Review of the Medical Research Future Fund Cardiovascular Health Mission

Report prepared for the Health and Medical Research Office

Australian Department of Health and Aged Care

19 December 2024

Acknowledgements

We would like to thank the many stakeholders who participated in this Review through surveys and/or interviews. We acknowledge and appreciate their time, experience and expertise.

We would also like to thank the Cardiovascular Health Mission Review Panel for their expert guidance and critical feedback throughout the Review process.

About Policy by Proxy

Policy by Proxy was established in 2019 and provides independent advice to government, non-government and academic organisations to support the delivery of better health and social policies, programs and services.

Contents

List of figures

List of tables

List of case examples

Executive Summary

Introduction

The Medical Research Future Fund (MRFF) is a $22 billion priority-driven endowment fund, established by the Australian Government to support medical research and innovation to improve health outcomes and increase economic growth.

The MRFF supports a range of initiatives, including those that focus on patients (e.g., Clinical Trials Activity initiative), research Missions (e.g., Cardiovascular Health Mission), researchers (e.g., Early to Mid-career Researchers initiative) and translation (e.g., Medical Research Commercialisation initiative).

The MRFF's Cardiovascular Health Mission (referred to as the Mission in this report) will provide $220 million in funding over 10 years (from the financial year 2019–20) for cardiovascular disease and stroke research. Funding for cardiovascular disease and stroke research is also provided through other MRFF initiatives, e.g., the Frontier Health and Medical Research initiative and the Preventive and Public Health Research initiative (referred to as non-Mission initiatives/projects in this report).

The Cardiovascular Health Mission Roadmap and Implementation Plan set out the Mission goal, aims, priority areas for investment, research questions and funding objectives under the Mission priorities, and evaluation measures.

The goal of the Mission is to make transformative improvements in heart health, vascular health and stroke for all Australians. It aims to:

- Reduce the number of Australians of all ages affected by heart disease and stroke

- Improve outcomes from acute cardiovascular and stroke events

- Improve long-term recovery and survivorship after a cardiovascular or stroke event.

Background to the Review

To guide future investment, this Review of the Cardiovascular Health Mission assessed progress of MRFF funded cardiovascular disease and stroke research (both Misson and non-Mission) from inception to February 2024. The Review investigated:

(i)   the MRFF contribution to cardiovascular disease and stroke research in Australia

(ii)   how MRFF-funded cardiovascular disease and stroke research sits within the national and international landscape

(iii)   the alignment and progress of MRFF-funded cardiovascular and stroke health research against objectives and benchmarks

(iv)   opportunities to improve the impact of MRFF-funded cardiovascular disease and stroke research.

A range of data sources were used to address the Review questions, including:

- MRFF program and project documentation and a desktop scan of the national and international cardiovascular disease and stroke research funding landscape

- surveys of Lead Chief Investigators (CIAs, hereafter referred to as Chief Investigators) and stakeholders

- interviews with stakeholders.

Review Findings

These findings present information drawn from program and project documentation, the desktop scan, surveys and interviews.

1. The MRFF is making a significant contribution to cardiovascular disease and stroke research in Australia.

As of 29 February 2024, the MRFF had invested $441.7 million in 172 cardiovascular disease and stroke research projects that have leveraged an additional $145 million in cash and in-kind co-funding from other sources. Many Review participants (survey and interview respondents) believed the Mission has positioned Australia as a leader in, and elevated the importance of, cardiovascular disease and stroke research, directed the research effort in Australia, identified and addressed evidence gaps, and contributed to the cardiovascular disease and stroke research workforce.

2. Funded projects aligned closely with (but were not evenly distributed across) Mission priorities and funding objectives; views on the appropriateness of priorities were mixed.

Translation-related research was the primary focus for more than 70% of all MRFF-funded cardiovascular disease and stroke projects.

All funded projects aligned with the grant opportunity under which they were funded. Projects have been funded across all 7 Mission priorities, with 58% of all MRFF cardiovascular disease and stroke funding directed towards priority 2.2 (discover and test new solutions).

Review participants had mixed views on the appropriateness of the Mission priority areas. Some thought they were sufficiently broad, some thought they were too broad, and others thought they were too narrow. Being too broad and/or having so many funding objectives was seen as less likely to be impactful.

3. Although most projects were still underway and there were delays in implementation, a quarter had met or made substantial progress towards their funding objective.

Most projects (88%) had not been completed at the time of the Review.

Between a quarter and a third of projects reported achieving all project milestones due at the time of their progress or final report. The main reasons for delays were COVID-19 related issues, time for ethics and/or site-specific approvals and delays in staff recruitment.

For 23% of projects, Chief Investigators reported they had met or made substantial progress towards the Mission funding objective with which they considered their project was most closely aligned.

For most projects, Chief Investigators reported that demonstrable impact on the Mission aims was not yet applicable.

4.   Funded projects are making progress towards the MRFF measures of success.

In relation to **unmet need**, most Chief Investigators (86%) believed the Mission, and the MRFF more broadly, had identified and addressed evidence gaps within their area of research. While there were differences in opinion about how well the Mission has addressed priority populations, there was strong support to continue to prioritise First Nations research.

The MRFF has funded 90 cardiovascular disease and/or stroke **clinical trials** which expect to enrol approximately 44,900 people.

Impacts on **cardiovascular disease and stroke health care** were not yet applicable for most projects, reflecting both the number of completed projects at the time of review (12%) and the time taken to translate research findings into policy and practice.

While 19% of all projects reported impacts on **health care provider experience**, many had implemented activities to support the translation of their research into practice. Translation activities included engaging with clinicians (72%), engaging with partners who can change practice (60%) and publications other than journal articles (28%). Many interviewees discussed the challenges of getting outcomes of successful research into practice.

The MRFF has supported **research workforce development**. MRFF cardiovascular disease and stroke research funding has supported 701 research staff. Most Chief Investigators believed the MRFF has built research capability (84%) and supported the attraction and retention of talent (74%). Half of all funded projects created new national and/or international networks or alliances.

Most funded projects (77%) have used strategies to involve **consumers**.

Fourteen non-Mission grants reported outputs related to **commercialisation** including patents and new products entering the market.

5.   MRFF cardiovascular disease and stroke research funding is well placed nationally and internationally.

The Mission priorities are consistent with national and international cardiovascular disease and stroke peak bodies, overlap significantly with the National Health and Medical Research Council (NHMRC) health priorities and are also broadly aligned with international funders with similar scope.

The MRFF is more focused towards the translation end of the research pipeline than the main NHMRC funding programs. The MRFF provides support for the commercialisation of cardiovascular disease and stroke research, including through the [Frontier Health and Medical Research initiative](#) and the [Targeted Translation Research Accelerator](#). MRFF's role in supporting the translation of research into health services delivery focuses primarily on funding research led by, or with the participation of, health services.

Compared to other national and international research funders, the MRFF has a more comprehensive approach to consumer engagement. When compared to the MRFF, some national and international funders:

- identify a broader range of priority populations

- have formal partnerships to co-fund research

- have more comprehensive programs to support early to mid-career researchers and clinician researchers

- include the application and integration of emerging research technologies and methods to facilitate research workforce and/or infrastructure capacity.

Opportunities for improvement

Based on the findings of this Review, 5 opportunities for improvement have been identified:

1. **To address the tension between broad and specific priorities**: Refine and communicate the funding objectives for the next 5 years, with realistic expectations on what can be achieved within funded project timeframes.

2. **To better support the Mission to meet its goal to make transformative improvements in cardiovascular health**: (i) Quarantine some Mission funding for one or 2 larger projects/programs of work to address a 'grand challenge', and/or (ii) explore ways to foster or provide dedicated (non-financial) support for funded research teams, including enablers, particularly in relation to translation.

3. **To better support the Mission's aim for improvements in cardiovascular and stroke health for all Australians:** Strengthen the Mission focus on First Nations research and determine whether an explicit focus on other priority populations is warranted.

4. **To better support the MRFF measures of success around research translation and increased capacity and capability for Australian researchers:** Strengthen requirements for (i) translation plans in applications, including early assessment of feasibility of intervention implementation and scale up, (ii) involvement and level of involvement of early to mid-career researchers, and (iii) co-funding by grant recipients and/or partners.

5. **To improve Mission leadership and engagement with researchers, implementation partners and the public**: Enhance sector-wide coordination and increase communication about the achievements of the Mission.

1.   Background to the Review

Key messages

- The Australian Government, through the MRFF, is making a significant investment in cardiovascular disease and stroke research through the Cardiovascular Health Mission (the Mission) and a range of other initiatives.

- The Cardiovascular Health Mission Roadmap and Implementation Plan outline the goal, aims, priority areas for investment, funding objectives under the Mission priorities and evaluation measures.

- This Review assessed progress of the Mission with the aim of guiding future investment from 2024–25.

- The MRFF Monitoring, Evaluation and Learning Strategy is the overarching framework for assessing the performance of the MRFF.

1.1 About the Medical Research Future Fund

The MRFF is a $22 billion priority-driven endowment fund, established by the Australian Government to support medical research and innovation to improve health outcomes and increase economic growth. The MRFF operates as an endowment fund, where the net earnings serve as a permanent revenue stream for investment in health and medical research and innovation, with the capital preserved in perpetuity. The MRFF reached maturity at $22 billion on 31 December 2023.

The fund is structured around 4 research themes and the second MRFF 10-year Investment Plan[1], in effect when this Review commenced, outlined 21 initiatives under these themes (Figure 1).

Grant opportunities are made available under each MRFF initiative and can fund a single project or multiple projects within a topic area or areas.

---

[1] The MRFF 3rd 10-year Investment Plan 2024–25 to 2033–34 was released in May 2024, outlining the use of MRFF funding from 2024–25 to 2033–34. Information from the MRFF 2nd 10-year Investment Plan has been used in this report as it was in effect when the Review commenced.

Figure 1: Overview of the Medical Research Future Fund, March 2024

MRFF Vision and aim	**Vision:** A health system fully informed by quality health and medical research **Aim:** To transform health and medical research and innovation to improve lives, build the economy and contribute to health system sustainability
4 MRFF research themes	• Bring benefits to **patients** • Large programs of work (**missions**) to tackle big health challenges • Support Australian **researchers** • Research **translation** to translate research outcomes into practice
21 MRFF initiatives	**Three patient initiatives** • Clinical Trials Activity • Emerging Priorities and Consumer-Driven Research • Global Health **Eight research missions** • Brain Cancer • Cardiovascular Health • Dementia, Ageing and Aged Care • Genomics Health Futures • Indigenous Health Research • Million Minds Mental Health • Stem Cell Therapies • Traumatic Brain Injury **Four researcher initiatives** • Clinician Researchers • Early to Mid-Career Researchers • Frontier Health and Medical Research • Researcher Exchange and Development within Industry **Six translation initiatives** • Medical Research Commercialisation • National Critical Research Infrastructure • Preventive and Public Health Research • Primary Health Care Research • Rapid Applied Research Translation • Research Data Infrastructure

Source: MRFF 2nd 10-year Investment Plan and Monitoring, Evaluation and Learning Strategy

The [Monitoring, Evaluation and Learning Strategy](#) is the overarching framework for assessing the performance of the MRFF. Figure 2 outlines the MRFF monitoring and evaluation conceptual framework including impact measures and measures of success.[2]

---

[2] The MRFF Monitoring, Evaluation and Learning Strategy was refreshed in August 2024, which included minor changes to the wording of one impact measure and 3 measures of success. In this report, the MRFF impact measures and measures of success in effect at the time the Review commenced (as outlined the MRFF Monitoring, Evaluation and Learning Strategy 2020–2021 to 2023–2024) are used.

Figure 2: MRFF Monitoring and Evaluation Conceptual Framework

Medical Research Future Fund outcomes

Vision: A health system fully informed by quality health and medical research
Aim: To transform health and medical research and innovation to improve lives,
build the economy and contribute to health system sustainability.

| Better health outcomes | Economic growth |

| Beneficial change to health practice | Increased health efficiency | Increased job and export potential |

Measures of success

| Increased focus of research on areas of unmet need | More Australians access clinical trials | New health technologies are embedded in health practice | New health interventions are embedded in health practice |
| Research community has greater capacity and capability to undertake translational research | Health professionals adopt best practices faster | The community engages with and adopts new technologies and treatments | Increased commercialisation of health research outcomes |

Source: MRFF Monitoring, Evaluation and Learning Strategy

[Performance Indicators Towards the Impact of the Medical Research Future Fund](#) were established in 2023 to provide a set of metrics to support the assessment of the MRFF measures of success. These include indicators relating to:

- projects (e.g., number, value and percentage of projects targeting priority populations, emerging issues and clinical trials)

- research workforce (e.g., number and type of research staff employed)

- knowledge gain (e.g., publications and citation impact)

- consumer involvement (e.g., consumers involved in advisory groups, study co-design, data dissemination)

- health care change (e.g., engagement with decision makers, changes to clinical guidelines)

- commercialisation pathways (e.g., industry co-funding, patents, start-ups).

1.2 About the Cardiovascular Health Mission

The Australian Government, through the MRFF, is making a significant investment in cardiovascular disease and stroke research through the Mission and a range of other initiatives. The Mission will provide $220 million in research funding over 10 years (from the financial year 2019–20).

An Expert Advisory Panel developed the Cardiovascular Health Mission Roadmap and Implementation Plan. The draft Roadmap and Implementation Plan were reviewed by an international panel to gain an international perspective, and a national consultation was undertaken to seek community feedback.[3]

The Implementation Plan sets out the Mission goal, aims, priority areas for investment, research questions and funding objectives under the Mission priorities and evaluation measures (Figure 3).

Figure 3: Overview of the Mission goals, aims, priorities, funding objectives and evaluation measures

1 goal	• To make transformative improvements in cardiovascular health and stroke for all Australians
3 aims	• Reduce the number of Australians of all ages affected by heart disease and stroke • Improve outcomes from acute cardiovascular and stroke events • Improve long-term recovery and survivorship after a cardiovascular or stroke event
7 funding priorities	• Improve understanding of cardiovascular disease risk, including biological mechanisms • Identify best-practice preventive care for all Australians • Optimise evidence-based diagnoses and clinical pathways • Discover new solutions through innovation - technology, drugs and devices, and models of care • Identify and target personalised lifelong care approaches, to prevent further stroke or heart events • Develop new treatments for recovery with better understanding of the biology of recovery, leading to improved monitoring and new treatments • Improve survivorship and reduce morbidity
71 research questions and funding objectives[4]	• 28 short-term objectives • 43 med- to long-term objectives
16 evaluation measures	• across the Mission aims (**Appendix A: Mission Implementation Plan – Evaluation approach and measures**)

Source: Cardiovascular Health Mission Roadmap and Implementation Plan

The relationship between the Mission aims and priorities and the priority short titles used in this report are shown in Table 1.

---

[3] The reports on the International Review of the Roadmap and Implementation Plan and the Public Consultation are available on the Mission website.

[4] The research questions and objectives under each funding priority in the Implementation Plan have been broken down in this Review into 28 short-term and 43 medium-to long-term funding objectives, for the purposes of determining alignment with the Mission funding priorities. This report refers to the short- and medium- to long term- research questions and objectives as funding objectives.

Table 1: Mission aims, and associated priorities and corresponding short title used in this document

Mission aims	Mission priorities	Short title
Aim 1: Reduce the number of Australians of all ages affected by heart disease and stroke	1.1 Improve understanding of cardiovascular disease risk, including biological mechanisms	Identify and predict risk
	1.2 Identify best-practice preventive care for all Australians	Prevent cardiovascular disease
Aim 2: Improve outcomes from acute cardiovascular and stroke events	2.1 Optimise evidence-based diagnoses and clinical pathways	Optimise diagnosis and reduce inequities
	2.2 Discover new solutions through innovation - technology, drugs and devices, and models of care	Discover and test new solutions
Aim 3: Improve long-term recovery and survivorship after a cardiovascular or stroke event	3.1 Identify and target personalised lifelong care approaches, to prevent further stroke or heart events	Prevent disease recurrence
	3.2 Develop new treatments for recovery with better understanding of the biology of recovery, leading to improved monitoring and new treatments	Improve recovery and monitoring
	3.3 Improve survivorship and reduce morbidity	Reduce morbidities

Source: Department of Health Desktop Scan to support the Cardiovascular Health Mission Review

In determining Mission priorities and funding principles, the Expert Advisory Panel considered information from multiple sources including:

- the Australian Medical Research and Innovation Strategy and Priorities in force at the time

- the National Strategic Action Plans for Heart Disease and Stroke (in draft form at the time) and Childhood Heart Disease

- funding across the research pipeline, from discovery to delivery of patient care

- alignment to the Mission goals and discussion on short-, medium- and long-term priorities

- complementarity to currently funded research efforts (e.g. by NHMRC)

- lessons from other MRFF Missions

- input from the Australian Cardiovascular Alliance and early feedback from the National Heart Foundation and the National Stroke Foundation.

As with all MRFF Research Missions, the Department of Health and Aged Care (department) uses the priorities for investment set out in the Implementation Plan, in particular the defined research questions and objectives for short- and medium- to long-term investment, as the primary reference for developing grant opportunity guidelines and to guide grant type and funding amounts.[5]

---

[5] MRFF Mission Governance available at https://www.health.gov.au/resources/publications/mrff-mission-governance

1.3 About the Review

This mid-term Review of the Cardiovascular Health Mission, conducted by Policy by Proxy, assessed progress of MRFF funded cardiovascular disease and stroke research (both Misson and non-Mission) with the aim of guiding future investment from 2024–25. It included an investigation of:

(i)   how the MRFF has contributed to cardiovascular disease and stroke research in Australia (through the Mission and other relevant funded projects)

(ii)   how MRFF-funded cardiovascular disease and stroke research sits within the national and international cardiovascular disease and stroke research funding landscape

(iii)   alignment and progress of MRFF-funded cardiovascular and stroke health research against objectives and benchmarks[6]

(iv)   opportunities (if any) to enhance MRFF funding and granting arrangements to improve the impact of MRFF-funded cardiovascular disease and stroke research.

Review scope

The Review examined all cardiovascular disease and stroke research investments made by the MRFF until 29 February 2024 (**Appendix B: Cardiovascular disease and stroke research projects in scope for the Review**) and associated program documentation, and consulted grantees and other stakeholders. Administrative processes of the MRFF were out of scope.

Review governance

The Review was overseen by a Mission Review Panel which was comprised of international and national panel members with qualifications and/or experience in cardiovascular disease and stroke research, industry and innovation, health policy and/or working in cardiovascular health service delivery, and a consumer representative (**Appendix C: Mission Review Panel**). The Panel:

- advised the department and Policy by Proxy on the collection, analysis, and interpretation of information supporting the Review.

The department:

- lead and oversaw the Review

- provided expert advice to support the Review, including feedback on deliverables prepared by Policy by Proxy

---

[6] Benchmarks include the Mission Roadmap and Implementation Plan, MRFF 2nd 10-year Investment Plan, the MRFF Monitoring, Evaluation and Learning Strategy 2020–21 to 2023–24 and Performance Indicators Towards the Impact of the MRFF.

- prepared a desktop scan[7] on how MRFF-funded cardiovascular disease and stroke research sits within the national and international cardiovascular disease and stroke research funding landscape

- conducted a Performance Indicator Survey (which provided a snapshot of the performance of all MRFF-funded research and the MRFF program as a whole).[8]

Policy by Proxy:

- designed and conducted interviews with national and international stakeholders

- designed and conducted surveys for MRFF cardiovascular disease and stroke project Chief Investigators and interested stakeholders

- reviewed program and project documentation, including grant opportunity guidelines and project progress reports

- conducted deep dives to further investigate key themes that arose through the Review

- synthesised data from all sources and prepared the report.

---

[7] The Desktop Scan was undertaken by the Department of Health and Aged Care (August 2024).

[8] The MRFF Performance Indicator Survey was undertaken in April/May 2024.

Notes on the Review scope

This Review is a mid-term assessment of the Mission's progress, primarily designed to help inform future investments for cardiovascular disease and stroke research through the Mission and MRFF more broadly.

This report includes analyses of research funded under the Mission and other MRFF investments in cardiovascular disease and stroke research (non-Mission funding). To 29 February 2024 there were 7 Mission grant opportunities, and funding was also provided through 50 non-Mission grant opportunities, 8 of which specified cardiovascular disease and stroke research in some way. Another 42 non-Mission grant opportunities coincidentally funded cardiovascular disease and/or stroke research (particularly clinical trials).

Non-Mission funding was included in the Review to:

- provide context for Mission funding and describe achievements across the whole MRFF cardiovascular disease and stroke research effort,
- demonstrate the contribution of all MRFF-funded cardiovascular disease and stroke research towards Mission and MRFF objectives,
- use findings regarding non-Mission grants and comparison between Mission and non-Mission grants to inform the Mission,
- highlight potential synergies between Mission and non-Mission cardiovascular disease and stroke funding to facilitate better coordination and minimise duplication, and
- potentially inform future MRFF non-Mission funding for cardiovascular disease and stroke research as well as Mission funding.

The Review will also inform and contribute to the end-of-Mission evaluation[9], which will make a more comprehensive assessment of overall impact of the Mission as a greater number of funded projects will have been completed.

While out of scope for the Review, findings may also inform broader cardiovascular disease and stroke research strategies and funding, outside of the MRFF.

---

[9] As outlined in the MRFF Monitoring, Evaluation and Learning Strategy, all Research Missions will undergo evaluation towards the end of the Mission.

2.   Review methods

Key messages

- A range of data sources were used to address the Review questions including document reviews, surveys and interviews.

- There were 109 completed surveys from Chief Investigators *(*response rate 65%), 46 responses to the public stakeholder survey, and 46 organisations participated in individual or group interviews (response rate 70%) with 58 people taking part.

- For cardiovascular disease and stroke projects, there were 124 completed responses (72% response rate) to the MRFF Performance Indicator survey conducted by the department.

2.1 Data sources

Data sources for the Review, data collection focus, responsibility and response rate are shown in Table 2.

Table 2: Review data source, focus, responsibility for collection and response rate

Data source	Focus	Responsibility	Number invited/in scope (n)	Number of responses (n)	Response rate (%)
Chief Investigator Survey	Chief Investigators of MRFF funded cardiovascular disease and stroke research	Policy by Proxy	169	109	65%
Stakeholder Survey	Public consultation	Policy by Proxy	–	46	–
Stakeholder Interviews	Consumers, health service providers, researchers, industry groups	Policy by Proxy	66	46	70%
Document review	MRFF and Mission documents	Policy by Proxy	172	172	100%
Performance Indicator Survey	All MRFF grant recipients	Department	172	124	72%
Desktop Scan	National and international research funding	Department	–	–	–
Deep Dives	Further investigation of key issues raised in the Review	Policy by Proxy	–	–	–

Chief Investigator and Stakeholder Surveys

The surveys targeted:

- Chief Investigators – to gather new information to better understand the characteristics of funded projects and their progress towards the objectives of the Mission

- Chief Investigators and other stakeholders – to gather views on the Mission and MRFF, including opportunities for improving the transformative capacity of Mission funding, and on cardiovascular disease and stroke research in Australia more broadly.

The department emailed the Chief Investigator for each Mission project (n=85) and cardiovascular disease and stroke research projects funded under other MRFF initiatives (n=84)[10] to explain the Review and to invite them to participate. Policy by Proxy followed up with a participant information sheet and an individual link to the survey.

The Stakeholder Survey was open (via public survey link) to individuals who were interested in contributing to the Review. The survey was promoted through the MRFF newsletter and through emails to:

- professional, industry, non-government, First Nations, research and consumer organisations (n=28) that had been invited to participate in interviews, requesting they promote the Stakeholder Survey within their organisation and through their networks, including through organisational newsletters and personal contacts

- state and territory Cardiovascular Research Network Managers, requesting they notify members in their state.

Both surveys were open for 4 weeks from 4 June to 1 July 2024. Chief Investigators who had not completed the survey received up to 2 reminder emails.

The surveys for Chief Investigators and other stakeholders included program (Mission and MRFF) and project related topic areas (Table 3).

---

[10] Note that total non-Mission cardiovascular disease and stroke projects = 87. The Health and Medical Research Office of the department requested that 3 non-Mission grants not be sent a survey – 2 were embargoed and one (the Targeted Translation Research Accelerator) was slated for an interview rather than a survey.

Table 3: Topic areas for Chief Investigator and Stakeholder Surveys

Survey topics	Respondent groups
Mission and MRFF related topics	
Contribution of the Mission to cardiovascular disease and stroke research in Australia Extent to which the Implementation Plan has helped to direct cardiovascular disease and stroke research in Australia Extent to which the Mission and MRFF more broadly have filled evidence gaps, including areas of emerging priority and unmet need Extent to which the Mission has supported the cardiovascular disease and stroke research workforce in Australia Innovative funding models from other grant schemes Opportunities for improving the transformative capacity and impact of Mission funding, to better inform strategic allocation under Mission funding priorities	Chief Investigators and other stakeholders
Project related topics	
Extent to which their project has met Mission research questions and objectives (as outlined in the Mission Implementation Plan) including translation of research findings and any health-related outcomes Primary research focus Actions to support dissemination and translation of findings Engagement with Mission enablers	Chief Investigators

Stakeholder Interviews

Interviews were conducted with a range of stakeholders including consumers, health service providers, researchers and industry groups. The department identified a list of stakeholders for interview, which was refined after advice from the Mission Review Panel. Stakeholders were grouped under 4 categories based on their likely engagement with the Mission. This included individuals with:

- a good understanding of the MRFF and/or Mission

- a specific interest in cardiovascular or stroke health, research, or research funding

- interests that include but are broader than cardiovascular or stroke health

- consumer perspectives.[11]

The purpose of the interviews was to give stakeholders the opportunity to provide input into the Review. Tailored interview schedules were developed for each stakeholder group. The main topics covered in the interviews were research impact, collaboration, capability building and how to enhance the Mission (Table 4).

In late May 2024, the department made initial contact with stakeholders via email, including an invitation to participate and an introduction to Policy by Proxy. After the initial contact, Policy by Proxy contacted stakeholders to schedule an interview time and provide a participant information sheet. If potential stakeholders did not respond, a third contact was made.

Virtual, semi-structured interviews were conducted by Policy by Proxy between 4 June and 24 July 2024.

Table 4: Interview topics across all stakeholders

Interview topics
Research Impact
Contribution of MRFF to cardiovascular disease and stroke research in Australia, and the role of the Mission
Whether (and how) the MRFF and/or Mission have addressed evidence gaps
Research impacts, including translation to policy and practice
How the MRFF/Mission funded research relates to interests of consumers, professional bodies and other organisations
Collaboration and capability
Whether the Mission has supported collaboration, capability building, translation
Whether consumer perspectives have been included/voices heard in priority setting
Exemplar projects including impact, collaboration, capability building (especially for early to mid-career researchers) and translation
Consumer engagement/collaboration in funded research and translation
Future focus
Emerging priority areas or unmet needs
Lessons from other funding schemes or initiatives
Options for improvement (including encouraging transformative research)
Other comments, issues or perspectives

---

[11] A 'good understanding' was defined as having significant involvement in the establishment of the Mission, i.e., members of the Mission Expert Advisory Panel and members of the Australian Cardiovascular Alliance; 'specific interest' included heart and stroke NGOs, cardiovascular disease and stroke professional groups, NHMRC, state and territory research offices; 'broader interests' included research associations, universities, international funders, industry organisations and professional bodies; 'consumer perspectives' included stakeholders from organisations with consumer perspective and voice.

Mission and MRFF program and project document review

Mission and MRFF program and project documentation was reviewed by Policy by Proxy to inform and complement the other data collections used for the Review.

The program documentation review included the following documents:

- for the Mission: the Roadmap and Implementation Plan

- for the MRFF: two MRFF 10-year Investment plans (2018–19 to 2027–28 and 2022–23 to 2031–32), the MRFF Monitoring, Evaluation and Learning Strategy 2020–21 to 2023–24, and the document outlining Performance Indicators Towards the Impact of the Medical Research Future Fund

- the guidelines for Mission and non-Mission grant opportunities that provided funding for MRFF cardiovascular disease and stroke research projects.

The review of project documentation included, for both Mission and non-Mission projects:

- the grant agreement or schedule

- progress reports (multiple reports for most projects)

- final reports (where applicable).

Project documentation was reviewed manually to assess:

- progress against MRFF measures of success (where information was available)

- achievement of project deliverables over time, delays, barriers and enablers

- extent to which projects included activities to support translation

- exemplar projects (particularly in relation to capability development, collaboration, translation and commercialisation).

Projects used for case examples were identified by Policy by Proxy project analysts using information from project and final reports. The lead analyst reviewed the short-listed exemplar project elements using project documentation (initially without any identifying information) and then, for some, complementary publicly-available information. The project lead reviewed and vetted the case examples. This 3-step, objective process was based solely on project characteristics and achievements.

Notes on case examples

- Case examples focused on MRFF measures of success, including priority populations (First Nations research), translation, research community capacity and capability, collaboration and co-design, consumer engagement and commercialisation.

- There are many more Mission and non-Mission research project-related achievements that are not showcased in this report due to limitations in the Review scope, methods and timeframes.

MRFF Performance Indicator Survey

In April 2024, the department surveyed all MRFF grant recipients to provide a snapshot of the performance of MRFF-funded research and the MRFF program as a whole. The aim of the Performance Indicator Survey was to provide a high-level public overview of the success and impact of MRFF-funded research, as assessed by the MRFF Monitoring, Evaluation and Learning Strategy and MRFF performance indicators. The data collected will also form the basis for future evaluations of longer-term impact. For this Review, Policy by Proxy incorporated survey responses from funded cardiovascular disease and stroke research projects, particularly in relation to progress towards MRFF measures of success.[12]

Desktop Scan

The department conducted a Desktop Scan to evaluate Mission and non-Mission research funding in the context of national and international cardiovascular disease and stroke research funding, to enable a high-level comparison of the Mission's research priorities and investment across this broader landscape. Data to support the comparative review of research focus and priorities was drawn from all 85 Mission projects, and 87 cardiovascular disease and stroke-related projects funded by other MRFF initiatives, as of 29 Feb 2024.

In addition to MRFF-funded research, the Scan included information (from published and grey literature) from relevant Australian funders[13] and 11 comparable international funders[14] between the funding commencement years of 2018 and 2023, coinciding with the earliest relevant funding opportunities since the inception of the MRFF.

Policy by Proxy incorporated elements of the Desktop Scan findings into this report, particularly in relation to the MRFF's contribution to cardiovascular disease and stroke research and how this research fits within the national and international funding landscape.

Deep Dives

Three deep dives (priority setting, transformative approaches and First Nations research) were conducted by Policy by Proxy to provide a more comprehensive assessment of issues that arose during the Review that warranted further investigation. Relevant program and project documentation, survey and interview results were re-examined, publicly available information was drawn from relevant websites to provide context or exemplars, and members of the Mission Review Panel were consulted to inform the deep dives.

---

[12] To minimise respondent burden, Policy by Proxy did not include questions in the CIA survey that were covered by the MRFF Performance Indicator Survey.

[13] Australian research funders included NHMRC, Australian Research Council, state and territory governments, National Heart Foundation and National Stroke Foundation.

[14] International funders included government, industry and philanthropic research funders from the USA, United Kingdom, European Union, Japan and Canada.

2.2 Data analysis

Drawing from the consultation topics and questionnaires, 2 frameworks were developed to guide the analysis of themes arising from the Chief Investigator and Stakeholder Surveys: one for qualitative data, and one for quantitative data.

A thematic review of qualitative responses to the open survey questions was undertaken, with emerging themes not previously identified being added to the framework. A broad assessment was made of which themes were raised by many (>10) some (5–10) or a few (<5) respondents. One primary analyst was responsible for each question.

Frequencies and percentages were calculated for quantitative data, which were summarised and presented in table or graph form.

A separate framework was developed to guide the analysis of qualitative data from the interviews. This drew from the consultation topics and the interview questions. Most interviews were automatically transcribed, with the interviewee's consent. A thematic analysis of interview transcripts was undertaken by the lead analyst, with emerging themes not previously identified being added to the framework. Consistent with the analysis of survey data, a broad assessment was made of which themes were raised by many, some or a few respondents.

Qualitative and quantitative data analysis methods for Performance Indicator Survey data mirrored those used for the Chief Investigator and Stakeholder Surveys.

The project lead reviewed all survey and interview analyses to ensure a consistent approach to presentation of results.

2.3 Surveys and Interview respondent response rates and characteristics

The total number of completed surveys from Chief Investigators was 109 of a possible 169 (response rate 65%). The response rate for Mission-funded projects was higher (73%) than for projects funded under other MRFF initiatives (56%).

Forty six people responded to the Stakeholder Survey, of whom most (59%) were researchers based in university or research institute settings (Table 5). Twenty two (48%) Stakeholder Survey respondents had applied for MRFF funding, and of those, 6 (27%) had been successful. While survey respondents came from all states and territories (with the exception of the ACT), most were based in NSW (46%) and Victoria (22%).

Table 5: Stakeholder Survey respondent roles

Role	Number	%
Researcher (e.g., an employee of a university or research institute)	27	59%
Consumer	6	13%
Employee of a non-government organisation	5	11%
Clinician-researcher, clinician or other health professional practitioner	4	9%
Employee in a state or territory government department	3	7%
Other	1	2%
Total	46	100%

Across both surveys, most respondents were either very or somewhat familiar with the Cardiovascular Health Mission Implementation Plan (Figure 4), although around 18% of Chief Investigators funded under other MRFF initiatives (non-Mission) and 22% of other stakeholders were not familiar with the plan.

Figure 4: Survey respondent familiarity with the Mission Implementation Plan

Source: Chief Investigator and Stakeholder Surveys

Sixty six organisations or individuals were invited to participate in an interview, and 46 (70%) agreed to participate. Twenty nine interviews were conducted, with 58 people taking part (Table 6).

Table 6: Interviewee roles

Interviewee perspective	Number	%
Good understanding of the MRFF and/or Mission	13	22%
Specific interest in cardiovascular or stroke health, research, or research funding	12	21%
Interests that include but are broader than cardiovascular or stroke health	28	48%
Consumer perspectives	5	9%
Total	58	100%

The list of stakeholder organisations engaged in the interviews is provided in **Appendix D: Organisations and number of people interviewed**.

Results from the Performance Indicator Survey were available for 66 (78%) Mission projects and 58 (67%) non-Mission projects (Table 7).

Table 7: Performance Indicator Survey response rates

Mission or non-Mission	Grants in scope (n)	Grantees completed (n)	Response rate (%)
Mission grants	85	66	78%
Non-Mission grants	87	58	67%
All grants	172	124	72%

3. The MRFF's contribution to cardiovascular disease and stroke research

Key findings

- The MRFF has invested $441.7 million in cardiovascular disease and stroke research with 26% of funding awarded through the Mission.

- Funded projects have leveraged an additional $145 million in cash and in-kind co-funding from other sources.

- On average, the amount of funding awarded to each Mission grant was $1.4 million compared to an average value of $3.7 million for non-Mission cardiovascular disease and stroke grants.

- Most (91.5%) of MRFF funding for cardiovascular disease and stroke research was awarded through targeted calls for research. Incubator and accelerator grant models accounted for 4.9% and 3.6% of funding, respectively, noting that these grant models were introduced in more recent years.

- Many Review participants believed the Mission has positioned Australia as a leader in, and elevated the importance of, cardiovascular disease and stroke research and has helped direct the research effort in Australia.

Review participants identified 2 opportunities for improvement

- Use more strategic and collaborative funding models.

- Implement additional efforts to coordinate and communicate with the sector.

3.1 About MRFF funding for cardiovascular disease and stroke research

Total funding and investment by year

The MRFF has invested $441.7 million in cardiovascular disease and stroke research from the inception of the MRFF until 29 February 2024 (Figure 5).[15]

---

[15] Throughout the period of this Review, the MRFF has continued to fund research through several grant opportunities.

Figure 5: Number of MRFF cardiovascular disease and stroke grants and percentage of total funding by Mission status
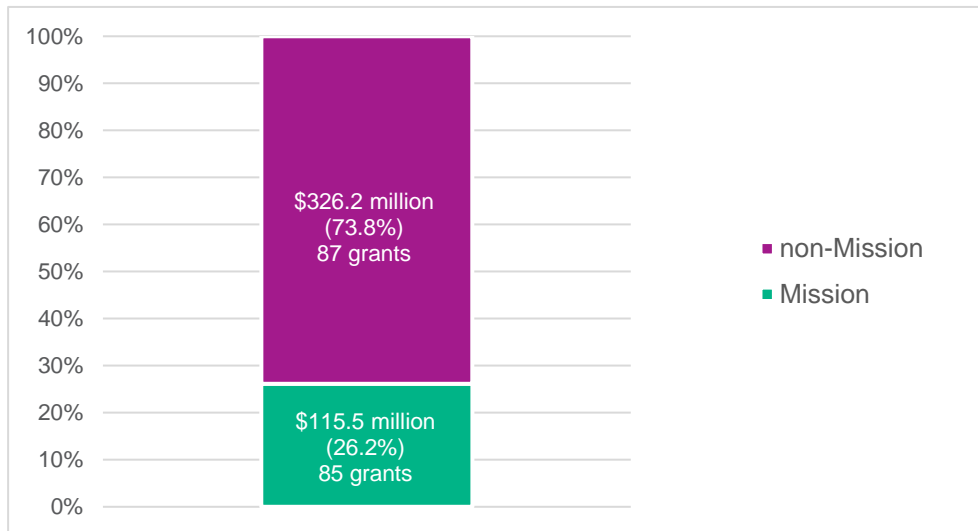
Source: Desktop Scan

Total MRFF funding for cardiovascular disease and stroke research through the Mission and non-Mission initiatives peaked in 2023 at $120.1 million. Annual funding through non-Mission initiatives was consistently higher than funding through the Mission (Figure 6).

Figure 6: MRFF funding for cardiovascular disease and stroke research by year[16]
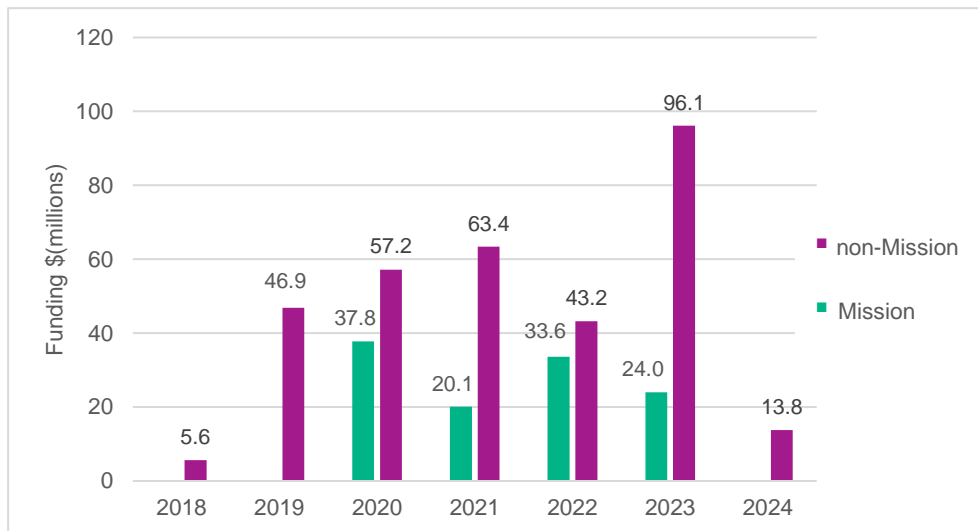
Source: Desktop Scan

---

[16] The amount of funding in 2024 only includes projects funded until 29 February 2024.

Size of grants awarded through the Mission and other MRFF initiatives

Cardiovascular disease and stroke research investments made through the Mission were smaller per project compared to those funded through non-Mission initiatives (Figure 7). Overall, individual Mission grants had an average value of $1.4 million compared to non-Mission grants at an average value of $3.7 million. The single largest Mission grant was valued at $5 million compared to the largest non-Mission grant valued at $50 million.

Figure 7: Size, number and distribution of grants awarded through the Mission and other MRFF initiatives
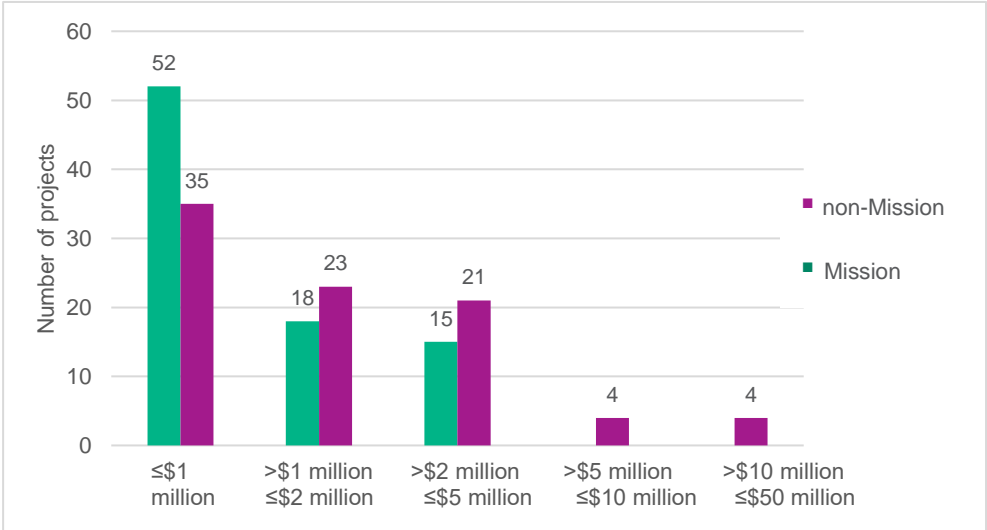
Source: Desktop Scan

Notes on grant size

The average size of non-Mission grants was skewed by:

- four grants that were awarded between $5 and $10 million
- four grants that were awarded between $35 and $50 million.

Primary focus of research funded through the Mission and other MRFF initiatives

Translation-related research was identified by Chief Investigators as the primary focus area for more than 70% of all cardiovascular disease and stroke projects (Figure 8) with most in the applied research or translational category rather than full clinical/market translational research.[17]

Figure 8: Primary research focus of funded projects
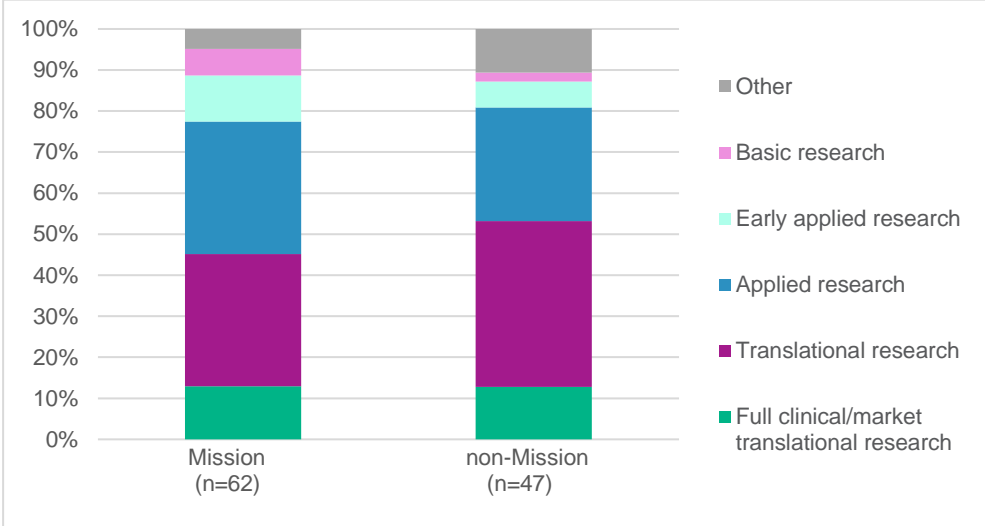
Source: Chief Investigator Survey

Some survey respondents and interviewees commented on the importance of providing funding across the whole research pipeline. This included calls for more support for early and late-stage research.

> *'Provide support to the sector across all aspects of the research pipeline. Focusing on one particular part of the translational pipeline will not result in better outcomes in the long term' – Stakeholder Survey (Researcher)*

---

[17] 'Basic research' includes exploring fundamental science without immediate commercial or clinical application, 'Early applied research' includes beginning practical application, yet still primarily basic science, 'Applied research' includes developing basic discoveries into practical uses, products, or clinical methods, 'Translational research' includes finalising products or interventions for imminent adoption in clinical, policy, community, or commercial areas, 'Full clinical/market translational research' includes fully integrated research in use in clinical, policy, community, or commercial setting.

Cash and in-kind support generated by MRFF investment

Three (6%) of the 50 non-Mission grant opportunities in scope for the Review mandated co-funding in one of their 3 streams: the Early to Mid-career Researchers grant opportunities (2021 and 2023) and the 2022 National Critical Research Infrastructure grant opportunity. Two other non-Mission grant opportunity guidelines included implicit requirements for co-funding: the Targeted Translation Research Accelerator where the Board was to approve and implement guidelines for partnering arrangements and granting activities which leverage philanthropic and business co-funding, and the 2020 International Clinical Trial Collaborations (Round 20.1) where the impact assessment criteria included that applicants were to provide details of how their engagement with partners including funding would leverage other complementary funding sources.

MRFF investment in cardiovascular disease and stroke research leveraged an additional $145 million in cash and in-kind co-funding from other sources. Non-Mission projects generated more co-funding compared to Mission projects (Table 8).

Table 8: Percentage of funded projects with co-funding and funding amount

Category	Projects with co-funding (%)	Amount ($) (cash and in-kind)
Mission (n=66)	65%	$15 million
Non-Mission (n=58)	76%	$130 million
Total (n=124)	70%	$145 million

Source: Performance Indicator Survey

The sources of most co-funding were philanthropy/not for profit organisations (37%) and industry (22%). A few interviewees and survey respondents commented that there were opportunities to increase partnerships for co-funding.

Twenty seven percent of MRFF cardiovascular disease and stroke projects reported on through the Performance Indicator Survey have led to approximately $109 million in new funding. The most common sources of new funding were Australian Government departments/agencies other than health including the NHMRC and ARC (33%), state or territory governments (27%) and philanthropy or not for profit organisations (24%).

MRFF grant models and initiatives used to fund cardiovascular disease and stroke research

The percentage of cardiovascular disease and stroke research funding awarded through the Mission and other MRFF initiatives, and the funding grant models used are shown in Figure 9.[18]

Figure 9: Percentage of cardiovascular disease and stroke research funding by MRFF initiative and grant model
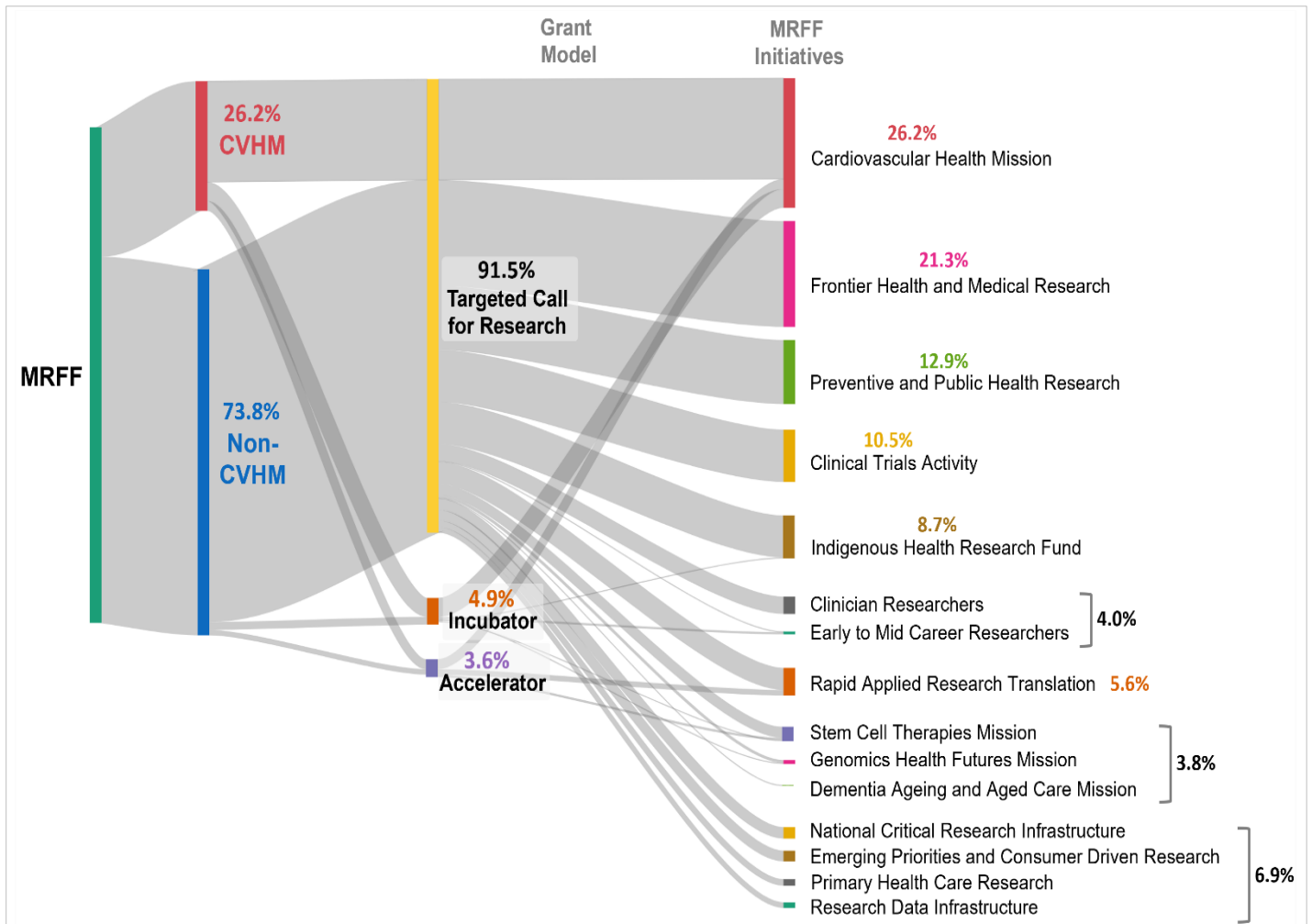
Source: Desktop Scan

---

[18] Figure 9 provides 3 layers of information: (i) The green bar on the left represents total MRFF funding for cardiovascular disease and stroke research, with the red and blue bars showing the percentage of Mission and non-Mission funding (ii) The central bar (yellow, orange and purple) shows percentage of funding distributed through different grant models and (iii) The right-hand side of the graph shows the MRFF initiative under which funding was distributed, including Mission and non-Mission grants.

Ninety two percent of MRFF funding for cardiovascular disease and stroke research was awarded through targeted calls for research.[19] Incubator and accelerator grant models accounted for 5% and 4% of funding, respectively.[20]

3.2 Where MRFF funding for cardiovascular disease and stroke research was invested

Research investment by institution type and jurisdiction

Seventy six percent of all MRFF funding for cardiovascular disease and stroke research was awarded to universities, 15.2% was awarded to non-academic organisations (peak bodies or other non-government organisations) and 8.4% was awarded to medical research institutes. A higher percentage of Mission than non-Mission funding was awarded to universities (Figure 10).[21]

Figure 10: Distribution of research investment by organisation type
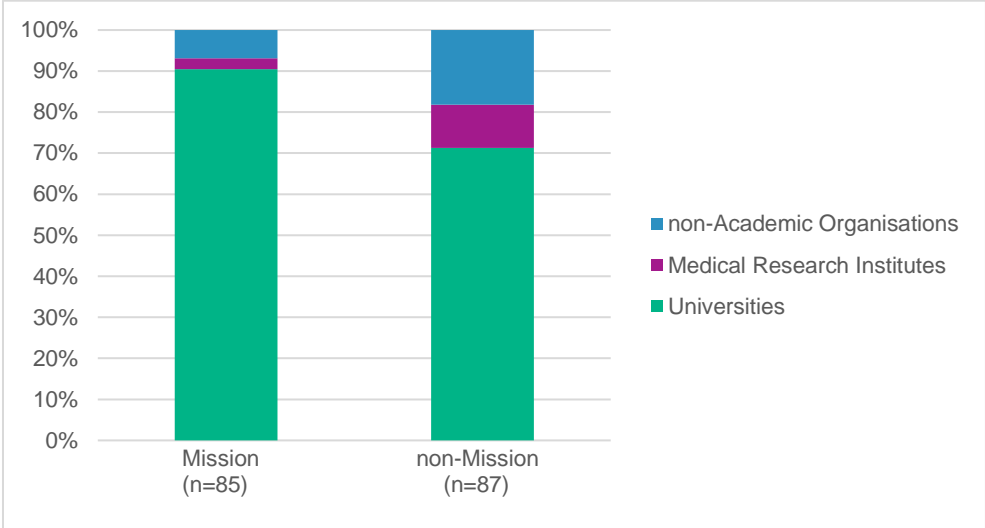
Source: Desktop Scan

---

[19] A Targeted Call for Research is a one-time request for grant applications to address a specific health issue where there is a significant research knowledge gap or unmet need. Targeted Calls for Research | Australian Government National Health and Medical Research Council

[20] Incubator grants support early-stage research projects that test the potential and feasibility of new strategies and approaches for addressing critical or intractable health challenges. They provide small scale (up to $1 million) and short-term (6 - 24 months) funding. MRFF Incubator Grants | Australian Government Department of Health and Aged Care. Accelerator grants support large-scale interdisciplinary research to drive implementation of substantial improvements to health care and/or health system effectiveness. They provide large scale (up to $5 million) and long-term (up to 5 years) funding. Care. The MRFF first used the incubator grant model in 2020 and the accelerator grant model in 2021.

[21] This data shows the lead institution. Information on research, industry and health service collaboration is described in Section 6.4.

Six universities received 111 (65%) MRFF grants for cardiovascular disease and stroke research, the number of applications, grants and grant funding is shown in Table 9.[22,23] The full list of grantees' institutions is provided in **Appendix B: Cardiovascular disease and stroke research projects in scope for the Review**.

Table 9: Number of grants awarded to lead organisations

Lead organisation	Mission			Non-Mission	
	Applications (n)	Funded grants (n)	Funding (%)	Funded grants (n)	Funding (%)
University of Sydney	39	18	24.0%	9	4.3%
University of Melbourne	29	10	14.7%	15	19.2%
Monash University	40	13	11.0%	11	22.9%
University of New South Wales	30	9	10.2%	5	1.9%
University of Queensland	14	6	4.7%	6	3.5%
University of Newcastle	16	6	4.4%	6	2.9%
Other organisations	122	23	31.0%	35	45.3%
Total	290	85	100%	87	100%

Source: Desktop Scan

Most Mission funding was awarded to organisations in New South Wales (39.2%), Victoria (35.6%) and Queensland (12.1%), and most non-Mission funding for cardiovascular disease and stroke research was awarded to organisations in Victoria (66.4%), Western Australia (13.7%) and New South Wales (10.7%) (Table 10).

For Mission projects, data was available on the number of applications submitted from each state and territory. Success rates for Mission applications were highest in NSW (34.0%), South Australia (29.0%) and Queensland (28.6%) with the Northern Territory being awarded funding for the one project for which an application was submitted.

---

[22] Applications for non-Mission grant opportunities are not included in the table as not all applications would relate to cardiovascular and stroke research.

[23] Three organisations also received significant percentage of funding: MTPConnect (1 grant and 14.4% of non-Mission funding) and the University of Western Australia (6 grants and 12.5% of non-Mission funding) and University of Adelaide (4 grants and 6.4% of Mission funding).

Table 10: Number of Mission applications, number of grants and proportion of MRFF funding awarded to lead organisations for cardiovascular disease and stroke research

State or territory	Mission			Non-Mission	
	Applications (n)	Funded grants (n)	% Mission funding	Funded grants (n)	% non-Mission funding
Victoria	115	28	35.6%	40	66.4%
New South Wales	97	33	39.2%	24	10.7%
Western Australia	22	2	1.4%	9	13.7%
Queensland	35	10	12.1%	8	3.8%
South Australia	31	9	9.8%	5	2.4%
Northern Territory	1	1	0.9%	1	3.0%
Tasmania	4	1	0.7%	0	0
Australian Capital Territory	6	1	0.4%	0	0
Total	311	85	100%	87	100%

Source: Desktop Scan

3.3 Review participant perspectives on the MRFF contribution to cardiovascular disease and stroke research

This section provides Review participant feedback on the main contributions of the MRFF to cardiovascular disease and stroke research, the role of the Mission Implementation Plan in directing research, research areas funded and potential gaps, opportunities for improvement in the funding model and enhanced coordination and communication (Table 11).

Table 11: Summary of qualitative feedback on the contribution of the Mission to cardiovascular disease and stroke research

Frequency of perspective	Broad themes
Many survey respondents and/or interviewees thought the Mission and MRFF more broadly …	• positioned Australia as a leader in, and elevated the importance of, cardiovascular disease and stroke research • helped to direct cardiovascular disease and stroke research in Australia • identified and addressed evidence gaps (while others did not agree) • contributed to the research workforce • could improve grant funding models

Frequency of perspective	Broad themes
Some survey respondents and/or interviewees thought the Mission and MRFF more broadly …	- provided valuable funding for stroke research - stroke research remained under-recognised and under-funded - enabled large collaborations and facilitated multidisciplinary teams - supported consumer engagement - could improve consumer engagement - could improve coordination, communication and sector-wide leadership
A few survey respondents and/or interviewees thought the Mission and MRFF more broadly …	provided a good basis for the development of a national research strategy

Source: Chief Investigator and Stakeholder Surveys and Stakeholder Interviews

The overarching impacts of the Mission on Australian research

Many survey respondents and interviewees believed the Mission had positioned Australia as a leader in, and elevated the importance of, cardiovascular disease and stroke research. A few interviewees also commented that the original intent of the Mission was to 'think big' to address a significant health issue that hadn't received attention commensurate with the burden of disease, which hadn't happened prior to the Mission.

> *'The Mission has recognised the impact of cardiovascular disease and stroke in our community and provided much-needed funds to address research needs' – Stakeholder Survey (Research Institute)*
>
> *'In the absence of quarantined research funding we saw a decline in the proportion of research activities directed towards cardiovascular … it's always been the page 3 disease, it's never on the front page' – Interviewee (good understanding)*

A few interviewees also noted the substantial addition of funds was particularly welcome at a time when other sources of funding were contracting, and that the funding provided was complementary to other schemes.

A few survey respondents and interviewees highlighted that the Mission has been particularly valuable as a funding mechanism for stroke research, however, some thought stroke was under-recognised and under-funded.[24,25]

---

[24] Analysis of MRFF cardiovascular disease and stroke research in scope for the Review showed that 52% of funding was for cardiovascular disease research, 27% was for stroke research and 20% was for research that addressed both cardiovascular disease and stroke.

[25] The reports on the national consultation and the international review of the Mission Roadmap and Implementation Plan raised the potential to separate stroke from cardiovascular disease research.

The role of the Mission Roadmap and Implementation Plan in directing research

Most survey respondents (77%) thought the Mission Implementation Plan had helped to direct cardiovascular disease and stroke research in Australia, at least to some degree. Chief Investigators funded by non-Mission MRFF initiatives and stakeholders were less certain about the impact of the Implementation Plan on directing research (Figure 11).

Figure 11: Survey respondent views on whether the Implementation Plan has helped direct research
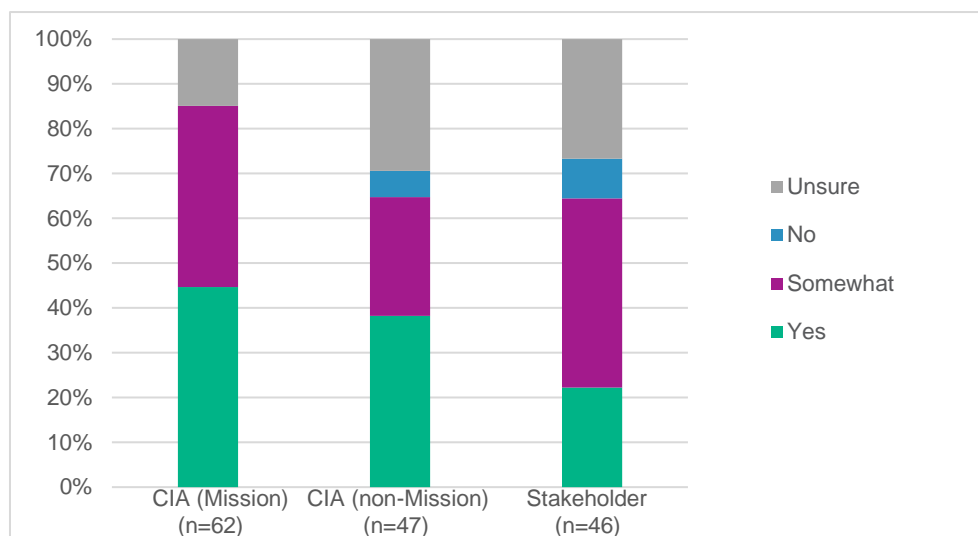
Source: Chief Investigator and Stakeholder Surveys

Many survey respondents and interviewees thought that the Mission Implementation Plan was a clear overarching strategy which provided guidance and increased opportunities for the research community to undertake and accelerate cardiovascular disease and stroke research.

> 'It's a big change … to have an implementation plan that thinks ambitiously … really leading the way as to how the whole coordinated research sector can actually tackle some of these problems' – Interviewee (good understanding)
>
> '[Having] clear aims, types of research projects sought, as well as details about types of activities required to support the research … allows researchers to plan and target key priority areas' – CIA Survey (non-Mission)

There was a suggestion, supported by a few respondents in a group interview, that the Mission Roadmap and Implementation Plan provided a good basis for the development of a national strategy to provide further focus for research funding.

'How you operationalise [a potential new strategy] in a way that's different from just handing out grants that cause people to jump and compete against each other versus operationalising it in a way a bit like the NASA of cardiovascular disease for Australia' – Interviewee (good understanding)

The Mission has supported different areas of research but there are perceived gaps

Many survey respondents and interviewees commented that the Mission supported translational research, which would in turn improve health and economic outcomes. A few noted that translational research was typically harder to fund, and others mentioned the need for more implementation research.

'It has provided a platform for research that can expand and develop further into translational and commercial outcomes' – Stakeholder Survey (Researcher)

'We have known for a long time the benefit of statins/ lipid lowering drugs and yet we still haven't figured out a way to get them into the hands of those who need them most … The Mission would be more relevant if policy and implementation were built more prominently into the Mission scope' – Interviewee (broad interest)

Many survey respondents and some interviewees commented that there had been inadequate funding for disease prevention research, and some identified a lack of investment in particular disease areas. A few noted that health services research needed a stronger focus.

'There's just not enough funding particularly [for] prevention. There's heart conditions right through the life span and there's a lot than can be prevented' – Interviewee (consumer)

'The lack of recognition of mental health and heart disease … if you look at the language of the priority areas, you're looking at the biology of recovery. What about the psychology of recovery?' – Interviewee (specific interest)

'We need more research investment into doing better with what we have got. Yet no one champions the [health service] efficiency thing … there is no prestige in it for researchers' – Interviewee (broad interest)

A few interviewees had differing understandings of the role of the Mission in funding basic science research and noted its importance in 'feeding' the research pipeline.

'There should be more investments towards discovery research … no implementation of research is possible without the initial steps of discovery' – Stakeholder Survey (Other)

'Expectation setting and communication about the Mission was also not clear – especially for discovery researchers who thought they might get $3 million grants for their cell research. When in fact the expectation was, they would collaborate with others in solving the problems of translation' – Interviewee (good understanding)

A few survey respondents expressed concern that some funding may duplicate existing research.

> 'While excellent research has been funded, I don't yet believe there has been careful assurance that funding is not directed to areas that will duplicate research already being undertaken in Australia or overseas' – CIA Survey (Mission)

Opportunities to improve funding models to better support transformational research

Many Chief Investigator Survey respondents and interviewees suggested increased or longer-term funding would support more transformative research.

This included larger grants, full funding for research staff, longer grant timeframes, opportunities for additional funding to enable further impact, and funding for cooperative research centres to replicate the success seen in other sectors.

> 'Longer duration of funding, particularly for projects that need … community engagement and even more so if this involves Aboriginal and Torres Strait Islander community engagement' – CIA Survey (Mission
>
> 'One potential means of enhancing the impact [could be] a second tranche of funding for an additional … investment if sufficient progress has been made at the end of the two-year period' – CIA Survey (Mission)

Some survey respondents and interviewees suggested more strategic and collaborative funding models that focus on larger programs of work rather than individual projects including teams across institutions and disciplines.

> 'Have a call for a few key strategic areas where people put together teams … and then they're given time, maybe a year, to develop an actual plan to tackle that problem rather than ad hoc grant calls' – Interviewee (good understanding)
>
> 'This [location] is a place where reducing having a heart attack is probably achievable … where you [could] throw the kitchen sink at something that's so important … Get the whole community feeling part of it [and] tying that to whole of pipeline research … It's the nation identifying where the areas of greatest need are, and testing this out in a way that's then scalable … I don't think anyone in the world is doing it like this' – Interviewee (good understanding)

A few survey respondents and interviewees suggested different funding models to leverage resources and establish 'buy in' from partners.

> 'There is a real need to be innovative and brave and introduce new models, e.g., commissioning style calls, where big picture priorities are announced, and national approaches are required to solutions' – CIA Survey (Mission)

'Develop a collaborative model of prioritisation and strategy development that can bring together academic and industry partners … philanthropy and consumers to think big … and leverage the [diverse] funding towards an ambitious goal' – CIA Survey (non-Mission)

Opportunities to strengthen leadership, coordination and communication to advance Mission goals

Some survey respondents and interviewees thought additional efforts were needed to coordinate the sector to fulfill the goals of the Roadmap and Implementation Plan.

'Provide strong support and leadership for coordination and strong engagement across the cardiovascular disease and stroke ecosystem (consumers, industry, health professionals, government and other funders)' – CIA Survey (Mission)

'There's a lot of issues that are addressed [by the MRFF]. Maybe there are opportunities for overlapping support between Missions' – Interviewee (good understanding)

A few survey respondents and interviewees thought that there was a bigger role for existing alliances and non-government organisations to support strengthened coordination.

'The Cardiovascular Health Leadership Forum can provide a platform to support the Mission, MRFF and state and territory programs to achieve greater impact from research investment' – Stakeholder Survey (Research Institute)

'In some of the early rounds where there was co-funding [with] foundations – that's a very good process [to identify] where strategic funding would make a difference and people [would] put their money where their mouth was' – Interviewee (good understanding)

Mission governance and the range of expertise needed to shape the next 5 years was also raised by a few interviewees.

'Start thinking about the next 5 years and the kind of group that you'll have to lead the way … to build something that's going to be here to stay, and the government want to invest in this because it's actually changing health, in a way that we can measure … We don't want to reinvent the wheel for the Roadmap and Implementation Plan' – Interviewee (good understanding)

Some interviewees noted a lack of available information about the impact of funded projects and suggested summaries be made public.

'There is not enough communication directly from Government about the Mission. You will occasionally hear about things from other organisations' – Interviewee (good understanding)

'The website should also have a listing of all papers/researchers funded through the MRFF with an explanation of how their findings contribute to addressing problems/issues. And how their findings

will contribute to translation and upscaling beyond what they have been funded to investigate. There should be more communication of findings and links to similar papers or research happening in the area.' – Interviewee (broad interest)

4. Alignment of funded projects with grant opportunity and Mission priorities

Key findings

- All funded projects aligned with the grant opportunity under which they were funded.

- Projects have been funded across all 7 Mission priorities, with more than half of all MRFF cardiovascular disease and stroke funding directed towards Priority 2.2.: Discover and test new solutions.

- Review participants had mixed views on whether the Mission priorities are appropriately focused – some thought they were appropriately broad, some thought they were too broad, and others thought they were too narrow. Being too broad and/or having so many objectives was seen as less likely to be impactful.

- Many review participants identified emerging priority areas for future MRFF cardiovascular disease and stroke research investment. These included broad categories of interest and a wide variety of disease-specific topics.

Review participants identified one opportunity for improvement

- Refine the funding objectives for the Mission's next 5-year funding period.

4.1   Alignment of funded projects with grant opportunity objectives

Mission funding was made available under 7 grant opportunities which sought proposals across Mission priorities, funding objectives, streams and topic areas (**Appendix E: Mission grant opportunities, number of grants and funding provided**).

MRFF funding was also provided for cardiovascular disease and stroke research through 50 non-Mission grant opportunities across 14 MRFF initiatives, although most of these grant opportunities did not specifically target or mention cardiovascular disease or stroke research.[26]

The descriptions of all funded projects (for which this information was available in project documentation) closely aligned with the objectives and outcomes of the grant opportunity under which they were funded.

---

[26] Eight (16%) of the 50 non-Mission grant opportunities addressed cardiovascular disease or stroke research in some way. Four opportunities and a stream within a fifth opportunity were specifically designed to support cardiovascular disease or stroke research and 3 others mentioned cardiovascular disease in their guidelines, among other topic areas.

4.2 Alignment of funded projects with Mission priorities and funding objectives

Department administrative data shows the percentage of Mission and non-Mission cardiovascular disease and stroke research funding against the Mission priorities, with most funding allocated to Priority 2.2: Discover and test new solutions (Table 12).

Table 12: Percentage of Mission and non-Mission funding mapped against Mission priorities (n=172)

Mission priority	Mission funding (%)	Non-Mission funding (%)	Total funding (%)
1.1 Identify and predict risk	19.9%	3.3%	7.6%
1.2 Prevent cardiovascular disease	11.8%	6.6%	8.0%
2.1 Optimise diagnosis and reduce inequities	10.7%	2.8%	4.9%
2.2 Discover and test new solutions	23.2%	70.7%	58.3%
3.1 Prevent disease recurrence	21.5%	5.8%	10.0%
3.2 Improve recovery and monitoring	6.7%	2.9%	3.8%
3.3 Reduce morbidities	6.2%	7.9%	7.4%
Total	100%	100%	100%

Source: Desktop Scan

The Chief Investigator Survey asked grantees to identify the one Mission priority with which their project was most closely aligned. Based on this response, they were then provided with a list of Mission funding objectives that related to that priority area (between 8 and 12 objectives depending on the selected priority area) and asked to identify the objective with which their project was most closely aligned.

A comparison was made between:

- the priority from the Mission Implementation Plan under which each Mission project was funded (based on administrative data from the department), and

- the priority that each Mission-funded CIA nominated as the one with which their project most closely aligned.

The priority nominated by Mission-funded CIAs matched the priority under which their project was funded for only 42% of projects.[27]

---

[27] CIAs were asked to select one priority, but as the priority descriptions are broad, their project may relate to multiple priority areas (among which may be the priority under which they were funded). The staged nature of funding under Mission grant opportunities could also account for the low percentage matched, i.e., applicants apply for grant opportunities under a particular priority and then a grant opportunity is released at a later date, the description of which better matches their study focus.

4.3 Review participant perspectives on Mission priorities

Table 13 summarises Review participant feedback on the Mission priorities.

Table 13: Summary of qualitative feedback on Mission priorities

Frequency of perspective	Broad themes
Many survey respondents and/or interviewees thought …	• there are emerging priorities for future MRFF investment
Some survey respondents and/or interviewees thought …	• the Mission priorities are sufficiently broad
A few survey respondents and/or interviewees thought …	• the Mission priorities are too broad • the Mission priorities are overly restrictive (leading to restrictive grant opportunities) • the Mission has too many objectives

Source: Chief Investigator and Stakeholder Surveys and Stakeholder Interviews

Some survey respondents and interviewees felt the Mission priority areas were sufficiently broad and allowed a diverse range of research to be funded. A few thought the priorities were too broad, while others thought the priorities and resultant grant opportunities may be overly restrictive. Being too broad and/or having so many objectives was seen as less likely to be impactful.

> *'Sometimes if you spread things too broadly, then you make less impact' – Interviewee (good understanding)*
>
> *'[the Mission grants] are highly prescriptive grants and therefore there's very little opportunity to do anything bold and new and novel' – Interviewee (broad interest)*

A few survey respondents and interviewees thought there were too many funding objectives and that this could be revisited in the second 5-year funding period, including a specific focus on identifying Australia's research strengths.

> *'Given the size of the investment the [Mission] impact could be potentially improved by more focus on Australia's key strengths and most important unmet needs to address within the plan' – CIA Survey (Mission)*

Fifty six percent of all survey respondents and many interviewees believed there were emerging priority areas for future MRFF cardiovascular disease and stroke research investment. These included broad categories of interest and a wide variety of disease-specific topics.[28]

---

[28] Many of the identified emerging priorities could fit within the current priority areas.

Broad categories of interest included basic and discovery research, primary and secondary prevention, screening and diagnosis, rehabilitation, pre-hospital care, health services research, implementation research, consumer focused research, precision medicine, digital health applications, artificial intelligence, equity, and reporting, monitoring and surveillance.

Disease specific topic areas included atrial fibrillation, heart failure, peripheral arterial disease, blood pressure control, post stroke complications and outcomes, genomics, multimorbidity and mental health.

5. Progress towards project milestones and Mission aims and objectives

<div style="border-left: 4px solid magenta; background: #f7eef5;">

Key findings

- Most projects were not complete at the time of the Review.

- Between a quarter and a third of projects reported achieving all project milestones due at the time of their progress or final report. The main reasons for delays were COVID-19 related issues, time for ethics and/or site-specific approvals and delays in staff recruitment.

- For 23% of projects, Chief Investigators reported they had met or made substantial progress towards the Mission funding objective with which they considered their project was most closely aligned.

- For most projects, Chief Investigators reported that demonstrable impact on the Mission aims was not yet applicable.

</div>

5.1 Project stage of completion

As many Mission and non-Mission projects were not completed at the time of the Review, longer-term impacts such as changes in health care practice and health outcomes (which comprise the aims of the Mission, and the majority of the Mission's stated evaluation measures - **Appendix A: Mission Implementation Plan – Evaluation approach and measures**) are unlikely yet to be realised, a point reinforced by many survey respondents and interviewees.

> *'Most projects are still going [and] for many of those, the actual impact assessment will take a few more years … and the translation will take a few more years beyond that' – Interviewee (broad interest)*

Based on administrative data from the department, of all funded projects (n=172), around a quarter were less than halfway through the funding period for their grant, and only 12% of projects had been completed (Figure 12). A higher percentage of non-Mission projects were either at a very early stage or had been completed.[29]

---

[29] Mission grant opportunities ran from 2019 to 2022; non-Mission grant opportunities ran from 2017 to 2023.

Figure 12: Project stage of completion (funding period elapsed)
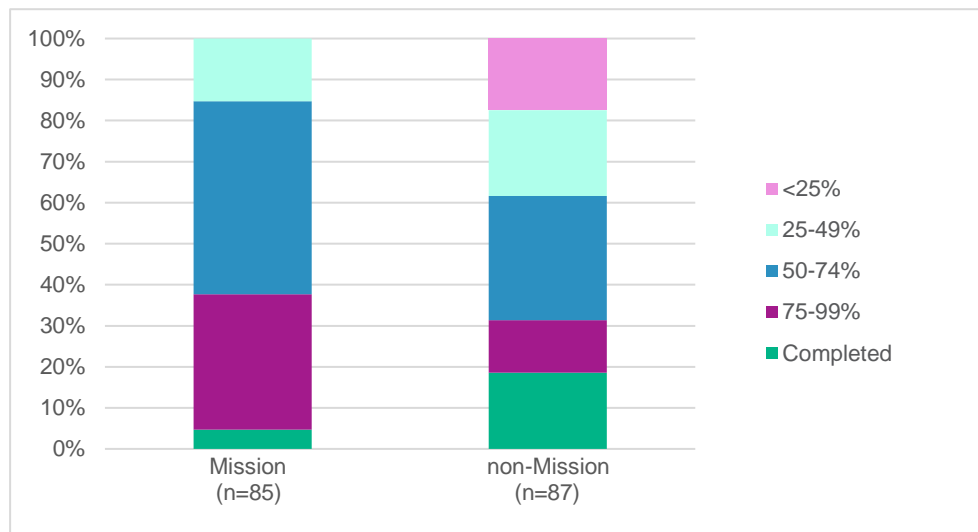
Source: Department of Health and Aged Care

5.2 Project progress towards individual project milestones

Project reports provided information about the progress of individual projects against their milestones due and delays in their achievement. Projects had provided between zero and 6 progress reports. At each reporting period, between a quarter and a third of projects reported achieving all milestones due at that time. The main reasons given for delays were:

- COVID-related issues (n=33 projects), particularly affecting participant recruitment, clinical staff availability and timelines for ethics or site-specific approvals

- general delays in ethics and/or site-specific approvals (n=30 projects)

- workforce issues unrelated to COVID, such as delays in recruitment (n=23 projects).

Other issues included delays in obtaining drugs or other study materials, needing to update protocols due to changes in evidence or project findings, delays in software/equipment preparation, issues with execution of multi-institutional agreements, embargoes preventing project start times[30], and unexpected equipment or data issues.

Chief Investigator Survey respondents also described their project's progress in relation to their study aims, new infrastructure, partnerships, new knowledge and other outcomes.

> *'We have engaged government and non-government agencies nationally, to support the national roll-out of the school program' – CIA Survey (Mission)*
>
> *'By working with an industrial partner, we have received regulatory approval for the solution' – CIA Survey (non-Mission)*

---

[30] The department has recently released advice to clarify that projects can commence whilst under embargo Policy on MRFF and NHMRC funding outcomes released under media embargo | Australian Government Department of Health and Aged Care.

5.3   Progress towards grant opportunity objectives and outcomes

Only 9% of all projects were asked to report on their progress against the objectives and outcomes of the relevant grant opportunity as part of MRFF reporting requirements.[31] Given this small proportion, further analysis was not undertaken.

5.4   Progress towards Mission funding objectives and aims

Progress against Mission funding objectives

For 23% of projects, Chief Investigators reported they had met or made substantial progress towards the Mission funding objective with which they indicated their project most closely aligned (Figure 13), noting that most projects were not completed at the time of the Review.

Figure 13: Project progress against Chief Investigator-identified Mission funding objectives
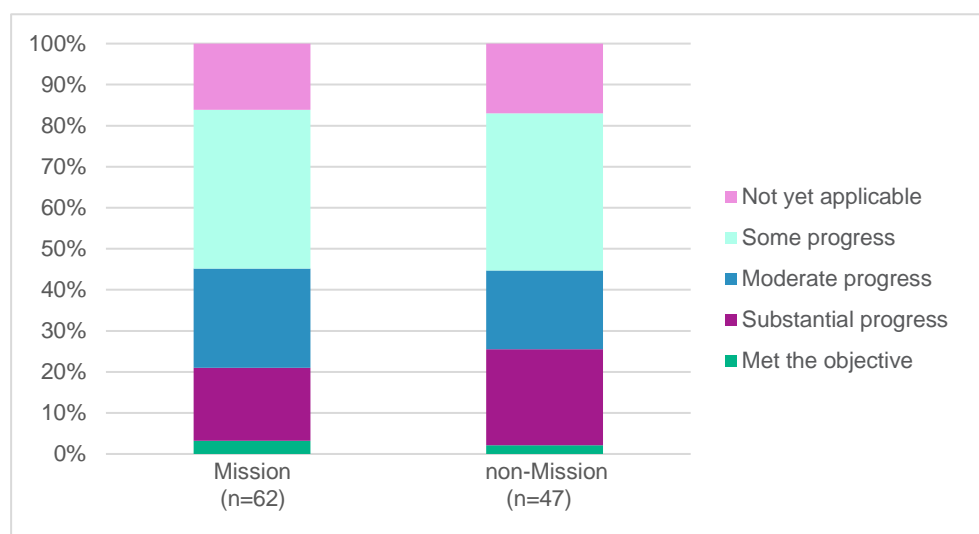
Source: Chief Investigator Survey

---

[31] There are multiple layers of objectives and outcomes that relate to the MRFF, the Mission, the relevant grant opportunity and the funded project. The requirement to report on grant opportunity objectives and outcomes was not consistent over time. Reporting requirements focussed on progress against project milestones and, in some cases, against MRFF measures of success (see section 6).

A sub-analysis of progress against Mission funding objectives by project stage (funding period elapsed) showed that the percentage of projects that reported meeting or having made substantial progress toward the relevant objective increased with project stage (noting that some of the percentages are based on very small numbers, therefore this comparison should be made with caution). For completed projects where responses were available (n=13), none of the CIAs indicated that their project had met the funding objective, 31% reported the objective was not yet applicable and 38% reported making substantial progress.[32]

Progress towards Mission aims

Less than 10% of Chief Investigators reported that their project had achieved demonstrable impact against the aims of the Mission, with over half indicating that progress against these aims was not yet applicable to their project (Figure 14). The pattern for Mission and non-Mission projects was similar across each aim.

Figure 14: Project progress against Mission aims
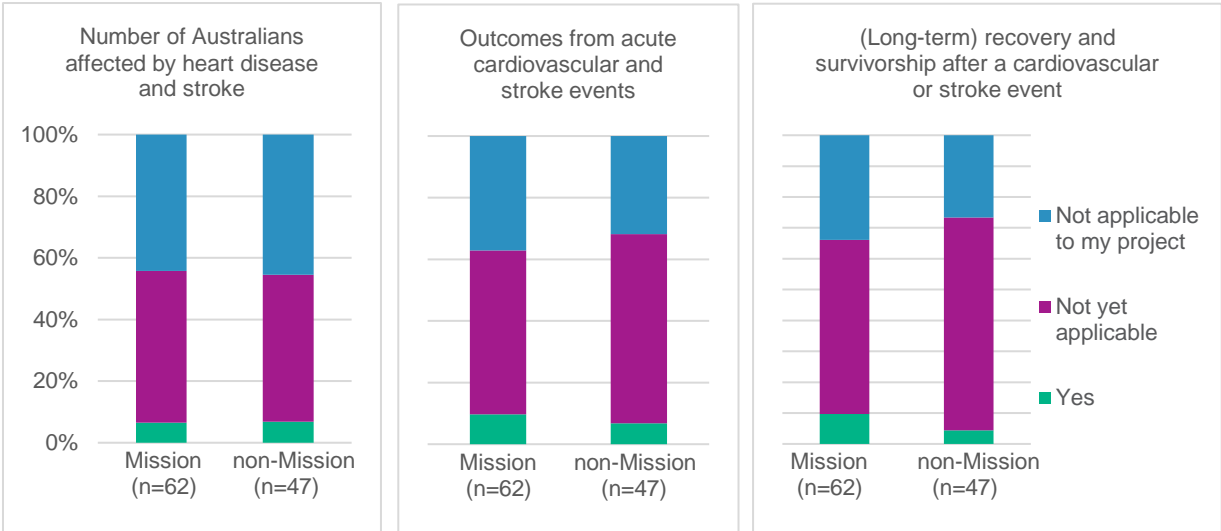
Source: Chief Investigator Survey

Nine Performance Indicator Survey respondents (one Mission and 8 non-Mission) reported one of the following changes within the population of people whose health their MRFF grant aims to improve:

- patient/consumer-reported outcomes measures improvement (n=1 project)

- reduction in modifiable health risk factors (n=1 project)

- reduction in mortality and morbidity (n=1 project)

- improved patient and family involvement in their healthcare (n=2 projects)

---

[32] Some Mission funding objectives, including short-term objectives, have lead-in sentences that refer to longer term outcomes, such as changes in adoption of and adherence to interventions, access to best care, reducing complications and length of stay and reducing the number of Australians experiencing disease. This may have affected respondents' answers to this question.

- improved productivity, such as ability to participate in paid or unpaid occupations (n=1 project)

- health literacy improvements among the community (n=2 projects)

- social determinants of health improvements (n=1 project).

6. Progress of funded projects towards MRFF measures of success

Key findings

- A higher percentage of Chief Investigators (86%) compared to stakeholders (59%) believed the Mission, and the MRFF more broadly, had identified and addressed evidence gaps within their area of research.

- While there were differences in opinion about how well the Mission has addressed priority populations, there was strong support to continue to prioritise First Nations research.

- The MRFF has funded 90 cardiovascular disease and/or stroke clinical trials which expect to enrol approximately 44,900 people.

- Impacts on cardiovascular disease and stroke health care are not yet applicable for most projects. While 19% of projects reported impacts on provider's experience of delivering health care, many have implemented activities to support the translation of their research findings into practice. This includes engaging with clinicians (72%), engaging with partners who can change practice (60%) and publications other than journal articles (28%). Many interviewees discussed the challenges of translating outcomes of successful research into practice.

- MRFF cardiovascular disease and stroke funding has supported 701 research staff. Most Chief Investigators believed the MRFF had built research capability (84%) and supported the attraction and retention of talent (74%). Half of all funded projects created new national and/or international networks or alliances.

- Most funded projects (77%) have used strategies to involve consumers.

- Fourteen non-Mission grants reported outputs related to commercialisation including patents and new products entering the market.

Review participants identified 5 opportunities for improvement

- Make funding commensurate with needs of priority populations, including quarantining funding.

- Provide better support for First Nations researchers (and those that work in this field), those working in rural and remote areas and early to mid-career researchers.

- Establish better mechanisms to support translation of findings to policy and practice, including structured mechanisms to support engagement between research, government policy and practice change partners.

- Provide better recognition and reward for consumers.

- Increase the focus on commercialisation.

The MRFF Monitoring, Evaluation and Learning Strategy was published in 2020. Table 14 shows the percentage of all MRFF cardiovascular and stroke projects that included a requirement to report on MRFF measures of success as outlined in the Strategy (see section 1, Figure 2).[33]

Table 14: Percentage of projects required to report on MRFF measures of success

Measure of success	In reporting requirements n (%)
Increased focus of research on areas of unmet need	83 (60%)
More Australians access clinical trials	43 (31%)
New health technologies are embedded in health practice	45 (33%)
New health interventions are embedded in health practice	34 (25%)
Research community has greater capacity and capability to undertake translational research	62 (45%)
Health professionals adopt best practices faster	39 (28%)
The community engages with and adopts new technologies and treatments	56 (41%)
Increased commercialisation of health outcomes	33 (24%)

Source: Document review

A higher percentage of Mission (86%) than non-Mission (39%) projects were required to report progress against specified MRFF measures of success.[34] Of these, 53 (85%) Mission and 20 (77%) non-Mission projects reported making progress. No projects reported meeting their identified MRFF measures of success.

---

[33] Some projects pre-dated the MRFF Monitoring, Evaluation and Learning Strategy and are thus not required to report against the MRFF measures of success. Where projects are required to report, they report against the measures of success that are relevant to their project as indicated by the Chief Investigator at the time of application.

[34] Some projects predated the MRFF Monitoring, Evaluation and Learning Strategy and are thus not required to report against the MRFF measures of success. Where projects are required to report, they report against the measures of success that are relevant to their project as indicated by the Chief Investigator at the time of application.

.

6.1 Increased focus of research on areas of unmet need

Evidence gaps

Most Chief Investigators (86%) believed the Mission, and the MRFF more broadly, had identified and addressed evidence gaps within their area of research, at least to some extent (Figure 15). Compared to Chief Investigators, a higher percentage of stakeholders did not agree or were unsure.

Figure 15: Extent to which the Mission (and MRFF) have identified and addressed evidence gaps
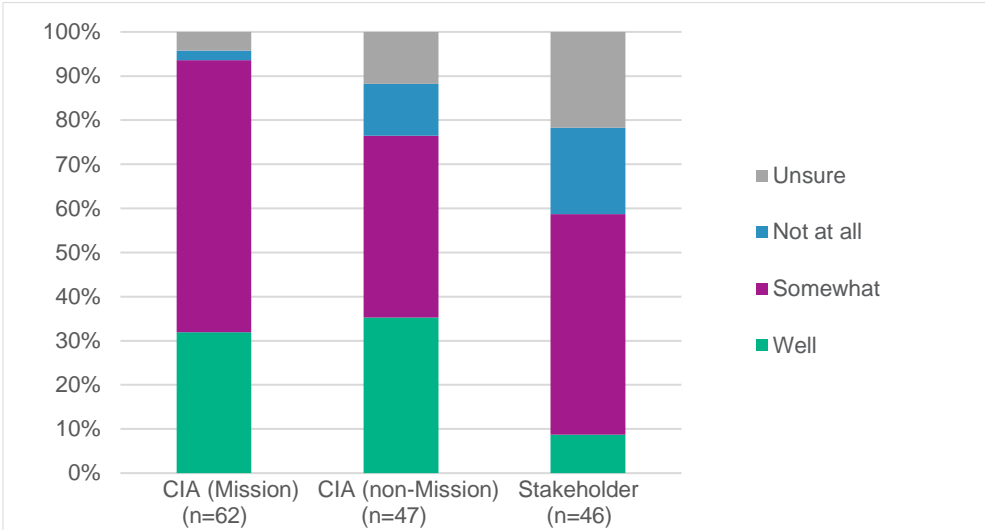
Source: Chief Investigator and Stakeholder Surveys

While some survey respondents and interviewees commented that evidence gaps had been identified and were being addressed, others did not agree. Some were not aware of, or did not trust the priority setting process.

> *'The Mission priorities and schemes have specifically identified key areas of domestic and international need to address gaps in healthcare'* – Stakeholder Survey (Researcher)
>
> *'I am unaware of a prioritisation process undertaken by the Mission or MRFF using available data and evidence'* – Stakeholder Survey (Non-government organisation)
>
> *'Some MRFF calls seemed to be rather random or seem to target a specific group of researchers or institution, creating a lack of transparency'* – CIA Survey (Mission)

Priority populations

While the Mission Roadmap and Implementation Plan identified only one priority population (First Nations people), funded projects addressed a range of populations of interest.

> *'The [draft] Roadmap and Implementation Plan initially did have a number of different groups … but the health gap from an Indigenous perspective was recognised to be really very distinct and different' – Interviewee (good understanding)*

Responses to the Performance Indicator Survey indicated many projects focused on priority population topics (Figure 16). The most frequently nominated populations were older people experiencing diseases of ageing (43 projects), people living in rural/regional/remote areas (27 projects) and people with rare or currently untreatable conditions (24 projects).

Figure 16: Number of projects directed to specific populations
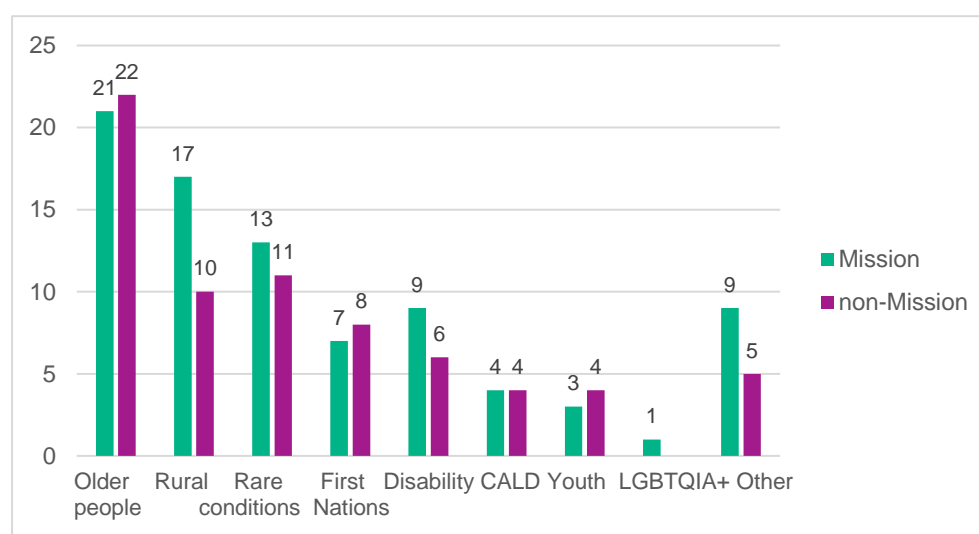
Source: Performance Indicator Survey[35]

Table 15 summarises Review participant feedback on priority populations.

Table 15: Summary of qualitative feedback on priority populations

Frequency of perspective	Broad themes
Many survey respondents and/or interviewees thought …	• the Mission should continue to focus on First Nations health
Some survey respondents and/or interviewees thought …	• women and people in regional, rural and remote areas were important priority populations
A few survey respondents and/or interviewees thought …	• the Mission had done well in addressing priority populations (but others did not agree) • funding should be commensurate to need

Source: Chief Investigator and Stakeholder Surveys and Stakeholder Interviews

---

[35] Some specific population groups have been abbreviated in the figure legend. The full descriptors are older people experiencing diseases of ageing, people living in rural/regional/remote areas, people with rare or currently untreatable conditions, First Nations people, people with a disability, culturally and linguistically diverse people, youth, LGBTQIA+ people.

A few interviewees thought the Mission had done well in addressing priority populations, others expressed surprise about low levels of funding awarded.[36]

> *'[There have been] increased studies in diverse populations including gender, disability, culturally and linguistically diverse groups' – CIA Survey (Mission)*
>
> *'When you look at the data, you would have to say [funding for projects focusing] particularly on rural, regional, remote [populations], First Nations [people] and women, are all very low' – Interviewee (broad interest)*

The case example below describes the approach to funding First Nations research taken by 2 independent grant programs, funded through the MRFF.[37]

First Nations Case Example 1

Independent grant programs administered by the National Heart Foundation (Mission, 2020, $4,000,000) and MTPConnect (non-Mission, 2020, $47,000,000)

In 2020, the National Heart Foundation received funding from the Cardiovascular Health Mission, and MTPConnect received funding through the Preventive and Public Health Research initiative of the MRFF for the initial investment in the Targeted Translation Research Accelerator (TTRA) program. The National Heart Foundation co-contributed $4 million to their Strategic Grants Program and MTPConnect leveraged an additional $46.5 million from the sector for the 2020 TTRA ($14.4 million cash and $32.1 million in-kind). The grants facilitated both groups to develop and administer independent grant programs. To support these programs:

* The National Heart Foundation developed a list of research priorities through consultation with researchers, consumers and end users as part of the development process for their strategic plan. One of the 8 funded projects, awarded in 2021, focused on First Nations people and aimed to improve cardiovascular health for people with cancer.

---

[36] Interviewees received background information that included an analysis of MRFF funded cardiovascular disease and stroke research that was targeted towards, or benefits, populations of interest. The data was drawn from the Desktop Scan. The analysis was based on a key word search, and did not include information on independent grants programs funded by MRFF but administered by National Heart Foundation and MTPConnect. The background information did not include data from the Performance Indicator Survey presented in Figure 16 as this was not available at that time.

[37] The individual grants funded through these programs have not been counted in data from the project documentation review, surveys or the Desktop Scan.

- TTRA, in collaboration with the Lowitja Institute, developed a research [prioritisation framework](#) to guide their investment in First Nations research. Funding for diabetes or cardiovascular disease research focused on improving health and wellbeing for Aboriginal and Torres Strait Islander people was announced in October 2023, and 4 projects specific to cardiovascular disease and stroke were funded. These projects focused on reducing risk of diabetes and cardiovascular complications in pregnancy through a model of care co-design with Aboriginal and Torres Strait Islander women, a community-led strategy for comprehensive primary preventative care, co-design to improve heart health in remote communities in North-East Arnhem Land, and a strength-based prevention approach based on Aboriginal Culture, Kinship, Community and Country.

Many interviewees commented on the importance of a continued focus on First Nations health through the Mission. Some also discussed the importance of having time to develop relationships, that communities are over researched and that it takes time to build the First Nations research workforce.

> 'To be done well [First Nations research] is very reliant on good relationships with various populations, health services, government bodies and that can only be done over a period of time of working together' – Interviewee (specific interest)
>
> 'The more we work with non-Indigenous researchers is a critical facet because [First Nations researchers] can't do everything, but we need to work with everyone' – Interviewee (good understanding)
>
> 'It takes so long to build up capacity of our people to lead and make a significant contribution to research – there isn't enough of us around … We need to invest but tailor it [to build up] over the next 5 or 6 years rather than flushing [too much] into the system' – Interviewee (good understanding)

The following case example describes a First Nations research project with strong community engagement.

First Nations Case Example 2

Yarning Up After Stroke, University of Newcastle (Mission, 2020, $485,062)

This [project](#) builds on the wisdom and cultural practices within local Hunter Aboriginal Communities to address the inequitable health care experienced by, and strengthen the long-term recovery and survivorship of, Aboriginal and/or Torres Strait people living with stroke in regional and rural Australia. Aboriginal Elders, people with lived experience of stroke, Community members and health workers are guiding researchers and health services in work to (i) identify the needs and wants of Aboriginal people (ii) co-design an evidence and strengths-based culturally responsive model of care for stroke recovery, and (iii) determine how well this strategy, built by Aboriginal people for Aboriginal people, strengthens the spirit and well-being of both Aboriginal and/or Torres Strait people living with stroke and their Communities. The project which incorporates the principles the AIATSIS Code of Ethics for Aboriginal and Torres Strait Islander Research, continues to:

- be led by local Aboriginal Communities and Elders and health partners

- actively include people with lived experience of stroke and their families in every aspect of the project

- involve the Community in all project steps – the design, implementation and evaluation of the model of care – to strengthen the likelihood of immediate and long-term translational success

- communicate all progress and results with the Community through Community determined strategies including at Community events (e.g., health yarning days, Family Fun Days and NAIDOC Events).

While still in the early stages, the project is generating interest about the impact of stroke and unmet needs in relation to culturally responsive health care interactions and resources. Yarning with Community members with lived experience of having a stroke, supporting someone with stroke and/or working with people with stroke, have revealed several Community determined solutions; the importance of (i) involving family in care decisions, (ii) forming trusted relationships, (iii) ensuring health care interactions are culturally responsive, and free from disrespect and racism, and (v) appreciating the impact that complicated and under-resourced systems play in limiting access to evidence-based stroke care.

This knowledge, obtained through deep listening with the Community, has been shared with the stroke research community at conferences/forums and with health professionals and managers within health care, locally, nationally and internationally. Learnings from this project has been also shared with the Australian Stroke Alliance and their cultural advisory group, Darak, to strengthen the cultural safety and subsequent success of their translational work in pre-hospital/hyper-acute stroke care.

Some interviewees thought women and people in regional, rural and remote areas were important priority populations for cardiovascular disease and stroke research. A few mentioned people from culturally and linguistically diverse backgrounds, older people or adolescents.

A few interviewees suggested funding should be commensurate with needs of priority populations, including quarantining funding and support for researchers from priority populations and for those working in in rural and remote areas.[38]

6.2 More Australians access clinical trials

Performance Indicator Survey respondents reported 65 cardiovascular disease and stroke research projects (52%) included a clinical trial. A higher percentage of non-Mission projects (64%) reported a clinical trial than Mission projects (42%).

The number of clinical trials per grant ranged from one to 5, with an overall total of 90 trials being supported.

Table 16 shows the planned and actual number of enrolments (note that for international trials, enrolments are for the Australian arm only).

Table 16: Enrolments and expected enrolments in clinical trials

Enrolments	Mission	non-Mission	Total
Number of enrolments (as at May 2024)	1,694	11,980	13,674
Planned enrolments	10,555	34,336	44,891
Number of enrolments per grant (planned) (range)	10 – 1,800	5 – 9,180	5 - 9,180
Median no. of enrolments per grant (planned)	228	300	295

Source: Performance Indicator Survey

A few interviewees commented on how MRFF funding for clinical trials has brought the sector together to do more impactful trials, but that there were ongoing challenges into the future.

> *'We have had some fantastic cardiovascular disease outcomes based on previous Australian clinical trials, but clinical trials need big numbers and are expensive. I don't think the MRFF or Mission are equipped to support these trials over the long term' – Interviewee (good understanding)*

---

[38] Topic areas in Grant Opportunity Guidelines effectively quarantine funding for specific areas of research. In relation to priority populations, 5 Mission grant opportunities included topics specific to Aboriginal and Torres Strait Islander people and one Mission grant opportunity referred to supporting research for women. No Mission grant opportunity referred to people living in rural or remote areas or people from culturally diverse groups.

6.3 New health technologies and interventions are embedded in health practice

For most projects, Chief Investigators reported that demonstrable impacts on access to new treatments, interventions or technology (77%), patient experience (58%) or provider experience (53%) was not yet applicable (Figure 17).[39] The pattern for Mission and non-Mission projects was similar across each dimension.

Figure 17: Demonstrable impacts on cardiovascular disease and stroke health care
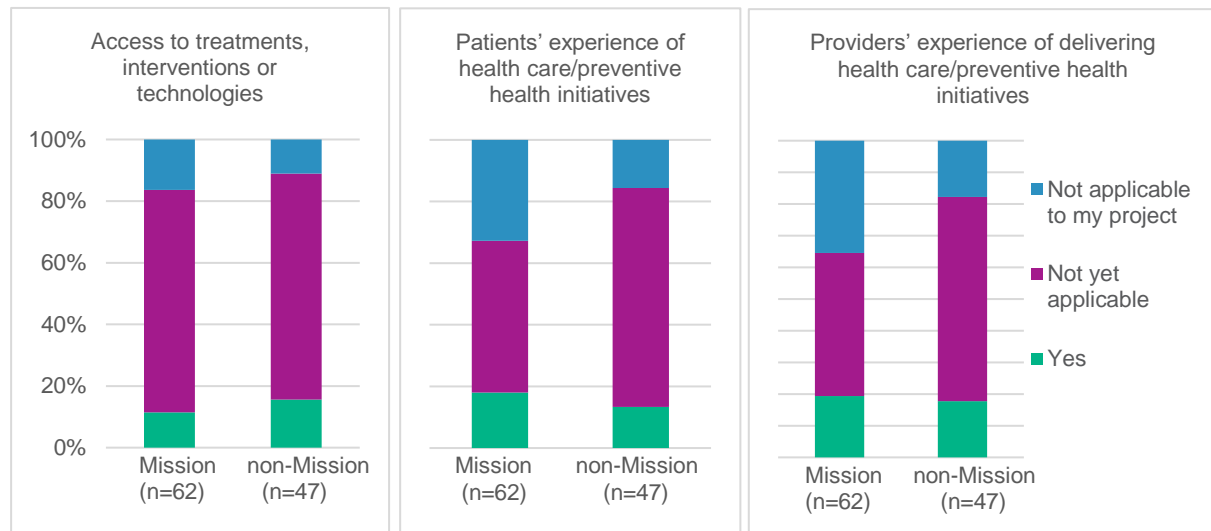
Source: Chief Investigator Survey

Performance Indicator Survey respondents reported outputs that contributed toward effecting health and health care change for 14 projects. These all related to non-Mission projects and included:

- influencing new treatments or interventions being adopted (3 projects)

- progressing a new treatment or intervention to the next phase of development (2 projects)

- influencing the withdrawal of ineffective treatment or interventions (2 projects).

Other outputs reported by individual projects included:

- regulatory application/approval for determination about a new drug or device

- new or changed local healthcare policy or clinical guideline

- new or changed local standard healthcare procedure or service delivery

- contribution to health care policy or clinical guidelines

---

[39] While there are gaps in understanding of and different ways of measuring time lags in translational research, some estimates suggest an average of 17 years from discovery to commercialisation. See ZS Morris, S Wooding and J Grant. The answer is 17 years, what is the question: understanding time lags in translational research. Journal of Research Society and Medicine. 2011:104(12):510-20 doi: 10.1258/jrsm.2011.110180. https://pmc.ncbi.nlm.nih.gov/articles/PMC3241518/.

- repurposing current treatments and/or technologies

- completing a cost effectiveness analysis to support the use or discontinuation of an intervention

- use of evidence by non-government organisations, end-users, and/or stakeholders (other than those in the healthcare system) to guide patient care.

Some survey respondents and interviewees noted the need for better data, data linkage and use of AI for research and clinical service improvement.

> *'Near real time access to standardised outcome and clinical quality indicators, which can be connected to [and measure the impact of] research has massive implications for [translation] and attraction of commercial entities' – Interviewee (good understanding)*
>
> *'Generation of real-world evidence using complex multimodal electronic medical record data and linked data [is an emerging priority area]' – CIA Survey (Mission)*
>
> *'New capabilities in machine learning and assay development could deliver breakthroughs to improve patient disease prognosis and management' – Stakeholder Survey (Researcher)*

The 3 case examples on the following pages describe different translation outcomes: 'living' clinical guidelines for stroke management, novel biomarkers for use in primary care, and identification of drugs that can prevent cardiac injury.

Translation Outcomes Case Example 1

Australian Living Guidelines for Stroke Management, National Stroke Foundation (non-Mission, 2018, $1,500,000)

This project developed and tested groundbreaking methods and drew on the latest technologies to develop efficient 'evidence surveillance' systems and continually integrating identified new research and rapidly updated guideline recommendations whenever there is an important change in the evidence.

The project has been completed and has transitioned from a research project into ongoing program activity. The findings helped inform other national living guidelines for conditions such COVID-19, diabetes, pregnancy and postnatal care, kidney health and arthritis. The Stroke Guidelines are now fully 'living' with reviews of new evidence being completed monthly and subsequent updates of the guidelines being made as required - resulting in health professionals having direct access to the most up to date research and guidelines for their clinical practice.

Stroke Foundation continue to manage the guidelines and have made over 50 new and updated recommendations since 2018, all which have received NHMRC approval. On 21 October 2024, the Foundation invited public comment on a further 4 new and updated draft living recommendations. There is very high stakeholder involvement and commitment to maintaining the guidelines in 'living mode' and the guideline development groups, including those with lived experience, are continually refreshed to ensure continuity but also new input into the process.

A 2022 evaluation found that the living guidelines resulted in significantly higher levels of trust, higher access, and higher intention to use recommendations compared to the previous periodically updated guidelines. It was estimated that over the 3 years since updated guidelines in 2018, 321 Australian lives were saved from death or life limiting disability following severe stroke.

Translation Outcomes Case Example 2

New Frontiers in Personalised Prevention of Coronary Artery Disease (CAD), University of Sydney (non-Mission, 2021, $997,562)

This one year project sought to establish CAD Frontiers as a new model for academic and industry collaboration to identify urgently needed biomarkers of early plaque, establish evidence-based clinical pathways and discover game-changing new drug treatments to support earlier detection and treatment of silent atherosclerosis.

The project has attracted global attention regarding unmet needs in CAD for new markers and treatments for patients before they get symptoms or a heart attack, and has stimulated new company start-ups (e.g., Kardiomics Pty Ltd). CAD Frontiers is now a private Australian company registered as a not-for-profit charity, and has continued to build an enduring R&D model through academic and industry partnerships. During Stage 1 the project gained support and collaboration from an additional 104 global researchers, 29 Universities and research organisations, 34 commercial industry partners, 16 not-for-profit organisations, government and health partners, and 10 community and charity partners.

The team were awarded additional grant funding via an NHMRC-funded Partnership Grant for Precision Prevention in coronary artery disease which has accelerated CAD Frontiers implementation beyond Stage 1 expectations. The team have made significant biomarker and mechanistic discoveries with established clinical implementation and drug discovery pipelines, commercialisation pathways and sustainability modelling. A prospective study of CAD polygenic risk scores in primary care will provide the foundation for the implementation of novel biomarkers in primary health care.

To support translation into practice the project included initiatives that evaluate the health economics aspects of early identification of silent CAD beyond traditional risk factors, as well as translation into care and guidelines. The team have benefited from extensive consumer and government policy maker input. Implementation resources will be promoted through health services and peak bodies and via the production of a toolkit with consumer and health professional factsheets, educational materials for GPs and practice staff and digital tools that will be refined based on consumer and primary care feedback.

This completed project found that inflammation is likely the primary driver of cardiac injury in patients with COVID-19. The study identified a class of drugs that could prevent injury – bromodomain extraterminal inhibitors (BETi). A BETi, apabetalone, has been granted U.S. Food & Drug Administration (FDA) approval as a Breakthrough Therapy Designation for use in combination with top standard of care, including high-intensity statins, for the secondary prevention of major adverse cardiac events in patients with type 2 diabetes mellitus and recent acute coronary syndrome.

Given the safety and efficacy profile, the study also tested apabetalone and confirmed efficacy in preventing cardiac injury. Apabetalone is now in phase II clinical trials for COVID-19 in Canada and Brazil. These activities are overseas rather than in Australia as the company that owns the drug (Resverlogix) is Canadian. The investigator notes that 'Development of more substantial funding to develop early stage IP and a pharmaceutical R&D sector in Australia would facilitate more of these activities here in the future.'

Activities undertaken to support translation

Many projects have implemented activities to support the translation of research evidence into practice. The project documentation review showed that 33% of all projects (36% Mission and 29% of non-Mission projects) implemented a suite of translation activities (i.e., either dialogue or co-design with implementation partners and/or community members, not just production of communication products).

Twenty eight percent of Chief Investigators identified that their project had resulted in, or contributed to, cardiovascular disease- or stroke-relevant publications other than journal articles. Most were reports, followed by patents and guidelines (Table 17).

Table 17: Number of publications (other than journal articles)

Category	Reports	Patents	Guidelines	Policy briefs
Preventive approaches focussed on individuals or communities	13	0	3	1
New clinical pathways with optimised treatments	2	30	5	1
New discoveries and biomarkers that improve diagnosis and prognostication	1	4	1	0
Novel interventions, treatments and devices	3	1	1	0
New treatments and interventions	13	2	2	0
Other relevant discoveries	2	0	0	0
Economic analyses	5	0	1	1
Total	39	37	13	3

Source: Chief Investigator Survey

Respondents to the Performance Indicator Survey reported publication of 58 peer review publications for Mission projects and 72 peer review publications for non-Mission projects.

Of the translation activities asked about in the Chief Investigator Survey, the most frequently undertaken were engaging with relevant clinicians (72%) and engaging with partners who can change practice (60%). Practice change partners include professional colleges or similar professional organisations, policy partners, health system managers (Figure 18).

Figure 18: Activities undertaken to support the translation of research into policy or practice
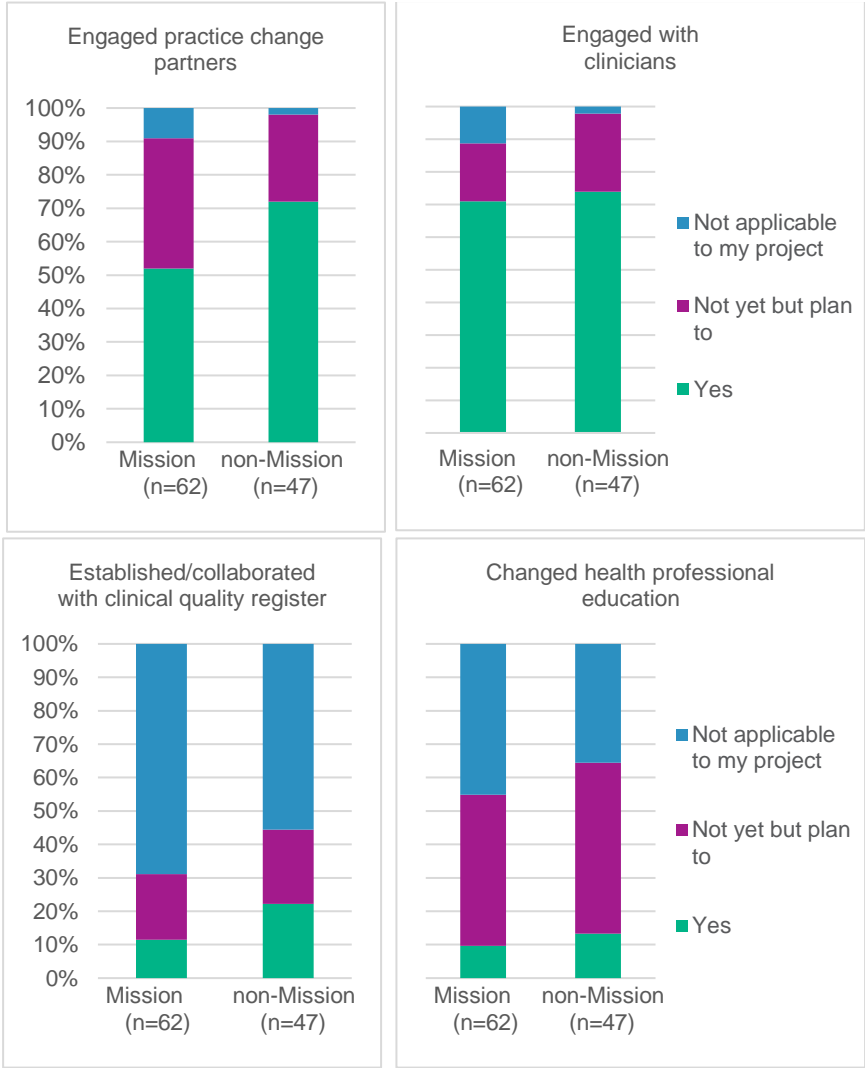
Source: Chief Investigator Survey

A sub-analysis of translation activities by project stage of completion (funding period elapsed) showed that the percentage of projects that reported engaging with partners who can change practice increased with project stage, as did the percentage that reported engaging with relevant clinicians.[40] The numbers of projects that reported establishing/collaborating with a clinical quality register and changing health professional education were too small for such an analysis.

---

[40] These results should be interpreted with caution as some of the numbers on which the percentages are based are small.

Chief Investigators described a range of other translation activities including applying for new grant funding to progress their research to the next phase, business development, presentations at conferences, public and media engagement and community capacity building.

A few interviewees raised the inclusion of plans for translation in grant opportunity guidelines.

> *'People have collaborations across many different institutes and so on - that makes sense. But I guess allowing a place in the grant to describe how it will be implemented, or if it cannot, if the team can only get it to a certain point. I think just some consideration for what would the next steps be. Because obviously you can't do it on your own. What's the next step and (is there) funding in an appropriate way for that?' – Interviewee (broad interest)*
>
> *'Are opportunities in the future around better engagement with the implementers at a state level because sometimes what we see is projects being funded that realistically aren't gonna work within the health system or haven't considered the implementation aspects. And so trying to see that translation pathway then is really difficult.' – Interviewee (broader interest)*

The following 3 case examples describe the use of translation plans and frameworks to guide translation activity.

Translation Activities Case Example 1

The CONSEP trial: Implementing screening for a hidden cause of hypertension, Monash University (non-Mission, 2021, $2,299,203)

Primary aldosteronism is a condition that affects around 10% of adults with high blood pressure that makes their blood pressure hard to control, thus leading to strokes, heart attacks and kidney failure.

The CONSEP trial aims to increase screening and diagnosis of primary aldosteronism in people living with hypertension who attend general practice, using electronic clinical decision support embedded in the practice software. The study is rolling out in 28 general practices in Melbourne, Adelaide and Hobart.

The evaluation of the implementation of the tool will use the Reach, Efficacy, Adoption, Implementation, and Maintenance (RE-AIM) framework. Barriers and enablers to implementation will be assessed at an individual (e.g. physician, patient), organisational (e.g. clinic) and environmental (e.g. financial, legal, regulatory) level. Interviews with GPs, clinic managers and other staff will identify barriers to screening to facilitate improved detection of primary aldosteronism. Consultation with implementation scientists and health economists will also contribute to the translation of the intervention into practice.

Translation Activities Case Example 2

Improving cardiovascular health through increased transport-related physical activity: A co-designed randomised controlled trial, University of Tasmania (Mission, 2021, $767,133)

This project aims to establish the impact on physical activity of a novel incentives-based strategy to increase public transport use.

The team is using an integrated knowledge translation approach and developing an end-of-grant dissemination plan, as per the Canadian Institutes of Health Research Guide to Knowledge Translation Planning.

Partner organisations (end-users) are involved through the entire research process, including problem identification, development of research questions and methodology, interpretation of results, and dissemination of findings. The end-of-grant dissemination plan will involve identifying the knowledge-user audience (beyond the project team), strategies (diffusion, dissemination, application), expertise (e.g., graphic design), and adequate resource allocation.

Translation Activities Case Example 3

Using existing digital infrastructure for the national scale-up of an effective school nutrition program to reduce population CVD risk, The University of Newcastle (Mission, 2021, $997,351)

SWAP-IT is a healthy lunchbox, text-message based program delivered by schools to parents' mobile phones using software schools routinely used to contact parents. It was found to be effective in improving student diet and healthy weight.

This research tests a strategy to increase the adoption of the SWAP-IT program by schools across Australia. It has the potential to influence millions of student lunches each week and reduce the risk of future cardiovascular disease and stroke.

The project includes a national implementation working group, a knowledge translation working group and a dissemination plan to further guide translation activities. A NSW Health Translational Research Grant has been received to support the scale up of the intervention in NSW.

The challenges of translating research and opportunities for improvement

Many interviewees discussed the challenges of getting outcomes of successful research adopted in government policy and clinical practice.

> *'A problem with MRFF is that [it can fund research on] a system-based solution, but then translating that into a sustainable government funding, [it's] a bit like a valley of death' – Interviewee (specific interest)*
>
> *'How things get translated from a successful grant to clinical practice is still a bit of a mystery to me [and] to be honest, I think it's probably still a bit of a mystery to a lot of people' – Interviewee (broad interest)*

70

Many Chief Investigators and interviewees suggested better mechanisms to support translation of findings to policy and practice. This included, in addition to strengthening translation requirements in applications, sharing findings, access to translation expertise, mentoring or support networks, guidance on regulatory approval pathways and policy change, and connectivity with end users.

> *'Most grants do have a section that says what are you going to do if you're successful? But that's a unilateral claim with no buy in from anyone who's actually going to make it happen' – Interviewee (specific interest)*
>
> *'If the MRFF had a translation advisory panel established where all successful projects could link to 1) establish the sustainability framework, 2) have expert advice for pathways to new systems of care … this would be a game changer. We want projects to change practice! HELP' – CIA Survey (non-Mission)*

The following case example describes the challenges of translation even with significant engagement with clinicians, senior health service stakeholders, development of a commercialisation roadmap and economic evaluation. It highlights the need for support to translate successful interventions, including improving connectivity between research outputs and state and federal bureaucracies.

Translation Challenges Case Example 1

The Stroke Golden Hour: delivering urgent stroke care to all Australians, University of Melbourne (non-Mission, 2018 $1,203,125 and 2020 $40,167,052)

Under the 2018 Frontier Health and Medical Research grant opportunity, $1.2 million was awarded to develop transformative pre-hospital technologies to improve treatments in the first 'golden hour' after stroke, in particular to address outcome disparities between rural and urban Australia. In Stage 1:

- the Australian Stroke Alliance was established
- project committees and councils were established including the Commercialisation Committee, the Indigenous Research Advisory Council, the Rural and Remote Health Advisory Council and, in conjunction with the National Stroke Foundation, the Consumer Council
- a Research and Business Plan and a Commercialisation Roadmap (to map potential markets for research outputs) were developed
- consultations included more than 50 workshops and a national survey with the Royal Flying Doctor Service, Ambulance Victoria, Indigenous Australians, commercial partners and research leaders
- support was galvanised from senior stakeholders in all jurisdictions including letters of support
- an independent economic evaluation estimated the technologies would generate gains of over 235,000 years of healthy life, deliver $15.6 billion in economic benefit and 1700 new jobs between 2021 and 2050.

A subsequent grant of $40 million was awarded under the 2020 Frontier Health and Medical Research grant opportunity. This stage aimed to develop lightweight brain scanners to rapidly deliver pre-hospital stroke care by air and road ambulances to all Australians, underpinned by education and a national telehealth platform. Due to be completed in June 2026, project achievements to June 2024 included:

- The 2 portable brain scanners are undergoing significant final testing, and patient recruitment has been expanded to accelerate device validation.
- The digital telestroke platform was active across 14 regions, 82 ambulances and over 1050 paramedics within South Western Sydney Local Health District, Hunter New England Local Health District and Victoria.
- South Australia is hosting the next phase of Stroke Smart Ambulances which have integrated portable brain scanners. The South Australia telestroke platform has supported over 1000 consultations. Treatment times are up to 30 minutes faster, access to treatment has improved with double the number of stroke patients receiving thrombectomy, and there has been a 72% reduction in interhospital transfers.
- Preliminary health and economic benefits have been determined from the first phase of digital telestroke road and air ambulance studies.
- Website development is complete with brain scanner training modules to be added once devices are available and validated. It provides health organisations with borderless stroke education including access to shared resources and healthcare innovations. A new role will review education material to ensure content is culturally sensitive and has an Indigenous lens applied.

Project leads consulted as part of the Mission Review indicated they have a high level of confidence that by the end of the program they will have solutions that can change care in Australia. While they have engaged with state and federal health authorities, who are uniformly supportive of their intervention, the biggest challenge is to translate their research findings into implementation and there needs to be support for evidence to move to practice, in particular connectivity between research outputs and state and federal bureaucracies.

6.4 Research community has greater capacity and capability to undertake translational research

This section includes information on workforce development, establishing collaborative or translational platforms and use of Mission enablers.

Five (10%) of the 50 non-Mission grant opportunities in scope for the Review included an eligibility requirement for leadership by early to mid-career researchers. The 2017 Next Generation Clinical Researchers (Career Development Fellowship) grant opportunity funded 'highly competitive, 4-year Fellowships that recognise and provide support for the most outstanding early to mid-career health and medical researchers in each Fellowship category'. The 2019 Investigator Grants: Medical Research Future Fund Priority Round was restricted to 'the Emerging Leadership category only' and innovation grants under the 2021 Dementia, Ageing and Aged Care Mission were for research that was either led by an early to mid-career researcher or conducted by a research team comprised of Chief Investigators of which at least half were early to mid-career researchers. Cardiovascular disease and/or stroke projects were also funded under 2 of the dedicated non-Mission Early to Mid-career Researchers grant opportunities (2021 and 2023).

The MRFF contribution to workforce development

MRFF funding for cardiovascular disease and stroke research supported 701 people in research roles (Table 18). This includes, e.g., Chief Investigators, students, research associates, lab managers, project officers, clinical trial nurses etc.

Table 18: Researchers supported by MRFF funding for cardiovascular disease and stroke research

Category	Mission (n=66)	non-Mission (n=58)	Total (n=124)
Number of people supported	303	398	701 (100%)
Number of early to mid-career researchers supported	167	161	328 (47%)
Number of culturally and linguistically diverse people supported	31	47	78 (11%)
Number of people located in a regional, rural or remote area	46	23	69 (10%)
Number of First Nations people supported	11	20	31 (4%)

Source: Performance Indicator Survey

Most Chief Investigators believed the Mission had contributed to the research workforce. Most Chief Investigators believed that the Mission had, at least to some extent, built capacity (84%), created jobs (83%) and helped to attract and retain talent (74%). A higher percentage of stakeholders did not agree or were unsure (Figure 19).

Figure 19: Mission contribution to the cardiovascular disease and stroke research workforce
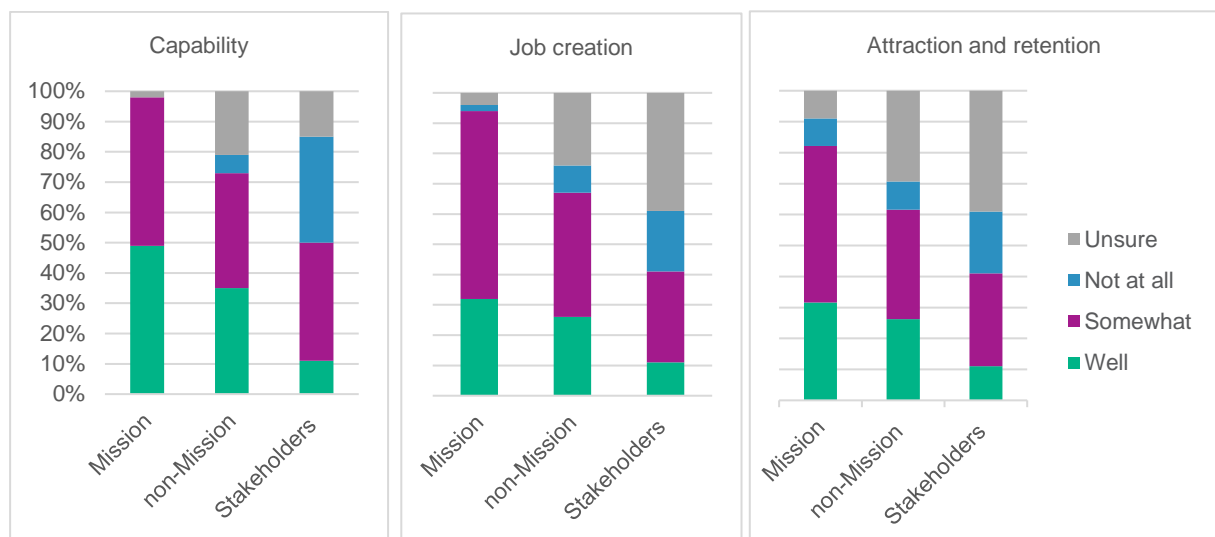
Source: Chief Investigator and Stakeholder Surveys

Many survey respondents and interviewees described how the MRFF, and Mission, had injected much needed funding and confidence into the sector which in turn supported workforce development.

> *'It allowed us to build research capacity including in regional areas, retain talented researchers and help mentor the next generation of cardiovascular research leaders in our country' – CIA Survey (Mission)*

Some survey respondents noted that funding had provided continuity for researchers to maintain their presence in the sector, rather than building new capacity. A few also noted that the MRFF does not fund the full cost of research, which places pressure on teams and hampers the attraction and retention of talent.[41]

Some survey respondents described how funding had allowed job creation for early to mid-career researchers. While a few interviewees mentioned the MRFF early to mid-career research initiative was positive, low success rates were considered challenging. Others expressed the need for more opportunities to support this group.

Many survey respondents and interviewees suggested ways to better support early to mid-career researchers, including targeted grant funding, opportunities for project leadership, creating career pathways, mentorship and professional development.

> *'Encourage early to mid-career researchers to be part of the core Chief Investigator team and whether you make that a criterion or make that [part of the application]' – Interviewee (broad interest)*

---

[41] This reflects broader, systemic issues that extend beyond the MRFF, which have a wide range of impacts on different parts of the health and medical research sector.

'Designate one of the principal investigators to be the director of the early career investigators to make sure that they have educational content at all of their meetings' – Interviewee (specific interest)

A few interviewees also raised the need to better support First Nations researchers, and the discovery research and stroke research workforces.

Activities to support workforce development

Respondents to the Performance Indicator Survey reported on their workforce capacity or capability building activities (Table 19). Mission projects had higher levels of collaboration with Australian researchers outside their institution and non-Mission projects had higher levels of interdisciplinary collaboration, new partnerships and international collaboration.

Table 19: Percentage of funded projects reporting capacity or capability building activities and outputs

Category	Mission (n=66)	Non-Mission (n=58)
Collaboration with Australian researchers outside of your institution	93%	55%
Interdisciplinary collaborations	65%	90%
Research translation training of research staff	62%	60%
New research collaborations/partnerships	54%	81%
Collaboration with international researchers	53%	71%
Establishing or expanding relationships and engagement with industry	36%	48%
Research staff involvement in exchange programs or placements with industry	9%	16%
Contract research or consultancies	11%	9%

Source: Performance Indicator Survey

The following 2 case examples describe different aspects of capability development – support for early to mid-career researchers and support for Aboriginal and Torres Strait Islander researchers.

Capability Development Case Example 1

Love Your Brain: A stroke prevention digital platform, Monash University (Mission, 2021, $944,788)

This project tests the effectiveness of a platform comprising an online course and messaging system on risk factor management, leveraging an existing National Stroke Foundation program.

The project is being led by 2 mid-career researchers and includes mentoring of 4 early-career researchers, who will lead publications on process and economic evaluation components of the project and be provided with opportunities to present at national and international conferences.

Capability Development Case Example 2

Nasal high-flow Oxygen Therapy After Cardiac Surgery: NOTACS, Curtin University (non-Mission, 2020, $1,460,862)

The NOTACS project is testing an oxygen delivery strategy called nasal high flow oxygen as a way of reducing lung complications and shortening the time needed to recover in hospital for patients undergoing cardiac surgery.

Because Indigenous patients needing cardiac surgery experience disproportionately worse outcomes, NOTACS focuses on Aboriginal and Torres Strait Islander study participation, innovative and inclusive trial methods, and research leadership development.

In line with this focus, the joint lead Chief Investigator is a First Nations investigator from The George Institute's [Guunu maana (Heal) Aboriginal and Torres Strait Islander Health Program](#), the study established Aboriginal and Torres Strait Islander reference groups, appointed an Aboriginal project manager, and recruited multiple Aboriginal research officers - training them in research skills through a course in Indigenous Research Methodologies at Flinders University.

Some interviewees noted the MRFF and Mission had enabled large collaborations and facilitated multidisciplinary teams to a greater extent than other funding streams.

> *'The biggest contribution is that the MRFF and Mission have driven more collaboration and cross disciplinary collaboration … this is the secret sauce of MRFF funding'* – Interviewee (good understanding)

The following 2 case examples describe different aspects of collaboration and co-design with implementation partners, and with consumers and/or patients with lived experience, including those from culturally and linguistically diverse communities.

Collaboration and Co-design Case Example 1

Improving life after stroke with tailored support: Innovation in use of national registry data, University of Melbourne (Mission, 2020, $505,704)

This project used data from the Australian Stroke Clinical Registry to identify factors associated with an increased risk of returning to hospital and poor quality of life. The information was used to co-design a hospital-led, outpatient-based telehealth service. The purpose of the follow-up service was to review and support registrants identified with extreme health needs on a self-reported survey at 6 months post stroke. Elements of the collaborative, co-design approach included:

- The study Investigator group conceptualised a preliminary design for the intervention that included the main components to be designed during a mixed methods, co-design process.

- Clinicians, researchers and consumers i.e., those with lived experience, helped to co-design the intervention, including a tailored training program and procedure manual suitable for implementation in various hospital settings.

- Processes and documents were modified based on feedback and it was identified that extra engagement with the carer and/or next of kin and general practitioner would be essential to the intervention being effective.

- Insights from an initial pilot testing of the intervention at one hospital (Austin Health, Victoria) led to further refinements to the clinical protocol and training manual.

- The intervention has now been assessed for feasibility in a randomised controlled trial of 62 survivors of stroke for this registry-based study (ANZCTR: ACTRN12622001015730). Results will be published in 2025.

Collaboration and Co-design Case Example 2

Using co-design to improve accessibility and acceptability of cardiac services for vulnerable populations: The Equal Hearts Study, Monash University (Mission, 2021, $597,104)

The research team for this project are working with implementation partners (clinicians), and cardiac patients and consumers that represent groups with low health literacy and cultural groups (e.g. African and Sikh communities) to identify factors that affect accessibility of hospital-based cardiac services.

A health literacy-based intervention that addresses these factors will be co-designed and tested within a Victorian health service. Findings from focus groups have been reported to each group and discussions held about the implications of these findings for each community and the potential for future co-design work to improve cultural acceptability and accessibility of health services (separate to this grant).

An advisory panel of consumers and clinicians has been involved throughout all stages of the study.

Development of collaborative or translational platforms

Chief Investigators reported on whether their project had developed collaborative or translational platforms. New networks and alliances (50% of all funded projects) were the most commonly reported (Figure 20). With the exception of clinical registries, a higher percentage of non-Mission projects have developed collaborative or translational platforms.

Figure 20: Development of collaborative or translational platforms
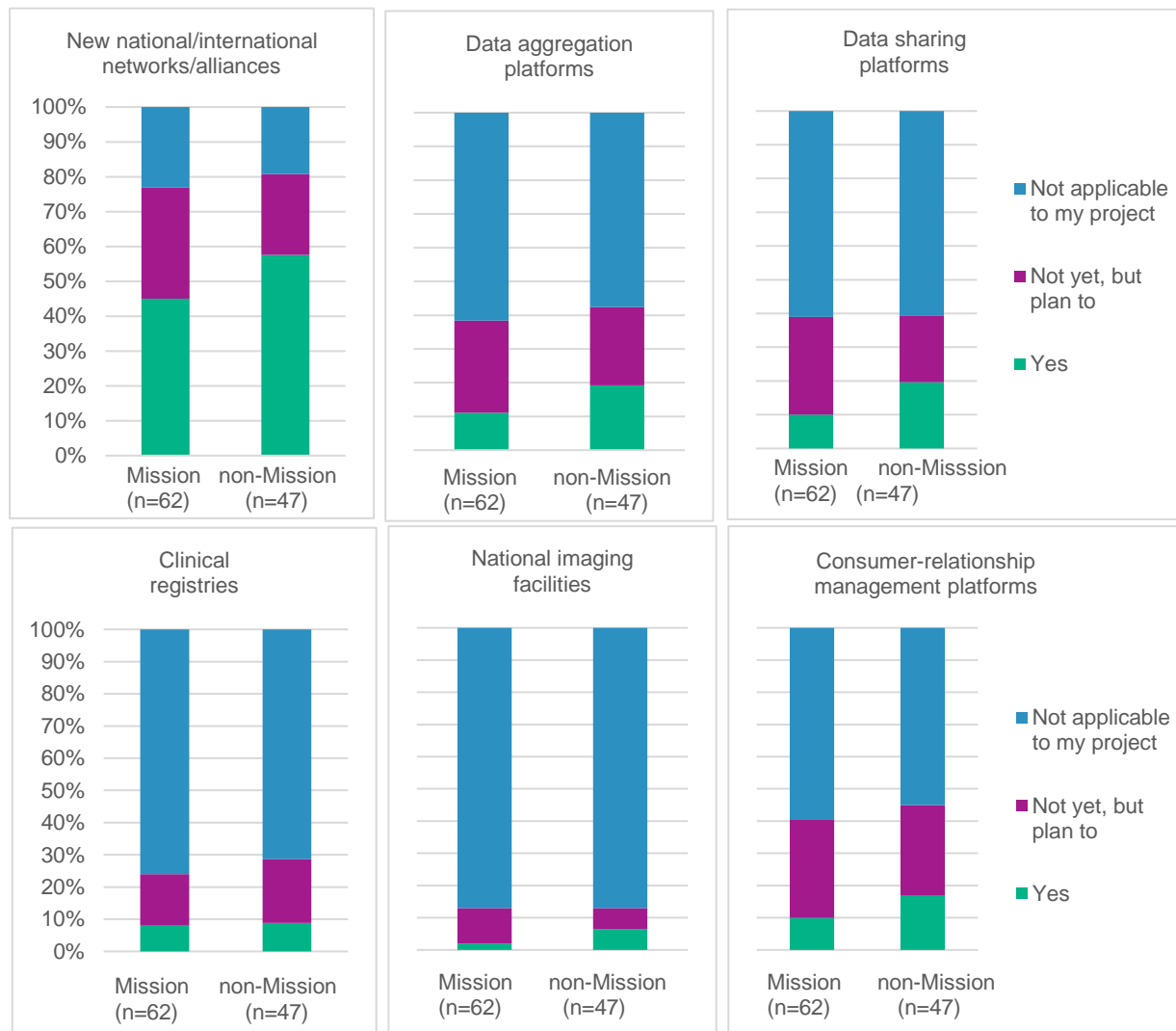
Source: Chief Invesitgator Survey

Use of Mission enablers

The Mission Implementation Plan identified 10 non-research activities that were intended to facilitate and support the funded research and long-term implementation (Box 1).

Box 1: Enablers to support the Cardiovascular Health Mission's implementation

- Nationally coordinated approach that leverages core research capabilities to support research (e.g., coordinate aligned projects, develop datasets for future use)

- Engagement across all levels of government to increase impact

- Linkage between allied groups (including foundations, alliances and networks) to avoid duplication and increase impact

- Development of the workforce (for example, in large-scale bioinformatics, data analysis and management and interpretation)

- Improved integration of data and research into continuous quality improvement

- Improved integration with health system priorities (e.g., health care quality standards, patient outcomes)

- Industry engagement to translate research findings

- National and international collaboration to maximise efforts and avoid duplication

- Implementation research and health service engagement to realise the health benefits from innovation

- The Targeted Translation Research Accelerator program, focusing on accelerating research into preventing, diagnosing and treating diabetes and cardiovascular disease

More than half of all Chief Investigators reported that they used the enablers as described, at least to some extent (Figure 21)**.** The most used enablers included national and international collaboration (78%) and implementation research and health service engagement (67%). The Targeted Translation Research Accelerator (36%) was the least used enabler.[42] Mission and non-Mission Chief Investigators gave similar responses for most enablers.

Some survey respondents and interviewees commented on the need for structured mechanisms to support engagement between research, government policy and practice change.

> *'There is no mechanism that I'm aware of whereby there is a structured approach to ensuring that the outcomes of their MRFF [grant] directly feed into policy making' – Interviewee (broad interest)*
>
> *'What's missing from MRFF, and all Missions, is translation and sustainability support for projects. We've spent time trying to link with health reform researchers/government/policy makers and it's nigh impossible to find people to help you set up the implementation framework for large scale projects' – CIA Survey (non-Mission)*

---

[42] The Targeted Translation Research Accelerator focuses on the development of novel products and solutions for diabetes and cardiovascular disease and so is not relevant to all funded projects.

Figure 21: Chief Investigator reported engagement with the Mission enablers
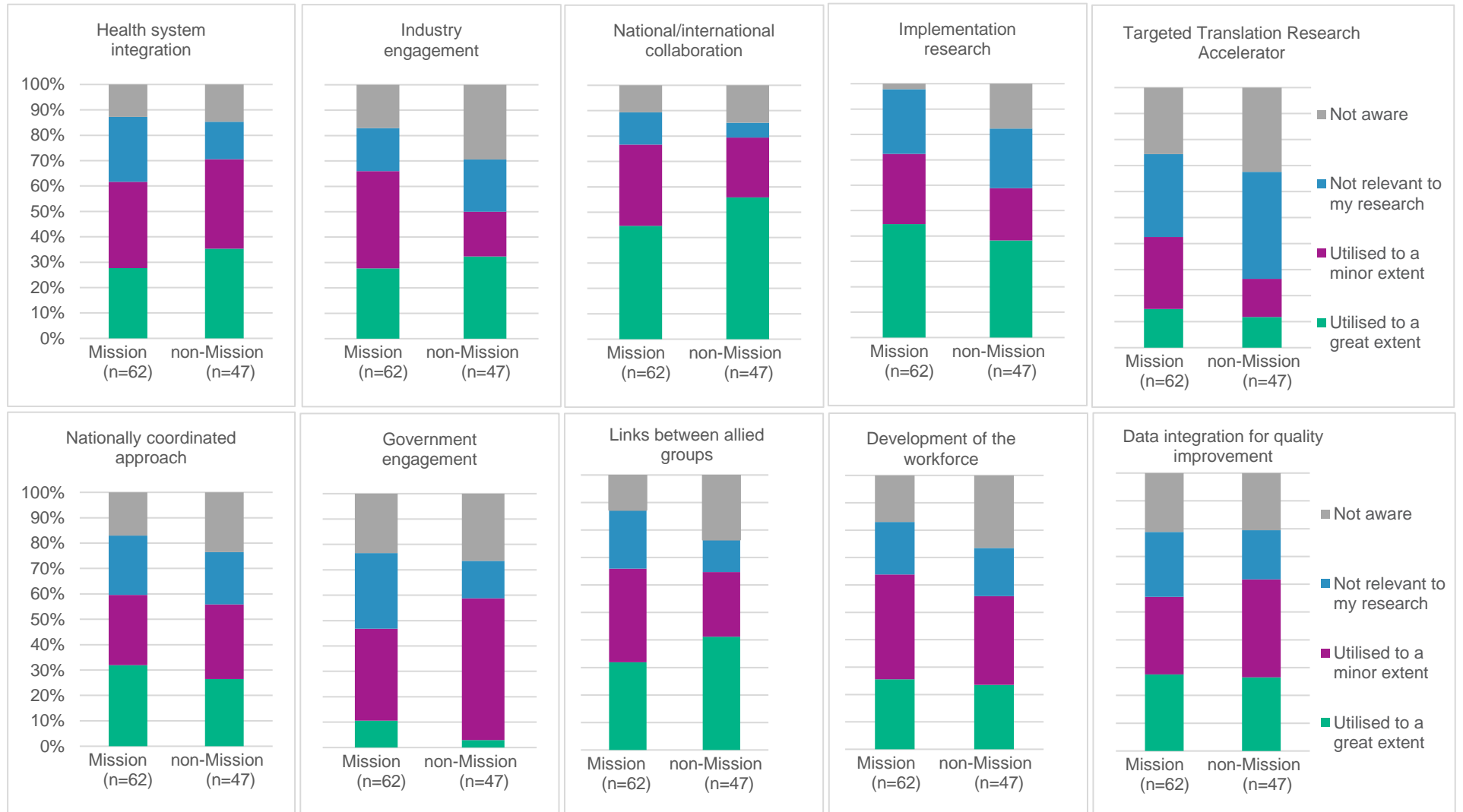
Source: Chief Investigator Survey

6.5 Health professionals adopt best practices faster

Data on adoption of best practices is linked to section 6.3 on embedding new technologies and interventions in health practice.[43] For most projects, Chief Investigators reported that demonstrable impacts on provider experience of delivering care was not yet applicable. Nineteen percent of Mission and 18% of non-Mission projects reported impacts on provider experience (Figure 17).

MRFF Performance Indicator Survey respondents reported 3 projects' outputs influenced new treatments or interventions being adopted.

6.6 The community engages with and adopts new technologies and treatments

Data on patient access to new treatments and experience of health care is presented in section 6.3. Eighteen percent of Mission projects, and 13% of non-Mission projects had reported impacts on patients' experience of health care (Figure 17).

Consumer engagement activities undertaken

Respondents to the Performance Indicator Survey reported that 77% of all funded projects used strategies to involve consumers. While Mission and non-Mission projects reported similar levels of engagement, there were some differences in the distribution of strategies used (Figure 22).

Figure 22: Number of projects that have used strategies to involve consumers
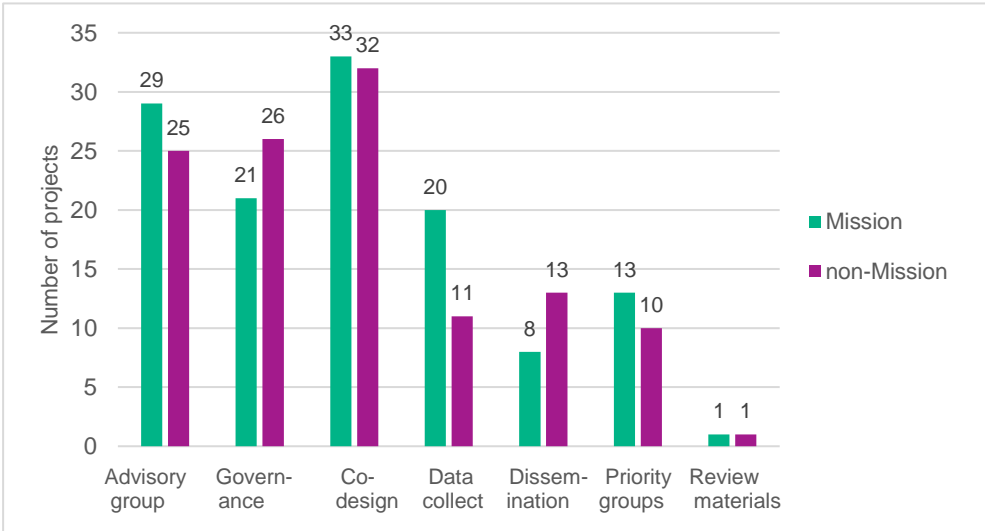
Source: Performance Indicator Survey[44]

---

[43] The adoption of best practices is dependent on a range of factors including outcomes of successful research being embedded in clinical guidelines or policy, which takes time.

[44] Strategies for involvement included participation on advisory groups and/ governance committees, co-design, involvement in data collection and dissemination, participation from under-represented groups and reviewing study materials

Review participant feedback on consumer engagement is summarised in Table 20.

Table 20: Summary of qualitative feedback on consumer engagement

Frequency of perspective	Broad themes
Many survey respondents and/or interviewees thought …	• consumer involvement in research is important
Some survey respondents and/or interviewees thought …	• the MRFF and Mission had supported consumer involvement • consumer involvement could be improved
A few survey respondents and/or interviewees thought …	• consumer involvement needs to be appropriate to the research and as representative as possible • there should be better recognition and reward for consumers involved in research • consumer collaborations need to be genuine

Source: Chief Investigator and Stakeholder Surveys and Stakeholder Interviews

Many interviewees described the importance of consumer involvement in research. While some interviewees noted the MRFF and Mission had supported consumer engagement, others thought this could be improved.

> *'[One of the benefits of the MRFF] is that consumer engagement is a necessary component' – Interviewee (broad interest)*
>
> *'The Mission could do more work to empower individuals in having a meaningful say [and] avoid tokenism' – Interviewee (broad interest)*

A few interviewees also noted that consumer involvement needed to be appropriate to the research and as representative as possible.

> *'From a basic researcher's perspective, it's still really difficult to understand how to involve consumers more in our research' – Interviewee (good understanding)*
>
> *'We have had consumer representatives typically from organisations that are involved and so we get that viewpoint, but we're all singing from the same song sheet … what portion of the population does that represent versus the portion that we [don't] hear from?' – Interview (broad interest)*

A few interviewees advocated for better recognition and reward for consumers involved in research.[45]

---

[45] In March 2023 the department released Principles for consumer involvement in research funded by the Medical Research Future Fund, Advice from the Medical Research Future Fund Consumer Reference Panel, which include guidance on appropriately compensating and recognising consumers and community members for their involvement in research.

> *'One of us would at least have to be listed as a Chief Investigator or associate investigator so that guarantees that someone's name is on the publication' – Interviewee (consumer)*
>
> *'It's still taking a long time actually [to] have people value [consumer involvement] in any kind of monetary form' – Interviewee (consumer)*

A few interviewees cautioned that collaborations needed to be genuine, and that genuine partnerships endured even when an application was unsuccessful.

> *'The grant process is a perverse incentive for collaboration. It forces marriages of convenience to get over the line … So there's a moment of pause around what sort of collaboration are we truly fostering?' – Interviewee (broad interest)*
>
> *'Sometimes when we get approached to be a partner in a MRFF grant [they want] a nice letter to say they're doing good things in rural … Well, no. If you want to partner with us, it has got to be genuine, and [we] have to be resourced as part of the grant' – Interviewee (broad interest)*

The following 2 case examples describe different aspects of consumer engagement including co-design and consumers as authors on research papers.

Consumer engagement Case Example 1

Harnessing the power of co-design to develop digital solutions and improve health self-efficacy after stroke, Flinders University (non-Mission, 2021, $599,874)

This project aims to work with survivors of stroke and carers to design a digital resource to build survivors' confidence in being able to manage their health and wellbeing.

Survivors of stroke and carers were involved from conception and throughout the project. The investigator team comprises academic researchers, survivors of stroke, carers, digital designers, Stroke Foundation team members and clinicians. A Lived Experience Workgroup (14 survivors, 1 carer) was convened, and all workgroup meetings were co-facilitated by a survivor of stroke. The Lived Experience Workgroup selected the digital platform to use (website), the website domain name (EmpowerMe), the content to include and customised features of the website to meet the needs of survivors of stroke.

The website prototype was tested for useability by survivors of stroke, carers and members of the Lived Experience Workgroup.

The EmpowerMe website hosts more than 100 videos recorded by 26 survivors and 10 carers, as well as written information about different aspects of building confidence after stroke. The website is currently being evaluated in a Phase II study.

This project is developing technology, training and guidelines that make the internet accessible to people with communication disability, such as stroke survivors with aphasia (impaired language/communication).

Consumers are involved in several ways:

- two consumers are engaged as Chief Investigators

- a Consumer Advisory Group oversees the research and participates in the Steering Committee

- consumers participate as co-designers of the technology and guidelines along with clinicians

- the project employs 4 research assistants, 2 of whom are consumers

- consumer investigators participate in the research, co-author publications and present at conferences.

6.7 Increased commercialisation of health research outcomes

Respondents to the Performance Indicator Survey reported 14 outputs related to commercialisation; all outputs were from non-Mission projects (Table 21).

Table 21: Number of grants that have reported commercialisation outputs or outcomes

Category	Non-Mission (n)
Intellectual property disclosure	2
Patent application/approval	2
Product entering the market in Australia or overseas	2
Measurable improvement in the maturity of a technology, for example an improvement in technology readiness level	2
Job creation in industry R&D and commercialisation	2
Product entering Phase 3/4 clinical trials	1
New start-ups/companies created	1
Commercialisation agreement with partners to commercialise Project Intellectual Property	1
Generated income from intellectual property	1

Source: Performance Indicator Survey

A few survey respondents and interviewees commented on the need to focus more on commercialisation, including funding and project-level support, and more broadly, the opportunity to learn from industry approaches.

'Commercialisation is a world that is not relatively well known to researchers … [they] do fabulous research, but don't know how to take steps along the commercialisation [pathway]' – Interviewee (specific interest)

'Project support and coordination services that oversee implementation of ideas and innovation to the next stage of the innovation chain e.g. assistance to commercialisation' – Stakeholder Survey (Non-government organisation)

'Picking projects that are too advanced for [standard] research grants but not advanced enough to attract venture capital … there needs to be more [of this] in Australia' – Interviewee (good understanding)

'A funding option to apply for a further grant at the end of an existing Mission grant to help commercialise the findings from the original grant (if applicable)' – CIA Survey (Mission)

The following 2 case examples describe different aspects of commercialisation including filing patents, establishing businesses and proceeding from discovery to pre-clinical trials.

Commercialisation Case Example 1 Personalised Pulmonary Valved Conduits: reducing re-operations in coronary heart disease, University of Sydney (Mission, 2019, $2,081,761)

This project aims to design and develop a durable, biocompatible right ventricle to pulmonary artery valved tube, used in reconstructive surgery for congenital heart disease, thus reducing re-operations. Achievements to date include the filing of 2 provisional patents and the incorporation of a start-up in Sydney, to pursue the commercialisation of the technologies developed.

Commercialisation Case Example 2

Development of drugs to prevent ischemic injuries of the heart and brain, The University of Queensland (Mission, 2020, $1,499,560)

This project aimed to develop new drugs to prevent injuries caused by heart attack and stroke. The project team has discovered a peptide in the venom of the K'gari funnel-web spider that protects the brain after stroke, protects the heart after a heart attack, and helps to preserve the integrity of donor hearts destined for transplantation.

The team founded an Australian biotech company, Infensa Bioscience, to develop the drug for human clinical trials. Infensa, based at the Translational Research Institute in Brisbane, is in the pre-clinical trial phase, supported by $23 million raised through Australian private investors.

The research team has secured an MRFF Frontiers grant of $17.8 million to progress the drug development through Phase 2a clinical trials for heart attack patients and to improve transplantable hearts.

7. How MRFF-funded research sits within the national and international funding landscape

Key findings of the Desktop Scan

- The Mission priorities are consistent with national and international cardiovascular and stroke peak bodies, overlap significantly with NHMRC health priorities and are also broadly aligned with international funders with similar scope.

- The MRFF is more focused towards the translation end of the research pipeline than the main NHMRC funding programs. The MRFF supports

  o the translation of research into health services delivery primarily through funding research led by, or with the participation of, health services

  o commercialisation of research through the Frontier Health and Medical Research initiative, the Medical Research Commercialisation initiative[46] and the Targeted Translation Research Accelerator.

- Compared to other research funders, the MRFF has a more comprehensive approach to consumer engagement.

- When compared to the MRFF, some national and international funders

  o identify a broader range of priority populations,

  o have formal partnerships to co-fund research,

  o have more comprehensive programs to support early to mid-career researchers and clinician researchers, and

  o include the application and integration of emerging research technologies and methods to facilitate research workforce and/or infrastructure capacity.

---

[46] None of the projects in scope for this Review were funded under the Medical Research Commercialisation initiative

Opportunities for improvement identified in the Desktop Scan

- Explore bi/multilateral co-funding partnerships to enhance transformational support for cardiovascular disease and stroke research in Australia.

- Allocate some future Mission funds towards larger-scale projects that have the capacity to deliver transformative change to cardiovascular diseases and stroke treatment and outcomes.

- Refine the Mission's strategy to ensure appropriate investments to First Nations-led or focused research.

- Formally recognise and prioritise research that addresses the cardiovascular health needs of women, children, and rural populations.

- Address the gap in the Mission's long-term adaptability to emerging research technologies and methodologies, which is only partially addressed by non-Mission initiatives.

- Increase career development opportunities, e.g., by embedding requirements for early to mid-career researchers and clinician researcher leadership in future grant opportunities.

- Enhance support for research commercialisation pathways to bridge the gap in the commercialisation of Mission-funded research into biomedical/ health products.

- Evaluate and communicate the impact of MRFF-funded cardiovascular disease and stroke research, especially those that have influenced policy and clinical practices or guidelines.

MRFF cardiovascular disease and stroke research funding is well placed nationally and internationally

The NHMRC provided most funding for cardiovascular disease and stroke research in Australia between 2018 to 2023 (Table 22). The average grant size of MRFF funded cardiovascular disease and stroke research was close to 2.5 times larger than NHMRC grants. Despite awarding comparatively fewer grants, MRFF on average provided more funding per project for cardiovascular disease and stroke research than national and international comparator schemes[47] (with the exception of the European Research Council). The larger average grant size for the MRFF was driven primarily through a number of grants funded under non-Mission initiatives (See also Figure 7).[48]

---

[47] National comparators included the NHMRC, Australian Research Council, State and Territory Governments, National Stroke Foundation and National Heart Foundation. International comparators included the National Heart, Lung and Blood Institute, the National Institute of Neurological Disorders and Stroke and American Heart Association (USA), the European Research Council, the Japan Society for the Promotion of Science, the UK Medical Research Council and Canadian Institutes of Health Research. Philanthropic or industry funders included the Wellcome Trust (UK), Bill and Melinda Gates Foundation, Pfizer and Bristol Myer Squibb (USA).

[48] The average grant size will have been skewed by the 8 non-Mission grants that each received more than $5 million in funding.

Table 22: National investments into cardiovascular disease and stroke research 2018–2023

Category	Total funding ($ million)	Average annual funding ($ million)	Number of grants	Average grant size ($ million)
MRFF Mission	$115.5	$16.5	85	$1.4
MRFF non-Mission	$326.2	$46.5	87	$3.7
Total MRFF	$441.7	$63.1	172	$2.6
NHMRC	$693.3	$99.0	644	$1.1
Australian Research Council	$31.6	$4.5	63	$0.5
National Heart Foundation	$85.3	$14.2	Insufficient data	
National Stroke Foundation	$2.4	$0.3	Insufficient data	

Source: Desktop Scan

Mission priorities

The Mission priorities are consistent with national and international peak bodies (National Heart Foundation, National Stroke Foundation and the American Heart Association) overlap significantly with NHMRC health priorities and are also broadly aligned with international funders with similar scope (i.e., funders who have a specific focus on cardiovascular disease and stroke research and/or are priority driven).

An area of difference was that national funders (NHMRC and ARC) and several international funders (e.g., Canadian Institutes of Health Research and the USA National Heart, Lung and Blood Institute) include in their strategies the promotion, application and integration of emerging research technologies and methods to facilitate research workforce and/or infrastructure capacity.

Priority populations

The Mission identifies one population of interest (Aboriginal and Torres Strait Islander people). Other national and international priority driven funders identify a broader range of priority populations including women, children and adolescents, culturally and linguistically diverse people, and those living in rural, regional and remote areas.

Co-funding agreements, partnerships and other alliances between funders

No research collaboration or co-funding partnerships between MRFF and other national funders were identified in relation to cardiovascular disease and stroke research.[49] Nationally, the NHMRC and ARC have established bilateral and multilateral agreements, and the National Heart Foundation collaborates with other organisations to support cardiovascular disease and stroke research. Internationally, most funders reviewed as part of the Desktop Scan have formal partnerships with other organisations to fund research.

Support for early to mid-career and clinician researchers

The MRFF provides funding opportunities for large collaborative projects led by early to mid-career and clinician researchers through the Early to Mid-Career initiative and Clinician Researchers initiative. Other national funders prioritise seed grants or fellowships that support workforce retention and career development.

International funders support workforce development though training and career development programs, research residencies for clinicians, mentoring awards, and supplemental funding for early to mid-career researchers facing life events such as childbirth during the project period.

Support for research translation and commercialisation

The MRFF is more focused towards the translation end of the research pipeline than the main NHMRC funding programs.

The MRFF supports the commercialisation of research into innovative drugs, devices and other biomedical products through the Frontier Health and Medical Research initiative, the Medical Research Commercialisation initiative and the Targeted Translation Research Accelerator.

However, mechanisms and pathways to close the gap between commercialisable research and delivery of products are still required in the national landscape, including centralised regulatory advice and support, as well as entrepreneurial training. Some international funders have more holistic programs that support entrepreneurial training, startups and business development.

Consumer engagement

The MRFF approach to consumer involvement is more comprehensive than those of most comparable international funders.

---

[49] This analysis does not include co-funding of individual research projects by project partners.

The MRFF engages actively with consumers throughout all stages of the research process guided by the MRFF Principles for consumer involvement in research. These engagements include through the MRFF Consumer Reference Panel[50] (to be superseded by a new joint NHMRC-MRFF Consumer Advisory Group), involvement of consumers in Expert Advisory Panels, Roundtables and public consultations, the Consumer-Led Research stream of funding through the Preventive and Public Health Research initiative, and consumer involvement as scoring or non-scoring members of MRFF grant assessment committees.

Health service engagement

Engagement with health services is prioritised by national and international funders of health and medical research, including peak bodies.

MRFF's role in supporting the translation of research into health services delivery focuses primarily on funding research led by, or with the participation of, health services. Non-Mission schemes which can support funding that prioritises engagement with health services include the Clinician Researchers initiative, the Rapid Applied Research Translation initiative, the Clinical Trials Activity initiative and through Accelerator Grants.

The MRFF does not duplicate the NHMRC's role in performing systematic or evidence reviews on the state of research for the development and publication of clinical guidelines.

.

---

[50] The MRFF Consumer Panel ceased on 30 June 2024

8.   Key themes and opportunities for improvement

> ## Key messages
>
> - The Mission and MRFF have made a significant contribution to cardiovascular disease and stroke research in Australia
>
> - Based on the findings of this Review, 5 opportunities for improvement have been identified:
>
>   1. Refine the funding objectives for the next 5 years, with realistic expectations on what can be achieved within funded project timeframes.
>
>   2. To enable transformative research, (i) quarantine some Mission funding for one or 2 larger projects/programs of work to address a 'grand challenge' and/or (ii) explore ways to foster or provide dedicated (non-financial) support for funded research teams, including enablers, particularly in relation to translation.
>
>   3. Strengthen the Mission focus on First Nations research and determine whether an explicit focus on other priority populations is warranted.
>
>   4. Strengthen requirements for (i) translation plans in applications, including early assessment of feasibility of intervention implementation and scale up, (ii) involvement and level of involvement of early to mid-career researchers, and (iii) co-funding by grant recipients and/or partners.
>
>   5. Enhance sector-wide coordination and communication about the achievements of the Mission.

8.1 The Mission and MRFF have made a significant contribution to cardiovascular disease and stroke research in Australia

The Mission has positioned Australia as a leader in, and elevated the importance of, cardiovascular disease and stroke research, has directed research, filled evidence gaps and supported translation.

Funding through the Mission aligns with grant opportunities. Projects have been funded across all Mission priorities (although most Mission funds have been directed to 3 priorities: discover and test new solutions, prevent disease recurrence and identify and predict risk).

The Mission has contributed to workforce capability, job creation and attraction and retention of talent, and the creation of collaborative or translational platforms.

Although most projects are still in progress, there have been some demonstrable impacts towards Mission aims, priorities and funding objectives.

8.2 There is tension between broad and specific priorities; there is an opportunity to refine the funding objectives for years 6 to 10

The Mission priorities are consistent with priorities of cardiovascular health peak bodies, and national and international funders. However, numerous funding objectives sit under 7 funding priorities. This complexity is compounded by the need for the Mission to also address MRFF aims, measures of success and associated performance indicators and measurable outputs.

Most Mission funds (65%) were allocated to 3 Mission priorities, and most non-Mission funds (70%) for cardiovascular disease and stroke research were allocated to one Mission priority.

Review participants had differing perspectives on whether the priorities are appropriate, too broad or too narrow. Being too broad and/or having so many objectives was seen as less likely to be impactful. There were different levels of understanding of, and trust in, the Mission priority setting process, and differing views on the role of the Mission in funding basic research. Review participants had many and varied suggestions about emerging research needs. For the next 5 years, a focus on research to support implementation of what works was recommended by some to realise health benefits sooner.

Similar themes were raised in the initial consultations on the Mission Roadmap and Implementation Plan, including a need to articulate how priorities were generated, the importance of collaboration across the research pipeline and the potential to identify and focus cardiovascular and stroke health issues likely to be at the forefront of clinical care in the future.[51]

While the Mission priorities and funding objectives were set for the full 10 years of the Mission, there is an opportunity to refine the funding objectives for the next 5 years. In considering opportunities for improvement, the process for setting Mission priorities was clarified and examples of how other national and international funding bodies undertake comprehensive priority setting processes were reviewed (**Appendix F: Priority Setting Deep Dive**).

The Mission could consider:

1. Refining, focusing and communicating funding objectives for the Mission in years 6-10 by:

---

[51] MRFF Cardiovascular Health Mission Roadmap and Implementation Plan National Consultation Report and MRFF Cardiovascular Health Mission International Review of the Roadmap and Implementation Plan

- establishing a more focused sub-set of funding objectives (and realistic measures of success) for the Mission based on explicit criteria (e.g., objectives not yet addressed by Mission grant opportunities; complementarity to funding priorities of other Australian schemes; research that identifies how to effectively implement interventions that are known to be effective (i.e., implementation science); research that aims to reduce health inequity; research that builds on Australia's strengths; clarifying the Mission focus across the research continuum) and communicating these refined objectives to researchers

- quarantining some Mission funding (through dedicated grant opportunities) for one or 2 larger projects and/or programs of work (narrow/deep investigations), see section 8.3

- increasing transparency and trust by making a clear statement on the priorities for investment and how these were identified

- in addition to guiding calls for and selection of projects under the Mission, consider whether Mission priorities can be used more broadly, for instance, coordinating funding through Mission grant opportunities and non-Mission grant opportunities where cardiovascular disease and stroke research is specified.

In the longer term, if it continues beyond 10 years,[52] the Mission could consider:

- refining and consolidating Mission objectives for funding and associated metrics for evaluation based on existing reviews of evidence, recent collaborative priority setting processes and changes in relevant national strategies, perhaps with the support of an independent organisation (see examples of priority setting processes in **Appendix F: Priority Setting Deep Dive**)

- increasing coordination of cardiovascular disease and stroke research through setting national priorities (as suggested by a few interviewees) across other funding schemes.

8.3 The Mission aims for transformation; quarantining some funding for a small number of larger grants and enhancing Mission enablers may better support this ambition

MRFF has invested $441.7 million in cardiovascular disease and stroke research from its inception until 29 February 2024. Annual funding for cardiovascular research through non-Mission initiatives has been consistently higher than funding through the Mission and, on average, research investments made through the Mission (85 grants totalling $115.5 million) were smaller compared to those funded through non-Mission initiatives (87 grants totalling $326.4 million).

---

[52] As outlined in the MRFF Monitoring, Evaluation and Learning Strategy and the MRFF 3rd 10-year investment plan, extension of the Mission beyond 10 years is subject to evaluation.

Many Review participants thought that increased or longer-term funding would support more transformative research, suggesting larger grants, full or better funding for research staff,[53] longer grant timeframes, opportunities for additional funding to enable further impact, and funding for cooperative research centres to replicate the success seen in other sectors.

Some suggested more strategic and collaborative funding models that focus on larger programs of work rather than individual projects, including teams across institutions and disciplines. A few survey respondents and interviewees suggested different funding models to leverage resources and establish 'buy in' from partners.

The report on the international review of the Mission Roadmap and Implementation Plan also raised the potential for training to support translation.[54]

A more transformational approach could include 2 potential pathways:

- addressing a 'grand challenge' through a 'research continuum' approach that brings together a range of researchers across the research pipeline with policy makers and practitioners to answer a complex question with the potential to move through the translation continuum and ensure implementation considerations throughout, and/or

- fostering specialist (non-financial) support for funded research teams, particularly in relation to translation (for example, strengthening the requirements or increasing opportunities for partnerships with policy and/or practice decision makers who can advise on implementation at scale, and similarly with partners who can provide support for commercialisation).

In considering opportunities for improvement, the Review team looked at how other national and international research organisations took a transformational approach (**Appendix G: Transformative Approaches Deep Dive**).

The Mission could consider:

1. Quarantining some Mission funding for one or 2 larger projects/programs of work.

   For the 'grand challenge' or 'research continuum approach' this could require:

- a robust and transparent process for identifying challenges based on prioritisation (section 8.2)

- strategic communication to researchers and assessment panels about what the challenge entails

- establishing tailored selection criteria (e.g., diverse partnerships, track record of the team and capability building)

---

[53] This reflects broader, systemic issues that extend beyond the MRFF, which have a wide range of impacts on different parts of the health and medical research sector.

[54] MRFF Cardiovascular Health Mission International Review of the Roadmap and Implementation Plan

- a new expanded governance (which will require investment) with greater responsibilities in overseeing the pipeline

- broad governance group membership, for example researchers (including implementation scientists), international researchers, peak body representatives (including consumers), industry, public health organisations/service providers, and policy advisors

- establishing bi-lateral or multilateral co-funding partnerships

- the department undertaking closer tracking of progress and potentially applying a rapid research impact assessment (with an economic arm) to any successful project before it can be re-funded or moved along the research continuum

- legal (intellectual property) support in transitioning from one phase to the next and potentially additional funds as part of this transition

- case studies and effective communication to demonstrate the value of the approach.

2. Fostering the establishment of explicit Mission enablers that provide specialist support to funded researchers, particularly in relation to translation, commercialisation and capability development. This approach could include working with government agencies and other organisations to provide:

- a stronger and more strategic focus on earlier connection and linkage to decision makers including advice on translation and scale up

- technical, process and/or system guidance for researchers and relevant government departments to facilitate realistic and efficient access to quality data assets and data linkage, use of AI and other emerging research technologies, health economics or rapid research impact advice

- commercialisation support including centralised regulatory advice, entrepreneurial training and an ongoing commercialisation program.

8.4 A continued focus on equity remains paramount; there are opportunities for the Mission to strengthen support for First Nations research and consider whether other priority groups should be made explicit

The scope of the Mission Roadmap and Implementation Plan includes focused efforts to improve equity and outcomes for Aboriginal and Torres Strait Islander people. This is the only priority population identified, in recognition that the health gap was 'very distinct and different' (Interviewee – good understanding).

Although funding for projects designed to benefit First Nations people's cardiovascular or stroke health remains low, there are examples of good practice. Review participants strongly support a continued and greater focus on First Nations research in the next 5 years.

In considering opportunities to strengthen support for First Nations research, the Review team reviewed outcomes of relevant MRFF consultations, had follow up discussions with the Mission Review Panel and looked at what other national and international funding bodies are doing to support First Nations research (**Appendix H: First Nations Deep Dive**).

The Mission could consider:

1. Strengthening the Mission focus on First Nations research through, for example:

    - setting a transparent funding target (taking into account increased risk factors, higher burden of disease and poorer health outcomes and preferably above population share to address inequity) and/or specify a number of targeted grant opportunities and timeframe for calls for proposals

    - when identifying priorities and shaping future grant opportunities, drawing on collaborative prioritisation processes for First Nations research already conducted (e.g., National Heart Foundation and TTRA processes) and seeking advice from existing First Nations research advisory groups (NHMRC, MRFF and TTRA)

    - within future grant opportunities, allowing (and funding) time to enable development of partnerships and community connections in the early stages, to identify community research questions and approaches before the project advances, noting that community may have different ideas about key issues for their community and that co-design is a key priority

    - providing additional guidance for researchers and assessment panels on best practice when conducting and assessing research with First Nations people (e.g., MRFF Indigenous Health Research Fund assessment criteria, NHMRC Indigenous Research Excellence Criteria, CONSIDER Statement, Box 2), including First Nations researcher and/or consumers on assessment panels, including appropriate research methods and increasing requirements for accountability throughout the project, e.g., through reporting requirements

    - requiring meaningful First Nations researcher involvement and incorporation of First Nation research capacity and capability building in all funded projects focussed on First Nations people

    - prioritising projects where First Nations researchers within project teams are in positions of leadership or co-leadership to increase agency and avoid tokenism. When First Nations research is not led by First Nations researchers, considering building in requirements for First Nations governance or oversight, and communicate this expectation to grant review committees and include these requirements in the grant assessment criteria.

    - building and/or strengthening connections between the Mission and existing workforce initiatives available through the NHMRC (e.g., the OCHRe national network for Aboriginal and Torres Strait Islander health researchers) and MRFF (e.g., Early to Mid-Career initiative, Indigenous Health Research Fund).

2. Whether the Mission equity focus should remain only on First Nations research or include other priority populations.

> ## Box 2: The CONSIDER statement[55]
>
> This [statement](#) outlines a checklist with 8 research domains and associated criteria for strengthening reporting of health research involving Indigenous peoples. It covers:
>
> - research governance – including partnership agreements, accountability and review mechanisms, protection of Indigenous intellectual property and knowledge
>
> - prioritisation – including how the research aims have emerged from stakeholder priorities, governing bodies, funders, consumers and empirical evidence
>
> - relationships – including between Indigenous stakeholders, study participants and the research team, including stakeholder involvement and team expertise in Indigenous health and research
>
> - methodologies – including rationale for the approach and incorporation of participant perspectives and worldviews
>
> - participation – including consent, how resource demands on Indigenous participants and communities were identified and agreed, and how biological samples are stored and disposed
>
> - capacity – including how the research supported development and maintenance for Indigenous research capacity, professional development opportunities for stakeholders
>
> - analysis and interpretation – including how the analysis supported strength-based approaches and was inclusive of Indigenous values
>
> - dissemination – including to relevant Indigenous governing bodies and people and knowledge translation to support Indigenous advancement

8.5 There are opportunities to strengthen requirements in funding applications to better reflect and support attainment of MRFF measures of success

Translation and support for early to mid-career researchers were raised throughout the Review as potential areas for improvement. Research translation and support for Australian researchers are 2 of the 4 MRFF funding themes, and capacity-building initiatives and translation across the research system are key funding principles under the Mission. While the MRFF has specific initiatives that support early to mid-career researchers and translation (Figure 1), Mission grant opportunities were variable in their requirements in these areas.

Furthermore, many Review participants described challenges in translating research findings into practice; only a third of projects implemented a suite of translation activities and while early engagement with practice change partners and clinicians is ideal, for MRFF funded cardiovascular disease and stroke research, this engagement increased over time.

---

[55] T Huria, SC Palmer, S Pitama. *et al.* Consolidated criteria for strengthening reporting of health research involving indigenous peoples: the CONSIDER statement. *BMC Med Res Methodol* **19**, 173 (2019). https://doi.org/10.1186/s12874-019-0815-8

A precedent has been set for the MRFF with dedicated early to mid-career researcher funding in the Million Minds Mental Health Research Mission. The [Million Minds Mental Health Research Mission's Implementation Plan](#) includes small-scale activities supported through MRFF Incubator Grants. These grants contribute to capacity building, as targeted funding is provided for early and mid-career researcher-led research; the Chief Investigator and at least half of the Chief Investigator team must be early and mid-career researchers. The Million Minds Mental Health Research Mission also includes mid-career researcher-led, large-scale implementation research projects, where the Chief Investigator and at least half of the Chief Investigator team must be mid-career researchers (less than 10 years post-PhD).

The Mission Roadmap includes promoting and leveraging co-investment as one of the Mission's ambitions and the Implementation Plan includes, for each priority area, 'opportunities to use additional investment and other research' and 'activities required to support the research and facilitate long-term implementation'. The MRFF funded cardiovascular disease and stroke research projects leveraged significant amounts of co-funding, however non-Mission projects attained significantly more co-funding than Mission projects. A few Review participants supported co-funding as mechanism to increase commitment and coordination across the cardiovascular disease and stroke sector.

The Mission could consider:

1. Opportunities to strengthen requirements for (i) translation plans in applications, including early assessment of feasibility of intervention implementation and scale up, (ii) involvement and level of involvement of early to mid-career researchers, and (iii) co-funding by grant recipients and/or partners.

8.6 There are opportunities for enhanced coordination and communication to increase awareness of Mission progress, improve leadership and engagement

While the MRFF has made significant investments in cardiovascular disease and stroke research, and projects are making progress against their objectives and the MRFF measures of success, some Review participants thought there were opportunities to enhance sector-wide coordination and increase communication about the achievements of the Mission to further advance the goals of the Mission.

The department could consider:

1. Reviewing Mission governance to ensure it is fit for purpose for the second stage of the Mission, including a focus on facilitating priority setting and strategy, transformative research and maximising the potential for health and economic impact.

2. More targeted communication about individual project successes and overall progress towards Mission aims, priorities and objectives.

3. Increasing opportunities for engagement with key stakeholder groups and decision makers, through processes to refine Mission funding objectives (see section 8.2), supporting larger programs of work and Mission enablers (see section 8.3) and establishing bi-lateral or multi-lateral co-funding partnerships (see section 7).

Appendices

Appendix A: Mission Implementation Plan - Evaluation approach and measures

Implementation Plan	Evaluation approach and measures
Aim 1: Reduce the number of Australians of all ages affected by heart disease and stroke • Priority area 1.1: Improving understanding of cardiovascular disease risk, including biological mechanisms • Priority area 1.2: Identifying best-practice preventive care for all Australians through novel diagnostic, therapeutic and health service delivery strategies	• Improved cardiovascular health • New discoveries and biomarkers that improve prediction of cardiovascular disease and stroke are identified and available in clinical practice nationally • New clinical pathways with optimised treatments are identified and available in clinical practice nationally • A greater proportion of the eligible population having their cardiovascular and stroke risk assessed • A greater proportion of those at risk of cardiovascular disease and stroke receiving best-practice preventive care • Preventive approaches focused on individuals and communities available and implemented nationally • Inequalities in cardiovascular disease and stroke outcomes reduced for at risk populations, particularly Aboriginal and/or Torres Strait Islander people • Efforts to understand the potential return on investment and the health economic implications of the research
Aim 2: Improve outcomes from acute cardiovascular and stroke events • Priority area 2.1: Optimising evidence-based diagnoses and clinical pathways • Priority area 2.2: Discovering new solutions through innovation — technology, drugs and devices, and models of care	• New discoveries and biomarkers that improve diagnosis and prognostication of cardiovascular disease and stroke are identified and available in clinical practice nationally • New clinical pathways with optimised treatments are identified and available in clinical practice nationally • Novel interventions, treatments and devices are developed and available in clinical practice nationally • A greater proportion of those experiencing cardiovascular disease and stroke receiving best practice acute care • Improved access to the most appropriate care, including reducing care inequalities in cardiovascular disease and stroke outcomes for at-risk populations, particularly Aboriginal and/or Torres Strait Islander people
Aim 3: Improve long-term recovery and survivorship after a cardiovascular or stroke event • Priority area 3.1: Identifying and targeting personalised lifelong care approaches, to prevent further stroke or heart events • Priority area 3.2: Developing new treatments for recovery with better understanding of the biology of recovery, leading to improved monitoring and new treatments • Priority area 3.3: Improving survivorship and reducing morbidity	• New treatments and interventions that improve outcomes following cardiovascular disease and stroke are identified and available in clinical practice nationally • A greater proportion of people have access to effective rehabilitation following cardiovascular disease and stroke • Inequality in access to rehabilitation for at-risk groups reduced, particularly for Aboriginal and/or Torres Strait Islander people

Appendix B: All MRFF-funded cardiovascular disease and stroke research projects were in scope for the Review and were invited to participate in the Chief Investigator and MRFF Performance Indicator Surveys

Project Title	Organisation	Grant Value
Mission grants		
CHD LIFE+ family-centred care models supporting long-term neurodevelopment	Queensland University of Technology	$2,997,256
Maternal exposures, congenital heart defects, and child development	The University of Adelaide	$3,037,417
Gene Expression to Predict Long-Term Outcome in Infants After Heart Surgery	The University of Queensland	$3,068,742
An Australian Study of the Outcomes and Burden of Congenital Heart Disease	University of Sydney	$3,994,175
Congenital Heart Fitness Intervention Trial: CH-FIT	University of Sydney	$3,328,569
Personalised Pulmonary Valved Conduits: reducing re-operations in CHD	University of Sydney	$2,081,761
A randomised controlled trial of ultra-early, minimally invasive surgery for intracerebral haemorrhage (EVACUATE)	University of Melbourne	$2,138,226
Novel deep learning methods for large-scale cardiovascular risk screening using Australian digital health data	University of New South Wales	$1,467,091
Total Cardiac Care - STROKE: A randomised controlled trial of a comprehensive smartphone application-centric model of care to improve outcomes in stroke patients	University of New South Wales	$1,629,905
The SaltSwitch Online Grocery Shopping (OGS) Trial: A Novel Method for Reducing Blood Pressure among Individuals with Hypertension	University of New South Wales	$1,687,990
Colchicine After Stroke to Prevent Event Recurrence (CASPER) Study	University of Sydney	$2,997,908
2020 Strategic Research Grants	National Heart Foundation of Australia	$4,000,000
The Australian Paediatric Acute Code Stroke (PACS) study	National Stroke Foundation	$4,000,000
Using Polygenic Risk Scores to Target Statin Therapy in Primary Prevention	Monash University	$1,416,095
Statins and Progression of Coronary Atherosclerosis in Melanoma Patients Treated with Immune Checkpoint Inhibitors	Monash University	$1,669,300
Stroke in patients with large Ischaemic Core: Assessment of Reperfusion therapy Impact on Outcome (SICARIO)	The University of Newcastle	$1,515,114
Safety and Tolerability of AZD6482 in Reperfusion for Stroke (STARS)	University of Sydney	$2,706,533
The SPRINTS Project: Stroke - Prevention of Reperfusion Injury and Neuroinflammation - a Therapeutic Strategy	The University of Adelaide	$2,563,916
LesioLogic	University of Sydney	$1,102,873
Development of novel, clinically viable strategies for reducing cardiac damage and preventing future events in myocardial infarction (MI) survivors by targeting inflammation	University of New South Wales	$2,849,892
REACHING FOR YOUR WORDS: A Phase IIa umbrella trial of integrated UPper limb & Language Impairment and Functional Training (UPLIFT) after stroke	University of Melbourne	$992,634
ECMO-Rehab: A Randomised Controlled Trial of Early Cardiac Rehabilitation to Improve Survival and Recovery in Critically-ill Patients on ECMO	Monash University	$662,649
CardiacAI: Deep learning to predict and prevent secondary cardiovascular events	University of New South Wales	$544,979
Digital solutions for heart failure best practice care	University of Sydney	$936,837

Project Title	Organisation	Grant Value
Improving life after stroke with tailored support: Innovation in use of national registry data	University of Melbourne	$505,704
Guardian Angel: Implementation of a peer support program for people with heart disease	University of Sydney	$655,522
Measuring, Monitoring, and Motivating Adherence to Self-Managed Aphasia Treatment	The University of Queensland	$388,521
Yarning up After Stroke	The University of Newcastle	$485,062
Development of drugs to prevent ischemic injuries of the heart and brain	The University of Queensland	$1,499,560
New models of rehabilitation to improve work and health outcomes after stroke	Monash University	$999,056
REnal FactORs Modify HEART disease Study - REFORM HEARTS	University of Sydney	$865,397
Investigating Mechanisms of Alcohol-Induced Heart Disease	University of New South Wales	$999,996
Treating the impact of seizures on cardiac function to reduce death	University of Melbourne	$847,480
Atheroma Progression in Clonal Haematopoiesis Investigation with Imaging, Biomarkers and Genomic Sequencing (ARCHIMEDES)	Monash University	$996,385
Cardiovascular disease and cancer: identifying shared disease pathways and pharmacological management	The University of Newcastle	$999,998
Non-invasive imaging of atherosclerotic plaque: quantification of disease activity for improved identification of patients with residual cardiovascular risk	University of Sydney	$999,631
Alloantibody in kidney transplant recipients: is this the missing link to reduce the risk of heart disease? (AN-INSPIRE STUDY)	University of Western Australia	$996,354
The Asialoglycoprotein Receptor 1 (ASGR1): a novel target for atherosclerosis	The University of Adelaide	$999,989
Early Atrial fibrillation Screening for Indigenous people (EASI)	Macquarie University	$574,884
Identifying and addressing barriers and enablers to implementing best-practice cardiac rehabilitation: the Quality Improvement in Cardiac Rehabilitation (QUICR) Cluster-Randomised Controlled Trial	University of Sydney	$894,507
Addressing the poor medication adherence in prevention of cardiovascular mortality and morbidity in Australia: development of a clinical decision support tool	Monash University	$706,242
Supervised Home Exercise for Peripheral Artery Disease	James Cook University	$1,000,000
Love Your Brain: A stroke prevention digital platform	Monash University	$944,788
Enhancing engagement with eHealth approaches to prevent cardiovascular disease among adolescents: The Triple E Project	University of Sydney	$993,682
Using existing digital infrastructure for the national scale-up of an effective school nutrition program to reduce population CVD risk	The University of Newcastle	$997,351
Improving cardiovascular health through increased transport-related physical activity: A co-designed randomised controlled trial	University of Tasmania	$767,133
Non Expert Acquisition and Remote Expert Review of Screening echocardiography images from Child health and AnteNatal clinics (NEARER SCAN)	Menzies School of Health Research	$999,764
Use of Artificial Intelligence-Guided Echocardiography to Guide Cardiovascular Management in Rural and Remote Australia	University of Melbourne	$999,997
Combining Novel Imaging Biomarkers with AI-Accelerated Diagnosis for Equitable Patient Selection To Proactive Treatment With Middle Meningeal Artery Embolisation To Improve Outcomes in cSDH	Monash University	$999,866
Impact of non-invasive coronary angiography on suspected acute coronary syndromes with low concentration troponin elevation	Flinders University	$999,543
CTCA-POC: CT Coronary Angiography Inspired Point-of-Care Technology for Enhanced Diagnosis and Monitoring of Coronary Artery Disease	Queensland University of Technology	$999,996
PRecision Ecmo in CardIogenic Shock Evaluation: PRECISE Study	Monash University	$999,779

Project Title	Organisation	Grant Value
Transforming clinical pathways for abdominal aortic aneurysm through use of blood and imaging biomarkers	James Cook University	$1,000,000
Using co-design to improve accessibility and acceptability of cardiac services for vulnerable populations: The Equal Hearts Study	Monash University	$597,104
Beyond Country of Birth: Transforming approaches to quantifying ethnic inequalities in access to best care for CVD	University of Sydney	$782,008
A very brief intervention for physical activity behaviour change in cardiac rehabilitation: the 'Measure It!' trial	University of Canberra	$510,070
Next Generation Precision Health Platform to support Atrial Fibrillation Management	The University of Adelaide	$791,555
Towards Remote Patient Monitoring of Heart Failure Using Event-Driven AI Systems	University of Western Australia	$583,551
Yolŋu Heart Health for Life: Person-centred, co-designed and student-assisted cardiac rehabilitation in East Arnhem Land	Flinders University	$633,589
The Right Treatment for the Right Person at the Right Time. Driving High-Value Aphasia Care through Meaningful Health System Monitoring	The University of Queensland	$451,221
Discovery of new platelet targets to improve the management of coronary artery disease	University of Sydney	$659,293
Improving short- and long-term outcomes in cardiac bypass surgery by preventing acute kidney injury	Monash University	$511,208
Novel targeted anti-inflammatory and anti-thrombotic mRNA therapies: Establishing innovative technologies to combat cardiovascular diseases	University of Melbourne	$689,855
Discovery of new molecular targets for stroke-Associated pneumonia to improve recovery	Monash University	$663,218
Real-time measurement of renewal rate constants in pulsed field ablation of atrial fibrillation	Flinders University	$604,306
Translating novel mechanism-guided therapeutics to improve functional recovery of the brain and kidneys after open-heart surgery	University of Melbourne	$998,224
Sustained delivery of stem cell secretome for cardiac repair	St Vincent's Institute of Medical Research	$958,504
Targeting no-reflow to augment tissue salvage in stroke	University of Melbourne	$999,978
The feasibility and potential of a novel robotic gait bioprosthesis for people with severe gait impairment post-stroke	University of South Australia	$513,103
Developing a holistic machine learning based rapid response system and end of life care system in preventing cardiac arrests and preventable deaths and improving end of life care in acute hospitals	University of New South Wales	$700,583
Outcome PredicTion in IntraCerebral haemorrhage Study (OPTICS) with machine learning	University of New South Wales	$404,190
The Elusive Hearts Study: Using genomics to diagnose and manage inherited cardiovascular diseases	University of New South Wales	$1,499,286
Early detection of insulin-resistance with a mixed meal challenge - The REFINE study	Deakin University	$1,498,741
Clinical and health economics implications of routine CTCA for emergency department assessment of Aboriginal and Torres Strait Islander people at risk of acute coronary syndrome	Queensland University of Technology	$1,488,718
Evaluation of a Standardised ClinicAl Pathway to improve Equity and outcomes in Cardiogenic Shock (ESCAPE-CS)	University of Sydney	$971,932
Increasing the capacity of Community Managed Organisations to provide preventive care to people with a mental health condition	The University of Newcastle	$1,135,281
Investigating genetic and lifestyle determinants of abdominal aortic calcification, and their relationship with cardiovascular disease	Edith Cowan University	$1,202,213
Activation of AMPK to treat abdominal aortic aneurysm (5As)	James Cook University	$1,044,836
Clinical imaging inspired point-of-care microtechnology for enhanced diagnosis and monitoring of recurrent stroke	University of Sydney	$1,199,996
Replenishing enzymatic cofactor NAD+ in Heart Failure: Rescuing an engine out of fuel	University of Sydney	$1,499,523

Project Title	Organisation	Grant Value
Advancing preclinical development of novel GPCR-targeted therapeutics for heart failure	Monash University	$1,496,863
Gap Junction Modulation: A Novel Molecular Target in the Management of Ventricular Arrhythmia in Ischaemic Cardiomyopathy	University of Sydney	$1,104,168
Novel, targeted therapies for heart failure with preserved ejection fraction	Baker Heart and Diabetes Institute	$998,335
Post-thrombectomy intra-arterial tenecteplase for Acute manaGement of Non-retrievable thrombus and no-reflow in Emergent Stroke (EXTEND-AGNES TNK)	University of Melbourne	$3,885,163
Impact of Total Arterial Revascularisation in Coronary Artery Surgery on cardiovascular, cerebrovascular and multiorgan outcomes - an RCT (TA Trial)	University of Melbourne	$4,958,416
Non-Mission grants		
The BLENDER Trial – Blend to Limit Oxygen in ECMO: A randomised Controlled Registry Trial	Monash University	$753,355
STOP-MSU: Stopping haemorrhage with Tranexamic acid commenced Prehospital in a Mobile Stroke Unit	University of Melbourne	$1,285,820
Discovery to therapy implementation in acute stroke	The University of Newcastle	$577,189
Understanding and optimising the delivery of chronic disease care for better cardiovascular outcomes	University of Sydney	$476,728
The Australian Genomics Cardiovascular Genetic Disorders Flagship	Murdoch Children's Research Institute	$6,000,000
Australian Living Guidelines for Stroke Management and "Return to life, return to work": A targeted clinical research investment in stroke recovery for young survivors	National Stroke Foundation	$2,500,000
Using disruptive technologies to transform prehospital care for stroke	University of Melbourne	$1,203,125
The SAHaRA Trial: Understanding the best red cell transfusion practice in patients with intracranial bleeding from a ruptured aneurysm	The George Institute for Global Health	$902,752
The Early valve replacement in severe ASYmptomatic aortic stenosis (EASY AS) trial	University of Western Australia	$1,827,443
The REsilience to Seasonal ILlness and Increased Emergency admissioNs CarE (RESILIENCE) Study	University of Melbourne	$1,284,327
Reduction of Heart Failure Readmission in Resource-Constrained Environments: Supporting Nurse-led Disease Management by Risk-Guidance and eHealth	Baker Heart and Diabetes Institute	$287,663
Improving paediatric critical care outcome	Wesley Medical Research Limited	$348,495
Accelerating Development of a Group A Streptococcal Vaccine	University of Western Australia	$35,000,000
Artificial intelligence to detect eye and cardiovascular diseases	Centre For Eye Research Australia Limited	$4,988,487
Transfusion Triggers in Cardiac Surgery Australia trial (TRICS-IV)	University of Melbourne	$869,566
Establishing the early diagnosis of atherosclerosis and cardiovascular risk factors in adults with repaired aortic arch obstruction: The key to decreasing premature death	Murdoch Children's Research Institute	$329,041
Saving time, saving brain through prehospital stroke care	University of Melbourne	$645,205
Optimise Primary Aldosteronism Detection For Better Health Outcomes	Monash University	$570,205
Better penicillin, better hearts: improving secondary prevention of rheumatic heart disease	University of Western Australia	$1,281,125
Innovative regenerative therapies for heart repair	University of Sydney	$1,562,250

Project Title	Organisation	Grant Value
Investigating novel therapies for heart failure with preserved ejection fraction	University of New South Wales	$387,123
Addressing the evidence gap on medical nutrition therapy for primary and secondary prevention of cardiovascular disease in regional and rural communities	The University of Newcastle	$1,028,236
Reducing debilitating fatigue after stroke to improve Quality of Life	The University of Newcastle	$1,006,075
PROMOTE: a cluster-randomised implementation trial to promote evidence use	Monash University	$2,996,464
Optimal Post rTPA-iv Monitoring in Ischaemic Stroke (OPTIMISTmain)	The George Institute for Global Health	$1,774,988
The Stroke Golden Hour: delivering urgent stroke care to all Australians	University of Melbourne	$40,167,052
AMEND-CRT trial	University of Melbourne	$991,198
Nasal high-flow Oxygen Therapy After Cardiac Surgery: NOTACS	Curtin University	$1,460,862
SAFER (AUS) Trial: Screening for Atrial Fibrillation with ECG to Reduce stroke - a randomised controlled trial	University of Sydney	$1,782,950
Building Australia's First Young Stroke Service	Florey Institute of Neuroscience and Mental Health	$9,932,108
Aboriginal prosperity through community driven translational research	Central Australian Aboriginal Congress Aboriginal Corporation	$9,760,245
Preventing Cardiac Injury in Patients with COVID-19	The Council of the Queensland Institute of Medical Research	$389,999
POST ETERNAL Extending the time window for Tenecteplase by Effective RecanalizatioN of bAsiLar artery thrombus in patients with POSTerior circulation stroke	University of Melbourne	$2,860,249
Use of Cardioprotective Therapy to Manage Persistent Cardiovascular Effects of COVID-19: A Pathway to Recognition and Treatment of Subclinical Disease	University of Melbourne	$2,574,943
Evaluating safety and efficacy of bioengineered heart tissue for congenital heart repair	Murdoch Children's Research Institute	$998,838
Induced pluripotent stem cell derived cardiomyocytes: a new therapy for "no-option" end stage heart failure	University of Sydney	$4,978,361
New therapies preventing heart damage during chemotherapy	Murdoch Children's Research Institute	$879,205
Novel SMART AAV vectors for gene therapy for Friedreich's Ataxia	University of Wollongong	$982,862
MTPConnect Diabetes and Cardiovascular Accelerator initiative	MTPConnect	$47,000,000
Generating new evidence to reduce complications and improve the safety and efficacy of extracorporeal membrane oxygenation (ECMO) in patients with severe cardiac and respiratory failure: THE RECOMMEND Platform Trial	Monash University	$2,985,993
Individualised blood pressure targets versus standard care among critically ill patients with shock - a multicentre randomised controlled trial	The University of Newcastle	$2,823,846
The CONSEP trial: Implementing screening for a hidden cause of hypertension	Monash University	$2,299,203
Harnessing the power of co-design to develop digital solutions and improve health self-efficacy after stroke	Flinders University	$599,874
HeartPath+: Targeting self-efficacy and health literacy through patient education to prevent recurrent heart events in Australians with heart disease	Monash University	$598,381
Bridging the Digital Divide: Building Health Self-Efficacy through Communication-Accessible Online Environments	The University of Queensland	$537,750

Project Title	Organisation	Grant Value
Good paths for healthy hearts: bringing choice and flexibility to long-acting penicillins for rheumatic heart disease	University of Western Australia	$999,230
Getting to the heart of healthy ageing: a behaviour change program to promote dietary pattern changes	Edith Cowan University	$506,835
Developing a promoter-less gene therapy approach for haemophilia A	University of Sydney	$513,720
Running for Health: community-based adaptive exercise for cardiorespiratory health in young people with moderate to severe cerebral palsy	The University of Queensland	$768,887
Repurposing approved drugs for Friedreich's ataxia heart disease	St Vincent's Institute of Medical Research	$570,744
The Artificial Heart Frontiers Program	Monash University	$999,570
The Artificial Heart Frontiers Program (phase 2)	Monash University	$50,000,000
Disruptive Technologies for Precision Medicine in Coronary Artery Disease	University of Western Australia	$896,606
New Frontiers in Personalised Prevention of Coronary Artery Disease	University of Sydney	$997,562
Preparing Australia for use of genomics in prevention of heart-disease: Focus on South Asian Australians	The University of Queensland	$928,899
Anticoagulation for Stroke Prevention In patients with Recent Episodes of perioperative Atrial Fibrillation after noncardiac surgery - The ASPIRE-AF trial	University of Sydney	$1,816,175
Enhanced Control of Hypertension and Thrombectomy Stroke Study (ENCHANTED-MT)	University of New South Wales	$2,029,361
Sedation, TEmperature and Pressure after Cardiac Arrest and REsuscitation (STEP CARE) trial	University of New South Wales	$844,764
Duration of Cardiac Antimicrobial Prophylaxis Outcomes Study (CALIPSO): multicentre, adaptive, double-blind, three-arm, placebo-controlled, non-inferiority trial examining antimicrobial prophylaxis duration in cardiac surgery	Monash University	$7,979,999
Accelerating clot lysis in ischemic stroke with dornase alfa in an Umbrella Bayesian Optimised Phase 2 trial	University of Melbourne	$1,453,337
Necessary steps to advance a pluripotent stem cell-derived tissue repair therapy to the clinic for stroke	University of Melbourne	$2,065,971
REMOTE-CARE: REmote MOnitoring deTEcting CArdiac issues Rapidly to Enable care	University of Sydney	$1,295,377
Remote monitoring of cardiac implantable electronic devices using an exception-based model of care	Flinders University	$1,459,974
Fludrocortisone in ICU patients with aneurysmal subarachnoid haemorrhage	University of New South Wales	$1,999,835
SAFE-HF - tranSlating heArt Failure guidElines into practice: a RCT of a Nurse Practitioner primary care service	Deakin University	$1,488,730
ESTEEM After Stroke: Improving access to stroke rehabilitation for regional Australians	The University of Newcastle	$1,485,667
PANDA Trial: Physical Activity in Nature for Cardiometabolic Diseases in People Aged 45y+	University of Wollongong	$1,491,205
Using polygenic scores to guide the treatment and prophylaxis of hypertension	The University of Newcastle	$2,619,701
Co-design approaches to preventing cardiovascular disease among Aboriginal and Torres Strait Islander women	University of Melbourne	$987,428
Towards a culturally appropriate coordination, rehabilitation and secondary prevention model in primary care for Aboriginal people hospitalised with chronic disease	South Australian Health and Medical Research Institute	$2,388,525
Personalised Exercise Rehabilitation FOR people with Multimorbidity - The PERFORM trial	Monash University	$2,999,444
Early treatment of Atrial fibrillation for Stroke prevention Trial in acute STROKE (EAST-STROKE)	University of Melbourne	$2,199,704
Australian participation in the Antiplatelet Secondary Prevention International Randomised trial after INtracerebral haemorrhaGe (ASPIRING)	University of Western Australia	$813,994

Project Title	Organisation	Grant Value
Improving Acute Atrial Fibrillation Management for better patient outcomes	The University of Adelaide	$1,075,421
Building an Australian Cardiovascular disease Data Commons (ACDC)	Baker Heart and Diabetes Institute	$2,929,499
Augmented Reality to improve telemedicine delivery and wound research	The University of Adelaide	$2,270,382
REducing hospital re-admission for high-risk CARDiology patients	The University of Queensland	$1,499,818
Aphasia Treatment TranslAtIon Network (ATTAIN)	The University of Queensland	$4,884,793
A National Intensive Care Research Data Initiative (NICE-Data)	Monash University	$2,497,605
National Integrated Stroke Data: Advancing Learning Health System	University of Melbourne	$2,496,136
Bioengineered tissue models to identify new antiarrhythmics for atrial fibrillation	University of New South Wales	$979,565
Repurposing Clinical Grade Medications for Treatment of Friedreich Ataxia Heart Disease	St Vincent's Institute of Medical Research	$812,365
Novel human stem cell-based models of genetic cardiomyopathy as a platform for disease modelling and therapeutic development	Murdoch Children's Research Institute	$732,251
Bridging the Urban and regional Divide in Stroke care (BUILDS): A national Tele-Stroke Unit and Inpatient Service for remote and rural Australia	University of Melbourne	$1,468,400
Developing Personalised and Portable Point-Of-Care Testing (POCT) Microtechnologies for Rapid Thrombotic Risk and Anticoagulant Dosage Assessment	University of Sydney	$600,000
Optimising the Detection and Multidisciplinary Management of Heart Failure in Primary Care	The University of Notre Dame Australia	$1,934,504
Applying needs-based workforce planning in primary care	The University of Queensland	$2,885,186

Appendix C: Mission Review Panel

The Mission Review Panel membership comprises international and national members with qualifications and/or experience in cardiovascular disease and stroke research, industry and innovation, health policy and/or working in cardiovascular health service delivery, First Nations research and a consumer representative.

Panel member	
Dr Dan Grant (Chair)	Dr Dan Grant has spent more than 25 years in senior roles in the pharmaceutical, higher education and medical research sectors. This includes a role as the Senior Director and Head of Pfizer's External Research and Development Innovation group for ANZ/Singapore and their head of open innovation. Dr Grant also sits on the Expert Advisory Panel for the MRFF Stem Cell Mission. He has a PhD in Cardiovascular Physiology and an MBA.
Dr Angela Dos Santos	Dr Angela dos Santos is Australia's first Indigenous neurologist and a leading stroke researcher. Dr dos Santos is a Kwiamble and Gumbaynggirr woman. She is a neurologist at the Royal Melbourne Hospital and is a senior clinical research fellow with the Australian Stroke Alliance. She also co-chairs the Australian Stroke Alliance Aboriginal and Torres Strait Islander Leadership Council and is a member of the Pre-hospital Stroke Council.
Ms Imelda Lynch	Ms Lynch was recently the Chief Executive of the South Australian and Northern Territory National Heart Foundation of Australia and was the founding Chief Executive Officer of Bellberry Limited. She is currently an Australian Medical Research Advisory Board member and Director of several health related companies.
Ms Jennifer Muller PSM	Ms Jennifer Muller PSM is a member of the Queensland Surgical, Treatment and Rehabilitation Services (STARS) Clinical Research Committee and STARS Research Consumer Steering Group; actively advocating for consumer engagement in research. Ms Muller has lived experience of stroke and has been a consumer advocate for stroke survivors on various state and national committees since 2014, as well as a participant in several research projects. She was the Non-Executive Director of the Stroke Foundation Board representing the interests of Consumers, and Chair of the Consumer Council for 9 years. During this period, she was a consumer member of the Commonwealth government expert committees on the National Action Plan for Heart Disease and Stroke and the National Clinical Quality Registries.
Dr Lee Nedkoff	Dr Lee Nedkoff is co-Director of the Cardiovascular Epidemiology Research Centre in the School of Population and Global Health at the University of Western Australia, and a Senior Research Fellow in cardiovascular disease epidemiology. She also heads the Cardiology Population Health laboratory at the Victor Chang Cardiac Research Institute, based at the UWA. She is a current National Heart Foundation Future Leader Fellow. Dr Nedkoff has research expertise in cardiovascular disease epidemiology and uses linked health data for monitoring cardiovascular disease at the population level.
Prof Anna Ranta	Professor Anna Ranta is an academic stroke neurologist and the Head of the Department of Medicine at the University of Otago, NZ. She also leads the New Zealand National Stroke Registry and Stroke Strategy, co-directs the New Zealand National Hyper-Acute Stroke Programme, is the immediate past President of the Neurological Association of New Zealand, the current Secretary of Stroke Society of Australasia, Board Member of the World Stroke Organization, Board Member of the New Zealand Stroke Foundation, and serves on the editorial boards of Stroke, Neurology, and the Journal of the American Heart Association.

Appendix D: Organisations and number of people interviewed

13 stakeholders with a good understanding of the MRFF and/or Mission
Mission Expert Advisory Panel (n=6)
Australian Cardiovascular Alliance (n=5)
Individuals from other organisations (n=2)
12 stakeholders with a specific interest in cardiovascular/stroke health and/or research
Australian Stroke Alliance (n=3)
National Stroke Foundation (n=3)
The National Heart Foundation (n=2)
ANZ Stroke Organisation (n=2)
Cardiac Society of ANZ (n=1)
Australian Centre for Heart Health (n=1)
28 stakeholders with interests that include but are broader than cardiovascular or stroke health
Australian Department of Health and Aged Care (n=7)
State and territory health and medical research offices (n=4)
Global CV Research Funders Forum (n=3)
Royal Australian College of Physicians (n=2)
National Rural Health Alliance (n=2)
National Health and Medical Research Council (n=1)
Group of 8 Australia (n=1)
Innovative Research Universities (n=1)
Australian Society of Medical Research (n=1)
Australian Health Research Alliance (n=1)
Health Services Research Association of Australia and New Zealand (n=1)
Medicines Australia (n=1)
Novartis Pty. Ltd (n=1)
Bristol-Myers Squibb Pty. Ltd (n=1)
Amgen (n=1)
5 stakeholders with consumer perspectives
National Heart Foundation – Consumer representative (n=1)
National Stroke Foundation Consumer Council (n=1)
Heartbeat Victoria (n=1)
Her Heart (n=1)
Heart Support Australia (n=1)

Appendix E: Mission grant opportunities, number of grants and funding provided

Mission Grant Opportunity	Grants awarded (n)	Funding ($)
Grant opportunity 1: 2019 Accelerated Research - Congenital heart disease	6	$18,507,920
Grant opportunity 2: 2019 Cardiovascular Health	6	$11,337,215
Priority 1 - Improving prevention of heart disease and stroke	*3*	*$ 4,571,176*
Priority 2 - Improved survival outcomes after an acute event	*1*	*$ 2,138,226*
Priority 3 - Improving secondary prevention and survivorship after an event	*2*	*$ 4,627,813*
Grant opportunity 3: 2020 Strategic Research - improve identification, management of CVD in clinical practice	1	$4,000,000
Grant opportunity 4: 2020 Childhood Stroke – design and implement a national paediatric stroke protocol	1	$4,000,000
Grant opportunity 5: 2020 Cardiovascular Health	16	$20,078,152
Stream 1 (Targeted Call): new therapeutics and devices to prevent cardiovascular disease and/or stroke	*1*	*$1,669,300*
Stream 2 (Targeted Call for Research): providing new interventions that promote rapid and more effective recovery following an acute event	*6*	*$12,237,888*
Stream 3 (Incubator): generating new approaches that have the potential to transform care following a CV and/or stroke event		
Topic A - new models of support that increase survival and quality of life	*4*	*$3,199,318*
Topic B - initiatives that increase equity of access for all people	*0*	*$0*
Topic C - new models for routine, annual checking and monitoring of people with disease	*2*	*$1,442,541*
Topic D - new, innovative models that improve treatment adherence	*2*	*$1,044,043*
Topic E - new, culturally secure models for Aboriginal and/or Torres Strait Islander people	*1*	*$485,062*
Grant opportunity 6: 2021 Cardiovascular Health	41	$33,634,319
Stream 1 (Targeted Call): generating knowledge to improve detection and prediction to support prevention or intervention approaches		
Topic A - enable better understanding of how non-CV diseases confer CV risk	*5*	*$4,709,255*
Topic B - novel blood, imaging and clinical markers/methods for improved risk prediction	*3*	*$2,995,975*
Topic C - mechanisms that contribute to variation and inequities in CVD and stroke care	*0*	*$0*
Topic D – predict CVD and stroke risk in Aboriginal and/or Torres Strait Islander people	*1*	*$574,884*
Stream 2 (Targeted Call): reducing the prevalence or severity of CVD and stroke through more effective preventive health interventions		
Topic A - barriers and enablers for adopting best-practice care across the care continuum	*2*	*$1,600,749*
Topic B - effective community-based approaches	*5*	*$4,702,953*
Topic C - address barriers to prevention for Aboriginal and/or Torres Strait Islander people	*0*	*$0*
Stream 3 (Targeted Call): provide equitable health care access to improve outcomes for CV & stroke patients		
Topic A - novel technologies or devices to enhance and accelerate diagnosis	*5*	*$4,999,165*
Topic B - new biomarkers to support prognosis and treatment pathways	*2*	*$1,999,779*
Topic C - managing Aboriginal and/or Torres Strait Islander people with critical events	*0*	*$0*
Topic D - novel approaches to better understand and quantify access to care	*2*	*$1,379,112*
Stream 4 (Incubator): providing new care approaches that promote effective recovery following stroke or heart events		
Topic A - new models to increase treatment adherence for all heart and stroke survivors	*3*	*$1,885,176*
Topic B - new, effective approaches for Aboriginal and/or Torres Strait Islander people	*1*	*$633,589*
Topic C – approaches using health system monitoring, consumer feedback, policy change	*1*	*$451,221*
Stream 5 (Incubator): providing new treatments that promote improved recovery following stroke or heart events		
Topic A - new molecular targets and devices for treatment, and to improve recovery	*4*	*$2,523,573*
Topic B - new therapeutics, incl. target validation to improve recovery and survivorship	*5*	*$4,074,115*
Topic C - health informatics approaches that use AI and machine learning	*2*	*$1,104,773*
Grant opportunity 7: 2022 Cardiovascular Health	14	$23,983,470
Stream 1 (Targeted Call): improve detection and prediction of CVD and stroke to support effective prevention or intervention approaches		
Topic A - novel diagnostic markers and methods to better predict risk of CVD and stroke	*2*	*$2,998,027*
Topic B - clinical pathways for implementing optimised diagnosis and treatment	*2*	*$2,460,650*
Topic C - integration of individual and population approaches to optimise prevention	*1*	*$1,135,281*
Topic D - how chronic diseases contribute to CVD/stroke in risk prediction/prevention	*1*	*$1,202,212*
Stream 2 (Targeted Call): provide new treatments, devices that prevent/ ameliorate effects of CVD/stroke	*6*	*$7,343,721*
Stream 3 (Accelerator): provide new therapeutics that improve long-term recovery/survivorship after a CV and/or stroke event	*2*	*$8,843,579*
Total	85	$115,541,076

Appendix F: Priority Setting Deep Dive

How the current Mission priorities were identified

The Cardiovascular Health Mission Expert Advisory Panel (EAP) first met in May 2019. In determining Mission priorities and funding principles the EAP considered information from multiple sources including:

- the Australian Medical Research and Innovation Strategy and Priorities in force at the time

- the National Strategic Action Plans for Heart Disease and Stroke (in draft form at the time) and Childhood Heart Disease

- funding across the research pipeline, from discovery to delivery of patient care

- alignment to the Mission goals and discussion on short-, medium- and long-term priorities

- complementarity to currently funded research efforts (e.g. by NHMRC)

- lessons from other MRFF Missions

- input from the Australian Cardiovascular Alliance and early feedback from the National Heart and Stroke Foundations.

The Mission has 7 funding priorities under which sit numerous research questions and funding objectives. There have been 7 Mission grant opportunities, and funded projects were distributed across 32 topics within these grant opportunities.

What this Review has found

The Desktop Scan conducted by the department found that Mission research priorities overlap completely with those of cardiovascular health peak bodies (National Heart and National Stroke Foundations) and overlap significantly with NHMRC's health priorities.

Most Mission funds (65%) were allocated to 3 priorities:

- Priority 2.2 Discover and test new solutions (23.2%)

- Priority 3.1 Prevent disease recurrence (21.5%)

- Priority 1.1 Identify and predict risk (19.9%).

Most non-Mission funds (70%) allocated to cardiovascular disease and stroke research were allocated to a single priority:

- Priority 2.2 Discover and test new solutions.

While some Review participants thought Mission priorities are sufficiently broad, others said they are too restrictive. A few commented that if priorities are too broad or too many, then you are 'trying to please everyone', the research will not be distinguishable from (or complementary to) existing schemes and will reduce impact.

There were differing understandings of whether the Mission had a remit for funding basic research. Research at the translational end of the research pipeline, including implementation research based on current knowledge of what works, was recommended by some to realise health benefits sooner.

Some were not aware of, or did not trust the priority setting process. There was also a suggestion that the Mission Roadmap and Implementation Plan provided a good basis for the development of a national strategy to provide further focus for research funding.

How other funding bodies and health organisations set research priorities

The UK National Institute for Health and Care Research provides funding for the James Lind Alliance to oversee the processes for [Priority Setting Partnerships](). These partnerships 'enable clinicians, patients and carers to work together to identify and prioritise evidence uncertainties in particular areas of health and care that could be answered by research.' The process includes identifying areas of research which are important to all stakeholder groups, joint prioritisation and production of a final list, often a 'top 10'. See for example, [priorities in stroke prevention, diagnosis, pre-hospital and hospital care]().

In August 2022, the Australian Cardiovascular Alliance, Cardiac Society of Australia and New Zealand and the National Heart Foundation convened a [national roundtable]() with a wide range of stakeholders to agree on actions to be prioritised and implementation barriers and gaps for further implementation research to cardiovascular and stroke outcomes for the community.

The National Stroke Foundation and National Heart Foundation consulted with consumers and reviewed evidence to develop the [National Strategic Action Plan for Heart Disease and Stroke](), which includes priorities for research. Other organisations, such as the [Australian and New Zealand Stroke Organisation](), also provide forums for setting priorities in cardiovascular disease and stroke research.

The Targeted Translation Research Accelerator program conducted a [structured prioritisation process]() to inform their research investments in cardiovascular disease and diabetes research. It included an on-line survey, and a series of roundtables with clinical, research and community leaders to prioritise unmet need against pre-defined criteria.

In February 2024, the MRFF released a [grant opportunity]() for pilot projects co-led with communities that scope and address priority health issues.

Other guidelines are available to support comprehensive priority-setting processes, e.g., [Setting Research Priorities - Population health research and evaluation (nsw.gov.au)]().

Appendix G: Transformative Approaches Deep Dive

The Mission aims to drive transformative improvements in cardiovascular disease and stroke outcomes for all Australians.

What this Review has found

MRFF has invested $441.7 million in cardiovascular disease and stroke research from the inception of the Mission until 29 February 2024. Annual funding for cardiovascular research funding through non-Mission initiatives has been consistently higher than funding through the Mission and, on average, research investments made through the Mission (85 grants totalling $115.5 million) were smaller compared to those funded through non-Mission initiatives (87 grants totalling $326.4 million).

Many Review participants thought that increased or longer-term funding would support more transformative research, suggesting larger grants, full funding for research staff, longer grant timeframes, opportunities for additional funding to enable further impact, and funding for cooperative research centres to replicate the success seen in other sectors.

Some suggested more strategic and collaborative funding models that focus on larger programs of work rather than individual projects, including teams across institutions and disciplines. A few survey respondents and interviewees suggested different funding models to leverage resources and establish 'buy in' from partners.

Larger, more transformative programs of work could be approached in 2 ways:

1. addressing a 'grand challenge' through a 'research continuum' approach that brings together a range of researchers across the research pipeline to answer a complex question with the potential to move through to translation into practice. This could include:

    - planning for the whole pipeline of research

    - involvement of researchers and implementation partners at all stages from the outset

    - incentivising greater/real collaboration with implementation partners

    - funding the research 'handover' between researchers as a project moves through the different stages of the pipeline

    - funding allocated for specific expertise, e.g., economic, digital and commercial

    - active monitoring and clear reporting of progress publicly

    - incentivising and supporting the research to move along the continuum (e.g., new funding for the next phase)

    - establishing a two-stage process for a small proportion of projects to incentivise innovation

    - pivoting or ceasing work if any stage is unsuccessful or not progressing as planned.

2. having access to specialist support for funded research teams, particularly in relation to translation (for example, facilitating partnerships with policy/practice decision makers who can advise on implementation at scale, and providing support for commercialisation – see Targeted Translation Research Accelerator Enabler Case Example 1, below).

Examples of transformative approaches

The UK Cancer Grand Challenges is a global research initiative that identifies the toughest challenges in cancer research. With awards of up to $25 million, it empowers global, interdisciplinary teams to take them on. The process includes:

- engaging with the global community to stimulate debate on topics for potential new challenges, which are then shortlisted and posed to the research community

- inviting researchers from across the globe to form new, interdisciplinary and international teams and submit a short expression of interest to take on one of the challenges

- inviting the best applicants to submit a more detailed proposal and attend an in-person interview; each shortlisted team receives seed funding to develop its application

- selecting and providing funding, at scale, to the successful teams, over several years, to address their challenges.

CSIRO, in establishing its Missions Program in 2019, is mobilising coordinated and sustained efforts across disciplines and sectors, incorporating a broad range of perspectives and interests, to deliver impact and build innovation system capability for the long term. CSIRO uses an 'agency convened' model that seeks to accelerate the diffusion of solutions by 'crowding in' existing and new policy initiatives, investment, research activities and innovation system actors around a shared objective. Missions are selected, based on clear criteria, and are co-designed with collaborators. CSIRO has implemented a timebound stage gate framework where ongoing investment is contingent on satisfying design requirements. As outlined in their Mission Design Stage Gates Framework, this builds in a cycle of implementation, evaluation and re-design. Missions are managed by CSIRO as a portfolio, with both internal and external governance bodies, twice-yearly reporting and development of new performance measures to enhance collective impact.

The MRFF-funded 2020 Targeted Translation Research Accelerator (TTRA) program supports translational research for the development of novel products and solutions for diabetes and cardiovascular disease. Key elements of the TTRA approach are provided in the case example below.

Two examples of funding approaches that involve a staged application and selection process, and require or encourage involvement of implementation partners from the outset are:

- The MRFF Frontiers initiative, which:

  - includes a 3-phase process – phase 1 where applicants outline the proposed project, phase 2 where those selected to proceed are awarded a grant to develop a detailed research plan, and phase 3 where those whose research plan is successful are awarded a second grant to implement the research plan

- highly values strategic partnerships with organisations whose decisions and actions affect Australians' health, health policy and health care delivery in ways that improve the health of Australians.

- The [NSW Translational Research Grants Scheme](#) (TRGS) which:

  - includes an expression of interest (EOI) stage and a full application stage

  - provides support for applicants in both the EOI stage (e.g., feedback on TRGS idea, identification of appropriate research partners, advice on study design / sample size and analysis plan / scalability / implementation, and written feedback on completed EOI) and for the full application phase (including any of the items in the EOI phase, development of program logic model / implementation plan / budget, written feedback on completed full application)

  - provides research funding only to implementation partners, i.e. NSW Health local health districts, specialty health networks, NSW Ambulance and NSW Health Pathology

  - requires host organisations to identify and engage relevant partners early and throughout the research process to support effective delivery of the research project and implementation of the outcomes in NSW

  - at full application stage, requires the Chief Executive of the host organisation to outline why the problem and solution being proposed is a priority for the host organisation and how the Chief Executive will support the research project and implementation of research findings within the host organisation, if there is a case for change.

Enabler Case Example 1

The Targeted Translation Research Accelerator, MTPConnect (non-Mission, 2020, $47,000,000)

The Targeted Translation Research Accelerator (TTRA) is a $124.5 million funding allocation for diabetes and cardiovascular disease research that sits within the MRFF Preventive and Public Health Research Initiative. In 2020, MTPConnect was selected to deliver the initial $47 million investment in the Targeted Translation Research Accelerator on behalf of the department, through a 2-pillar program including:

- establishment of research centres for diabetes and cardiovascular disease

- establishment of a contestable funding program to support diabetes and cardiovascular research projects

- promotion of the effective clinical and commercial translation of novel therapeutics and devices for diabetes and cardiovascular disease.

MTPConnect leveraged an additional $46.5 million from the sector for the 2020 TTRA ($14.4 million cash and $32.1 million in-kind). TTRA is identified in the Mission Implementation Plan as a 'significant enabler' for the Mission. The TTRA aligns with Mission priority 2.2 Discover and test new solutions.

The 2020 TTRA model includes strong partnerships with small and medium-sized enterprises and health services to accelerate into practice promising drugs, devices and models of care focused on cardiovascular disease and diabetes. They focus on both commercial (e.g., new therapeutics, diagnostics and devices) and public health outcomes (e.g., new models of care).

To 31 December 2023, the 2020 TTRA program had delivered 22 research grants totalling $17.8 million with $8.7 million being allocated to support research prioritisation, specialty experts, governance and infrastructure. The 2 national Research Centres have been established: the Australian Centre for Accelerating Diabetes Innovations (ACADI) and the Australian Stroke and Heart Research Accelerator (ASHRA), with $10 million in TTRA funding to each complemented by co-contributions from the sector. Both centres also fund research projects.

Key elements of the 2020 TTRA approach include:

- using strategic, evidence-based priority-setting processes to inform funding for research centres and the contestable funding program

- providing 2-year funding for projects that are at a particular stage of the research pipeline, i.e., have the potential to progress to a relevant impact (e.g., incorporation of findings into care guidelines, policy change, attracting venture capital, patents, spin-out companies)

- encouraging opportunities for early to mid-career researchers (EMCRs) to lead funded projects and embedding of EMCRs in the 2 research centres

- providing wrap around support for funded research.

Wrap around support has accelerated research translation

Support is provided both pre and post awards. Pre-award support includes:

- application requirements and processes that include an industry/investor lens, co-design and assessment of the whole research team

- a 3-stage application process - expression of interest, interview and written application, during which one or more experts are matched to the applicant to provide advice.

Post-award support includes:

- ongoing support from the assigned expert(s) throughout the project, higher levels of reporting than other grants programs to mirror requirements of potential investors, including quarterly tracking of milestones

- stage gates (go/no-go/pivot points) based on milestones, built into projects from the outset and included in contracts, assistance from the MTPConnect team to help overcome emerging challenges

- ongoing education, including an annual summit for funded researchers and communities of practice.

The February 2024 TTRA [Interim report on impacts of the first Targeted Translation Research Accelerator](#) notes the following impacts as at 30 June 2023:

- 46 new products, solutions or technologies invented or progressed, 13 new patents, trademarks or licenses

- 3 new spin-out or startup companies

- $10.4 million in additional investment secured

- 17 pre-clinical and clinical trials started with 459 participants recruited with 221 treated

- extensive collaboration with other organisations, experts and individuals with knowledge of the lived experience and clinician end users.

Appendix H: First Nations Deep Dive

What this Review has found

The scope of the Mission Roadmap and Implementation Plan includes focused efforts to improve equity and outcomes for Aboriginal and Torres Strait Islander people. This is the only priority population identified, in recognition that the health gap was 'very distinct and different' (Interviewee – good understanding).

- Five Mission grant opportunities have included topics for funding specific to Aboriginal and Torres Strait Islander people. Under these topics, 3 projects were funded.

- Twelve projects specifically designed to benefit First Nations people's cardiovascular or stroke health have been funded through the Mission and other MRFF initiatives, representing 1.2% of Mission funding and 3.9% of non-Mission funding for cardiovascular disease and stroke research.

- Five First Nations cardiovascular and stroke projects have also been funded through MRFF via facilitated independent grant programs administered by the National Heart Foundation and MTPConnect (see First Nations Case Example 1, section 6.1.).

- Responses to the MRFF Performance Indicator Survey (Chief Investigator self-report) indicated that 11% of Mission projects and 14% of non-Mission cardiovascular and stroke projects were directed to First Nations health.

- Performance Indicator Survey respondents reported 31 First Nations people (4% of all people supported) were supported through MRFF funding for cardiovascular disease and stroke research.

- Four (5%) grants under the Mission were led by First Nations researchers (Chief Investigators). Note that information on First Nations Chief Investigators was not captured for 3 of the 7 grant opportunities.

- The review of project reports identified examples of best practice in First Nations research (see First Nations Case Examples 1 and 2, section 6.1).

- Review participants strongly support a continued focus on First Nations research, and noted considerations such as:

  o the need for longer grants to support effective engagement

  o given small numbers of First Nations researchers there is a need to build capability and pathways for their development

  o the importance of working with non-Indigenous researchers to 'share the burden'.

A review of the 7 Mission and 50 MRFF non-Mission grant opportunities under which cardiovascular and/or stroke research was funded found:

- four Mission and 35 non-Mission grant opportunities mentioned Aboriginal and Torres Strait Islander health

- two Mission and 5 non-Mission included streams or topics specific to Aboriginal and/or Torres Strait Islander health

- four Mission and 27 non-Mission encouraged applications that addressed Aboriginal and/or Torres Strait Islander health and/or for research where at least 20% of the research effort and/or capacity building related to Aboriginal and/or Torres Strait Islander health, and assessed applications against the NHMRC's Indigenous Research Excellence Criteria

- four Mission and 32 non-Mission included considerations such as building relationships of trust with Aboriginal and/or Torres Strait Islander communities over long periods and, for Aboriginal and/or Torres Strait Islander applicants, community and cultural obligations, in relative to opportunity assessments of the applicant's track record

- four Mission and 28 non-Mission referred to improvement to health in the Australian population and/or in Aboriginal and Torres Strait Islander communities as an example of research impact for assessments of Chief Investigator capacity and capability

- one Mission and 12 non-Mission included an assessment panel member with expertise in Aboriginal and/or Torres Strait Islander health.

The Next Generation Clinical Researchers grant opportunities included an Aboriginal or Torres Strait Islander fellowship category and the 2022 Indigenous Health Research opportunity required that to be considered for an Innovation grant under Stream 4 or 5, an application must propose research that was either led by an Aboriginal and/or Torres Strait Islander researcher (i.e. the Chief Investigator is an Aboriginal and/or Torres Strait Islander researcher) or conducted by a research team comprised of Chief Investigators of which at least 50% were Aboriginal and/or Torres Strait Islander researchers.

Further discussion with members of the Mission Review Panel provided additional insights.

- It is important to emphasise research that upholds and strengthens First Nations knowledge, culture and links to country.

- Ideally First Nations research would be led by First Nations researchers to ensure there is appropriate emphasis on what the community thinks is important, to apply culturally appropriate approaches to the conduct of research and to embed data sovereignty into the data collection aspects of the project. If research is led by non-Indigenous people, there should be requirements for First Nations governance and oversight to keep research meaningful for and uphold the values of First Nations people.

- Timelines are important. Time for the development of research questions is not included in the grant application processes. Time (and funding) is needed to facilitate consultations with community, for example, to form a consultation panel, to undertake yarning sessions. When this doesn't occur, the research questions, processes and analysis tend to come from the researcher, not the community. This needs to be 'flipped on its head' by drawing out questions from community.

What consultations and reviews of other MRFF initiatives have found

The [International Review of the Implementation Plan for the MRFF Indigenous Health Research initiative](#) noted

- funding was low given the burden of disease

- there was a need for a strong, well-funded, capacity-building plan for Aboriginal and Torres Strait Islander researchers for all MRFF initiatives

- the burden of improving Aboriginal and/or Torres Strait Islander health cannot be borne by Aboriginal and/or Torres Strait Islander researchers alone.

The percentage of projects that specifically address First Nations health funded under other MRFF initiatives is variable, for example 3 of 18 (17%) projects funded under the Million Minds Mission, and 4 of 170 (2%) MRFF genomics projects. The evaluation of MRFF Clinical Trials Activity reported that 8% of MRFF clinical trials included study team members who were Aboriginal or Torres Strait Islander people. Opportunities for improvement from these reviews included building capacity of the research workforce, ensuring all funded research consider appropriate involvement of and potential impact on First Nations people, and stage gating to support engagement and planning for implementation pathways.

The consultation summary report [Improving the alignment and coordination between the Medical Research Future Fund and NHMRC's Medical Research Endowment Account](#) recommended retaining exclusive funding opportunities for First Nations researchers.

The [MRFF Cardiovascular Health Mission International Review of the Roadmap and Implementation Plan](#) recommended health equity be emphasised in the Implementation Plan to help researchers make this a more integral part of their projects. It was noted that this is pertinent for Aboriginal and/or Torres Strait Islander communities because of their disproportionately high risk of cardiovascular disease.

What other research funding bodies are doing to support First Nations research

The NHMRC has made a commitment to improving the health of Aboriginal and Torres Strait Islander people, including an aim to spend 5% or more of MREA on Aboriginal and Torres Strait Islander health research. The Principal Committee Indigenous Caucus provides advice, activity is guided by a [strategic framework](#) and associated action plan and progress is reported annually. There are also a range of capacity building activities to support Aboriginal and Torres Strait Islander researchers, including a national network (OCHRe), workshops and awards.

The Canadian Institutes of Health Research (CIHR) have an [Action Plan](#) for building a healthier future for Indigenous peoples. This includes a funding target for Indigenous health research proportional to Canada's Indigenous population, the establishment of a CIHR Advisory Board on Indigenous Peoples' Health, and use of iterative peer review processes that include elders, knowledge guardians and community based Indigenous researchers in a Reference group for the Appropriate review of Indigenous research.

The Health Research Council of New Zealand (HRCNZ) uses a [range of strategies](#) to improve health outcomes for Māori through research, including having a Māori Health Committee to provide advice. Investing in research for healthy futures for Māori is a key action in the New Zealand Health Research Strategy. This includes consultative priority setting and funding allocation and ongoing professional development of the non-Māori workforce. While all research funding is open to Māori health research, there is also a dedicated research investment stream, and Māori Health Assessing Committees for peer review. HRCNZ report that approximately 10% of all HRCNZ investment goes into the Māori funding stream.