 41.5)	0.59(0.25, 1.38)
BSC	1	15	6.7(0.2, 31.9)	35	117	29.9(21.8, 39.1)	0.22(0.03, 1.51)
BSSL	1	18	5.6(0.1, 27.3)	55	191	28.8(22.5, 35.8)	0.19(0.03, 1.31)
BSHC	2	4	50.0(6.8, 93.2)	15	66	22.7(13.3, 34.7)	2.20(0.75, 6.45)
Total	27	183	14.8(10.0, 20.7)	297	980	30.3(27.4, 33.3)	0.49(0.34, 0.70)
50–69 years							
BSWN	21	107	19.6(12.6, 28.4)	163	737	22.1(19.2, 25.3)	0.89(0.59, 1.33)
BSCM	13	92	14.1(7.7, 23.0)	101	426	23.7(19.7, 28.0)	0.60(0.35, 1.01)
BSAL	7	38	18.4(7.7, 34.3)	97	390	24.9(20.7, 29.5)	0.74(0.37, 1.48)
BSM	24	150	16.0(10.5, 22.9)	137	602	22.8(19.5, 26.3)	0.70(0.47, 1.04)
BSCtoC	10	98	10.2(5.0, 18.0)	79	487	16.2(13.1, 19.8)	0.63(0.34, 1.17)
BSC	10	69	14.5(7.2, 25.0)	119	491	24.2(20.5, 28.3)	0.60(0.33, 1.08)
BSSL	9	49	18.4(8.8, 32.0)	169	822	20.6(17.8, 23.5)	0.89(0.49, 1.64)
BSHC	2	15	13.3(1.7, 40.5)	56	297	18.9(14.6, 23.8)	0.71(0.19, 2.62)
Total	96	618	15.5(12.8, 18.6)	921	4,252	21.7(20.4, 22.9)	0.72(0.59, 0.87)

Ratios below 1 show Māori women had a lower proportion of screen-detected cancers that were DCIS than non-Māori women. Ratios in italics show a statistically significant difference between Māori and non-Māori.

The proportions of screen-detected cancers among Māori women that were diagnosed as DCIS were significantly lower than the proportions among non-Māori women in both age groups.

In women aged 45–49 years, 15% of cancers detected in Māori women were DCIS while the proportion for non-Māori was 30%.

In women aged 50–69 years, the proportions of cancers that were DCIS were in the target range of 12%–25% for both Māori (16%) and non-Māori (22%).

SECTION 4: TREATMENT

4a Proportion of invasive cancers having a surgical axillary procedure

Description:

Percentage of all women who are operated on for a screen detected invasive cancer, over 1mm in size, who have a surgical axillary procedure.

Target:

95% of women operated on for invasive cancer over 1mm in size, should normally have a surgical axillary procedure.

Table 4a: Percentage of invasive cancers having a surgical axillary procedure, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	Number having a surgical axillary procedure for invasive cancers >1mm	Number having an operation for invasive cancers >1mm	% of invasive cancers, >1mm, having a surgical axillary procedure	Number having a surgical axillary procedure for invasive cancers >1mm	Number having an operation for invasive cancers >1mm	% of invasive cancers, >1mm, having a surgical axillary procedure	
45–49 years							
BSWN	32	32	100.0(89.1, 100.0)	115	115	100.0(96.8, 100.0)	1.00(0.90, 1.02) #
BSCM	18	18	100.0(81.5, 100.0)	62	63	98.4(91.5, 100.0)	1.02(0.85, 1.06) #
BSAL	12	13	92.3(64.0, 99.8)	64	64	100.0(94.4, 100.0)	0.92(0.67, 1.00) #
BSM	34	34	100.0(89.7, 100.0)	82	82	100.0(95.6, 100.0)	1.00(0.91, 1.03) #
BSCtoC	20	20	100.0(83.2, 100.0)	62	62	100.0(94.2, 100.0)	1.00(0.85, 1.04) #
BSC	13	13	100.0(75.3, 100.0)	80	80	100.0(95.5, 100.0)	1.00(0.78, 1.02) #
BSSL	17	17	100.0(80.5, 100.0)	130	130	100.0(97.2, 100.0)	1.00(0.82, 1.01) #
BSHC	2	2	100.0(15.8, 100.0)	50	50	100.0(92.9, 100.0)	1.00(0.30, 1.02) #
Total	148	149	99.3(96.3, 100.0)	645	646	99.8(99.1, 100.0)	0.99(0.98, 1.01)
50–69 years							
BSWN	79	81	97.5(91.4, 99.7)	546	557	98.0(96.5, 99.0)	0.99(0.96, 1.03)
BSCM	74	77	96.1(89.0, 99.2)	303	310	97.7(95.4, 99.1)	0.98(0.94, 1.03)
BSAL	28	28	100.0(87.7, 100.0)	257	258	99.6(97.9, 100.0)	1.00(0.89, 1.01) #
BSM	118	119	99.2(95.4, 100.0)	443	451	98.2(96.5, 99.2)	1.01(0.99, 1.03)
BSCtoC	83	84	98.8(93.5, 100.0)	393	395	99.5(98.2, 99.9)	0.99(0.97, 1.02)
BSC	55	57	96.5(87.9, 99.6)	356	360	98.9(97.2, 99.7)	0.98(0.93, 1.03)
BSSL	40	40	100.0(91.2, 100.0)	635	648	98.0(96.6, 98.9)	1.02(0.93, 1.03) #
BSHC	12	12	100.0(73.5, 100.0)	234	235	99.6(97.7, 100.0)	1.00(0.76, 1.01) #
Total	489	498	98.2(96.6, 99.2)	3,167	3,214	98.5(98.1, 98.9)	1.00(0.98, 1.01)

Ratios below one are unfavourable to Māori. Ratios in italics show a statistically significant difference between Māori and non-Māori.

Almost all women with screen-detected invasive cancer over 1mm had a surgical axillary procedure in both age groups. The target of 95% was met for both Māori and non-Māori women in each Lead Provider.

4b Proportion of invasive cancers having a single excisional procedure

Description:

The proportion of women with invasive cancer who have a single excisional breast treatment procedure.

Target: No target.

Table 4b: Proportion of invasive cancers having a single excisional breast treatment procedure, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. having a single excisional procedure for invasive cancer	No. of invasive cancers having surgical breast procedure	% of invasive cancers having a single excisional breast treatment procedure (95% CI)	No. having a single excisional procedure for invasive cancer	No. of invasive cancers having surgical breast procedure	% of invasive cancers having a single excisional breast treatment procedure (95% CI)	
45–49 years							
BSWN	26	33	78.8(61.1, 91.0)	91	122	74.6(65.9, 82.0)	1.06(0.86, 1.30)
BSCM	17	18	94.4(72.7, 99.9)	52	64	81.2(69.5, 89.9)	1.16(0.99, 1.37)
BSAL	11	14	78.6(49.2, 95.3)	65	70	92.9(84.1, 97.6)	0.85(0.64, 1.12)
BSM	28	34	82.4(65.5, 93.2)	65	82	79.3(68.9, 87.4)	1.04(0.86, 1.26)
BSCtoC	15	21	71.4(47.8, 88.7)	49	64	76.6(64.3, 86.2)	0.93(0.69, 1.26)
BSC	10	13	76.9(46.2, 95.0)	67	81	82.7(72.7, 90.2)	0.93(0.68, 1.27)
BSSL	13	17	76.5(50.1, 93.2)	106	131	80.9(73.1, 87.3)	0.95(0.72, 1.25)
BSHC	2	2	100.0(15.8, 100.0)	42	50	84.0(70.9, 92.8)	1.19(0.35, 1.27) #
Total	122	152	80.3(73.0, 86.3)	537	664	80.9(77.7, 83.8)	0.99(0.91, 1.08)
50–69 years							
BSWN	66	82	80.5(70.3, 88.4)	460	565	81.4(78.0, 84.5)	0.99(0.88, 1.11)
BSCM	69	77	89.6(80.6, 95.4)	290	314	92.4(88.8, 95.0)	0.97(0.89, 1.05)
BSAL	25	29	86.2(68.3, 96.1)	242	279	86.7(82.2, 90.5)	0.99(0.85, 1.16)
BSM	100	122	82.0(74.0, 88.3)	370	459	80.6(76.7, 84.1)	1.02(0.93, 1.12)
BSCtoC	69	86	80.2(70.2, 88.0)	326	401	81.3(77.1, 85.0)	0.99(0.88, 1.11)
BSC	48	57	84.2(72.1, 92.5)	307	366	83.9(79.7, 87.5)	1.00(0.89, 1.13)
BSSL	32	40	80.0(64.4, 90.9)	571	652	87.6(84.8, 90.0)	0.91(0.78, 1.07)
BSHC	11	12	91.7(61.5, 99.8)	195	242	80.6(75.0, 85.4)	1.14(0.95, 1.36)
Total	420	505	83.2(79.6, 86.3)	2,761	3,278	84.2(82.9, 85.5)	0.99(0.95, 1.03)

Ratios in italics show a statistically significant difference between Māori and non-Māori.

There is no target for this indicator.

80% of Māori women aged 45–49 years and 83% of those aged 50–69 years had a single excisional breast treatment procedure. These proportions were similar for non-Māori women.

4c Proportion of DCIS where no axillary dissection was carried out

Description:

The proportion of women who have surgery for DCIS who do not have an axillary dissection

Target for women aged 50–69 years:

>95%

Table 4c: Proportion of women with DCIS not having axillary dissection, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	Number having surgery for DCIS who do not have an axillary dissection	Number. having surgery for DCIS	% of DCIS women not having axillary dissection (95% CI)	Number having surgery for DCIS who do not have an axillary dissection	Number. having surgery for DCIS	% of DCIS women not having axillary dissection (95% CI)	
45–49 years							
BSWN	4	4	100.0(39.8, 100.0)	40	40	100.0(91.2, 100.0)	1.00(0.49, 1.04) #
BSCM	5	5	100.0(47.8, 100.0)	13	13	100.0(75.3, 100.0)	1.00(0.57, 1.19) #
BSAL	1	1	100.0(2.5, 100.0)	23	23	100.0(85.2, 100.0)	1.00(0.17, 1.05) #
BSM	4	4	100.0(39.8, 100.0)	30	30	100.0(88.4, 100.0)	1.00(0.49, 1.06) #
BSCtoC	4	4	100.0(39.8, 100.0)	25	25	100.0(86.3, 100.0)	1.00(0.50, 1.07) #
BSC	0	0	--	25	25	100.0(86.3, 100.0)	--
BSSL	0	0	--	41	41	100.0(91.4, 100.0)	--
BSHC	2	2	100.0(15.8, 100.0)	11	11	100.0(71.5, 100.0)	1.00(0.32, 1.19) #
Total	20	20	100.0(83.2, 100.0)	208	208	100.0(98.2, 100.0)	1.00(0.84, 1.01) #
50–69 years							
BSWN	19	20	95.0(75.1, 99.9)	139	141	98.6(95.0, 99.8)	0.96(0.87, 1.07)
BSCM	10	10	100.0(69.2, 100.0)	88	88	100.0(95.9, 100.0)	1.00(0.72, 1.02) #
BSAL	6	6	100.0(54.1, 100.0)	80	81	98.8(93.3, 100.0)	1.01(0.60, 1.03) #
BSM	19	22	86.4(65.1, 97.1)	123	123	100.0(97.0, 100.0)	0.86(0.67, 0.96) #
BSCtoC	6	6	100.0(54.1, 100.0)	72	73	98.6(92.6, 100.0)	1.01(0.60, 1.04) #
BSC	10	10	100.0(69.2, 100.0)	98	98	100.0(96.3, 100.0)	1.00(0.72, 1.01) #
BSSL	9	9	100.0(66.4, 100.0)	148	150	98.7(95.3, 99.8)	1.01(0.71, 1.03) #
BSHC	2	2	100.0(15.8, 100.0)	50	50	100.0(92.9, 100.0)	1.00(0.30, 1.02) #
Total	81	85	95.3(88.4, 98.7)	798	804	99.3(98.4, 99.7)	0.96(0.92, 1.01)

Ratios below one are unfavourable to Māori. This indicator excludes women who have had immediate reconstruction. Sentinel node biopsies and nodal sampling are not coded as axillary dissection.

The target of over 95% of women with DCIS where no axillary dissection was carried out was met for both Māori (95%) and non-Māori women (99%) aged 50–69 years. And none of the women aged 45–49 years had an axillary dissection.

4e Proportion of DCIS having breast conserving surgery

Definition:

The proportion of women diagnosed with sole DCIS of pathological diameter ≤ 20 mm who have breast conserving surgery (BCS).

Target for women aged 50–69 years:

The majority ($>50\%$) of screen-detected DCIS ≤ 20 mm are treated by BCS.

Table 4e: Proportion of DCIS ≤ 20 mm having BCS, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of DCIS ≤ 20 mm having BCS	No. of DCIS ≤ 20 mm who are operated on	% of DCIS ≤ 20 mm who have BCS (95% CI)	No. of DCIS ≤ 20 mm having BCS	No. of DCIS ≤ 20 mm who are operated on	% of DCIS ≤ 20 mm who have BCS (95% CI)	
45–49 years							
BSWN	3	4	75.0(19.4, 99.4)	30	31	96.8(83.3, 99.9)	0.78(0.44, 1.37)
BSCM	2	4	50.0(6.8, 93.2)	9	9	100.0(66.4, 100.0)	0.50(0.16, 0.99) #
BSAL	0	0	--	17	18	94.4(72.7, 99.9)	--
BSM	4	4	100.0(39.8, 100.0)	25	27	92.6(75.7, 99.1)	1.08(0.53, 1.20) #
BSCtoC	3	3	100.0(29.2, 100.0)	12	16	75.0(47.6, 92.7)	1.33(0.54, 1.75) #
BSC	0	1	0.0(0.0, 97.5)	19	21	90.5(69.6, 98.8)	0.00(0.00, 4.50)
BSSL	0	0	--	29	30	96.7(82.8, 99.9)	--
BSHC	0	2	0.0(0.0, 84.2)	5	10	50.0(18.7, 81.3)	0.00(0.00, 5.46)
Total	12	18	66.7(41.0, 86.7)	146	162	90.1(84.5, 94.2)	0.74(0.53, 1.03)
50–69 years							
BSWN	16	17	94.1(71.3, 99.9)	90	105	85.7(77.5, 91.8)	1.10(0.95, 1.27)
BSCM	3	3	100.0(29.2, 100.0)	41	51	80.4(66.9, 90.2)	1.24(0.50, 1.36) #
BSAL	4	5	80.0(28.4, 99.5)	52	61	85.2(73.8, 93.0)	0.94(0.60, 1.47)
BSM	11	15	73.3(44.9, 92.2)	73	86	84.9(75.5, 91.7)	0.86(0.63, 1.19)
BSCtoC	3	4	75.0(19.4, 99.4)	35	46	76.1(61.2, 87.4)	0.99(0.55, 1.78)
BSC	4	5	80.0(28.4, 99.5)	65	74	87.8(78.2, 94.3)	0.91(0.58, 1.42)
BSSL	4	5	80.0(28.4, 99.5)	90	100	90.0(82.4, 95.1)	0.89(0.57, 1.38)
BSHC	1	1	100.0(2.5, 100.0)	26	37	70.3(53.0, 84.1)	1.42(0.23, 1.59) #
Total	46	55	83.6(71.2, 92.2)	472	560	84.3(81.0, 87.2)	0.99(0.88, 1.12)

Ratios below one are unfavourable to Māori. Ratios in italics show a statistically significant difference between Māori and non-Māori.

The target of over 50% of women with sole DCIS ≤ 20 mm having breast conserving surgery was met for both Māori and non-Māori women aged 50–69 years (84% for both).

Among women aged 45–49 years, 67% of Māori and 90% of non-Māori women had BCS.

4f Proportion of invasive cancers having breast conserving surgery

Description:

The proportion of women diagnosed with invasive cancer, without a DCIS component, of pathological diameter ≤ 20 mm who have breast conserving surgery (BCS).

Target for women aged 50–69 years:

The majority (>50%) of screen-detected cancers ≤ 20 mm are treated by BCS

Table 4f: Proportion of invasive cancers ≤ 20 mm, without DCIS, having BCS, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of invasive cancers without DCIS ≤ 20 mm having BCS	No. of invasive cancers without DCIS ≤ 20 mm who are operated on	% of invasive cancers without DCIS ≤ 20 mm who have BCS (95% CI)	No. of invasive cancers, without DCIS ≤ 20 mm having BCS	No. of invasive cancers without DCIS ≤ 20 mm who are operated on	% of invasive cancers, without DCIS ≤ 20 mm who have BCS (95% CI)	
45–49 years							
BSWN	5	6	83.3(35.9, 99.6)	9	10	90.0(55.5, 99.7)	0.93(0.61, 1.40)
BSCM	0	0	--	1	2	50.0(1.3, 98.7)	--
BSAL	1	2	50.0(1.3, 98.7)	5	6	83.3(35.9, 99.6)	0.60(0.14, 2.51)
BSM	5	5	100.0(47.8, 100.0)	4	5	80.0(28.4, 99.5)	1.25(0.69, 2.46) #
BSCtoC	3	3	100.0(29.2, 100.0)	4	4	100.0(39.8, 100.0)	1.00(0.46, 1.77) #
BSC	2	2	100.0(15.8, 100.0)	7	8	87.5(47.3, 99.7)	1.14(0.36, 1.62) #
BSSL	0	0	--	5	7	71.4(29.0, 96.3)	--
BSHC	0	0	--	5	8	62.5(24.5, 91.5)	--
Total	16	18	88.9(65.3, 98.6)	40	50	80.0(66.3, 90.0)	1.11(0.90, 1.38)
50–69 years							
BSWN	12	14	85.7(57.2, 98.2)	86	108	79.6(70.8, 86.8)	1.08(0.85, 1.36)
BSCM	9	12	75.0(42.8, 94.5)	31	42	73.8(58.0, 86.1)	1.02(0.70, 1.48)
BSAL	7	8	87.5(47.3, 99.7)	64	70	91.4(82.3, 96.8)	0.96(0.73, 1.26)
BSM	16	18	88.9(65.3, 98.6)	82	96	85.4(76.7, 91.8)	1.04(0.87, 1.25)
BSCtoC	11	16	68.8(41.3, 89.0)	53	71	74.6(62.9, 84.2)	0.92(0.64, 1.32)
BSC	8	9	88.9(51.8, 99.7)	49	59	83.1(71.0, 91.6)	1.07(0.83, 1.39)
BSSL	4	5	80.0(28.4, 99.5)	78	96	81.2(72.0, 88.5)	0.98(0.63, 1.54)
BSHC	0	1	0.0(0.0, 97.5)	20	34	58.8(40.7, 75.4)	0.00(0.00, 6.89)
Total	67	83	80.7(70.6, 88.6)	463	576	80.4(76.9, 83.5)	1.00(0.90, 1.12)

Ratios below one are unfavourable to Māori. Ratios in italics show a statistically significant difference between Māori and non-Māori.

The target of more than 50% of screen-detected invasive cancers ≤ 20 mm diameter treated by breast conserving surgery was met for both Māori (81%) and non-Māori (80%) women aged 50–69 years.

Among women aged 45–49 years, 89% of Māori women and 80% of non-Māori women had breast conserving surgery.

4g Proportion of women with invasive cancer having radiotherapy

Description:

The proportion of women diagnosed with invasive cancer, who have breast conserving surgery (BCS) who go on to have radiotherapy

Target for women aged 50–69 years:

≥95%

Table 4g: Proportion of invasive cancers, having BCS and having radiotherapy, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of invasive cancers having BCS who have radiotherapy	No. of invasive cancers having BCS	% of invasive cancers having BCS who have radiotherapy (95% CI)	No. of invasive cancers having BCS who have radiotherapy	No. of invasive cancers having BCS	% of invasive cancers, having BCS who have radiotherapy (95% CI)	
45–49 years							
BSWN	20	22	90.9(70.8, 98.9)	67	69	97.1(89.9, 99.6)	0.94(0.82, 1.08)
BSCM	8	9	88.9(51.8, 99.7)	28	30	93.3(77.9, 99.2)	0.95(0.74, 1.22)
BSAL	7	9	77.8(40.0, 97.2)	31	37	83.8(68.0, 93.8)	0.93(0.64, 1.35)
BSM	22	26	84.6(65.1, 95.6)	55	61	90.2(79.8, 96.3)	0.94(0.78, 1.13)
BSCtoC	7	7	100.0(59.0, 100.0)	36	38	94.7(82.3, 99.4)	1.06(0.68, 1.15) #
BSC	9	10	90.0(55.5, 99.7)	42	42	100.0(91.6, 100.0)	0.90(0.60, 1.01) #
BSSL	13	13	100.0(75.3, 100.0)	60	63	95.2(86.7, 99.0)	1.05(0.81, 1.11) #
BSHC	1	1	100.0(2.5, 100.0)	27	28	96.4(81.7, 99.9)	1.04(0.17, 1.09) #
Total	87	97	89.7(81.9, 94.9)	346	368	94.0(91.1, 96.2)	0.95(0.89, 1.03)
50–69 years							
BSWN	48	53	90.6(79.3, 96.9)	365	390	93.6(90.7, 95.8)	0.97(0.88, 1.06)
BSCM	44	47	93.6(82.5, 98.7)	160	171	93.6(88.8, 96.7)	1.00(0.92, 1.09)
BSAL	17	21	81.0(58.1, 94.6)	176	211	83.4(77.7, 88.2)	0.97(0.78, 1.20)
BSM	76	85	89.4(80.8, 95.0)	314	350	89.7(86.0, 92.7)	1.00(0.92, 1.08)
BSCtoC	47	48	97.9(88.9, 99.9)	226	239	94.6(90.9, 97.1)	1.04(0.98, 1.09)
BSC	33	33	100.0(89.4, 100.0)	230	233	98.7(96.3, 99.7)	1.01(0.91, 1.03) #
BSSL	24	25	96.0(79.6, 99.9)	400	406	98.5(96.8, 99.5)	0.97(0.90, 1.06)
BSHC	2	2	100.0(15.8, 100.0)	130	135	96.3(91.6, 98.8)	1.04(0.31, 1.04) #
Total	291	314	92.7(89.2, 95.3)	2,001	2,135	93.7(92.6, 94.7)	0.99(0.96, 1.02)

Ratios below one are unfavourable to Māori. Shaded boxes show the confidence interval excludes the target of ≥95%. Ratios in italics show a statistically significant difference between Māori and non-Māori.

93% of Māori and 94% of non-Māori women aged 50–69 years with invasive cancer who had BCS went on to have radiotherapy, close to the target of 95%. The target was not met for Māori (81%) or non-Māori women (83%) in the BSAL region, nor for non-Māori women in BSM (90%), during this 5-year period.

Among women aged 45–49 years, the proportions were 90% for Māori women and 94% for non-Māori women.

4h Proportion of women with DCIS having radiotherapy

Description:

The proportion of women diagnosed solely with DCIS, who have Breast Conserving Surgery (BCS), who go on to have radiotherapy.

Target:

No target.

Table 4h: Proportion of women with DCIS, having BCS and having radiotherapy, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of DCIS, having BCS, who have radiotherapy	No. of DCIS, having BCS	% of DCIS, having BCS, who have radiotherapy (95% CI)	No. of DCIS, having BCS, who have radiotherapy	No. of DCIS, having BCS	% of DCIS, having BCS, who have radiotherapy (95% CI)	
45–49 years							
BSWN	3	3	100.0(29.2, 100.0)	25	38	65.8(48.6, 80.4)	1.52(0.60, 1.80) #
BSCM	2	3	66.7(9.4, 99.2)	7	11	63.6(30.8, 89.1)	1.05(0.42, 2.62)
BSAL	0	2	0.0(0.0, 84.2)	13	23	56.5(34.5, 76.8)	0.00(0.00, 3.77)
BSM	3	5	60.0(14.7, 94.7)	20	34	58.8(40.7, 75.4)	1.02(0.47, 2.20)
BSCtoC	0	4	0.0(0.0, 60.2)	4	15	26.7(7.8, 55.1)	0.00(0.00, 5.68)
BSC	0	0	--	8	24	33.3(15.6, 55.3)	--
BSSL	0	0	--	29	36	80.6(64.0, 91.8)	--
BSHC	0	0	--	4	5	80.0(28.4, 99.5)	--
Total	8	17	47.1(23.0, 72.2)	110	186	59.1(51.7, 66.3)	0.80(0.47, 1.34)
50–69 years							
BSWN	10	18	55.6(30.8, 78.5)	87	120	72.5(63.6, 80.3)	0.77(0.50, 1.18)
BSCM	4	5	80.0(28.4, 99.5)	40	61	65.6(52.3, 77.3)	1.22(0.76, 1.96)
BSAL	1	6	16.7(0.4, 64.1)	29	67	43.3(31.2, 56.0)	0.39(0.06, 2.35)
BSM	10	16	62.5(35.4, 84.8)	72	110	65.5(55.8, 74.3)	0.95(0.64, 1.43)
BSCtoC	1	4	25.0(0.6, 80.6)	23	44	52.3(36.7, 67.5)	0.48(0.09, 2.67)
BSC	6	8	75.0(34.9, 96.8)	37	77	48.1(36.5, 59.7)	1.56(0.98, 2.48)
BSSL	5	6	83.3(35.9, 99.6)	83	114	72.8(63.7, 80.7)	1.14(0.79, 1.67)
BSHC	1	2	50.0(1.3, 98.7)	24	32	75.0(56.6, 88.5)	0.67(0.16, 2.70)
Total	38	65	58.5(45.6, 70.6)	395	625	63.2(59.3, 67.0)	0.93(0.75, 1.15)

There is no target for this indicator.

Among Māori women who were diagnosed solely with DCIS and had breast conserving surgery, 47% of those aged 45–49 years and 59% of those aged 50–69 years went on to have radiotherapy.

Among non-Māori women, the proportions were 59% and 63% respectively.

4i Proportion of women with invasive cancer having chemotherapy

Description:

The proportion of women diagnosed with invasive cancer who have chemotherapy, reported by disease character groups.

Table 4i.1: The proportion of women aged 45–49 years with invasive cancers who have chemotherapy, by disease character group, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of invasive cancers in group having chemotherapy	No. of invasive cancers, in group	% of invasive cancers, in group, having chemotherapy	No. of invasive cancers, in group, having chemotherapy	No. of invasive cancers, in group	% of invasive cancers, in group having chemotherapy	
Group 1: Node positive, ER/PR negative							
BSWN	0	0	--	3	4	75.0(19.4, 99.4)	--
BSCM	0	0	--	1	1	100.0(2.5, 100.0)	--
BSAL	1	1	100.0(2.5, 100.0)	0	1	0.0(0.0, 97.5)	Inf(0.39, 52.83) #
BSM	0	0	--	3	3	100.0(29.2, 100.0)	--
BSCtoC	3	3	100.0(29.2, 100.0)	1	1	100.0(2.5, 100.0)	1.00(0.52, 5.17) #
BSC	0	0	--	1	1	100.0(2.5, 100.0)	--
BSSL	0	0	--	2	2	100.0(15.8, 100.0)	--
BSHC	0	0	--	1	1	100.0(2.5, 100.0)	--
Total	4	4	100.0(39.8, 100.0)	12	14	85.7(57.2, 98.2)	1.17(0.58, 1.51) #
Group 2: Node negative, high risk, and ER/PR negative							
BSWN	3	3	100.0(29.2, 100.0)	11	15	73.3(44.9, 92.2)	1.36(0.55, 1.83) #
BSCM	1	1	100.0(2.5, 100.0)	3	6	50.0(11.8, 88.2)	2.00(0.30, 4.06) #
BSAL	1	2	50.0(1.3, 98.7)	1	2	50.0(1.3, 98.7)	1.00(0.14, 7.10)
BSM	0	0	--	1	1	100.0(2.5, 100.0)	--
BSCtoC	1	1	100.0(2.5, 100.0)	1	2	50.0(1.3, 98.7)	2.00(0.29, 7.46) #
BSC	0	0	--	1	1	100.0(2.5, 100.0)	--
BSSL	0	0	--	6	7	85.7(42.1, 99.6)	--
BSHC	0	0	--	2	2	100.0(15.8, 100.0)	--
Total	6	7	85.7(42.1, 99.6)	26	36	72.2(54.8, 85.8)	1.19(0.82, 1.71)
Group 3: Node positive, either ER or PR positive							
BSWN	3	8	37.5(8.5, 75.5)	26	30	86.7(69.3, 96.2)	0.43(0.17, 1.07)
BSCM	4	7	57.1(18.4, 90.1)	18	25	72.0(50.6, 87.9)	0.79(0.40, 1.58)
BSAL	1	1	100.0(2.5, 100.0)	14	19	73.7(48.8, 90.9)	1.36(0.22, 1.64) #
BSM	8	14	57.1(28.9, 82.3)	14	21	66.7(43.0, 85.4)	0.86(0.50, 1.48)
BSCtoC	6	6	100.0(54.1, 100.0)	16	20	80.0(56.3, 94.3)	1.25(0.74, 1.58) #
BSC	3	4	75.0(19.4, 99.4)	23	29	79.3(60.3, 92.0)	0.95(0.52, 1.72)
BSSL	4	4	100.0(39.8, 100.0)	37	42	88.1(74.4, 96.0)	1.14(0.55, 1.24) #
BSHC	1	1	100.0(2.5, 100.0)	18	18	100.0(81.5, 100.0)	1.00(0.16, 1.07) #
Total	30	45	66.7(51.0, 80.0)	166	204	81.4(75.3, 86.5)	0.82(0.66, 1.02)

Ratios in italics show a statistically significant difference between Māori and non-Māori.

Table 4i.1 continued

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of invasive cancers in group having chemotherapy	No. of invasive cancers, in group	% of invasive cancers, in group, having chemotherapy	No. of invasive cancers in group having chemotherapy	No. of invasive cancers, in group	% of invasive cancers, in group having chemotherapy	
Group 4: Node negative, high risk-either ER or PR positive							
BSWN	1	10	10.0(0.3, 44.5)	10	35	28.6(14.6, 46.3)	0.35(0.05, 2.42)
BSCM	3	5	60.0(14.7, 94.7)	6	20	30.0(11.9, 54.3)	2.00(0.75, 5.33)
BSAL	4	7	57.1(18.4, 90.1)	7	25	28.0(12.1, 49.4)	2.04(0.83, 5.01)
BSM	4	11	36.4(10.9, 69.2)	11	39	28.2(15.0, 44.9)	1.29(0.51, 3.26)
BSCtoC	2	4	50.0(6.8, 93.2)	15	25	60.0(38.7, 78.9)	0.83(0.30, 2.34)
BSC	2	7	28.6(3.7, 71.0)	7	31	22.6(9.6, 41.1)	1.27(0.33, 4.83)
BSSL	3	9	33.3(7.5, 70.1)	15	57	26.3(15.5, 39.7)	1.27(0.46, 3.52)
BSHC	0	1	0.0(0.0, 97.5)	8	18	44.4(21.5, 69.2)	0.00(0.00, 10.54)
Total	19	54	35.2(22.7, 49.4)	79	250	31.6(25.9, 37.8)	1.11(0.74, 1.67)

Among women aged 45–49 years, Māori women who were node positive and ER or PR positive (Group 3) were 18% less likely than non-Māori women in the same diagnostic group to receive chemotherapy, but this difference was not statistically significant. There were differences between Māori and non-Māori in the receipt of chemotherapy in the other diagnostic groups.

Table 4i.2: The proportion of women aged 50–69 years with invasive cancers who have chemotherapy, by disease character group, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of invasive cancers in group having chemotherapy	No. of invasive cancers in group	% of invasive cancers in group having chemotherapy	No. of invasive cancers in group having chemotherapy	No. of invasive cancers in group	% of invasive cancers in group having chemotherapy	
Group 1: Node positive, and ER and PR negative							
BSWN	0	1	0.0(0.0, 97.5)	17	21	81.0(58.1, 94.6)	0.00(0.00, 5.09)
BSCM	1	2	50.0(1.3, 98.7)	9	11	81.8(48.2, 97.7)	0.61(0.15, 2.51)
BSAL	1	1	100.0(2.5, 100.0)	9	10	90.0(55.5, 99.7)	1.11(0.19, 1.40) #
BSM	2	2	100.0(15.8, 100.0)	10	10	100.0(69.2, 100.0)	1.00(0.32, 1.21) #
BSCtoC	2	2	100.0(15.8, 100.0)	8	8	100.0(63.1, 100.0)	1.00(0.32, 1.29) #
BSC	1	2	50.0(1.3, 98.7)	9	10	90.0(55.5, 99.7)	0.56(0.14, 2.26)
BSSL	1	1	100.0(2.5, 100.0)	15	15	100.0(78.2, 100.0)	1.00(0.17, 1.10) #
BSHC	1	1	100.0(2.5, 100.0)	4	4	100.0(39.8, 100.0)	1.00(0.19, 1.63) #
Total	9	12	75.0(42.8, 94.5)	81	89	91.0(83.1, 96.0)	0.82(0.59, 1.15)
Group 2: Node negative, high risk, and ER or PR negative							
BSWN	4	5	80.0(28.4, 99.5)	34	54	63.0(48.7, 75.7)	1.27(0.78, 2.06)
BSCM	2	4	50.0(6.8, 93.2)	15	28	53.6(33.9, 72.5)	0.93(0.33, 2.64)
BSAL	0	0	--	17	19	89.5(66.9, 98.7)	--
BSM	3	3	100.0(29.2, 100.0)	17	30	56.7(37.4, 74.5)	1.76(0.68, 2.26) #
BSCtoC	4	5	80.0(28.4, 99.5)	13	29	44.8(26.4, 64.3)	1.78(0.98, 3.24)
BSC	3	3	100.0(29.2, 100.0)	9	29	31.0(15.3, 50.8)	3.22(1.13, 4.97) #
BSSL	2	3	66.7(9.4, 99.2)	35	52	67.3(52.9, 79.7)	0.99(0.44, 2.25)
BSHC	1	1	100.0(2.5, 100.0)	9	14	64.3(35.1, 87.2)	1.56(0.25, 2.10) #
Total	19	24	79.2(57.8, 92.9)	149	255	58.4(52.1, 64.5)	1.35(1.08, 1.71)

Table 4i.2 continued

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of invasive cancers in group having chemotherapy	No. of invasive cancers in group	% of invasive cancers in group having chemotherapy	No. of invasive cancers in group having chemotherapy	No. of invasive cancers in group	% of invasive cancers in group having chemotherapy	
Group 3: Node positive, and either ER or PR positive							
BSWN	7	17	41.2(18.4, 67.1)	43	100	43.0(33.1, 53.3)	0.96(0.52, 1.76)
BSCM	5	12	41.7(15.2, 72.3)	34	67	50.7(38.2, 63.2)	0.82(0.40, 1.67)
BSAL	1	6	16.7(0.4, 64.1)	16	45	35.6(21.9, 51.2)	0.47(0.08, 2.93)
BSM	8	27	29.6(13.8, 50.2)	43	97	44.3(34.2, 54.8)	0.67(0.36, 1.25)
BSCtoC	11	26	42.3(23.4, 63.1)	50	94	53.2(42.6, 63.6)	0.80(0.49, 1.29)
BSC	8	15	53.3(26.6, 78.7)	48	82	58.5(47.1, 69.3)	0.91(0.55, 1.51)
BSSL	4	9	44.4(13.7, 78.8)	63	120	52.5(43.2, 61.7)	0.85(0.40, 1.79)
BSHC	2	2	100.0(15.8, 100.0)	46	61	75.4(62.7, 85.5)	1.33(0.39, 1.43) #
Total	46	114	40.4(31.3, 49.9)	343	666	51.5(47.6, 55.4)	0.78(0.62, 0.99)
Group 4: Node negative, high risk, and either ER or PR positive							
BSWN	6	36	16.7(6.4, 32.8)	10	194	5.2(2.5, 9.3)	3.23(1.25, 8.34)
BSCM	3	32	9.4(2.0, 25.0)	19	126	15.1(9.3, 22.5)	0.62(0.20, 1.97)
BSAL	1	15	6.7(0.2, 31.9)	13	98	13.3(7.3, 21.6)	0.50(0.07, 3.57)
BSM	11	64	17.2(8.9, 28.7)	31	185	16.8(11.7, 22.9)	1.03(0.55, 1.92)
BSCtoC	3	35	8.6(1.8, 23.1)	30	172	17.4(12.1, 24.0)	0.49(0.16, 1.52)
BSC	1	23	4.3(0.1, 21.9)	21	148	14.2(9.0, 20.9)	0.31(0.04, 2.17)
BSSL	7	20	35.0(15.4, 59.2)	30	293	10.2(7.0, 14.3)	3.42(1.72, 6.79)
BSHC	0	6	0.0(0.0, 45.9)	20	105	19.0(12.0, 27.9)	0.00(0.00, 3.54)
Total	32	231	13.9(9.7, 19.0)	174	1321	13.2(11.4, 15.1)	1.05(0.74, 1.49)

Ratios in italics show a statistically significant difference between Māori and non-Māori.

Among women aged 50–69 years, Māori women in Group 2 (Node negative, high risk, and oestrogen receptor and progesterone receptor status negative) were 35% more likely than non-Māori to have chemotherapy. While Māori women in Group 3 (Node positive and either ER or PR positive) were 22% less likely to have chemotherapy than non-Māori women.

There is no target for this indicator.

4j Proportion of women with invasive cancer having endocrine therapy

Description:

The proportion of women diagnosed with invasive cancer who have endocrine therapy reported by disease character group.

Table 4j.1: Proportion of women aged 45–49 years diagnosed with invasive cancer who had endocrine therapy by disease character group, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of invasive cancers, in group having endocrine therapy	No. of invasive cancers, in group	% of invasive cancers, in group, having endocrine therapy	No. of invasive cancers, in group, having endocrine therapy	No. of invasive cancers, in group	% of invasive cancers, in group having endocrine therapy	
Group 1: Node positive and either ER or PR positive							
BSWN	8	8	100.0(63.1, 100.0)	29	30	96.7(82.8, 99.9)	1.03(0.70, 1.14) #
BSCM	7	7	100.0(59.0, 100.0)	22	25	88.0(68.8, 97.5)	1.14(0.73, 1.34) #
BSAL	1	1	100.0(2.5, 100.0)	17	19	89.5(66.9, 98.7)	1.12(0.18, 1.26) #
BSM	14	14	100.0(76.8, 100.0)	19	21	90.5(69.6, 98.8)	1.11(0.87, 1.35) #
BSCtoC	6	6	100.0(54.1, 100.0)	20	20	100.0(83.2, 100.0)	1.00(0.62, 1.12) #
BSC	3	4	75.0(19.4, 99.4)	29	29	100.0(88.1, 100.0)	0.75(0.29, 0.99) #
BSSL	4	4	100.0(39.8, 100.0)	38	42	90.5(77.4, 97.3)	1.11(0.54, 1.20) #
BSHC	1	1	100.0(2.5, 100.0)	17	18	94.4(72.7, 99.9)	1.06(0.18, 1.17) #
Total	44	45	97.8(88.2, 99.9)	191	204	93.6(89.3, 96.6)	1.04(0.99, 1.11)
Group 2: Node negative, high risk, and either ER or PR positive							
BSWN	9	10	90.0(55.5, 99.7)	28	35	80.0(63.1, 91.6)	1.12(0.86, 1.47)
BSCM	4	5	80.0(28.4, 99.5)	13	20	65.0(40.8, 84.6)	1.23(0.71, 2.12)
BSAL	5	7	71.4(29.0, 96.3)	16	25	64.0(42.5, 82.0)	1.12(0.64, 1.94)
BSM	10	11	90.9(58.7, 99.8)	36	39	92.3(79.1, 98.4)	0.98(0.80, 1.21)
BSCtoC	4	4	100.0(39.8, 100.0)	20	25	80.0(59.3, 93.2)	1.25(0.60, 1.50) #
BSC	7	7	100.0(59.0, 100.0)	29	31	93.5(78.6, 99.2)	1.07(0.69, 1.19) #
BSSL	7	9	77.8(40.0, 97.2)	40	57	70.2(56.6, 81.6)	1.11(0.75, 1.63)
BSHC	0	1	0.0(0.0, 97.5)	14	18	77.8(52.4, 93.6)	0.00(0.00, 5.43)
Total	46	54	85.2(72.9, 93.4)	196	250	78.4(72.8, 83.3)	1.09(0.96, 1.24)
Group 3: Node negative, low risk, and either ER or PR positive							
BSWN	1	11	9.1(0.2, 41.3)	5	33	15.2(5.1, 31.9)	0.60(0.08, 4.59)
BSCM	0	4	0.0(0.0, 60.2)	2	11	18.2(2.3, 51.8)	0.00(0.00, 14.64)
BSAL	2	3	66.7(9.4, 99.2)	3	20	15.0(3.2, 37.9)	4.44(1.19, 16.55)
BSM	8	10	80.0(44.4, 97.5)	16	17	94.1(71.3, 99.9)	0.85(0.61, 1.18)
BSCtoC	5	6	83.3(35.9, 99.6)	6	12	50.0(21.1, 78.9)	1.67(0.85, 3.26)
BSC	1	2	50.0(1.3, 98.7)	12	14	85.7(57.2, 98.2)	0.58(0.14, 2.37)
BSSL	1	4	25.0(0.6, 80.6)	9	22	40.9(20.7, 63.6)	0.61(0.10, 3.59)
BSHC	0	0	--	0	11	0.0(0.0, 28.5)	--
Total	18	40	45.0(29.3, 61.5)	53	140	37.9(29.8, 46.4)	1.19(0.79, 1.78)

Ratios in italics show a statistically significant difference between Māori and non-Māori.

There were no differences between Māori and non-Māori women in the overall proportions receiving endocrine therapy in any diagnostic group.

Table 4j.2: Proportion of women aged 50–69 years diagnosed with invasive cancer who had endocrine therapy by disease character group, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	No. of invasive cancers, in group having endocrine therapy	No. of invasive cancers, in group	% of invasive cancers, in group, having endocrine therapy	No. of invasive cancers, in group, having endocrine therapy	No. of invasive cancers, in group	% of invasive cancers, in group having endocrine therapy	
Group 1: Node positive, and either ER or PR positive							
BSWN	17	17	100.0(80.5, 100.0)	96	100	96.0(90.1, 98.9)	1.04(0.85, 1.08) #
BSCM	11	12	91.7(61.5, 99.8)	62	67	92.5(83.4, 97.5)	0.99(0.82, 1.19)
BSAL	6	6	100.0(54.1, 100.0)	41	45	91.1(78.8, 97.5)	1.10(0.66, 1.19) #
BSM	25	27	92.6(75.7, 99.1)	94	97	96.9(91.2, 99.4)	0.96(0.85, 1.07)
BSCtoC	26	26	100.0(86.8, 100.0)	91	94	96.8(91.0, 99.3)	1.03(0.91, 1.08) #
BSC	15	15	100.0(78.2, 100.0)	81	82	98.8(93.4, 100.0)	1.01(0.81, 1.04) #
BSSL	8	9	88.9(51.8, 99.7)	114	120	95.0(89.4, 98.1)	0.94(0.74, 1.18)
BSHC	2	2	100.0(15.8, 100.0)	60	61	98.4(91.2, 100.0)	1.02(0.30, 1.03) #
Total	110	114	96.5(91.3, 99.0)	639	666	95.9(94.2, 97.3)	1.01(0.97, 1.04)
Group 2: Node negative, high risk, and either ER or PR positive							
BSWN	21	36	58.3(40.8, 74.5)	148	194	76.3(69.7, 82.1)	0.76(0.57, 1.02)
BSCM	16	32	50.0(31.9, 68.1)	71	126	56.3(47.2, 65.2)	0.89(0.61, 1.30)
BSAL	10	15	66.7(38.4, 88.2)	59	98	60.2(49.8, 70.0)	1.11(0.75, 1.64)
BSM	58	64	90.6(80.7, 96.5)	175	185	94.6(90.3, 97.4)	0.96(0.88, 1.04)
BSCtoC	26	35	74.3(56.7, 87.5)	125	172	72.7(65.4, 79.2)	1.02(0.82, 1.27)
BSC	21	23	91.3(72.0, 98.9)	129	148	87.2(80.7, 92.1)	1.05(0.91, 1.21)
BSSL	14	20	70.0(45.7, 88.1)	166	293	56.7(50.8, 62.4)	1.24(0.91, 1.67)
BSHC	5	6	83.3(35.9, 99.6)	59	105	56.2(46.2, 65.9)	1.48(1.00, 2.20)
Total	171	231	74.0(67.9, 79.6)	932	1,321	70.6(68.0, 73.0)	1.05(0.96, 1.14)
Group 3: Node negative, low risk, and either ER or PR positive							
BSWN	3	19	15.8(3.4, 39.6)	36	186	19.4(13.9, 25.8)	0.82(0.28, 2.40)
BSCM	0	25	0.0(0.0, 13.7)	4	74	5.4(1.5, 13.3)	0.00(0.00, 4.48)
BSAL	0	7	0.0(0.0, 41.0)	10	99	10.1(5.0, 17.8)	0.00(0.00, 6.31)
BSM	21	26	80.8(60.6, 93.4)	117	128	91.4(85.1, 95.6)	0.88(0.73, 1.07)
BSCtoC	11	18	61.1(35.7, 82.7)	44	88	50.0(39.1, 60.9)	1.22(0.80, 1.87)
BSC	8	13	61.5(31.6, 86.1)	69	94	73.4(63.3, 82.0)	0.84(0.54, 1.31)
BSSL	0	6	0.0(0.0, 45.9)	50	163	30.7(23.7, 38.4)	0.00(0.00, 2.08)
BSHC	0	2	0.0(0.0, 84.2)	10	52	19.2(9.6, 32.5)	0.00(0.00, 11.60)
Total	43	116	37.1(28.3, 46.5)	340	884	38.5(35.2, 41.8)	0.96(0.75, 1.24)

Ratios in italics show a statistically significant difference between Māori and non-Māori.

There were no statistically significant differences between Māori and non-Māori women aged 50–69 years in the proportions receiving endocrine therapy.

There is no target for this indicator.

SECTION 5: PROVISION OF AN APPROPRIATE AND ACCEPTABLE SERVICE

5e First surgical treatment within 20 working days

Description:

The time from when a woman receives her final diagnostic results to the date of her first surgical treatment.

Target for women aged 50–69 years:

90% of women should normally receive their first surgical treatment within 20 working days of receiving their final diagnostic results.

Table 5e: Proportion of women receiving first surgical treatment within 20 working days, 5 years (July 2007–June 2012)

Lead provider	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)
	First surgical treatment within 20 working days	Total number having surgery	% receiving first surgery within 20 working days (95% CI)	First surgical treatment within 20 working days	Total number having surgery	% receiving first surgery within 20 working days (95% CI)	
45–49 years							
BSWN	22	38	57.9(40.8, 73.7)	126	181	69.6(62.4, 76.2)	0.83(0.62, 1.11)
BSCM	4	24	16.7(4.7, 37.4)	24	87	27.6(18.5, 38.2)	0.60(0.23, 1.57)
BSAL	11	16	68.8(41.3, 89.0)	59	107	55.1(45.2, 64.8)	1.25(0.86, 1.81)
BSM	19	39	48.7(32.4, 65.2)	84	123	68.3(59.3, 76.4)	0.71(0.51, 1.01)
BSCtoC	18	27	66.7(46.0, 83.5)	71	94	75.5(65.6, 83.8)	0.88(0.66, 1.18)
BSC	10	15	66.7(38.4, 88.2)	67	117	57.3(47.8, 66.4)	1.16(0.79, 1.72)
BSSL	11	18	61.1(35.7, 82.7)	127	185	68.6(61.4, 75.3)	0.89(0.61, 1.30)
BSHC	3	4	75.0(19.4, 99.4)	43	65	66.2(53.4, 77.4)	1.13(0.63, 2.05)
Total	98	181	54.1(46.6, 61.6)	601	959	62.7(59.5, 65.7)	0.86(0.75, 1.00)
50–69 years							
BSWN	68	104	65.4(55.4, 74.4)	513	730	70.3(66.8, 73.6)	0.93(0.80, 1.08)
BSCM	17	90	18.9(11.4, 28.5)	118	415	28.4(24.1, 33.0)	0.66(0.42, 1.05)
BSAL	21	36	58.3(40.8, 74.5)	223	372	59.9(54.8, 65.0)	0.97(0.73, 1.30)
BSM	87	145	60.0(51.5, 68.0)	392	597	65.7(61.7, 69.5)	0.91(0.79, 1.06)
BSCtoC	53	96	55.2(44.7, 65.4)	319	480	66.5(62.0, 70.7)	0.83(0.69, 1.01)
BSC	39	68	57.4(44.8, 69.3)	270	485	55.7(51.1, 60.1)	1.03(0.83, 1.28)
BSSL	31	49	63.3(48.3, 76.6)	567	823	68.9(65.6, 72.0)	0.92(0.74, 1.14)
BSHC	8	14	57.1(28.9, 82.3)	180	299	60.2(54.4, 65.8)	0.95(0.60, 1.51)
Total	324	602	53.8(49.7, 57.9)	2,582	4,201	61.5(60.0, 62.9)	0.88(0.81, 0.95)

Ratios below one are unfavourable to Māori. Shaded boxes show confidence interval excludes target of 90% or more. Ratios in italics show a statistically significant difference between Māori and non-Māori.

Just over 50% of Māori women and 60% of non-Māori women in both age groups received their first surgical treatment within 20 working days. Among women aged 50–69 years Māori women were 12% less likely than non-Māori women to receive timely surgery. BSCM had the lowest proportions of Māori women receiving timely surgery in both age groups, (17% in 45–49 years and 19% in 50–69 years). No Lead Provider reached the target of 90%.

APPENDIX A: GLOSSARY OF TERMS

Assessment

A follow-up investigation if something of concern is seen on a mammogram.

Assessment rate

Number of women referred to assessment as a percentage of all women screened.

Asymptomatic

Women who do not have symptoms of breast cancer.

Axillary lymph nodes

Lymph nodes located in the armpits.

BCS

Breast conserving surgery

Biopsy

A sample of a breast abnormality, or the whole abnormality, is removed and examined under a microscope by a pathologist to determine whether it is cancer.

Benign biopsy weight

The weight of the open biopsy specimen presented to the pathologist.

Benign biopsy rate

Number of open biopsies that turn out to be benign lesions, expressed as a proportion of women screened.

BSA

BreastScreen Aotearoa

Coverage

Population-based measure of the percentage of women in the target age groups (45–49, 50–69 years) who have had a screening mammogram in the programme.

ER

Estrogen Receptor

False negative

A negative screening test result in a woman who actually does have cancer at the time the screening is conducted.

False positive result

The proportion of women recalled to assessment, but after assessment are found not to have cancer.

FNAC

Fine needle aspiration cytology

IMMG

Independent Māori Monitoring Group

IMMR

Independent Māori Monitoring Report

Initial screen

A woman's first screening mammogram at any BSA Lead Provider.

Lead Provider

A service provider who contracts with the National Screening Unit to provide services purchased as a result of the *Request for Proposal*. This term encompasses those individuals or organisations who act as a nominee, agent or subcontracted provider to a Lead Provider.

MAG

Māori Advisory Group

MMEG

Māori Monitoring and Equity Group

Negative predictive value (NPV)

The proportion of women screened negative who are ultimately diagnosed as not having cancer.

Node negative

Axillary lymph nodes (in armpit) do not contain cancer cells.

Node positive

Axillary lymph nodes (in armpit) contain cancer cells.

Positive predictive value (PPV)

The proportion of women screened positive who are ultimately diagnosed as having cancer.

PR

Progesterone receptor

Pre-operative diagnosis rate

Number of women for whom a needle biopsy provides the definitive diagnosis (pre-operative diagnosis), as a percentage of all women diagnosed with breast cancer in the programme.

Rescreen

A screening mammogram undertaken two years after the previous screen. In this report, rescreen refers to women who returned for screening within 27 months following their previous screen.

Sensitivity

The proportion of truly diseased persons in the screened population who are identified as diseased by the screening test. Sensitivity is a measure of the probability of correctly diagnosing a case, or the probability that any given case will be identified by the test.

Specificity

The proportion of women without breast cancer at screening who have a negative screen result. This is estimated by expressing the number of women who have a negative screen result as a percentage of all women screened excluding the women screened positive with cancer.

Subsequent screen

A woman's screening mammogram at a BSA Lead Provider when she has previously attended BSA.

Technical recall rate

Number of women who have to return to a screening unit (either Fixed or Mobile) for further films to complete their screening episode, after radiologist's review, (not technicians' review) expressed as a percentage of the number screened.

Technical reject rate

Number of films rejected as a percentage of the number of films taken, calculated separately for women who are screened in a fixed unit and a mobile unit.