

Evaluation of the BreastScreen Australia program's expansion of the target age for active recruitment to include women aged 70 – 74 years

Evaluation Plan Summary

Australian Government Department of Health

21 November 2018

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Nous acknowledges the Aboriginal and Torres Strait Islander peoples as the First Australians and the traditional custodians of the states and territories of Australia. We pay our respects to the elders past, present and future in maintaining the culture, country and their spiritual connection to the land. Nous acknowledges that there is no single Australian Aboriginal and Torres Strait Islander culture or group and recognises the diversity of communities and cultures throughout Australia. In this document we will be respectfully using the term Indigenous people or Aboriginal and Torres Strait Islander people.

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Glossary

Item	Description
Aboriginal and Torres Strait Islander	Refers to a person who identifies as an Aboriginal and/or Torres Strait Islander and is accepted as such by the community with which he or she lives. ¹
Ductal carcinoma in situ (DCIS)	Ductal carcinoma in situ is the presence of abnormal cells inside a milk duct in the breast. DCIS is considered the earliest form of breast cancer. DCIS is non-invasive, meaning it hasn't spread out of the milk duct to invade other parts of the breast.
Higher risk women	A collective term used to refer to women at a higher risk of breast cancer – for example, women with family history, women with a past history of breast cancer or ductal carcinoma in situ or women with symptoms.
Program manager	Program managers are responsible for management of all Program functions at the jurisdictional level and ensure that service delivery is client-focused, efficient and of the highest standard. The role includes financial performance, statutory compliance of service delivery and management of human resources. ²

Acronyms

Item	Description
ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
AMS	Aboriginal Medical Service
ICR	International comparator review
KLE	Key Lines of Enquiry
PHN	Primary Health Network
RA	Remoteness areas
BSTRG	Department of Health BreastScreen Technical Reference Group

¹ BreastScreen Australia. (2005) Data Dictionary.

² Ibid.

1 Introduction

This document summarises the plan for the *Evaluation of the BreastScreen Australia program's expansion of the target age for active recruitment to include women aged 70 – 74 years*. This Evaluation Plan Summary outlines the conceptual framework for the evaluation, key lines of enquiry and evaluation questions that will guide the evaluation process from 2018 - 2021.

Background and context

The BreastScreen Australia Program has played a pivotal role in reducing breast cancer mortality and morbidity for Australian women through population-based screening, detection and early diagnosis. Globally, early detection to improve breast cancer outcomes and survival remains the cornerstone of breast cancer control. Organised national screening programs for breast cancer are active in several countries including Canada, Denmark, England, France, Ireland, Japan, Republic of Korea, New Zealand, Sweden, and The Netherlands.

From 2013-14, the target age range for screening in Australia was expanded to include women aged 70-74 years (aligned with the 2009 BreastScreen Australia Evaluation³ recommendations). Program expansion was supported by initial Commonwealth funding of \$55.7 million over four years, from 2013-17. A recent further commitment of \$64.3 million will continue funding program expansion to June 2021.

As part of the further funding commitment, the Department has engaged Nous Group (Nous) to evaluate the implementation and early impact of the BreastScreen Australia's program expansion of the target age for active recruitment to include women aged 70 – 74 years. The evaluation will focus on screening participation rates, and clients' and stakeholders' experiences. The evaluation findings will provide important evidence to guide improvements to future program delivery planning and funding beyond the current program funding commitment.

Implementation data to date indicates overall participation rates in the BreastScreen Australia program have increased in aged 70-74 years across Australia. However, participation in breast screening is influenced by income, education level, age, health, access to health and screening services, age, residential geography, cultural background, knowledge and/or worry about breast cancer and screening.⁴ In Australia, barriers to participation are enhanced for particular sub-groups, including women from non-English speaking

³ Department of Health. (2009). BreastScreen Australia Evaluation. Retrieved [Cancer Screening Australia](#).

⁴ Ibid.

backgrounds (especially those who have newly arrived to Australia), Indigenous women, women living in remote areas (particularly in the Northern Territory), and women with disabilities.⁵

In addition to this evaluation, there the Department of Health (the Department) has initiated projects and evaluations (underway or in train) for the BreastScreen Australia program including:

- an evaluation of the national accreditation system by the University of South Australia
- a project to review and manage screening in women aged 75 and over
- a project to review annual screening
- development of technical standards for tomo synthesis in BreastScreen Australia.

Evaluation approach and considerations

Program expansion is now well advanced in each jurisdiction, with completion of the first phase of implementation achieved in 2016-17. Our evaluation will equally consider the implementation progress and lessons learnt in phase one, alongside the tracking of future progress from 2018-19 to 2021.

A key challenge, and opportunity, for the evaluation relates to the diversity of operating models and contextual factors across jurisdictions. Implementation of program expansion has been shaped by differing local needs and priorities in each State and Territory. While program diversity creates analytical complexity, it also offers great potential to compare differing approaches to the shared issues associated with implementation. For example, there is potential to explore different approaches to raising awareness and understanding in culturally and linguistically diverse (CALD) women or addressing access issues in geographically challenging locations. Equally, there is potential draw on the international evidence from population-based screening programs to compare the design and implementation of program expansion in the Australian context.

Our evaluation approach will test the theory of change that an investment in targeted awareness-raising and increased screening eligibility will increase participation rates and cancer detection in women aged 70-74 years. Drawing on a program logic model, the evaluation will explore both formative (implementation) and summative (impact) aspects of the program expansion. Evaluation questions are organised under three key lines of enquiry (KLE):

1. How effective were the implementation processes and activities?
2. How has program expansion impacted screening participation in the target group? What barriers or enablers to participation have been encountered?
3. What opportunities are available to improve and sustain the program expansion?

⁵ Department of Health and Ageing (2008). *Breast Screen Evaluation: Participation Qualitative Study*. Screening Monograph No.3/2009.

Each KLE is supported by a suite of research questions that probe aspects of program access equity, effectiveness and efficiency, associated with expansion of the target age group. Exploring the awareness, understanding and experiences of program expansion for Aboriginal and Torres Strait Islander women and women from culturally and linguistically diverse backgrounds is a cross-cutting research theme that spans all KLE.

The evaluation scope focuses specifically on impacts associated with screening program participation. Issues concerning diagnostic accuracy of screening and the clinical management of screening results in women aged 70-74 are outside the scope of this evaluation. The Department is presently considering commissioning additional research activities to explore these issues in parallel with this evaluation.

Evaluation methodology

The evaluation methodology spans four stages, each with a distinctive focus:

- **Stage 1:** (January 2018 – September 2018) will deliver the *Evaluation Design*, establishing a clear framework and methodology for analysis. During this stage, evaluation governance and consultation structures will be established. Approval from the Australian Institute of Health and Welfare (AIHW) Health Human Research Ethics Committee was successfully sought during this stage.
- **Stage 2:** (September 2018 – August 2019) will *Analyse Current Progress*, focusing on program design, implementation since commencement in 2013. A desktop, international comparator review will be conducted as part of this stage, comparing and contrasting the program expansion in Australia with other population-based screening programs around the world.
- **Stage 3:** (August 2019 – August 2020) will *Monitor Improvement and Early Impact*, will track the progress of improvements to the program, identified in Stage 2. The experiences of women aged 70-74 will also be explored in this stage of the evaluation, considering both participants and non-participants.
- **Stage 4:** (September 2020 – June 2021) will *Deliver the Final Report and Recommendations* drawing together and building upon the interim findings and recommendations from Stages 2 and 3. The final report will include the recommendations for future program sustainability and funding.

Regular Departmental and key stakeholder dialogue, progress updates and interim reporting is a feature of the evaluation methodology. This approach will enable testing and validation of findings together with early identification and implementation of opportunities for program improvement. Three substantial interim reports will be delivered across Stages 2 and 3, supporting a 'no surprises' approach that will build a shared view of the evaluation findings and future program options well in advance of the Final Evaluation Report. These interim reports will provide valuable information on Nous' preliminary findings to support funding decisions and planning leading up to June 2021.

Mixed methods data collection and analysis will be an iterative, cyclical process spanning Stages 2-4 of the evaluation. The BreastScreen Australia program offers a rich array of data sources with which to triangulate the evaluation findings. The analysis will draw on the published and grey literature concerning Australian and international screening programs; nationally collected program and population health data and individual jurisdictional data. Existing evidence will be complemented by primary collection of stakeholder consultation data, including surveys and interviews with women in the target age group.

Evaluation governance and oversight

A comprehensive evaluation governance structure has been established to ensure delivery of high quality analysis, appropriate stakeholder consultation and practical, evidence-based recommendations. The governance structure provides for overall oversight and monitoring of the evaluation by the Department of Health, with expert guidance and advice from the BreastScreen Australia Technical Reference Group (BSTRG). As a key stakeholder for the evaluation, jurisdictional involvement will be achieved through regular consultation with Program Managers, including their review and feedback on evaluation deliverables, commencing with this Evaluation Plan.

Oversight of ethical conduct is central to good evaluation governance. Nous will ensure the design and conduct of the evaluation is consistent with National Health and Medical Research Council (NHMRC) advice and the *Guidelines for the Ethical Conduct of Evaluations* published by the Australasian Evaluation Society (2000). Ethics approval of the evaluation has been secured through the AIHW Human Research Ethics Committee, prior to commencement.

Stakeholder groups

Various groups of stakeholders will be engaged across the course of this evaluation:

- The Department – Department Project Team and other representatives as agreed with the Department
- BreastScreen Australia Technical Reference Group
- State and Territory Governments – representatives from State and Territory Governments as relevant
- State and Territory Program Managers
- Service providers staff in each jurisdiction – this includes clinical and administrative staff e.g. radiologists, surgeons, medical officers, radiographers, sonographers, health promotion/ administrative staff, data management staff, counsellors and nurses
- BreastScreen Australia clients in the target age group – a sample of women who have participated in the program aged 70-74 years
- Women aged over 70 years – a sample of women in the general population

- Consumer groups – groups of consumers, including Breast Cancer Network Australia’s research group
- Peak bodies – for example Cancer Australia and Cancer Council
- Primary Health Networks, Aboriginal Medical Services and the Colleges – a sample of PHNs, AMSs and relevant colleges across all jurisdictions including the Royal Australian and New Zealand College of Radiologists and the Australian Society of Medical Imaging and Radiation Therapy.

Key issues and unintended consequences of breast screening

Key issues and unintended consequences of breast screening programs identified by the International Agency for Research on Cancer (IARC)⁶ are applicable to the Australian context and will be considered during the current evaluation. These include:

- **False positive rates:** Although abnormalities might be detected through screening, investigations may show no cancer. This may result in unnecessary invasive procedures and exposure to radiation.
- **Over-diagnosis:** Breast cancer diagnosed by screening may not have otherwise been diagnosed during a woman’s lifetime. This includes all instances where cancers detected through screening might never have progressed to become symptomatic during a woman’s life.⁷
- **Over-treatment:** Except in rare cases, over-diagnosed breast cancer cases are over-treated. Although breast cancer care has moved positively from aggressive surgery to breast-conserving treatment, carcinoma in situ is still considered a major area of over-treatment.
- **Risk of breast cancer induced by radiation:** Exposure of the breast to ionising radiation may induce breast cancers. Therefore, the balance of benefits and risks must consider the number of cancers caused by screening with mammography; however due to the small number of expected cases it is not possible to estimate such a number.
- **Psychological consequences of screening:** Participation in breast cancer screening can have psychological or psychosocial consequences for women. This includes the impacts of an invitation to screening, a negative result, diagnosis of breast cancer, and the impact of a false-positive result on further participation.
- **Cost-effectiveness and balance of harms and benefits:** Decisions about the implementation of health care interventions are partially based on cost-effectiveness analyses. Costs that should be considered include costs associated with the organisation of the program (including invitations and screening), interval cancers, diagnostic work up and additional treatment costs.

⁶ Ibid.

⁷ Cancer Australia (2014), Over diagnosis from mammographic screening. Retrieved from: [Cancer Australia Publications and Resources](#)

The following sections of this document outline the key elements of the evaluation in more detail.

2 Evaluation framework

This section outlines the overall evaluation approach, including the purpose, scope, type of evaluation, and program logic model.

2.1 Purpose and scope

BreastScreen Australia’s expansion of the target age to include women aged 70-74 was intended to increase early detection and detection for older Australian women through increased participation whilst not affecting the existing target population. The evaluation has the following objectives:

- to assess the effectiveness of the implementation of the program expansion
- to assess the initial impact of the program expansion on screening participation rates in women aged 70-74 years, and
- to identify opportunities to improve or strengthen screening participation rates in women aged 70-74 years.

The evaluation has a clear scope, as outlined in Table 1 below.

Table 1 | Scope of the evaluation

In scope aspects of the evaluation	<ul style="list-style-type: none"> • BreastScreen Australia’s current and previous (i.e. prior to the expansion) service delivery model
Out of scope aspects of the evaluation	<ul style="list-style-type: none"> • BreastScreen Australia’s accreditation and quality improvement processes • Assessment and management of women at higher risk of breast cancer • The clinical appropriateness of the BreastScreen Australia program in general • Alternative service-delivery models for the BreastScreen Australia program • Exclusion of long-term outcomes (e.g. mortality) due to the timing and retrospective nature of the evaluation
Any context or related activity	<ul style="list-style-type: none"> • The 2009 Evaluation of the BreastScreen Australia Program’s Final Report will provide context to the expansion of the target age to women aged 70-74. • The Department will commission a complementary study into clinical effectiveness of population breast screening for women aged 70 to 74 years, including the short-term clinical outcomes of the expansion (up to two years). • Nous’ role will be to incorporate and integrate the outcomes of the clinical effectiveness review to the broader evaluation, interim finding reports and final evaluation report. Nous will meet with the University of Sydney and the Department during the second half of 2018 to agree the scope and approach to integrate the clinical component of the evaluation.

2.2 Evaluation type and principles

The evaluation will focus on identifying ongoing improvements to the program and short-term outcomes. To enable this, the evaluation will incorporate formative and summative elements, described below.

- **Formative:** initial phase of the evaluation. This will enable an understanding of change over time and identification of further opportunities to improve evaluation activities as the project continues into later stages.
- **Summative:** secondary phase of the evaluation. This will review the overall effectiveness of the expansion, including the short-term outcomes.

The overarching principles for the evaluation project are:

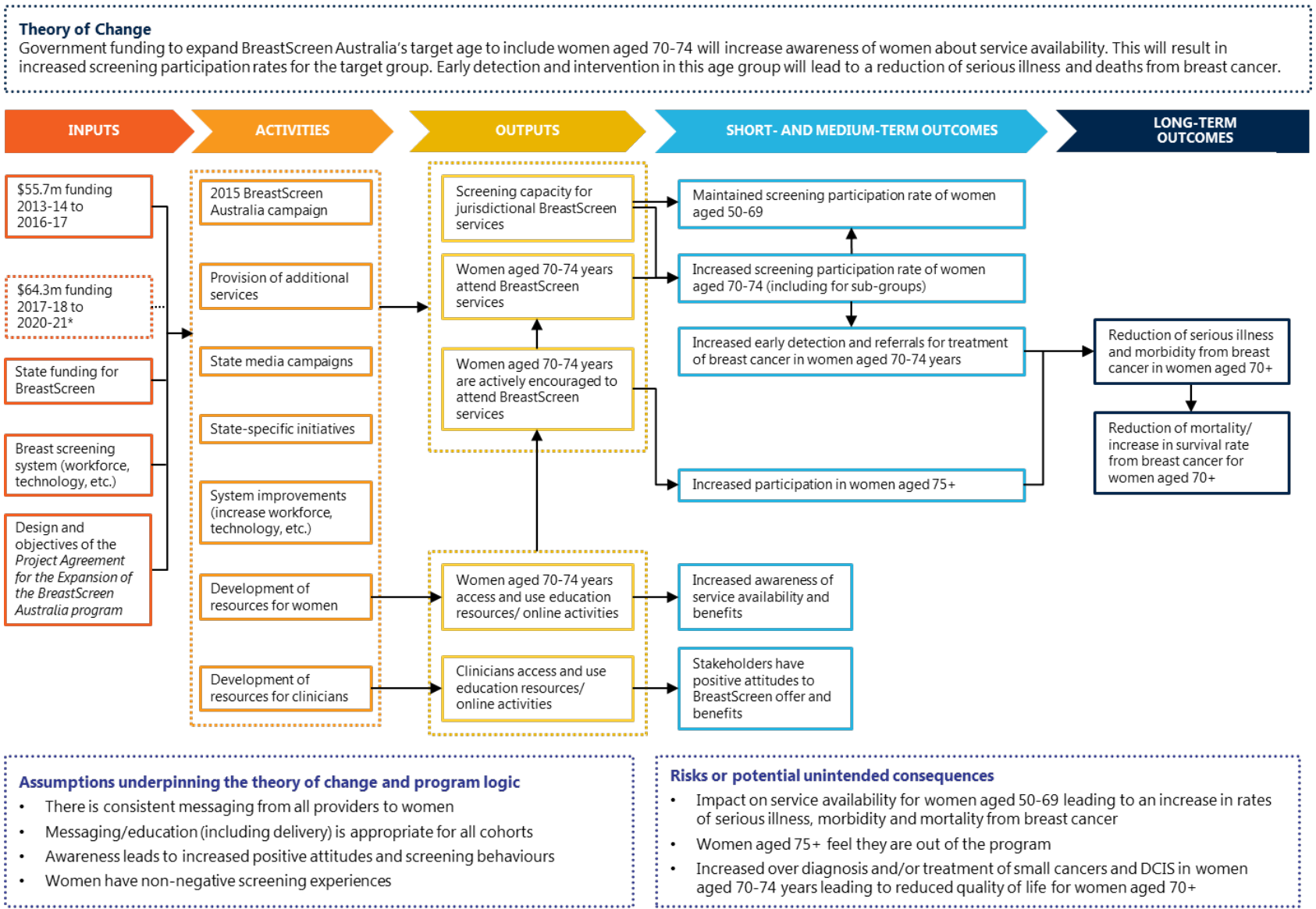
- **Balanced** – for feasibility, appropriateness and rigour.
- **Leverage service provider and clinical experience** – ensure evaluation activities reflect an understanding of day-to-day practice and recommendations are feasible and appropriate.
- **Efficiency** – make best use of existing data.
- **Engagement** – include sustained engagement with key stakeholders, including BreastScreen Australia's clients.
- **Dignity** – respect the rights, privacy, dignity, entitlements and knowledge of different stakeholder groups.
- **Unintended consequences** – consider negative consequences of the expansion including considering changes to participation in 50-69 year olds and the impact of the funding structure on States and Territories.

2.3 Program logic

The evaluation will be guided by a program logic model. The program logic model articulates the relationship between desired outcomes, and the required inputs, activities and outputs. These relationships, and the underlying assumptions that support the theory of change, will be tested throughout the evaluation.

The program logic guiding the evaluation is provided in Figure 1. While long-term outcomes are noted in the program logic theory of change, they are out-of-scope for the evaluation as noted in Table 1.

Figure 1 | Program logic for the evaluation

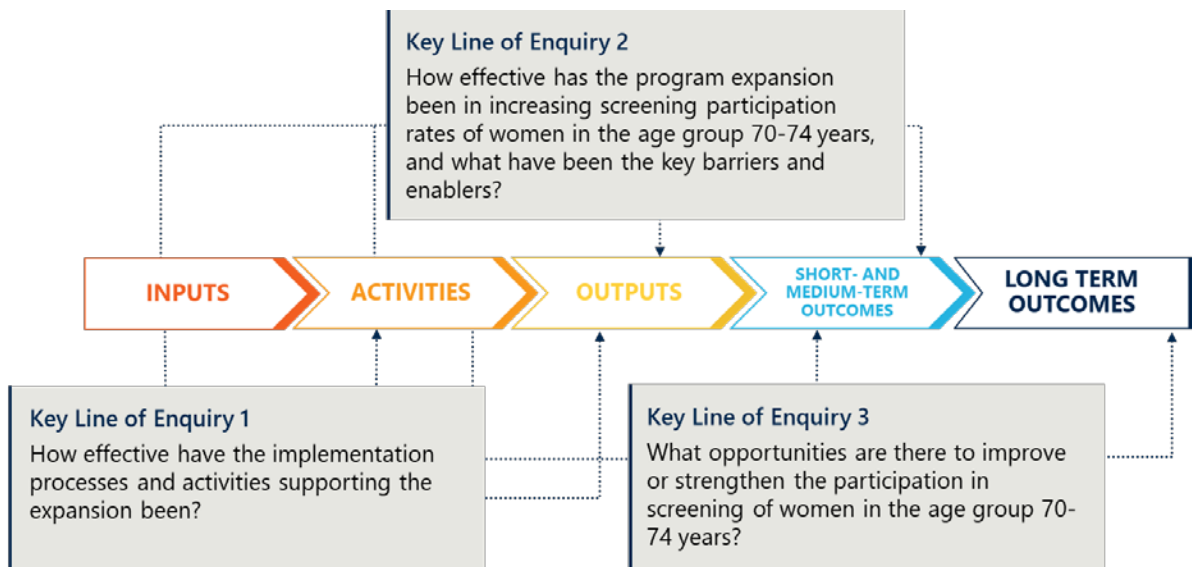


*Allocation of these funds is to be confirmed following negotiation of a project agreement by the Commonwealth and States and Territories

3 Key lines of enquiry

Three key lines of enquiry will guide and structure evaluation activities. These have been mapped to the elements of the program logic, as shown in Figure 2 below.

Figure 2 | Alignment of the program logic and the key lines of enquiry



4 Evaluation methodology

This section describes key elements of how the evaluation methodology will be organised and conducted. It includes key activities, project management, and timelines. **Error! Reference source not found.** summarises the timing, activities and deliverables of the evaluation.

Table 2 | Four-stage methodology to deliver the evaluation

Date	January 2018 – September 2018	September 2018 – August 2019	August 2019 – August 2020	September 2020 – June 2021
Stage	Stage 1: Design Evaluation	Stage 2: Analyse current progress	Stage 3: Monitor improvement and early impact	Stage 4: Deliver final report and recommendations
Activities	<ul style="list-style-type: none"> Initiate the evaluation Conduct environment scan of stakeholders and data, including targeted interviews Confirm ethics requirements Develop and test draft Evaluation Plan, including sampling and recruitment approach, data collection tools and risk management plan Finalise and submit the Evaluation Plan and ethics application 	<ul style="list-style-type: none"> Conduct review of existing consumer experience information and data Conduct review of international comparators Conduct online national survey of BreastScreen Australia program staff and broad stakeholder groups Collect and analyse quantitative program usage, cost and other data Conduct consultations with government, Program Managers and BreastScreen Australia staff Conduct baseline cost analysis Interim Findings Report 1 	<ul style="list-style-type: none"> Update desktop review of relevant program contextual information Conduct surveys and consultations with BreastScreen Australia clients Conduct follow-up survey of BreastScreen program staff and broad stakeholder groups Interim Findings Report 2 Update quantitative analysis on program use and client demographics Conduct follow-up consultations with governments, Program Managers and BreastScreen staff and clients Interim Findings Report 3 	<ul style="list-style-type: none"> Synthesise qualitative and quantitative data, including final cost analysis, to develop draft findings Update review of international comparators Hold working session with DOH to test findings and options Develop Draft Report Test and iterate findings and recommendations with Department Submit Final Report
Key deliverables	<ul style="list-style-type: none"> Draft Evaluation Plan, including environment scan and survey/interview questions Final Evaluation Plan Ethics application 	<ul style="list-style-type: none"> International Comparator Review Interim Findings Report 1 	<ul style="list-style-type: none"> Interim Findings Report 2 Interim Findings Report 3 	<ul style="list-style-type: none"> Draft Final Report, including update review of international comparators Final Report

Project management and planning tools will be employed to ensure the evaluation is delivered within timeframes, within budget and to scope. This includes a project plan setting out activities and milestones, a communications plan, a stakeholder engagement plan, a data collection plan and a risk management plan.

5 Data collection and analysis

Data collection and analysis will be driven by the overall objectives of the evaluation and the key lines of enquiry through an iterative, cyclical process. Data triangulation will be used to validate data and research outputs across methodologies and to balance the subjectivity of qualitative inputs.

There will be four main streams of data collection and analysis in the evaluation:

1. **Desktop research**
2. **Stakeholder consultations** (including interviews, meetings, working sessions, briefing sessions, focus groups, workshops and half-hour phone consultations)
3. **Stakeholder surveys** (including online surveys and telephone surveys)
4. **Existing population, program and other relevant data.**

Sufficient data quality is critical to ensure robust evaluation findings. Given the differences of data collection streams, the approach to assessing data quality varies. The planned data sources have been assessed against best practice for each stream, taking into consideration the prospective or retrospective nature of the collection. Privacy and data security of all collected data will be maintained as appropriate.

5.1 Desktop research

The evaluation will rely on desktop research throughout the project.

Data sources

The data sources for the desktop research will include a domestic component and an international component in the form of an international comparator review (ICR). The domestic research and ICR will be informed by peer-reviewed, grey and media data sources. The ICR will target ten countries, with a primary focus on Europe and New Zealand, and keep abreast of any emerging programs throughout the course of the evaluation.

Data quality

An integral part of the desktop research will be to ensure the identified sources are of sound quality. Specific research parameters and inclusion criteria will be used to ensure desktop research remains focused on the research questions and uses credible sources.

Data collection tools

Literature relevant to the review will be identified using search terms and combinations in open access internet searches and specific databases. Review items will be captured in a document register using a scale of high,

medium and low priority. The document register will link the desktop research review and emerging insights to the associated KLEs.

Data analysis

Desktop research analysis will be driven by relevant KLEs, research questions, and sub-questions. Following identification of all relevant documents, sources will be scanned for key data and prioritised for an in-depth review. Key findings will be drawn from this review, supported by the broader scan data.

The approach to synthesising findings is shown in **Error! Reference source not found.** below.

Table 3 | Prioritisation and synthesis of findings

Scope of search	Conduct database, open access and specific website searches on key terms.	Search extends to open-access journals, specific databases, Google search results, and specific grey literature searches using set key terms.
Parameters and inclusion criteria	Identify sources based on set parameters and inclusion criteria.	English-language literature and publications from 2009, including other specific priority and relevant papers as identified by the Department.
Assessment criteria	Refine the sources for in-depth review based on assessment criteria.	<ul style="list-style-type: none"> • Alignment of sources with key lines of enquiry • Ability of the source to address gaps in existing data sources • Depth of the source (i.e. ability to provide deep understanding of a particular issue or key line of enquiry) • Number of citations and quality of the source journal • Expert recommendations and guidance from Program managers and Technical Reference Group.
Analysis	Synthesise for key insights	Development of distinct themes, with heavier weighting given to: <ul style="list-style-type: none"> • Primary data • More recent data • Empirical or peer-reviewed data

5.2 Stakeholder consultations

Evaluation success depends on effective consultations with diverse groups who support or interact with BreastScreen program delivery and policy across state and federal levels (within and outside of government).

Data sources

Consultations will all be undertaken once consent has been provided by participants. Stakeholder groups to be consulted include:

- The Department Project Team
- BreastScreen Australia Technical Reference Group
- AIHW
- State and Territory governments
- State and Territory Program Managers
- Service provider staff in each jurisdiction – administrative staff and clinicians/technicians
- BreastScreen Australia clients (women) in the target age group
- Consumer groups, including Breast Cancer Network Australia’s research group
- Peak bodies e.g. Cancer Australia, Cancer Council Australia

Data quality

It is important to obtain accurate and meaningful insights from the consultations. Consultation activities will be underpinned by a series of core principles which will ensure useful and accurate insights are obtained:

- Thorough preparation and a structured approach
- Time to build rapport
- Absolute confidentiality
- A focus on the stakeholder

Data collection tools

Data will be collected and captured via consultations through meetings, working sessions, workshops, ad-hoc engagement, interviews and focus groups.

Data analysis

Consultations will be aligned to the KLEs and corresponding research questions. All qualitative data collected from BreastScreen staff and clients will be confidential and anonymous and this will be made clear at the beginning of each consultation. Results will be aggregated to inform evaluation findings and individual comments will not be attributed to specific participants.

Thematic analysis will be used as the primary technique to extract key insights and messages. This will include the team familiarising themselves with the national and jurisdictional data to develop a holistic understanding, ahead of a series of analytical processes:

- Code and identify themes (based on repeated patterns)
- Review, modify and test themes
- Define themes, including key insights and findings
- Triangulate with broader evaluation methods.

5.3 Stakeholder surveys

Thoughtful planning and well-executed surveys of stakeholders will be critical to ensure valuable insights for the evaluation.

Data sources

Survey collection methods in the evaluation include: online surveys and telephone surveys. Surveys will include the following stakeholders:

- State and Territory Program Managers
- Service providers in each jurisdiction – administrative staff and clinicians/technicians (including rural/regional)
- Primary Health Networks (PHNs), Aboriginal Medical Services and the Colleges
- BreastScreen Australia clients in the target age group
- Australian women aged over 70 years.

Data quality

The surveys will use a convenience sampling approach to recruitment. Sampling ensures that a representative picture is obtained of a population. Sample sizes for the surveys and interviews with Breast Screen staff/clinicians and women in the target age range have been developed using the sample size formula below.

$$\text{Sample Size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \frac{z^2 \times p(1-p)}{e^2 N}}$$

Where:

- N = the population to be sampled. This has been indicated for each sample and sub-group below.
- e = 5% (accepted margin of error).
- p = 0.5 (the percentage value, set to maximise the sample size calculated).
- z = 95% (the number of standard deviations a given proportion is away from the mean and is calculated based on the desired confidence level).

To achieve the desired power for a robust analysis the minimum survey sample size for:

- BreastScreen staff (i.e. staff delivering or supporting the delivery of the program, excluding program managers) is 208.
- BreastScreen clients (i.e. women aged 70 years and over who attended BreastScreen) is 5,400.
- Australian women in the general population aged 70 years and over is 768.

Data collection tools

Surveys will consist of telephone surveys (with recorded notes and a thematic coding log) and online surveys (through a survey platform enabling data collection and analysis).

Data analysis

Synthesis of outputs from surveys is important to produce meaningful insights. Surveys will be aligned to the KLEs and corresponding research questions.

Survey findings for clients will be confidential and anonymous and this will be made clear at the beginning of each survey. Results will be aggregated to inform evaluation findings and individual comments will not be attributed to specific participants.

Methods of survey analysis will include quantitative and qualitative aspects, including assessments of accuracy, one-way tables, cross-tabulations, development of profiles/personas, and thematic analysis.

5.4 Existing population, program and other relevant data

Nous will undertake statistical analysis of population and BreastScreen program data to evaluate implementation effectiveness and program performance.

Data sources

Quantitative analysis will add robustness to the evaluation. In addition to enabling triangulation of findings against the literature review and stakeholder engagement, the data analysis will inform areas of interest or issues to explore in consultations.

BreastScreen registers in each state and territory record data collected during a woman's contact with a BreastScreen service. Each BreastScreen program supplies BreastScreen data annually to the AIHW. This program data will form the basis of much of the evaluation's quantitative analyses, supplemented by additional experience, cost and population data. This will include:

- National BreastScreen Australia program data (from AIHW)

- Jurisdictional BreastScreen program data, registers and reports (from State and Territory BreastScreen programs)
- Population data (from the ABS).

Data quality

Quality data should be complete and timely, consistent and reliable, and accurate. Nous has undertaken an assessment of the data quality for key quantitative data sources. To address cost data quality issues, jurisdictional data will be supplemented with figures from literature.

Data collection tools

Where possible, existing established datasets (e.g. prepared data provided to the AIHW by states and territories) will be used. Unit-record data will be collected via secure transfer of de-identified datasets, in the form provided by the data custodian (AIHW or local BreastScreen Program Managers). Aggregate data will be provided by data custodians or publicly available tools. Data will be de-identified.

Program data analysis

Statistical analysis of the data will be undertaken to evaluate the performance of the BreastScreen program expansion against objectives. It will be complementary to the literature review and stakeholder engagement.

Where targets have been established in the project agreement or project plans, these will be used to assess performance. Peer benchmarking will be undertaken to assess the relative performance of services, and to identify services of positive or negative deviance (i.e. high- or low-performing compared to the average).

To measure the success of implementation, Nous will use performance benchmarks for screening women aged 70-74 years.

Cost analysis

The evaluation includes a limited cost analysis of the program expansion. The analysis will be retrospective, focused on the BreastScreen program post-expansion of the target age range to 2017. Effectiveness will be assessed as the number of women screened and the number of cancers detected. The services included in the analysis are the screening and assessment costs, and ancillary administrative costs.

The analysis will include the following:

- cost per screen, pre- and post-program expansion
- total costs for screening by five-year age cohort, pre- and post-program expansion
- an incremental cost-effectiveness ratio of the program expansion compared to no program expansion.

The cost analysis will be a robust assessment of direct BreastScreen costs and outcomes, rather than taking a health system or societal perspective of costs and outcomes (i.e. the downstream costs and outcomes are not within scope for this review, for example treatment costs, private sector and MBS costs, women's quality of life and productivity impacts).

The cost analysis will not include a detailed cost-effectiveness (e.g. incremental cost to achieve incremental benefit such as life years gained), or cost-utility (e.g. value for money, or quality-adjusted life-year), or cost-benefit (e.g. the net monetary cost of achieving a health outcome) analysis of the BreastScreen program or expansion.⁸

⁸ Analysis definitions from World Health Organization Essential Medicines Portal ([World Health Organization Essentials Medicines Portal](#))

6 Conclusion

The BreastScreen Australia Program has played a pivotal role in reducing breast cancer mortality and morbidity for Australian women through population-based screening, detection and early diagnosis. The expansion of the target age range for screening to include women aged 70-74 years is in line with the 2009 BreastScreen Australia Evaluation recommendations, supported by Commonwealth funding.

This Evaluation Plan Summary outlines the approach for the evaluation of the implementation of the program expansion. Nous will work collaboratively with BreastScreen Australia, the BSTRG, Program Managers and key stakeholders to deliver a successful evaluation that enables practical improvements and clear recommendations.

The evaluation's findings will provide important evidence to guide improvements to future program delivery planning and funding beyond the current program funding commitment

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ABOUT NOUS

Nous Group is the largest Australian-founded management consulting firm. We partner with leaders across Australia and the UK to shape effective government, world-class businesses and empowered communities.

bold
performance & influence
engaging

300

PEOPLE

50

PRINCIPALS

8

LOCATIONS

2

COUNTRIES

Financial Review Client Choice Awards 2017
Best Management Consulting Firm
Best Provider to Government & Community
Most Cost Conscious Firm