BreastScreen Aotearoa

Independent Māori Monitoring Report 6b: **Treatment** of Women with BSA Detected Cancers, ages 45–49 and 50–69 years

(Women screened July 2008 to June 2013)

A report prepared by
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This document will be available on the National Screening Unit website: http://www.nsu.govt.nz

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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 third 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.

Data are presented for women screened during the five-year period July 2008 to June 2013. Because these reports are produced annually, four of the five years of data in this report overlap with the previous report in this series. Trends over time are therefore not presented in this report.

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 ductal carcinoma in situ (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 analysis 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

During this five-year period, 200 Māori women aged 45 to 49 years had breast cancer detected by BSA, mostly invasive cancers, and 30 diagnosed as DCIS.

Māori women aged 45 to 49 years were 90% more likely than non-Māori women to have invasive breast cancer detected from their initial screen and 94% more likely from a subsequent screen. The detection rate from an initial screen in this age group was around half the rate of detection in women aged 50 to 60 years, and around two-thirds the rate of detection from a subsequent screen.

For both Māori and non-Māori women, just over half the invasive cancers were 15mm or less in diameter. Close to 70% had no nodal involvement.

The detection rate of small cancers (≤15mm) from initial screens for Māori women was nearly twice that of non-Māori. For those having a subsequent screen it was 80% higher than the non-Māori rate.

The percentage of screen detected cancers that were diagnosed as DCIS among Māori women in this age group was half that of non-Māori women (15% compared to 31%).

Women aged 50 to 69 years

The five-year invasive breast cancer detection rates for Māori women aged 50 to 69 years were around double the target values for initial and subsequent screens. The targets were also met for the proportions and detection rates of small cancers, the percentage without nodal involvement, and the proportion that were diagnosed as DCIS.

Māori women having an initial screen were 70% more likely than non-Māori women to have an invasive cancer detected, with just over half of the cancers 15mm or less in diameter. Around 70% had no nodal involvement.

Among those having a subsequent screen, the invasive cancer detection rate was nearly 60% higher for Māori women than non-Māori women. Nearly two-thirds (62%) of the invasive cancers were 15mm or less and three-quarters (76%) had no nodal involvement.

The proportion of screen detected cancers that were DCIS was 15% for Māori women compared to 21% for non-Māori women (target range 10% to 25%).

Treatment

Women aged 45 to 49 years

Almost all (99%) Māori women aged 45 to 49 years with an invasive cancer over 1mm had a surgical axillary procedure and 83% had a single excisional breast treatment procedure. Of those whose invasive cancers were 20mm or less, 90% had breast conserving surgery (BCS) and 92% of those 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 received chemotherapy or endocrine therapy.

Most (95%) Māori women who were diagnosed with DCIS did not have an axillary dissection and 77% of those with DCIS 20mm or less had BCS (compared with 90% of non-Māori women). Of those who had BCS, 41% 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 the indicators were similar for Māori and non-Māori women.

Of women who were diagnosed with invasive cancer, 98% of Māori and 99% of non-Māori women had a surgical axillary procedure (target 95%); 86% of both Māori and non-Māori women had a single excisional breast treatment procedure (no target). Of women without DCIS whose invasive cancers were 20mm or less, 77% of Māori and 82% of non-Māori women had BCS (target >50%), with most going on to have radiotherapy (94% of Māori and 93% of non-Māori, target ≥95%).

No targets have been set for the receipt of chemotherapy or endocrine therapy. There were no statistically significant differences between the proportions of Māori and non-Māori in each diagnostic group who received these adjuvant therapies.

Among women in this age group who were diagnosed with DCIS, 96% of Māori women and 99% of non-Māori women did not have an axillary dissection (target >95). Of those whose DCIS was ≤20mm, 85% of Māori and 86% of non-Māori had BCS (target >50%) and of those with DCIS only, 63% of Māori and 64% of non-Māori went on to have radiotherapy (no target).

Timeliness of first surgical treatment

Overall, only 50% of Māori women and 60% of non-Māori women in both age groups received their first surgical treatment within 20 working days. All LPs were well below the target value of 90%.

Discussion points

As noted in previous reports, 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 their first surgical treatment within 20 working days needs further investigation and monitoring by DHB and investigation of barriers to timely treatment.

There could also be further analysis of the distribution of the actual times to first surgical treatment for Māori and non-Māori women, since we have little knowledge of the length of time it takes for the 'other' 50% of Māori women to be treated.

The new national "Faster Cancer Treatment" target, introduced in October 2014, requires DHBs to progressively increase the proportions of patients receiving their first cancer treatment within 62 days of being referred urgently with a high suspicion of cancer[1]. This will influence the indicator on time to first surgical treatment and should be monitored for Māori and non-Māori women screened by BSA.

Apart from the differential proportions of women receiving timely surgical treatment, the treatment indicators were on target for Māori women and there was no evidence of differences between Māori and non-Māori women. This suggests that a well-organised programme that is monitored by ethnicity can deliver equitable services for indigenous and non-indigenous populations.

[1] Ministry of Health. 2014. *National Cancer Programme: Work Plan 2014/15*. Wellington: Ministry of Health. Available at http://www.health.govt.nz/publication/national-cancer-programme-work-plan-2014-15

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 2008 to 30 June 2013 in order to maximise numbers and increase statistical precision.

Indicators which do not have targets are not included. These are:

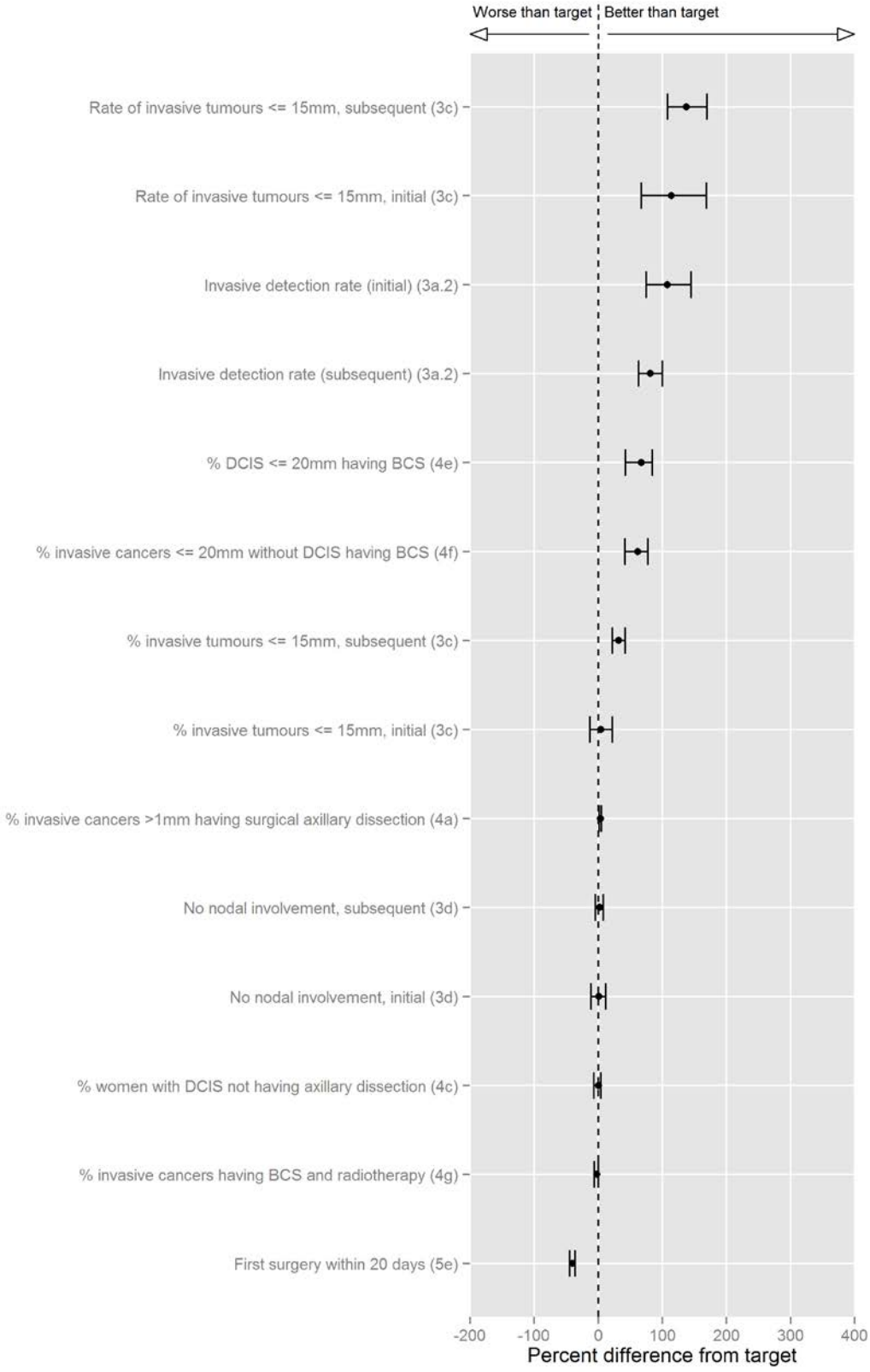
- 4b The proportion of invasive cancers having a single excisional procedure
- 4h The proportion of women with DCIS having radiotherapy
- 4i The proportion of women with invasive cancer having chemotherapy (by diagnostic group)
- 4j The proportion of women with invasive cancer having endocrine therapy (by diagnostic group)

Indicator 3e, the proportion of cancers that were DCIS, is also not presented on the graph because the target is a range of values. This indicator was within the target range of 10%–25% for Māori in all Lead Providers.

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. 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.

All BreastScreen Aotearoa

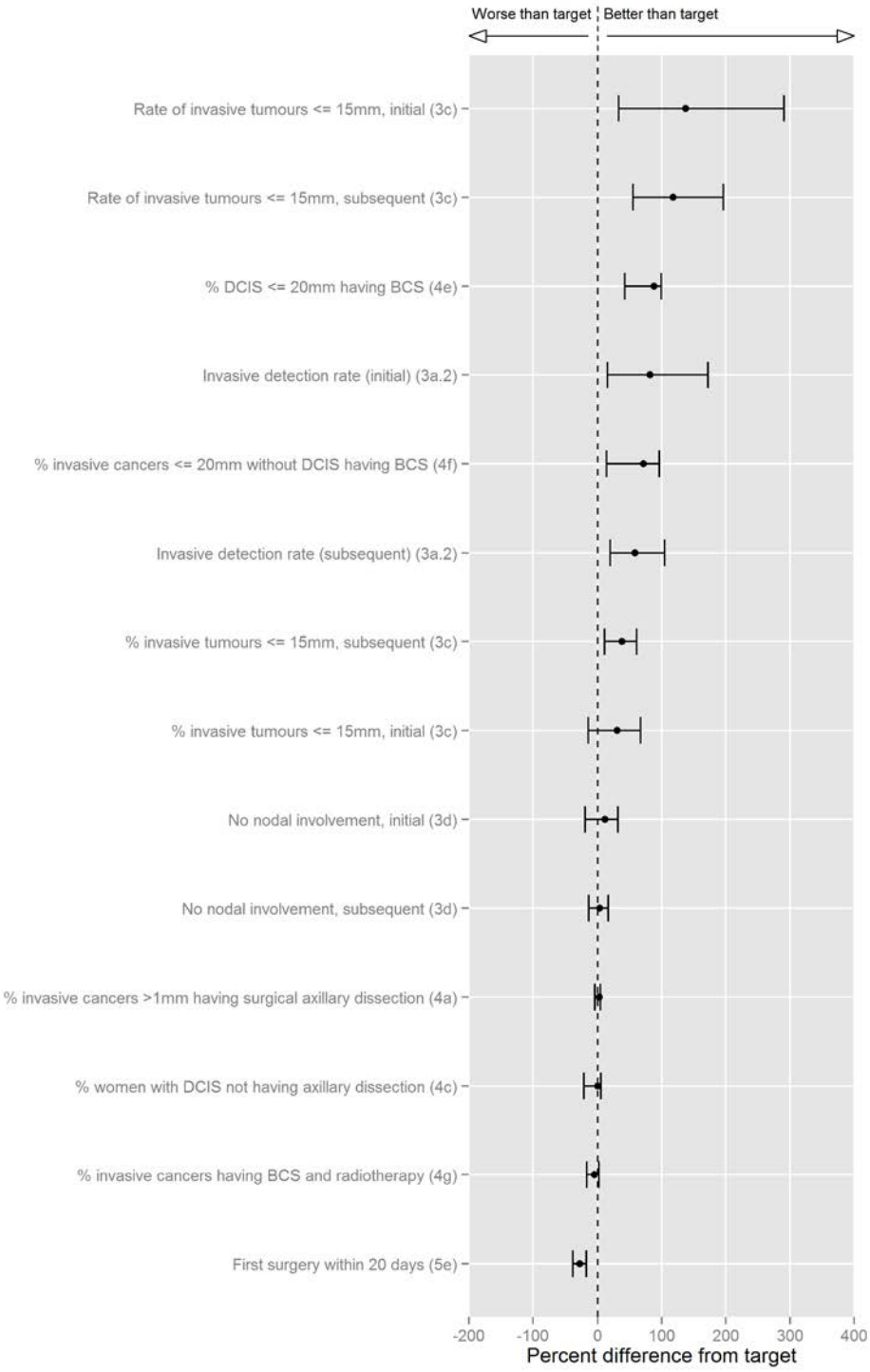
Figure 1: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2008–June 2013, all BSA



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 (57% of Māori women and 68% of non-Māori women, target 90%). Among women aged 45–49 years only 19% of Māori women and 25% of non-Māori women received timely surgery.

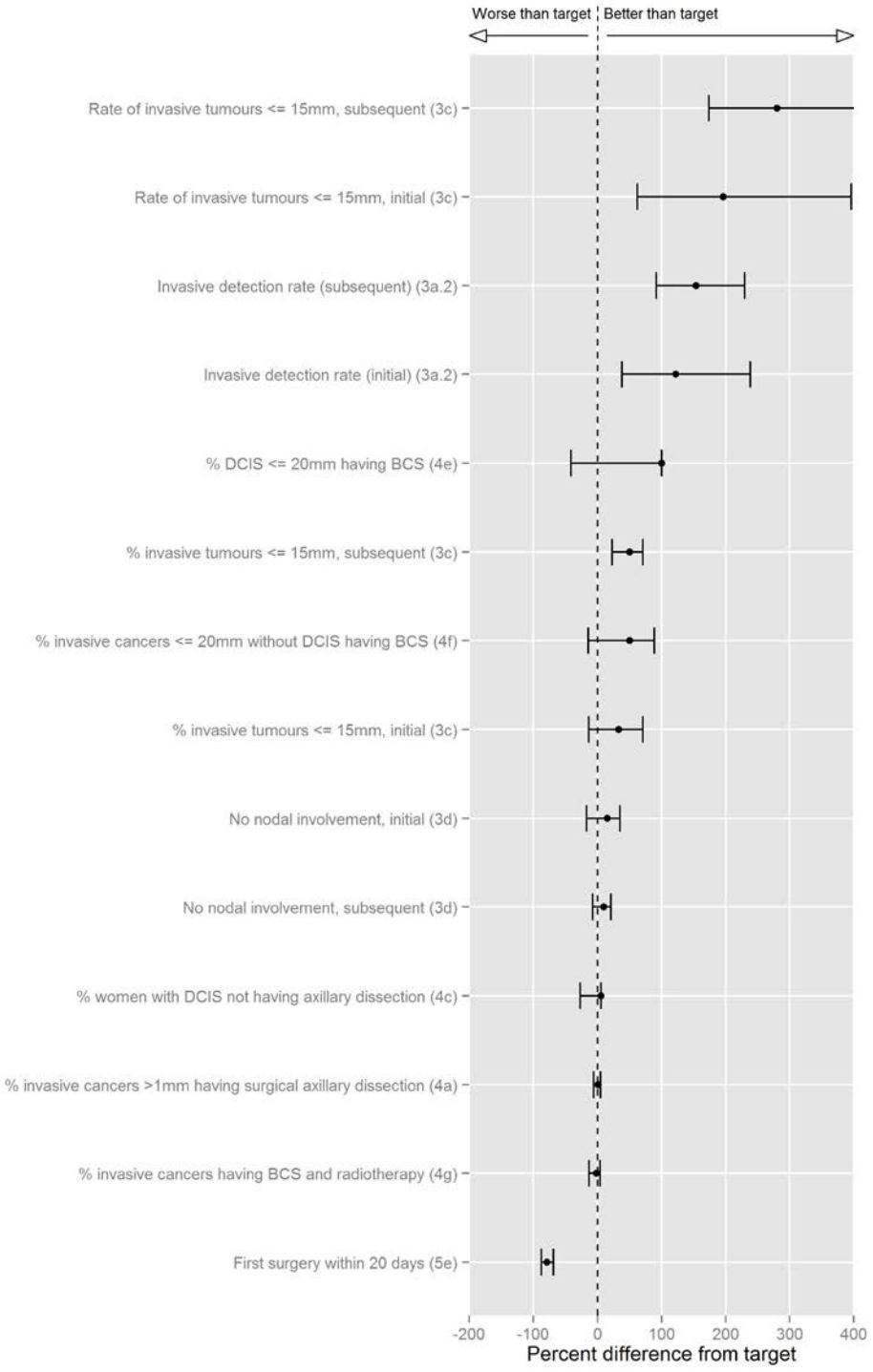
Figure 2: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2008–June 2013, BSWN



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 22% of Māori women and 27% 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 19% of Māori women and 25% of non-Māori women received timely surgery.

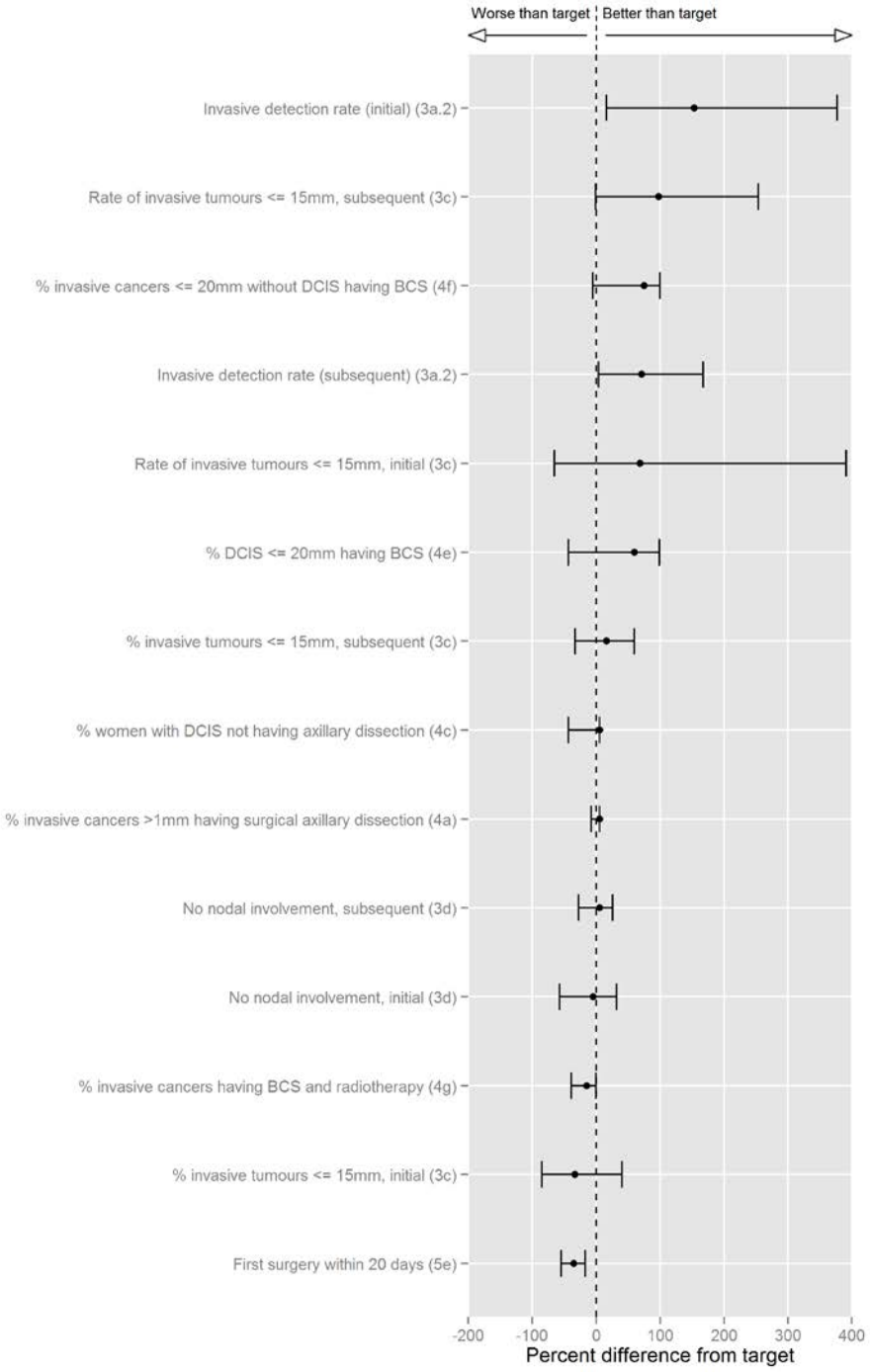
Figure 3: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2008–June 2013, BSCM



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 was not achieved for the percentage of women who received their first surgical treatment within 20 working days (50% of Māori women and 57% of non-Māori women, target 90%). Among women aged 45–49 years 61% of Māori and 51% of non-Māori women received timely surgery. Only 9 cancers were detected among Māori women having initial screens, four of which were ≤15mm in diameter.

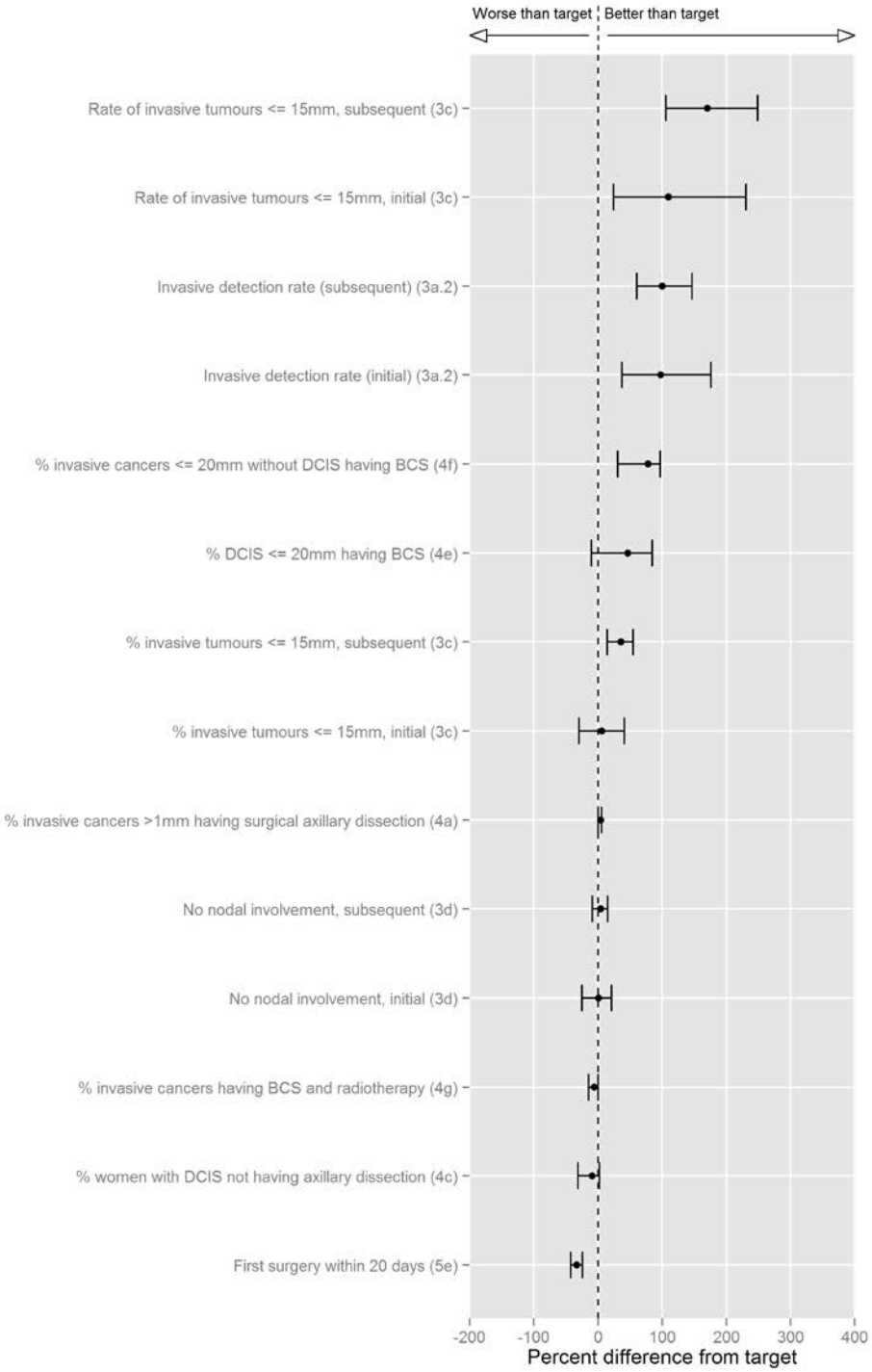
Figure 4: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2008–June 2013 BSAL



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 (63% of Māori women and 65% of non-Māori women). Among women aged 45–49 years, 50% of Māori and 71% of non-Māori women received timely surgical treatment.

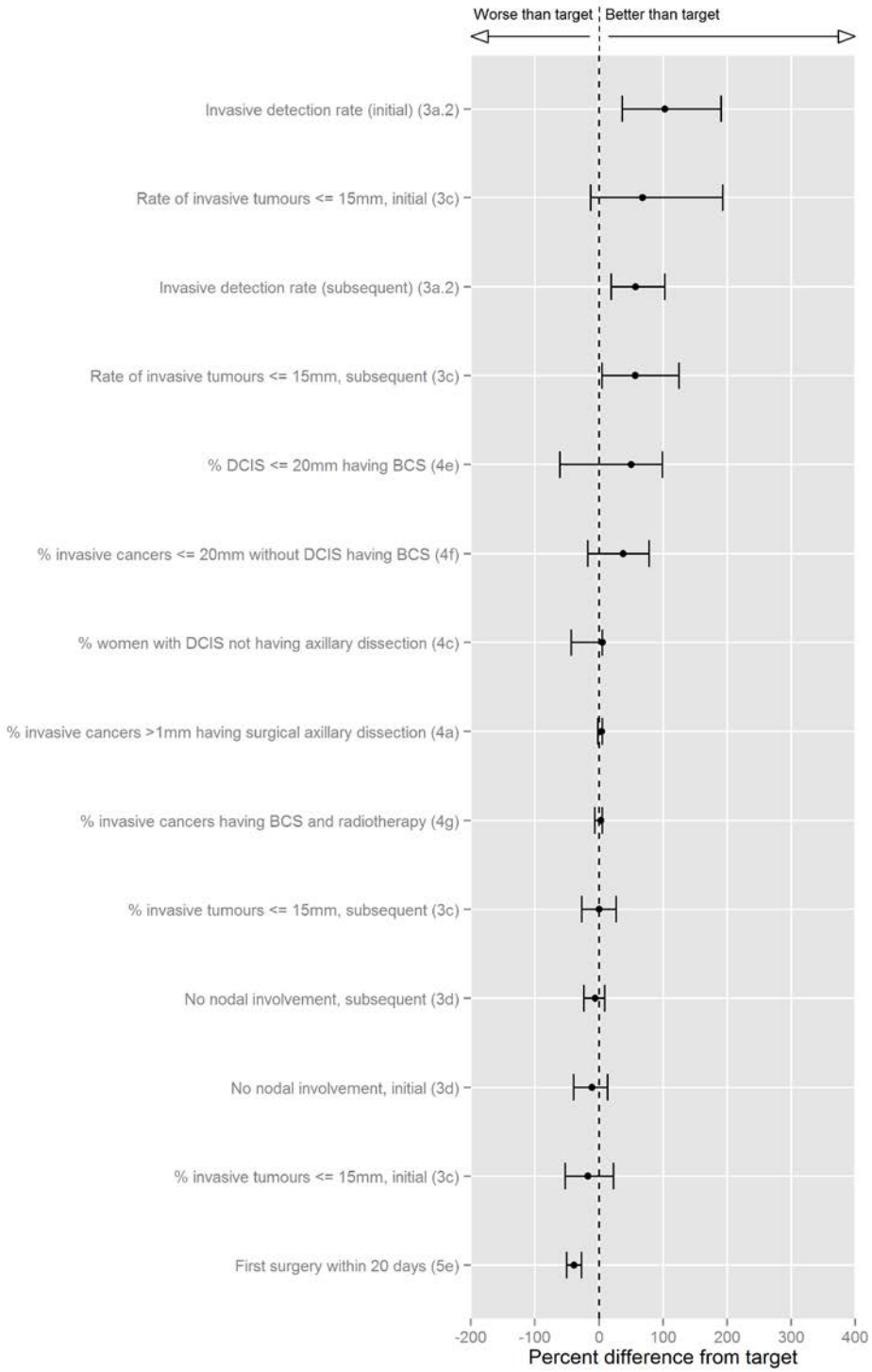
Figure 5: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2008–June 2013, BSM



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 (47% of Māori women and 66% of non-Māori women). Among women aged 45–49 years, 59% of Māori and 72% of non-Māori women received timely surgical treatment.

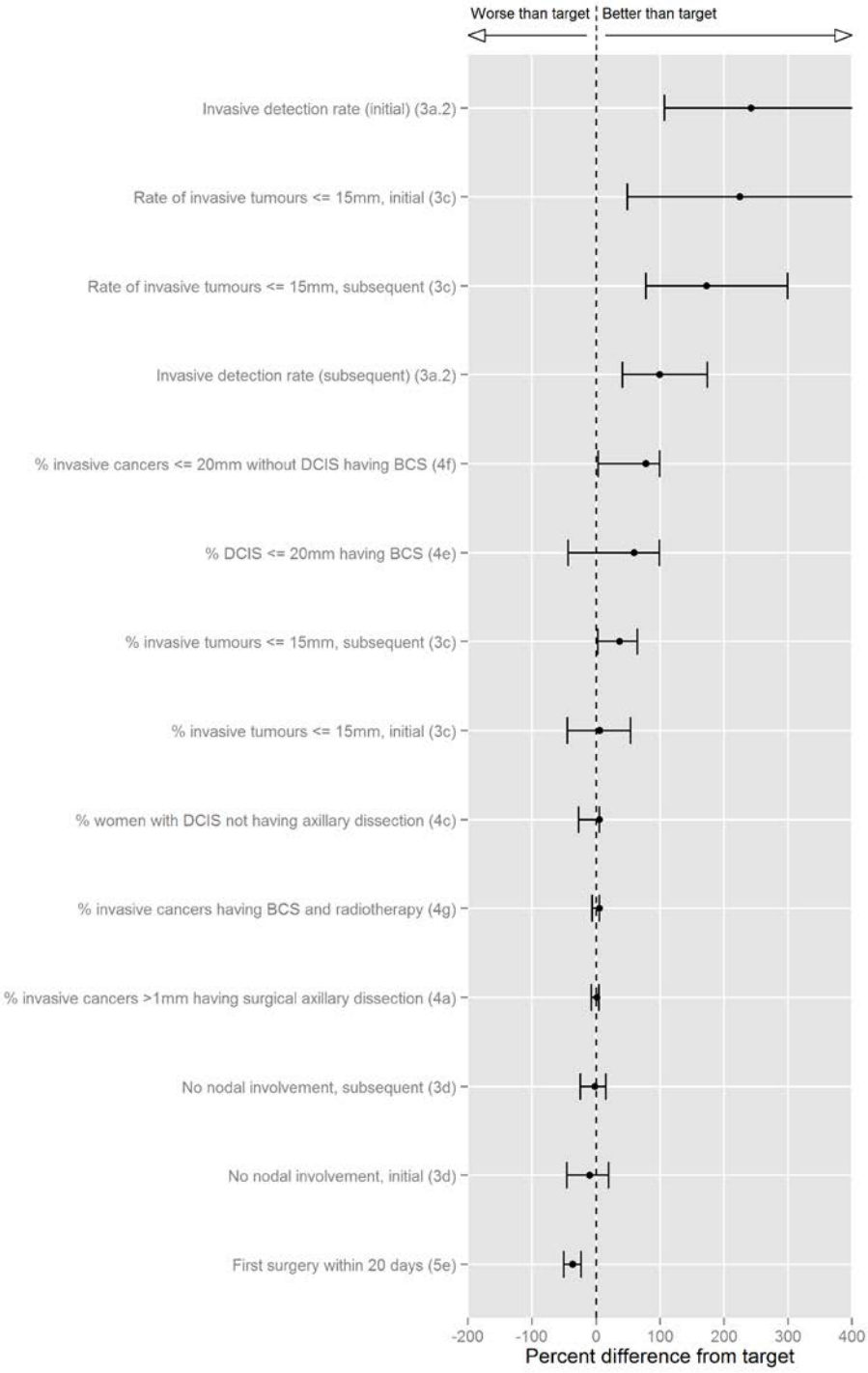
Figure 6: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2008–June 2013, BSCtoC



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 (52% of Māori and 54% of non-Māori women, target 90%). Among women aged 45–49 years, 75% of Māori women and 54% of non-Māori women received timely surgical treatment.

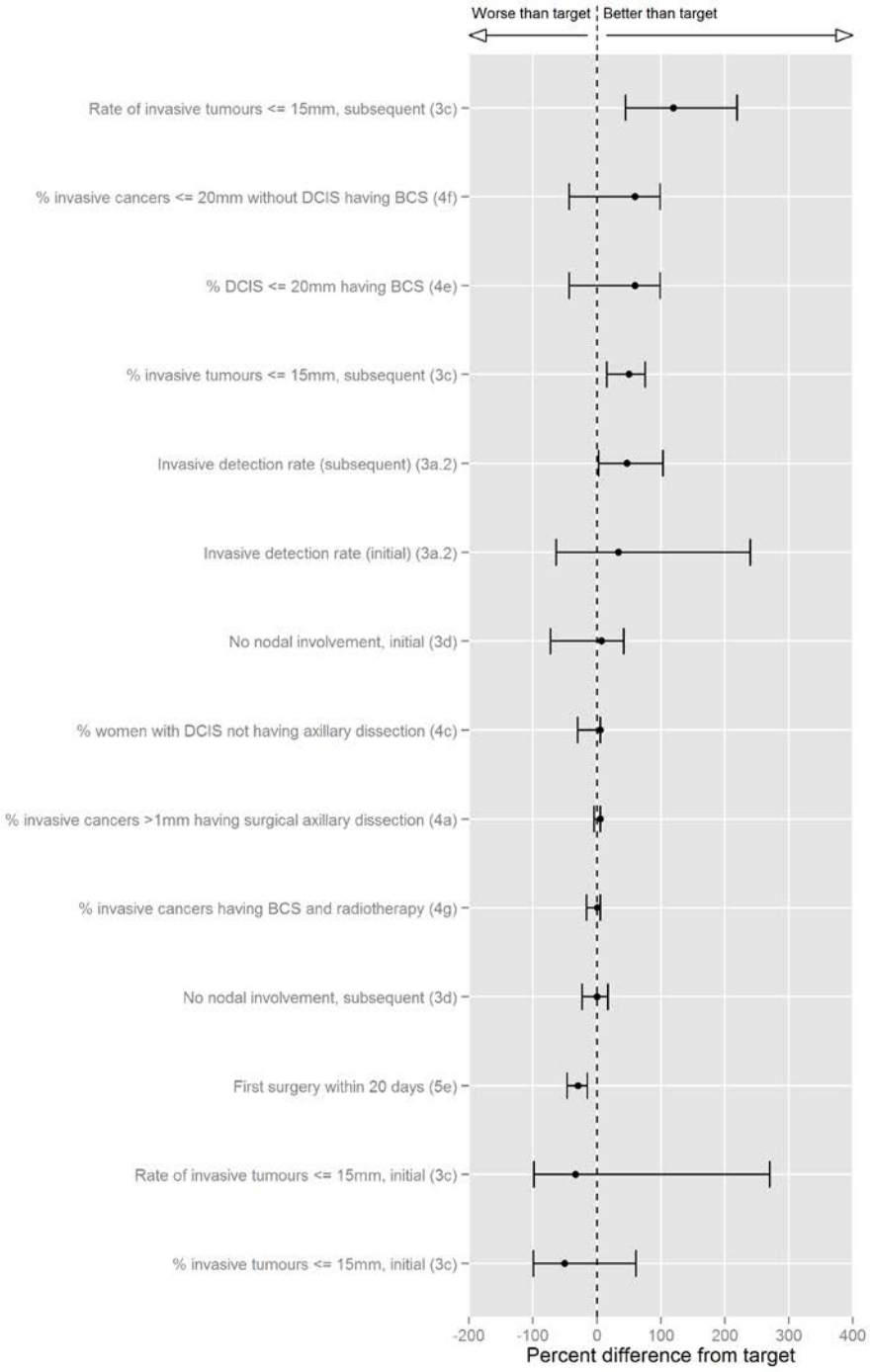
Figure 7: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2008–June 2013, BSC



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 (60% of Māori and 66% 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. Only 2 Māori women were diagnosed with invasive cancer from initial screens during this 5-year period, one of which was ≤15mm.

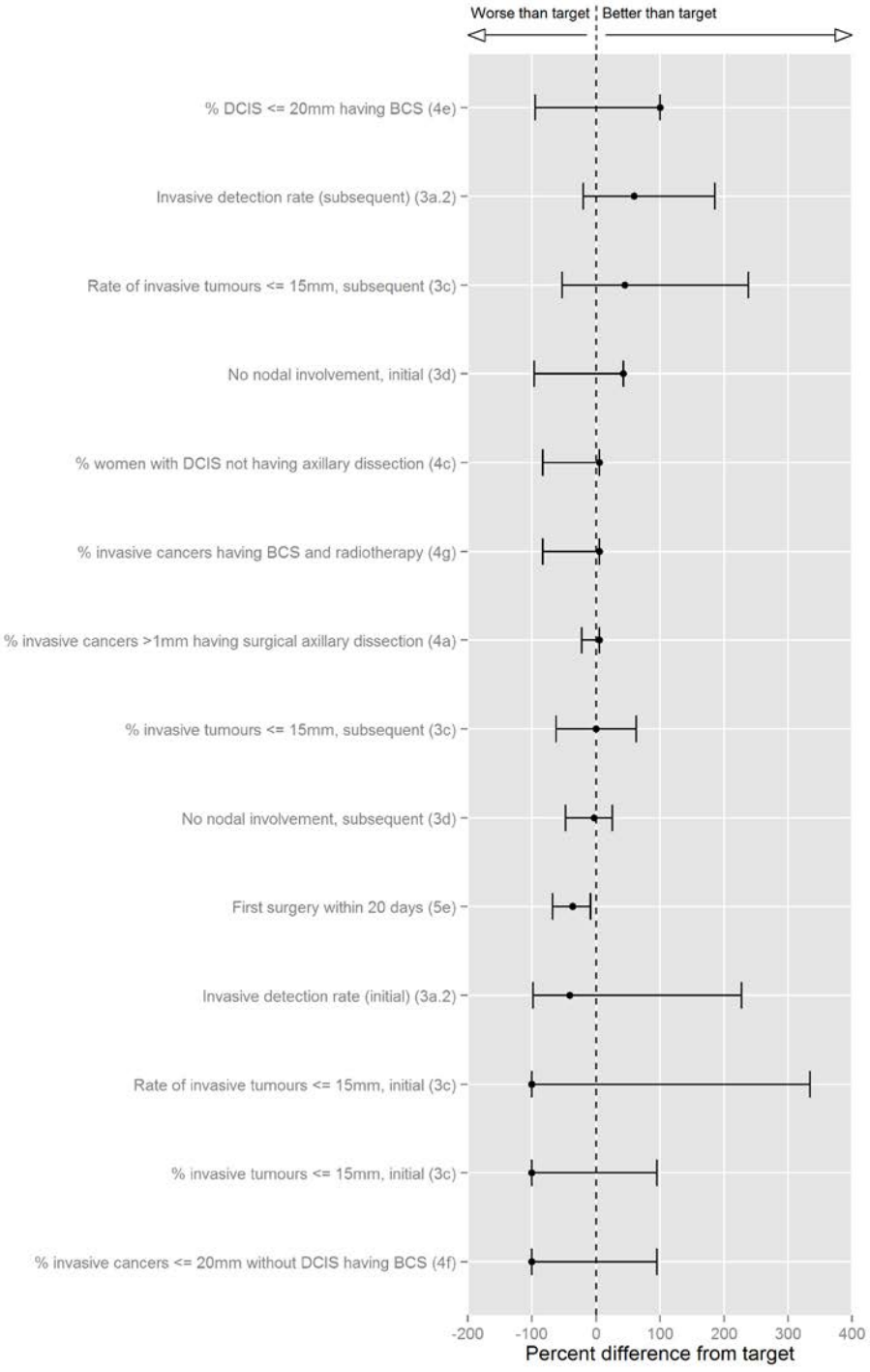
Figure 8: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2008–June 2013, BSSL



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 (67%) who received their first surgical treatment within 20 working days (target 90%). This meant 10 of 15 Māori women received timely surgery. Only three invasive cancers were detected from initial screens among Māori, one of which was 15mm or less in diameter. Only one Māori woman had invasive cancer ≤20mm without DCIS and she did not have BCS.

Figure 9: Indicators above and below target for Māori women aged 50 to 69 years, screened during July 2008–June 2013, BSHC



INTRODUCTION

This report is the third 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 2008 to 30 June 2013. This report on Treatment indicators accompanies the Screening and Assessment Māori Monitoring report which describes indicators for the two-year period 1 July 2012 to 30 June 2014.

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 possible[2].

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% higher[3]. 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 Maori 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] Ministry of Health. 2013. *BreastScreen Aotearoa National Policy and Quality Standards*. Wellington: Ministry of Health. Page 8.

BACKGROUND

BreastScreen Aotearoa[6]

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 auditing

[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. In August 2014 BreastScreen Health Care (BSHC) was replaced by BreastScreen Otago and Southland (BSOS). However, this report covers the period when BSHC was operating in the Otago and Southland areas and we report data for BSHC.

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 July 2014
BSOS	BreastScreen Otago and Southland	August 2014 to present

Figure 10: Map of BSA Lead Provider Regions

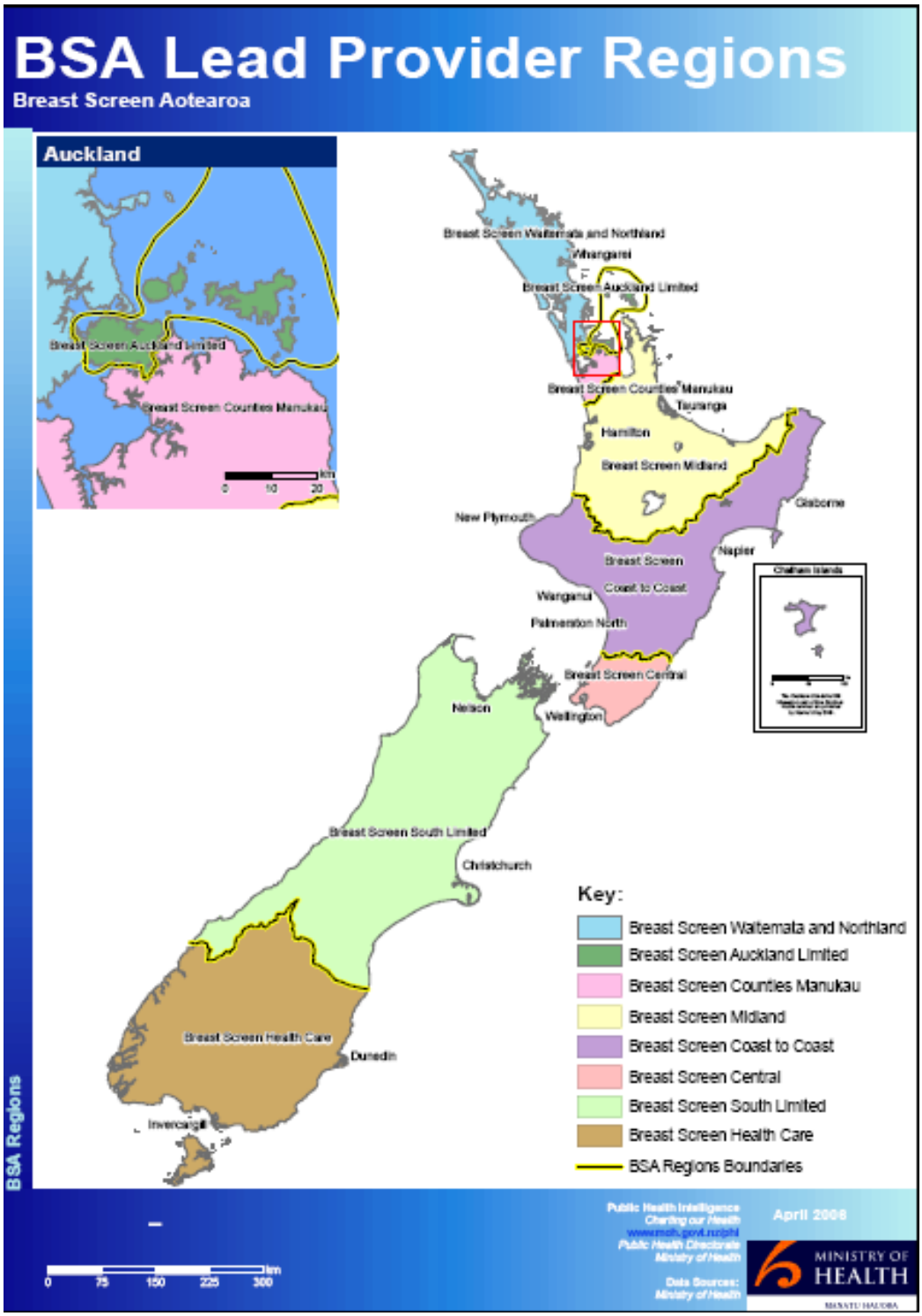
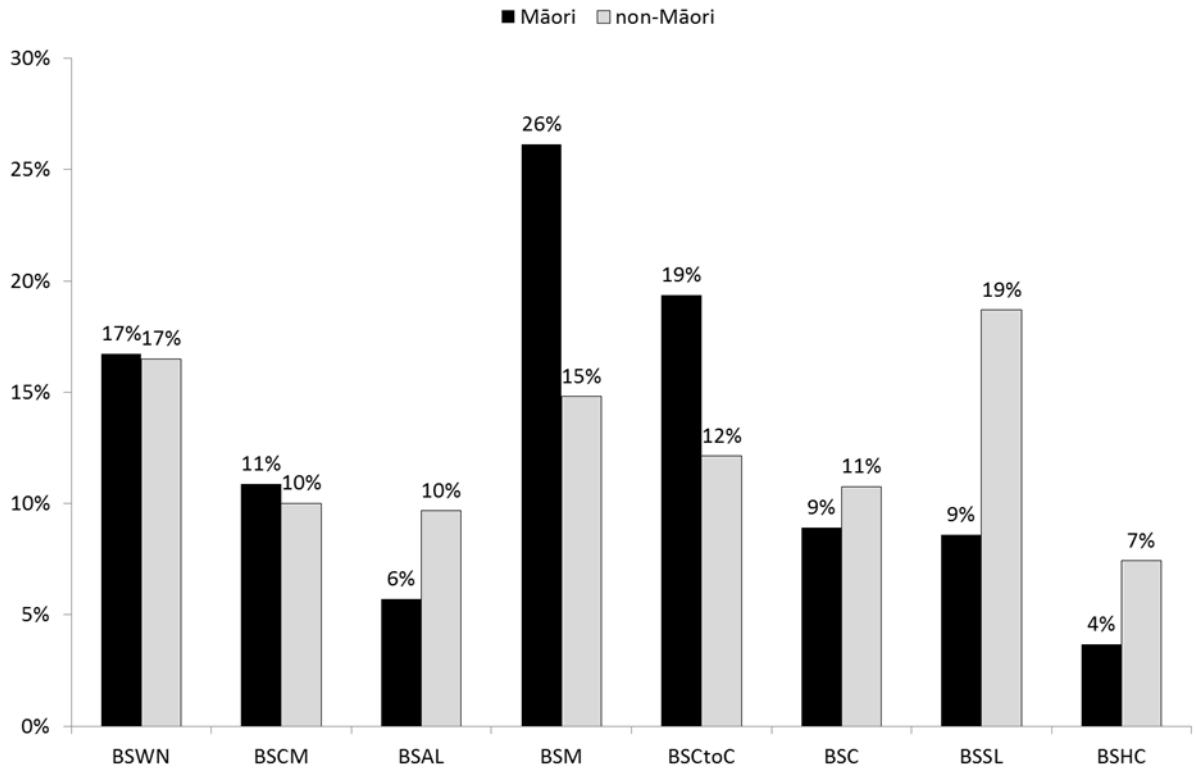


Figure 11: Distribution of Māori and non-Māori women aged 45 to 69 years by Lead Provider region 2013



Source: Statistics NZ Population estimates mid-year 2013, based on 2013 Census (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.

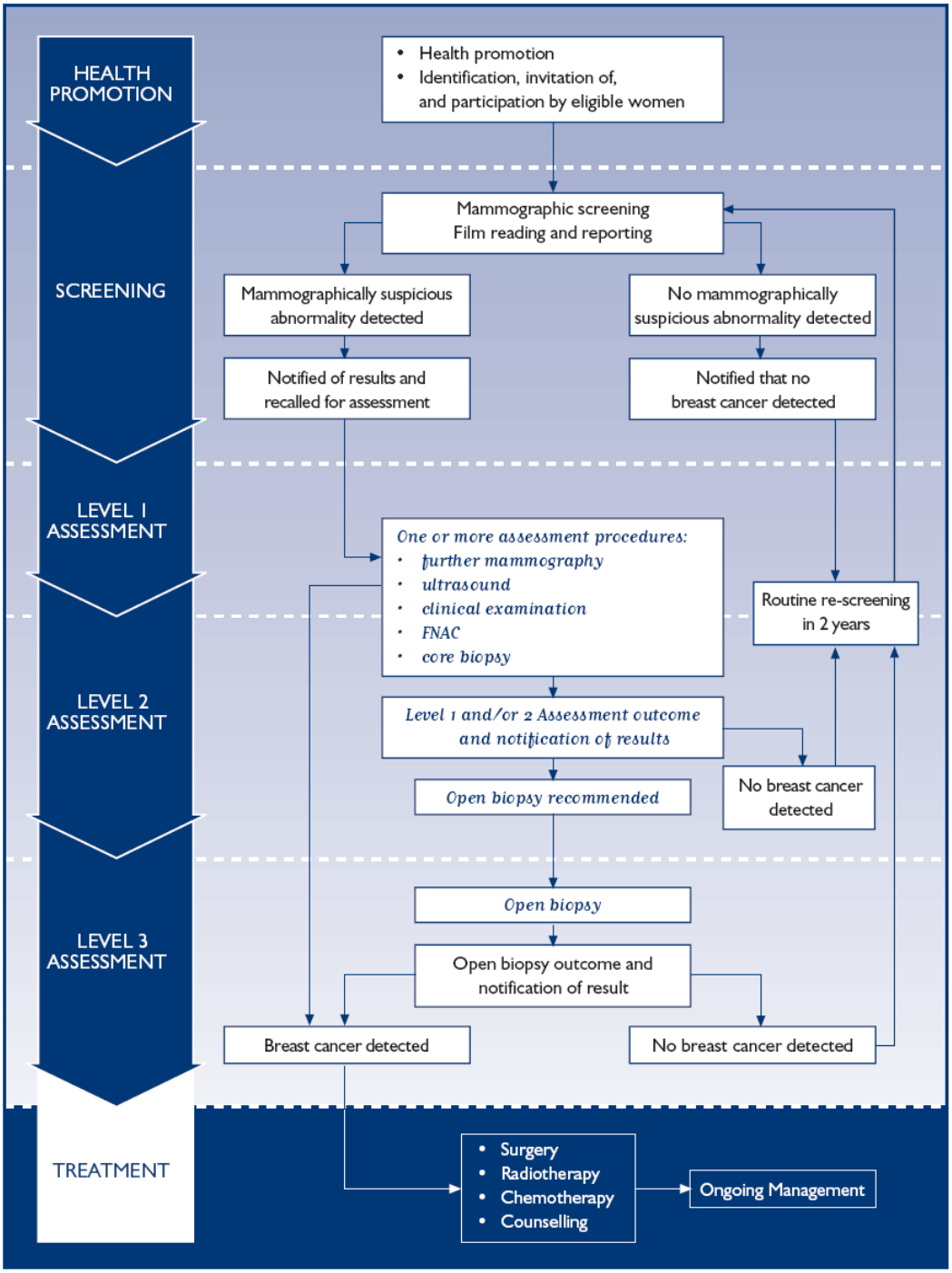
It is important to recognise the Lead Providers that serve large proportions of Māori women in the target age group, as the performance of BSA in these regions will have considerable impact on the Māori population as a whole. In 2013 the BSM region included 26% of the eligible Māori population, BSCtoC 19%, and BSWN 17%.

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. However, 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 pathway[7]

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.

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 2008 to 30 June 2013. 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 distribution[8]. 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.

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

where e.g. $Maori_{IND}$ is numerator for Māori (i.e. count of Māori women with indicator); and $Maori_{ALL}$ 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.

SECTION 3: EARLY DETECTION OF DCIS OR INVASIVE BREAST CANCER

3a.3t Treatment data completeness, 5 years

Description:

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

Target:

≥ 90%

Table 3a.3t: Treatment data completeness, 5 years (July 2008–June 2013)

	Māori								Non-Māori							
Lead Provider	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	32	18	37	32	12	25	7	198	107	107	123	96	120	214	70
% 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	96.9	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	99	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	119	104	30	159	101	67	57	16	758	447	414	628	502	498	889	321
% 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	99.8	100	99.4	100	100	99.7
% Radiotherapy Complete	100	100	100	100	100	100	100	100	100	99.6	99.8	100	99.4	99.8	100	100
% Chemotherapy Complete	100	100	100	100	100	100	100	100	100	100	99.8	100	99.6	99.8	100	100

Shaded boxes show confidence interval excludes target.

All LPs exceeded the target of ≥90% of treatment data completed 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 2008–June 2013), women aged 45–49 years

	Māori		Non-Māori		
Lead provider	Number with breast cancer	Rate per 1,000 screens (95% CI)	Number with breast cancer	Rate per 1,000 screens (95% CI)	Māori/Non-Māori ratio (95% CI)
Initial screens					
BSWN	19	6.1(3.7, 9.5)	77	3.6(2.8, 4.4)	*1.71(1.03, 2.82)*
BSCM	14	6.0(3.3, 10.0)	55	3.7(2.8, 4.9)	1.60(0.89, 2.88)
BSAL	9	9.0(4.1, 17.1)	37	2.7(1.9, 3.7)	*3.33(1.61, 6.88)*
BSM	24	6.4(4.1, 9.5)	48	3.0(2.2, 4.0)	*2.14(1.31, 3.49)*
BSCtoC	21	6.8(4.2, 10.4)	41	3.0(2.2, 4.1)	*2.24(1.32, 3.78)*
BSC	7	4.7(1.9, 9.6)	48	3.7(2.7, 4.8)	1.28(0.58, 2.83)
BSSL	9	5.1(2.3, 9.6)	70	2.9(2.2, 3.6)	1.77(0.89, 3.54)
BSHC	1	1.6(0.0, 8.9)	24	2.8(1.8, 4.2)	0.57(0.08, 4.21)
Total	**104**	**6.1(5.0, 7.3)**	**400**	**3.2(2.9, 3.5)**	***1.90(1.53, 2.36)***
Subsequent screens					
BSWN	14	5.2(2.9, 8.7)	52	2.5(1.8, 3.2)	*2.12(1.18, 3.82)*
BSCM	10	6.6(3.2, 12.1)	20	1.7(1.0, 2.6)	*3.92(1.84, 8.36)*
BSAL	5	5.4(1.8, 12.6)	31	2.5(1.7, 3.5)	2.20(0.86, 5.66)
BSM	7	3.0(1.2, 6.2)	37	2.7(1.9, 3.7)	1.12(0.50, 2.51)
BSCtoC	6	2.4(0.9, 5.2)	26	1.7(1.1, 2.5)	1.37(0.57, 3.34)
BSC	3	2.3(0.5, 6.7)	31	2.5(1.7, 3.5)	0.94(0.29, 3.07)
BSSL	13	6.2(3.3, 10.6)	76	2.2(1.7, 2.7)	*2.82(1.57, 5.07)*
BSHC	3	5.8(1.2, 17.0)	23	2.6(1.6, 3.9)	2.26(0.68, 7.50)
Total	**61**	**4.4(3.4, 5.6)**	**296**	**2.3(2.0, 2.5)**	***1.94(1.47, 2.55)***

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 90% more likely to be diagnosed with invasive breast cancer on their initial screen than non-Māori women during the 5-year period July 2009 to June 2014.

Similarly, among women having a subsequent screen, Māori women were 94% more likely than non-Māori women to have an invasive breast cancer detected.

Table 3a.2b: Detection rate of invasive breast cancer per 1,000 screens, 5 years (July 2008–June 2013), 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	24	14.1(9.0, 20.9)	101	7.5(6.1, 9.1)	*1.88(1.21, 2.93)*
BSCM	16	12.0(6.9, 19.4)	76	7.7(6.0, 9.6)	1.56(0.91, 2.67)
BSAL	6	10.4(3.8, 22.5)	67	7.1(5.5, 9.0)	1.46(0.64, 3.35)
BSM	33	11.4(7.9, 16.0)	62	6.3(4.9, 8.1)	*1.80(1.18, 2.73)*
BSCtoC	26	11.9(7.8, 17.4)	46	6.0(4.4, 8.0)	*1.98(1.22, 3.19)*
BSC	15	19.1(10.7, 31.3)	67	9.6(7.4, 12.2)	*1.99(1.14, 3.47)*
BSSL	2	4.6(0.6, 16.5)	39	6.4(4.5, 8.7)	0.72(0.18, 2.99)
BSHC	3	12.8(2.6, 36.9)	19	5.7(3.4, 8.8)	2.26(0.67, 7.57)
Total	**125**	**12.3(10.3, 14.7)**	**477**	**7.2(6.5, 7.8)**	***1.72(1.42, 2.09)***
Subsequent					
BSWN	68	5.6(4.4, 7.1)	468	4.2(3.8, 4.6)	*1.35(1.05, 1.74)*
BSCM	72	9.6(7.5, 12.0)	254	4.1(3.6, 4.6)	*2.35(1.81, 3.05)*
BSAL	16	4.4(2.5, 7.1)	215	3.7(3.2, 4.2)	1.19(0.72, 1.98)
BSM	96	7.0(5.7, 8.5)	435	4.3(3.9, 4.7)	*1.64(1.31, 2.04)*
BSCtoC	63	5.1(3.9, 6.5)	373	3.9(3.5, 4.3)	*1.32(1.01, 1.72)*
BSC	38	6.4(4.5, 8.7)	310	4.0(3.6, 4.5)	*1.58(1.13, 2.21)*
BSSL	45	6.0(4.4, 8.0)	664	3.9(3.6, 4.2)	*1.54(1.14, 2.08)*
BSHC	10	4.4(2.1, 8.1)	238	3.9(3.5, 4.5)	1.12(0.59, 2.10)
Total	**408**	**6.3(5.7, 6.9)**	**2,957**	**4.0(3.9, 4.1)**	***1.57(1.41, 1.74)***

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 cancers detected per 1000 screens was 72% higher for Māori than non-Māori women among those having an initial screen, and 57% higher among those having a subsequent screen.

The detection rates for Māori women were around twice the target values for initial and subsequent screens, while the non-Māori rates were 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 ≤15mm.

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 than or equal to 15mm, 5 years (July 2008–June 2013), women aged 45–49 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	14	19	73.7(48.8, 90.9)	46	75	61.3(49.4, 72.4)	1.20(0.87, 1.66)
BSCM	4	13	30.8(9.1, 61.4)	24	53	45.3(31.6, 59.6)	0.68(0.29, 1.62)
BSAL	4	9	44.4(13.7, 78.8)	18	36	50.0(32.9, 67.1)	0.89(0.40, 1.98)
BSM	15	24	62.5(40.6, 81.2)	26	45	57.8(42.2, 72.3)	1.08(0.73, 1.61)
BSCtoC	9	21	42.9(21.8, 66.0)	18	41	43.9(28.5, 60.3)	0.98(0.53, 1.78)
BSC	3	7	42.9(9.9, 81.6)	24	45	53.3(37.9, 68.3)	0.80(0.33, 1.97)
BSSL	5	9	55.6(21.2, 86.3)	34	68	50.0(37.6, 62.4)	1.11(0.59, 2.09)
BSHC	1	1	100.0(2.5, 100.0)	16	24	66.7(44.7, 84.4)	1.50(0.24, 1.80)#
Total	**55**	**103**	**53.4(43.3, 63.3)**	**206**	**387**	**53.2(48.1, 58.3)**	**1.00(0.82, 1.23)**
Subsequent screens							
BSWN	9	14	64.3(35.1, 87.2)	37	52	71.2(56.9, 82.9)	0.90(0.59, 1.38)
BSCM	5	10	50.0(18.7, 81.3)	11	20	55.0(31.5, 76.9)	0.91(0.44, 1.90)
BSAL	2	5	40.0(5.3, 85.3)	18	31	58.1(39.1, 75.5)	0.69(0.23, 2.10)
BSM	2	7	28.6(3.7, 71.0)	22	37	59.5(42.1, 75.2)	0.48(0.14, 1.60)
BSCtoC	1	6	16.7(0.4, 64.1)	14	26	53.8(33.4, 73.4)	0.31(0.05, 1.92)
BSC	3	3	100.0(29.2, 100.0)	15	31	48.4(30.2, 66.9)	2.07(0.79, 2.75)#
BSSL	8	13	61.5(31.6, 86.1)	42	73	57.5(45.4, 69.0)	1.07(0.67, 1.72)
BSHC	2	3	66.7(9.4, 99.2)	9	22	40.9(20.7, 63.6)	1.63(0.63, 4.19)
Total	**32**	**61**	**52.5(39.3, 65.4)**	**168**	**292**	**57.5(51.6, 63.3)**	**0.91(0.70, 1.18)**

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.

Just over half (53%) of the invasive cancers detected from initial screens were 15mm or less in diameter for both Māori and non-Māori women aged 45–49 years.

Similarly, just over half the subsequent screen detected cancers were 15mm or less for Māori (53%) and non-Māori (58%) women.

Table 3c.1b: Proportion of invasive cancers less than or equal to 15mm, 5 years (July 2008–June 2013), 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	24	62.5(40.6, 81.2)	65	101	64.4(54.2, 73.6)	0.97(0.69, 1.37)
BSCM	9	16	56.2(29.9, 80.2)	37	73	50.7(38.7, 62.6)	1.11(0.68, 1.81)
BSAL	1	6	16.7(0.4, 64.1)	44	67	65.7(53.1, 76.8)	0.25(0.04, 1.53)
BSM	19	33	57.6(39.2, 74.5)	32	61	52.5(39.3, 65.4)	1.10(0.75, 1.60)
BSCtoC	10	26	38.5(20.2, 59.4)	24	46	52.2(36.9, 67.1)	0.74(0.42, 1.29)
BSC	9	13	69.2(38.6, 90.9)	37	65	56.9(44.0, 69.2)	1.22(0.80, 1.85)
BSSL	1	2	50.0(1.3, 98.7)	19	39	48.7(32.4, 65.2)	1.03(0.25, 4.26)
BSHC	1	3	33.3(0.8, 90.6)	7	19	36.8(16.3, 61.6)	0.90(0.16, 4.98)
Total	**65**	**123**	**52.8(43.6, 61.9)**	**265**	**471**	**56.3(51.6, 60.8)**	**0.94(0.78, 1.13)**
Subsequent screens							
BSWN	44	68	64.7(52.2, 75.9)	320	468	68.4(63.9, 72.6)	0.95(0.79, 1.14)
BSCM	46	72	63.9(51.7, 74.9)	136	253	53.8(47.4, 60.0)	1.19(0.97, 1.46)
BSAL	8	16	50.0(24.7, 75.3)	125	211	59.2(52.3, 65.9)	0.84(0.51, 1.40)
BSM	57	96	59.4(48.9, 69.3)	292	431	67.7(63.1, 72.1)	0.88(0.73, 1.05)
BSCtoC	35	63	55.6(42.5, 68.1)	220	370	59.5(54.3, 64.5)	0.93(0.74, 1.18)
BSC	25	38	65.8(48.6, 80.4)	192	308	62.3(56.7, 67.8)	1.06(0.83, 1.35)
BSSL	35	45	77.8(62.9, 88.8)	484	662	73.1(69.6, 76.5)	1.06(0.90, 1.25)
BSHC	4	10	40.0(12.2, 73.8)	153	234	65.4(58.9, 71.5)	0.61(0.28, 1.31)
Total	**254**	**408**	**62.3(57.4, 67.0)**	**1,922**	**2,937**	**65.4(63.7, 67.2)**	**0.95(0.88, 1.03)**

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.

Among women aged 50–69 years, just over half the invasive cancers detected from initial screens were 15mm or less in diameter for both Māori (53%) and non-Māori (56%) women, meeting the target of >50%.

The proportions of small tumours detected from subsequent screens were slightly higher at 62% for Māori women and 65% for non-Māori women.

There were no significant differences between these proportions for Māori and non-Māori women.

Table 3c.2a: Rate of invasive cancers less than or equal to 15mm, per 10,000 screens, 5 years (July 2008–June 2013), 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	14	44.7(24.5, 74.9)	46	21.2(15.6, 28.3)	*2.10(1.16, 3.82)*
BSCM	4	17.1(4.7, 43.7)	24	16.3(10.4, 24.2)	1.05(0.36, 3.02)
BSAL	4	40.2(11.0, 102.5)	18	13.2(7.8, 20.9)	*3.04(1.03, 8.97)*
BSM	15	40.1(22.4, 66.0)	26	16.2(10.6, 23.8)	*2.47(1.31, 4.66)*
BSCtoC	9	29.3(13.4, 55.5)	18	13.4(7.9, 21.2)	2.19(0.98, 4.86)
BSC	3	20.1(4.1, 58.6)	24	18.3(11.7, 27.2)	1.10(0.33, 3.65)
BSSL	5	28.3(9.2, 65.8)	34	14.0(9.7, 19.5)	2.03(0.79, 5.17)
BSHC	1	16.1(0.4, 89.4)	16	18.8(10.8, 30.5)	0.86(0.11, 6.44)
Total	**55**	**32.0(24.1, 41.7)**	**206**	**16.4(14.3, 18.8)**	***1.95(1.45, 2.63)***
Subsequent screens					
BSWN	9	33.5(15.3, 63.5)	37	17.5(12.3, 24.1)	1.91(0.92, 3.96)
BSCM	5	32.9(10.7, 76.6)	11	9.2(4.6, 16.5)	*3.56(1.24, 10.24)*
BSAL	2	21.7(2.6, 78.3)	18	14.3(8.5, 22.6)	1.52(0.35, 6.54)
BSM	2	8.6(1.0, 30.9)	22	15.9(10.0, 24.1)	0.54(0.13, 2.29)
BSCtoC	1	4.0(0.1, 22.2)	14	9.4(5.1, 15.7)	0.43(0.06, 3.23)
BSC	3	23.1(4.8, 67.4)	15	11.9(6.7, 19.6)	1.94(0.56, 6.70)
BSSL	8	38.1(16.5, 74.9)	42	12.1(8.7, 16.4)	*3.14(1.48, 6.68)*
BSHC	2	38.9(4.7, 139.8)	9	10.1(4.6, 19.2)	3.85(0.83, 17.78)
Total	**32**	**23.1(15.8, 32.5)**	**168**	**12.9(11.0, 15.0)**	***1.79(1.23, 2.61)***

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.

For women aged 45–49 years having an initial screen, the rate of screen-detected cancers 15 mm or less was nearly twice as high for Māori as for non-Māori women.

Among women who had a subsequent screen the rate was 80% higher for Māori than for non-Māori women.

Table 3c.2b: Rate of invasive cancers less than or equal to 15mm, per 10,000 screens, 5 years (July 2008–June 2013), 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	88.0(49.3, 144.8)	65	48.2(37.2, 61.4)	*1.83(1.04, 3.19)*
BSCM	9	67.4(30.8, 127.5)	37	37.3(26.3, 51.4)	1.81(0.87, 3.73)
BSAL	1	17.3(0.4, 96.2)	44	46.8(34.0, 62.8)	0.37(0.05, 2.68)
BSM	19	65.7(39.6, 102.3)	32	32.8(22.4, 46.2)	*2.00(1.14, 3.53)*
BSCtoC	10	45.7(22.0, 84.0)	24	31.4(20.1, 46.7)	1.46(0.70, 3.04)
BSC	9	114.5(52.5, 216.2)	37	53.0(37.3, 72.9)	*2.16(1.05, 4.46)*
BSSL	1	23.0(0.6, 127.4)	19	30.9(18.6, 48.3)	0.74(0.10, 5.54)
BSHC	1	42.6(1.1, 234.8)	7	20.8(8.4, 42.9)	2.04(0.25, 16.53)
Total	**65**	**64.0(49.4, 81.5)**	**265**	**39.7(35.1, 44.8)**	***1.61(1.23, 2.11)***
Subsequent screens					
BSWN	44	36.3(26.4, 48.7)	320	28.4(25.4, 31.7)	1.28(0.93, 1.75)
BSCM	46	61.1(44.8, 81.4)	136	21.8(18.3, 25.8)	*2.80(2.01, 3.91)*
BSAL	8	22.0(9.5, 43.3)	125	21.4(17.9, 25.5)	1.03(0.50, 2.09)
BSM	57	41.6(31.5, 53.8)	292	28.7(25.5, 32.2)	*1.45(1.09, 1.92)*
BSCtoC	35	28.3(19.7, 39.3)	220	22.8(19.9, 26.0)	1.24(0.87, 1.77)
BSC	25	42.0(27.2, 61.9)	192	25.0(21.6, 28.8)	*1.68(1.11, 2.54)*
BSSL	35	46.6(32.5, 64.7)	484	28.3(25.8, 30.9)	*1.65(1.17, 2.32)*
BSHC	4	17.6(4.8, 45.0)	153	25.3(21.5, 29.6)	0.70(0.26, 1.88)
Total	**254**	**39.0(34.4, 44.1)**	**1,922**	**26.0(24.8, 27.2)**	***1.50(1.32, 1.71)***

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 rates of screen-detected cancers 15mm or less for Māori women aged 50–69 years were around twice the target values for initial and for subsequent screens.

The small tumour detection rate for Māori women was 60% higher than the rate for non-Māori women having an initial screen, and 50% higher than for non-Māori women having a subsequent screen.

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 2008–June 2013), 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	16	19	84.2(60.4, 96.6)	57	77	74.0(62.8, 83.4)	1.14(0.90, 1.44)
BSCM	8	14	57.1(28.9, 82.3)	33	55	60.0(45.9, 73.0)	0.95(0.58, 1.57)
BSAL	7	9	77.8(40.0, 97.2)	24	37	64.9(47.5, 79.8)	1.20(0.79, 1.83)
BSM	17	24	70.8(48.9, 87.4)	36	48	75.0(60.4, 86.4)	0.94(0.70, 1.28)
BSCtoC	13	21	61.9(38.4, 81.9)	29	41	70.7(54.5, 83.9)	0.88(0.59, 1.29)
BSC	5	7	71.4(29.0, 96.3)	31	48	64.6(49.5, 77.8)	1.11(0.66, 1.85)
BSSL	5	9	55.6(21.2, 86.3)	49	70	70.0(57.9, 80.4)	0.79(0.43, 1.45)
BSHC	1	1	100.0(2.5, 100.0)	15	24	62.5(40.6, 81.2)	1.60(0.25, 1.96)#
Total	**72**	**104**	**69.2(59.4, 77.9)**	**274**	**400**	**68.5(63.7, 73.0)**	**1.01(0.87, 1.17)**
Subsequent screens							
BSWN	8	14	57.1(28.9, 82.3)	34	52	65.4(50.9, 78.0)	0.87(0.53, 1.43)
BSCM	6	10	60.0(26.2, 87.8)	15	20	75.0(50.9, 91.3)	0.80(0.45, 1.41)
BSAL	4	5	80.0(28.4, 99.5)	25	31	80.6(62.5, 92.5)	0.99(0.62, 1.59)
BSM	3	7	42.9(9.9, 81.6)	24	37	64.9(47.5, 79.8)	0.66(0.27, 1.61)
BSCtoC	4	6	66.7(22.3, 95.7)	17	26	65.4(44.3, 82.8)	1.02(0.54, 1.92)
BSC	3	3	100.0(29.2, 100.0)	17	31	54.8(36.0, 72.7)	1.82(0.70, 2.34)#
BSSL	10	13	76.9(46.2, 95.0)	55	76	72.4(60.9, 82.0)	1.06(0.77, 1.48)
BSHC	2	3	66.7(9.4, 99.2)	15	23	65.2(42.7, 83.6)	1.02(0.44, 2.40)
Total	**40**	**61**	**65.6(52.3, 77.3)**	**202**	**296**	**68.2(62.6, 73.5)**	**0.96(0.79, 1.17)**

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 and 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 2008–June 2013), 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	19	24	79.2(57.8, 92.9)	77	101	76.2(66.7, 84.1)	1.04(0.82, 1.31)
BSCM	12	16	75.0(47.6, 92.7)	53	76	69.7(58.1, 79.8)	1.08(0.78, 1.48)
BSAL	4	6	66.7(22.3, 95.7)	54	67	80.6(69.1, 89.2)	0.83(0.46, 1.47)
BSM	22	33	66.7(48.2, 82.0)	44	62	71.0(58.1, 81.8)	0.94(0.70, 1.25)
BSCtoC	18	26	69.2(48.2, 85.7)	29	46	63.0(47.5, 76.8)	1.10(0.78, 1.54)
BSC	11	15	73.3(44.9, 92.2)	42	67	62.7(50.0, 74.2)	1.17(0.82, 1.67)
BSSL	2	2	100.0(15.8, 100.0)	25	39	64.1(47.2, 78.8)	1.56(0.46, 1.82)#
BSHC	3	3	100.0(29.2, 100.0)	13	19	68.4(43.4, 87.4)	1.46(0.58, 1.92)#
Total	**91**	**125**	**72.8(64.1, 80.4)**	**337**	**477**	**70.6(66.3, 74.7)**	**1.03(0.91, 1.16)**
Subsequent screens							
BSWN	55	68	80.9(69.5, 89.4)	369	468	78.8(74.9, 82.5)	1.03(0.91, 1.16)
BSCM	55	72	76.4(64.9, 85.6)	191	254	75.2(69.4, 80.4)	1.02(0.88, 1.18)
BSAL	13	16	81.2(54.4, 96.0)	166	215	77.2(71.0, 82.6)	1.05(0.82, 1.35)
BSM	68	96	70.8(60.7, 79.7)	344	435	79.1(75.0, 82.8)	0.90(0.78, 1.03)
BSCtoC	48	63	76.2(63.8, 86.0)	286	373	76.7(72.0, 80.9)	0.99(0.86, 1.15)
BSC	29	38	76.3(59.8, 88.6)	232	310	74.8(69.6, 79.6)	1.02(0.84, 1.23)
BSSL	35	45	77.8(62.9, 88.8)	534	664	80.4(77.2, 83.4)	0.97(0.82, 1.14)
BSHC	8	10	80.0(44.4, 97.5)	181	238	76.1(70.1, 81.3)	1.05(0.77, 1.45)
Total	**311**	**408**	**76.2(71.8, 80.3)**	**2,303**	**2,957**	**77.9(76.3, 79.4)**	**0.98(0.92, 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.

The targets for proportions of invasive cancers detected by initial (>70%) or subsequent screens (>75%) that had no nodal involvement were met for Māori and non-Māori women overall. There were no differences between these percentages for Māori and non-Māori women.

3e Ductal carcinoma in situ

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 2008–June 2013)

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	4	38	10.5(2.9, 24.8)	61	195	31.3(24.8, 38.3)	*0.34(0.13, 0.87)*
BSCM	7	31	22.6(9.6, 41.1)	25	101	24.8(16.7, 34.3)	0.91(0.44, 1.90)
BSAL	3	18	16.7(3.6, 41.4)	35	107	32.7(24.0, 42.5)	0.51(0.18, 1.48)
BSM	5	37	13.5(4.5, 28.8)	38	123	30.9(22.9, 39.9)	0.44(0.19, 1.03)
BSCtoC	4	32	12.5(3.5, 29.0)	29	96	30.2(21.3, 40.4)	0.41(0.16, 1.09)
BSC	1	12	8.3(0.2, 38.5)	40	119	33.6(25.2, 42.8)	0.25(0.04, 1.65)
BSSL	3	25	12.0(2.5, 31.2)	65	212	30.7(24.5, 37.3)	0.39(0.13, 1.15)
BSHC	3	7	42.9(9.9, 81.6)	21	70	30.0(19.6, 42.1)	1.43(0.57, 3.61)
Total	**30**	**200**	**15.0(10.4, 20.7)**	**314**	**1,023**	**30.7(27.9, 33.6)**	***0.49(0.35, 0.69)***
50–69 years							
BSWN	21	117	17.9(11.5, 26.1)	177	755	23.4(20.5, 26.6)	0.77(0.51, 1.15)
BSCM	14	102	13.7(7.7, 22.0)	103	438	23.5(19.6, 27.8)	*0.58(0.35, 0.98)*
BSAL	5	30	16.7(5.6, 34.7)	98	410	23.9(19.9, 28.3)	0.70(0.31, 1.58)
BSM	24	157	15.3(10.0, 21.9)	125	625	20.0(16.9, 23.4)	0.76(0.51, 1.14)
BSCtoC	11	100	11.0(5.6, 18.8)	81	501	16.2(13.1, 19.7)	0.68(0.38, 1.23)
BSC	12	66	18.2(9.8, 29.6)	115	494	23.3(19.6, 27.3)	0.78(0.46, 1.34)
BSSL	10	57	17.5(8.7, 29.9)	183	888	20.6(18.0, 23.4)	0.85(0.48, 1.52)
BSHC	2	16	12.5(1.6, 38.3)	59	321	18.4(14.3, 23.1)	0.68(0.18, 2.54)
Total	**99**	**645**	**15.3(12.7, 18.4)**	**941**	**4,432**	**21.2(20.0, 22.5)**	***0.72(0.60, 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 that were DCIS were significantly lower for Māori than for non-Māori women in both age groups.

In women aged 45–49 years, 15% of breast cancers detected in Māori women were DCIS compared to 31% of cancers detected in non-Māori women.

In women aged 50–69 years, the proportions of cancers that were DCIS were within the target range of 10%-25% for both Māori (15% overall) and non-Māori (21% overall).

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 2008–June 2013)

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	33	33	100.0(89.4, 100.0)	125	125	100.0(97.1, 100.0)	1.00(0.90, 1.02) #
BSCM	24	24	100.0(85.8, 100.0)	72	73	98.6(92.6, 100.0)	1.01(0.88, 1.06) #
BSAL	13	14	92.9(66.1, 99.8)	67	67	100.0(94.6, 100.0)	0.93(0.69, 1.00) #
BSM	31	31	100.0(88.8, 100.0)	84	84	100.0(95.7, 100.0)	1.00(0.90, 1.03) #
BSCtoC	26	26	100.0(86.8, 100.0)	65	65	100.0(94.5, 100.0)	1.00(0.88, 1.04) #
BSC	10	10	100.0(69.2, 100.0)	78	78	100.0(95.4, 100.0)	1.00(0.72, 1.02) #
BSSL	22	22	100.0(84.6, 100.0)	144	144	100.0(97.5, 100.0)	1.00(0.86, 1.01) #
BSHC	4	4	100.0(39.8, 100.0)	47	47	100.0(92.5, 100.0)	1.00(0.49, 1.03) #
Total	**163**	**164**	**99.4(96.6, 100.0)**	**682**	**683**	**99.9(99.2, 100.0)**	**1.00(0.98, 1.01)**
50–69 years							
BSWN	89	92	96.7(90.8, 99.3)	550	564	97.5(95.9, 98.6)	0.99(0.95, 1.03)
BSCM	86	88	97.7(92.0, 99.7)	318	324	98.1(96.0, 99.3)	1.00(0.96, 1.03)
BSAL	22	22	100.0(84.6, 100.0)	279	280	99.6(98.0, 100.0)	1.00(0.86, 1.01)#
BSM	126	127	99.2(95.7, 100.0)	487	492	99.0(97.6, 99.7)	1.00(0.98, 1.02)
BSCtoC	84	86	97.7(91.9, 99.7)	409	410	99.8(98.6, 100.0)	0.98(0.95, 1.01)
BSC	51	53	96.2(87.0, 99.5)	364	370	98.4(96.5, 99.4)	0.98(0.93, 1.03)
BSSL	47	47	100.0(92.5, 100.0)	683	700	97.6(96.1, 98.6)	1.02(0.95, 1.03)#
BSHC	13	13	100.0(75.3, 100.0)	253	253	100.0(98.6, 100.0)	1.00(0.77, 1.00)#
Total	**518**	**528**	**98.1(96.5, 99.1)**	**3343**	**3393**	**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 in diameter had a surgical axillary procedure. The target of 95% was met for Māori and non-Māori women in each LP.

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 2008–June 2013)

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	29	34	85.3(68.9, 95.0)	112	131	85.5(78.3, 91.0)	1.00(0.85, 1.17)
BSCM	22	24	91.7(73.0, 99.0)	65	74	87.8(78.2, 94.3)	1.04(0.90, 1.21)
BSAL	12	15	80.0(51.9, 95.7)	67	72	93.1(84.5, 97.7)	0.86(0.66, 1.12)
BSM	25	31	80.6(62.5, 92.5)	69	85	81.2(71.2, 88.8)	0.99(0.81, 1.21)
BSCtoC	20	27	74.1(53.7, 88.9)	56	67	83.6(72.5, 91.5)	0.89(0.69, 1.13)
BSC	9	10	90.0(55.5, 99.7)	64	79	81.0(70.6, 89.0)	1.11(0.88, 1.40)
BSSL	17	22	77.3(54.6, 92.2)	119	145	82.1(74.8, 87.9)	0.94(0.74, 1.20)
BSHC	4	4	100.0(39.8, 100.0)	42	48	87.5(74.8, 95.3)	1.14(0.55, 1.24) #
Total	**138**	**167**	**82.6(76.0, 88.1)**	**594**	**701**	**84.7(81.9, 87.3)**	**0.98(0.90, 1.05)**
50–69 years							
BSWN	82	94	87.2(78.8, 93.2)	492	569	86.5(83.4, 89.2)	1.01(0.93, 1.10)
BSCM	80	88	90.9(82.9, 96.0)	303	330	91.8(88.3, 94.5)	0.99(0.92, 1.07)
BSAL	20	23	87.0(66.4, 97.2)	261	303	86.1(81.7, 89.8)	1.01(0.86, 1.19)
BSM	113	131	86.3(79.2, 91.6)	423	498	84.9(81.5, 88.0)	1.02(0.94, 1.10)
BSCtoC	68	88	77.3(67.1, 85.5)	346	419	82.6(78.6, 86.1)	0.94(0.83, 1.06)
BSC	48	53	90.6(79.3, 96.9)	320	375	85.3(81.3, 88.8)	1.06(0.96, 1.17)
BSSL	39	47	83.0(69.2, 92.4)	622	703	88.5(85.9, 90.7)	0.94(0.82, 1.07)
BSHC	12	13	92.3(64.0, 99.8)	211	261	80.8(75.5, 85.4)	1.14(0.97, 1.35)
Total	**462**	**537**	**86.0(82.8, 88.9)**	**2978**	**3458**	**86.1(84.9, 87.3)**	**1.00(0.96, 1.04)**

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

There is no target for this indicator.

Over 80% of Māori and non-Māori women in each age group had a single excisional breast treatment procedure. There were no differences between Māori and 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 2008–June 2013)

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	3	3	100.0(29.2, 100.0)	43	43	100.0(91.8, 100.0)	1.00(0.41, 1.03)#
BSCM	5	5	100.0(47.8, 100.0)	14	14	100.0(76.8, 100.0)	1.00(0.57, 1.18)#
BSAL	2	2	100.0(15.8, 100.0)	25	25	100.0(86.3, 100.0)	1.00(0.30, 1.06)#
BSM	4	4	100.0(39.8, 100.0)	29	29	100.0(88.1, 100.0)	1.00(0.49, 1.06)#
BSCtoC	3	3	100.0(29.2, 100.0)	24	24	100.0(85.8, 100.0)	1.00(0.41, 1.07)#
BSC	0	0	--	29	29	100.0(88.1, 100.0)	--
BSSL	1	2	50.0(1.3, 98.7)	45	45	100.0(92.1, 100.0)	0.50(0.10, 0.93)#
BSHC	2	2	100.0(15.8, 100.0)	16	16	100.0(79.4, 100.0)	1.00(0.31, 1.11)#
Total	**20**	**21**	**95.2(76.2, 99.9)**	**225**	**225**	**100.0(98.4, 100.0)**	**0.95(0.78, 0.99)#**
50–69 years							
BSWN	19	20	95.0(75.1, 99.9)	147	149	98.7(95.2, 99.8)	0.96(0.87, 1.07)
BSCM	11	11	100.0(71.5, 100.0)	91	91	100.0(96.0, 100.0)	1.00(0.74, 1.02)#
BSAL	4	4	100.0(39.8, 100.0)	80	81	98.8(93.3, 100.0)	1.01(0.49, 1.03)#
BSM	20	23	87.0(66.4, 97.2)	112	112	100.0(96.8, 100.0)	0.87(0.68, 0.96)#
BSCtoC	7	7	100.0(59.0, 100.0)	74	75	98.7(92.8, 100.0)	1.01(0.65, 1.04)#
BSC	12	12	100.0(73.5, 100.0)	94	94	100.0(96.2, 100.0)	1.00(0.76, 1.02)#
BSSL	9	9	100.0(66.4, 100.0)	160	161	99.4(96.6, 100.0)	1.01(0.70, 1.01)#
BSHC	2	2	100.0(15.8, 100.0)	55	55	100.0(93.5, 100.0)	1.00(0.30, 1.01)#
Total	**84**	**88**	**95.5(88.8, 98.7)**	**813**	**818**	**99.4(98.6, 99.8)**	**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 having no axillary dissection was met for Māori (96%) and non-Māori women (99%) aged 50–69 years.

Among women aged 45–49 years, only one Māori woman with DCIS had an axillary dissection and no non-Māori women.

4e Proportion of DCIS having breast conserving surgery

Definition:

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

Target for women aged 50–69 years:

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

Table 4e: Proportion of DCIS ≤ 20mm having BCS, 5 years (July 2008–June 2013)

	Māori			Non-Māori			
Lead provider	No. of DCIS ≤20mm having BCS	No. of DCIS ≤ 20mm who are operated on	% of DCIS ≤20mm who have BCS (95% CI)	No. of DCIS ≤20mm having BCS	No. of DCIS <= 20mm who are operated on	% of DCIS ≤20mm who have BCS (95% CI)	Māori/Non-Māori ratio (95% CI)
45–49 years							
BSWN	1	1	100.0(2.5, 100.0)	29	30	96.7(82.8, 99.9)	1.03(0.17, 1.08)#
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	--	7	7	100.0(59.0, 100.0)	--
BSM	4	4	100.0(39.8, 100.0)	22	24	91.7(73.0, 99.0)	1.09(0.54, 1.24)#
BSCtoC	2	2	100.0(15.8, 100.0)	15	17	88.2(63.6, 98.5)	1.13(0.34, 1.34)#
BSC	0	0	--	22	25	88.0(68.8, 97.5)	--
BSSL	1	1	100.0(2.5, 100.0)	34	36	94.4(81.3, 99.3)	1.06(0.17, 1.10)#
BSHC	0	1	0.0(0.0, 97.5)	6	11	54.5(23.4, 83.3)	0.00(0.00, 9.34)
Total	**10**	**13**	**76.9(46.2, 95.0)**	**144**	**159**	**90.6(84.9, 94.6)**	**0.85(0.63, 1.15)**
50–69 years							
BSWN	13	14	92.9(66.1, 99.8)	90	103	87.4(79.4, 93.1)	1.06(0.90, 1.25)
BSCM	4	4	100.0(39.8, 100.0)	44	54	81.5(68.6, 90.7)	1.23(0.59, 1.34) #
BSAL	0	0	--	30	34	88.2(72.5, 96.7)	--
BSM	10	12	83.3(51.6, 97.9)	66	75	88.0(78.4, 94.4)	0.95(0.73, 1.24)
BSCtoC	3	5	60.0(14.7, 94.7)	33	47	70.2(55.1, 82.7)	0.85(0.41, 1.79)
BSC	4	5	80.0(28.4, 99.5)	59	67	88.1(77.8, 94.7)	0.91(0.58, 1.42)
BSSL	4	5	80.0(28.4, 99.5)	98	106	92.5(85.7, 96.7)	0.87(0.56, 1.35)
BSHC	1	1	100.0(2.5, 100.0)	33	41	80.5(65.1, 91.2)	1.24(0.20, 1.34) #
Total	**39**	**46**	**84.8(71.1, 93.7)**	**453**	**527**	**86.0(82.7, 88.8)**	**0.99(0.87, 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 ≤20mm diameter having breast conserving surgery (BCS) was met for Māori (85%) and non-Māori (86%) women aged 50–69 years.

Among women aged 45–49 years, 77% of Māori and 91% 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 ≤20mm who have breast conserving surgery (BCS).

Target for women aged 50–69 years:

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

Table 4f: Proportion of invasive cancers ≤20mm, without DCIS, having BCS, 5 years (July 2008–June 2013)

Lead provider	Māori			Non-Māori			Māori/Non-Māori ratio (95% CI)
	No. of invasive cancers without DCIS ≤20mm having BCS	No. of invasive cancers without DCIS ≤20mm who are operated on	% of invasive cancers without DCIS ≤20mm who have BCS (95% CI)	No. of invasive cancers, without DCIS ≤20mm having BCS	No. of invasive cancers without DCIS ≤20mm who are operated on	% of invasive cancers, without DCIS ≤20mm who have BCS (95% CI)	
45–49 years							
BSWN	5	6	83.3(35.9, 99.6)	8	9	88.9(51.8, 99.7)	0.94(0.61, 1.44)
BSCM	1	1	100.0(2.5, 100.0)	3	4	75.0(19.4, 99.4)	1.33(0.23, 2.66) #
BSAL	2	3	66.7(9.4, 99.2)	4	5	80.0(28.4, 99.5)	0.83(0.33, 2.08)
BSM	4	4	100.0(39.8, 100.0)	6	7	85.7(42.1, 99.6)	1.17(0.59, 1.85) #
BSCtoC	3	3	100.0(29.2, 100.0)	2	2	100.0(15.8, 100.0)	1.00(0.49, 2.83) #
BSC	1	1	100.0(2.5, 100.0)	9	9	100.0(66.4, 100.0)	1.00(0.17, 1.21) #
BSSL	2	2	100.0(15.8, 100.0)	6	8	75.0(34.9, 96.8)	1.33(0.40, 2.08) #
BSHC	0	0	--	5	7	71.4(29.0, 96.3)	--
Total	**18**	**20**	**90.0(68.3, 98.8)**	**43**	**51**	**84.3(71.4, 93.0)**	**1.07(0.88, 1.29)**
50–69 years							
BSWN	17	21	81.0(58.1, 94.6)	87	108	80.6(71.8, 87.5)	1.00(0.80, 1.26)
BSCM	8	13	61.5(31.6, 86.1)	32	41	78.0(62.4, 89.4)	0.79(0.50, 1.25)
BSAL	4	5	80.0(28.4, 99.5)	61	68	89.7(79.9, 95.8)	0.89(0.57, 1.39)
BSM	17	19	89.5(66.9, 98.7)	88	101	87.1(79.0, 93.0)	1.03(0.87, 1.22)
BSCtoC	14	20	70.0(45.7, 88.1)	59	75	78.7(67.7, 87.3)	0.89(0.65, 1.21)
BSC	8	10	80.0(44.4, 97.5)	48	56	85.7(73.8, 93.6)	0.93(0.67, 1.30)
BSSL	7	8	87.5(47.3, 99.7)	67	86	77.9(67.7, 86.1)	1.12(0.84, 1.49)
BSHC	0	1	0.0(0.0, 97.5)	25	38	65.8(48.6, 80.4)	0.00(0.00, 6.04)
Total	**75**	**97**	**77.3(67.7, 85.2)**	**467**	**573**	**81.5(78.1, 84.6)**	**0.95(0.85, 1.06)**

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 women diagnosed with invasive cancer with a diameter≤20mm (and no DCIS component) treated by BCS was met for Māori (77%) and non-Māori (82%) women aged 50–69 years.

Among women aged 45–49 years, 90% of Māori and 84% of non-Māori women had BCS.

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 2008–June 2013)

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	23	25	92.0(74.0, 99.0)	68	70	97.1(90.1, 99.7)	0.95(0.84, 1.07)
BSCM	10	11	90.9(58.7, 99.8)	34	36	94.4(81.3, 99.3)	0.96(0.79, 1.18)
BSAL	7	9	77.8(40.0, 97.2)	32	38	84.2(68.7, 94.0)	0.92(0.63, 1.34)
BSM	21	24	87.5(67.6, 97.3)	62	68	91.2(81.8, 96.7)	0.96(0.81, 1.14)
BSCtoC	9	9	100.0(66.4, 100.0)	39	41	95.1(83.5, 99.4)	1.05(0.74, 1.14) #
BSC	8	8	100.0(63.1, 100.0)	42	42	100.0(91.6, 100.0)	1.00(0.68, 1.05) #
BSSL	16	16	100.0(79.4, 100.0)	64	67	95.5(87.5, 99.1)	1.05(0.85, 1.11) #
BSHC	3	3	100.0(29.2, 100.0)	26	27	96.3(81.0, 99.9)	1.04(0.43, 1.13) #
Total	**97**	**105**	**92.4(85.5, 96.7)**	**367**	**389**	**94.3(91.6, 96.4)**	**0.98(0.92, 1.04)**
50–69 years							
BSWN	57	62	91.9(82.2, 97.3)	369	396	93.2(90.2, 95.5)	0.99(0.91, 1.07)
BSCM	49	52	94.2(84.1, 98.8)	167	180	92.8(88.0, 96.1)	1.02(0.94, 1.10)
BSAL	14	16	87.5(61.7, 98.4)	176	217	81.1(75.3, 86.1)	1.08(0.89, 1.31)
BSM	87	96	90.6(82.9, 95.6)	352	388	90.7(87.4, 93.4)	1.00(0.93, 1.07)
BSCtoC	49	51	96.1(86.5, 99.5)	232	247	93.9(90.2, 96.6)	1.02(0.96, 1.09)
BSC	30	30	100.0(88.4, 100.0)	242	247	98.0(95.3, 99.3)	1.02(0.91, 1.04) #
BSSL	28	29	96.6(82.2, 99.9)	434	446	97.3(95.3, 98.6)	0.99(0.92, 1.06)
BSHC	3	3	100.0(29.2, 100.0)	145	153	94.8(90.0, 97.7)	1.06(0.42, 1.07) #
Total	**317**	**339**	**93.5(90.3, 95.9)**	**2117**	**2274**	**93.1(92.0, 94.1)**	**1.00(0.97, 1.04)**

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.

Among women aged 50–69 years, 94% of Māori and 93% of non-Māori women who had BCS went on to have radiotherapy, close to the target of 95% or more.

Among women aged 45–49 years, the proportions were similar at 92% of Māori and 94% of 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 2008–June 2013)

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	2	2	100.0(15.8, 100.0)	25	41	61.0(44.5, 75.8)	1.64(0.48, 1.92)#
BSCM	2	4	50.0(6.8, 93.2)	9	12	75.0(42.8, 94.5)	0.67(0.24, 1.87)
BSAL	0	2	0.0(0.0, 84.2)	13	25	52.0(31.3, 72.2)	0.00(0.00, 4.10)
BSM	3	5	60.0(14.7, 94.7)	20	33	60.6(42.1, 77.1)	0.99(0.46, 2.13)
BSCtoC	0	3	0.0(0.0, 70.8)	7	17	41.2(18.4, 67.1)	0.00(0.00, 3.93)
BSC	0	0	--	11	29	37.9(20.7, 57.7)	--
BSSL	0	1	0.0(0.0, 97.5)	30	40	75.0(58.8, 87.3)	0.00(0.00, 5.23)
BSHC	0	0	--	6	10	60.0(26.2, 87.8)	--
Total	**7**	**17**	**41.2(18.4, 67.1)**	**121**	**207**	**58.5(51.4, 65.2)**	**0.70(0.39, 1.26)**
50–69 years							
BSWN	10	15	66.7(38.4, 88.2)	86	125	68.8(59.9, 76.8)	0.97(0.66, 1.41)
BSCM	4	6	66.7(22.3, 95.7)	40	61	65.6(52.3, 77.3)	1.02(0.56, 1.84)
BSAL	0	4	0.0(0.0, 60.2)	31	66	47.0(34.6, 59.7)	0.00(0.00, 2.09)
BSM	13	19	68.4(43.4, 87.4)	64	100	64.0(53.8, 73.4)	1.07(0.76, 1.50)
BSCtoC	2	4	50.0(6.8, 93.2)	25	43	58.1(42.1, 73.0)	0.86(0.31, 2.37)
BSC	6	8	75.0(34.9, 96.8)	36	72	50.0(38.0, 62.0)	1.50(0.95, 2.38)
BSSL	4	6	66.7(22.3, 95.7)	90	122	73.8(65.0, 81.3)	0.90(0.51, 1.61)
BSHC	1	2	50.0(1.3, 98.7)	28	40	70.0(53.5, 83.4)	0.71(0.18, 2.90)
Total	**40**	**64**	**62.5(49.5, 74.3)**	**400**	**629**	**63.6(59.7, 67.4)**	**0.98(0.81, 1.20)**

There is no target for this indicator.

Among Māori women who were diagnosed solely with DCIS and had breast conserving surgery, 41% of those aged 45–49 years and 63% of those aged 50–69 years went on to have radiotherapy.

Among non-Māori, 59% of those aged 45–49 and 63% of those aged 50–69 years had radiotherapy.

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 2008–June 2013)

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	--	2	2	100.0(15.8, 100.0)	--
BSAL	1	1	100.0(2.5, 100.0)	0	1	0.0(0.0, 97.5)	Inf(0.39, 53.05) #
BSM	0	0	--	1	1	100.0(2.5, 100.0)	--
BSCtoC	2	2	100.0(15.8, 100.0)	1	1	100.0(2.5, 100.0)	1.00(0.40, 4.90) #
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	**3**	**3**	**100.0(29.2, 100.0)**	**11**	**13**	**84.6(54.6, 98.1)**	**1.18(0.49, 1.54) #**
Group 2: Node negative, high risk, and ER/PR negative							
BSWN	3	4	75.0(19.4, 99.4)	15	18	83.3(58.6, 96.4)	0.90(0.49, 1.64)
BSCM	1	1	100.0(2.5, 100.0)	4	7	57.1(18.4, 90.1)	1.75(0.27, 3.11) #
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	--	2	3	66.7(9.4, 99.2)	--
BSCtoC	1	1	100.0(2.5, 100.0)	2	3	66.7(9.4, 99.2)	1.50(0.25, 3.78) #
BSC	0	0	--	2	2	100.0(15.8, 100.0)	--
BSSL	0	0	--	8	9	88.9(51.8, 99.7)	--
BSHC	0	0	--	1	3	33.3(0.8, 90.6)	--
Total	**6**	**8**	**75.0(34.9, 96.8)**	**35**	**47**	**74.5(59.7, 86.1)**	**1.01(0.65, 1.55)**
Group 3: Node positive, either ER or PR positive							
BSWN	3	9	33.3(7.5, 70.1)	26	35	74.3(56.7, 87.5)	0.45(0.17, 1.15)
BSCM	5	10	50.0(18.7, 81.3)	18	25	72.0(50.6, 87.9)	0.69(0.36, 1.35)
BSAL	2	2	100.0(15.8, 100.0)	13	18	72.2(46.5, 90.3)	1.38(0.41, 1.76)#
BSM	7	11	63.6(30.8, 89.1)	18	24	75.0(53.3, 90.2)	0.85(0.51, 1.40)
BSCtoC	7	8	87.5(47.3, 99.7)	15	20	75.0(50.9, 91.3)	1.17(0.81, 1.68)
BSC	2	2	100.0(15.8, 100.0)	23	30	76.7(57.7, 90.1)	1.30(0.39, 1.50)#
BSSL	6	7	85.7(42.1, 99.6)	35	40	87.5(73.2, 95.8)	0.98(0.71, 1.35)
BSHC	1	1	100.0(2.5, 100.0)	14	16	87.5(61.7, 98.4)	1.14(0.19, 1.33)#
Total	**33**	**50**	**66.0(51.2, 78.8)**	**162**	**208**	**77.9(71.6, 83.3)**	**0.85(0.69, 1.05)**

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	2	10	20.0(2.5, 55.6)	9	37	24.3(11.8, 41.2)	0.82(0.21, 3.22)
BSCM	4	6	66.7(22.3, 95.7)	9	25	36.0(18.0, 57.5)	1.85(0.86, 4.00)
BSAL	4	6	66.7(22.3, 95.7)	7	25	28.0(12.1, 49.4)	*2.38(1.02, 5.55)*
BSM	4	10	40.0(12.2, 73.8)	10	39	25.6(13.0, 42.1)	1.56(0.62, 3.95)
BSCtoC	3	5	60.0(14.7, 94.7)	16	26	61.5(40.6, 79.8)	0.97(0.45, 2.12)
BSC	2	6	33.3(4.3, 77.7)	8	31	25.8(11.9, 44.6)	1.29(0.36, 4.64)
BSSL	4	11	36.4(10.9, 69.2)	20	70	28.6(18.4, 40.6)	1.27(0.54, 3.02)
BSHC	1	3	33.3(0.8, 90.6)	6	19	31.6(12.6, 56.6)	1.06(0.19, 5.96)
Total	**24**	**57**	**42.1(29.1, 55.9)**	**85**	**272**	**31.2(25.8, 37.1)**	**1.35(0.95, 1.92)**

Among women aged 45–49 years, there were no statistically significant differences between Māori and non-Māori women within a diagnostic group in the proportions who received chemotherapy.

Table 4i.2: The proportion of women aged 50–69 years with invasive cancers who have chemotherapy, by disease character group, 5 years (July 2008–June 2013)

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	0	--	17	21	81.0(58.1, 94.6)	--
BSCM	1	2	50.0(1.3, 98.7)	8	10	80.0(44.4, 97.5)	0.62(0.15, 2.59)
BSAL	1	1	100.0(2.5, 100.0)	9	10	90.0(55.5, 99.7)	1.11(0.19, 1.40) #
BSM	3	3	100.0(29.2, 100.0)	11	11	100.0(71.5, 100.0)	1.00(0.43, 1.21) #
BSCtoC	2	2	100.0(15.8, 100.0)	9	9	100.0(66.4, 100.0)	1.00(0.32, 1.25) #
BSC	0	1	0.0(0.0, 97.5)	11	11	100.0(71.5, 100.0)	0.00(0.01, 0.93) #
BSSL	1	1	100.0(2.5, 100.0)	16	16	100.0(79.4, 100.0)	1.00(0.17, 1.09) #
BSHC	0	0	--	5	5	100.0(47.8, 100.0)	--
Total	**8**	**10**	**80.0(44.4, 97.5)**	**86**	**93**	**92.5(85.1, 96.9)**	**0.87(0.63, 1.19)**
Group 2: Node negative, high risk, and ER or PR negative							
BSWN	4	7	57.1(18.4, 90.1)	29	49	59.2(44.2, 73.0)	0.97(0.49, 1.91)
BSCM	2	4	50.0(6.8, 93.2)	12	24	50.0(29.1, 70.9)	1.00(0.35, 2.88)
BSAL	0	0	--	16	19	84.2(60.4, 96.6)	--
BSM	3	4	75.0(19.4, 99.4)	19	33	57.6(39.2, 74.5)	1.30(0.69, 2.46)
BSCtoC	3	4	75.0(19.4, 99.4)	16	32	50.0(31.9, 68.1)	1.50(0.77, 2.91)
BSC	2	2	100.0(15.8, 100.0)	11	29	37.9(20.7, 57.7)	2.64(0.72, 3.71) #
BSSL	3	4	75.0(19.4, 99.4)	36	59	61.0(47.4, 73.5)	1.23(0.67, 2.24)
BSHC	1	1	100.0(2.5, 100.0)	9	12	75.0(42.8, 94.5)	1.33(0.22, 1.76) #
Total	**18**	**26**	**69.2(48.2, 85.7)**	**148**	**257**	**57.6(51.3, 63.7)**	**1.20(0.91, 1.59)**

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	8	19	42.1(20.3, 66.5)	42	102	41.2(31.5, 51.4)	1.02(0.57, 1.82)
BSCM	9	19	47.4(24.4, 71.1)	41	77	53.2(41.5, 64.7)	0.89(0.53, 1.49)
BSAL	1	4	25.0(0.6, 80.6)	24	59	40.7(28.1, 54.3)	0.61(0.11, 3.45)
BSM	11	36	30.6(16.3, 48.1)	43	98	43.9(33.9, 54.3)	0.70(0.41, 1.20)
BSCtoC	8	21	38.1(18.1, 61.6)	49	95	51.6(41.1, 62.0)	0.74(0.41, 1.32)
BSC	5	12	41.7(15.2, 72.3)	51	92	55.4(44.7, 65.8)	0.75(0.38, 1.50)
BSSL	5	9	55.6(21.2, 86.3)	64	128	50.0(41.0, 59.0)	1.11(0.60, 2.04)
BSHC	2	2	100.0(15.8, 100.0)	44	59	74.6(61.6, 85.0)	1.34(0.39, 1.45) #
Total	**49**	**122**	**40.2(31.4, 49.4)**	**358**	**710**	**50.4(46.7, 54.2)**	**0.80(0.63, 1.00)**
Group 4: Node negative, high risk, and either ER or PR positive							
BSWN	8	43	18.6(8.4, 33.4)	14	208	6.7(3.7, 11.0)	*2.76(1.24, 6.18)*
BSCM	4	36	11.1(3.1, 26.1)	19	136	14.0(8.6, 21.0)	0.80(0.29, 2.19)
BSAL	1	16	6.2(0.2, 30.2)	16	104	15.4(9.1, 23.8)	0.41(0.06, 2.86)
BSM	13	63	20.6(11.5, 32.7)	44	219	20.1(15.0, 26.0)	1.03(0.59, 1.78)
BSCtoC	4	42	9.5(2.7, 22.6)	33	168	19.6(13.9, 26.5)	0.48(0.18, 1.29)
BSC	1	27	3.7(0.1, 19.0)	21	144	14.6(9.3, 21.4)	0.25(0.04, 1.81)
BSSL	6	20	30.0(11.9, 54.3)	30	314	9.6(6.5, 13.4)	*3.14(1.48, 6.65)*
BSHC	1	8	12.5(0.3, 52.7)	21	121	17.4(11.1, 25.3)	0.72(0.11, 4.69)
Total	**38**	**255**	**14.9(10.8, 19.9)**	**198**	**1414**	**14.0(12.2, 15.9)**	**1.06(0.77, 1.47)**

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

There is no target for this indicator.

There were no statistically significant differences in the proportions receiving chemotherapy between Māori and non-Māori women aged 50–69 years within a diagnostic group.

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 2008–June 2013)

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	9	9	100.0(66.4, 100.0)	33	35	94.3(80.8, 99.3)	1.06(0.75, 1.17)#
BSCM	10	10	100.0(69.2, 100.0)	22	25	88.0(68.8, 97.5)	1.14(0.82, 1.35)#
BSAL	2	2	100.0(15.8, 100.0)	16	18	88.9(65.3, 98.6)	1.12(0.34, 1.31)#
BSM	11	11	100.0(71.5, 100.0)	22	24	91.7(73.0, 99.0)	1.09(0.81, 1.28)#
BSCtoC	8	8	100.0(63.1, 100.0)	20	20	100.0(83.2, 100.0)	1.00(0.69, 1.13)#
BSC	2	2	100.0(15.8, 100.0)	30	30	100.0(88.4, 100.0)	1.00(0.30, 1.04)#
BSSL	7	7	100.0(59.0, 100.0)	38	40	95.0(83.1, 99.4)	1.05(0.68, 1.14)#
BSHC	1	1	100.0(2.5, 100.0)	15	16	93.8(69.8, 99.8)	1.07(0.18, 1.20)#
Total	**50**	**50**	**100.0(92.9, 100.0)**	**196**	**208**	**94.2(90.1, 97.0)**	**1.06(0.98, 1.10)#**
Group 2: Node negative, high risk, and either ER or PR positive							
BSWN	8	10	80.0(44.4, 97.5)	30	37	81.1(64.8, 92.0)	0.99(0.70, 1.40)
BSCM	5	6	83.3(35.9, 99.6)	16	25	64.0(42.5, 82.0)	1.30(0.82, 2.07)
BSAL	5	6	83.3(35.9, 99.6)	16	25	64.0(42.5, 82.0)	1.30(0.82, 2.07)
BSM	9	10	90.0(55.5, 99.7)	37	39	94.9(82.7, 99.4)	0.95(0.76, 1.18)
BSCtoC	5	5	100.0(47.8, 100.0)	22	26	84.6(65.1, 95.6)	1.18(0.65, 1.39)#
BSC	6	6	100.0(54.1, 100.0)	28	31	90.3(74.2, 98.0)	1.11(0.66, 1.25)#
BSSL	8	11	72.7(39.0, 94.0)	47	70	67.1(54.9, 77.9)	1.08(0.73, 1.61)
BSHC	2	3	66.7(9.4, 99.2)	12	19	63.2(38.4, 83.7)	1.06(0.44, 2.52)
Total	**48**	**57**	**84.2(72.1, 92.5)**	**208**	**272**	**76.5(71.0, 81.4)**	**1.10(0.97, 1.25)**
Group 3: Node negative, low risk, and either ER or PR positive							
BSWN	0	10	0.0(0.0, 30.8)	6	33	18.2(7.0, 35.5)	0.00(0.00, 2.80)
BSCM	2	6	33.3(4.3, 77.7)	3	14	21.4(4.7, 50.8)	1.56(0.34, 7.06)
BSAL	3	4	75.0(19.4, 99.4)	3	21	14.3(3.0, 36.3)	5.25(1.60, 17.27)
BSM	9	11	81.8(48.2, 97.7)	16	17	94.1(71.3, 99.9)	0.87(0.64, 1.18)
BSCtoC	8	10	80.0(44.4, 97.5)	11	15	73.3(44.9, 92.2)	1.09(0.71, 1.69)
BSC	1	2	50.0(1.3, 98.7)	10	12	83.3(51.6, 97.9)	0.60(0.15, 2.45)
BSSL	1	4	25.0(0.6, 80.6)	10	24	41.7(22.1, 63.4)	0.60(0.10, 3.49)
BSHC	0	0	--	0	10	0.0(0.0, 30.8)	--
Total	**24**	**47**	**51.1(36.1, 65.9)**	**59**	**146**	**40.4(32.4, 48.8)**	**1.26(0.90, 1.78)**

There were no statistically significant differences between Māori and non-Māori women aged 45–49 years 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 2008–June 2013)

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	19	19	100.0(82.4, 100.0)	98	102	96.1(90.3, 98.9)	1.04(0.87, 1.08)#
BSCM	17	19	89.5(66.9, 98.7)	71	77	92.2(83.8, 97.1)	0.97(0.82, 1.15)
BSAL	4	4	100.0(39.8, 100.0)	57	59	96.6(88.3, 99.6)	1.04(0.50, 1.07)#
BSM	34	36	94.4(81.3, 99.3)	95	98	96.9(91.3, 99.4)	0.97(0.89, 1.06)
BSCtoC	21	21	100.0(83.9, 100.0)	93	95	97.9(92.6, 99.7)	1.02(0.87, 1.06)#
BSC	12	12	100.0(73.5, 100.0)	91	92	98.9(94.1, 100.0)	1.01(0.77, 1.04)#
BSSL	8	9	88.9(51.8, 99.7)	121	128	94.5(89.1, 97.8)	0.94(0.74, 1.19)
BSHC	2	2	100.0(15.8, 100.0)	58	59	98.3(90.9, 100.0)	1.02(0.30, 1.03)#
Total	**117**	**122**	**95.9 (90.7, 98.7)**	**684**	**710**	**96.3(94.7, 97.6)**	**1.00(0.96, 1.04)**
Group 2: Node negative, high risk, and either ER or PR positive							
BSWN	27	43	62.8(46.7, 77.0)	154	208	74.0(67.5, 79.9)	0.85(0.66, 1.08)
BSCM	20	36	55.6(38.1, 72.1)	75	136	55.1(46.4, 63.7)	1.01(0.72, 1.40)
BSAL	11	16	68.8(41.3, 89.0)	66	104	63.5(53.4, 72.7)	1.08(0.75, 1.55)
BSM	56	63	88.9(78.4, 95.4)	210	219	95.9(92.3, 98.1)	0.93(0.85, 1.02)
BSCtoC	32	42	76.2(60.5, 87.9)	128	168	76.2(69.0, 82.4)	1.00(0.83, 1.21)
BSC	24	27	88.9(70.8, 97.6)	124	144	86.1(79.4, 91.3)	1.03(0.89, 1.20)
BSSL	13	20	65.0(40.8, 84.6)	181	314	57.6(52.0, 63.2)	1.13(0.81, 1.58)
BSHC	5	8	62.5(24.5, 91.5)	72	121	59.5(50.2, 68.3)	1.05(0.60, 1.83)
Total	**188**	**255**	**73.7(67.9, 79.0)**	**1010**	**1414**	**71.4(69.0, 73.8)**	**1.03(0.95, 1.12)**
Group 3: Node negative, low risk, and either ER or PR positive							
BSWN	2	21	9.5(1.2, 30.4)	33	183	18.0(12.8, 24.4)	0.53(0.14, 2.05)
BSCM	1	25	4.0(0.1, 20.4)	5	74	6.8(2.2, 15.1)	0.59(0.07, 4.83)
BSAL	0	2	0.0(0.0, 84.2)	10	103	9.7(4.8, 17.1)	0.00(0.00, 22.98)
BSM	20	25	80.0(59.3, 93.2)	117	129	90.7(84.3, 95.1)	0.88(0.72, 1.08)
BSCtoC	11	18	61.1(35.7, 82.7)	52	103	50.5(40.5, 60.5)	1.21(0.80, 1.83)
BSC	7	11	63.6(30.8, 89.1)	71	99	71.7(61.8, 80.3)	0.89(0.56, 1.41)
BSSL	1	12	8.3(0.2, 38.5)	50	178	28.1(21.6, 35.3)	0.30(0.04, 1.97)
BSHC	0	2	0.0(0.0, 84.2)	10	59	16.9(8.4, 29.0)	0.00(0.00, 13.16)
Total	**42**	**116**	**36.2(27.5, 45.6)**	**348**	**928**	**37.5(34.4, 40.7)**	**0.97(0.75, 1.25)**

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

There is no target for this indicator.

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

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 2008–June 2013)

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	20	38	52.6(35.8, 69.0)	123	194	63.4(56.2, 70.2)	0.83(0.60, 1.14)
BSCM	6	31	19.4(7.5, 37.5)	24	97	24.7(16.5, 34.5)	0.78(0.35, 1.74)
BSAL	11	18	61.1(35.7, 82.7)	54	107	50.5(40.6, 60.3)	1.21(0.80, 1.83)
BSM	18	36	50.0(32.9, 67.1)	87	123	70.7(61.9, 78.6)	0.71(0.50, 1.00)
BSCtoC	19	32	59.4(40.6, 76.3)	69	96	71.9(61.8, 80.6)	0.83(0.60, 1.13)
BSC	9	12	75.0(42.8, 94.5)	65	120	54.2(44.8, 63.3)	1.38(0.96, 2.00)
BSSL	15	25	60.0(38.7, 78.9)	138	209	66.0(59.2, 72.4)	0.91(0.65, 1.27)
BSHC	3	7	42.9(9.9, 81.6)	40	69	58.0(45.5, 69.8)	0.74(0.31, 1.78)
Total	**101**	**199**	**50.8(43.6, 57.9)**	**600**	**1015**	**59.1(56.0, 62.2)**	***0.86(0.74, 0.99)***
50–69 years							
BSWN	66	116	56.9(47.4, 66.1)	513	751	68.3(64.8, 71.6)	*0.83(0.71, 0.98)*
BSCM	22	100	22.0(14.3, 31.4)	117	434	27.0(22.8, 31.4)	0.82(0.55, 1.22)
BSAL	14	28	50.0(30.6, 69.4)	228	398	57.3(52.3, 62.2)	0.87(0.60, 1.28)
BSM	97	155	62.6(54.5, 70.2)	406	623	65.2(61.3, 68.9)	0.96(0.84, 1.10)
BSCtoC	46	99	46.5(36.4, 56.8)	330	500	66.0(61.7, 70.1)	*0.70(0.56, 0.88)*
BSC	34	66	51.5(38.9, 64.0)	266	490	54.3(49.8, 58.8)	0.95(0.74, 1.22)
BSSL	34	57	59.6(45.8, 72.4)	588	888	66.2(63.0, 69.3)	0.90(0.72, 1.12)
BSHC	10	15	66.7(38.4, 88.2)	190	320	59.4(53.8, 64.8)	1.12(0.78, 1.62)
Total	**323**	**636**	**50.8(46.8, 54.7)**	**2638**	**4404**	**59.9(58.4, 61.4)**	***0.85(0.78, 0.92)***

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.

Only 51% of Māori women and 60% of non-Māori women received their first surgical treatment within 20 working days. Māori women in both age groups were 15% less likely than non-Māori women to receive timely surgery. BSCM had the lowest proportion of Māori women receiving timely surgery in both age groups among both Māori and non-Māori women. No LP 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.