EVALUATION OF THE RAPID APPLIED RESEARCH TRANSLATION INITIATIVE

24 NOVEMBER 2020

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Acknowledgement of Country

Allen + Clarke acknowledges the Traditional Custodians of the land we work on and the communities that we work with. We acknowledge their history, culture and Elders past, present and emerging.

Art acknowledgement   The original artwork in our Acknowledgement of Country was produced by **Emma Walke**. Emma is a Bundjalung Aboriginal woman from northern NSW.

ACKNOWLEDGEMENTS

ABOUT *ALLEN + CLARKE*

Founded in 2001, *Allen + Clarke* is an established and respected consultancy with offices in Melbourne and Wellington. Our areas of work cover three core areas of practice including evaluation and research; policy, regulatory and business change; and governance, secretariat and program support services. More information about our work can be found on our website at www.allenandclarke.com.au.

Allen + Clarke has been independently certified as compliant with ISO9001:2015 Quality Management Systems

CONTENTS

GLOSSARY OF TERMS

Term	Description
Aboriginal Community Controlled Health Organisation (ACCHO)	A primary health care service initiated and operated by the local Aboriginal Community to deliver holistic, comprehensive, and culturally appropriate health care to the community which controls it, through a locally elected Board of Management.
Aboriginal Community Controlled Organisation (ACCO)	An incorporated Aboriginal organisation, initiated, based in and governed by the local Aboriginal Community to deliver holistic and culturally appropriate services to the Aboriginal Community.
Australian Medical Research Advisory Board (AMRAB)	Board advising the Minister for Health on prioritising spending from the Medical Research Future Fund (MRFF).
Australian Health Research Alliance (AHRA)	A national group of the seven Advanced Health Research Translational Centres and three Centres for Innovation in Regional Health.
Advanced Health Research and Translation Centres (AHRTCs)	A centre recognised by the National Health and Medical Research Council as an Advanced Health Research and Translation Centre.
Canadian Institutes of Health Research (CIHR)	Federal agency responsible for funding Canadian health and medical research.
Centres for Innovation for Regional Health (CIRHs)	A centre recognised by the National Health and Medical Research Council as a Centre for Innovation in Regional Health.
Department	The Australian Government Department of Health, unless otherwise stated.
Executive Directors (EDs)	The principal executive officer of the AHRTC and CIHR are referred to by different terms including Executive Director (ED), Managing Directors (MD) and Chief Executive Officers (CEO). For the purposes of this Report, the term Executive Director (ED) is used.

Term	Description
Health and Medical Research (HMR)	Includes biomedical, clinical, public health and health systems research.
Integrated Health Research Centres (IHRCs)	Centres that combine hospital and community-care networks, universities, and research organisations such as medical research institutes (MRIs) to conduct Health and Medical Research.
Learning healthcare system	A healthcare system characterised by the continuous generation and implementation of knowledge from clinical research embedded within healthcare delivery.
Local Hospital Network(s) (LHNs)	While this term is only used in some jurisdictions, it is used in this report to refer to Hospital and Health Service(s) (HHSs) and Area Health Networks (AHNs).
McKeon Review	Strategic Review of Health and Medical Research – *Better Health through Research* (2013).
Medical Research Future Fund (MRFF)	A $20 billion long-term investment supporting Australian health and medical research. The MRFF aims to transform health and medical research and innovation to improve lives, build the economy and contribute to health system sustainability.
Memorandum of Association (MOA)	A legal document prepared in the formation and registration process of a limited liability company to define its relationship with shareholders.
Memorandum of Understanding (MOU)	A non-binding agreement between two or more parties outlining the terms and details of an understanding, including each party's requirements and responsibilities.
National Health and Medical Research Council (NHMRC)	The NHMRC funds high quality health and medical research to build research capability, support researchers, encourage the translation of research into better health outcomes and promote the highest ethical standards for health and medical research.

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Term	Description
National Health Service (NHS)	Umbrella term for the publicly funded healthcare systems of the United Kingdom.
National Institutes of Health (NIH)	United States federal agency devoted to medical research. Administered by the Department of Health and Human Services (HHS), the NIH consists of roughly 20 separate Institutes and Centres. NIH's program activities are represented by these Institutes and Centres.
National Systems Level Initiatives (NSLIs)	Mechanisms to improve collaboration between AHTRCs and CIRHs for the implementation of Transformative Translational Research.
Primary care	Includes a broad range of activities and services, from health promotion and prevention, to treatment and management of acute and chronic conditions. It can include general practice, allied health services, community health and community pharmacy.
Primary Health Networks (PHNs)	PHNs have been established with the key objectives of increasing the efficiency and effectiveness of medical services for patients, particularly those at risk of poor health outcomes, and improving coordination of care to ensure patients receive the right care in the right place at the right time.
Rapid Applied Research Translation (RART)	The RART Initiative invests in research projects that encourage academic researchers and health service providers to collaborate to improve health care delivery, services and systems sustainability.
Research excellence	Currently there is no precise or widely adopted definition of what research excellence is or should be.
Research pipeline	The journey of translating a discovery into improved health outcomes.

Term	Description
Research translation	The process whereby knowledge is passed anywhere along the translational pathway from basic science at one end to improved community-based health outcomes at the other and, of course, vice versa.
Tertiary care/ hospital	Highly specialised healthcare mostly provided as in-patient hospital care on referral from a primary or secondary health professional. This can include complex medical or surgical procedures.
Translational research	Any type of research that leads to knowledge translation.
Transformative Translational Research Projects (TTRPs)	Projects where academic research and health service providers collaborate to harness the translation of research findings to improve health care delivery, deliver evidence and research translation consistent with the MRFF Strategy and the Priorities identified for Translation Centres, and identify innovative and up-to-date approaches to healthcare and treatment.

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TABLES AND FIGURES

Tables

Figures

EXECUTIVE SUMMARY

Introduction

The Medical Research Future Fund (MRFF) Rapid Applied Research Translation (RART) Initiative is an Australian Government investment established to support the translation of evidence (through research) into clinical practice. Advanced Health Research and Translation Centres (AHRTCs) and Centres for Innovation in Regional Health (CIRHs) – referred to as 'the Centres' in this report – are the current recipients, and distribution mechanism for RART Initiative funding.

Allen + Clarke was engaged to undertake a formative process evaluation of the RART Initiative, the intent of which is to inform options for future investment.

The evaluation

The evaluation focused on answering the following Key Evaluation Questions (KEQs):

- **KEQ 1** How have the Centres implemented the RART Initiative? What have been the enablers and challenges?

- **KEQ 2** How effective have the elements of the implementation models been as they relate to the RART objectives?

- **KEQ 3** To what extent have the Centres' implementation of the RART Initiative aligned with the intentions of the McKeon Review and best practice international approaches?

Evaluation methodology

This report presents and discusses findings from data collection activities which include:

- **Key stakeholder interviews** – with the executive management of nine Centres.

- **Document review** – of documents provided by the Health and Medical Research Office (HMRO) and the Centres.

- **Project profiling survey** – to gather information on RART Initiative funded projects completed by Centres.

- **Partner survey** – to gather feedback from Centre Partners regarding how the Centres have implemented the RART Initiative, investigate enablers and strengths and identify challenges and areas to strengthen.

- **Environmental scan** – including interviews with three international experts and a scan of comparative research translation initiatives in the United Kingdom (UK) and Canada.

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Key areas of opportunity

The evaluation has identified three key areas of opportunity that have the potential to support the rapid translation of research evidence into clinical practice. These three areas of opportunity reflect findings discussed in Chapter 4 of this evaluation report:

Research translation focus

The RART Initiative has been established to fund projects that have the potential for 'rapid' and 'applied' research translation. The research to translation timeframe is dependent on many factors including the nature of the research, its scale and complexity and the capacity of the system to effectively translate and adopt research evidence into practice and/or policy.

RART Initiative grant funding should continue to focus on funding research projects that can demonstrate the greatest potential for research translation and adoption in areas of prioritised need. Research proposals should provide a plan for research translation which demonstrates commitment from all key research partners.

The RART Initiative should also continue to have flexibility to fund both small scale and larger, more complex research projects, which may require longer to demonstrate research translation and impact.

Research priorities

Health and medical research is more likely to be translated into practice and have greater real world impact when it responds to locally prioritised need and is shaped by the people who will use and benefit from the research.

The RART Initiative grant funding should therefore be underpinned by evidence of engagement and involvement with all stakeholders relevant to the research and its translation. This will usually include health service consumers and providers.

The RART Initiative should also continue to support a balance of national, state/territory and local community research priorities, and support mechanisms that promote alignment and integration of resources at these levels to address common research priorities.

Research impact

Understanding what works, for whom and under what circumstances is critical for research translation and an effective and efficient health and medical research sector. Therefore, measuring and communicating research progress, outcomes and impact is an important aspect of the RART Initiative funded projects.

Assessment of research outcomes and impact should be embedded in the RART Initiative and account for the diversity of research contexts including cultural, geographical, demographic and economic factors which can impact health outcomes.

Communicating research outcomes and impact should be timely and include a variety of communication methods inclusive of consumer and stakeholder preferences.

EVALUATION OF THE RAPID APPLIED RESEARCH TRANSLATION INITIATIVE

Evaluation findings

The RART Initiative evaluation found that there were a number of areas of interest that influence successful research translation. These areas of interest are presented through the evaluation findings in Chapter 4. Some findings relate to more than one key area of interest. The areas of interest flow into three key areas of opportunity to support the rapid translation of research evidence into clinical practice.

Figure 1: Evaluation findings roadmap

Key areas of opportunity		
Research translation focus	**Research design & delivery**	**Research impact**
Funding prioritised research with the greatest potential for translation.	Engaging and involving research end users and beneficiaries in research.	Measuring and communicating research outcomes and impact.
Key evaluation findings		
Research translation	Engagement, collaboration, and integration	Research quality and excellence
Strategy and strategic priorities	Responding to local context	Monitoring progress and evaluating impact
Additional findings		
Workforce capacity development	Governance and leadership mechanisms	

STRUCTURE OF THIS REPORT

This report is divided into the following sections:

Section 1:   **The Evaluation** (pages 6-8) - an overview of the evaluation purpose and scope.

Section 2:   **Context** (pages 9-12) – a summary of the RART Initiative in context.

Section 3:   **Evaluation Methodology** (pages 13-17) – an overview of the evaluation methods.

Section 4:   **Key Findings** (pages 18-87) – findings relating to the evaluation questions.

Appendices: **Key reference material** (pages 88-122).

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1. THE EVALUATION

This section provides an overview of the evaluation purpose and focus, scope, and its governance structure.

1.1. Evaluation purpose

The evaluation is a formative process evaluation, the intent of which is to inform options for future investment of the RART Initiative. The evaluation was undertaken in two phases of data collection and analysis (Appendix A).

The principal purpose of Phase One was to document and compare the Centres' implementation models.

The principal purpose of Phase Two was to assess the impact of the different implementation models on achievement of RART Initiative objectives and to compare approaches taken by the Centres with international models and the intentions of The Strategic Review of Health and Medical Research – *Better Health through Research,* commonly known as the McKeon Review (McKeon et al., 2013).

1.2. Key evaluation questions

The evaluation seeks to answer the following KEQs:

- **KEQ1** - How have the Centres implemented the RART Initiative? What have been the enablers and challenges?

- **KEQ 2** - How effective have the elements of the implementation models been as they relate to the RART Initiative objectives?

- **KEQ 3** - To what extent have the Centres' implementation of the RART Initiative aligned with the intentions of the McKeon Review and best practice international approaches?

The KEQs are underpinned by a series of detailed evaluation questions (EQs). The KEQs and EQs form the basis of the evaluation framework (Appendix B) which have been informed by the key areas of interest identified by the HMRO and the RART Evaluation Advisory Panel (REAP).

1.3. Evaluation scope

The scope of this evaluation is the implementation of the RART Initiative. This includes the Centres in receipt of RART funding, the activities associated with the RART Initiative, characteristics of implementation models and, where applicable, the impact of these models to date.

Activities and programs that are not funded or associated with the RART Initiative are outside the scope of this evaluation, including the newly established Tropical Australian Academic Health Centre which had not received RART funding.

1.4. Evaluation governance

The evaluation was commissioned and overseen by the Department of Health's HMRO, including representatives from the HMRO's Evaluation team, Program team, and Scientific team.

The independent evaluation consultants from *Allen + Clarke* worked in collaboration with representatives of the HMRO. The consultants were provided with additional technical advice relating to the health and medical research landscape in Australia and internationally by the REAP which includes:

- Professor Russell Gruen - Dean, College of Health & Medicine, Australian National University

- Professor Graham Lord - Vice President and Dean of the Faculty of Biology, Medicine and Health, University of Manchester, and

- Dr Margaret Wilsher - Chief Medical Officer, Auckland District Health Board.

Additional advisory input was provided by Professor Ian Frazer (Chair of the Australian Medical Research Advisory Board of the MRFF and Professor of the Faculty of Medicine at the University of Queensland).

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2. CONTEXT

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The following section provides contextual information relating to the establishment of the RART Initiative, the recipients of RART Initiative grant funding, the concept of transformative translational research, and a summary of international comparative initiatives from the UK and Canada.

2.1. The Rapid Applied Research Translation Initiative

The RART Initiative is an Australian Government investment through the MRFF comprising $218 million in funding over 10 years. The RART Initiative, along with the accreditation of Advanced Health Research and Translation Centres (AHRTCs) and Centres for Innovation in Regional Health (CIRHs), were developed in response to the McKeon Review, which proposed a new strategy for health and medical research in Australia. The intent of the RART Initiative is to support the translation of evidence (through research) into clinical practice (Australian Government, 2017). The Centres are the current recipients and distribution mechanism for RART Initiative funding.

There are seven AHRTCs and three CIRHs located across Australia (Figure 2). All seven AHRTCs and two of the CIRHs, collectively known as the Centres, have received RART Initiative funding. The newest Centre (Tropical Australian Academic Health Centre) was accredited in 2020 and has not yet received RART Initiative funding, it is therefore not included in this evaluation.

Figure 2: Map of AHRTCs and CIRHs

1. Brisbane Diamantina Health Partners (BDHP)
2. Central Australian Academic Health Science Network (CAAHSN)
3. Health Translation SA (HTSA)
4. Melbourne Academic Health Science Centre (MACH)
5. Monash Partners (MP)
6. NSW Regional Health Partners (NSWRHP)
7. Sydney Health Partners (SHP)
8. Sydney Partnership for Health, Education, Research and Enterprise (SPHERE)
9. Tropical Australian Academic Health Centre (TAAHC)
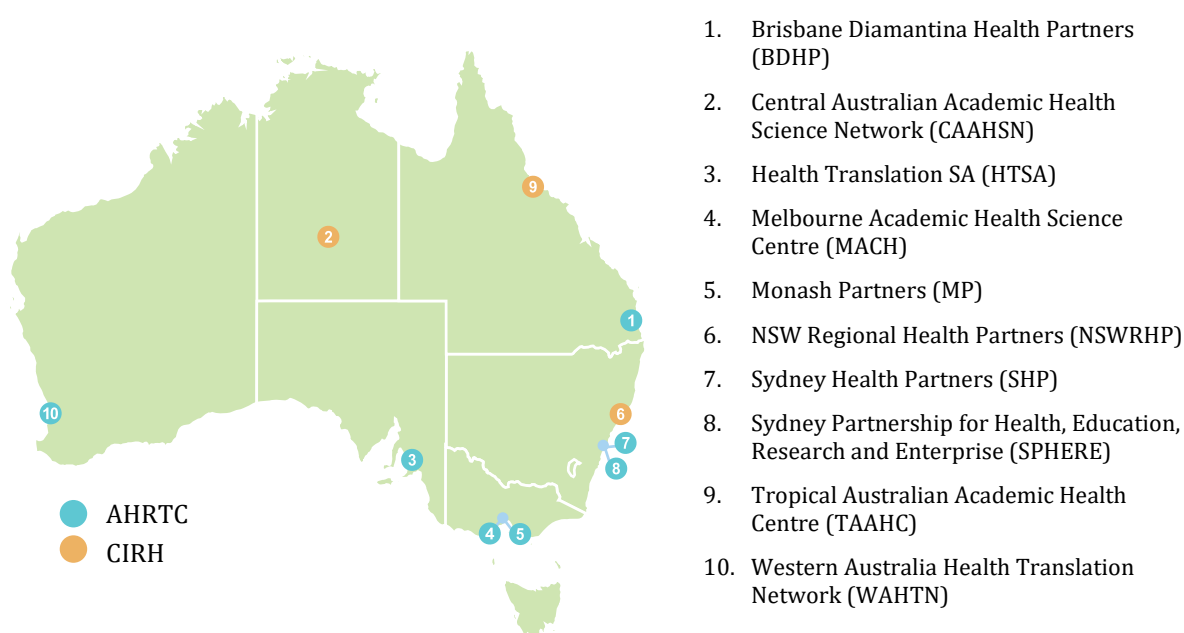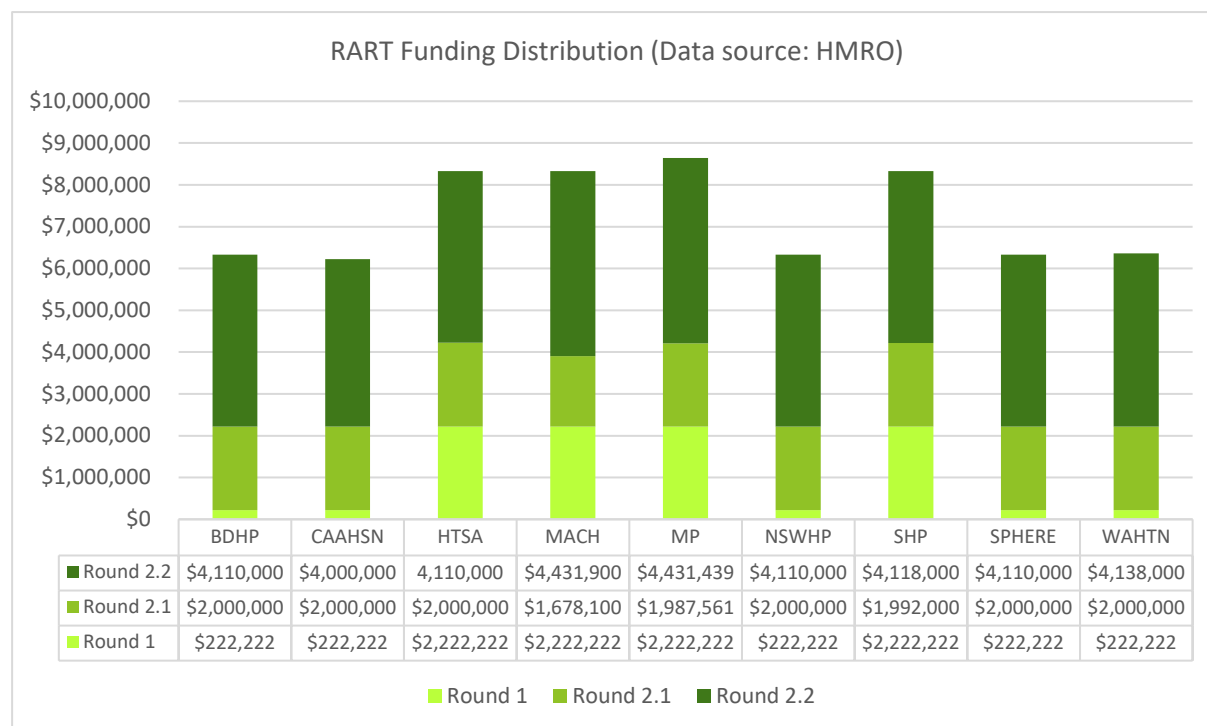10. Western Australia Health Translation Network (WAHTN)

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Figure 3 shows how RART Initiative funding has been distributed across the Centres to date.

Figure 3: RART funding distribution

RART Funding Distribution (Data source: HMRO)

	BDHP	CAAHSN	HTSA	MACH	MP	NSWHP	SHP	SPHERE	WAHTN
■ Round 2.2	$4,110,000	$4,000,000	4,110,000	$4,431,900	$4,431,439	$4,110,000	$4,118,000	$4,110,000	$4,138,000
■ Round 2.1	$2,000,000	$2,000,000	$2,000,000	$1,678,100	$1,987,561	$2,000,000	$1,992,000	$2,000,000	$2,000,000
■ Round 1	$222,222	$222,222	$2,222,222	$2,222,222	$2,222,222	$222,222	$2,222,222	$222,222	$222,222

■ Round 1   ■ Round 2.1   ■ Round 2.2

The timeline for funding is:

- Round 1: grant agreement executed between December 2017 and 20 March 2018
- Round 2.1: grant agreement executed between January 2019 and March 2019
- Round 2.2: grant agreement executed July 2019 and for CAAHSN on the 23 August 2020

2.2. Transformative translational research

The RART grant guidelines (Australian Government, 2017), define transformative translational research as:

> *the provision of research-based and evidence-based health care and the training of doctors, nurses and other health professionals. This accelerates translation of research findings into health care and ways of bringing health care problems to researchers. (p3)*

The phrases 'research translation' and 'translational research' are used interchangeably in RART Initiative documentation. Davidson (Davidson, 2011), explains that the terms are subtly different and often cause confusion.

Research translation:

> *is the process whereby knowledge is passed anywhere along the translational pathway from basic science at one end to improved community-based health outcomes at the other and, of course, vice versa. The type of research varies depending on the stage. A key point is that knowledge generated in one mode of research informs the study or activity needed in the next mode. That is research translation. (p910)*

Translational research:

> *could be regarded as any type of research that leads to knowledge translation…Research that has a high capacity for translation and research that addresses particular gaps in translation is translational research that is particularly valued. (p910)*

In this report the terms research translation and translational research are used in the context in which they are discussed by interviewees and survey respondents. However, it is acknowledged that there is potential for divergent use of the terms.

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3. METHODOLOGY

This section provides information relating to the evaluation methodology, particularly the data collection methods, approach to data analysis and methodological limitations.

An overview of the methodology and the evaluation framework are located in Appendix A and Appendix B respectively.

The methodology and timelines for the evaluation required adaptation on occasion in response to the COVID-19 pandemic, which has impacted on the Centres and their Partners.

3.1.   Data collection and analysis methods

The methods used in the evaluation include a document review, in-depth interviews with Centre executives, a project profiling survey, a Partner survey, an environmental scan involving a rapid literature review, and interviews with a small number of international experts.

Document review

The document review included 85 documents. Documents provided by the HMRO included grant opportunity guidelines, funding agreements, progress reports, final reports, and funding acquittals. The documents provided by the Centres included documents such as strategic plans, and RART impact reports. In addition, a desktop review of the Centres' websites was undertaken to identify key characteristics. A list of documents included in the document review is provided in Appendix C.

Documents were reviewed against the KEQs, gaps in data were identified and contributed to the development of Phase Two data collection activities.

Interviews with Centres

Two members of the evaluation team interviewed Centre senior executives. A list of contributors is provided in Appendix D. In total, 14 interviews involving 17 participants were completed for the nine Centres. The interview questions (Appendix E) and supporting information were provided to all participants prior to the interviews.

The interviews were conducted via Zoom and ranged in length from 90 to 180 minutes. The interviews were audio recorded with consent, enabling detailed interview summaries to be constructed. The interview summaries were provided to participants, allowing them an opportunity to review, edit and approve the summaries.

A code frame was constructed in NVivo 12 using predetermined and emerging themes to analyse the interview summaries. The themes were ordered into key themes and subthemes according to relevance to the evaluation questions and strength (i.e. prevalence of the theme across interviews).

We note that the interviews provide us with self-reported data from the Centres.

Project profiling survey

The project profiling survey (Appendix F) was designed to gather information about RART funded projects relating to the KEQs. The survey was designed in collaboration with the HMRO, the REAP and an additional senior advisor. The survey utilised an Excel format with each project requiring completion of up to 23 questions. The survey utilised drop down and free text options.

Survey data from the nine centres was consolidated in a basic excel database. Data was reviewed and cleaned, and in some instances further clarification was sought from the Centres.

Using a descriptive statistical method, the data was analysed quantitatively to describe and summarise features from the data set. Univariate analysis was undertaken, particularly exploring distribution and dispersion of single variables, such as mean, median, mode, range and quartiles. Data visualisation was also undertaken in order to illustrate and explore findings from the descriptive statistical analysis.

Partner survey

The Partner survey's purpose was to obtain feedback from Partners regarding how the Centres have implemented the RART Initiative, investigate enablers and strengths and identify challenges and areas to strengthen. This online survey was designed in consultation with the HMRO and the REAP and hosted on SurveyMonkey (Appendix G). The survey included a mix of Likert scale closed questions and free text open questions.

Survey invitations were sent to the nominated key contacts identified by the Centres. Each Centre provided their Partner contact details at different time points. One Centre and its Partners did not participate in the survey due to the COVID-19 pandemic. The survey was open from 29 August to 24 September 2020.

Survey respondent characteristics:

Participation	Centres involved: n=8 Partners invited: n=95 Partners responded: n=75
Membership type	Funding Partner: 83% (n=62) Non-funding Partner: 12% (n=9) Other: 5% (n=4)
Organisational type	LHN/Ds: 37% (n=28) MRIs: 27% (n=20) Universities: 17% (n=13) PHNs: 4% (n=3) State Government: 4% (n=3) Private Health: 4% (n=3) ACCHS/ACCS: 3% (n=2) Peak bodies: 1% (n=1) Other: 3% (n=2)

Respondent role	Executive: 45% (n= 34)
	Director: 31% (n=23)
	Leader: 12% (n=9)
	Manager: 5% (n=4)
	Other: 7% (n=5)

Qualitative survey data was reviewed first for sentiment and then thematic analysis was undertaken. Pre-determined and emerging themes were mapped, and strength was determined by frequency.

Quantitative survey data was analysed using descriptive univariate analysis including 'top two box' (most favourable) and 'bottom two box' (least favourable) responses. Where 'too early to tell' was used as a response for around one fifth of the responses or more, this was noted as being of importance. Data visualisation was also used to determine patterns and key points of interest.

Environmental scan including expert interviews

An environmental scan of comparable international models of academic health research translation centres was undertaken to explore key enablers and challenges, along with factors considered critical to success. The UK and Canada were identified as the most comparable countries, thus providing the focus for the scan.

The environmental scan contained two elements:

1. A literature scan using both search engine key word search and documents recommended by the international experts and Centre executives. In total 24 documents were reviewed (Appendix H).

2. Interviews with experts in the UK and Canada identified by the REAP. Three experts participated in a 60-minute interview via Zoom. The interviews were audio recorded and detailed notes taken.

Documentary and interview data were reviewed and coded against areas of key interest relating to the KEQs and sub questions. Themes were analysed for consistency and difference.

The data from the five activities were then synthesised in alignment with the evaluation framework structure.

3.2.   Limitations

Any evaluation methodology has limitations – some known at the outset and others that are revealed through the evaluation. The evaluation team has identified the following four limitations for this evaluation:

Maturity of the system

The RART Initiative is relatively new:

- four Centres received $2.2M each two and half years ago, while five Centres received $222K each
- the Centres received around $2M one and a half years ago
- the Centres received a further $4M recently.

Given the funding flow, and that between 16-23% of RART projects are complete to date, the system is relatively immature. This limits the degree of certainty that can be drawn from some findings.

Data completeness

The project profiling survey asked Centres to enter information against Transformative Translational Research Projects (TTRPs) which are Centre-led projects and National Systems Level Initiatives (NSLIs) which are co-led national projects. The number of projects in the NSLIs dataset may not accurately reflect the number of smaller projects that are part of larger NSLIs as Centres did not necessarily complete the survey in the same way. Additionally, only lead agencies were asked to complete all questions for NSLIs hence there is a difference in counts between some projects.

To improve the accuracy of reporting in the future it would be useful if each RART funded project is allocated a primary code (NSLI theme) and secondary code (NSLI individual project) from the HMRO for reporting purposes.

Data reliability

As participants were aware that the evaluation findings will contribute to future decisions regarding the RART Initiative, there is a potential that participant bias influenced some of the data collection activities. Using multiple data sources, triangulated data and analysing for consistency will have reduced the impact of this type of bias, however it cannot be totally eliminated.

Contextual limitations

The COVID-19 pandemic became an immediate priority for all Centres and their Partners from March 2020, which coincided with the commencement of the evaluation. In response to the impact of COVID-19, the evaluation methods and timing were adapted considerably and more flexible arrangements for participant engagement and conducting evaluation activities were utilised.

One Centre and its Partners did not participate in the Partner survey due to the impact of COVID-19 on their priorities.

4. KEY FINDINGS

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4.1. Research translation

This section considers the mechanisms adopted by Centres to facilitate research translation when implementing the RART Initiative.

	Research translation
	Summary of key points:

What mechanisms have been adopted by the Centres to facilitate research translation?	- Centres are utilising a range of mechanisms to facilitate research translation and there are many examples of projects that are having, or have the potential to have, significant impact in relation to research translation. - Centres have funded over 260 TTRPs and approximately 26 NSLI projects. - RART funded projects are at various stages of progression with between 16-23% complete. Almost all (97%) have a goal of research translation. - The majority of projects with a full data record indicated translation or research to 'practice' as the primary intent. - Impact on 'individuals or groups' was the primary focus for TTRPs and the 'sector' for NSLIs.
How effective have the Centres' mechanisms for facilitating research translation been?	- The maturity of the RART Initiative limits the ability to judge the overall effectiveness of different approaches to research translation at the current time, as between 16-23% of funded projects have been completed and two Centres have not completed any projects. - However, Partner nominated research translation projects indicate considerable actual and potential impact in diverse and high priority research areas.
How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?	- Being 'translation-focused' in the research concept and design phase maximises the potential for effective translation and adoption of research evidence. - Successful research translation is dependent on many factors including: - Being 'translation-focused' in the research concept and design phase. - The Three T's framework, of Trust (relationships), Translation (communication), and Timing (readiness to respond) provides a good model for Centres to reflect on their translation readiness.
Opportunity	There is an opportunity to ensure that, prior to receiving research funding, all RART project proposals identify a proposed path to research translation that has been informed by engagement with research end-users and beneficiaries. Those responsible for research adoption should be supportive of the project proposal.

4.1.1 What mechanisms have been adopted by the Centres to facilitate research translation?

Some of the mechanisms that Centres have adopted that show promise to facilitate research translation are:

- Developing mechanisms to track research project progress and impacts. Examples of how Centres have been working in this space is discussed in section 4.6.

- Building robust mechanisms to engage with key stakeholders in determining research needs and priorities and communicating research activities and opportunities. Examples of how Centres have been working in this space are discussed in section 4.3.

- Funding collaborative research that embeds health services and consumers in the research design and implementation process. Examples of how Centres have been working in this space is discussed in section 4.3.

- Building health workforce capacity to undertake and utilise research. Examples of how Centres have been working in this space is discussed in section 4.7.1.

- Establishing broad representation of key stakeholder groups in the Centre's governance structures such as boards, committees and advisory groups. Examples of how Centres have been working in this space is discussed in sections 4.7.2

- Developing Centre strategic plans for research translation, promoting Partner contribution, collaboration and commitment to a shared purpose. Examples of how Centres have been working in this space is discussed in section 4.2.

Timing and RART Initiative maturity

To be accredited each Centre must have the capability to accelerate research translation (National Health and Medical Research Council, 2016). Four Centres gained accreditation in 2015 and received their first TTRP funding between December 2017 and 20 March 2018 (HTSA, MP, MACH and SHP). Five Centres were accredited in 2017 and received their first TTRP funding between January 2019 and March 2019 (BDHP, CAAHSN, NSWRHP, SPHERE, WAHTN).

The first of three overarching intended outcomes for the RART Initiative is '*early evidence of health system research translation*' (Australian Government, 2018)*.* The majority of Centres considered that more time is required to evidence research translation in the RART funded projects, despite the initiative's requirement for a focus on 'rapid' research translation. Centres used terms such as 'embryonic' to describe where projects were currently at. Two Centres stated that they had not yet had the opportunity to complete a project (this is further discussed below). One Centre reflected the sentiment of many when stating:

> *All that can be said after the first 6 months is that the project is up and running. In 12 months, we can say they are making good progress but the kind of stories the Commonwealth wants of significant impact in that time span is just not practical. (Centre)*
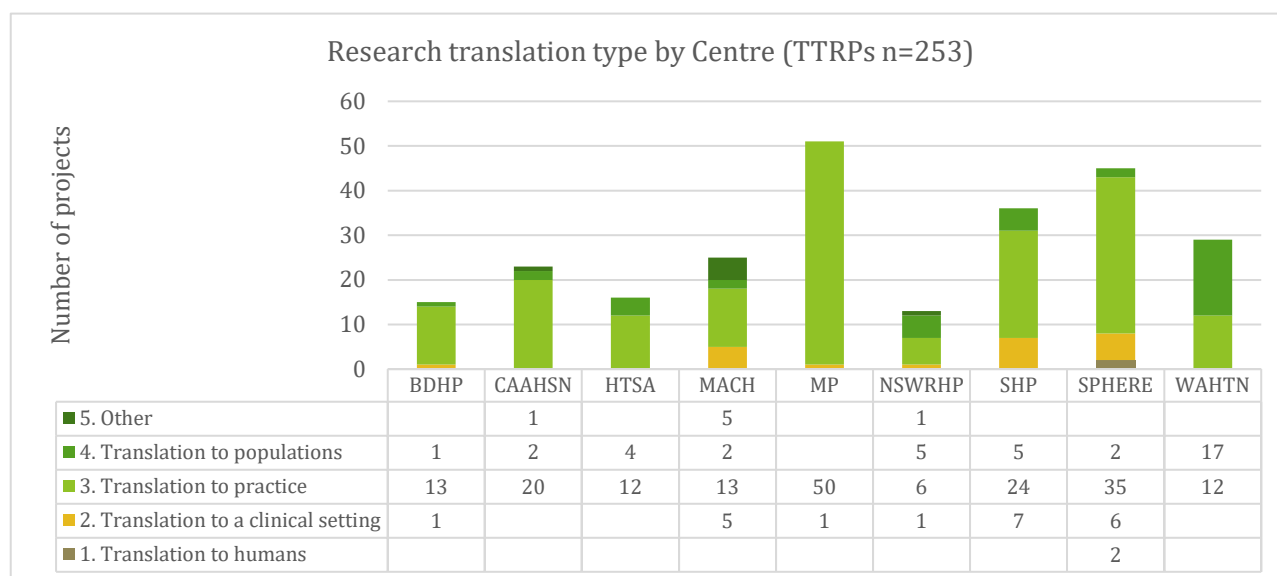
However, much optimism was expressed by all Centres that the RART Initiative would equate to significant research translation outcomes in time:

> *We're doing all the right things, we've got all the right connections and we know all the right people, but we can't tell all the exciting stories yet - that will come with time. (Centre)*

Types of research translation in RART funded projects

Data is not currently available to determine the extent, quality or speed of research translation of the RART funded projects. However, 97% of TTRPs had research translation as a goal. Of the 253 projects where data is recorded for research translation type, 'research to practice' is the dominant research type for eight of the nine Centres (Figure 4).
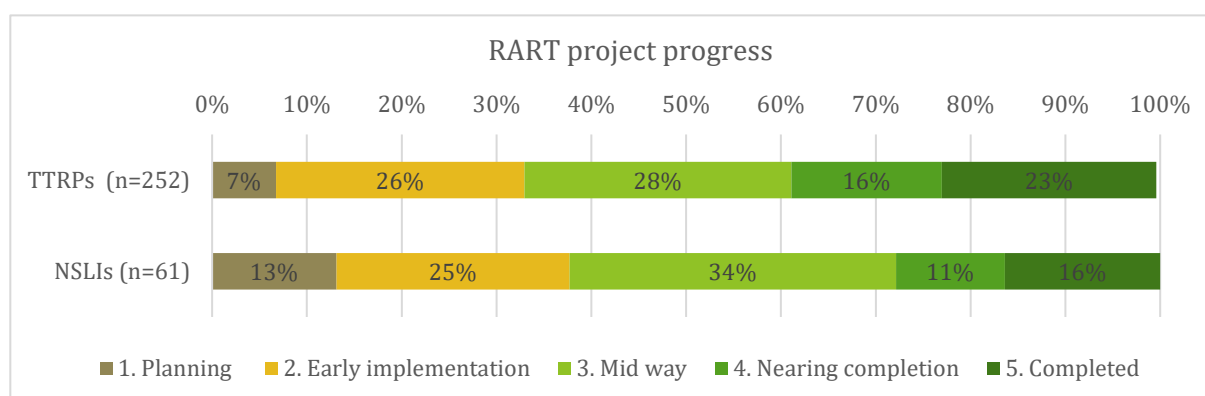
Figure 4: Research translation goals of RART funded projects

Research translation type by Centre (TTRPs n=253)

	BDHP	CAAHSN	HTSA	MACH	MP	NSWRHP	SHP	SPHERE	WAHTN
5. Other		1		5		1			
4. Translation to populations	1	2	4	2		5	5	2	17
3. Translation to practice	13	20	12	13	50	6	24	35	12
2. Translation to a clinical setting	1			5	1	1	7	6	
1. Translation to humans								2	

RART funded project progress

While more time is required before substantial evidence of Centre outcomes is expected to emerge, there is some evidence that the Centres are progressing well at a project implementation level. For example, project completion rates outlined in Figure 5 show that almost 40% of TTRPs (97 projects in total) are either completed or are nearing completion. These projects have on average lower value funding allocations than the average across all projects ($149,000 compared to the broader average funding amount of $200,000), suggesting a potential correlation between project funding allocation/size allocation and duration.

Figure 4: RART project progress by stage

RART project progress

	1. Planning	2. Early implementation	3. Mid way	4. Nearing completion	5. Completed
TTRPs (n=252)	7%	26%	28%	16%	23%
NSLIs (n=61)	13%	25%	34%	11%	16%

Note: 61[1] NSLIs

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[1] This figure is subject to double reporting as discussed in the data limitations section 3.2.

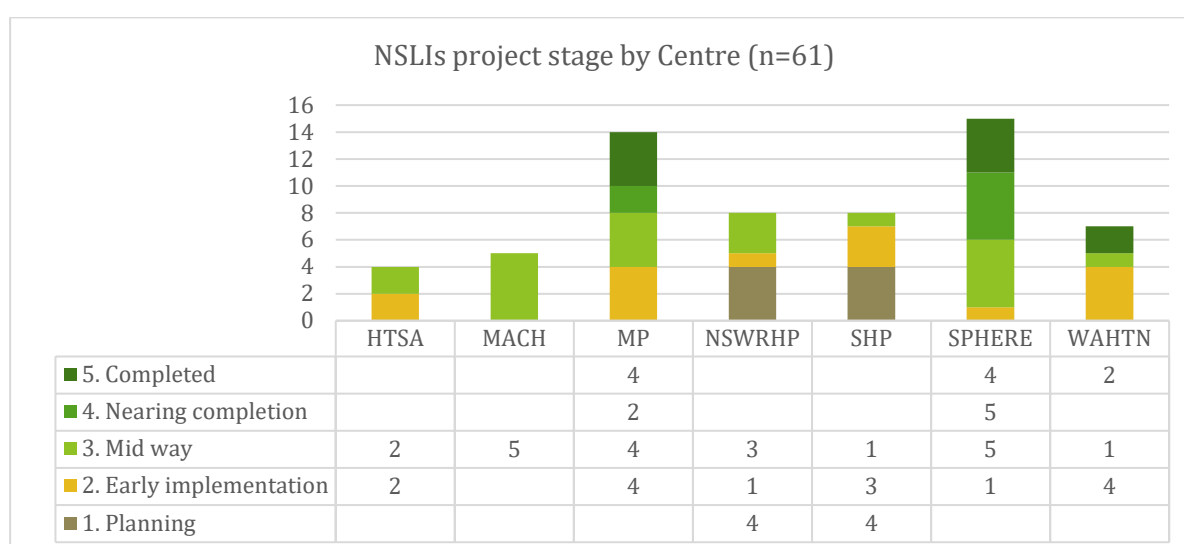EVALUATION OF THE RAPID APPLIED RESEARCH TRANSLATION INITIATIVE

A more detailed breakdown of project completion data in Figure 6 and Figure 7, indicates some differences across the Centres in relation to the number and progression of projects.

Figure 5: TTRPs project stage by Centre

TTRPs project stage by Centre (n=251)

	BDHP	CAAHSN	HTSA	MACH	MP	NSWRHP	SHP	SPHERE	WAHTN
5. Completed		5	6	4	13		15	9	5
4. Nearing completion		1	2	1	8	6	5	8	9
3. Mid way	9	6	7	8	9	2	4	23	3
2. Early implementation	6	3	1	11	16	3	10	5	11
1. Planning		1		1	6	2	3	3	1
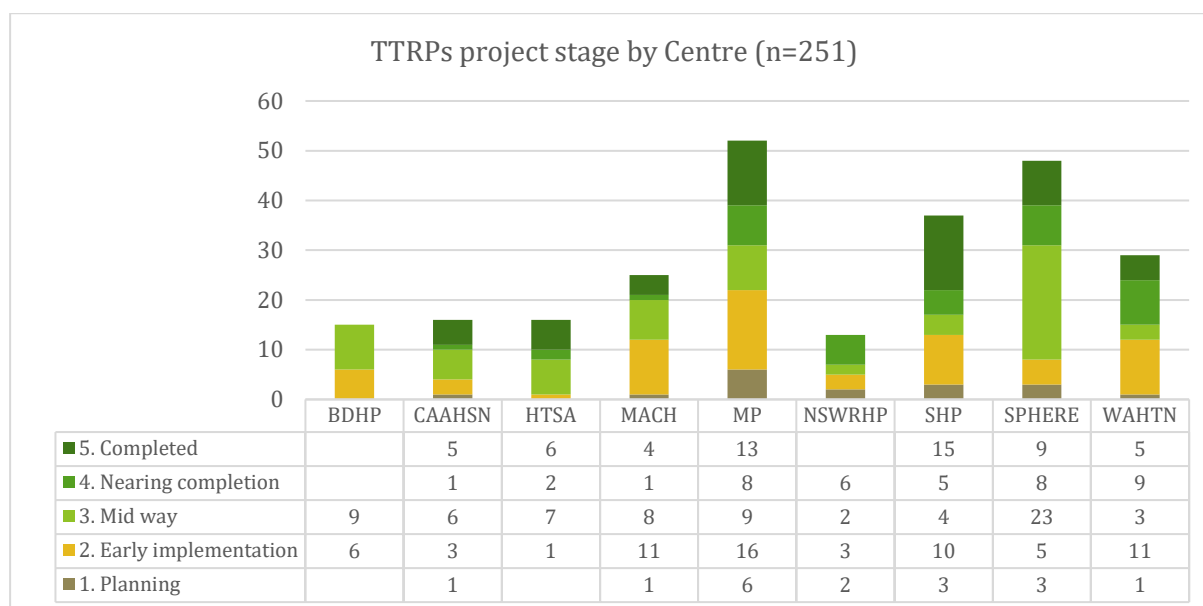
Two Centres (MP and SHP) that received TTRP funding in Round 1 have a greater number of completed projects than all other Centres. SPHERE has the third most completed projects yet did not receive TTRP funding until Round 2, they do however have the second highest number of projects overall suggesting that having a high proportion of smaller budgeted projects might equate to faster progression. It is however unclear as to whether smaller funded projects lead to faster research translation as other factors such as project type, complexity, and project team mix can also influence project speed and speed of research translation.

Figure 6: NSLIs project stage by Centre

NSLIs project stage by Centre (n=61)

	HTSA	MACH	MP	NSWRHP	SHP	SPHERE	WAHTN
5. Completed			4			4	2
4. Nearing completion			2			5	
3. Mid way	2	5	4	3	1	5	1
2. Early implementation	2		4	1	3	1	4
1. Planning				4	4		

Of the Centres that NSLI data was available for, the three Centres who have been chairs of the Australian Health Research Alliance (AHRA) are the only Centres to report completed NSLI projects, MP was the first chair, SPHERE was the second and WAHTN are the current chairs. These Centres may have a greater focus in facilitating national projects which can influence or be influenced by their role as chair of AHRA.

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Alignment of RART projects with RART objectives and MRFF priorities

Project profiling survey data is presented in Figure 8 and Figure 9 to illustrate the range of RART objectives and MRFF priorities (as set in the RART grant guidelines) that Centres considered their projects aligned to. This data indicates:

- substantial alignment of RART funded projects against RART objectives and MRFF priorities (as set in the RART grant guidelines) associated with collaboration and improving health of vulnerable populations, and

- considerably lower alignment against objectives and priorities associated with research commercialisation, research infrastructure, primary care and public health.

Figure 7: RART projects mapped against RART objectives
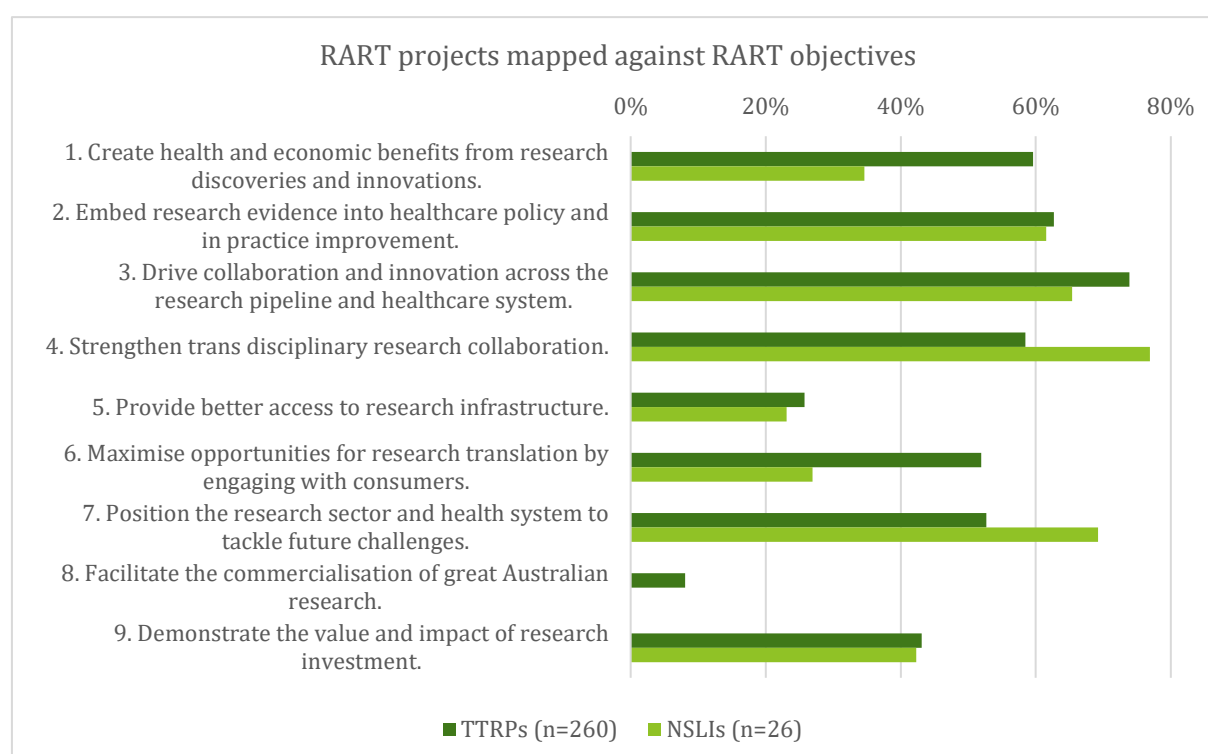
RART Objective 3 (collaboration and innovation across the research pipeline) was the most commonly cited objective for TTRPs (74%) and Objective 4 (transdisciplinary collaboration) was the most commonly cited objective for NSLIs (77%). Objective 8 (the commercialisation of research) was the least likely to be cited against TTRPs, with no NSLIs recorded against this objective. Objective 5 (access to infrastructure) also received fairly low numbers of TTRP and NSLI projects, and Objective 6 (engaging consumers) received low numbers for NSLI projects

Figure 8: RART projects mapped against MRFF Priorities (as set in the RART grant guidelines),

RART projects mapped against MRFF Priorities (as set in the RART grant guidelines),
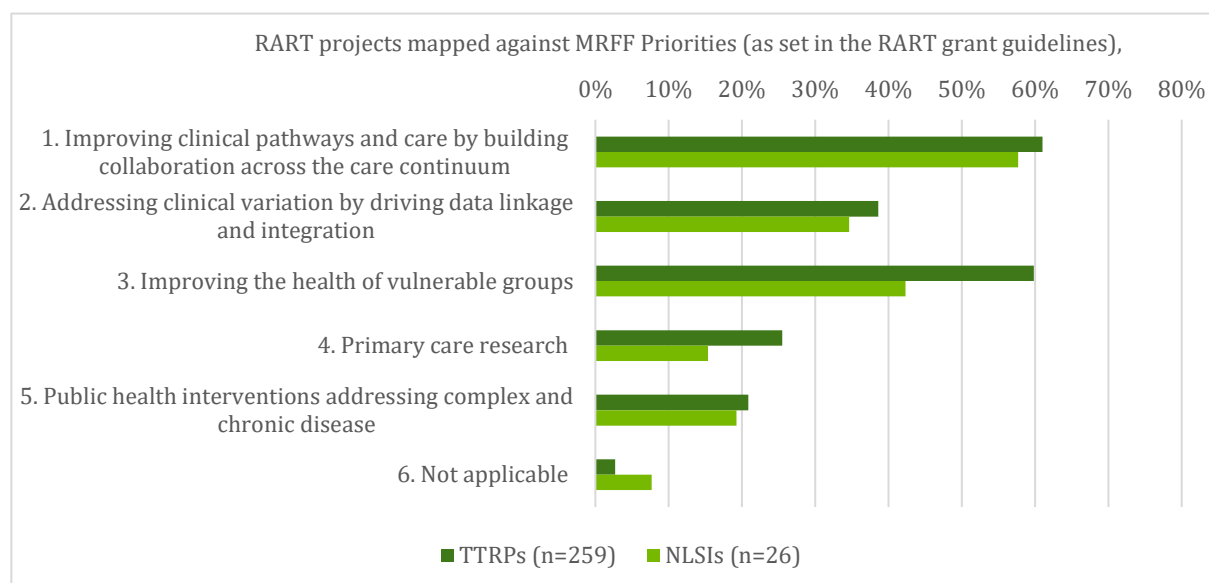
As shown in Figure 9, MRFF Priority 1 (improving clinical pathways by building collaboration across the care continuum) was the most frequently cited priority for TTRP (61%) and NSLI (58%) projects. Priority 3 (addressing clinical variation through data driven linkage and integration) was the second most frequently cited (TTRP 60%, NSLI 42%). Priority 4 (primary care research) (TTRP 25%, NSLI 15%) and Priority 5 (public health interventions) (TTRP 21%, NSLI 19%) were perhaps not surprising least frequently cited, as these priorities were only established at the time of RART funding round 2.2.

4.1.2 How effective have the Centres' mechanisms for facilitating research translation been?

Facilitating research translation

Approximately 260 TTRP and 26 NSLI projects have been funded by the RART Initiative, 71% of TTRPs and 77% of NSLIs are focused on translating evidence into practice. Of 160 TTRPs with data, 73% are intending to impact individuals/groups (60% organisation, 54% the sector and 33% population/society). Of the 26 NSLIs, 81% are intending to impact the sector (35% individuals/groups, 31% organisations and 23% population/society).

Respondents to the Partner survey indicated moderately high levels of agreement that the Centres had an effective approach enabling research translation where 67% agreed, 8% disagreed, 24% felt it was too early to tell and 1% didn't know (Q5.1 n=72).

Partner feedback in the survey was mixed in relation to how progressed Centres were in facilitating research translation,

> *The Centre has strongly engaged health services in collaborative research and actively promoted rapid/early/quality translation. (Partner)*

> *Research translation takes time and at this stage there are only preliminary signs of success in this area. (Partner)*

In slight contrast, 57% agreed that Centres were effectively engaging Partner organisations in enabling research translation (11% disagreed, 28% felt it was too early to tell, 1% didn't know, Q5.2 n=72).

Partner feedback was mixed in relation to the engagement of Partner organisations in facilitating research translation.

> *The Translation Committee is the conduit with our LHD (Local Health District), ensuring two-way input into the design and delivery of projects and other initiatives...[The Centre] encourages and supports our staff to participate in state and national initiatives that are relevant to our community. (Partner)*

> *The Centre is focussed on the needs or perceived needs of Universities, Institutes, and researchers and not on the unmet needs of services that deliver healthcare. (Partner)*

Contribution to the RART Objectives

Figure 10 provides an indication from respondents to the Partner Survey of how Centres are perceived to be contributing to the RART objectives which incorporate facilitating research translation. A limitation of this data is the small sample size (n=58, representing Partner responses from seven of the nine Centres), which should be considered when reviewing the findings.

Figure 9: Centre contribution to RART objectives

Q12 The Centre is effectively contributing to the following RART objectives:
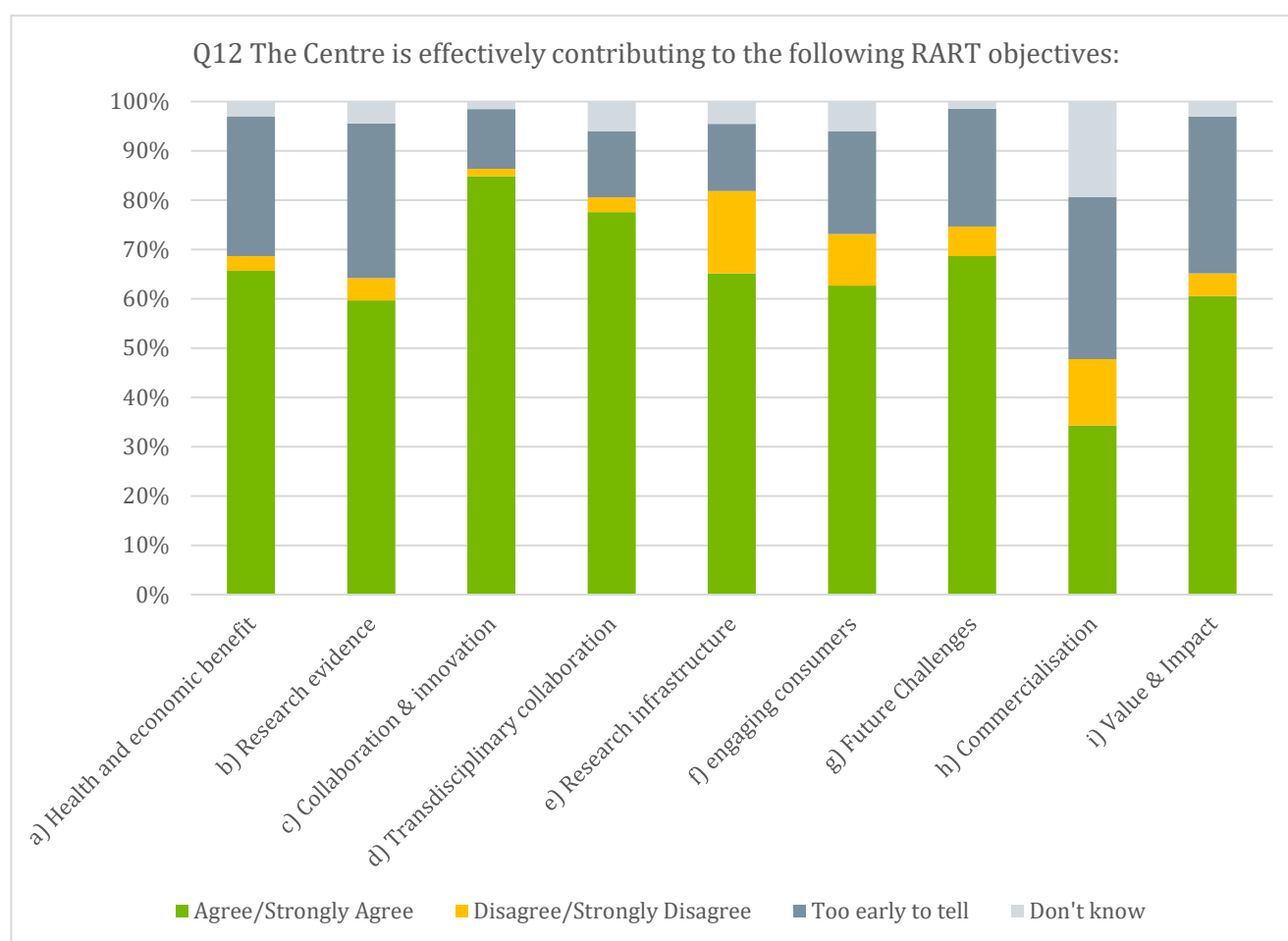
Of the seven Centres represented in this survey data, those that received high levels of Partner agreement (75% or higher), in relation to contributing to the RART Initiative objectives (a-j), are noted below. An example of a highly rated Centre's work is also provided under each RART objective.

a) Creating health and economic benefits from research discoveries and innovations: Centres receiving high levels of agreement (75% or over) were: NSWRHP 100%, HTSA 86% and MACH 80%. An example of a Centres work is the NSWRHP RART funded 'Embedded Economist Project'. The Centre and Partners have acknowledged that this has been beneficial in realising both health and economic benefits of research.

> *Fiscal constraints mean we need stronger understanding of health economics and its importance in decision making, and the need to achieve optimal use of available health service resources. This type of translational research would never have been funded in a typical NHMRC model yet is one of the most fundamental types of knowledge for health services and governments to ensure best return on health expenditure. (NSWRHP Partner)*

b) Embedding research evidence into healthcare policy and in practice improvement: Centres receiving high levels of agreement (75% or over) were: BDHP 75% and NSWRHP 75%. An example of a Centre's work in this area is BDHP's close relationship with the state government department of health who are represented on their governance board. This was considered by the Centre to provide greater opportunity to align priorities and impact future health policy.

c) Driving collaboration and innovation across the research pipeline and healthcare system: Centres receiving high levels of agreement (75% or over) were: HTSA 100%, SHP 100%, NSWRHP 88%, MACH 86% and BDHP 75%. An example of a Centre's work in this area is HTSA who have the broadest stakeholder representation of all Centres which represents members across the healthcare system. Their collaborative approach to working with Aboriginal and Torres Strait Islander services and people is also considered notable by the Centre and its Partners.

d) Strengthening trans disciplinary research collaboration: Centres receiving high levels of agreement (75% or over) were: BDHP 88%, SHP 83%, MACH 80% and NSWRHP 75%. An example of a Centre's work in this area is BDHP's funded project called 'Mobile-based diabetes management system: redesigning diabetes care through new technologies'. This project sees collaboration across the health care continuum including GPs and primary care professionals, people with diabetes and their families and Metro South Health and Hospital Service. The Centre reported that this project used a participatory design approach with consumers leading the design of a user-friendly app.

e) Providing better access to research infrastructure: Centres receiving high levels of agreement (75% or over) were: NSWRHP 88% and MACH 86%. An example of a Centre's work in this area is MACHs work in the space of data linkage. A RART funded project called 'Consolidation of record linkage algorithms in Victoria and beyond', is reported by the Centre to have the potential to significantly impact the ability to link and use GP data across Victoria and nationally, thus contributing to health care coordination across the care continuum.

f) Maximising opportunities for research translation by engaging with consumers: Centres receiving high levels of agreement (75% or over) were: WAHTN 91% and HTSA 86%. An example of a Centre's work in this area is WAHTN's 'Consumer and Community Involvement (CCI) Program' which is built upon a solid foundation of CCI in research in Western Australia first established in 1998 through The University of Western Australia's, School of Population Health and the Telethon Kids Institute. The initiative is a state-wide platform that is recognised nationally

and internationally as a good practice model. WAHTN co-led the NSLI in CCI on behalf of AHRA. Their Partners see WAHTNs work in CCI as a strength and enabler to research translation.

g) Positioning the research sector and health system to tackle future challenges: Centres receiving high levels of agreement (75% or over) were: NSWRHP 100%, MACH 87% and HTSA 86%. Examples of a Centre's work in this area include: NSWRHP's work in building capacity for rural and remote health research through their funding of research scholarships and other opportunities in addition to their work for the Spinifex network (discussed in section 4.3, 4.4 and 4.7.1) which aims to increase rurally-based and rurally-relevant health research.

> *We also appreciate NSW RHP's work on cultivating a national network to attract funding for rurally-based medical research and to support creative and non-traditional research approaches (the Spinifex Network). As a largely rural health service, this is highly valued. (NSWRHP Partner)*

Other Centres are also investing in funding educational opportunities to tackle future health system challenges, examples include MACH and MP's work. MACH has developed the MACH-Track which is a structured, mentored and funded career development program intended to develop the future leaders of clinical innovation.[2] Whilst MP (not represented in the Partner survey), has educational platforms that are notable in relation to positioning and preparing the research sector to tackle future challenges.[3]

h) Facilitating the commercialisation of great Australian research: No Centres obtained more than 50% agreement in relation to this objective. However, an example of a Centre's work in this area is MP's collaboration with the Monash Institute of Medical Engineering (MIME) who have formed a strategic partnership which exists outside of RART funding. Information from the Centre and MPs website[4] indicates that the partnership brings together health service clinicians, biomedical engineers and health information and communications technology researchers to develop clinical and community driven innovation initiatives with commercial application. An example of which is a non-invasive wearable technology to detect seizure events in patients with epilepsy.

i) Demonstrating the value and impact of research investment: Centres receiving high levels of agreement (75% or over) were: HTSA 86%, BDHP 75% and NSWRHP 75%. An example of a Centre's work in this area is HTSA and WAHTN's coordination of state-wide COVID-19 pandemic research activities at the request of their state government, which is viewed by the Centres and Partners as an indication of their value.

> *HTSA has taken a proactive and very effective response to the COVID pandemic. HTSA initiated and led the establishment of an SA research register of capabilities and research activities relevant to COVID. The 7th Edition of the COVID 19 Research Register, representing over 150 projects, has now been published on the HTSA website. In collaboration with the SA COVID-19 Coordinating Group, HTSA and the CEIH are now working together to co-facilitate an 'Innovation in Contact Tracing Think Tank'. (HTSA Partner)*
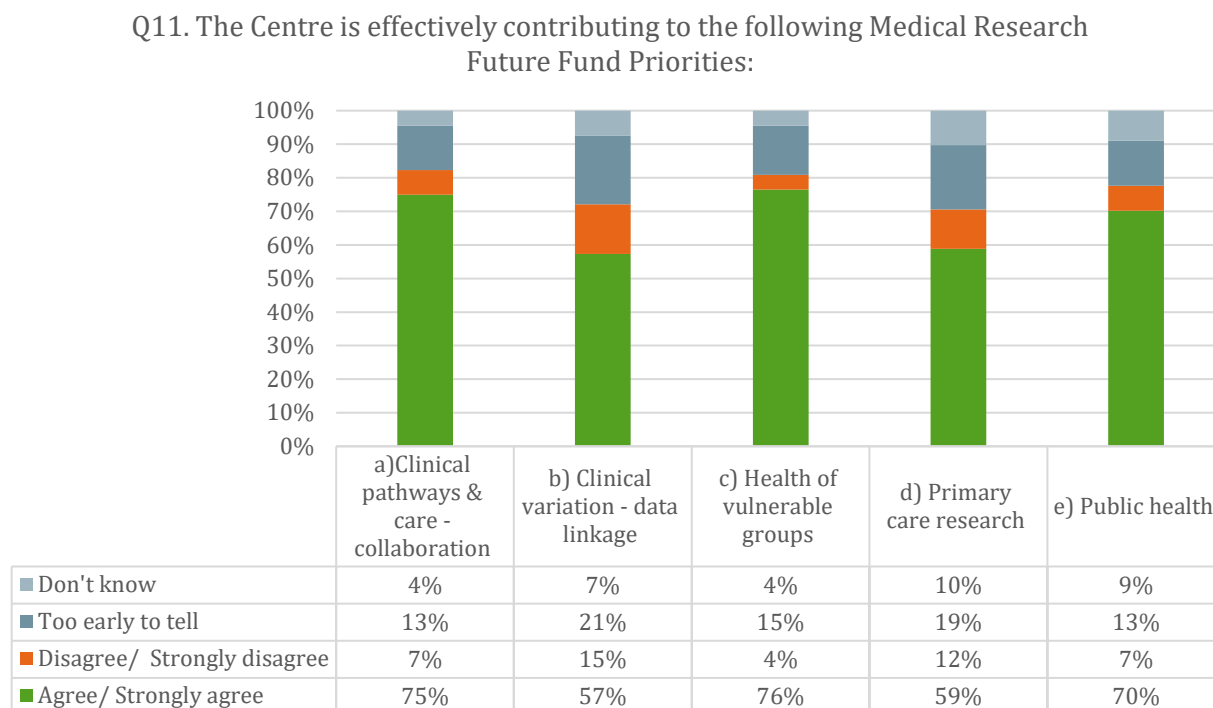
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[2] https://www.machaustralia.org/mach-track
[3] https://monashpartners.org.au/education-and-training/
[4] https://monashpartners.org.au/about-us/mime-alliance/

Contribution to the MRFF Priorities

When Partners were asked to comment on the effectiveness of the Centres in contributing to MRFF priorities (as set in the RART grant guidelines) (Q11, Figure 11) higher levels of agreement were recorded for priorities relating to the health of vulnerable people (76%), clinical pathways and care collaboration (75%) and public health (70%) than for primary care (59%) and clinical variation and data linkage (57%).

Figure 10: Centre contribution to MRFF Priorities (as set in the RART grant guidelines)

Q11. The Centre is effectively contributing to the following Medical Research Future Fund Priorities:

	a)Clinical pathways & care - collaboration	b) Clinical variation - data linkage	c) Health of vulnerable groups	d) Primary care research	e) Public health
Don't know	4%	7%	4%	10%	9%
Too early to tell	13%	21%	15%	19%	13%
Disagree/ Strongly disagree	7%	15%	4%	12%	7%
Agree/ Strongly agree	75%	57%	76%	59%	70%

Strengths in relation to research translation

Respondents to the Partner survey indicated that Centre strengths in relation to research translation were the opportunities they created for engagement and linkage (37%), clinical partnerships (24%), opportunities for collaboration (15%), consumer and community engagement (12%) and governance structures (10%), (Q16, n=52). A Partner's comments regarding strengths highlighted,

> *High consumer and community engagement allows opportunities for research translation. High level of partner engagement and involvement in health service delivery - primary and tertiary. (Partner)*

Areas that needed to be strengthened in relation to research translation related to having a more health system focus (31%), funding (20%), having an implementation focus (18%), capacity building (10%) and consumer and community engagement (8%) (Q17, n=51).

A Partner's comments regarding areas to strengthen highlighted,

> *Needs to identify the needs at the coal face and meet those needs more effectively. For example, setting up a clinical trials unit in a university, but not having staff on the ground to facilitate clinical trials was a waste of resources from the health service provider perspective. (Partner)*

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Translation research project examples

A selection of RART funded research projects nominated by Partners as examples of effective research translation are provided in Table 1 (one project has been selected for each Centre whose Partners participated in the Partner Survey[5]). The list demonstrates a diverse range of projects which align to many aspects of the MRFF priorities (as set in the RART grant guidelines) and RART objectives.

The key features of the projects include:

- prioritised health research
- translation along the care continuum
- high levels of stakeholder engagement, and
- working with marginalised communities.

Table 1: Partner nominated research translation projects

Nominated project	Partner's reason for nominating this project	Research translation impact as determined by the Centre
Early Detection of Melanoma Utilising a 3D Tele dermatology Network (BDHP:R2.1)	*Building on excellent links between many of the RTC partners. Important (vital) health priority. Well organized and successful in delivering on the progress. Good value for money.*	*The two BDHP funded projects focus on testing the feasibility, reliability and acceptability of utilising innovative 3D total body imaging for clinical practice and involves clinical training of GPs and dermatologists.*
Non-clinical indicators in Aboriginal primary health care (CAAHSN: R2.1)	*Development and piloting of non-clinical indicators in Aboriginal primary health care. It's vital that effective indicators of health are recognised and used in health practice. Current clinical indicators do not tell the whole story when used with Aboriginal people, so this project is potentially very high impact.*	*The project team will work with relevant Northern Territory (NT) primary health care governance structures to institute the new non-clinical indicators within the NT Aboriginal Health Key Performance Indicators reported on across the Territory. This will in turn provide information to better track performance of the sector in nonclinical domains, which play a critical role in ensuring quality health care for Aboriginal people[6].*

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[5] MP has a significant number of completed RART projects, however due to their Partners not being involved in the Partner survey, no projects could be nominated and included in this table.

[6] http://caahsn.org.au/wp-content/uploads/2020/03/200317-Impact-statement_NCI.pdf

Nominated project	Partner's reason for nominating this project	Research translation impact as determined by the Centre
SA Aboriginal Chronic Disease Consortium: Improving Care across the Continuum (HTSA: R1)	*This project involved the development of a Chronic Disease Monitoring and Evaluation Framework- a suite of Aboriginal Health indicators developed into an Aboriginal-specific dashboard for SA Health - accessible, up-to-date information on health outcomes In addition the development of a Continuity of Care Model for Aboriginal and Torres Strait Islander patients, to improve the transition between hospital and home and ultimately health outcomes for patients and their families A really terrific project and great outcomes.*	*The vision of the Consortium is to reduce the impact of chronic disease experienced by Aboriginal and Torres Strait Islander people living in South Australia. These two funded projects drove immediate outcomes.* *The first project has ensured that any changes that are implemented over the next 5 years can be measured through the development of an evaluation framework.* *The second project worked with all relevant stakeholders to develop a model for improving ongoing care after a hospital stay at the Royal Adelaide Hospital. This project is currently being tested and has been embraced by key hospital clinical and administrative staff[7].*
Future Health Today Project-Co-design of Prototype (MACH: R2.1 & 2.2)	*This is fantastic way to grow a new e-technology platform to extract primary care performance data for clinical audit and decision support. This is key to ensuring that those with chronic conditions get the best treatment as soon as possible and prevent deterioration through poor identification. The goal of Future Health Today (FHT) is to create a new standard-of-care for patients at risk, or diagnosed with chronic diseases, focused on chronic kidney disease (CKD), type 2 diabetes (T2DM) and cardiovascular disease (CVD) which is a huge issue both in our population, in Victoria, and a long way beyond. I selected this one as it is close to my view on how we need to move to prevention rather than hospital treatment and if this works as we have seen on trials for kidney disease then the results will be huge and have profound impacts on health funding and the populations experience of care.*	*This study will use health professional and consumer co-design to develop a technology platform ('Future Health Today') which will be used in general practice for a quality improvement program consisting of audit, feedback and clinical decision support for chronic disease screening, diagnosis and management.[8]*

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[7] https://healthtranslationsa.org.au/wp-content/uploads/2019/04/Aboriginal-Consortium_Project-Impact-Summary_250319.pdf

[8] https://www.machaustralia.org/mach-2019-rart-nelson

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Nominated project	Partner's reason for nominating this project	Research translation impact as determined by the Centre
Acute Telestroke for rural and regional stroke patients ('At It' study) (NSWRHP: R2.1)	*I have selected this because it addresses a priority health care issue and is demonstrating an effective approach for bringing better health to rural Australians. This is the kind of study that RART is making possible and is easier to implement with the support and leadership of a rural/regional CIRH - NSW Regional Health Partners - and its support for locally-led research.*	*Preliminary results from paramedics' use of the Hunter 8 Stroke Score, designed to assess stroke severity, is showing a higher than expected rate of identification of large vessel occlusion strokes in the field, enabling rapid access to ECR for those patients.* *Additionally, the project has increased telestroke consultations by almost 500%. This has increased the number of patients receiving tPA but reduced the rate of tPA in these centres. That is, more patients who are suitable for tPA are receiving this treatment, and fewer patients who are not suitable. At three months, patient outcomes are in line with large comprehensive stroke centres.* *Delivering reperfusion therapies to currently underserviced locations is also expected to reduce the overall costs to the community by preventing both lost work opportunity and reducing care costs (estimated at $2.1 billion per annum nationally).[9]*
REACH OUT: Maximising cures for HCV in marginalised communities (SHP: R1 & R2.1)	*Although it will take 10 years to completely eliminate Hep C, RART has funded this possibility.*	*The project is sending six-person teams of doctors and nurses to 'blitz' locations in both inner west and western Sydney - including opioid addiction treatment clinics, mental health facilities and centres providing care to the homeless. By the end of June 2018, more than 550 people had been screened, 94 were found to have HCV and 26 had commenced drug treatment.[10]*
De-labelling patients with antibiotic allergy (Triple I) (SPHERE: R2.1)	*Aligns with a number of RART proprietary areas, including primary care, health system improvement, clinical pathways, community involvement. Significant clinical need relatively simple idea and approach.*	*This project aims to promote the rational use of antibiotics and standardise clinical care in an area prone to variation; an identified priority of the recent National Allergy Statement. (Project profiling survey)*

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[9] https://nswregionalhealthpartners.org.au/stroke/
[10] https://www.slhd.nsw.gov.au/SydneyHealthPartners/news/news-HealthyLiverCheck.html

EVALUATION OF THE RAPID APPLIED RESEARCH TRANSLATION INITIATIVE

Nominated project	Partner's reason for nominating this project	Research translation impact as determined by the Centre
Consumer and Community Involvement in Health Research (WAHTN: R1, R2.1 & R2.2)	*WAHTN built on an already strong Health Consumer Group network and has played a significant role in making that a national initiative. This aligns with NHMRC, Cancer Council and other funding bodies that require researchers to have engaged with health consumers as part of their project development and application. Such initiatives tend to make research more relevant and have a greater 'translation' goal.*	*WAHTN is leading the national initiative across the Centres, which aims to strengthen and promote increased consumer and community involvement in health and medical research across Australia. The four areas of work - Handbook Guide, Knowledge Hub, Measuring Impact, and International Alliances are being progressed simultaneously, supported by a leadership group of seven AHRA translation centres and the national peak body, Consumer Health Forum. Regular planning meetings and liaison with the NHMRC have led to an agreed coordinated program of works and identification of resource requirements for 2020. (Project profiling survey)*

4.1.3 How do these mechanisms align to the intentions of the McKeon Review?

The McKeon Review highlighted the need to accelerate health system innovation and proposed that this could be supported through research being 'translation-focused', by providing incentives to generate clinically relevant research. Enhancement of non-commercial pathways to impact (public health research, health services research, health system innovation and evidence-based policy) and commercial pathways to impact were felt to be equally important.

The intent of the RART initiative is for measurable translation to occur within relatively short timeframes. Centres commented that the first funding round was aimed at impact within 12 months of funding and the following two rounds within two years of funding. Whilst there is evidence that impact can be achieved in short timeframes for example the Acute Telestroke for rural and regional stroke patients (cited in Table 1), many Centres are communicating that the timeframe is limiting the types projects that can be funded and that it is putting stress on the research design process particularly the elements of engaging end-users / beneficiaries and multi-site ethics approvals.

Six Centres have funded projects over multiple rounds to ensure that projects deemed of high priority are funded. This multi-round investment occurred in project 'REACH OUT' described in Table 1.

4.1.4 How do these mechanisms compare to international contexts?

Whilst the translation of medical research 'from the bench to the bedside' is internationally recognised as substantially long (Morris et al., 2011), the RART Initiative was designed to address this issue. The COVID-19 pandemic has also created an urgent need to accelerate the translation timeframe (Hanney et al., 2020).

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The Accelerated Access Review and Pathway

In November 2014, the UK government commissioned the Accelerated Access Review (AAR) supported by the Wellcome Trust. The review's recommendations focused on making it easier for NHS patients to access innovative medicines, medical technologies, diagnostics and digital products, improving efficiency and patient outcomes. Following the review, the Accelerated Access Collaborative was established which is,

> *Bringing together industry, government, regulators, patients and the NHS*
> *to remove barriers and accelerate the introduction of ground-breaking new*
> *treatments and diagnostics which can transform care.*

Additionally, an 'Accelerated Access Pathway' (Wellcome Trust, 2016) was developed for strategically important, transformative research products which stated that the pathway should:

> *…align and coordinate regulatory, reimbursement, evaluation and diffusion*
> *processes to bring these transformative products to patients more quickly.*
> *(p.26)*

The principles proposed by the pathway requires high levels of intersectoral partnerships as represented in Figure 12.

Figure 11: Accelerated Access proposed structure
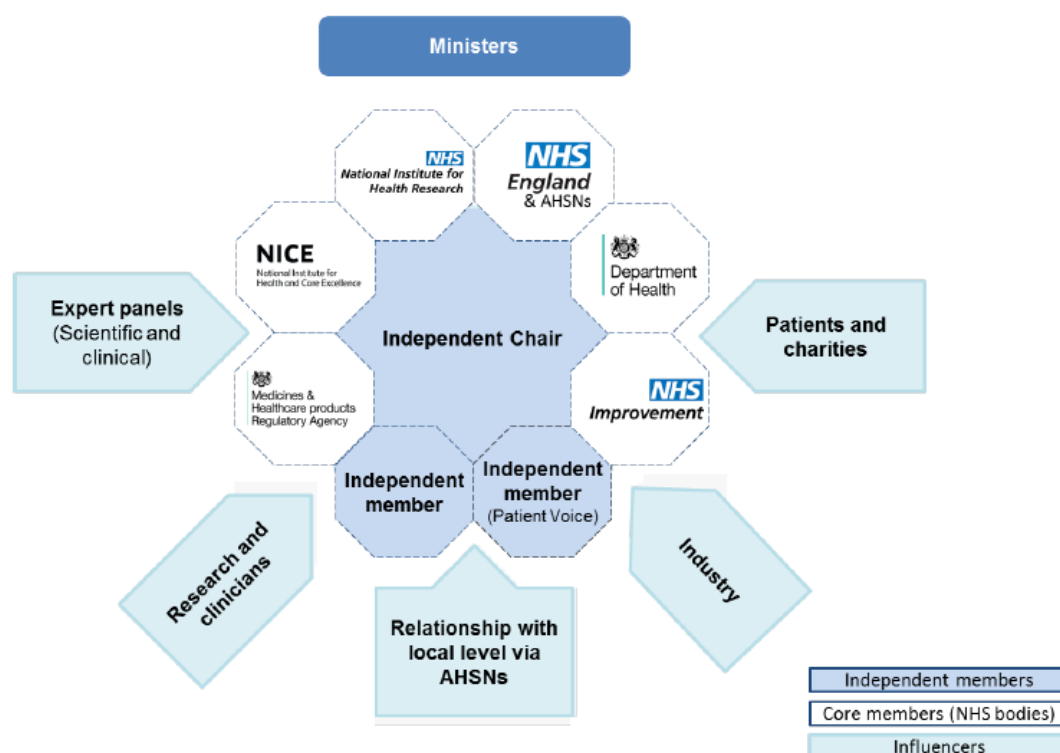
While the intent of the RART Initiative is different to the Accelerated Access Pathway some of the principles are transferable. This primarily relates to engaging the right people at the right time to address the right issues in the right ways. As the RART Initiative matures it would be valuable to undertake a comparative case study analysis of RART projects considered to be highly transformative to look for critical success factors. Similarly, it would also be valuable to review projects that did not reach their expected objectives to analyse what elements might have been missing.

The Three T's Framework

An expert interviewee outlined the Three T's framework, which they developed from Kathryn Oliver's work (Oliver et al., 2014). They proposed the framework as an effective method to maximise the potential for research translation. The framework was summarised as a series of questions as follows:

1. ***Trust*** *- Do you have the relationships with your key stakeholder groups? Do they trust you? Do you have mechanisms and processes in place to allow you to create those trusting relationships? Who do you need to influence, who do you need to get to know and who do you need to invite to events?*

2. ***Translation*** *(communication) - Have you invested in communication? How do you translate academic language into a language that practitioners, decision makers and the general public are going to understand?*

3. ***Timing*** *- Are you in a position to move quickly if something happens in your space where you can add value? What mechanisms do you have in place to shift priorities, be nimble and agile? How do you create a culture that enables that to develop? (Expert)*

Trust, translation and timing are all relevant and relatable concepts for the Centres. Building trust has been the focus of a great deal of the Centres' work and will undoubtedly be required in future if a wider group of stakeholders are drawn into Centre partnerships. Embedding communication mechanisms has been the focus of some of the Centres, which requires dedicated resources. The COVID-19 pandemic has provided an opportunity to 'pressure test' the Centres' responsiveness to enable the activation of timely research translation activities.

4.2. Strategy and strategic priorities

This section considers the Centres mechanisms for developing strategy and strategic priorities when implementing the RART Initiative.

	Strategy and strategic priorities *Summary of key points:*
What mechanisms have been adopted by the Centres when determining their strategic priorities?	• Centres have invested in formalised and transparent strategic planning processes, and over time have developed processes to determine priorities and select projects for RART Initiative funding. • Utilising opportunities to strengthen Centre strategic planning and prioritisation of RART funding is seen as a positive investment by Centres and their Partners.
How effective have the Centres' mechanisms for strategic planning and priority setting been?	• Overall Partners viewed the Centres' strategic planning and prioritisation processes as effective. Partner satisfaction was also high in relation to the selection of RART funded projects although there is room to strengthen this through broadening Partner and other stakeholder consultation. • Enhancing collaboration has been a principal outcome of the Centres' strategies to date which aligns to the RART objectives. Additionally, 'improving clinical pathways' and 'addressing clinical variation' have been the most commonly represented MRFF priorities (as set in the RART grant guidelines) in RART projects. • RART objectives and MRFF priorities that have been least prominent in RART funded projects include 'research commercialisation', 'research infrastructure', 'primary care research' and 'public health research' (primary care and public health research became a focus of MRFF in round 2.2 of the RART Initiative which has likely influenced the outcomes observed).
How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?	• Ensuring that health research is demand-driven (based on health service and community need) rather than supply-driven (researcher interest) is important for research translation and research adoption in Australia and globally. • Tension can exist regarding aligning national/federal, state/territory and local community health research priorities – the international approach has been both top down and bottom up in developing research priorities. Broad top down direction enables local level prioritisation.
Opportunity	• There is opportunity for the HMRO to strengthen 'top down' and 'bottom up' needs identification, using both consultation and data to inform decision making shaped by local, state/territory and national stakeholder consultation. This will ensure that the RART Initiative research agenda continues to be priority driven.

4.2.1 What mechanisms have been adopted by the Centres when determining their strategic priorities?

Strategic planning

All nine Centres had a strategic plan and/or described strategic planning processes. Two Centres noted that their strategic plans were due for renewal. Most of the Centres consider their investment in strategic planning to be valuable.

One Centre explained that their year-long strategic planning process had been critical to the Centre's operations, although acknowledged that the process of getting all Partners on the same page had been 'painful' at times. A strength of the planning process was that it provided opportunity for all Partner voices to be heard. The resulting plan had enabled the governing group to define their strategy, identify their point of difference, and develop a joint vision and value proposition. The Centre reported that all its activities are delivered in alignment with their strategic plan.

Strategic priorities

Centres have established different mechanisms for determining and communicating their strategic priorities. The organisation of priorities is detailed in Table 2.

One Centre spoke of their annual prioritisation meeting with consumers, community, researchers and clinicians. In the meeting, priorities are agreed which then drives calls for research funding applications.

A number of Centres use clinical themes and enabling platforms to provide the focus for priority setting. Two Centres spoke of different processes for establishing priorities. One was driven by 16 Clinical Advisory Groups (CAGs), and the other has chosen to move away from large numbers of clinically themed priorities to focus on a few key overarching areas (identified through consultation with stakeholders).

Nonclinical cross-cutting themes such as data driven healthcare, workforce development, biomedical discovery integration, primary and community health and clinical research facilitation are considered by Centres to provide good value for time, money and effort as it is considered that everyone can benefit from them because they are targeted at a whole of workforce or whole of population level. However, some of these themes require investment in infrastructure such as online platforms and biobank facilities which one Centre commented was not in scope for RART funding.

Centres specifically spoke of additionally responding organically to local need. One Centre stated that it responded to needs as they presented themselves from organisations who seek assistance:

> *Generally, when people come to us for help, we'll help them. (Centre)*

Another Centre canvassed local MPs for their priorities, which resulted in a focus on palliative care as this was a pressing need for their region.

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Table 2: Organisation of research priorities

BDHP	CAAHSN	HTSA
• 5 Strategic Goals • 4 Objectives • 9 Clinical Themes	• 5 Priorities	• 4 Strategic Priorities • 10 Priority Areas
NSWHP	**SHP**	**SPHERE**
• 5 Priorities	• 4 Objectives • 4 Cross Cutting Themes • 9 Clinical Streams	• 5 Strategic Goals • 7 Strategic Platforms • 19 Clinical Academic Groups
MACH	**MP**	**WAHTN**
• 11 Themes • 8 Translational Platforms	• 4 Priorities • 8 Strategic Goals • Enabling Platforms • 7 Clinical Themes	• 7 Objectives

Balancing and aligning priorities in RART project selection

RART-funded projects need to align with the RART objectives, MRFF priorities (as set in the RART grant guidelines) and additional criteria in the grant funding guidelines. Most Centres referenced the need for alignment as a key consideration for RART project selection. In general, Centres commented that they balanced local priorities with RART funding criteria when selecting RART projects. Some tensions were noted in relation to trying to select projects that were considered a local priority but that could not deliver measurable impact in the relatively short period of time required under the RART Initiative:

> *Should we pick projects that are going to deliver really important impacts but will take a bit longer or should we fund projects that can achieve something in 12 months to tick Commonwealth's boxes? (Centre)*

Approximately a third of Centres suggested that this had resulted in selection of fellowships and less complex projects rather than potentially more worthy projects that required more time.

Involving Partners in RART implementation

There was evidence that Centres are engaging Partners (particularly health services Partners) in determining priorities for RART project selection. One Centre stated that they allocated half of their RART funding to their health service Partners to be used on projects that responded to their biggest issues. The health services were encouraged to hold a competitive process to identify the top projects, which were then reviewed by an independent panel to select the grant recipients.

Another Centre hosted a forum for Partner organisations for their most recent RART project selection process, but stated for the next round they are looking for greater levels of engagement from across the whole health system to get the 'right projects for the right problem'.

A further Centre described their process of using Clinical Advisory Groups (CAGs) to identify and seed fund projects that align with both the focused objectives of the RART Initiative and the broader objectives of the Centre's partnership.

More than half of Centres spoke of having a contestable process for RART project selection involving panels responsible for final decision making (the remaining Centres may also have a contestable process, but it was not discussed).

WAHTN cited on their website that in 2019 they awarded 12 research translation projects to health services but received 68 applications. They stated,

> *The large number of quality applications made the process highly competitive. It also provided an encouraging snapshot of the strength and breadth of translational health research occurring in WA hospital and primary health settings. (WAHTN website)[11]*

The Centre also awarded 11 Early Career Fellowships in Translational Health Research in 2019 and two Biostatistician Fellowships in 2020.

4.2.2 How effective have the Centres' mechanisms for strategic planning and priority setting been?

As discussed in section 4.2, the Partner survey data indicated high levels of agreement amongst respondents that the Centre's approaches to strategic planning were effective (84%) and that the Centres were effectively engaging Partners in strategic planning (77%). In relation to setting priorities for RART funding and selecting RART projects, 73% of respondents agreed that Centres had an effective approach to both, 71% agreed that their organisation was effectively engaged in prioritisation (19% disagreed) and 68% in project selection (20% disagreed).

In support of their Centre being effective in strategic planning one respondent commented:

> *(The Centre) has an excellent strategic plan, high quality management and excellent processes for prioritising opportunities. It focuses especially on major initiatives that will have high impact on healthcare and can effectively harness the capabilities and resources of its partner organisations. (the Centre) also has good working relationships with other translation centres nationally. (Partner)*

Levels of disagreement relating to engaging Partner organisations provides an opportunity for Centres to strengthen the involvement of Partners in RART prioritisation and project selection processes. This was mirrored by a Partner survey respondent who noted:

> *It would be good to be more strategic and collaborative with our approach to research. This could involve workshops and roundtables with key stakeholders including consumers. And then research projects could be developed and ranked to ensure that we progress with the research that is a priority for the stakeholders. Through that process, we could identify collaborators that could be outside of our Centre. (Partner)*

Collaborative strategic planning mechanisms are starting to become more common place amongst Centres.

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[11] https://wahtn.org/blog/2019/09/18/wahtn-awarded-federal-budget-funds-for-the-rapid-applied-research-translation-program/

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4.2.3 How do these mechanisms align to the intentions of the McKeon Review?

Australian health research priorities

The McKeon Review stated that Australia needed research to be embedded in the healthcare system and focused on 'strategic priority-driven research' with a mix of 'top-down… and bottom-up investigator-driven research'. Four national health research priorities were identified in the review:

1. Indigenous health research
2. rural and remote health research
3. global health research, and
4. genomics.

On the first national priority area, the review suggested that:

> *Indigenous health and medical research is difficult to fund due to the longer-term timeframes involved, the need for researchers to visit and develop close relationships with the community, and the need to understand the delivery of health services. A national integrated network or virtual IHRC for performing Indigenous health research is needed in conjunction with targeted researcher training and capacity-building. (p. 27)*

On the second national priority area, the review stated:

> *Almost one third of Australia's population lives in non-metropolitan settings, and rural and remote communities experience significantly worse health outcomes than metropolitan populations. Research capacity should be built up and better organised to focus on understanding and addressing this gap, with a national integrated network or virtual IHRC to lead these efforts. (p. 27)*

With respect to RART Initiative, NSLIs and a substantial number of TTRPs are focused on Indigenous health research and capacity building. As indicated in the McKeon Review, continued long term funding and commitment to engage in culturally responsive ways with Aboriginal and Torres Strait Islander peoples and services is required. Ongoing effort to build the capacity of the Aboriginal and Torres Strait Islander workforce and the cultural capability of the non-Indigenous workforce is also important.

While not a RART NSLI, building the research capacity and capability in rural, regional and remote health and medical research in Australia is receiving attention through the Spinifex Network (discussed in section 4.3. 4.4 and 4.7.1). The two CIRHs are significantly engaged in this network.

4.2.4 How do these mechanisms compare to international contexts?

Top-down and bottom-up strategic planning

Literature indicates that when developing a translational research strategy:

> *best practice involves working backwards from desired outcomes for patients and the community to identify ways of changing research practice (rather than forward from the needs of existing institutions or professions).*
> (Cancer Institute NSW, 2015, p. 12)

The Cancer Institute NSW noted that depending on the context, research strategy can be bottom-up, top-down or a mixture of both and that it is important to remain flexible and consider strategic plans as a 'living document'. Brimacombe et al., (2010) recommended that it is important to align funding with local 'care-teaching-research priorities' to offer value.

International experts interviewed for this evaluation highlighted some issues in how national health and medical research funding priorities were established in their respective countries. It was considered that 'everything and anything' could be made to fit into research proposals within their national research funding mechanisms. In Canada, a nationally agreed approach to research prioritisation was seen as exceptionally difficult due to the national and provincial systems for decision making.

One interviewee expressed that research priorities should be determined by the government but informed by health services and community. This is reflected in the UK's National Institute for Health Research's (NIHR) ten-year strategy. The NIHR strategy outlines a mission of including 'the public as partners in everything we do…'. The strategic goals include having public involvement as a required part of high-quality research. NIHR reports to have met this goal, with 100% of all NIHR research and activities now involving patients, service users, carers and the public in some way.

In Australia, the Statement on consumer and community involvement in health and medical research (The Statement)(National Health and Medical Research Council, 2016), aims to guide research institutions, researchers, consumers and community members in the active involvement of consumers and community members in all aspects of health and medical research. This document is highlighted in the RART research grant guidelines and is being reflected in the work described by Centres who are starting to embed CCI as a requirement for RART funded project funding.

When comparing research priority areas in the UK and Canada (Appendix J) with the MRFF priorities (as set in the RART grant guidelines), similarities include a focus on: Aboriginal (Indigenous) health, aging, health economics, inequalities and public (population) health.

Additionally, through the document review, project profiling survey, Partner survey and Centre interviews it can be determined that Centres are balancing RART project prioritisation and MRFF national priorities with local community and Partner priorities. This may pose a tension at times, but continued support of local priorities is essential for ongoing engagement of key community and health services stakeholders.

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4.3. Engagement, collaboration and integration

This section considers the effectiveness of Centres mechanisms to foster engagement, collaboration and integration with key stakeholders when implementing the RART Initiative.

	Engagement, collaboration and integration *Summary of key points:*
What mechanisms have been adopted by the Centres to foster engagement, collaboration and integration with respect to key partnerships when implementing the RART Initiative?	• Centres are adopting a range of mechanisms for engaging and collaborating with Partners and other stakeholders. • Integration of knowledge, resources and activities at a national level is supported by AHRA. At a Centre level, integration of resources and ways of working occurs between members. Co-locating Centres with health services, rather than with universities, has been suggested as an opportunity to become embedded in health services.
How effective have the Centres' mechanisms for engagement, collaboration and integration been?	• Centres that have invested time in developing collaborative partnerships across health services, academia, and consumer and community organisations are well placed to facilitate research translation. Whilst collaboration in RART funded projects is well established with health services and universities, there is room for greater and earlier involvement of consumers, community and policy makers to ensure research is priority driven and implementable at scale. • Traditional methods of engagement through representation of stakeholders on governing Boards and Councils is beneficial if all stakeholders are present and are enabled to have a voice. • Centres that spend time addressing cultural and operational barriers (between organisations) are best placed to develop collaborative and integrated partnerships.
How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?	• Integrated partnerships, as envisioned by the McKeon Review, are difficult to achieve internationally and in Australia due to institutional culture and operational barriers. • Genuine co-design and co-production methodologies involving research end-users and beneficiaries are providing a means to authentic engagement and are providing positive results in research translation internationally and in Australia.
Opportunity	• Evidence of early and genuine engagement and involvement of research end-users and beneficiaries in RART Initiative research proposals and projects could be embedded as a selection criteria and performance measure for RART Initiative funding.

4.3.1 What mechanisms have been adopted by the Centres to foster engagement, collaboration and integration with respect to key partnerships when implementing the RART Initiative?

The following section focuses on mechanisms adopted by Centres to promote involvement of Centre Partners, followed by a discussion of specific stakeholder groups who may or may not be represented as Centre Partners.

Involvement of stakeholders across RART projects

The establishment of the Centres under the NHMRC, and the implementation of the RART Initiative, is intended to deliver a new system of needs-driven, collaborative, consumer and end-user centred health research. This presents opportunities and challenges for the Centres and their Partners.

The project profiling survey asked Centres to identify which stakeholder groups:

- have been engaged in the design of projects? (Q14, Engagement)
- have or will be collaborators in the delivery of projects? (Q15, Collaboration)
- have or will be sharing resources or ways of working in projects? (Q16, Integration).

The project profiling survey data (Table 3) shows that for TTRPs, health care providers are almost always engaged in the design of the project (E), collaborate in the delivery of the project (C) and share resources or ways of working (I) (E:100%, C:99%, I:98%) with similarly high levels of involvement of academic institutions (E:97%, C:96%, I:93%) and research institutes (E: 83%, C: 83%, I:75%).

Academic institutions were recorded as having the highest levels of involvement in the NSLIs followed almost equally by health services and research institutes (Table 4). Industry and the commercial sector were more likely to be involved in the NSLIs than the TTRPs, potentially due to the scale of the national initiatives. Perhaps surprisingly, consumers and community and government departments were less likely to be involved in the NSLIs than the TTRPs.

In Table 3 and Table 4 green shading denotes areas of particular strength in relation to engagement whereas orange shading denotes opportunities to strengthen engagement. The data indicates that there are opportunities to enhance earlier engagement with consumers and community, which could help ensure project design is consumer or community-centred. At the other end of the translation spectrum, increasing the involvement of government departments in appropriate ways could help influence future funding and policy. This is supported by research undertaken by Oliver et al. (2014). One respondent said:

> *The most frequently reported facilitators [to evidence uptake] were collaboration between researchers and policymakers, and improved relationships and skills. (Partner)*

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Table 3: Stakeholder engagement in TTRPs

TTRPs (n=260)	Engagement	Collaboration	Integration
1. Patients, Carers & Community	45%	60%	68%
2. Health care providers	100%	99%	98%
3. Research institutes	83%	83%	75%
4. Academic institutes	97%	96%	93%
5. Industry / Commercial sector	6%	9%	9%
6. Government departments	33%	35%	33%
7. Other	7%	7%	7%
8. Not applicable	0%	0%	1%

Table 4: Stakeholder engagement in NSLIs

NSLIs (n=26)	Engagement	Collaboration	Integration
1. Patients, Carers & Community	35%	42%	35%
2. Health care providers	77%	77%	77%
3. Research institutes	77%	77%	73%
4. Academic institutes	81%	81%	81%
5. Industry / Commercial sector	19%	19%	19%
6. Government departments	27%	27%	27%
7. Other	12%	12%	12%
8. Not applicable	0%	0%	0%

Co-design and co-production

There is emerging evidence that Centres are successfully using a co-design or co-production approach to engaging and involving consumers and health services in research design. Five Centres spoke of implementing co-design or co-production methodologies in their work. Principally this related to engaging research beneficiaries (usually consumers and community) and research end-users (usually health services) as part of the research design and delivery process to ensure research is needs-driven and has practical application. Education in co-design methodologies has also been utilised by two Centres.

> *Co-production methodology also makes a big difference. Having consumers and clinicians legitimately have a seat at the table and be involved in research co-design and coproduction, brings system level change. This is priceless as changing the system has flow on effects to other research activity and builds capacity. (Centre)*

As one Centre explained the aim is to 'flip' the paradigm in translational research, addressing stakeholder need instead of researcher priorities. This was mirrored by a Partner survey respondent who noted co-design as a key strength of a Centre's approach to research translation:

> *Co-design research that has a strong ecological validity and capacity to answer fundamental questions that are relevant to health services and rural and regional communities, this [is] in stark contrast with other competitive models that seem to address investigator driven research questions. (Partner)*

Another respondent commented

> *The flexibility the RART scheme allowed partners to fund research focused on local needs, delivered research with strong co-design elements. (Partner)*

This system level change was described as fundamental to the Centre and to AHRA. Co-design and co-production is further explored in consideration of international best practice (Section 4.3).

Mechanisms to promote Partner involvement

Centres are using formal, targeted and informal processes to engage their Partners. Formalised engagement mechanisms, such as Board, Council and Management meetings, are primarily focused on strategy development, prioritisation and progress and performance reporting.

The majority of Centres have themes, streams or platforms that are used for organising specialist bodies of work for clinical specialisms and cross-cutting research issues. The purpose of theme, stream or platform focused meetings is primarily to plan, implement, monitor and report on research activities across programs of work. These meetings may also promote cross-fertilisation of ideas, sharing knowledge and learnings, and discussing methodologies or ways of measuring impact.

Working groups are also used by many of the Centres to engage Partners and other stakeholders in specific time-limited bodies of work. Informal mechanisms include forums and symposia. These provide opportunities to engage Partners and other stakeholders through showcasing best practice in research and research translation, providing educational opportunities, and through providing opportunities for engagement, networking and consultation.

In relation to promoting Partner collaboration, numerous Centres acknowledged that health organisations and university departments often work in 'research silos', unaware of the expertise and experience that surrounds them. One Centre commented:

> *You just can't do your research in a vacuum and then publish a paper somewhere. That doesn't lead to translation. (Centre)*

All Centres reported that they are committed to effective collaboration with Partners, and other stakeholder groups to improve efficiencies, avoid duplication and enhance research translation. Centres considered that building collaborations requires knowing what is going on in the research space, identify opportunities for collaboration, linking people up, supporting and enabling and ultimately adding value. Centres described their role in the collaboration process in different ways including as the 'honest broker' - approachable because they are non-competitive, as the 'enabler' - adding to the strengths of their members, and a third referred to themselves as the 'glue' - supporting people to connect and collaborate.

Integration mechanisms are less well established amongst Centres compared to engagement and collaboration mechanisms. However, when organisations partner with a Centre they are committing to contributing resources and agreeing to ways of working together with the intent of creating something bigger than any individual entity could create on their own, and this can be considered 'integration'.

The following points provides a brief summary relating to Partner integration activities.

- Partners pay an annual financial membership which usually covers the Centre's operational costs. Methods to determine Partners' financial contribution differ and result in substantial differences in available funds across the Centres.

- One third of Centres stated that they received in-kind contributions from partners. This includes the provision of a physical base from which to work, HR, finance and legal support. One Centre had a Service Level Agreement to pay a member for these services.

- Matched funding from Partners (and potentially other stakeholders) as a means to fund RART projects is only used by one Centre. Most RART projects (80%) are funded solely by RART funds.

- Bodies of work to streamline research ethics and research governance procedures, shared training resources and shared communication officer resources.

- Centres, through AHRA, working on the NSLIs with their Partners enabling greater contribution and benefit.

Centres commented that Partners want to work together in an integrated way but there are system barriers, these include a culture of independence and competition, and limited financial incentives to collaborate and integrate. One stated:

> *Research institutes want to be independent whenever they can, hospitals are formally very independent. (Centre)*

Additionally, a perceived lack of engagement across the Australian state and territory governments with the national government in relation to the implementation of the RART Initiative was felt to have been a further barrier to integration.

Mechanisms to promote health service involvement

All Centres stated that they have established mechanisms to engage with health services, and all Centres have representation of LHNs (or their equivalent) on their Boards and Councils.

One Centre noted that it has over 100 clinicians sitting on its committees, and health service partners play an important role in reviewing funding decisions and driving strategy. They stated:

> *We have very engaged and strong [health service] chief executives who are always at the table. We rely on them to bring their health service priorities to us so we can embed that in everything we do. (Centre)*

Whilst having 100 clinicians involved on committees is a considerable commitment to engaging health service professionals, it is not necessarily unique as other Centres rely on significant input and leadership of clinicians and health professionals on clinical advisory groups, other committees and importantly in relation to research projects. When this occurs the work of Centres is more health services driven, research is likely to be more relevant and research translation is more likely to occur.

Of the projects recorded in the project profiling survey (TTRPs and NSLIs), the mean number of agencies involved per project was four, with a range from one to 22 agencies involved in a single project. The vast majority of RART funded projects - 97% of TTRPs - involve engagement/collaboration/integration with health service providers.

Having strong links with health services was viewed as a way to increase the likelihood of research translation occurring:

> *The [Centre] has very strong links with [state health department] and many of the public and private health service providers. This enables far greater opportunities for research that may originate in the academic sector to involve clinicians and policy makers to ensure translation into healthcare delivery or planning is embedded in the study's outcomes. (Centre)*

HTSA have developed a RART funded project to embed an economist in health services to support research capacity building and evidence informed decision making. HTSA's work is presented in Table 1 as it was selected by Partners as a good example of enabling research translation. This Centre also provided access to a communications officer to health services for three months to inform communication strategies to promote research translation.

Another mechanism of engaging health services is the approach taken by WAHTN who have allocated almost $3M to health service led research.

> *The Health Service Translational Research Projects (HSTRP) attracted 68 applications from the public and private health sector, PathWest and the WA Primary Health Alliance...The successful projects...will be supported by $2.84 million in MRFF funding, with matched funding from the health services. (WAHTN website[12])*

Mechanisms to promote consumers and community involvement

Eight out of the nine Centres described mechanisms for engaging directly with consumers and community. Three quarters of the Centres stated that they also engage with the community through their Partner organisations. Two of the Centres spoke of using existing consumer and community networks which have extensive memberships. Approximately half of the Centres are establishing their own consumer and community research forums and networks, primarily for engagement and consultation but in some instances for recruiting representatives onto working groups and project teams. Additionally, as mentioned earlier in this section, around half of the Centres are utilising co-design or co-production methodologies to involve consumers more specifically on research focused activities.

The following strategies and bodies of work undertaken by Centres have been informed by Centres undertaking research to determine appropriate and evidenced based consumer and community engagement mechanisms:

- community led partnerships

- consumer and community involvement resources, website, and events

- developing a community and consumer engagement framework with AHRA

- establishing a knowledge hub in Consumer and Community Engagement

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[12] https://wahtn.org/blog/2019/09/18/wahtn-awarded-federal-budget-funds-for-the-rapid-applied-research-translation-program/

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- workforce development project in community engagement, and

- a COVID -19 community involvement initiative.

Other approaches to engaging consumers and community have included appointment of consumer and community representatives as Board members, appointment to research committees and research advisory groups and appointment to identified staff positions. Community social listening through a Facebook-based platform was also being utilised by one Centre to consult with hard to reach culturally and linguistically diverse (CALD) communities.

Mechanisms to promote primary and community health services involvement

A very small number of Centres appear to have systematic and formalised mechanisms for engaging with Primary Health Networks (PHNs) and Aboriginal Community Controlled Health Organisation (ACCHOs). Two Centres acknowledged difficulties engaging PHNs, due to having different priorities and governing mechanisms. One Centre has put PHN representatives into grant teams which has reportedly enhanced the PHN's enthusiasm about being partners in research. The Centre stated that this is important because PHNs are the key to sustainable implementation of research findings.

Only two Centres have representation from Aboriginal and Torres Strait Islander controlled organisations as Partners. One of these Centres stated that much of their work is influenced by the needs of Aboriginal and Torres Strait Islander Communities, with whom they undertake extensive engagement through their Partner networks. The Indigenous Research Network and Capacity Building NSLI under AHRA may help to support Centres to conduct formalised engagement with Aboriginal and Torres Strait Islander peoples in the future.

Mechanisms to promote national and international collaborations

Most Centres have engaged with and developed intrastate and interstate collaborations with other Centres (both accredited and yet to be accredited). In most instances these collaborations exist to combine expertise in areas of special interest, for example a specific disease, or a shared need such as rural and remote workforce. Sometimes they are established to provide a state-wide response or offer support to a less well-established Centre. Underlying these collaborations there appears to be a genuine intent to enhance effectiveness and efficiency, share knowledge and skills, create real health benefit for Australians and enhance the Australian health research sector.

The principal vehicle for engagement, collaboration and integration across the Australian Centres is the AHRA. AHRA enables Centres to collaborate and progress national initiatives, and fostered sharing of learnings, tools and opportunities across the Centres. AHRA is referred to in other sections of this report.

Three of the Centres spoke of collaborations with counterparts in other countries through personal connections. Examples included working with Health Data Research UK, Office for Healthcare Transformation Singapore, and one ED was a member of the International Advisory Board for Applied Research Centres.

Two Centres spoke of collaborating as an entity themselves and through AHRA, with international Centres such as Kings Health Partners, UCL Partners, Imperial College London, Kings College London, Warwick Business School UK, Manchester: Improving Medicine with Innovation Technology (MIMIT) Team, and Harvard University. Topics of collaboration included disease specific specialisms and research translation.

Threats to collaboration

A number of Centres discussed threats to collaboration. The most significant threat was considered to be competitive grant funding and the highly competitive culture of academic research. Competition is frequently cited as a barrier to collaboration in the literature (Robinson et al., 2020), which mirrors the opinion expressed by Centre Executives and two Partners.

> *Having supported the Centres, it would be counterproductive to have them disaggregate and compete for funding of projects. So while Centres are multi partner and across all health and medical research, they are bringing the partners together and strongly enhancing health translation. Don't change this. (Partner)*

> *Sustainable funding - emphasise collaboration as opposed to competition. (Partner)*

Three Centres commented on the challenges of the competitive research funding environment. It was noted that larger, more established Centres tended to attract experienced and highly ranked researchers, who were more likely to be successful in grant applications. This could result in elite Centres attracting an increasing portion of the research funding pool, disadvantaging smaller or less established Centres.

The importance of retaining a non-competitive RART funding system was raised by all Centres. Centres noted that any introduction of competitive funding would likely undermine collaboration and create an uneven playing field for smaller and newer Centres. One Centre noted that:

> *Many [Centres] are still new, are evolving and will increase impact, but their ability to do so is being escalated though collaboration and shared learnings across the Australian Centres...If we were to dismantle this through competition for base funding, this would be a significant step backwards. (Centre)*

Competition across Centres was seen as a significant threat to collaboration and to the survival of two Centres.

Internationally, funding arrangements for translational research vary, based on national context and circumstance. For example, the Medical Research Council – the UK body responsible for co-coordinating and funding medical research including translational research - has established targeted funding schemes for translational research that include both competitive and bulk funding models. These include the:

- Development Pathway Funding Scheme (DPFS): an open competition to support work in any disease area or therapeutic modality. MRC assesses progress of projects against milestones and expected project outcomes, which allows MRC to enabling closure or re-direction of projects once active.

- Confidence-In-Concept programme (CiC): awards made to research organisations to support a portfolio of projects. Research organisations that are awarded funding are responsible for deciding which specific projects are supported and are expected to establish processes for the assessment of proposals, agreement of appropriate milestones and management of projects against these milestones. The purpose is to de-risk concepts to a stage where they are competitive for more substantial translation funding, from DPFS, industry or other sources

An evaluation of MRC's Translational research group concluded that both CiC and DPFS 'have been a major driver of product development leading to successful commercialisation outcomes'.

4.3.2 How effective have the Centres' mechanisms for engagement, collaboration and integration been?

The following section provides findings relating to the effectiveness of engagement, collaboration and integration with Centre Partners and other stakeholder groups.

Partners

Respondents to the Partner survey (Q5.1 and 5.2) indicated high levels of agreement that the Centres have an effective approach to promoting research collaboration and integration (90%, n=72) and effectively engaging their organisation in promoting research collaboration and integration (81%, n=72). This was supported by numerous comments including:
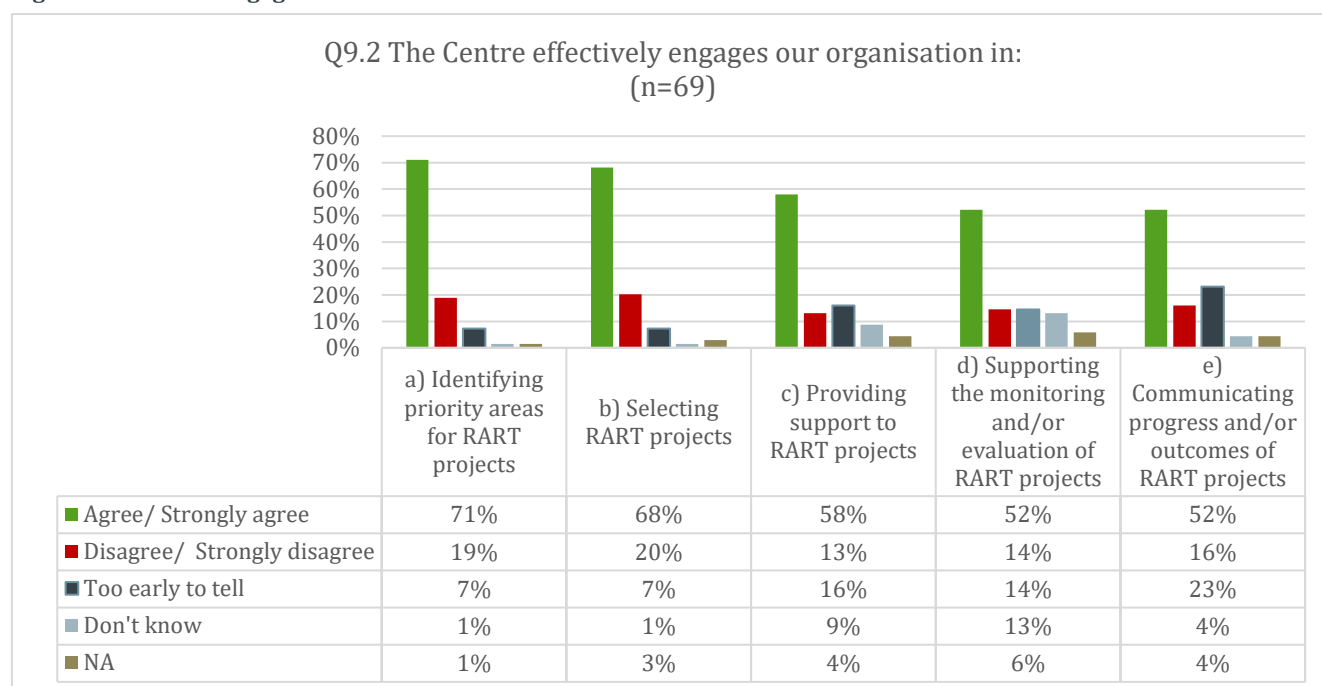
> *The focus on collaboration is really good - ensuring that university and Medical Research Institutes (MRIs) partner with health services and the health professionals within them increases the relevance and translatability of research. (Partner)*

One survey respondent noted that while good progress had been made in fostering a collaborative culture with some Partners, there was a continued challenge to ensure a consistent approach across all Partner organisations:

> *We have made great inroads into developing a collaborative culture across multiple universities, LHDs and MRIs. The biggest challenge is widespread partner engagement and impact. i.e. those involved are making great progress, but the challenge is to have [the Centre] permeate all partner organisations. (Partner)*

Partner survey respondents indicated that there are opportunities to increase Partner engagement in identifying RART priorities and projects and in supporting, monitoring and communicating progress and outcomes of RART projects (Q9.2, Figure 13).

Figure 12: Partner engagement in the RART Initiative

Q9.2 The Centre effectively engages our organisation in: (n=69)

	a) Identifying priority areas for RART projects	b) Selecting RART projects	c) Providing support to RART projects	d) Supporting the monitoring and/or evaluation of RART projects	e) Communicating progress and/or outcomes of RART projects
Agree/ Strongly agree	71%	68%	58%	52%	52%
Disagree/ Strongly disagree	19%	20%	13%	14%	16%
Too early to tell	7%	7%	16%	14%	23%
Don't know	1%	1%	9%	13%	4%
NA	1%	3%	4%	6%	4%

In relation to direct involvement in RART funded projects, approximately three quarters of Partner survey respondents (Q10) stated their organisation had received RART funding (73%), had co-led (73%), had collaborated (80%) or had contributed (80%) to a RART funded project one or more times. Over two thirds of respondents (68%) had contributed to monitoring or evaluating one or more RART funded projects. Involvement between two and four times was most common (n=66). It is expected that for some Partner organisations it might not be appropriate to receive RART funds or actively participate in the design, delivery or monitoring of RART projects.

Health services

The findings of the Partner survey show that respondents considered the following factors were important to work effectively with health services:

- having strong engagement mechanisms,

- collaborative research between universities and health services,

- representation at the governing Board,

- participation in strategic decision making,

- funding translation work in priority health service areas,

- actively promoting rapid/early/quality translation,

- the clinical themes and their leadership from significant leaders clinicians, and

- clinician scientists from the health service.

One Partner said:

> *The Translation Committee is the conduit with our LHD, ensuring two-way input into the design and delivery of projects and other initiatives. (Partner)*

Survey findings also indicate that some health services view participation in research as adjacent to their core business of providing clinical services, and that this could be acting as a barrier for collaboration:

> *The interaction between [the Centre] and the Health Service Providers is tricky, as the HSPs are driven to provide best clinical service, which doesn't always leave time/money/staff to do 'extra' activities like engaging in translational research. It has no impact on workforce, which actually is the largest need in the HSPs to enable more translational research. (Partner)*

Other opportunities to strengthen engagement with health services identified in the Partner survey include transfer of funds to health services, co-location of Centre staff in health services, ensuring health service priories are a focus and extending activities beyond central metropolitan districts to areas of need. The latter point is noted in the following quotation:

> *[Centres should focus on] truly partnering with health services and clinicians, particularly those geographically out of the centre of town but where current / future population growth continues to accelerate. (Partner)*

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Aboriginal service providers and Aboriginal and Torres Strait Islander Communities

Comments from Partner survey respondents indicated that authentic involvement of senior Aboriginal people at governance level and engaging Aboriginal controlled organisations is important for the Centres. One respondent to the Partner survey stated:

> *They have a track record of doing research in a culturally safe way. The location of the Centre is critical and a strength of the Centre. Senior Aboriginal people are involved in key roles from governance to research. (Partner)*

Another respondent highlighted the need to involve Aboriginal controlled agencies to foster research priorities led by community:

> *[The Centre] engages a diverse range of agencies, particularly Aboriginal controlled agencies, which enables community-led research priorities. (Partner)*

The NSLI focusing on Indigenous Health and Research Capacity Building was also considered a strength of the RART Initiative. Respondents said it supported Partners to contribute in ways that are relevant to Aboriginal and Torres Strait Islander Communities. However, one respondent stated that there needed far more collaboration and less calls for funding through competitive grants as this did not support the consultation process that was needed to generate Community led research.

To strengthen work with Aboriginal service providers and communities, Partner survey respondents indicated an Aboriginal resource plan is needed. One respondent commented:

> *An Aboriginal community controlled-specific resourcing plan would enable the Centre to implement a more targeted approach to improve the health of Aboriginal communities in [the state] and help foster progressive linkages between the acute and comprehensive primary health care sectors. (Partner)*

Additionally, having dedicated Aboriginal and Torres Strait Islander staff was considered important to ensure knowledge translation, collaboration and response was enabled.

Primary care stakeholders

While primary care is considered the core of population health, respondents to the Partner survey indicated that it had been neglected in the past in terms of health research, but that the RART Initiative and the Centres' focus on primary care was adding value to the whole health sector.

> *The focus on primary health care is good - this setting has been 'underdone' in research terms, yet GPs are the gateway to most health services. We need robust primary models of care and sensible connections between primary care and the rest of the health sector. (Partner)*

Another respondent commented:

> *Primary care has a large part to play in keeping individuals well but research is often undertaken in settings that don't reflect how and where people get their treatment or care… we look for evidence that enables us to fund activity that best fits with the consumer and is able to be sustainable beyond initial funding. Through our partnership with the Centre, we are able to influence inclusion of business cases and cost effectiveness in research for translation to action. (Partner)*

Some respondents to the Partner survey spoke of their Centre's positive work in the primary care space, including funding RART projects that were making a real impact in terms of care and capacity building. Other comments indicate that greater focus was still needed, and that engagement should be 'active'. The primary care funding model was considered a barrier for engaging primary health professionals in translational research as they would typically only be funded for clinical work. One survey respondent commented:

> *We need a dedicated and funded strategy to achieve this, until then we are wasting a valuable opportunity. (Partner)*

Rural and regional stakeholders

The evaluation found examples of good practice Centre-led rural and regional initiatives. Successful initiatives were underpinned by a genuine commitment to engaging with and listen to rural and regional communities and ensuring research was relevant to their needs. These included the development of a Rural GP network which aimed to encourage GPs to build research into their practice, and projects such as an acute telestroke project which provided equitable health care for rural communities.

The Spinifex Network, a national network to increase rurally-based and rurally-relevant health research, was seen by survey respondents as effective in engaging rural stakeholders. Centres who drive this network were recognised for this activity.

Equitable RART funding for rural and regional health research was appreciated and seen as overdue. Evaluation participants emphasised that ongoing commitment to resourcing rural and regional health research is vital:

> *For too long health research funding has been concentrated in metro centres with little hope of 'trickle down' to rural health settings. Thanks to RART, we can conduct research in rural and regional Australia, with the strong likelihood of lasting results that can be spread. (Partner)*

Consumers and community stakeholders

Partner survey respondents cited consumer and community involvement (CCI) initiatives as a key strength of Centres in promoting research translation. Initiatives that are seen as particularly effective included appointing expert CCI staff to coordinate and support the involvement of consumers and community members in research, 'meaningfully' supporting centre Partners through engagement of a CCI expert, embedding CCI in research projects, enabling a state-wide approach to CCI, and the coordination of the CCI NSLI.

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Survey respondents considered that challenges to CCI were posed by individualistic and competitive mindsets that required changing:

> *Historical siloed research institutions vying for limited funding that has traditionally been allocated based on the lead investigator. Shifting that thinking to a more collaborative approach that ensures consumers are engaged in research development. (Partner)*

While CCI is seen as increasing opportunities for research translation, it was also seen as an area that the RART Initiative and Centres needed to focus efforts on improving. This could include developing incentives to ensure CCI occurs in the research design phase, as this was considered to align with current best practice. One Partner said:

> *The Centre should focus on making sure that any research funded should be demonstrating genuine engagement with consumers and community at all stages - from idea development to commercialisation. There is still a pervasive commentary that the researchers don't have the budget for this type of engagement until they have been awarded the funding. We won't get embedded consumer engagement and allocation of budgets until this narrow thinking is removed at all levels. Funding won't be allocated until the research institutions miss out on grants because they don't have genuine consumer involvement. (Partner)*

Another respondent commented that embedding CCI in research project design would 'make research more relevant and impactful, with another respondent pointing out that existing networks of consumer experts already existed and were ready to engage:

> *The Centres don't need to be the expert in consumer involvement - there are other organisations (peak bodies) that they could partner with (and help fund) to help them achieve this. (Partner)*

State government

Centres that had representation from the state government as a Partner spoke of having particularly positive relationships with them. Other Centres spoke of challenges in navigating tricky political relationships associated with complicated state departments and local health services. One Centre said:

> *Working through how you do those connections well is something we continue to grapple with, but we now have very good relationships with the heads of everything. (Centre)*

A Partner commented on how their Centre had been working successfully with the state health department:

> *[The Centre] has been instrumental in facilitating much greater collaboration between [state] health researchers and promoting its value to both [state] Health and the State government.*

Establishing common ground between Centres is an enabling factor when working to influence or contribute to state government priorities. Six Centres spoke of banding together with other Centres in their jurisdictions. Centres also spoke of needing to be careful to align with, and not duplicate, work of the state departments.

Clear direction from state governments was considered to enable Centres to be more strategic in their decision making. While three Centres spoke of their state government providing clear

direction on their policy priorities, this was not uniform across all states. One Centre suggested that there had been missed opportunities by the state governments in terms of guiding and supporting the Centres more effectively.

One Centre spoke of an Aboriginal Health Forum in their state which includes two of their Partners and the Australian Department of Health. The forum was viewed as influential in setting policy direction. The Centre considered that having two of its Partners as members of this forum benefited the Centre's positioning.
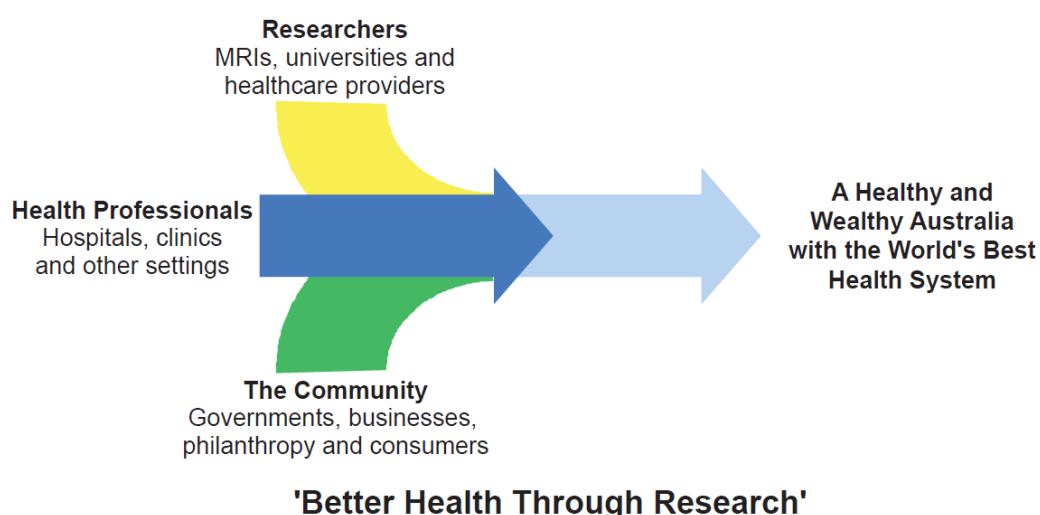
Centres have also reached out to state governments to assist with the COVID-19 response effort. This has proved effective for those Centres who had not already been approached to assist. A number of Partner survey respondent suggested that their Centre's work supporting their state governments during the pandemic provided an excellent opportunity to build on in future.

4.3.3 How do these mechanisms align to the intentions of the McKeon Review?

The McKeon Review (p. 15) draws on a vision of strengthened partnerships between researchers, health professionals and the community to create 'better health through research' for Australians (Figure 14).

Figure 13: Better health through research partnerships

Delivery Through Partnerships

Researchers
MRIs, universities and healthcare providers

Health Professionals
Hospitals, clinics and other settings

The Community
Governments, businesses, philanthropy and consumers

A Healthy and Wealthy Australia with the World's Best Health System

'Better Health Through Research'

The Review recommended that the new research Centres should be integrated and clustered, representing collaboration across key stakeholder types, with infrastructure shared and preferably geographically co-located.

This vision has been partially realised in that Centres have adopted a range of mechanisms to engage and collaborate with stakeholders. However, there is some inconsistency across Centres in the degree of engagement and collaboration with consumers and community, primary and community healthcare providers including ACCHOs and Aboriginal Community Controlled Organisation (ACCOs) and state governments.

Additionally, integrating and sharing financial and non-financial resources and ways of working is being established at Centre level and at national level facilitated by AHRA, but there is an apparent lack of shared infrastructure and co-location with key stakeholder Partners.

4.3.4 How do these mechanisms compare to international contexts?

Engaging the right stakeholders

Collaboration is seen as critical for research translation within Centres, across Centres, beyond Centres nationally, and internationally (Anandagoda & Lord, 2016; Cancer Institute NSW, 2015; French et al., 2014; Shahzad et al., 2011). This is reliant on effective engagement with the relevant stakeholder groups, and an alignment of vision and motivation.

> *Listening to stakeholders is crucial because it increases the probability that research outputs will be used, which maximizes the potential for achieving impact(s). The benefits of stakeholder engagement include improved quality and applicability of the research, increased dissemination and uptake of results and empowerment of stakeholders. (Phipps, 2018)*

The challenges of determining which stakeholders to focus engagement and collaboration efforts on has been observed in Academic Health Science Centres (AHSCs) in North America:

> *Some commentators call for AHSCs to have a stronger emphasis on primary care and community needs, whereas others feel that AHSCs should concentrate on high end tertiary care and research. (French et al., 2014, p365)*

International expert opinion suggests an answer to this question:

> *We need to facilitate the uptake of evidence in the context of its use. (Expert)*

This means that wherever change is sought, researchers should be engaging those stakeholders in the research. When considering which stakeholders to engage, the advice is to consider end-users and beneficiaries:

> *End-users are those individuals/organizations who actually use (or 'implement') the research evidence into products, policies, practices and services. End beneficiaries are stakeholders upon whom the improved or new products, policies, practices and/or services have an affect. (Phipps, 2018)*

Embedding authentic co-production

International expert opinion aligns with the views of some of the Centre executives that 'co-production is the key' to successful research translation. This means ensuring that research beneficiaries and research end-users are at the table throughout the research process, and that users of the research are sufficiently funded to embed the research into practice. Even if all the key stakeholder groups are literally and metaphorically 'at the table' it is considered wise to reflect,

> *Are they really at the table or are we listening, going away and doing our own thing and then giving it back to them…how genuine is the co-production? (Expert)*

The Co-produced Pathway to Impact (Phipps, 2018; Phipps et al., 2016) is a model developed in Canada which aims to communicate a mechanism to promote 'knowledge mobilization'. The pathway is a logic model-based framework for mapping the progress of research → dissemination → uptake → implementation → impact and could prove a useful framework for consideration in Australian health research.

It has also been suggested that the authenticity of stakeholder collaboration should be assessed as part of Centre performance reporting, by asking stakeholders to comment on how meaningful and authentic the collaboration has been. In addition to authentic collaboration, research end-users need skills, time and funding to uptake evidence. An absence of these enablers creates significant barriers for end-users to mobilise knowledge.

Most Centres have adopted mechanisms for engaging and collaborating with stakeholders. Some have adopted co-design / co-production methodologies into their research design processes. Further review of the uptake and impact of these methodologies in Australian health research would be beneficial.

4.4. Responding to local context

This section considers the Centres' mechanisms for responding to local context when implementing the RART Initiative.

	Responding to local context *Summary of key points:*
What mechanisms have been adopted by Centres to respond to local context when implementing the RART Initiative?	• Partner organisations provide a valuable connection to understanding and responding to the local context. • Partner membership is varied across the Centres with evidence suggesting that for only a few Centres membership includes PHNs, ACCHOs, consumer and community peak bodies and state government health departments.
How effective have the Centres mechanisms for responding to local context been?	• The Centres have established a number of effective mechanisms for responding to local context through their Partner memberships and building relationships with other key stakeholder groups to determine priority areas for research. • Mechanisms for responding to local context could be strengthened in Centres that have not yet established formal partnerships with PHNs, ACCHOs, consumer and community peak bodies and state government health departments.
How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?	• Opportunities exist for many Centres to strengthen and formalise a whole of health approach to responding to local context. This would create better alignment to the intent of the McKeon Review, enabling research translation to be embedded across the health care continuum. • The Australian health and medical research system is similar in some ways to the systems in the UK and Canada. Navigating complex relationships between state and federal governments and avoiding research silos and duplication are issues of relevance to all countries. In the UK, the investment in research infrastructure and support systems is a strength.
Opportunity	• Promoting meaningful inclusion of PHNs, ACCHOs, consumer and community peak bodies and state government health departments could strengthen the RART Initiative to respond to local context. • Evidence of meaningful inclusion of all locally significant stakeholders could be used to support application for ongoing RART Initiative funding.

4.4.1 What mechanisms have been adopted by Centres to respond to local context when implementing the RART Initiative?

The Centres have diverse geographic locations and cover areas with a range of demographic characteristics. This includes Centres in both urban and rural areas. The seven AHRTCs are based in state capital cities. HTSA and WAHTN cover entire states, MACH and MP share metropolitan areas of Melbourne, SHP and SPHERE share metropolitan areas of Sydney and BDHP covers the greater Brisbane region. The two CIRHs, CAAHSN and NSWRHP, cover large regional areas with dispersed populations.

This section considers how the Centres have responded to local context in implementing the RART Initiative.

Centre membership and local stakeholders

Centre membership influences the work that Centres do and how they do it. There is a significant difference in the size, scale and distribution of Partner members across the Centres, as indicated in Table 5.

Table 5: Centre membership

	BDHP	CAAHSN	HTSA	MACH	MP	NSWHP	SPHERE	SHP	WAHTN
Public Health Services	4	#[13]	10	10	4	3	4	4	6
Private and NGO Health services	1	-	-	-	2	1	-	-	2
Primary Health Networks/Services	-	7[14]	2	-	-	1	-	-	-
ACCHOs/ACCOs	-		1[15]	-	-	-	-	-	-
Universities	2	2	3	1	1	2	3	1	5
Research Institutes	2	4	1	8	3	1	7	9	6
State government health department	1	1	1	-	-	-	-	-	1
Total Members	**10**	**18**	**19**	**19**	**10**	**8**	**14**	**14**	**20**
Affiliate members	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**8**

While PHNs and Consumer peak bodies are sometimes represented as affiliate members, they are substantially underrepresented along with ACCHOs and peak bodies representing Aboriginal and Torres Strait Islander health and wellbeing. State government health departments are also only represented as Partners for four Centres.

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[13] CAAHSN have a relationship with public health services facilitated by the Northern Territory Government (individual government run hospital and health services are not listed as Partners)
[14] CAAHSN has two ACCHOs/ACCOs that are also considered consumer peak bodies
[15] HTAS has one ACCHOs/ACCOs that is also considered a consumer peak body

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Centre size and the representation of Partners on Boards and Councils was noted by Centre Executives to be an enabler in providing opportunities to connect into key stakeholder networks and understand what needed research attention. Partner representation on Boards and Councils also posed a challenge in some instances, as it required strong leadership to ensure alignment of vision and purpose across frequently differing priorities and perspectives.

Centre relationships

The evaluation explored relational factors that enabled the effective delivery of the RART Initiative. The following mechanisms have been used by Centres to build enabling relationships with key stakeholder groups in order to respond to local contexts, data regarding the frequency of engagement with different stakeholder groups was not captured:

- **Building relationships with state government** included engaging with the state government as a single voice. Four out of nine centres have state government represented in their membership. For two of the Centres, this is considered easier as they are the single entity within their state. Other Centres have first had to establish a partnership with each other before approaching their state government.

  Other important factors to working effectively with state government include having a strong awareness of the government's work so ensure they align with and support this, not duplicate it. Understanding state priorities is assisted by having state government representation on Boards. These relationships are starting to bear fruit, with approximately half of the Centres being invited to work on state-wide issues, including COVID-19.

- **Engagement with local entities** such as PHNs, LHNs, ACCHOs and Aboriginal peak bodies is seen as a critical success factor for RART. Developing these relationships ensures RART research funds are directed towards issues of priority for the local population and health services across the care continuum.

  Few Centres have established or developed close connections with their local community through engagement with these entities. Where close connections with local communities have been made, these have mainly been with PHNs and LHNs. Three out of nine centres have PHNs represented in their membership, this is very low considering the role of PHNs and the MRFF priority for primary health research. Very few Centres spoke of having established mechanisms to engage with ACCHOs and Aboriginal peak bodies (two out of nine centres). An effective mechanism of engaging with local entities is through direct involvement at Board or Council level.

- Centres that appear to have greater access to **research infrastructure, research personnel and research opportunities** through their Partners and geographic location have benefited from access to these resources in that it enables them to focus on implementing the RART Initiative and funding projects rather than building enabling platforms and mechanisms from the ground up.

- Centres who actively engage, and foster close ties, with existing **independent consumer and community networks** are developing strong mechanisms to respond to local community priorities. An example of this included a Centre working with their Consumer and Community Network to influence the states guardianship legislation, as it was restricting access to appropriate healthcare for vulnerable populations.

RART project examples exhibiting a response to local context

A number of RART projects have been driven by local community and health service priorities, targeting Aboriginal Communities, Culturally and Linguistically Diverse (CALD) Communities, people living in rural and remote communities and marginalised populations. These include:

- **Capacity building in research for palliative care staff to enable a better end of life experience for the Central Coast community (NSWRHP):** This project involves a research capacity building program for palliative clinicians to develop their research knowledge and skills through a series of workshops. Palliative care was raised as a top priority for regional NSW by primary care and the local population through their local government representatives.

- **Aremella Arratyenye-ileme - Doing it Right: Research Knowledge Generation and Translation in Central Australia (CAAHSN):** The overall aim of Doing It Right is to improve research knowledge exchange, generation and translation by creating a shared understanding between researchers and community.

- **Engaging with Aboriginal People to Improve Kidney Care and Outcomes in South Australia (HTSA):** The over-arching aim of this collaborative project is to improve kidney care for Aboriginal people in South Australia. The project focuses on the needs and priorities of Aboriginal patients with complex care needs complicated further by kidney failure.

- **REACH OUT: Maximising cures for Hepatitis C (HCV) in marginalised communities (SHP):** A new generation of Direct Acting Antiviral drugs has proven to be 95% effective in curing HCV, but the new treatment is by-passing many marginalised communities and other disadvantaged socioeconomic groups. This project tested new community outreach methods to identify and provide healthcare for these groups.

- **Targeted Early Detection of Melanoma Utilising a 3D Tele dermatology Network (Melanoma 3DT Network) (BDHP):** This project uses 3D total body imaging integrated with telehealth capabilities to explore the feasibility, reliability and acceptability of utilising 3D total body imaging for clinical practice. It includes a training component for GPs and junior clinicians. This project targets a priority area for Queensland and seeks to address issues of access to specialist services.

These projects represent research in areas that would not normally receive competitive research funding. The RART Initiative is seen as enabling the kind of research that is much needed and highly valued by local communities.

4.4.2 How effective have the Centres' mechanisms for responding to local context been?

Centre response to local context

The Partner survey indicated that 76% of respondents agree that the Centres had an effective approach to responding to local health service research needs (10% disagreed, 14% felt it was too early to tell). A further 69% agreed that Centres were effective in responding to local health consumer research needs (6% disagreed, 22% felt it was too early to tell). 57% agreed Centres were effective in responding to local workforce needs (19% disagreed, 19% felt it was too early to tell), (Q5.1 n=72).

Similar levels of agreement were reported for Centres effectively engaging their Partners in responding to local health service research needs (76% agreed), responding to local consumer research needs (64% agreed) and responding to local workforce research needs (53% agreed). Of note, 25% disagreed that workforce needs were being responded to and 18% felt it was too early to tell (Q5.2, n=72).

The findings indicate opportunity to strengthen response to health service, consumer and workforce research needs as the initiative matures, as well as greater engagement of Partner organisations.

While some evaluation participants considered that physical co-location in health services was important (rather than universities where most are currently based), the key enabler for health service-driven research was the Centres' ability to connect and build relationships with health service providers:

> *[Centres need to focus on] truly embedding themselves within hospitals / health services rather than within Universities. University priorities are to get papers published [and to] attract grants. It is hospitals and health services where the real research questions are, and thus who should be the ones leading the generation of research questions that directly improve the care of our communities. (Partner)*

Another perspective:

> *Connections to major providers of clinical care such as [the ACCHO] and [the tertiary hospital] as well as the health services means that research can be conducted and implemented in sites of great need and for high impact on health outcomes. (Partner)*

4.4.3 How do these mechanisms compare to the intentions of the McKeon Review?

The McKeon Review's vision for the future of Australian health and medical research had seven overarching principles and 21 recommendations. The first principle was to embed research in the health system, with recommendation three relating to the establishment of Integrated Health Research Centres (IHRCs). The McKeon Review saw the Centres as combining hospital and community-care networks, universities, and research organisations such as medical research institutes (MRIs).

The review also envisaged the Centres be 'integrated and clustered', representing collaboration across key stakeholder types, with shared infrastructure and preferably geographically co-located. There is underrepresentation of some key stakeholders (PHNs, ACCHOs and other community health providers) in the formalised structure of the Centres. This potentially limits the ability of Centres to represent the interests of the local stakeholders in a systematic rather than

ad hoc manner, which in turn could limit a Centre's ability to respond effectively to the local context.

Opportunities exist for many Centres to strengthen and formalise a whole-of-health approach to responding to local context to embed research in the health system, build health professional research capacity and support priority-driven research.

4.4.4 How do these mechanisms compare to international contexts?

The UK and Canada have different health research policy and infrastructure to Australia, yet there is alignment across the three countries with respect to a vision of promoting population health through building capacity of health services to do and use health and medical research. One notable difference in the UK and Canadian research system compared to Australia is inclusion of 'social care' into the health research agenda.

Another notable difference is the UK and Canada have funded research centres with a focus on translational research for longer than Australia. The UK and Canada could therefore be considered more advanced in aspects such as the research workforce and impact measurement.

England

For the purposes of direct comparison to Australia, it is useful to review health and medical research in England, as Scotland, Wales and Northern Ireland are considered 'devolved nations' and do not have equal coverage of all research infrastructure.

England has both a unified National Health System (NHS) and a unified National Institute for Health Research (NIHR). The NHS drives two research mechanisms that could be compared to the Australian Centres: the Academic Health Science Centres (AHSC) and the Academic Health Science Networks (AHSNs). The NIHR drives the Applied Research Collaborations (ARCs) and Biomedical Research Centres (BRCs), amongst a host of other significant infrastructure. The health research infrastructure of England is described in more detail in Appendix I.

The experts interviewed for this evaluation had limited knowledge of the NHS operated AHCSs and AHCNs, and therefore were not able to provide detailed information in relation to their operations and impact. There was a however general consensus that the AHCSs and AHCNs are most successful when the partnerships between the health services and universities were 'aligned and melded' meaning a shared vision and embedded relationships.

Experts were concerned that when the NHS gets financially 'squeezed' the challenge of balancing clinical, education and research interests usually results in research funding coming last. It was noted that research initiatives have been paused while clinical researchers have been repatriated back into hospitals to provide frontline care during the COVID-19 pandemic. Similarly, concern was raised that aging physical research assets may not be replenished due to the financial drain of the recent and ongoing pandemic. For Australian health and medical research to be protected from such risks, a plan to protect research funds and clinician researcher time would need to be embedded.

Experts noted that the NIHR success is symbiotically tied to the existence of a unified National Health Service (NHS). The size and spread of the NIHR provides opportunities to promote and support health and social care research and is significantly different to the Australian experience. However, as the NIHR has evolved it was thought to have inadvertently created new research silos, with many slightly different application forms and metrics and not enough central staff. This provides a useful point for Australia to consider as it extends its translational research sector.

The UKs ARCs emerged from the Collaborations for Leadership in Applied Health Research and Care (CLAHRCs), evaluations of which highlighted increased levels of trans-sectorial collaboration across health research key stakeholder groups, similar to that observed in this evaluation. Expert opinion and literature however indicate that more substantial evidence of impact was harder to evaluate (Kislov et al., 2018). It would be opportunistic for Australia to learn from this experience and develop pragmatic and relevant outcome and impact measures and embed these into reporting frameworks to help monitor and evaluate impact.

As ARCs were only established in July 2019, little is currently known regarding their actual or potential impact. The BRCs are seen to play a critical role in experimental research which balances the ARC focus on applied research. When led and governed well, these mechanisms bring together hospitals and universities, community health and social care, third sector (Non-Government / Non-Profits), research institutes and industry to focus attention on national priorities.

Canada

In Canada the health research system is multilayered in structure and governance. Similar to Australia, the federal and provincial governments divide responsibility for health service delivery and decision-making.

The Canadian Institutes of Health Research (CIHR) is the principal federal health mechanism and drives virtual research institutes across Canada. The CIHR, in conjunction with the Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC), also lead the New Frontiers in Research Fund (NFRF) which has recently replaced the Networks of Centres of Excellence (NCEs).

The NFRF and the NCE focus on all research of significance to Canada. This includes health and life sciences, information and communication, environment, natural resources and manufacturing/ engineering. In addition, the Academic Health Science Networks (AHSNs) and Academic Health Science Centres (AHSCs) are publicly funded to provide research and innovation, integrated health services delivery and professional education. The AHSCs and AHSNs are centred around teaching hospitals with close links to large academic institutions.

Literature and expert opinion indicate that translational health research in Canada faces challenges in navigating relationships with government at federal and provincial/territorial levels. Within each layer of government, responsibilities are spread across various Ministries (including health and post-secondary education) and that these layers of funding and accountability lead to:

> *problems with competing agendas, conflicting policies and fragmented priorities (Brimacombe et al., 2010).*

As Australia experiences similar issues relating to tiered governance, it will be important for Centres to develop strategies and structures to engage with state and federal governments to minimise the potential for conflicting agendas.

Experts views on the current translational research situation in Canada and other similar countries is that the research funding is given to the wrong agencies, which 'feeds the academic research machine'. Instead of funding academic researchers and then requiring them to work with industry, government or community, experts considered that governments should fund the health service and get them to partner with academics (who will still get the funding). In this way the research system will be 'demand-driven instead of supply-driven' (this reflects the intent of the NIHR in the UK). This system would have health services identifying the problems all the way through the research cycle to translation, implementation and adoption at scale.

4.5. Research quality and excellence

This section considers the Centres mechanisms for enhancing research quality and excellence when implementing the RART Initiative.

	Research quality and excellence *Summary of key points:*
What mechanisms have been adopted by the Centres to enhance research quality and research excellence?	• In the absence of a single agreed definition and means of assessing research quality and excellence, Centres have started to consider what this means with their Partners and other stakeholders. • Areas of concentrated effort to improve research quality and excellence are supported by local Centre and national AHRA coordinated initiatives. • It is difficult to separate out the specific impact of RART funding in relation to improving research quality and excellence. • Funding research projects over longer duration can help reduce the threat to research quality posed by short timeframes.
How effective have the Centres' mechanisms for enhancing research quality and research excellence been?	• Each Centre is contributing to accelerating research quality and excellence. This is being achieved through a range of interventions including: building and retaining the research workforce, enhancing research ethics and governance processes, funding and creating enabling infrastructure, clinical research design, advancing data sharing and analytics, embedding consumer and community engagement into research and upskilling researchers in evaluation methodologies.
How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?	• International evidence suggests that appropriate investment in 'People, Place, and Project' enhances the potential for high performing research Centres and research quality and excellence. • Models for assessing university-based research excellence in the UK (REF), Canada (RIC) and Australia (ERA) use impact case studies and engagement indicators as measures. Centres are also developing a case study approach.
Opportunity	• There is opportunity to further develop appropriate methods and mechanisms to capture evidence of research quality and excellence associated with the RART Initiative. This may include establishing tailored indicators for each research project and case studies.

4.5.1 What mechanisms have been adopted by the Centres to enhance research quality and research excellence?

Fostering research quality and excellence

There was no universally accepted definition of research quality or research excellence across the Centres. This makes standard assessment of research quality and excellence challenging.

Centres provided a range of definitions of what excellence looks like in the context of the RART Initiative. One Centre commented that excellence is about 'the best product/medicine/quality research that will have the greatest output'. Another Centre stated that 'excellence is research implemented'. Another Centre explained that there are two sides to the research excellence coin. One side is successful translation of things that work, and the other is the non-translation of things that do not work. Related to this is the efforts Centres make to learn from projects that fail or stall in order to avoid replicating mistakes and inefficiencies.

This attitude is reinforced by the Cancer Institute NSW, which wrote:

> *[Centres] need to create a culture where failure is not automatically punished by withdrawal of support, but rather used diagnostically to develop the next round of research questions or to improve research protocols, processes or capacity. In addition, governance groups and the leadership need to actively learn from colleagues in the broader translational research community.* (Cancer Institute NSW, 2015)

Barriers to research excellence include time pressures. One Centre quoted Chalmers and Glasziou (2009) in relation to the extensive waste associated with biomedical research and considered that the short timeframes expected for RART project outcomes could contribute to poor quality research and therefore waste. The Centre added:

> *Good research requires quality, developing proper collaborations, which is the aim of this program, takes time… In the current research environment that should be reflected in the way the program is delivered. (Centre)*

This Centre spoke of needing a framework to support research quality. They suggested that the National Health and Medical Research Council's (NHMRC's) Research Quality Strategy (2019) is not sufficient in that it 'doesn't have teeth'. However, they did suggest that without the Centre focusing the attention of Partners on research quality and excellence, the subject would not be the focus of Partner's attention.

The major activities Centres cited in relation to improving research quality and excellence included streamlining and standardising research ethics and research governance processes, data sharing agreements, mandating and/or making Good Clinical Practice (GCP) training available and mandating and/or encouraging consumer engagement in research design.

One Centre commented that they had a solid foundation of research excellence prior to the RART Initiative but saw their job now to support, enable and enhance translating research excellence into practice, impact, and commercialisation.

Measuring contribution to research quality and excellence

The RART Initiative was generally considered by Centres to contribute to improving research quality and excellence. Centres considered that the RART funding model encourages researchers to think differently about how they develop research plans. For example, the Centres provide researchers with access to formal engagement mechanisms with consumers, and they are encouraged to work collaboratively with people with whom they would not otherwise have had an opportunity to work. One Centre commented that the most important output of the RART Initiative is generating systems level changes that improve research quality and excellence, such as cross-disciplinary collaboration, streamlining ethics processes and improving clinical trial databases.

Two Centres stated that it is hard to separate out the impact of RART funding from all the other sources of funding when it comes to improving research quality and excellence. In listing numerous activities associated with research quality and excellence one Centre stated:

> *All these things are clearly adding up and contributing to research [quality] and the RART funding is certainly part of that…but trying to tease it out from everything else we are doing is hard. (Centre)*

4.5.2 How effective have the Centres' mechanisms for enhancing research quality and research excellence been?

The Partner survey respondents indicated high levels of agreement (79%) that the Centres had an effective approach to promoting research quality and excellence (8% disagreed, 10% felt it was too early to tell and 3% didn't know Q5.1 n=72). Similarly, 71% of respondents agreed that Centres were effectively engaging Partner organisations in promoting research quality and excellence (10% disagreed, 15% felt it was too early to tell and 1% didn't know (Q5.2 n=72).

Comments from the Partner survey indicated that Centres were accelerating research quality and excellence in:

- research ethics
- data analytics
- economic evaluation
- research training
- clinical trial design
- co-design, and
- consumer and community engagement.

Another aspect of promoting research quality and excellence is considered to be when Centres fund high quality research proposals that have been developed in response to clear guidelines. Centres spoke of starting to incorporate more rigour into RART project selection, in some cases requiring researchers to evidence end-user or end-beneficiary consultation.

Research quality and excellence relating to translational research can be difficult to assess. However, an opportunity exists for national investment to engage all key stakeholder groups to develop a more diverse picture of what might be considered good or exceptional translational research.

Communicating best practice should continue to focus on written (or audio-visual) semi-structured narrative case studies (discussed in section 4.6), which are becoming a feature of the Centres work. These are a helpful means to communicate outcomes to stakeholder audiences.

4.5.3 How do these mechanisms align to the intentions of the McKeon Review?

The McKeon Review proposed that four interrelated elements of the research delivery system needed to be enhanced to ensure health and medical research maintained its high standard in Australia:

- the research workforce
- the grant process
- enabling infrastructure, and
- research funding.

The RART Initiative does not specifically target these areas although Centres have established mechanisms that correspond to strengthening these elements. This includes:

- **Supporting workforce capacity building** through investment in scholarships, fellowships and other forms of training.

- **Improving the prioritisation, selection, funding and monitoring** of RART funded projects. For example:
  - grant funding processes requiring engagement with end-users
  - development of impact goals and case studies, and
  - evaluation of applications by a review committee that includes consumer and community expertise.

- **Investing in enabling infrastructure,** often involving non-RART funding. Examples of enabling infrastructure includes:
  - research support services
  - co-funding clinical registries, and
  - leveraging funding for biobanks.

4.5.4 How do these mechanisms compare to international contexts?

The Research Excellence Framework

All publicly funded university-based research in the UK is subject to the Research Excellence Framework (REF), the UK model has influenced the Research Impact Canada (RIC) model and the Australian Excellence in Research for Australia (ERA) model. REF is the focus for the following section.

The REF is a process of expert review and occurs every five years. REF is very large, with more than 150 institutions submitting 191,950 research outputs, covering 52,061 FTE staff and providing around 7,000 impact case studies (Manville et al., 2015).

Expert opinion regarding the REF was mixed. A strong proponent of REF stated it provides a transparent performance measure for funding research that rewards excellence. A critic suggested that it was an organisational measure of impact rather than an individual or project

measure of impact. It was also felt to have limitations in that anything could be submitted as evidence over a given period of time, not necessarily related to outcomes of research funding.

Researchfish©, a tool developed in the UK was considered a more valuable measure of individual researcher performance. The tool was described as having the capability to be tailored to suit the funder but is essentially an off the shelf product.

Characteristics of high performing research institutes

REF data was used by RAND Europe (Manville et al., 2015) to determine characteristics of high performing research units. RAND Europe reviewed the top 1.5% of REF case study submissions to determine key characteristics of high research performance. Analysis of qualitative and quantitative data identified eight observations that are associated with high research performance (i.e. research excellence).

They are:

- in high-performing research units more of the staff have PhDs, professorial positions, international experience and externally funded salaries

- high-performing research units are focused on recruiting the best and retaining them

- high-performing research units provide training and mentorship programmes to develop staff, while offering rewards for strong performance

- staff within high-performing research units display a distinct ethos of social and ethical values

- the leaders of high-performing research units have earned 'accountable autonomy' within their higher education institution

- high-performing research units have strategies that are real, living and owned, and more than merely a written document

- high-performing research units receive more income per researcher than the average research unit, and

- high-performing research units enable and encourage researchers to initiate collaborations organically as opposed to using a top down approach.

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The RAND Europe report also proposed a conceptual model to help explain how these observations may interact (Figure 15).

Figure 14: A conceptual model describing high performance research units
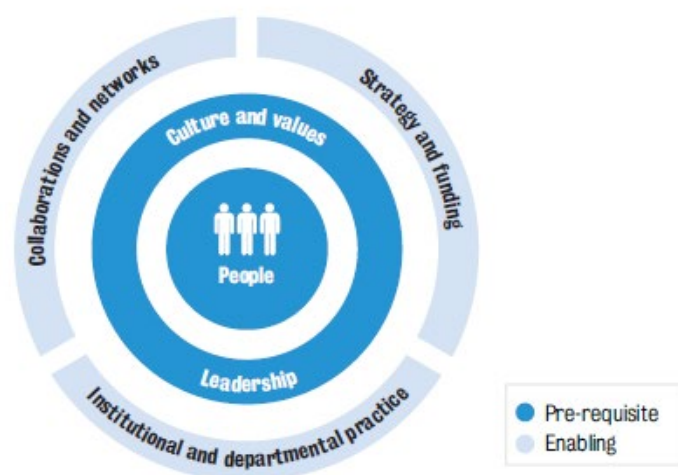
International expert opinion proposed that 'good' translational research practice is a preferred term rather than 'best' when considering the qualities of research centres. They stated that Centres that pay attention to 'People, Place and Project' are more likely to deliver 'good' results. This was explained as follows:

- **People** – equipping people with the right skills, mentoring and supporting them
- **Place** – fostering a positive culture, removing hierarchy, creating equality, diversity and voice
- **Project** – providing resources to support people and rewarding impact

This evaluation observed that within the 'people' element of the model, approximately half of the Centres have leveraged resources to support training and mentoring programs, but this is not yet consistent across all Centres due to the substantial costs involved.

Within the 'place' element, Centres are observed to be implementing change in the culture in which research priorities are identified, designed and funded. Continued work in this area, extended into engaging across all stakeholder groups, would be beneficial in future.

Within the 'project' element, while RART funding is making an impact on the delivery of research projects, currently there is not an established system for rewarding impact beyond research publications. Developing a broader definition of research impact would support more innovative and less traditional research methodologies and researchers.

4.6. Monitoring progress and evaluating impact

This section considers the mechanisms adopted by Centres to facilitate monitoring progress and evaluating impact when implementing the RART Initiative.

	Monitoring progress & evaluating impact *Summary of key points:*
What mechanisms have been adopted by the Centres to monitor and evaluate RART funded projects?	• Centres considered that monitoring, evaluation, and reporting activities should be meaningful, provide opportunities to learn, be proportionate to the investment and not be unduly onerous. Evidence indicates that there is substantial work required to embed these principles in the RART Initiative. • Centres are at different stages of developing their approach to monitoring and evaluation. The Centres are prioritising and progressing work in this area individually and collectively through AHRA to develop practical, efficient and useful monitoring and evaluation mechanisms.
How effective have the Centres' mechanisms for monitoring and evaluation outcomes and impact been?	• Mechanisms to monitor progress and measure impact are currently not well-established across all Centres and have been highlighted by Centres and their Partners as an area that requires strengthening. • Some Centres are using economic evaluation and impact case studies, these are seen as effective means of evaluating projects and reporting research outcomes and impacts. • Tension exists in measuring the impact of diverse and complex projects using standardised quantitative measures that lack sensitivity and flexibility.
How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?	• Centres that are using economic evaluation and supporting their health Partners to use it are aligned to the intent of the McKeon review. • Centres that are developing impact case studies are aligned to international trends in evaluating research impact. • There is a mixed opinion regarding the best way to measure impact and the extent that performance measures such as research publications should underpin the funding of research centres.
Opportunity	• There is opportunity to develop and agree at a national level a broader definition of research impact and facilitate practical, efficient and useful monitoring and evaluation mechanisms that include innovative, flexible and culturally appropriate measures of impact.

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4.6.1 What mechanisms have been adopted by the Centres to monitor and evaluate RART funded projects?

Measuring impact and capturing different perspectives

All Centres recognised the importance of embedding monitoring and evaluation into their work. They noted that it is important that the monitoring and evaluation approach has utility and balances rigor with feasibility.

Centres are at different stages of developing their individual approach to monitoring and evaluation, four Centres spoke about monitoring and evaluating research projects, one Centre is embedding economic evaluation and two Centres spoke of developing culturally appropriate outcome measures. Centres also spoke of using impact case studies to communicate outcomes. Collectively all Centres are working through AHRA to develop an Impact Evaluation Framework.

Three Centres spoke of being interested in receiving more guidance from the HMRO in relation to monitoring and evaluation.

> *If there was a consistent MRFF-wide approach to evaluation this would be good. (Centre)*

The majority of Centres stated that meeting progress reporting expectations of the RART Initiative funders, Partners and other stakeholders was challenging. Centres spoke of needing flexible reporting methods and measures of impact that incorporate the diversity of RART projects. One Centre noted that this should include incorporation of Aboriginal and Torres Strait Islander peoples' perspectives and local priorities.

A number of Centres highlighted the difficulty in predicting or forecasting likely impacts at the commencement of a project, as is often required in funding agreements. They drew attention to the limitations of linear logic models, noting that these models are rarely representative of the nature of evolving research and its environment. There was also evidence to indicate that Centres might not necessarily agree on a definition of impact, with one Centre highlighting publications and another real-world uptake:

> *It is immaterial if a piece of work has been cited in 14,000 places if it's not getting onto the ground. (Centre)*

Establishing monitoring and evaluation mechanisms

Centres spoke of using formal and informal methods of monitoring and evaluating RART funded projects. Examples included incorporating regular monitoring of milestone/deliverables reports, and annual performance reviews of productivity against the 'translation to impact spectrum'.

Impact reports and case studies were commonly used among the Centres. These are communicated to stakeholders through the Centre's website and at seminars, symposia and conferences. One Centre described how fund recipients initially found it very challenging to detail their project's social, clinical, and economic impact(s). However, the Centre reported that after two and a half years the standard had greatly improved.

Two Centres are leading a national initiative through AHRA to develop a research monitoring and evaluation framework. As part of this work they are looking at international models for measuring impact. This work is considered important not only for the Centre's reporting obligations to the MRFF but also reporting back to their Partners.

One Centre spoke in detail of how they are measuring RART impact, which included recording direct project-related healthcare impact, broader lessons and changes from projects and from platforms, commercialisation successes, sustainable implementation into healthcare, systems level change, value to end-users, broader partnerships and investment, extent of community/ stakeholder engagement.

Another Centre spoke of embedding health economic evaluation in every RART project and building the capacity of their health service Partners to use economic evaluation. This includes making available a health economist and commissioning a university course to upskill participants on how to deliver an evidence base. This course is currently postponed due to the COVID-19 pandemic. This work will help to ensure economic evidence is included in decision making.

Learning Health Systems were discussed by two Centres. One Centre has established a knowledge translation network across their Partners, which they stated would be shared nationally. They commented:

> *Implementation science is not pragmatic enough. Healthcare improvement is pragmatic but not scientific enough. The [Centre's] Learning Healthcare System is bringing all those silos together. (Centre)*

The Centre advised that the system is about learning together for improvement.

Developing appropriate impact measures

Centres referred to a lack of flexibility in existing impact measurement processes which made it difficult to effectively report on complex behavioural change interventions. One Centre discussed the challenges of measuring public health interventions, such as a childhood obesity intervention, due to difficulty isolating impact, compared to the more conventional measurement of clinical treatment interventions such as acute stroke interventions. Another Centre explained how success criteria of an intervention might require a number of years to be properly measured and might be too complex to isolate causal links to impact.

Centres considered that monitoring, evaluation, and reporting activities should be meaningful, provide opportunities to learn and not be unduly onerous, as this would take time away from research activities. Additionally, one Centre stated that impact measurement frameworks need to recognise the diversity of each Centres' work:

> *Bringing up a score sheet and trying to start scoring us all in the same way [won't work] - it should be about recognising that diversity. When you ask questions about 'how many did this and how many did that' it's missing the point. We are all successful, we should be able to demonstrate our success in different ways. (Centre)*

Another Centre suggested that the monitoring and evaluation process (cost and time) needed to be proportionate to the investment:

> *At the level of an individual centre, the spend is almost undetectable. So those RART projects spending eight million [dollars] over four years – during the same time the University alone will have spent two billion on research. So, the evaluation processes need to be proportionate. (Centre)*

Researchfish© as discussed in section 4.5.4 was suggested by one Centre for efficient monitoring and evaluation. The Centre considered that this was inexpensive and efficient, with only the grant holder needing to report outputs, outcomes, and impacts.

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4.6.2 How effective have the Centres' mechanisms for monitoring and evaluating outcomes and impact been?

Data from the Partner survey (Q9.1) indicated 59% of respondents agreed that the Centres had an effective approach to supporting the monitoring and/or evaluation of RART projects (16% disagreed, 16% felt it was too early to tell and 13% didn't know, n=70). A similar pattern was seen in relation to whether Centres had effectively engaged Partner organisations in supporting the monitoring and/or evaluation of RART projects where 52% agreed, 14% disagreed, 14% felt it was too early to tell, 13% didn't know and 6% selected not applicable (n=69).

When asked if they had contributed to monitoring and/or evaluation of a RART funded research project, 14% of Partner organisations selected 'more than five times', 36% selected 'two-four times', 18% selected 'once', 18% selected 'never' and 14% selected 'not applicable (n=66).

4.6.3 How do these mechanisms align to the intentions of the McKeon Review?

The McKeon Review outlined six high level criteria for establishing the Centres:

- integration
- excellence
- translation
- strategy,
- leadership, and
- governance.

The Review did not provide advice relating to how the work of the Centres should be evaluated, although it did state that capacity should be built in health services research and health economics to 'understand, assist and evaluate translation'. Workforce research and evaluation capacity building is discussed in section 4.7.1.

Monitoring progress and evaluating impact is yet to be fully embedded across all Centres. This situation may have been impacted by a perceived gap in guidance from the MRFF regarding what should be monitored and evaluated in relation to the RART Initiative. Work which is underway through AHRA to develop a research monitoring and evaluation framework will help address this.

There is an opportunity for the HMRO to provide further direction and clarity regarding what should be monitored and evaluated for the RART Initiative. This could include a mix of process, outcome and impact measures that could provide relevant information regarding accountability, decision making and future funding. Consistency of approach to monitoring and evaluation across MRFF research grants would be beneficial for researchers, Centres and the HMRO. The following section provides and overview of some of the approaches in the UK and Canada.

4.6.4 How do these mechanisms compare to international contexts?

Measuring impact in the UK and Canada

As mentioned in section 4.5.4, the UK's REF measures outcomes and impacts of university-based research across all disciplines, including health sciences. Impact is measured through case studies, with impact defined as:

> *an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia (UKRI, 2020).*

Research Impact Canada (RIC) also uses research impact case studies based on the UKs REF. However, the RIC impact case study methodology can be used prospectively and retrospectively, unlike REF's which is used according to expert opinion as a retrospective measurement tool only. A draft Impact and Engagement Case Study interview guide has recently been developed (Research Impact Canada, No date) which is intended to facilitate stakeholder contribution to the case studies.

While quantitative metrics are considered to hold potential for development of research excellence and impact measurement (Wilsdon et al., 2015), qualitative rather than quantitative criteria are considered by some to be more appropriate for health research translation (Cancer Institute NSW, 2015). This was mirrored in a review of the REF (Stern, 2016) which recommended a more flexible and broad approach to measuring impact through case studies including impacts on:

- socio-economics
- government policy
- public engagement and understanding
- cultural life
- academic impacts outside the field, and
- teaching.

The Australian experience

The Australian Research Council's Excellence in Research for Australia (ERA) has developed an Engagement and Impact Assessment (EI) framework. This was considered by experts to be similar to the UK's REF framework. A view shared by one of the international experts was that, while the two systems were similar, only the UKs REF provided a financial incentive for high performing research centres.

A comparative review of policy and procedures to assess research impact in Australia and the UK (Williams & Grant, 2018) indicates that the cost of implementing the REF would be prohibitive for Australia, which would likely select a more metrics based system rather than a case studies based system.

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4.7. Additional findings

4.7.1 Workforce capacity development

This section considers Centres' mechanisms for responding to workforce capacity development needs when implementing the RART Initiative.

	Workforce capacity and development *Summary of key points:*
What mechanisms have been adopted by the Centres to respond to workforce capacity development needs?	• Centres are engaged in a range of local, and in some instances national, workforce development initiatives. Some are more advanced in their activities and can resource initiatives outside of RART funding. • The majority of RART projects have workforce capacity building as a goal, but this remains an area of considerable need amongst Partner organisations and beyond. • Centres highlighted that there is a need for continued resourcing for rural and remote health sector research capacity, Aboriginal and Torres Strait Islander research and researcher capacity, in addition to consumer-researcher and clinician-researcher opportunities. • Consumer engagement research training has been offered by a few Centres and is particularly valued and considered a requirement for academic researchers who have traditionally not engaged consumers in research.
How effective have the Centres' mechanisms to promote workforce capacity development been?	• Workforce research capacity development is a focus of many RART funded projects. Some Centres are building research capacity through providing training and support in, economic evaluation, trial design, epidemiology, research translation and implementation science and consumer and community engagement. • Centres are also providing opportunities for clinician-researchers to receive fellowships and scholarships. These are highly valued by recipients as taking time away from clinical duties is often extremely difficult.
How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?	• The work of the Centres to date aligns to the intentions of the McKeon Review but requires maturity, expansion and continued investment. The RART Initiative funding can only form a small part of the solution. • The UK's NIHR Academy provides extensive support for research workforce capacity building.
Opportunity	• There is an ongoing need and opportunity to build capacity for research translation through developing the research workforce. Areas of particular need include rural and remote health research, Aboriginal and Torres Strait Islander research and researchers, in addition to consumer-researcher and clinician-researcher opportunities.

4.7.1.1 What mechanisms have been adopted by the Centres to respond to workforce capacity development needs?

Identifying workforce gaps

Centres described the health researcher workforce in Australia as having limited capacity to support research translation in its current state, which was felt to be a significant barrier to impactful research translation. Two Centres discussed the need for a clinician academic workforce such as in the UK and Canada.

Regional Centres also highlighted challenges in attracting researchers to rural and remote regions, with one Centre noting that it is necessary to build a critical mass of researchers in order to be self-sustaining. In particular, they noted the critical importance of Aboriginal and Torres Strait Islander researchers.

A focus for most of the Centres during their establishment phase has been identifying workforce gaps, strengths and challenges; undertaking a stocktake of development opportunities and gaps – both internally and across Centres; and developing targeted approaches to capacity building. Six Centres have established formal committees or working groups for workforce development within their Centres.

Approaches to workforce development

Project profiling survey data (Figure 16), indicated that of the 260 TTRPs that data was available for, 75% had workforce capacity building elements focused on the health workforce, 62% targeted academic workforce, 20% Indigenous workforce and 20% the Health Consumer workforce. The figures for the 26 NSLIs were comparable.

Figure 15: Workforce capacity building initiatives in RART projects

Workforce capacity building in RART projects

	1. Academic workforce	2. Health workforce	3. Indigenous workforce	4. Health consumer workforce	5. Other	6. Not applicable
■ TTRPs (n=260)	62%	75%	20%	18%	2%	12%
■ NSLIs (n=26)	54%	73%	23%	19%	4%	8%

■ TTRPs (n=260)   ■ NSLIs (n=26)

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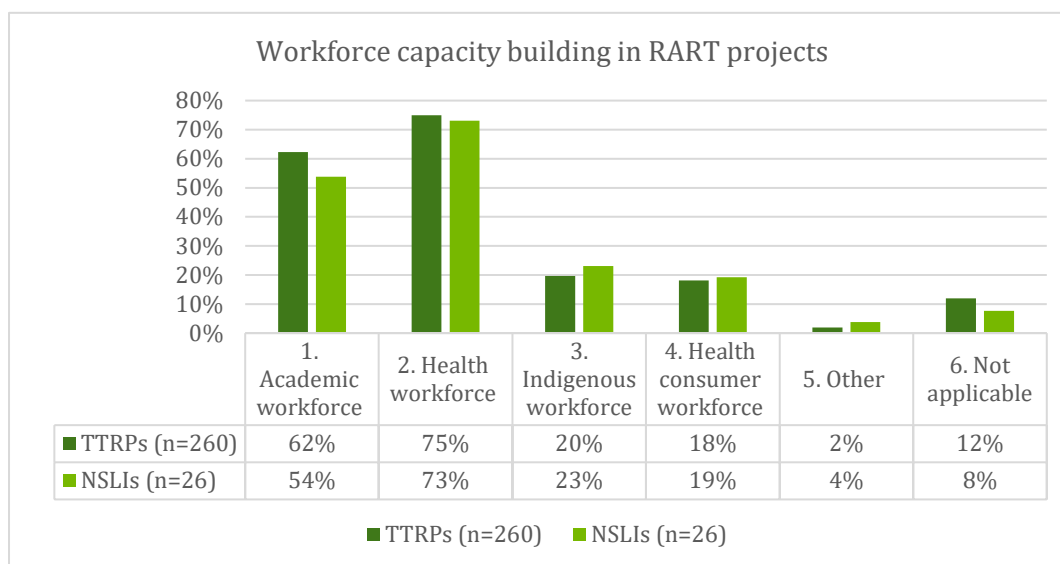
Workforce development initiatives that have been undertaken by the Centres include:

- **Conferences and Symposia** – three Centres spoke of hosting annual conferences or symposia as workforce development for their Partner organisations and other stakeholders. One Centre hosts an annual Implementation Science Symposium and a Master Class for Partners led by an industry expert.

- **Secondments** – one Centre stated they have funded national and international secondments to support the professional development of personnel.

- **Research networks** – three Centres have or are trying to establish research networks focused on specific areas of need, for example an Aboriginal and Torres Strait Islander researcher network, a physiotherapy research network and General Practitioner research network.

- **Courses** – most Centres have developed or provide funding for research-enabling courses (see following section).

Cross-collaboration and sharing

Three of the Centres discussed collaboration with other Centres on workforce development opportunities. Examples include:

- a webinar series on building resilience during COVID-19

- bringing in experts from other Centres and internationally

- sharing these opportunities across members and AHRA Centres, and

- accredited courses developed by one Centre that were made available to other Centres' Partners at heavily discounted rates.

This sharing of training opportunities is underpinned by a deliberate attempt to avoid duplication of effort in workforce development activities and opportunities, to focus resource on addressing gaps. This approach was reinforced in the environmental scan by the Cancer Institute NSW, in their analysis of Translational Cancer Research Centres (TCRCs):

> *As TCRCs evolve from the set-up phase, developing the capacity to facilitate and coordinate access to training programs offered across the whole network of TCRCs, enhance cooperation and reduce duplication of effort will enable best practice in research capacity-building* (Cancer Institute NSW, 2015, p. 13).

Two Centres are members of the Spinifex Network, which was established in 2019 with a focus on research in rural and remote Australia. Part of the two Centres work as members of the network is to help develop solutions to strengthen the rural and remote health research workforce in Australia, and to reduce reliance on 'Fly in Fly Out' models.

Another initiative that is being delivered by a Centre focusses on supporting health staff at the local rural hospital to develop a more methodical approach to research.

4.7.1.2 How effective have the Centres' mechanisms to promote workforce capacity development been?

Data from the Partner survey indicated that 57% of respondents considered the Centres had an effective approach to responding to local workforce research needs. This was considerably lower than other aspects of the Centres' work (19% disagreed, 19% felt it was too early to tell and 4% didn't know, Q5.1 n=72). Similarly, 53% agreed that the Centre effectively engages their organisation in responding to local workforce needs. Notably 25% disagreed and 18% felt it was too early to tell (Q5.2 n=72).

In reviewing open text comments from the Partner survey, the following key themes emerged as areas of strength in building workforce capacity:

- scholarships (clinical epidemiology and knowledge translation)
- embedded economist project including education modules
- clinician-researchers capacity building in translation and implementation science
- Support for trial design and capacity building in research workforce
- development of skills building opportunities for clinicians and managers
- consumer engagement research training
- early Career Research Fellowships, and
- research training and mentoring program for doctors.

With regards to funding scholarships a respondent noted:

> *[The Centre] has provided 19 scholarships in clinical epidemiology and 26 scholarships in knowledge translation to staff in our partner organisations. [the health service] has benefited greatly from these and we value the programs. (Partner)*

With regards to the embedded economist project a respondent noted:

> *This project is showing that exposure to a specialist evaluation intervention (education + access to a health economist) is having beneficial outcomes on health service staff regarding knowledge and attitudes toward the use of evidence in decision making and in understanding cost and how a program can be optimised. (Partner)*

Partner survey respondents highlighted the following workforce capacity building area as requiring strengthening:

- career pathways for clinician researchers
- examine models for work force development
- further education and development opportunities
- health and medical student education in translation
- developing capacity in biostatistics and health economics
- building capacity and capability of the local population
- develop online training modules, and
- one on one training to health service partners to help them embed translation pathways.

With regards to building capacity and capability a respondent noted:

> *The primary challenge is a lack of research capacity, capability and leadership at the LHD - [the Centre] is active and supportive, but it means that active participation in all areas is challenging. (Partner)*

4.7.1.3 How do these mechanisms align to the intentions of the McKeon Review?

The McKeon Review highlighted the challenges and barriers of building and maintaining a clinical-researcher workforce, which is destabilised further through competitive research funding.

> *Research capacity within the health professional workforce is critical for both conducting research and driving the translation of research into evidence-based healthcare...The current system does not adequately facilitate, incentivise or support research by the clinical workforce. Research is rarely financially rewarding for health professionals, who face increasing pressure to deliver clinical services rather than research. Protected research time through practitioner fellowships is required to ensure the best health professional researchers remain active in research. (p23)*

The review also suggested a number of key actions to help build and maintain the health professional research workforce. Those that Centres or their Partners reported as being delivered are indicated in Table 6.

Table 6: Actions to build and maintain the research workforce

McKeon review actions for a research workforce	Being delivered by Centres
Establish health professional research networks	✔
Train health professionals in research	✔
Support research-practitioner career pathways	✔
Build capacity through practitioner fellowships and competitive grants	✔
Build capacity in key enabling areas and disciplines that will deliver health system impact (e.g. health economics)	✔
Embed research into health professional training and accreditation	✘
Provide increased flexibility of track record definitions in grant applications to encompass a broader range of research activities and contributions	✘

Workforce development is seen as a priority by all Centres and considered essential for the continued development of research translation in Australia. While not fully established yet across all Centres, workforce capacity to facilitate research translation is a focus. For MACH this occurs through the MACH alliance[16], it also occurs across Centres through AHRA.[17]

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[16] https://www.machaustralia.org/translators

[17] https://ahra.org.au/wp-content/uploads/Research-Translators-to-Improve-Healthcare-Outcomes-and-Boost-the-Economy_06Oct20.pdf

4.7.1.4 How do these mechanisms compare to international contexts?

Prior to the UK NIHR's Strategic Review of Training in 2016, reports were highlighting a need for the UK to invest in translational research training to develop a specialist workforce (Soderquest & Lord, 2010). The NIHR Academy emerged in response to the 2016 review and provides a comprehensive suite of training and support for health professionals in research. Training is offered at different levels, and accessible by people from different professional backgrounds. Opportunities include Pre-Doctoral Fellowships in medical statistics, health economics, clinical trial design, operational research, modelling, bioinformatics, qualitative research, mixed methods and epidemiology.

The NIHR also offers an Integrated Clinical Academic Program[18] supporting healthcare professionals to develop careers that combine clinical research and research leadership with continued clinical practice and professional development.

In Australia, some of the Centres are attempting to deliver aspects of the Academy's program such as research fellowships and scholarships. However, the Centres and the RART Initiative are not resourced to deliver the full range of workforce capacity building activities. Additionally, one of the most significant barriers to workforce research capacity building is dedicated research time away from clinical duties. Addressing this is generally beyond the remit and funding capability of the Centres.

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[18] https://www.nihr.ac.uk/explore-nihr/academy-programmes

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4.7.2 Governance and leadership

This section considers the influence of Centre governance and leadership on the implementation of the RART Initiative.

	Governance and Leadership *Summary of key points:*
What governance structures and leadership mechanisms have influenced the Centres' implementation of the RART Initiative?	• Most Centres have adopted traditional mechanisms for governance such as Boards and Councils. Some have also distributed authority and responsibility to leaders of specific bodies of work such as clinical advisory groups. • As experts in their work, Centre leaders and their Partners respond well to having earnt autonomy, noting accountability for spending public funds is required in Australia. • In terms of Centre Executives, having credibility as a leader in health services and academia is seen as important, as is having a good 'track record' in managing similar initiatives internationally and in Australia. • In some Centres that have experienced executive leadership change, Partner feedback suggested improved satisfaction with the current leadership.
How effective have the Centres' mechanisms for governance and leadership been?	• Partners viewed Centres' mechanisms for leadership and governance as effective. Risk planning was less well developed. • Effective Centre governance models are considered to be those that are clear, participatory and distribute authority appropriately to Partners. • Effective leaders are considered to be good communicators, who can engage with stakeholders and draw out the strengths of Partners.
How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?	• The McKeon Review highlighted the need for Centres to have strong leadership and effective governance mechanisms, on the whole Centres appear to be in line with this requirement. • Literature and expert opinion indicate that effective leaders have equal measures of qualities associated with 'the head, the heart and the hand'. These qualities are useful for self-reflection for Centre executives.
Opportunity	• There is opportunity to strengthen the governance mechanisms for the RART Initiative to ensure that there is appropriate balance between accountability for public expenditure and earnt autonomy based on track record. • Accountability reporting requirements for grant recipients receiving funding under the RART Initiative should be clearly articulated and communicated in the funding expressions of interest guidelines, they should also remain as consistent as possible over consecutive funding rounds so that reporting systems can be bedded in.

4.7.2.1 What governance structures and leadership mechanisms have influenced the Centres' implementation of the RART Initiative?

Governance structures

The McKeon Review highlighted the importance of strong leadership teams and robust governance models within research centres (Recommendation 3). The review recognised that in order to facilitate best-practice translation of research into healthcare practice, Centres should be supported by a strong governance model that facilitates collaborative partnerships between researchers within universities, medical research institutes and health services, and encourages cooperative access to skilled professionals, infrastructure, and patient data.

The nine Centres have different governance structures, some more complex than others. The majority have representation from all members either through a Board, Council or Committee of Representatives. In most Centres this is supported by a management group that includes the executive team. A smaller number of Centres have a third layer of governance comprised of the heads of specific bodies of work, such as the clinical theme leads (discussed in the following section). One Centre with a large research institute membership has implemented a system of rotation by which one representative from their six research institutes and one representative from their five universities is a member of the Board at any one time.

One Centre explained that they take a 'layered governance approach' meaning the Centre has established governance at different levels such as at the Board level, at the Executive level and at a research 'doing' level. The Centre suggested that this approach provided some protection against the impacts of loss of pivotal people, meaning that the system is more resilient to change. The layering of governance also enables decision-making responsibilities to be spread across a wider number of members and representatives.

Partner representatives on Boards usually included Executive Directors (EDs), Chief Medical Officers, Chief Operating Officers, or Chief Research Officers. One Centre explained that the active involvement of senior representatives at Board meetings is helpful as they carry authority within their own organisations to advance the Centre's work. Another Centre noted that Partners tend to be more engaged with the Centre's activities when they are represented on the Board.

The involvement of additional non-Partner stakeholders on the Board was discussed by two Centres. One Centre has a consumer representative on their Board who brings priority issues relating to consumer engagement and another Centre is considering including skills-based members on their Board to provide guidance on specific areas of interest.

Almost all the Centres have established a systemic process of continual reflection on governance and leadership approaches or were willing to develop one. One Centre has recently completed a review of its strategy and governance and is in the process of considering how to implement the outcome of this. Other Centres stated that they are researching best practice and learning from international experience, including approaches to leadership.

Research themes and enabling platforms

Around half of the Centres spoke of having themes, committees or working groups which are focused on a specific body of clinical or non-clinical research work.

Five Centres arrange their research themes around a specific disease or area of clinical practice and have recruited senior clinicians as theme leaders. This has advantages in that it aligns with health system delivery structures and engages influential people relevant to the research

translation process. For example, one Centre stated that their clinical themes are well aligned with hospital structures, providing a clear line of sight between research and its potential area of application.

Another Centre referenced AHRA's NSLI enabling platforms. These platforms are focussed on capacity and capability building, which are considered relevant to all, as opposed to clinical themes which are disease focused. The Centres invest RART money in the NSLI platforms and come together to drive improvement in these areas, which were noted by one Centre as the most impactful, value for money RART Initiatives.

Business models

The seven Centres that discussed their business models were all operated as an Unincorporated Joint Venture (UJV), also referred to as an Unincorporated Association. The majority of Centres are bound by collaborative partnership agreements through a Memorandum of Understanding (MOU), and one through a Memorandum of Association (MOA).

While the majority felt this arrangement suited the Centre, two Centres stated that they were considering becoming incorporated. One planned to do so later in 2020, the other explained that this might occur in the future. The main suggested benefit of becoming incorporated was that it would enable the Centre to enter into contracts on its own behalf, rather than requiring a Partner to be a nominated entity to manage contractual arrangements.

One Centre stated that they endeavour to work as if they are fully incorporated and meet the requirements of the Australian Securities and Investments Commission. They suggested that this provides rigour around Board processes, and financial and legal delegations.

Leadership

The EDs of each Centre have diverse qualifications and experience. The majority have clinical academic backgrounds which helps them to navigate the different cultures and operating mechanisms of health services and universities. Having this dual connection assists the EDs to engage and obtain buy-in from these sectors. EDs without clinical training have other experience and skills that assist them to conduct their work, including experience in system and service planning, governance and leadership, and policy and advocacy. Some EDs have experience working with AHSCs in the UK and can apply their learnings to the Australian context, others are able to use their connections with the sector and the communities they serve, in particular EDs with close connection to Aboriginal Communities, are able to build mutual understanding and trust. All EDs shared a stated passion for research translation, a commitment to collaboration, and a drive to deliver impact for their communities.

The leadership of the Chair of the Board was noted by four of the Centres as important to the success of the Centre. The Centres discussed the value of having an independent Chair of the Board in that they are neutral and objective without vested interest in decisions. Other valued attributes included the Chair's knowledge of a sector such as government and an ability to keep the agenda focused on high level objectives. Other Centres stated that the Chair of the Board was undertaken in rotation by one of the Partners but did not comment on whether this had any benefits or limitations.

Centres discussed tensions associated with leadership, including ensuring members were committed to the Centre's shared vision, that funding was fairly distributed, that all voices could be heard, and that gender equity was embedded. Investing time in building relationships with Partners and consensus mechanisms has helped reduce 'squabbling' over funding.

4.7.2.2 How effective have the Centres' mechanisms for governance and leadership been?

The effectiveness of Centre management

Respondents to the Partner survey indicated high levels of agreement that the Centres had an effective approach to leadership (90%) and strategic planning (84%). Effective governance received slightly lower levels of agreement (76%) but was still supported by the majority. Risk management received significantly lower levels of agreement (56%) with notable levels of uncertainty and prematurity in responses (Table 7, Q6.1 n=70)

Table 7: Centre management

Q6.1 The Centre has an effective approach to: (n=70)	Agree/ Strongly agree	Disagree/ Strongly disagree	Too early to tell	Don't know
a) Centre leadership	90%	4%	6%	0%
b) Centre governance	76%	11%	10%	3%
c) Centre strategic planning	84%	7%	9%	0%
d) Centre risk management	56%	10%	16%	19%

An example of how Partners see the importance of Centre leadership is described below in relation to a data access and data analytics project funded by HTSA.

> *HTSA has secured substantial leverage of funding and resources for this project through the SA Government SA Health, the Commission on Excellence and the Department of Innovation as well as Digital Health SA. It is clear this type of initiative could not have occurred without HTSA's leadership. It is a perfect example of the benefits of the Translation Centre program and of RART. (HTSA Partner)*

Whilst the majority or Partner survey respondents indicated that Centre leadership was on track to support research translation, there was an acknowledgement that this had not always been the case across all Centres and that new leadership had provided greater opportunity to make progress.

Around three quarters of Partner survey respondents agreed that Centres effectively engage their Partners in leadership (77%), governance (76%) and strategic planning (77%). Once again effective engagement in risk management recorded significantly lower levels of agreement (50%), (Table 8, Q6.2 n=70).

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Table 8: Partner engagement in Centre management

Q6.2 The Centre effectively engages our organisation in: (n=70)	Agree/ Strongly agree	Disagree/ Strongly disagree	Too early to tell	Don't know	N/A
a) Centre leadership	77%	13%	6%	1%	3%
b) Centre governance	76%	10%	7%	4%	3%
c) Centre strategic planning	77%	9%	11%	0%	3%
d) Centre risk management	50%	13%	13%	19%	6%

An example of the importance of Centre delegated leadership is described by a CAAHSN Partner.

> *A number of service providers from the region are actively engaged, and playing important leadership roles and I think this will facilitate research translation. All the partners are familiar with the health and social issues for the region. They have a track record of doing research in a culturally safe way. The location of the Centre is critical and a strength of the Centre. Senior Aboriginal people are involved in key roles from governance to research. (CAAHSN Partner)*

As Centres bed in their governance and strategic planning mechanisms another important activity will be to develop and communicate their risk management plan. Respondent feedback also suggests that Partners are keen to be involved more in the mechanics of Centre management.

Communication and engagement was the most frequently reported enabler for effective Centre partnership with 32% of responses (Q7, n=63), strategy was the second (25%), governance and leadership were the equal third (24%). Partners (skills and commitment) was the fourth most sited enabler (19%). This supports the idea that when Centres invest time and energy in these activities, they are investing well. In relation to challenges to effective Centre partnership, funding was the most frequently reported challenge with 32% of responses (Q8, n=63), membership and engagement featured second (17%) followed by competing needs (15%), Centre size and scale of the work (15%) and implementation and impact (13%).

4.7.2.3 How do these mechanisms align to the intentions of the McKeon Review?

The McKeon Review highlighted in Recommendation 3 that Centres should be judged on criteria that includes a strong leadership and governance model. The task of leading and governing a collaborative partnership can be challenging. It is also difficult to assess the impact of individual elements of leadership and governance mechanisms across different Centres as context influences leadership and governance traits. That said, the Partner survey indicates that overall Centres are making progress with respect to embedding effective leadership and governance mechanisms as discussed in the previous section.

4.7.2.4 How do these mechanisms compare to international contexts?

Governance

Key themes from interviews with experts from Canada and the UK indicate that strong governance is necessary when public funds are being spent. One expert spoke of a system of 'earned autonomy' for Centres who are stable and performing well (Manville et al., 2015),

> *All the high-performance research units we spoke to had a degree of earned or accountable autonomy – that is they were allowed to get on with what they were doing, partly as it was recognised that they were successful due to their strong leadership and the research culture of the unit. (p7)*

Expert opinion also suggested that Centres should be 'given time to succeed', and that five to ten years might be appropriate if a Centre is newly established, noting the reported lengthy time lags associated within biomedical research (Morris et al., 2011). Other jurisdictions have applied this longer-term approach to performance measurement, such as the UK's Medical Research Council, indicated it is possible to compile evidence of progress from biomedical research investments within a ten-year time-period (Medical Research Council et al.,2019). This is relevant for the Australian context where many of the Centres and the RART Initiative are still in their infancy.

One expert spoke of their experience of effective governance structure in the UK where the lines of responsibility are very clear. Every three months everyone who holds a budget (approximately 20 senior people) attends the Board meetings and provides a report to the Chief Executive of the hospital trust, the Chair of the hospital Board and the Managing Director. The financial report is separately checked by the senior finance officer.

There is no single governance model for research translation centres and success can not necessarily be simply replicated, however elements of successful governance mechanisms have been mapped. These include clearly defining institutional priorities and directions, the development of a strategic plan, and good coordination and collaboration (Pellegrini et al., 2019), tailoring appropriate governance arrangements to address inter-institutional sensitivities (Cancer Institute NSW, 2015), and allocating responsibility and accountability for bodies of work (Jennings & Walsh, 2013).

Leadership

Key themes from interviews with experts from Canada and the UK indicate that leading an academic health research centre requires a specialized skill set. One expert cited the work of Ganz, a writer on social movements leadership, which was considered relevant to the type of leadership required to lead the change movement of translational research. Ganz refers to the 'the head, the heart and the hand' meaning intelligence, emotion and action as skills of effective leaders. Ganz integrates social movement experience with social science research in a focus on practices that combine conceptual (theoretical), motivational (values), and behavioural (skills) elements. This leadership requires five interdependent practices which includes relationship building, storytelling, strategy, structure and action (Ganz & Mckenna, 2017).

The initiator and first leader of the NIHR in the UK, Professor Dame Sally Davies, was cited by international experts and Australian Centre executives as possessing a skill set that was very effective and aligned to the Ganz' 'head, heart and hand' analogy. Qualities included that she was an authentic communicator, inspirational, empowering and someone who got things done and would not tolerate poor practice.

The Cancer Institute NSW (2015) suggest that leaders should be motivated by concern for others, understand both health services and academic institutions, channel common interests and engage people around these, have credibility and influence in their profession and sector, and have an ability to persuade and collaborate with key stakeholders. Having distributive and collective models of leadership was also suggested as means of harnessing insights from multiple stakeholders and improving the quality of decision making (Robinson et al., 2020).

The Partner survey indicated that leadership was a critical success factor for the Centres steering partnerships that could operationalise successful research translation. There was a high level of agreement from respondents that Centres had effective leadership.

5. APPENDICES

A. Methodology overview
B. Evaluation framework
C. Document review list of documents
D. List of contributors to the evaluation
E. Interview questions
F. Project profiling survey
G. Partner survey
H. Environmental scan list of documents
I. UK and Canada context
J. International health research priorities
K. Bibliography

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Appendix A: Methodology overview

Phase	Activities					Outputs
Phase 1 Stage 1: Evaluation planning *(28 February 2020 – 3 April 2020)*	Initial project scoping meeting with DOH	Initial RART Evaluation Advisory Panel (REAP) meeting/ video conference	Review of DOH documents	Develop evaluation plan	Environmental scan (initial)	***Deliverable:*** *Evaluation plan*
Phase 1 Stage 2: Preliminary data collection *(6 April 2020 – 13 May 2020)*	Interviews with AHRTC & CIRH CEOs	Preparation of AHRTC & CIRH individual interview summaries & sense check	Collation of documents provided by AHRTCs & CIRHs	Collation of policy and other contextual factors impacting local level research translation		***Deliverables:*** *Aggregated interview summary*
Phase 1 Stage 3: Preliminary data analysis and reporting *(14 May 2020 – 17 July 2020)*	Analysis of AHRTC & CIRH interview data	Analysis of documents provided by AHRTCs & CIRHs	Analysis of of policy and other contextual factors impacting local level research translation	Data synthesis and drafting of interim summary of findings	Incorporate HMRO and REAP feedback and deliver final interim summary of findings	*Interim summary of findings*
Phase 2 Stage 1: Project profiling activity *(6 July 2020 – 28 August 2020)*	Project profiling survey development	Project profiling survey approval	Circulation of tool to Centres	Analysis of data	Drafting of findings	***Deliverable:*** *Project profiling Excel spreadsheet*
Phase 2 Stage 2: Partner online survey *(6 July 2020 – 28 August 2020)*	Partner survey development	Partner survey approval	Circulation of survey to Partners	Analysis of data	Drafting of findings	***Deliverable:*** *Clean survey data file*
Phase 2 Stage 3: Interview international experts *(16 July 2020 – 28 August 2020)*	Engagement of experts	Interviews with experts & recommended document review	Analysis of data	Drafting of findings		
Phase 3: Reporting *(7 September – 24 November 2020)*	Phase One & Phase Two data synthesis	Drafting of report	Draft report delivered to DOH	Feedback incorporated into report	Delivery of report	***Deliverable:*** *Evaluation report*

Appendix B: Evaluation framework

Areas of interest	KEQ1 - How have the Centres implemented the RART Initiative? What have been the enablers and challenges?	KEQ 2 - How effective have the elements of the implementation models been as they relate to the RART objectives?	KEQ 3 - To what extent have the Centres implementation of the RART Initiative aligned with the intentions of the McKeon Review and best practice international approaches?
1. Research translation	What mechanisms have been adopted by the Centres to facilitate research translation?	How effective have the Centres' mechanisms for facilitating research translation been?	How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?
2. Strategy and strategic priorities	What mechanisms have been adopted by the Centres when determining their strategic priorities?	How effective have the Centres' mechanisms for strategic planning and priority setting been?	How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?
3. Engagement, collaboration, and integration	What mechanisms have been adopted by the Centres to foster engagement, collaboration and integration with respect to key partnerships when implementing the RART Initiative?	How effective have the Centres' mechanisms for engagement, collaboration and integration been?	How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?
4. Responding to local context	What mechanisms have been adopted by Centres to respond to local context when implementing the RART Initiative?	How effective have the Centres' mechanisms for responding to local context been?	How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?
5. Research quality & excellence	What mechanisms have been adopted by the Centres to enhance research quality and research excellence?	How effective have the Centres' mechanisms for enhancing research quality and research excellence been?	How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?

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Areas of interest	KEQ1 - How have the Centres implemented the RART Initiative? What have been the enablers and challenges?	KEQ 2 - How effective have the elements of the implementation models been as they relate to the RART objectives*?	KEQ 3 - To what extent have the Centres implementation of the RART Initiative aligned with the intentions of the McKeon Review and best practice international approaches?
6. Monitoring progress & evaluating impact	What mechanisms have been adopted by the Centres to monitor and evaluate RART funded projects?	How effective have the Centres' mechanisms for monitoring and evaluation outcomes and impact been?	How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?
7.1. Workforce capacity development	What mechanisms have been adopted by the Centres to respond to workforce capacity development needs?	How effective have the Centres' mechanisms to promote workforce capacity development been?	How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?
7.2. Governance and Leadership	What governance structures and leadership mechanisms have influenced the Centres implementation of the RART Initiative?	How effective have the Centres' mechanisms for governance and leadership been?	How do these mechanisms align to the intentions of the McKeon Review and compare to international contexts?

Appendix C: Document review list of documents

Centre	Document name	Document type	Source
BDHP	COVID-19 response - Translational research status update - update # 1	COVID-19 response	Centre provided
	COVID-19 response - Roundtable - Exploring opportunities to accelerate COVID-19 translation	COVID-19 response	Centre provided
	RART Round 1 Final Report and Financial Acquittal - Brisbane Diamantina	Financial acquittal	HMRO provided
	Round 1 - Executed Funding Agreement Brisbane Diamantina Health Partners	RART funded projects	HMRO provided
	Round 2.1 - Executed Funding Agreement Brisbane Diamantina Health Partners	Funding agreement	HMRO provided
CAAHSN	CAAHSN Governing Council Terms of Reference draft	Governance and leadership	Centre provided
	7.2-200424-CAAHSN Board Terms of Reference draft	Governance and leadership	Centre provided
	7.3-200424-CAAHSN SCDH Subcommittee Terms of Reference draft	Governance and leadership	Centre provided
	7.4-200424-CAAHSN Aboriginal researcher Terms of Reference draft	Governance and leadership	Centre provided
	Request for costed extension to RART projects due impact of COVID-19 pandemic	COVID-19 response	HMRO provided
	HTLV-1 Mother to Child Transmission Study	Progress report	HMRO provided
	RART Round 1 Final Report and Financial Acquittal - Central Australia Academic Health Science Network	Financial acquittal	HMRO provided

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Centre	Document name	Document type	Source
	VARIATION FW: CA AHSN - Component B - Budget table.XLSX	Financial acquittal	HMRO provided
	Round 1 - Executed Funding Agreement Central Australia Academic Health Science Centre	RART funded projects	HMRO provided
	Round 2.1 - Executed Funding Agreement Central Australia Academic Health Science Centre	Funding agreement	HMRO provided
HTSA	Review of research governance in the Department for Health and Wellbeing (SA) and related LHNs	Policy context	Centre provided
	Clinical Research Governance Forum Presentation - Birch Review Recommendations	Policy context	Centre provided
	HTSA Strategy Overview and Key Activities	Strategic plans/priorities	Centre provided
	Impact Projects Overview May 2020	RART funded projects	Centre provided
	RART Round 1 Final Report - Health Translation SA (SAHMRI)	Final Report	HMRO provided
	RART Round 1 Final Report and Financial Acquittal - Health Translation SA (SAHMRI)	Financial acquittal	HMRO provided
	RE: RART Round 1 Final Report - Health Translation SA (SAHMRI)	Financial acquittal	HMRO provided
	Round 1 - Executed Funding Agreement SAHMRI	RART funded projects	HMRO provided
	FINAL REPORT Medical Research Future Fund Round 1 – 2018 Rapid Applied Research Translation Projects	Final Report	HMRO provided

Centre	Document name	Document type	Source
	Component A December 2018		
	Round 2.1 - Executed Funding Agreement SAHMRI	Funding agreement	HMRO provided
	HTSA impact projects overview May 2020	RART funded projects	Centre provided
MACH	RART Round 1 Final Report and Financial Acquittal - Melbourne Academic Health Centre	Financial acquittal	HMRO provided
	Round 2.1 - Executed Funding Agreement	Funding agreement	HMRO provided
MP	Monash Research Future Fund, Advanced Health Research Translation Centre Funding	RART funded projects	Centre provided
	RART Round 1 Final Report and Financial Acquittal - Monash Health Partners	Financial acquittal	HMRO provided
	Round 1 - Executed Funding Agreement Monash	RART funded projects	HMRO provided
	Round 2.1 - Executed Funding Agreement Monash	Funding agreement	HMRO provided
	ACTA Report Clinical Trials Networks Final October 2015	Project output	Centre provided
NSWRHP	National Initiative Report - The Local Level Evaluation of Healthcare in Australia	Project output	Centre provided
	Discussion Paper - Rapid Applied Research Translation (RART) Programme Grants	RART funded projects	Centre provided
	NSW-RHP-Strategic-Plan-Summary.pdf	Strategic plans/priorities	Centre provided
	Update on Rapid Applied Research Translation Projects	RART funded projects	Centre provided

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Centre	Document name	Document type	Source
	Briefing paper - Rapid Applied Research Translation (RART) Programme Grants	RART funded projects	Centre provided
	MRFF Rapid Applied Research Translation Application Form	RART funded projects	Centre provided
	RE: Feedback on RART final report and financial acquittal	Financial acquittal	HMRO provided
	Appendix 6 - NSWRHP PRESENTATION Checked	Other	HMRO provided
	Appendix 7 - NSWRHP PRESENTATION Checked	Other	HMRO provided
	RART Round 1 Final Report and Financial Acquittal - NSW Regional Health Partners	Financial acquittal	HMRO provided
	Round 1 - Executed Funding Agreement Regional NSW	RART funded projects	HMRO provided
	RART funding (Round 1) - by Translation Centre	RART funded projects	HMRO provided
	Round 2 - Executed Funding Agreement Regional NSW	Funding agreement	HMRO provided
	Progress Report; RART 2.1	Progress report	HMRO provided
	RART Round 2.1 - Progress Reports	Progress report	HMRO provided
SHP	Sydney Health Partners Impact Report 2018	Monitoring, evaluation, performance measurement	Open source
	Sydney Health Partners - Completed and Current Projects	RART funded projects	Open source
	FW: RART Round 1 Final Report and Financial Acquittal - Sydney Health Partners - EMAIL 2	Financial acquittal	HMRO provided
	FW: RART Round 1 Final Report and Financial Acquittal - Sydney Health Partners EMAIL 1	Financial acquittal	HMRO provided

Centre	Document name	Document type	Source
	Round 1 - Executed Funding Agreement University of Sydney	RART funded projects	HMRO provided
	Round 2.1 - Executed Funding Agreement University of Sydney	Funding agreement	HMRO provided
	Accord for Sharing of Health Data across Sydney Health Partners	Governance and leadership	Centre provided
	Sydney Health Partners AHRTC submission September 2014	Policy context	Centre provided
	SWOT analysis for NHMRC review	Monitoring, evaluation, performance measurement	Centre provided
SPHERE	Clinical Academic Group Annual Performance Review 2019Assessors' Guideline1.	Monitoring, evaluation, performance measurement	Centre provided
	Clinical Academic Group Annual Performance Review 2019Assessors' Guideline 2.	Monitoring, evaluation, performance measurement	Centre provided
	Clinical Academic Group Annual Performance Report 2019 - Impact Story Template	Monitoring, evaluation, performance measurement	Centre provided
	Clinical Academic Group Annual Performance Review Guideline 2019	Monitoring, evaluation, performance measurement	Centre provided
	Clinical Academic Group Assessors Guidelines For Scoring Oral Presentations	Monitoring, evaluation, performance measurement	Centre provided
	Clinical Academic Group Annual Performance Review Assessor's Kit	Monitoring, evaluation, performance measurement	Centre provided
	SPHERE COVID-19 messages chronic conditions brief for Allen + Clarke	COVID-19	Centre provided
	COVID-19 Research Infrastructure Platform (CRIP) Asset register	COVID-19	Centre provided

Centre	Document name	Document type	Source
	COVID-19 Research Infrastructure Platform (CRIP) Organising Committee Membership	COVID-19	Centre provided
	NSW COVID-19 Clinical Research and Trials Infrastructure Consortium Proposal	COVID-19	Centre provided
	COVID-19 Research Infrastructure Platform (CRIP) - Workforce Capability Across NSW	COVID-19	Centre provided
	SPHERE Strategy Map	Strategic plans/priorities	Centre provided
	Project Impact Statement - Back pain: 'Busting the myths'	RART funded projects	Centre provided
	Project Impact Statement - DIABETES CONTRACEPTION AND PRE-PREGNANCY PROGRAM (DCAPP)	RART funded projects	Centre provided
	Project Impact Statement - Geriatric Flying Squad: Improving the health of elderly Australians	RART funded projects	Centre provided
	Project Impact Statement - INTEGRATED MULTI-DISCIPLINARY DEMENTIA CARE	RART funded projects	Centre provided
	Project Impact Statement - Patient-Reported Outcome Measures for Personalised Treatment and Care (PROMPT-Care): Improving care for cancer patients	RART funded projects	Centre provided
	Project Impact Statement - WATCH ME GROW PROJECT	RART funded projects	Centre provided
	MRFF RART - Breakdown of funded 2.2 projects and funding amount	RART funded projects	Centre provided
	MRFF RART 2018 CAG Projects	RART funded projects	Centre provided
	SPHERE Strategy Map	Strategic plans/priorities	Centre provided

Centre	Document name	Document type	Source
	RART Round 1 Final Report - SPHERE (UNSW)	Financial acquittal	HMRO provided
	Round 2.1 - Executed Funding Agreement Sydney Partnership for Health, Education and Research Enterprise (SPHERE)	Funding agreement	HMRO provided
WAHTN	RART Round 1 Final Report and Financial Acquittal - Western Australian Health Translation Network (WAHTN)	Financial acquittal	HMRO provided
	Round 1 - Executed Funding Agreement	RART funded projects	HMRO provided
	Round 1 - Executed Funding Agreement Western Australia	RART funded projects	HMRO provided
	Round 2.1 - Executed Funding Agreement Western Australia	RART funded projects	HMRO provided
	RART Round 2.1 - Progress Reports	RART funded projects	HMRO provided

Appendix D: List of contributors to the evaluation

List of Contributors	
Advanced Health Research and Translation Centres (AHRTCs)	
Brisbane Diamantina Health Partners (BDHP)	David Bunker (Executive Director) Dr Susan Hawes (Chief Operating Officer)
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Programs Team Representatives	Dr Saraid Billiards (Director) Alana Pekar (Assistant Director) Jody-Anne Harrison (Department Officer)
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Other contributors	
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Appendix E: Interview questions

Interview questions: AHRTC and CIRH CEOs/EDs - April 2020

Topic	Questions
1. Establishment	1.1 Can you tell me about how and why [the Centre] came to be established? 1.2 What and who were the driving forces behind [the Centre's] establishment?
2. Population needs	2.1 What mechanisms does [the Centre] have for listening to or determining the needs of the local population in relation to research priorities? 2.2 Can you provide an example of a project that came from engaging with consumers?
3. Local context	3.1 What local contextual factors are important to [the Centre's] work? 3.2 What have been the key enablers and barriers to [the Centre's] work?
4. Policy context	4.1 What is [the Centre's] relationship with the state government and how has the state policy environment impacted [the Centre's] work?
5. Governance and leadership	5.1 What approach does [the Centre] take in relation to organisational governance structures and leadership? 5.2 What do you feel are the strengths of this approach? 5.3 What do you feel, if any, are the weaknesses?
6. Strategic priorities	6.1 What are [the Centre's] strategic priority areas for RART funded projects and personnel? 6.2 How were these identified? 6.3 How are these aligned to local needs? 6.4 How are these aligned to RART/MRFF priorities?
7. Partner membership	7.1 How did the partner members come to be involved in [the Centre]? 7.2 What roles do the partners play? 7.3 How active have the partners been? 7.4 Have the partners changed over time? 7.5 Will partners likely change in the future?
8. Engagement	8.1 How does [the Centre] communicate and engage with its partner members and other organisations?
9. Collaboration	9.1 What are the principles and mechanism around collaboration with its member organisations and other organisations?
10. Integration	10.1 What is the value of [the Centre] over and above the organisations functioning separately?
11. Workforce	11.1 Can you briefly describe any workforce capacity development initiatives [the Centre] has undertaken? 11.2 How were these identified? 11.3 Why were these selected/initiated?

Topic (Cont.)	Questions
12. Research translation	12.1 Can you tell us about some of the translational research that has been carried out or is ongoing by [the Centre]? 12.2 Have any resulted in improvements to the speed, reach and equity of research? 12.3 Have any delivered local health impacts? 12.4 Have any resulted in systematic approaches to research translation compared to project-based approaches? 12.5 Are any scalable to national or global context? 12.6 Are there any lessons to be learned from less successful projects?
13. Research quality and excellence	13.1 Do you think the RART Initiative has resulted in improvements to research quality and excellence conducted by the [the Centre]? 13.2 Can you provide examples of this? 13.3 What do you think have been the key contributory factors?
14. Monitoring and evaluation	14.1 How is [the Centre] monitoring and measuring outcomes and success of RART funded projects?
15. Suggestions for the future	15.1 What in particular is working well in relation to the RART Initiative? 15.2 Are there ways to improve the effectiveness of the RART Initiative? 15.3 Is there any other contextual information that we should be aware of when considering recommendations for the RART Initiative?
16. COVID-19	16.1 Is [the Centre] engaged in any research in relation to COVID-19?

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Appendix F: Project profiling survey

Project profiling survey distributed to Centres August 2020

Descriptor	Question	Options
1. Project title	1. What is the project name?	Free text
2. Centre name	2. What is your Centre's name?	Single choice drop down 1. BDHP 2. CAAHSN 3. HTSA 4. MACH 5. MP 6. NSWRHP 7. SHP 8. SPHERE 9. WAHTN
3. Funding round	3. In which funding round(s) was funding received?	Multiple choice dropdown 1. 1 2. 2.1 3. 2.2
4. Funding stream	4. Please specify funding stream	Single choice drop down 1. National System Level Initiatives (NSLI) 2. Transformative Translational Research Projects (TTRP)
5. MRFF funding amount	5. Please specify funding amount. If funding was received in more than one funding round, please provide total amount across all rounds.	Free text
6. Project brief summary	6. Please provide a brief summary of the project (no more than one short paragraph)	Free text
7. Project stage	7. Approximately how far progressed is this project?	Single choice drop down 1. Planning 2. Early implementation 3. Mid way 4. Nearing completion 5. Completed 6. Withdrawn / ended prematurely
8. National system level Initiatives	8. For NSLIs, who are the lead Centres involved?	1. A lead agency 2. Not a lead agency

Descriptor	Question	Options
9. Transformative Translational Research Projects (TTRPs) Lead agency/agencies	9. For TTRPs, please indicate who the lead agency is / agencies are?	Free text
10. Transformative Translational Research Projects (TTRPs) Other agencies	10. For TTRPs, other than the lead agency, please name the other agencies involved?	Free text
11. RART funding proportion	11. Approximately what percentage of the project costs are covered by RART funding?	Single choice drop down 1. 25% 2. 50% 3. 75% 4. Most or all
12. RART (MRFF) Objectives	12. Which of the RART objectives (from the RART Grant Guidelines) does this project respond to?	Multiple choice dropdown 1. Create health and economic benefits from research discoveries and innovations. 2. Embed research evidence into healthcare policy and in practice improvement. 3. Drive collaboration and innovation across the research pipeline and healthcare system. 4. Strengthen trans disciplinary research collaboration. 5. Provide better access to research infrastructure. 6. Maximise opportunities for research translation by engaging with consumers. 7. Position the research sector and health system to tackle future challenges. 8. Facilitate the commercialisation of great Australian research. 9. Demonstrate the value and impact of research investment. 10. Not applicable
13. MRFF priorities	13. Which of the MRFF priorities (from the RART Grant Guidelines) does this project respond to?	Multiple choice dropdown 1. Improving clinical pathways and care by building collaboration across the care continuum 2. Addressing clinical variation by driving data linkage and integration 3. Improving the health of vulnerable groups 4. Primary care research 5. Public health interventions addressing complex and chronic disease

Descriptor	Question	Options
		6. Not applicable
14. Engagement	14. Which of the following stakeholder groups have been engaged in the design of this project?	Multiple choice dropdown and free text for 'other' 1. Patients, Carers & Community 2. Health care providers 3. Research institutes 4. Academic institutes 5. Industry / Commercial sector 6. Government departments 7. Other 8. Not applicable
15. Collaboration	15. Which of the following stakeholder groups have or will be collaborators in the delivery of this project?	Multiple choice dropdown and free text for 'other' 1. Patients, Carers & Community 2. Health care providers 3. Research institutes 4. Academic institutes 5. Industry / Commercial sector 6. Government departments 7. Other 8. Not applicable
16. Integration	16. Which of the following stakeholder groups have or will be sharing resources or ways of working in this project?	Multiple choice dropdown and free text for 'other' 1. Patients, Carers & Community 2. Health care providers 3. Research institutes 4. Academic institutes 5. Industry / Commercial sector 6. Government departments 7. Other 8. Not applicable
17. Workforce education or training	17. Which of the following groups does this project aim to build research capacity for?	Multiple choice dropdown and free text for 'other' 1. Academic workforce 2. Health workforce 3. Indigenous workforce 4. Health consumer workforce 5. Other 6. Not applicable
18. Aims	18. Which of the following aims are relevant to this project?	Multiple choice dropdown and free text for 'other' 1. Better health outcomes 2. Improved patient & carer satisfaction 3. Lower healthcare costs 4. Improved provider satisfaction

Descriptor	Question	Options
		5. None of the above 5. Other 6. Not applicable
19. Objectives	19. Which of the following research objectives are relevant to this project?	Multiple choice dropdown and free text for 'other' 1. Prevent a specific disease 2. Diagnose a specific disease 3. Understand the pathogenesis of a specific disease 4. Define best practice care for a specific disease 5. Implement best practice care for a specific disease 6. Evaluate the implementation of best practice care for a specific disease 7. Gather data sets to support research in health 8. Enable better sharing/communication of findings from research 9. Other 10. Not applicable
20. Outcomes	20. Which of the following outcomes does this project contribute to?	Multiple choice dropdown and free text for 'other' 1. Identification of research focus 2. Enhancing conditions for translation 3. Evidence for translation is produced 4. Decisions about health service innovation 5. Decisions about health policy innovation 6. Improved health outcomes 7. Improved health system performance 8. Other 9. Not applicable
21. Impacts	21. Which of the following levels of impact does this project seeks to influence?	Multiple choice dropdown and free text for 'other' 1. Individuals / groups 2. Organisation/s 3. Sector 4. Population / societal 5. Other 6. Not applicable
22. Translational research stage	22. If applicable, please identify what stage of translational research this project relates to?	Multiple choice dropdown and free text for 'other' 1. Translation to humans 2. Translation to a clinical setting

Descriptor	Question	Options
		3. Translation to practice 4. Translation to populations 5. Other 6. Not applicable
23. Comments	23. Please use the space below to make any additional comments.	Free text

Appendix G: Partner survey

Partner survey distributed to Partners 29 August to 24 September 2020

Question	Sub-questions	Options
1. Which AHRTC or CIRH do you mainly partner with? (please select one) Please note: 'the Centre' will be used throughout the survey to refer to the AHRTC or CIRH you select in this question.		Single choice drop down (names provided in full) 1. BDHP 2. CAAHSN 3. HTSA 4. MACH 5. MP 6. NSWRHP 7. SHP 8. SPHERE 9. WAHTN
2. Which of the following best describes your organisation's membership of the Centre?		1. Funding Partner 2. Non-funding Partner 3. Other
3. Which type of organisation best describes the entity you are representing in answering this survey?		1. ACCHS / ACCS 2. LHN / LHD / HHS 3. MRI 4. Peak body 5. PHN / service 6. Private hospital / health 7. State government 8. University 9. Other
4. Which of the following best describes your role?		1. Executive 2. Director 3. Leader 4. Manager 5. Other

5. Please provide feedback regarding the work of the Centre and your organisation.
    5.1 The Centre has an effective approach to:
    5.2 The Centre effectively engages our organisation in:
        a) Responding to local health consumer research needs
        b) Responding to local health service research needs
        c) Responding to local workforce research needs
        d) Promoting research collaboration and integration
        e) Promoting research quality and excellence
        f) Enabling research translation
		1. Strongly agree
		2. Agree
		3. Disagree
		4. Strongly disagree
		5. Too early to tell
		6. Don't' know

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Question (Cont.)	Sub-questions	Options

6. Please provide feedback regarding how the Centre works with your organisation.
    6.1 The Centre has an effective approach to:
    6.2 The Centre effectively engages our organisation in:
        a) Centre leadership
        b) Centre governance
        d) Centre strategic planning
        e) Centre risk management
		1. Strongly agree
		2. Agree
		3. Disagree
		4. Strongly disagree
		5. Too early to tell
		6. Don't' know

7. What are the enablers for the partnership between the Centre and its Partners?		Free text
8. What are the challenges for the partnership between the Centre and its Partners?		Free text

9. Please provide feedback regarding the implementation of the RART Initiative.
    9.1 The Centre has an effective approach to:
    9.2 The Centre effectively engages our organisation in:
        a) Identifying priority areas for RART projects
        b) Selecting RART projects
        c) Providing support to RART projects
        d) Supporting the monitoring and/or evaluation of RART projects
        e) Communicating progress and/or outcomes of RART projects
		1. Strongly agree
		2. Agree
		3. Disagree
		4. Strongly disagree
		5. Too early to tell
		6. Don't' know

10. How has your organisation been involved in RART funded projects?
    Our organisation:
        a) Has received RART funding for a research project
        b) Has led or co-led a RART funded research project
        c) Has collaborated with other organisations on the design of a RART funded research project
        d) Has contributed to the delivery of a RART funded research project
        e) Has contributed to the monitoring and/or evaluation of a RART funded research project
		1. 5 or more times
		2. 2-4 times
		3. Once
		4. Never
		5. N/A

11. To what extent do you agree with the following statements? (please select one option for each row) The Centre is effectively contributing to the following Medical Research Future Fund priorities:
        a) Improving clinical pathways and care by building collaboration
        b) Addressing clinical variation by driving data linkage and integration
        c) Improving the health of vulnerable groups
        d) Primary care research
        e) Public health approaches to modifiable risk
		1. Strongly agree
		2. Agree
		3. Disagree
		4. Strongly disagree
		5. Too early to tell
		6. Don't' know

Question (Cont.)	Sub-questions	Options
12. To what extent do you agree with the following statements? (please select one option for each row) The Centre is effectively contributing to the following RART objectives: a) Creating health and economic benefits from research discoveries and innovations. b) Embedding research evidence into healthcare policy and in practice improvement. c) Driving collaboration and innovation across the research pipeline and healthcare system. d) Strengthening trans disciplinary research collaboration. e) Providing better access to research infrastructure. f) Maximising opportunities for research translation by engaging with consumers. g) Positioning the research sector and health system to tackle future challenges. h) Facilitating the commercialisation of great Australian research. i) Demonstrating the value and impact of research investment.		1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree 5. Too early to tell 6. Don't' know
13. What aspects of the RART Initiative are working well and should continue?	Free text	
14. What aspects of the RART Initiative need improvement or should be stopped?	Free text	
15. Can you identify a RART funded project you consider to be a highly effective example of research translation and briefly explain why you have selected this project?	Free text	
16. What are the Centre's areas of strength in relation to research translation?	Free text	
17. What areas could the Centre strengthen in relation to research translation?	Free text	
18. Has the Centre's work during COVID-19 contributed to any long term or systemic improvements to the health and medical research landscape, if so can you briefly explain?	Free text	

Appendix H: Environmental scan references

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Appendix I: UK and Canada in context

United Kingdom

Institutions

National Institute for Health Research (NIHR)

The NIHR (National Institute for Health Research, 2020) was set up in 2006 under the UK government's health research strategy *Best Research for Best Health* to:

> *create a health research system in which the National Health Service (NHS) supports outstanding individuals, working in world-class facilities, conducting leading-edge research focused on the needs of patients and the public.*

The NIHR is centred on England but works with Scotland, Wales and Northern Ireland as 'devolved nations'.

The NIHR has three key functions, which are delivered through six centres across England. These functions are to commission and fund research, to provide the facilities and people, and to support people carrying out, training and participating in research.

The NIHR's work is driven by the operating principles of impact, excellence, inclusion, collaboration, and effectiveness.

Research infrastructure funded by the NIHR includes applied research collaborations; experimental research infrastructure; and research support infrastructure. Each is described below.

Applied Research Collaborations (ARCs)

The NIHR Applied Research Collaborations (ARCs) established in July 2019 essentially replaced the 13 NIHR Collaborations for Leadership in Applied Health Research and Care (CLAHRCs) which closed in September 2019. Similarly, to the CLAHRCs, the intent of the ARCs is to support applied health and care research that responds to, and meets, the needs of local populations and local health and care systems. The ARCs are local partnerships between NHS providers, universities, charities, local authorities, Academic Health Science Networks and other organisations also undertake implementation research to increase the rate at which research findings are implemented into practice.

The ARCs undertake research on areas of need highlighted by the NIHR Futures of Health report, including: the challenges of an aging society; multimorbidity; and the increasing demands placed on our health and care system.

The £135 million five-year funding also aims to deliver national-level impact through significant collaboration between the ARCs, with individual ARCs providing national leadership within their fields of expertise. These collaborations of ARCs drive progress in applied health research and implementation science in areas of national priority for the health and care system, to bring benefits to patients faster.

Experimental research infrastructure

The NIHR research infrastructure in the area of experimental medicine includes £816 million of funding over five years for 20 Biomedical Research Centres (BRCs), £112.3 million over five years for 23 Clinical Research Facilities (CRFs) and 14 Experimental Cancer Medicine Centres (ECMCs). The BRCs are collaborations between world-leading universities and NHS organisations that bring together academics and clinicians to translate lab-based scientific breakthroughs into potential new treatments, diagnostics and medical technologies. The centres undertake research in themes across a range of disease and therapeutic areas, such as genomics, stem cell therapy and regenerative medicine.

Research support infrastructure

The NIHR additionally provides research support infrastructure including a research design service, a study support service, and more recently research patient recruitment support.

The Study Support Service provides the life sciences industry with free support to help plan, set-up and deliver clinical research in the UK. The support service is available to all life science industries (including pharmaceutical, biotechnology, diagnostics and medical technology industries and Contract Research Organisations) regardless of location, study type, study size, or therapy area.

The Research Design Service provides specialist advice and support on research design and methodology, to researchers making funding applications for submission to research program and national, peer-reviewed funding competitions for applied health or social care research.

The five National Patient Recruitment Centres (PRCs) are a new addition to the UKs research infrastructure, being established in 2020 to set up and deliver late phase commercial clinical trials in the NHS at pace and scale.

The Academy was established following a strategic review of training across the NIHR in 2016. The purpose of the Academy is to develop a highly-skilled academic research workforce capable of advancing the best research which improves health, and benefits society and the economy (further discussed in section 4.7.1).

Other research mechanisms in the UK

The UK has other bodies and mechanisms that support research, including the NHS which is responsible for funding the Academic Health Science Centres (AHSC's) and the Academic Health Science Networks (AHSNs); and the UK Research and Innovation (UKRI) which is responsible for the Medical Research Councils (MRCs), Innovate UK and Research England.

Academic Health Science Centres (AHSC)

The UK has eight AHSCs, with the first established in 2007. The AHSCs are jointly designated by the NIHR, the NHS England and the NHS Improvement. The intent of the AHSCs is to harness the strategic alignment of the NHS organisations and their university partners to improve health and care through increased translation of discoveries from early scientific research into benefits to patients. The current AHSCs were accredited in March 2020 (all six existing AHSCs retained their accreditation and two additional Centres were accredited). AHSCs undertake their work through collaboration with other organisations, including the local Academic Health Science Network (AHSN), the NHS, other AHSCs and the NIHR infrastructure.

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Academic Health Science Networks (AHSNs)

In 2013, the UK Government established 15 AHSNs, which are membership organisations tasked with building relationships and alignment between academic institutions, health services, and industry within each Network's region. The goal of AHSNs is to:

> *improve patient and population health outcomes by translating research into practice and developing and implementing integrated health care services (Ovseiko et al., 2014, p. 4).*

The UK's NHS model is one of decentralised delegation. The NHS website outlines that:

> *AHSNs have been established as autonomous bio-enterprises and small/medium enterprise in nature, with a five-year licence commitment from NHS England. The relationship is one of investor return rather than traditional service provision and programme management. AHSNs are not the 'delivery vehicle' for NHS England national programmes (NHS England, 2020).*

UK Research and Innovation

The UKRI works across the whole of the UK, with a budget of more than £8 billion funded through the Science Budget by the Department for Business, Energy and Industrial Strategy (BEIS). UKRI includes the seven Research Councils, Innovate UK and Research England, working in partnership with universities, research organisations, businesses, charities, and government. UKRI's intent is to create the best possible environment for research and innovation to flourish. Impact measures for the UKRIs work includes economic impact and social prosperity in addition to social and cultural impact (including health) and knowledge generation.

Canada

Networks of Centres of Excellence (NCEs)

The Network of Centres of Excellence (NCEs) were founded as a program in 1989 as a joint initiative of the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC), the Social Sciences and Humanities Research Council (SSHRC), and Innovation, Science and Economic Development Canada (ISED). The NCEs invested about CA\$2 billion in research, commercialisation and knowledge translation.

The NCE program consists of 12 Networks of Centres of Excellence (NCE). The NCE program has grown over time to incorporate: six Knowledge Mobilization Initiative Networks (NCE-KM), The Canada-India Research Centre of Excellence (CIRCE), two International Knowledge Translation Platforms (NCE-IKTP), 14 Centres of Excellence for Commercialization and Research (CECR), and four Business-Led Networks of Centres of Excellence (BL-NCE).

NCE covers a range of sectors including: Health and Life Sciences, Information and Communication, Environment, Natural Resources and Manufacturing/Engineering. Continuation of funding for an NCE was assessed at the five and ten year point and was awarded if agreed performance against the research goals was met and the plan for the next five years was approved. There was also a need to provide evidence of being world leading, well published and partnering with organisations that can take the research through to the end. Expert opinion of the 15 year funding timeframe is that it enabled research translation to be funded through to impact with the first five years focusing on undertaking the research, the middle five years on knowledge translation and the last five years on impact.

New Frontiers in Research Fund (NFRF)

As advised by a Canadian expert in research administration, the NCEs have recently been wound down to be replaced by the New Frontiers in Research Fund (NFRF). NFRF is a tri-agency program between Canada's three research granting agencies: the CIHR, the NSERC and SSHRC.

The fund intends to invest $275 million over the next five years, commencing 2018-19, and $65 million ongoing, to fund three streams to support research.

1. exploration - generates opportunities for Canada to build strength in high-risk, high-reward and interdisciplinary research

2. transformation - provides large-scale support for Canada to build strength and leadership in interdisciplinary and transformative research, and

3. international - enhances opportunities for Canadian researchers to participate in research with international partners.

The NFRF in context

At present the NFRF is new and only recently requested interested entities to prepare a letter of intent. One point of expert opinion regarding the new system is that a knowledge translation strategy is now integrated within the research proposal unlike the NCE application process where it was a separate and sometimes neglected element.

Other research mechanisms in Canada

CIHR Institutes

Canada's health research is led by the CIHR as referenced in the information regarding the NCE. The CIHR, established in 2020, provides federal funding for goal-oriented health research. The CIHR is made up of 13 virtual institutes (each addressing different health challenges) which collaborate with partners and researchers to support research and innovations that improve healthcare and health systems. The CIHR funds key infrastructure for research including people, equipment and capacity building. The CIHR has $1 billion annual budget, of which approximately one quarter is allocated to support research on priority areas identified by the Canadian government. The funding is allocated through a competitive process in which each state competes for funding from the Canadian Federal Government and then within the state there is a competitive process involving rounds of presentations with collective decision making to decide who receives funding.

The Institutes are intended to provide an integrated approach to bring together researchers, health professionals and policy-makers from voluntary health organizations, provincial government agencies, international research organizations and industry and patient groups from across the country, under each Institute's virtual 'roof'. Each Institute is led by a Scientific Director and is supported through the advice of Institute Advisory Boards.

Academic Health Science Networks and Centres

In Canada, 60 percent of all publicly funded health research is conducted within AHSNs (The Association of Faculties of Medicine of Canada, 2020). The AHSNs were established to be formal partnerships created by health sciences universities, academic healthcare organisations and other provider organisations. The goal of the AHSNs is to improve patient and population health outcomes through mechanisms and structures that develop, implement and advance integrated health services delivery, professional education, and research and innovation. At the 'core' of these networks are the ten Academic Health Science Centres (AHSC), working closely with other

academic healthcare organisations who focus, in whole or in part, on the 'care-teaching-research mandate (Brimacombe et al., 2010).

Appendix J: International health research priorities

UK - ARCs	Canada - CIHR	Australia -MRFF
Aging and dementia	Aging	Aboriginal and Torres Strait Islander health
Applied Health Informatics	Cancer Research	Aging and aged care
Behavioural science	Circulatory and Respiratory Health	Antimicrobial resistance
Cardiovascular	Gender and Health	Biomedical/medical device development
Child health	Genetics	Digital health tools
Economics	Health Services and Policy Research	Drugs for new purposes
Equality, diversity and inclusion of under-represented groups	Human Development, Child and Youth Health	Global health challenges
Inequalities	Indigenous Peoples' Health	Health professionals research capacity
Mental health	Infection and Immunity	Lived experience/ gaps
Multimorbidity	Musculoskeletal Health and Arthritis	Primary care research
Operational research modelling	Neurosciences, Mental Health and Addiction	Public health /chronic disease
Palliative and end-of-life care	Nutrition, Metabolism and Diabetes	Value of health interventions (Economics)
Population health	Population and Public Health	
Prevention		
Social care		
Urgent and emergency care		

Appendix K: Bibliography

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