

Key Achievements & Strategic Direction Update from BreastScreen Aotearoa (BSA) – November 2009

Background

BreastScreen Aotearoa (BSA) aims to reduce breast cancer mortality in New Zealand by providing free mammograms every two years for women aged 45 to 69 years. The quality target for the national programme is 70% coverage for women aged 50-69. International evidence has shown that 70% coverage of the population can reduce breast cancer mortality by 30% in women aged 50-69.

The programme is delivered throughout the country by eight lead providers, their sub-contracted providers, and mobile units that deliver services to rural and some urban communities. Working alongside the lead providers are 10 independent service providers in defined geographical areas providing health promotion and support services for Māori and Pacific women.

BSA Key Achievements

- The programme was launched in December 1998 for women aged 50-64 years. It became fully operational in early 1999.
- On 1 July 2004 BSA was extended from 50-64 years to include women aged 45 – 49 years and 65 – 69 years, an additional 216,000 women to the then 328,000 eligible women.
- In 2005 the Auckland and North region was expanded from one provider to three providers. BreastScreen Counties Manukau commenced screening on October 2005 and BreastScreen Waitemata Northland (BSWN) commenced screening on February 2006. BSWN was the first provider to use digital mammography.
- The 'Celebration' communications campaign for BSA was developed in 2002 and ran from October 2002 through until April 2004. The material was used for a regional campaign in the BreastScreen Midlands region in 2006. In July 2007 national TVCs advertising of the 'Celebration' campaign recommenced.
- In August 2008 a new communications campaign commenced on national television and radio.
- Monitoring the performance of services to all women participating in BSA has occurred since 2000. The University of Queensland is currently contracted to provide independent monitoring for BSA. In October 2008 the first Maori monitoring report by Te Rōpu Rangahau Hauora a Eru Pomare was published, identifying areas where services vary between Maori and non Maori.
- An independent review of BSA by Jocelyn Chamberlain in 2002 found the quality of the screening process to be high and provided consistently across lead providers, and systems safeguarding against poor performance to be comprehensive and an improvement on previous systems.

- Joint position statements between the National Screening Unit, Breast Cancer Foundation and Cancer Society on Thermography and Breast Awareness have been developed and published.

Coverage statistics:

National figures to June 2009 show that around 56 percent of eligible Pacific women and 52 percent of eligible Maori women were screened by the programme. This compares to 68 percent for other women. This is an increase of 6 percent for Pacific, 5 percent for Maori and 2 percent for other women compared to the 24 months to June 2008.

BreastScreen South is the first provider internationally to achieve 70% coverage for Maori and Pacific women. They achieved 70% coverage for Maori (50-64 yrs) in the 24 month period July 2002 to June 2004 and 70% coverage for Pacific (50-64 yrs) in the 24 month period January 2003 to December 2004.

Key Strategic Issues for BreastScreen Aotearoa in the Next Five Years

Much needs to be done over the next five years to meet BSA's key outcomes of 70 percent coverage for all those eligible, improving and reducing variation in small cancer detection and ensuring access to timely best practice treatment. These improvements in effectiveness need to be distributed with equity and more efficiency.

The current barriers of a limited workforce and inadequate coordination need to be overcome. The primary care and cancer control strategies provide opportunities for better coordination. More effective use of information technology, funding mechanisms, and technological advances will also be important enablers.

Coverage

Unlike screening programmes in the United Kingdom (UK) and Australia, BSA has not had access to a list of eligible unscreened women (a population register) to allow direct invitations to be sent. Most BSA women have to request enrolment. The most effective proven means of improving coverage is to identify and invite unscreened women. Current BSA local initiatives to identify lists of unscreened women are labour intensive and inefficient.

BSA aims to implement automated health database matching to identify and invite consumers for screening. In five years time this will be fully implemented and will either be a central system or peripheral and interlinked nationally to ensure a mobile population has continual access (to improve flexibility of responsiveness to consumer needs and reduce non-attendance). Women will be able to make or alter pre-arranged appointments via secure links from the NSU website, and retrieve their own results. This will build on the e-referral initiatives in some DHBs.

Achieving Equity

M_ori women have an eight percent higher incidence of breast cancer than non-M_ori women yet mortality in M_ori women is 66 percent higher than in non-M_ori women. Similarly, Pacific women have a 54 percent greater risk than the general population of dying from breast cancer, despite having a similar risk to other women of developing the disease. This higher mortality is only partly explained by poverty and is largely due to

later diagnosis and treatment. Early detection by screening can potentially eliminate this disparity.

Coverage for the general population is nearing the 70 percent target, whilst M_ori and Pacific women remain significantly under-screened, at rates of 52 percent and 56 percent respectively (to June 2009). This under screening will further increase population outcome disparities.

While invitation letters alone will increase coverage overall, additional measures are necessary to reduce disparities. These include:

- facilitating a reconfiguration of service delivery – accessible screening sites, prompt and flexible screening services, and greater collaboration with local health promoters
- work to minimise the hidden costs of attendance, such as travel and time away from work
- the NSU working more closely with Primary Health Organisations (PHO) through DHBNZ, and implementing “pay for performance”, and balanced scorecards for BSA providers which specifically address inequalities in order to eliminate M_ori and Pacific inequity within five years.
- providing meaningful feedback to GPs and/or PHOs, and exploring with these groups the feasibility of providing on-line secure access to individual performance data through the NSU’s Reporting Services site.

New Technologies

Comprehensive Digital Conversion: Digital Mammography, Integrated Picture Archiving Communication Systems (PACS) and video teleconferencing

The main reasons for implementing digital technology now are to:

- convert the BSA radiologist workforce into a single national pool using telemammography
- reduce variation in quality between large central and small rural centres
- ensure service sustainability and quality despite impending obsolescence of film screen equipment.

Digital mammography will also help to improve coverage by making the screening process more efficient and reduce the number of women recalled for repeat mammograms for technical reasons. This will particularly benefit mobile screening services.

- Digital mammography achieves a diagnostic accuracy in screening equivalent to traditional film screen mammography. Recent evidence also confirms that this technology has superior sensitivity to film screen for younger women with dense breasts.

The BSA Programme has developed the Interim Digital Standards to guide Lead Providers when moving to a digital service.

An evaluation of the BreastScreen Waitemata Northland (BSWN) digital pilot provides further guidance for Lead Providers to develop their business cases for purchase of appropriate digital equipment.

- The NSU is currently evaluating options for PACS configurations in New Zealand so that a nationally delivered service can be realised. A national PACS network will allow the development of shared teaching and test archives for individual quality improvement.

Video conferencing with PACS supplied peer reviewable images allows joint patient management multidisciplinary meetings to occur across sites.

- To ensure that the potential of this inevitable technology conversion is realised, coordinated transition with compatible equipment and the appropriate PACS configuration must occur within the next five years.

Small Cancer Detection

The key to improving small cancer detection is to provide performance feedback and learning opportunities that are specific to the needs of the individual MRT (producing the film), the radiologist reading the film, or the relevant professional (MRT, radiologist or pathologist), performing the assessment test.

This will require development of assessment software and migration of historic data for all eight lead providers systems. Relevant reporting tools will need to be developed to provide individual performance reports compared with the national average.

Development of national assessment protocols and MDT decision making guidelines will be informed by these reports.

Magnetic Resonance Imaging (MRI)

The use of MRI, as an additional assessment tool in situations of diagnostic uncertainty is increasing. MRI is also becoming an important preoperative staging tool to allow better delineation of the extent and number of breast cancers requiring treatment in a woman with a needle biopsy diagnosis of cancer. Evidence based guidelines defining the role of MRI in these situations need to be developed, as well as operational policy on the place of MRI in BSA.

Computer Aided Diagnosis (CAD)

CAD could potentially either replace one reader or improve the sensitivity of current double reading. However, it may also reduce specificity and therefore increase the number of women unnecessarily undergoing assessment. The NSU will continue to monitor the literature with a view to implement if future studies show CAD may be of significant benefit to improving effectiveness, efficiency, or both.

Computer Based Risk Assessment Tools

Following the work to rationalise referral pathways for asymptomatic, symptomatic and high risk women, the NSU will consider developing a web-based interactive risk assessment tool available to women and their GPs to allow auto triage to the appropriate pathway of surveillance, screening or diagnostic services.

High breast density is a major risk factor for breast cancer. Digital mammography will allow deployment of objective auto measurement of breast density for all BSA women. This information, coupled with outcome data, will inform future management strategies and is likely to be of more benefit than other emerging risk stratification tests such as protein or genomic analyses on hair, saliva or blood.

Research

The major upcoming research work is evaluation of the effectiveness efficiency and equity of BSA, which will involve an ecological mortality study and cost benefit analysis. A case control validation will occur subsequent to this.

Ongoing research to improve the effectiveness efficiency and equity of BSA includes:

- further analysis of the nationally collected radiologists individual performance statistics to determine the features that can be taught to others
- analysis of benign biopsy outcomes to determine if mandatory open biopsy of some indeterminate lesions (eg: papillary lesions) can be avoided
- review of interval cancers initially assessed, to refine assessment guidelines and MDT decision making
- review of second round cancers that could have been detected earlier –what types of lesions are commonly missed?
- review of women who did not attend assessment or refused treatment to determine if there are recurrent concerns that can be addressed by BSA.

Workforce

BSA providers depend on a professional workforce drawn from a variety of specialist disciplines, many of which are limited in number both in New Zealand and internationally. The NSU will continue to contribute to relevant Ministry-wide workforce initiatives, as well as implement specific initiatives to sustain BSA.

Radiologists

- Despite a national radiologist shortage, BSA has historically retained sufficient staff for reporting, partly because of fee-for-service payments in most cases. However, there are intermittent shortages in some sites which could be alleviated by a nationally integrated telemammography service.
- Timely assessment services are often compromised by the lack of assessing radiologists (paid on a sessional basis). There are gains to be made from reducing assessment recall rates and improving assessment clinic efficiencies. Other options to be considered include employing non-radiologists to perform some assessment procedures.

Medical Radiation Technologists

The critical workforce for BSA is MRTs, and the successful re-positioning of the compulsory mammography proficiency certificate at NZQA level eight is the first step in development of a comprehensive MRT career pathway.

- Review the role of MRT assistant practitioners to have a limited mammography scope of practice not requiring the full generic three-year MRT degree training.
- Review the role of MRT advanced practitioners performing assessment tests and/or mammogram reporting.
- Benchmarking of current radiologist and MRT performance around the country is a necessary pre-requisite to guide performance standards for potential role extension.
- Nationally varying remuneration and working conditions have had an impact on retention and recruitment and means to address this will be explored.

Pathologists

The increase in available tests to improve breast cancer diagnosis, and predict appropriate breast cancer treatment, is additionally burdensome when anatomic pathologists are in short supply.

- BSA needs to define the scope of funded preoperative tissue analysis informed by best practice management guidelines.

The NSU will review the requirements for BSA multi-disciplinary team (MDT) meeting attendance while ensuring the maintenance of quality and necessary interdisciplinary information sharing. The collocation of screening and symptomatic services with joint MDTs should be explored by providers.

Equity

To realise equity, inequalities across the entire screening pathway (not just coverage) need to be identified and addressed. The first M_ori Monitoring Report is the initial step of ongoing work, which will over the next five years identify areas where BSA services need to concentrate efforts.

This first report shows that a smaller than expected proportion of small invasive breast cancers are detected in M_ori compared with non-M_ori women. Further analysis suggests that this is due to differential re-screening timelines and may be related to mobile scheduling. BSA must address this.

Coordination and collaboration

There are currently three disparate funding and referral pathways for publicly funded mammography: BSA for asymptomatic women aged 45 to 69; DHB outpatient services for symptomatic women; and community referred services for high risk and symptomatic women.

This unnecessarily complicated system has resulted in:

- delayed diagnosis of breast cancer because women have been referred to the wrong pathway
- confusion for women, GPs and DHBs

- access to services varying widely between regions
- prolonged outpatient follow-up for post treatment women solely to ensure they receive mammography
- inappropriate referrals of symptomatic women to BSA.

Each of these pathways is the responsibility of different teams within the Ministry. The NSU will work with these teams, with cancer networks and also DHBs to ensure a coordinated, common referral pathway to publicly funded mammography is developed. This will require:

- The development of national guidelines for women at high risk of developing breast cancer
- Appropriate surveillance methods including MRI for women at high risk will need to be defined
- The feasibility of collocation of services to more efficiently use high cost equipment and the specialised workforce will also be considered.

Breast Cancer Treatment

By 2009, treatment services for BSA diagnosed women will no longer be additionally funded by the NSU.

- impending publication of early breast cancer treatment guidelines will be an initial step to ensure that all women with breast cancer receive timely and comprehensive treatment.

The NSU publishes generic treatment monitoring reports based on performance in the eight lead provider regions. This is not conducive to quality improvement as the treatment surgery is provided by 21 DHBS and six Cancer Treatment Centres.

- The NSU will change treatment reports to monitor performance by DHB and cancer treatment centre, and work with cancer control and regional cancer networks to disseminate this information.

Over the next five years, the NSU will explore with these groups the feasibility of granting on-line access to the BSA Reporting services so that individual treatment practitioners can access their own individual performance data.

- The NSU will continue to work with the Royal Australasian College of Surgeons and other breast cancer treatment databases including the cancer registry to improve coordination and reduce the inefficiencies of multiple entries of the same information.

Initial work shows that for BSA women there are no inequalities in treatment, but there is wide variation in treatment practice that needs to be addressed, and regional variation in the quality of treatment provided may hide ethnic inequalities.

- Improvements to treatment services must proceed equitably and continued monitoring of treatment provision by ethnicity will help ensure this.

Policy

BSA 10 year review

2009 marks 10 years since the inception of BSA. A mortality and cost-effectiveness study of BSA will commence in June 2009, following completion of the comprehensive evaluation study currently being undertaken by BreastScreen Australia. The outcomes of the Australian study are likely to impact on the New Zealand public's expectations of BSA, especially on the following issues:

- implementation of total breastcare centres
- incorporating high risk women into the programme
- formal age range extension
- review of the screening interval.

The NSU is an observer to this work, which will inform BSA's own work on the following policies:

Screening women over 70

Recent literature has shown for the first time that screening women over the age of 70 may be cost effective. Whether this is so in other environments depends on the average survival and co-morbidities of older women, and the relative costs and benefits of the local screening services.

- To assess this, a cost benefit analysis will need to be completed within the next five years.

Women 40 to 44

The NSU is awaiting publication of further outcomes of the UK Age Trial before updating analysis on the screening of younger women. As yet, the Age Trial results have not shown a statistically significant mortality benefit for screening younger women.

Any extension of the age range is likely to have a detrimental effect on coverage rates and inequalities, and put additional demand on a limited workforce.

- Additional means to mitigate these effects will need to be established if a further age extension is contemplated.

High Risk Women

Guidelines for high risk women need to be developed (see above) before the appropriate configuration of service delivery is determined. One option that requires consideration is incorporating the surveillance of high risk women into BSA. The Australian review of this policy issue and the UK Family History clinic rollout will provide important evidence for New Zealand's decision.

The Future for Breast Screening In New Zealand

In international terms, BSA is considered a young breast screening programme. This is not only because the UK, Australian and other European programmes have been in existence for 5 to 10 years longer, but also because the relatively indolent nature of breast cancer means that demonstration of the full mortality benefit conferred by breast screening can take 15 to 20 years from the initiation of a programme.

However, in New Zealand terms, BSA is considered a mature programme compared with the other options for screening being implemented and considered by the NSU and the sector as a whole. In an era in which health resources are limited, BSA must

demonstrate that its use of resource is justified and increasingly efficient. The upcoming BSA mortality and cost-effectiveness evaluation will provide a baseline from which BSA's future performance is measured.