

Te Whatu Ora – Health New Zealand Capital, Coast & Hutt Valley
BreastScreen Central Review

Executive summary

In June 2021 BreastScreen Aotearoa (BSA) and the National Screening Unit (NSU) identified that a large number of people who enrolled with BreastScreen Central (BSC) had not received an offered appointment within 60 working days of enrolment as stipulated in the National Policy and Quality Standards.

A review team was established to assess the cases of the 61 people identified by NSU whose first offered appointment did not meet the quality standard, and who had received a diagnosis of breast cancer. Each case was assessed and triaged according to the potential for the delays that were experienced to have resulted in harm. The team commissioned 10 reviews into cases where it was deemed possible the delay could have adversely affected the outcome for that person. The review team were not able to quantify this impact at an individual level but acknowledge the possibility that earlier screening for the 10 people identified may have resulted in the cancer being diagnosed at a less advanced stage or requiring less intensive treatment.

Reviews were completed using systems analysis methodology. The focus was the identification of findings and recommendations for quality improvement of breast screening services. The review team consisted of external breast cancer experts and the Patient Safety Team who provided technical support. Draft reviews incorporating individual patient journeys and service level information were created. The methodology, content and quality of all reviews were appraised by a multidisciplinary panel of adverse event review experts from across the Capital Coast and Hutt Valley (CCHV) District. Draft reports were shared with BSA/NSU and Te Whatu Ora – Health New Zealand BSA review panel for feedback. Feedback received from BSA/NSU and Te Whatu Ora – Health New Zealand BSA Review Panel, was assessed by the District’s BSC Review Steering Group for consideration of inclusion in the final reports.

The core findings from the review were:

- The capacity of the breast screening service was not sufficient to provide the required number of screening appointments
- Existing capacity constraints were further exacerbated by COVID-19 lockdowns and restrictions
- As a result of capacity constraints, both before and after COVID-19, a prioritisation framework was used. The aim of which was to ensure that groups with a known increased risk of developing or dying from breast cancer received appointments preferentially
- Lack of communication about the delays with clients who enrolled for screening meant that those who enrolled were not fully informed about the breast screening programme
- There were gaps in the monitoring carried out nationally that resulted in missed opportunities to recognise and act to resolve issues at an earlier date

Supplementary findings from the review were:

- There is no process for direct referral to the symptomatic breast service for clients who disclose symptoms at the time of enrolment
- The enrolment process is complex and has multiple potential points of failure

Background

BreastScreen Central (BSC) is the BreastScreen Aotearoa (BSA) Lead Provider that covers the Wairarapa, Capital, Coast and Hutt Valley districts. BSC provides two-yearly screening mammograms to an estimated eligible population of approximately 80,000 people aged 45-69 (Ministry of Health, 2020). Prior to the formation of Te Whatu Ora - Health New Zealand, BSC was part of Hutt Valley District Health Board (HVDHB).

In June 2021, staff from the National Screening Unit (NSU) met with BSC to discuss the waiting times of clients who had newly enrolled with the service for breast screening. The National Policy and Quality Standards (NPQS) set out the targets and obligations for all breast screening Lead Providers. Under the standards for timeliness, the NPQS states:

“3.1.1 Target: ≥90% of eligible women, once enrolled, are offered an available appointment for a screening mammogram within 60 working days (fixed sites only)” (Ministry of Health, 2013, p. 28).

Sixty three percent of people (8,184 people over 4 years, further data available on page 4) who enrolled with BSC between 2017 and 2021 were waiting longer than 60 working days for their first offered appointment. NSU requested that BSC investigate the waiting times of clients who had enrolled with the service who were awaiting their first offered appointment. Reporting showed that there were 2774 people currently waiting for their first screening appointment. NSU requested that BSC develop a recovery plan detailing how the waiting clients would be screened, and how waiting times would be reduced for all new enrolments with the service to comply with the target. NSU confirmed that data showed waiting times for those who enrolled with BSC exceeded the 60 working day target, and that they would be investigating to establish if harm had occurred for any of the clients whose waiting time for their first offered screening appointment had exceeded the 60 working days.

In November 2021, NSU provided BSC with a list of 40 clients who had enrolled with BSC, had waited longer than 60 working days for their first offered appointment, and had received a diagnosis of breast cancer. This was from analysis of all new enrolments with BSC dating back to the start of 2017. An additional 19 clients who met these criteria were identified by NSU in January 2022 and a further eight clients were identified in May 2022. In total, 67 clients whose first offered appointment was outside of the target timeframe and who had received a diagnosis of breast cancer were identified by NSU.

BSC produced a detailed production plan outlining the steps that would be taken to clear the backlog of clients waiting for their first screening appointment. This was provided to NSU on 15 October 2021, with the final plan agreed upon on 13 December 2021, and executed by BSC resulting in clearing of the screening backlog and compliance with the 60 working day target by March 2022.

Triage process

Hutt Valley and Capital & Coast DHB (2DHB) Executive Leadership Team and Centre of Clinical Excellence representatives met with staff from BSC and NSU in December 2021. It was agreed that an incident group would be established to investigate what harm there may have been due to the delayed screening, and this process was to be led by HVDHB. On 31st January 2022 2DHB staff met and it agreed to the following:

- The Patient Safety Team would lead the review process
- Formal adverse event reviews would be undertaken for any cases where SAC 2 level harm may have occurred as a result of delays to screening
- An independent panel of external clinical experts would be engaged to review all individuals identified by NSU to support an independent review process

An expert review team was established with clinicians external to HVDHB. The review team consisted of:

- A radiation oncologist
- A radiologist
- A breast surgeon
- An epidemiologist
- Patient Safety Team

To assist the review team in their assessment of the potential for harm the following data was collected for each of the individuals identified by NSU:

- Length of time from enrolment to either first appointment offered by BSC or date of mammogram obtained by other means
- Length of time from enrolment to date of mammogram (if this differed from date of first appointment offered)
- Length of time from mammogram to commencing treatment
- Full diagnosis including type, size and grade of tumour, and cancer stage
- Treatment received
- Relevant past medical history and any other relevant factors

The data was reviewed independently by each of the external review team members. Following this the review team met over Zoom, the case for each individual was discussed as a group, and consensus reached. For each person it was assessed whether there was a possibility that their disease could have become more advanced over the time period of the delay they experienced and if this advancement would have potentially altered their prognosis, or the treatment options available to them.

Figure 1: Triage process

Te Whatu Ora - Health New Zealand Capital, Coast & Hutt Valley Breast Screen Central – Triage Process for Review

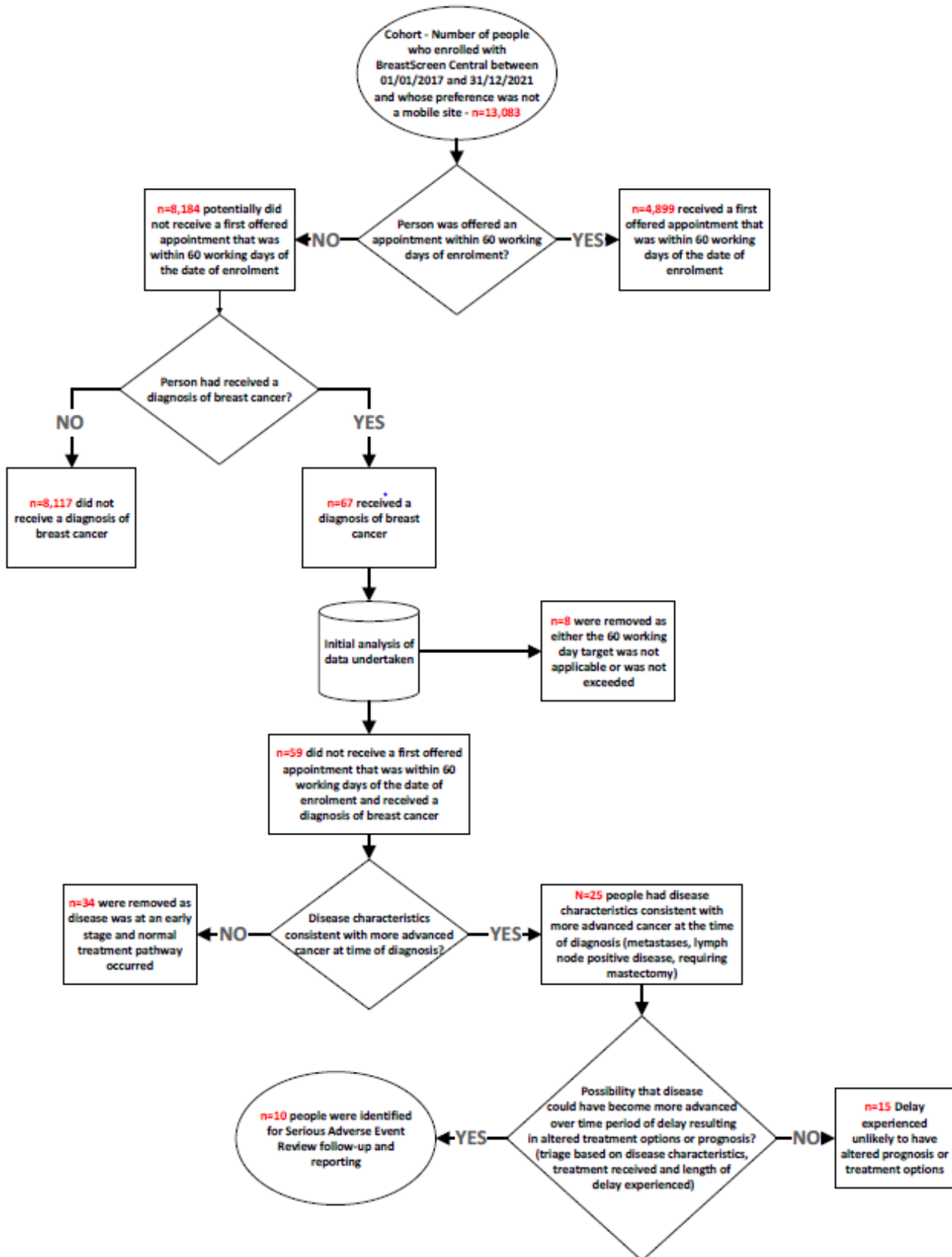


Table 1: Results of triage by expert panel

	Nov-21	Jan-22	May-22	Total
Total	40	19	8	67
No potential for harm	30	14	4	48
Not assessable	-	-	1	1
Potential for harm - for review	6	3	1	10
Target not applicable/no delay	4	2	2	8

A total of ten people were initially identified for whom the delay experienced could potentially have affected their diagnosis or treatment. Individual adverse event reviews were commissioned through Health Quality & Safety Commission (HQSC) for each of these people. One person from the further group of eight identified by NSU is currently undergoing neo-adjuvant therapy, so the review team felt assessment of potential harm for this individual was not possible until their surgery was completed and definitive histology was available, therefore this person has been identified as not assessable. Once additional information is available, a review can be commissioned for this case if required.

Through the process of gathering information, eight people were identified for whom the 60 working day target was met or was not applicable. These individuals were considered not to have experienced a delay. Based on this, the final total number of individuals who had experienced a delay in receiving their first offered appointment for mammogram who subsequently received a diagnosis of breast cancer, was 59.

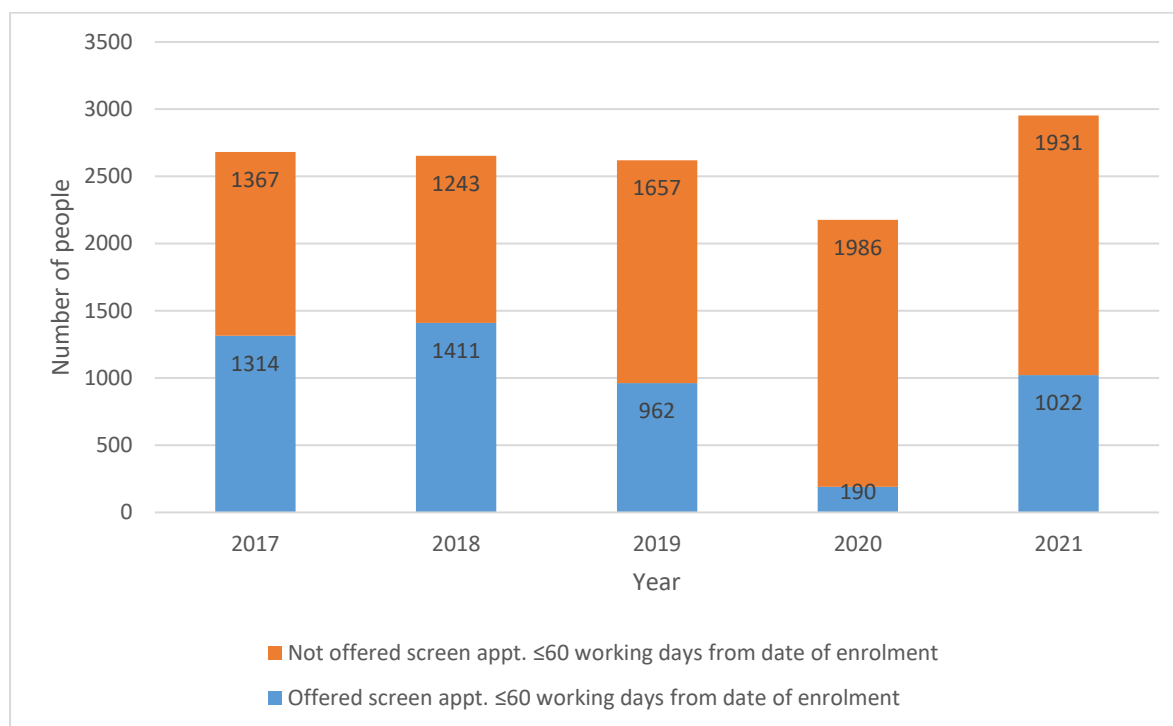
All 59 people were contacted by phone to apologise for the delay they experienced and to inform them of the review being undertaken to look at the causes of the delays that had occurred. The ten people identified for whom harm could potentially have occurred were phoned first by the clinical leader of BSC to apologise for the delay they experienced, explain that there was a possibility this may have resulted in the cancer being at a more advanced stage when they were diagnosed, and to allow them to ask any questions they might have. Follow up phone calls to these people were made by the Patient Safety Team to explain the adverse event review process and to offer these people an opportunity to meet face to face and share their experiences. All other people were phoned by a member of the Patient Safety Team to apologise for the delay they experienced, explain that a general review of the service was happening, and to allow them to talk about their experience of the breast screening process. All phone calls were followed up with a letter covering the same information and providing those affected with contact details should they have any further questions or concerns. Details of how to seek support through the Cancer Society, how to access advocacy support services and how to make a complaint to the hospital or the Health and Disability Commissioner were also provided.

For all those identified with possible high potential of having experienced harm, adverse/reportable event notifications were entered into the reporting system used by Hutt Hospital. All events were commissioned for SAC 2 reviews in accordance with hospital's Adverse Event Management policy and the Health Quality and Safety Commission's National Adverse Events Reporting Policy (Health Quality and Safety Commission New Zealand, 2017).

Cohort Demographics

Between the start of 2017 and the end of 2021, a total of 17,902 people enrolled for breast screening with BSC. Of those who enrolled 14,154 (79%) were aged 45-49. Over the same time period a total of 258,309 re-screening mammograms were required by people enrolled with BSC. Figure 2 shows the number of people who enrolled with BSC each year and how many received an offer of first appointment within the 60 working day timeframe laid out in the NPQS. This data refers to new enrolment eligible for assessment against the 60 working day target, and does not include those enrolled for a mobile site (e.g. fixed sites only).

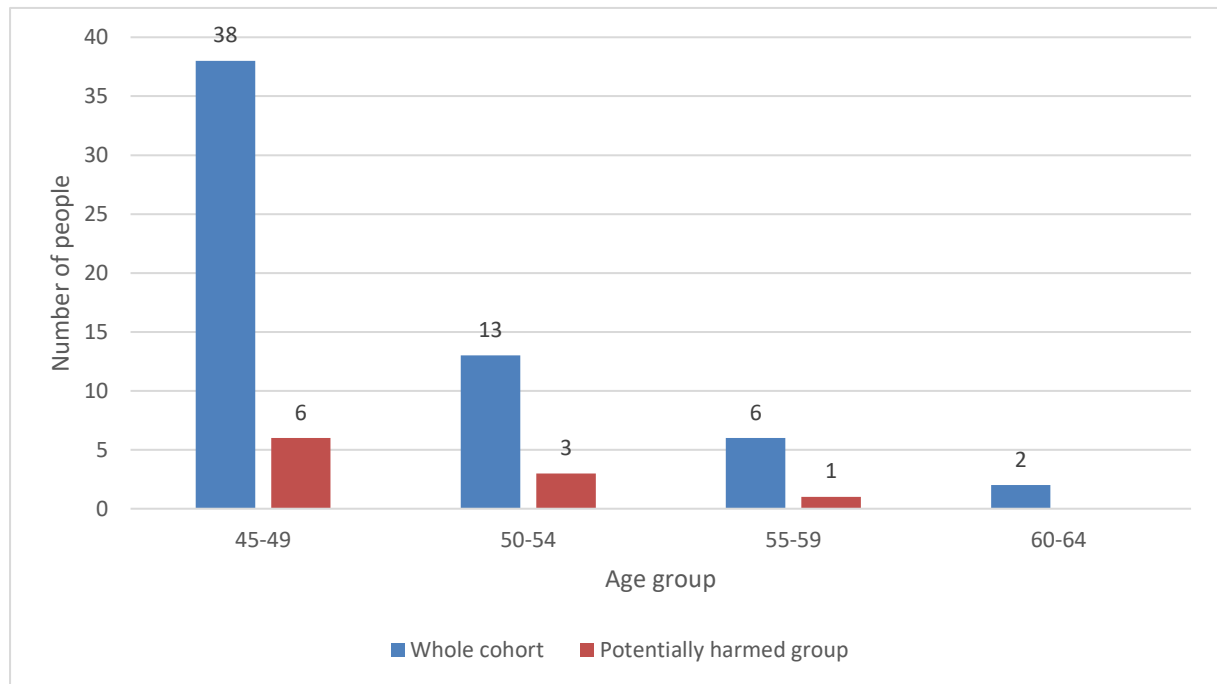
Figure 2: Number of new enrols by year who were, and who were not offered an appointment within the target timeframe.



Over this time period there were a total of 8,184 people who enrolled for breast screening with BSC who were not offered an appointment within the 60 working day timeframe. Using data supplied by NSU, and verified by BSC and the Patient Safety Team, 59 people (out of the 8,184 people) were identified who subsequently received a diagnosis of breast cancer. The following data refers to this group.

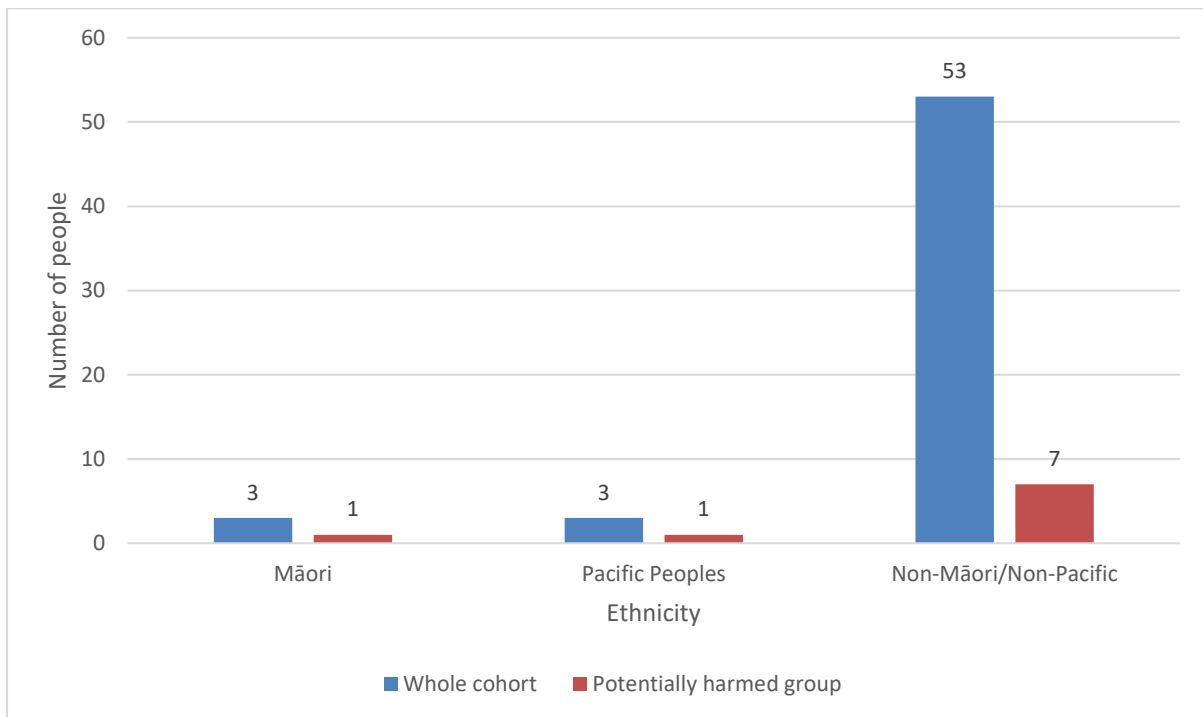
The majority of people identified were aged between 45 and 49 at the time they enrolled for breast screening. There is less evidence to show a benefit from screening in this age group (Ministry of Health, 2020) (Cox, B., 2022 – see Appendix 2) than there is for those aged 50-69. 38 (64%) of the total cohort of 59 people were in the 45-49 age group at the time of enrolment. Of the ten people who were identified as potentially harmed, six were aged 45-49, three were aged 50-54 and one was aged 55-59.

Figure 3: Whole cohort and potentially harmed group by age group



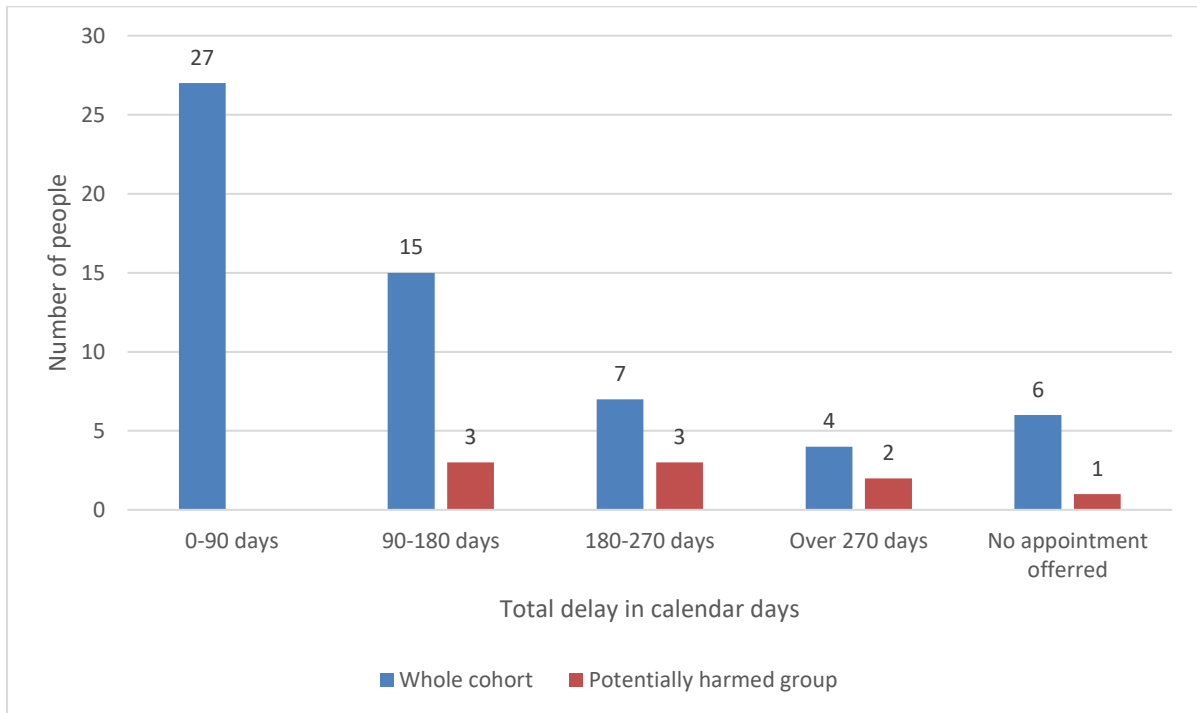
Māori and Pacific peoples have the lowest breast cancer survival rates in Aotearoa New Zealand (Tin Tin, et al., 2018). It is the aim of BreastScreen Aotearoa to achieve equity for all groups. To help achieve this the NPQS identifies Māori and Pacific peoples, as well as unscreened and under-screened people, as priority groups for screening (Ministry of Health, 2013). Of the whole cohort of 59 people, three people were Māori and three were Pacific peoples. In the group of ten who were identified as potentially harmed, one identified as Māori and one as Samoan. For both of these people the review team identified issues outside of capacity and prioritisation that prevented them from being offered appointments in a timely manner.

Figure 4: Whole cohort and potentially harmed group by ethnicity



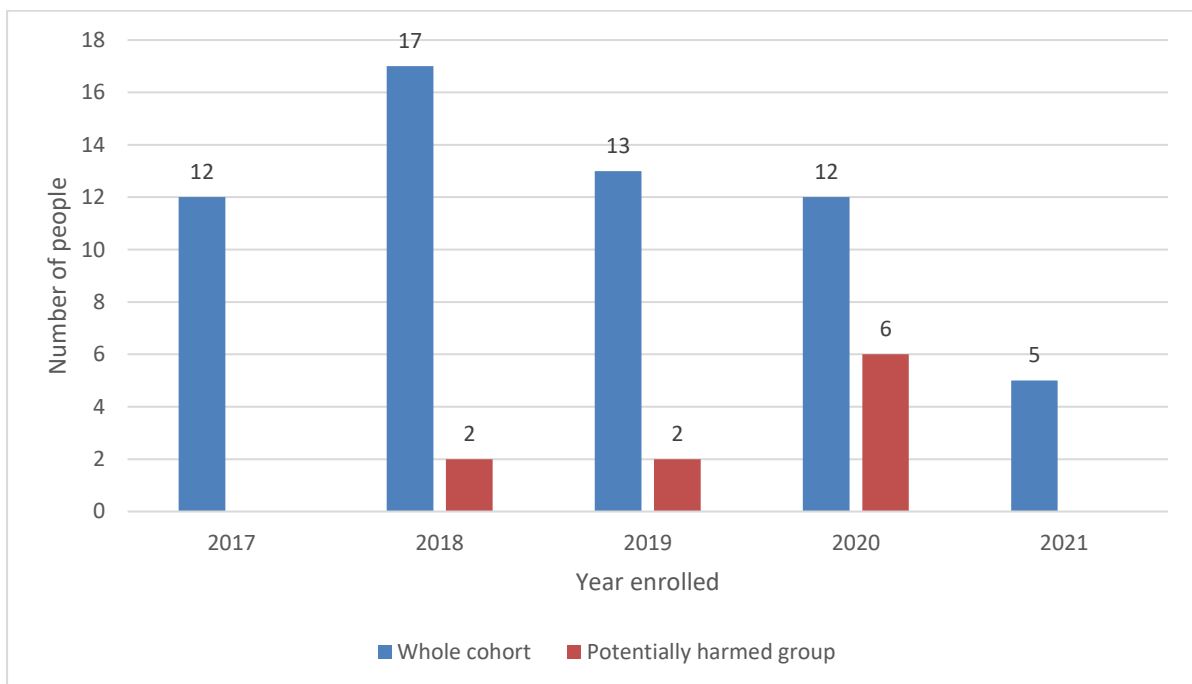
Out of the whole cohort of 59 people, 41 received an appointment for and then attended a screening mammogram at which an abnormality was detected. Six people did not receive an appointment for breast screening because an exclusion code was placed on their file for a breast cancer diagnosis or a private mammogram before an appointment had been issued. 12 people received appointments but did not attend them, eight received appointments after they had already received a mammogram through another pathway, and the remaining four received a mammogram through an alternative pathway at a date later than their first offered appointment. Figure 5 shows the time that elapsed in calendar days between the 60 working day time period ending and the date of the first offered appointment for the whole cohort. This time period was considered the delay that each individual experienced. The delay time for the group ranged from four days to 332 days, with a mean delay of 114 days. The mean delay for members of the cohort who identified as Māori was 51 days, and for those who identified as Pacific peoples the mean delay was 113 days.

Figure 5: Total number of days from end of 60 working day target to date of first appointment offered for whole cohort and potentially harmed group



The review looked at the group diagnosed with cancer whose first offered appointments were outside the 60 working day screening target who had enrolled with BSC from 2017 to 2021. Enrolment times for the whole cohort were spread relatively evenly across years 2017-2020 with fewer people who enrolled in 2021. Of the 10 people identified as potentially having been harmed, six enrolled in 2020, two enrolled in 2019, and two in 2018.

Figure 6: Whole cohort and potentially harmed group by year of enrolment



Review process

The 10 commissioned SAC 2 reviews were investigated using a systems analysis methodology. This is designed for the study of complex systems and their interacting parts. It included consideration of human factors, and was focused on identifying quality improvement findings and recommendations.

Representatives from Māori and Pacific Health Groups were consulted throughout the review process.

For the 10 people identified as requiring SAC 2 review a copy of all medical records was obtained including:

- Notes held on the breast screening digital platform
- All relevant documents from the digital platforms for Wellington, Hutt Valley and Wairarapa Hospitals such as clinic letters, discharge summaries, radiology reports and laboratory results
- Copies of relevant information from paper notes
- Radiology and laboratory results from Manage My Health
- Copies of notes from treatment with private health care providers
- Where the review team had questions relating to imaging, complete imaging results were uploaded to a digital platform accessible by the radiologist on the review team for review and comment

This information, along with details from conversations with the affected individuals, was used to construct a detailed timeline for each person. These timelines covered the period from enrolment to definitive treatment. These were shared with the review team and questions arising from them were clarified where possible by speaking to the affected individuals, staff members from BSC, or through further scrutiny of medical records.

Information about BSC, its systems and processes, the issues faced, and the actions taken to address these was obtained through interviews with key staff members. The following people from the BreastScreen Central service were spoken with:

- Clinical Director
- Service Manager
- Data Manager
- Quality Coordinator
- Administrative Team Leader
- Batch Booking Coordinator

Service level documentation and information was collected and sent to the review team, this included:

- Communications sent from BSA to Lead Providers with guidance on COVID-19
- Recent monitoring reports and audits for BSC

- Data on number of enrolments per month and number of enrolments without offered appointments for the time period in question
- Prioritisation frameworks used
- Information on capacity constraints faced by BSC over the time period in question
- Details from meeting minutes relating to capacity, staffing, prioritisation, and numbers waiting for appointments

Throughout the information gathering process all findings were disseminated to the review team and questions sought. Appendix 1 shows a timeline constructed from all data gathered depicting relevant events that occurred over the time period from 2017 to 2021.

On 12 August 2022 all members of the review team met in Wellington with the Patient Safety Team and Senior Leadership personnel from BreastScreen Central for a daylong meeting. Each of the cases for SAC 2 review were presented to the group and the key influencing factors for each were identified. Following this there was in depth discussion of the main influencing factors for the cohort as a whole. This focused on:

- Resource constraints experienced by the service over the time period in question and steps taken to address these
- Prioritisation frameworks used and guidance received from BSA relating to this
- The comparative risks of delayed screening in new-enrolments and those awaiting re-screening
- The impact of COVID-19 on breast screening services

The day concluded with a discussion with Te Whatu Ora – Health New Zealand and the BreastScreen Aotearoa (BSA) review panel who are conducting a review of breast screening nationally, to discuss the findings to date.

Following these discussions, findings and recommendations were drafted by the Patient Safety Team and shared with the external clinical experts on the review team and BSC for comment. They were also provided a sample review report showing the format and common information that would be used throughout all reviews. Feedback was collated and all review reports were populated with appropriate findings and recommendations and sent out once more for comment from the BSC service.

On 2 September 2022, drafts of all reports were shared with the Director Clinical Excellence Capital, Coast & Hutt Valley, Te Whatu Ora – Health New Zealand (HNZ) BreastScreen Aotearoa (BSA) Review Panel, BSA/NSU, and were submitted for consideration by a specialist Capital, Coast & Hutt Valley Serious Event Review Committee (SERC). Feedback was requested from all stakeholders by 7 September so it could be reviewed at the SERC meeting. Review by SERC is part of the usual adverse event review process for Wellington and Hutt Hospitals. This is a final content, quality and methodology check before reports are sent out to consumers. The SERC panel convened on 8 September for this process, and group membership consisted of:

- Consumer Representative
- Interim District Director Capital, Coast & Hutt Valley
- Medical Director, Hutt Hospital

- Clinical Director Medical and Acute Care, Hutt Valley Hospital
- Clinical Director Hospital Flow, Wellington Regional Hospital
- Service Group Manager Medical and Acute Care, Hutt Hospital
- Group Manager Centre of Clinical Excellence / Chair Hutt Hospital Serious Event Review Committee (SERC), Capital, Coast & Hutt Valley
- Chair Wellington Regional Hospital SERC
- Legal Counsel Capital, Coast & Hutt Valley
- Māori Health Group representative

The Patient Safety Team, members of the external review panel and staff representatives from BSC attended the SERC meeting to provide information about the review and answer questions from SERC panel members.

A representative from the Pacific Health Group was consulted independently of this process.

Feedback was received from the National Director, Te Whatu Ora – Health New Zealand National Public Health Service on 9 September after the SERC process was already completed, therefore changes resulting from this feedback were incorporated into reports along with changes from SERC. The feedback provided by the National Public Health Service and the amended reports were reviewed by the Te Whatu Ora – Capital, Coast & Hutt Valley BSC Review Steering Group (consisting of members of the District’s Senior Leadership Team) for final approval. Following this the review team received feedback from the Te Whatu Ora – Health New Zealand (HNZ) BreastScreen Aotearoa (BSA) Review Panel on 4 October. Feedback was reviewed by Te Whatu Ora – Capital, Coast & Hutt Valley BSC Review Steering Group for inclusion and approval of the final reports on 21 October.

Following approval from the Steering Group, reports were finalised for dissemination. These will be shared with the 10 people identified by the review team as potentially having experienced harm once the Chief Executive of Te Whatu Ora – Health New Zealand approves a release date. These people and their whānau will be invited to meet with the Patient Safety Team and clinical experts to discuss their review, ask questions and give feedback. Māori and Pacific Health Group representatives will continue to support the people who identify as these ethnicities throughout this process.

**Subsequent to finalisation of this report, the 10 SAC 2 review reports were provided to people affected on 8 December 2022.*

Finalised reports were initially sent to Te Whatu Ora – Health New Zealand Interim Regional Director, Central on 19 September. Reports were then sent to Te Whatu Ora – Health New Zealand (HNZ) BreastScreen Aotearoa (BSA) Review Panel. Following consideration of all feedback and final sign off from Te Whatu Ora – Capital, Coast & Hutt Valley BSC Review Steering Group reports were then sent back to Te Whatu Ora – Health New Zealand Interim Regional Director and Te Whatu Ora – Health New Zealand (HNZ) BreastScreen Aotearoa (BSA) Review Panel. The finalised reports will then be sent to Chief Executive of Te Whatu Ora – Health New Zealand. They will then be shared with Te Whatu Ora – Health New Zealand (HNZ) BreastScreen Aotearoa (BSA) Review Panel, BreastScreen Aotearoa/National Screening Unit, key stakeholders at Capital, Coast & Hutt Valley, and the Health Quality & Safety Commission.

Throughout the review process the Patient Safety Team has been in regular contact with BreastScreen Aotearoa/National Screening Unit through fortnightly meetings. The Patient Safety Team has also provided monthly progress reports to Te Whatu Ora – Health New Zealand head office (these were also provided to BreastScreen Aotearoa/National Screening Unit).

Assessment of potential harm

The review team were tasked with determining if harm had occurred as a result of delays in screening. The review team found that for each individual it was not possible to state with any certainty what impact an earlier screening appointment would have had on their diagnosis or treatment. For those individuals whose cases were identified for SAC 2 review, the review team acknowledged the possibility that earlier screening may have resulted in their cancer being at a less advanced stage at the time of diagnosis or requiring less intensive treatment. The review reached the consensus that harm could not be defined but that these individuals had not received the full benefit of the screening programme. The review team also acknowledged that these delays may have had psychological and emotional impacts for many individuals that are not easily quantifiable.

Findings & Recommendations

The review generated five core findings that were common across the majority of the SAC 2 reviews and were also relevant to the wider cohort of individuals who experienced delays in being offered a first screening appointment. Two supplementary findings were identified that were not of relevance to all individuals, but were recurrent themes from discussions with those affected and service staff. These findings had significant impacts in those cases where they were of relevance. The findings below highlight the complexity of the health system and the need for well designed and tested systems with clear communication and monitoring processes. For each of the findings, recommendations for system and process changes to be made at a local and national level have been made. Where relevant there is also a summary of the work already undertaken by BSC to address these issues.

Core Findings

Finding 1:

The capacity of the service was not sufficient to provide the required number of screening appointments. Over the time period looked at for this review, 2017 to 2021, BreastScreen Central had ongoing capacity issues. These were the result of:

- **Staffing shortages:** BSC had ongoing shortages for many key staff groups, most importantly in the context of this review they were consistently lacking the equivalent of between 0.5 and 2.0 full time medical imaging technologists (MITs) who carry out the mammograms. The number of MITs employed by the service dictates how many screening appointments they can book.
- **Lack of fixed sites:** Large sections of the population served by BSC (Wairarapa and Kāpiti Coast) are served by a mobile unit. Because of this, the centre was unable to utilise the MIT resource they had in the most efficient way. Staff working in mobile units are able to complete fewer scans per day than those at fixed sites due to ergonomic restrictions and social distancing rules, and further time is lost in transporting the mobile unit to and from the location where screening will be taking place.
- **Closure of a screening location operated by a private provider:** In December 2018 the private provider contracted by BSC closed one of their screening locations for renovations. They increased capacity at another screening location but there was still a shortfall. This continued until July 2019 when screening at Wellington Regional Hospital (WRH) commenced.

Actions already taken:

- **Staffing:** BSC has already put considerable effort into examining barriers to recruitment and retention of MITs. This has highlighted a number of potential initiatives such as offering breast MITs work in Hutt Hospital radiology department to make workloads more varied and appealing.
- **Fixed sites:** Funding was approved for the development of two new BSC fixed sites, one in the Wairarapa and one in central Wellington. A third fixed site in Kāpiti Coast is planned for 2023 but funding for this is yet to be approved.

Recommendations:

- a) Further initiatives aimed at improving recruitment and retention of MITs will be undertaken by BSC including making temporary administrative roles available to MIT students and consideration of extended scope MIT roles.
- b) The review team understand that work is already being undertaken by NSU to develop a national workforce strategy. We recommend that this involves consideration of the national barriers to recruitment and retention, including the continuous professional development requirements for those MITs exclusively engaged in breast screening.

Finding 2:

Existing capacity constraints were further exacerbated by COVID-19 lockdowns and restrictions.

Screening was paused across all BSC sites for a period of seven weeks in March and April of 2020 due to alert levels 4 and 3. The service re-opened in alert level 3 but during this time they only offered assessment appointments to allow time to put procedures in place in order to resume screening safely. When screening services resumed it was at lower than normal capacity, in order to meet national requirements for COVID-19 screening and social distancing.

During this time staff worked to manage the screening volumes as best they could. There was no documented escalation plan either within the service or nationally to guide staff in monitoring and managing the growing wait list. There was no national plan for such an unprecedented and significant event as the pandemic. The effects of COVID-19 on screening waiting lists was experienced globally.

Actions already taken:

- There has been considerable learning both locally, nationally and internationally as a result of COVID-19. Processes have been developed to enable breast screening to continue to run whilst maintaining social distancing. This learning will allow essential health services to continue with fewer interruptions should further restrictions be required in the future.

Recommendations:

- a) BreastScreen Aotearoa Lead Providers will work together with the NSU to share learnings from the COVID-19 pandemic and develop a national process for maintaining screening services wherever possible in the event of future national or global disasters.

Finding 3:

As a result of capacity constraints, both before and after COVID-19, a prioritisation framework was used to ensure that groups with a known increased risk of developing or dying from breast cancer received appointments preferentially. BSC used a prioritisation framework that prioritised people waiting for re-screens, Māori and Pacific people, and those enrolling at an advanced age over those who had newly enrolled with the service. The review team felt some of the guidance from NSU on prioritisation was open to interpretation. There were differing opinions as to whether the BSC framework aligned with NSU requirements. This prioritisation resulted in increased wait times for clients who had newly enrolled in breast screening. The majority of people who enrol for breast screening are aged 45-49. There is less evidence to show the benefits of screening in this group.

When screening resumed following COVID-19 lockdown, BSC offered appointments to new-enrolments only when there were appointment gaps or cancellations. This was done through telephone contact only, and therefore was based on who was available at the time and could take the appointment. This method was ad-hoc and did not have the objectivity or equity of the automated booking system.

Actions already taken:

- Following recognition that BSC was an outlier nationally due to the long waiting times for clients who enrolled with the service and the high numbers of new-enrolments waiting, immediate remedial actions were taken by the service. This included an increase in the number of appointment slots per clinic day that were allocated to new-enrolments, contracting an additional private provider to complete 555 screens over a three month period, and establishing Saturday clinics at Wellington and Kenepuru Hospitals to temporarily increase screening capacity. As a result of these actions, by March 2022, BSC had no new-enrolments waiting beyond the 60 working day target.
- BSC has implemented a production planning process that uses available data about current capacity, waiting lists and performance against targets to plan services on a daily basis in a way that maximises productivity and aims to balance both new-enrolment and re-screen work streams. The review team note however, that this balancing has meant an increase in the average re-screening interval to greater than 24 months highlighting the ongoing capacity constraints of the service.

Recommendations:

- a) BSC will implement an alert process that triggers notification to service management and leadership if the number of clients awaiting an appointment exceeds a specified and agreed threshold (60 working day target) and that outlines required responses.
- b) NSU and Lead Providers (including BSC) in consultation with all stakeholders, including consumers will agree a prioritisation framework that can be implemented when thresholds are exceeded and volumes exceed available resources. This framework will be consistently applied nationally.

Finding 4:

Lack of communication with clients who enrolled for screening about the delays meant that those who enrolled were not fully informed about the breast screening programme. BSC drafted a letter to inform all new-enrolments of the long waiting times and sent this to the National Screening Unit (NSU) for approval. NSU requested changes to the letter that meant it did not give an accurate picture of potential waiting times. No agreement was reached and the issue was not escalated further. As a result this letter was never sent out, which meant that clients who enrolled with the service lacked the full information they required to make informed decisions about their screening choices. This aligns with Ngā Paerewa Health and Disability Services Standard criteria 3.1.3 *“The entry process shall, where entry into the service is delayed, ensure the person receives timely updates”* (Standards New Zealand: Te mana Tautikanga o Aotearoa, 2021)

Recommendation:

- a) BSA, with input from all key stakeholders including service users and key staff members from all lead providers, will develop a standard communication using all technologies (letter, email, text etc.) to inform people waiting for appointment of the projected timeframe in which this will occur, their options, when and how to make direct contact with screening services or their GP, and the process for urgent care if they become symptomatic.

Finding 5:

There were gaps in the monitoring carried out nationally that resulted in a missed opportunity to recognise and act to resolve issues at an earlier date. Regular monitoring is carried out by the NSU using the targets stipulated in the National Policy and Quality Standards (NPQS). However, breast screening Lead Provider's performance against criteria 3.1.1 "*≥90% of eligible women, once enrolled, are offered an available appointment for a screening mammogram within 60 working days (fixed sites only)*" (Ministry of Health, 2013, p. 28), has never been monitored. There has also never been coordinated monitoring of the capacity within the screening system through measures such as staffing hours or available appointment numbers. This gap in monitoring meant that BSC's inability to meet demand and their increased waiting times for new-enrolments, when compared to other Lead Providers nationally, was not recognised and acted upon until July 2021.

Recommendation:

- a) With input from service users, BSC service staff and clinical leads, management, and the NSU, BSA will develop and implement a user focused system to monitor waiting numbers, wait times, resourcing (staffing, equipment, sites) and communication.

Supplementary Findings

There is no process for direct referral to the symptomatic service for clients who disclose symptoms at the time of enrolment. The review team identified the lack of a direct process for transferring symptomatic clients between the BSC screening service and the local symptomatic breast clinic without requiring them to go back to their GP first. The review team understands that such a referral process exists in another district, providing people there with a more efficient and quicker service for symptomatic people. The current system creates added complexity for symptomatic clients who approach the breast screening service. The requirement to go through a GP, and sometimes obtain a private mammogram, results in costs for symptomatic clients. This has the potential to exacerbate existing inequities in breast cancer survival.

Recommendations:

- a) Working with the newly established Regional Breast Service, implement a standardised process for people who disclose symptoms on enrolment with breast screening to be urgently prioritised and directly referred to the symptomatic breast clinic (without having to go back through their GP) . This should include consultation with other centres nationally where this process is established.



- b) NSU and Te Whatu Ora Health New Zealand review how breast screening services and symptomatic services interface at a national level with specific attention given to the equity issues inherent in the symptomatic pathway.


Finding 7:

The enrolment process is complex and has multiple potential points of failure. People who enrol with the service can do so by posting a physical enrolment form, phoning the service or submitting an enrolment form through the “time to screen” portal online. The online portal does not provide all the information required to complete enrolment, because of this BreastScreen Central does not actively promote use of the online portal. Instead they favour phone or paper based registrations, however both these systems are unreliable and have potential points of failure, and may exacerbate existing access inequities.

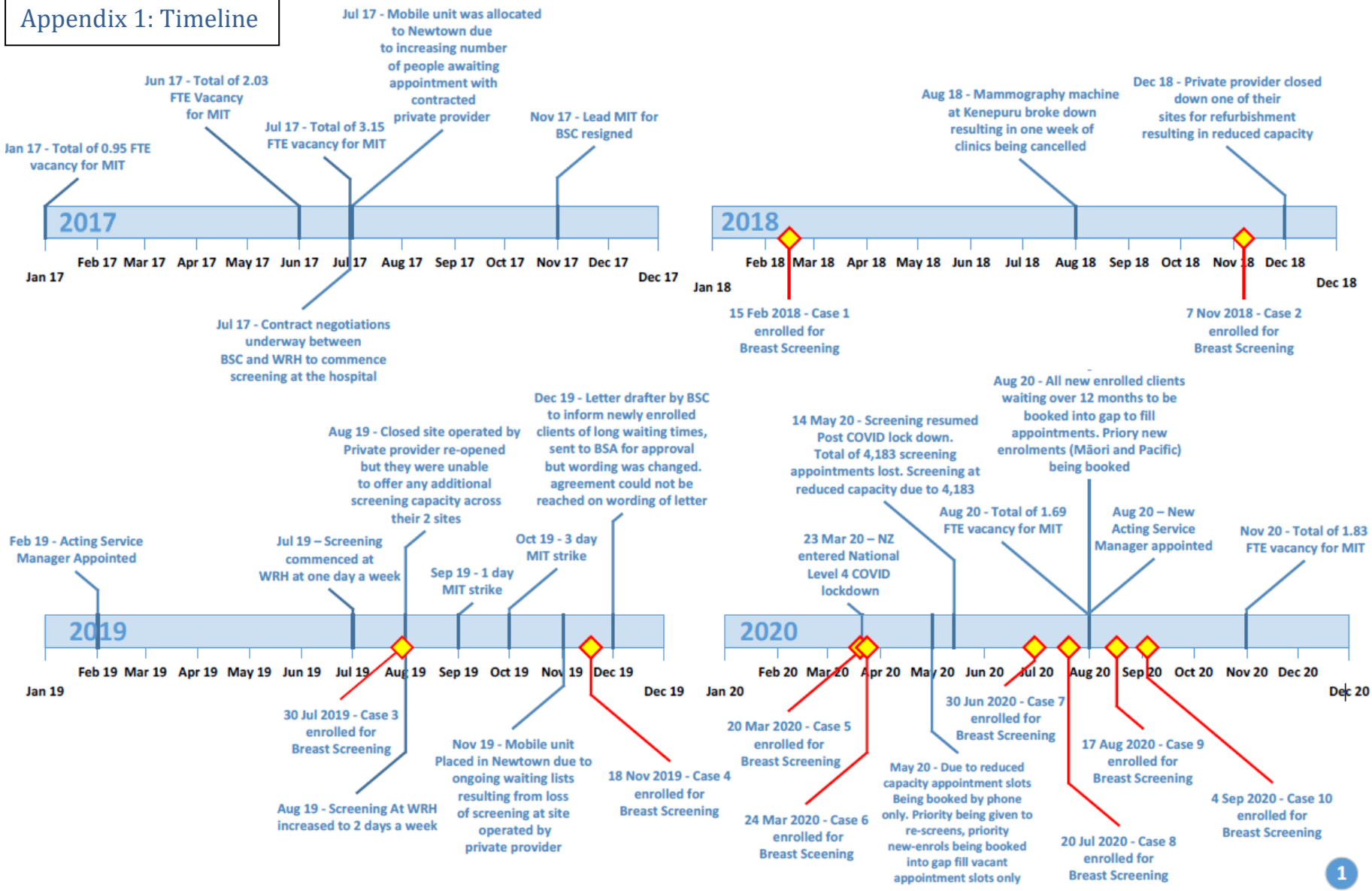
Recommendation:

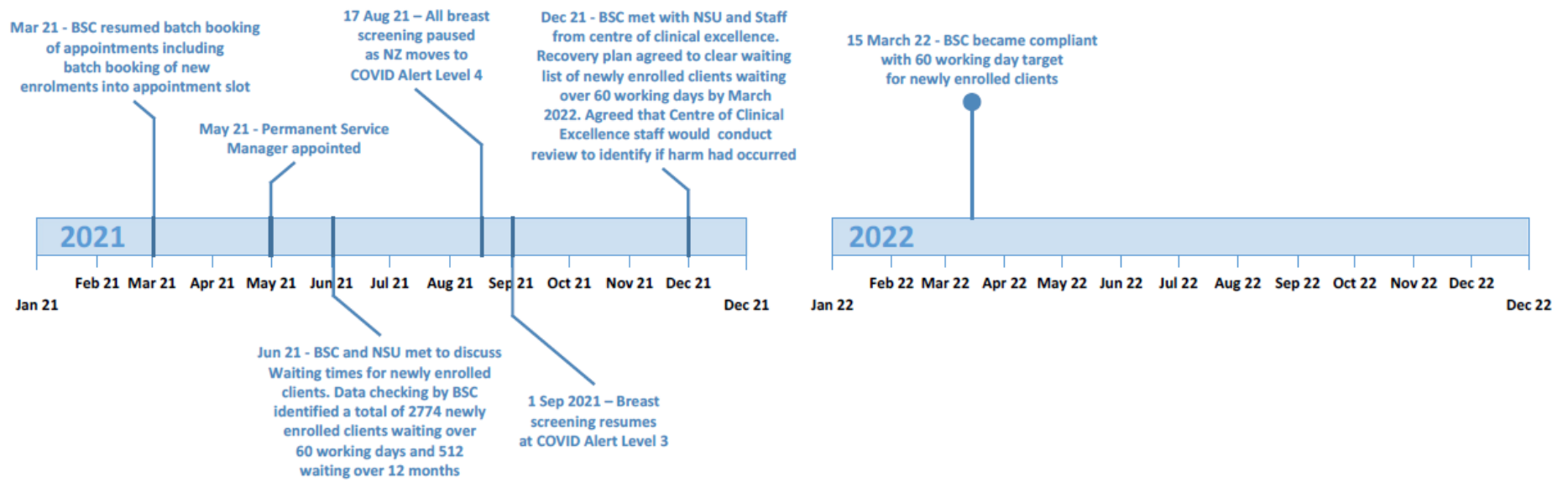
- a) BreastScreen Aotearoa and NSU will work together with Lead Providers and service users to evaluate enrolment processes and improve systems to make them simple, reliable and equitable.
- b) BSA to consider moving to an invitation process triggered by the 45th birthday of eligible consumers.

SERIOUS EVENT REVIEW COMMITTEE SIGN OFF		
Name and role	Signature	Date
Reuben Johnson Consultant Neurosurgeon, Medical Lead Patient Safety, Chair Wellington Regional Hospital SERC		13/09/2022
Anne Pedersen General Manager Clinical Excellence, Chair Hutt Valley Hospital SERC		13/09/2022

ACTING INTERIM DISTRICT DIRECTOR SIGN OFF		
Name and role	Signature	Date
Sarah Jackson Acting Interim District Director & Director, Clinical Excellence, Capital Coast & Hutt Valley District		14/09/2022

Appendix 1: Timeline





Appendix 2

The public health perspective of screening the newly enrolled versus rescreening current members of BreastScreen Aotearoa (BSA)

Author: Research Associate Professor Brian Cox, Medical Epidemiologist and Specialist in Public Health Medicine

The great majority of women newly enrolled in Breast Screen Aotearoa (BSA) are 45-49 years of age. The potential reduction in breast cancer mortality from screening 2-yearly for 10 years is estimated to be about 10%, at most and cannot be expected to alter the breast cancer mortality for women 45-49 years of age and most likely, if at all, reduce breast cancer mortality among women 55 or more years of age (Cox 2008). Starting 2-yearly screening at 50 years of age and continuing it for at least 10 years is expected to reduce breast cancer mortality in those screened by about 25%.

The great majority of current participants in BSA having rescreening episodes can be expected to be 50 or more years of age, with many 60 or more years of age. These women can expect to have about a 20% reduction in breast cancer mortality from, on average, four or five 2-yearly rescreening episodes. In addition, the older age of women being rescreened is associated with a higher risk of death from breast cancer.

For women 45-49 years of age who are newly enrolled in BSA the initial detection rate of invasive breast cancer is 3.8 per 1000 women (Page et al 2014). For women 50-64 years of age, the rate of new diagnosed invasive breast cancer in screening episodes after the first screening episode (rescreens) is 4.1 per 1000 (Page et al 2014). Therefore, the detection of invasive breast cancer is higher when rescreening older women than for newly enrolled women 45-49 years of age. However, the delay in rescreening does not mean these cancers are undetected but results in reducing the invasive cancers detected at rescreening and increasing the number of interval cancers. A 6-month delay in rescreens could be expected to increase the interval cancer rate by 25% and reduce the rescreen-detected cancer rate by an equivalent amount.

The interval cancer rate in those 50-64 years of age can be expected to be about 1.22 per 1000 women in the 24-36 months after a negative screen (Bennett et al 2011). This represents 42% of all interval cancers in a 3-year interval between screening episodes. The characteristics of interval cancers 24-36 months after a negative screen are similar to those found within 24 months of a negative screen. In addition, interval cancers are more aggressive than screen-detected cancers and survival is nearly half that of women with screen-detected cancers (Irvin et al 2020).

From the above, it is concluded that the prevention of interval cancers by appropriately rescreening 50-69 year-old women 2 years after their previous mammogram may not only result in a greater screen-detection of invasive breast cancer than that of newly enrolled women 45-49 years of age, but also enable detection of what would otherwise be interval cancers at a stage where survival is improved. The magnitude of this effect also depends on the amount of delay imposed on the rescreening of older women. However, combined with the known lower impact on breast cancer mortality when screening younger women, the timely rescreening of women 50-69 years of age in BSA

can be expected to have a greater impact on reducing breast cancer mortality than the screening of newly enrolled women 45-49 years of age.

Ethics of public health screening

The medical ethics of public health medicine has some additions to the medical ethics of clinical practice. When a public health service is offered, such as breast screening, it involves a commitment by the service to the accepting participant to provide the promised protective effect of 2-yearly mammography on their health. Changing that agreement so that a participant's protection is lowered for the sake of having more people join the programme, despite increasing a participant's risk of mortality, would seem unethical. From a public health medicine perspective, the consent of the participant should be necessary to waive some of the protection promised to them and this should not be the edict of the provider.

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