

# Targeted Translation Research Accelerator Needs Assessment and Prioritisation Project

Discussion Paper | MAY 2023

PREPARED BY THE LOWITJA INSTITUTE FOR MTPCONNECT

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Artwork: The artwork is by Ngarrindjeri artist, Jordan Lovegrove

About the artwork: The artwork shows the growing ripple effect that Aboriginal and/or Torres Strait Islander-led research has on health and wellbeing. The big meeting place in the centre represents Lowitja Institute and MTPConnect. The smaller coloured meeting places connected by footprints that surround it represents our connection and work with Aboriginal & Torres Strait Islander communities and other partners. The other small meeting places with pathways between, represent the communities that this research positively impacts.



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#### **ACKNOWLEDGEMENTS**

This discussion paper on the 'Targeted Translation Research Accelerator Needs Assessment and Prioritisation Project' was prepared through a commissioned collaboration and partnership between the Lowitja Institute and MTPConnect. This project included the completion of a needs assessment and prioritisation process for Round 3 of the Targeted Translation Research Accelerator (TTRA) Program, a Medical Research Future Fund initiative delivered by MTPConnect.

This work has been guided by TTRA Indigenous Advisory Group, established by MTPConnect.

#### **ABOUT LOWITJA INSTITUTE**



The Lowitja Institute is Australia's national institute for Aboriginal and Torres Strait Islander health research. We are an Aboriginal and Torres Strait Islander organisation working for the health and wellbeing of Australia's First Peoples through high impact quality research, knowledge translation, and by supporting Aboriginal and Torres Strait Islander health researchers.

Together with our many partners, we have helped transform research in Australia from research done on Aboriginal and Torres Strait Islander communities to research led by Aboriginal and Torres Strait Islander people, for and with Aboriginal and Torres Strait Islander communities.

## **ABOUT MTPCONNECT**



As Australia's Growth Centre for the medical technology, biotechnology and pharmaceutical (MTP) sector, MTPConnect forges stronger connections between research and industry and supports the development and translation of Australia's health and medical research through a number of strategic granting programs including five initiatives delivered on behalf of the Medical Research Future Fund. One of these is the \$47 million Targeted Translation Research Accelerator (TTRA) Program, launched in

2020 as an integrated research program to improve the prevention, diagnosis, treatment and management of diabetes and cardiovascular disease (D&CVD) and their associated complications in Australia, by establishing two new national research centres and three rounds of contestable funding opportunities to support individual D&CVD research projects.

# Contents

Executive Summary	6
The TTRA Program	6
The needs assessment process	6
Approach to prioritisation	6
Key Findings	<del>7</del>
Background	8
The Prioritisation Framework	9
Needs Assessment and Prioritisation Process	10
Methodology	11
Step 1 - Identifying areas of unmet need	
Step 2 – Developing a criteria for Prioritisation	
Step 3 – Prioritising areas of unmet need	
Step 4 - Results of the prioritisation process	24
Conclusion	
References	

# **Executive Summary**

## The TTRA Program

The Targeted Translation Research Accelerator program provides an integrated research program to improve the prevention, management and treatment of diabetes and cardiovascular disease (D&CVD) and their related complications in Australia. The \$47 million TTRA program is funded through the Preventative and Public Health Research initiative of the Medical Research Future Fund (MRFF) and is being delivered by MTPConnect.

The first two rounds of TTRA Research Projects funding provides between \$200,000 - \$750,000 to help eligible organisations develop innovative preventative, diagnostic, therapeutic and/or disease management products/solutions to address one of the Priority Areas identified for each round. These products/solutions fall into one of the following modalities: digital health, medical devices, therapeutics or standalone behavioural interventions.

Round 3 of the TTRA Research Projects funding provides between \$200,000 - \$1 million to help eligible organisations develop or progress innovative preventative, diagnostic, therapeutic and disease management products, services and/or models of care to benefit the health and wellbeing of Aboriginal and Torres Strait Islander people living with diabetes and/or cardiovascular disease.

To achieve maximum impact for the TTRA program, MTPConnect ensures that the investment made through the program builds upon existing successful initiatives and is targeted towards the areas of greatest unmet need in D&CVD. Research Projects address one of the specific priority areas for each round to be eligible for funding.

For Rounds 1 and 2, these priority areas were determined through an evidence-based, sector wide, consultative needs assessment. This process reinforced the need for funding to be focused on Indigenous health outcomes and highlighted that priority setting must be Indigenous led.

As a result, Round 3 of the Research Projects funding opportunity focus on addressing D&CVD-related unmet health and medical needs of Aboriginal and Torres Strait Islander people in rural, remote, regional and urban Australia. In line with directions from the TTRA Expert Advisory Board (TTRA Board).

# The needs assessment process

For Round 3 of the TTRA Research Projects funding opportunity, MTPConnect are funding D&CVD products, services and/or models of care that benefit the health and wellbeing of Aboriginal and Torres Strait Islander people. High-quality projects that are well matched to the selection criteria will include deep community engagement and Aboriginal and Torres Strait Islander leadership at all stages. This will ultimately lead to an increased number of grants made to Aboriginal and Torres Strait Islander researchers.

The Lowitja Institute was engaged to facilitate the needs assessment process for this round to determine the Indigenous-specific priority areas for research into D&CVD. In doing this, we have assessed and prioritised the related unmet health and medical needs of Aboriginal and Torres Strait Islander people in rural, remote, regional, and urban Australia.

Outcomes of this process have been used to guide the delivery and implementation of the TTRA Research Projects Round 3 funding opportunity and maximise its impact. Priority areas for D&CVD have been identified and have shaped calls for applications and the assessment of applications, to ensure that projects align to the agreed priorities and include innovative preventative, diagnostic, therapeutic and/or disease management products, services and/or models of care.

# **Approach to prioritisation**The Prioritisation Framework

A Prioritisation Framework was developed by the Lowitja Institute to guide this work in identifying, assessing, and prioritising related areas of unmet health and medical needs of Aboriginal and Torres Strait Islander peoples living with D&CVD in rural, remote, regional and urban Australia.

This framework includes the following

- The needs assessment and prioritisation process, detailing four key steps to be undertaken. These steps include identification, development, prioritisation, and endorsement.
- The criteria to be applied to areas of unmet need when assessing their priority.
- The criteria to be applied when allocating a priority rating.

#### Literature Review

As part of the identification step in the prioritisation framework, areas of unmet health and medical needs for Aboriginal and Torres Strait Islander peoples with D&CVD, in rural, remote, regional and urban Australia were identified. This was achieved through a literature review project, conducted by the College of Health & Medicine at the Australian National University in partnership with the Lowitja Institute.

A list of 33 current areas of unmet need were identified. These are focused on:

- · Complications associated with cardiovascular disease and diabetes.
- Interactions between Type 1 diabetes, Type 2 diabetes, and cardiovascular disease.
- Innovative preventative, diagnostic, therapeutic and/or disease management products/solutions for D&CVD.
- Medical and health needs for regional, remote, rural and urban patients with D&CVD.

#### The Prioritisation Roundtable

As part of the prioritisation steps of this process, a roundtable was held bringing together Indigenous Advisory Group members, clinicians, researchers, patient advocacy groups and people with lived experience to discuss areas of unmet health and medical needs of Aboriginal and Torres Strait Islander peoples in rural, remote, regional and urban Australia.

During the roundtable participants completed a prioritisation assessment, via an online questionnaire and utilising the Prioritisation Framework. As experts in the field, participants provided their feedback on the priorities for health and medical research for Aboriginal and Torres Strait Islander peoples with D&CVD, and where research investment can have the most positive impact.

Areas of unmet health and medical needs discussed included:

- Unmet needs for cardiovascular disease.
- · Unmet need for diabetes.
- Unmet needs where there is an interaction between D&CVD.
- · Any other areas of unmet need irrespective of disease end point.

## **Key Findings**

Results from the prioritisation roundtable were reviewed and informed the final list of Indigenous-specific priority areas for research into D&CVD. These priority areas include:

**Priority 1:** Strengths-based perspectives to chronic disease – a need to adopt a strengths-based perspective to chronic disease, which builds and develops the existing strengths, skills and capacities of Aboriginal and Torres Strait Islander peoples.

**Priority 2:** Culturally safe programs and supports – development of culturally safe programs and supports for D&CVD prevention and promotion of 'healthy lifestyles' among Aboriginal and Torres Strait Islander peoples, using empowering, evidence-based, health promotion campaigns.

**Priority 3:** Culturally safe strategies to address cardiometabolic disease – culturally safe strategies to address cardiometabolic disease / risk factors to improve the health of Aboriginal and Torres Strait Islander women prior to and during pregnancy. This should also include a focus on babies through the life course, including management of women with pre-existing and gestational diabetes.

# Background

#### **Diabetes and Cardiovascular Disease**

Aboriginal and Torres Strait Islander peoples are significantly and disproportionately burden by D&CVD. These chronic conditions, particularly when undiagnosed or poorly managed, not only cause suffering and disability, but are also some of the leading causes of death for Aboriginal and Torres Strait Islander peoples in Australia.

Heart disease was the leading cause of death for Aboriginal and Torres Strait Islander people in 2018<sup>1</sup>, followed by diabetes as the second leading cause of death for Aboriginal and Torres Strait Islander peoples<sup>2</sup>.

With reported cases of both D&CVD either remaining steady<sup>3</sup>, as is the case for diabetes, or rising in the case of cardiovascular disease<sup>4</sup>, research into the diagnosis and management of these diseases has become a key focus of state, territory and Commonwealth governments of Australia.<sup>56</sup>

#### The importance of Aboriginal and Torres Strait Islander led research

Since 1788 Aboriginal and Torres Strait Islander peoples have been subjected to huge amounts of research. Research was used as a tool of colonial violence and data was weaponised against Aboriginal and Torres Strait Islander peoples. It was embedded in a deficit discourse, which makes the racist presumption that Aboriginal and Torres Strait Islander peoples are a problem that requires fixing.

A 2013 review by the Australian Institute of Aboriginal and Torres Strait Islander Studies (AITASIS) and Lowitja Institute stated.

Early research in Australia included negative race-based research practices such as eugenics and scientific racism, which sought to prove that Aboriginal people were mentally and physically inferior human specimens to Europeans. Memories of these times have been ingrained in the psyches of successive generations of Aboriginal and Torres Strait Islander peoples and more recent examples of poor research practices have contributed to the degrees of distrust that developed towards researchers and research institutions.<sup>7</sup>

These presumptions dehumanised and othered Aboriginal and Torres Strait Islander peoples and meant that often research practices did more harm than good. In some cases, Aboriginal and Torres Strait Islander peoples were subjected to harmful and inhuman medical experimentation. <sup>8</sup> Research, even if well-meaning, was conducted based on non-Indigenous researchers' priorities and presumptions, which did not and do not match the priorities of Aboriginal and Torres Strait Islander peoples. This meant that research did not benefit Aboriginal and Torres Strait Islander peoples and findings were used to support policies and practices that further harmed them.

For example, it is well documented that health outcomes for Aboriginal and Torres Strait Islander peoples are significantly lower than for the non-Indigenous population; Aboriginal and Torres Strait Islander peoples' lifespan is approximately ten years less than non-Indigenous peoples' and more Aboriginal and Torres Strait Islander children are born below healthy birthweights.<sup>9</sup>

One of the reasons for the continued gap in health outcomes is that Aboriginal and Torres Strait Islander health researchers have not been supported nor funded to lead research projects.

Aboriginal and Torres Strait Islander peoples' have a holistic approach to health and wellbeing that takes a whole of life cycle lens.<sup>10</sup> They understand physical, social, emotional and cultural wellbeing as equally important and influential for individuals and communities.<sup>11</sup> Further, Aboriginal and Torres Strait Islander communities are diverse with different and distinct cultures and systems of law/lore.

There are differing and unique social and cultural determinants of health that impact on different communities, and access or barriers to health systems and culturally safe health systems. For example, a remote Aboriginal community in Western Australia will have very different health needs to an Aboriginal community in urban Victoria. This means that there cannot be a uniform approach to setting priorities.

Health solutions need to be local and community-driven, as does research.

The above history means that Aboriginal and Torres Strait Islander peoples have enduring and significant mistrust of research and researchers. Inequities in education, a deep mistrust of research institutions and a lack of cultural safety have locked Aboriginal and Torres Strait Islander peoples out of research. Despite this there is a strong and growing community of Aboriginal and Torres Strait Islander health researchers in Australia who have the power to make a large impact to their peoples' health outcomes. One major barrier to this is lack of available funding and bias in funding decision making and grant allocations.

# The Prioritisation Framework

This Prioritisation Framework was developed to guide our work in identifying, assessing, and prioritising related areas of unmet health and medical needs of Aboriginal and Torres Strait Islander peoples living with D&CVD in rural, remote, regional, and urban Australia.

This Framework outlines the following:

- The needs assessment and prioritisation process, detailing four key steps to be undertaken. These steps include identification, development, prioritisation, and endorsement.
- The criteria to be applied to areas of unmet need when assessing their priority.
- The criteria to be applied when allocating a priority rating.

#### How was this framework developed

In developing this Framework, a desktop review of key documents across governments and relevant Australian institutions was completed. The purpose of this was to understand the strategic horizon for health and medical research, research into D&CVD, as well as research focused on improving the health of Aboriginal and Torres Strait Islander peoples. Results of this review were used to determine the appropriateness of the process and the criteria for prioritisation included within this Framework.

#### 19 key documents were reviewed across governments and relevant institutions

#### **National Strategies**

- 1. National Aboriginal and Torres Strait Islander Health Plan (2013-2023)
- 2. Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan (2013-2023)
- 3. National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan 2021–2031
- 4. National Agreement on Closing the Gap 2020
- 5. 2021 National Research Infrastructure Roadmap
- 6. 2018 Research Infrastructure Investment Plan

#### Relevant institutions in Australia

- 7. Medical Research Future Fund, Australian Medical Research and Innovation Priorities 2020-2022
- 8. Medical Research Future Fund, Cardiovascular Health Mission International review of the Roadmap and Implementation Plan 2020
- 9. Australian Medical Research and Innovation Strategy 2021-2026
- 10. Australian Medical Research and Innovation Priorities 2020-2022 Consultation Report
- 11. Australian Medical Research and Innovation Strategy 2021-2026 and the Related Priorities Consultation Report
- 12. Medical Technology, Biotechnology & Pharmaceutical Sector Competitiveness Plan, MTPConnect 2020
- 13. MTPConnect, Annual Report FY2021
- 14. Road Map 3: A strategic framework for improving Aboriginal and Torres Strait Islander health through research.
- 15. Action Plan 2018 2021 Triennium to implement Road Map 3
- 16. Road Map 3: A strategic framework for improving Aboriginal and Torres Strait Islander health through research. Report of Community Consultation.
- 17. NHMRC Corporate Plan 2020-2021
- 18. NHMRC Annual Report 2020-21
- 19. NSW Health, Setting Research Priorities: A Guide 2019

### **Needs Assessment and Prioritisation Process**

Setting priorities for research funding is important in ensuring that investment has impact, is of benefit to the public and contributes to improving health outcomes for individuals and communities. It is important that the process for assessing and prioritising areas of unmet need, is not just a process of reviewing burden of disease data and cost-benefit analysis.

The aim of this needs assessment and prioritisation process was to determine Indigenous-specific priority areas for research into D&CVD, through an approach that facilitated input from Aboriginal and Torres Strait Islander researchers, clinicians, policy makers and thought leaders.

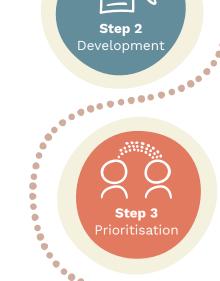
The needs assessment and prioritisation process is summarised below:



The **Identification** stage of the process was focused on identifying unmet health and medical needs for Aboriginal and Torres Strait Islander peoples living with D&CVD. Using a variety of channels, topics and areas for unmet need for assessment were identified. This step continued throughout **Development** and **Prioritisation** to ensure there was adequate opportunity for unmet needs to be identified and considered during prioritisation.



During the **Development** stage we worked with the TTRA Program Indigenous Advisory Group to develop criteria for prioritisation. These criteria were used to assess each area of unmet need and provide a priority rating. Further analysis of areas of unmet need was conducted to capture relevant information to support the prioritisation process.



In the **Prioritisation** stage a roundtable discussion was held, bringing together the Indigenous Advisory Group and other stakeholders from a variety of sectors to discuss areas of unmet need and complete an assessment of priority. Each unmet need received a priority rating. Topics rated highest will be used to guide the delivery and implementation of Round 3 Research Projects of the TTRA program.



Following the Priorisitation stage, **Endorsement** was completed. This included the publication of this discussion paper, detailing results from the needs assessment and prioritisation process. This paper details a list of priority areas which have been reviewed and approved by the TTRA Expert Advisory Board and Indigenous Advisory Group.

# Methodology

# Step 1 - Identifying areas of unmet need

In order to design and undertake the needs assessment and prioritisation process for the TTRA Research Projects Round 3 funding opportunity, the unmet health and medical needs of Aboriginal and Torres Strait Islander peoples with D&CVD were identified. These unmet needs were identified across rural, remote, regional, and urban Australia.

These were identified through a literature review project, conducted by the College of Health & Medicine at the Australian National University, in partnership with the Lowitja Institute.

The results of this literature review included a list of 33 current areas of unmet need.

#### The literature review

The literature review process aimed to identify the top 30-40 unmet needs for Aboriginal and Torres Strait Islander peoples, focused on the below four areas:

- · Complications associated with cardiovascular disease and diabetes.
- Interactions in the pathogenesis of Type 1 diabetes, Type 2 diabetes, and cardiovascular disease.
- Innovative preventative, diagnostic, therapeutic and/or disease management products/solutions for D&CVD.
- Medical and health needs for regional, remote, rural and urban patients with D&CVD.

In consultation with MTPConnect and the project reference group, relevant resources were identified for the literature review. Additional searches were conducted of publications between 2012 and 2022 in PubMed databases as well as relevant government and non-government publications and reports located through bibliographies and snowball reference identification.

#### The search strategy

The search strategy identified predominantly biomedical publications, particularly those associated with CVD rather than diabetes or intersects between CVD and diabetes.

Search terms used, singular and in combination, included 'diabetes\*', 'cardiovascular\*', 'cardiovascular disease\*', 'Aboriginal\*' 'Indigen\*', 'Torres Strait', 'care', 'health', 'intervention\*', 'First Nation\*', 'Australia\*', in conjunction with the terms 'and' and 'or'.

The search strategy over-represented academic peer-reviewed publications. The initial search identified 664 records, with an additional 11 records identified from hand searching and recommendations of the Indigenous Advisory Group. Of these, 266 articles were excluded, and a total of 409 articles were reviewed.

Areas of unmet need identified by Indigenous academics and Aboriginal and Torres Strait Islander peak organisations were privileged throughout the refinement process. As were areas of unmet need which were identified by multiple stakeholder groups, such as academics, clinicians, and patient groups. Fundamental and purely descriptive unmet medical and research needs were excluded.

#### **Summary of Findings**

Detailed below are the areas of unmet need for D&CVD identified throughout the literature review. These have been categorised into unmet needs for diabetes, CVD, interactions between D&CVD and other areas irrespective of disease end point.

#### Cardiovascular disease

The unmet needs listed below include needs specific to cardiovascular disease and related conditions: coronary artery disease, cardiomyopathy, stroke and transient ischaemic attack.

Unmet need	Description of unmet need
Systematic delivery of multidisciplinary, patient-centred care for people with heart failure	Systematic delivery of multidisciplinary, patient-centred care for Aboriginal and Torres Strait Islander peoples with heart failure is crucial for improving health outcomes, especially for those living in rural and remote areas. Importantly, there is a need to ensure that Aboriginal Australians with heart failure experience a satisfactory quality of life and are engaged with their family in end-of-life care decisions. <sup>12 13 14</sup>
Specific data gaps in epidemiology of CVD Address data gaps to improve the understanding of the epidemiology of CVD and serving gaps for particular groups. This would include:	
	<ul> <li>Understanding of CVD among Aboriginal and Torres Strait Islander peoples living in urban areas.</li> <li>Aboriginal and Torres Strait Islander men.</li> </ul>
	<ul> <li>Those with poorer outcomes following cardiac bypass.</li> <li>Primary care practitioner follow-up after hospital discharge post cardiac event. <sup>15 16 17 18</sup></li> </ul>
Risk assessment for broad CVD	Improved evidence base for, and delivery of, CVD risk assessment for Aboriginal and Torres Strait Islander peoples, including novel risk modifiers [psychosocial factors, socioeconomic indicators, sleep disruption, waist to hip ratio, low HDL-C levels, low vitamin D levels, culture] and calibration of existing algorithms to Aboriginal and Torres Strait Islander populations. 19 20 21 22 23 24 25
Management of comorbidities for people with CVD/DM	Improve management of comorbidities for people with CVD/DM. For example, associations between SLE (an autoimmune inflammatory disease) and CVD mortality for Aboriginal and Torres Strait Islander peoples, HIV/AIDS, cancer, psychological distress, and polycystic ovary syndrome as CVD risk factors. <sup>26 27 28 29 30 31</sup>
Strengths-based perspective to chronic disease	A need to adopt a strengths-based perspective to chronic disease, which builds and develops the existing strengths, skills and capacities of Aboriginal and Torres Strait Islander peoples. <sup>32</sup>
Geographic disparities in stroke outcomes	Address geographic disparities in stroke outcomes for Aboriginal and Torres Strait Islander peoples living in remote areas, who have reduced access to acute imaging for stroke and subsequent thrombolysis/endovascular thrombectomy. Strategies may include mobile CT service and aeromedical thrombolysis. 33
Experience and outcomes for acute coronary syndrome	Comprehensive programs to improve the experience and outcomes for Aboriginal and Torres Strait Islander peoples presenting to hospital with acute coronary syndrome (ACS). <sup>34</sup>
Culturally safe stroke services	Improved access to culturally safe stroke services, rehabilitation, and resources, including a focus on communication resource. <sup>35 36 37 38 39</sup>
Discharge against medical advice risk factors, and post-discharge interventions	Need for greater understanding around discharge against medical advice risk factors, and post-discharge interventions. This should form an integral part of the management of DAMA patients with clear guidelines for contact with the primary care providers, and active follow-up of patients and families. <sup>40</sup>
Cardiac patients' continuity of care	Address severe breakdowns in Aboriginal and Torres Strait Islander cardiac patients' continuity of care following discharge. Various communication and system level barriers affect patients' ability to receive test results, follow-up care and cardiac rehabilitation services. <sup>41</sup>

#### Diabetes

Unmet needs which have been listed include needs specific to diabetes, including diabetic kidney disease, peripheral neuropathy, and diabetic foot syndrome.

Unmet need	Description of unmet need
Prevention knowledge for young people	To improve models of care and educational strategies and increase prevention knowledge from a young age, there is a need to investigate perspectives of Aboriginal and Torres Strait Islander young people and families to understand how diabetes and health are conceptualised amid the many competing priorities of life. <sup>42</sup>
Screening for diabetes and other related conditions	Improve systems of screening for diabetic retinopathy for Aboriginal and Torres Strait Islander peoples living in remote areas, including a scale-up of telehealth screening systems for diabetic retinopathy. <sup>43</sup> <sup>44</sup>
Culturally safe comprehensive care for diabetic foot disease	Holistic, culturally safe, comprehensive care for diabetic foot disease, including patient education and staff training. <sup>45</sup> <sup>46</sup> <sup>47</sup> <sup>48</sup>
Screening and treatment strategies to reduce risk of diabetic retinopathy	Screening and treatment strategies to reduce risk of diabetic retinopathy before an irreversible visual loss occurs, including referral pathways with diabetic retinopathy. Pregnant women with pre-existing diabetes have a particular service gap in retinopathy screening. <sup>49 50</sup>
Screenings for diabetic neuropathy	Increased awareness of recommendations regarding annual screenings for diabetic neuropathy. <sup>54</sup>
Impacts of leaving home for treatment of renal disease	Better understanding of the social impacts of patients being required to leave their communities and homes for treatment of renal disease, and their associated health/patient journey upon return. <sup>55</sup>

#### Interactions between diabetes and cardiovascular disease

Unmet needs which have been listed as areas of interaction between D&CVD include mental health associations of CVD/diabetes mellitus, chronic kidney disease, and cardiac and vascular complications. This also includes areas of unmet need which relate to both D&CVD.

Unmet need	Description of unmet need
Intervention studies addressing both D&CVD	Increase number and quality of intervention studies addressing both CVD and diabetes among Aboriginal and Torres Strait Islander peoples. Need for increased quantitative data rather than surrogate endpoints. Aboriginal and Torres Strait Islander health research needs to move beyond deficit-descriptive statistical portraits and rather interrogate and hold health systems to account. <sup>56</sup> <sup>57</sup> <sup>58</sup> <sup>59</sup> <sup>60</sup> <sup>61</sup>
Improved screening for atrial fibrillation	Improve screening for atrial fibrillation, potentially including novel wearable technologies. <sup>62 63</sup>
Guideline-based care to Aboriginal and Torres Strait Islander peoples	Improve delivery of guideline-based care to Aboriginal and Torres Strait Islander peoples throughout the disease process and across the health system. Gaps in guideline-based care are more pronounced in remote settings. <sup>64 65 66 67 68 69 70 71</sup>
Renal disease management and dialysis services	Direct policy interventions to encourage increased service provision of renal disease management and dialysis services in rural and remote locations. <sup>72 73</sup>
Culturally safe programs and supports	Development of culturally safe programs and supports for D&CVD prevention and 'healthy lifestyles' among Aboriginal and Torres Strait Islander peoples, using empowering, evidence-based, health promotion campaigns. <sup>74</sup> <sup>75</sup> <sup>76</sup> <sup>77</sup> <sup>78</sup> <sup>79</sup> <sup>80</sup> <sup>81</sup>
Culturally safe strategies to address cardiometabolic disease	Culturally safe strategies to address cardiometabolic disease / risk factors to improve the health of women prior to pregnancy and during pregnancy. This should also include a focus on babies through the life course, including management of women with pre-existing and gestational diabetes. <sup>82</sup> 83 84 85 86 87 88 89
Self-management, shared decision making and peer support groups	Support engagement of Aboriginal and Torres Strait Islander peoples in their own health and the wider health system - potentially including support for self-management, shared decision making and peer support groups. There is a need for investment into patient's knowledge of their illness, with a cultural angle if needed, and the ability to initiate self-care. 90 91 92 93 94

Unmet needs which have been listed include other areas of need, nonspecific to D&CVD and irrespective of disease end point. This also includes areas of unmet need which relate to acute rheumatic fever and rheumatic heart disease.

Unmet need	Description of unmet need
Capability building for Aboriginal and Torres strait Islander health practitioners	Extended role / scope / capacity / engagement / training of Aboriginal and Torres Strait Islander health practitioners / workers / liaison officers. <sup>95 96 97 98 99 100</sup>
Clinically and culturally safe care	Strategies to eliminate racism within the Australian health system. Practitioners need to be trained and supported in providing both clinically and culturally safe care for Aboriginal and Torres Strait Islander patients with CVD. This requires adequate time, two-way communication, and resources to support and facilitate effective communication. Examples include Indigenous patient-led cultural awareness training for clinicians and investment in reflective practices. <sup>101</sup> <sup>102</sup> <sup>103</sup> <sup>104</sup> <sup>105</sup> <sup>106</sup> <sup>107</sup> <sup>108</sup> <sup>109</sup>
Strategies to address geographic distance from health services	Strategies to address geographic distance from health services across a range of service needs, including primary care, cardiac rehabilitation and specialist cardiac and other outreach services. Novel and innovative approaches/models of care may include telehealth, online application development. <sup>110</sup> <sup>111112</sup> <sup>113</sup> <sup>114</sup> <sup>115</sup>
Partnerships and collaboration	A need for partnerships and collaboration between Aboriginal and Torres Strait Islander peoples, community development, social, environmental, housing, and clinical services, to bring together core health messages applicable to multiple conditions (in effect a multisectoral prevention focus) across a range of disease endpoints. <sup>116</sup> 117
Research leadership	Investment in multidisciplinary teams led by Aboriginal and Torres Strait Islander peoples and driven by community priorities that demand transformational change in health and health systems. There is benefit – and imperative – of building integrative, diagonal approaches to care across all maternity, Aboriginal, and primary and public healthcare services (including RHD programmes), to support an optimal pathway of care, particularly early diagnosis and assessment. <sup>123</sup> <sup>124</sup> <sup>125</sup> <sup>126</sup>
Place based solutions	Investment in the development of local place-based solutions to rheumatic heart disease, that are identified and led by community. <sup>127</sup> <sup>128</sup> <sup>129</sup>
Impacts of food supply and quality	Strategies to increase access to food supply and quality. Low fruit and vegetable consumption by Aboriginal and Torres Strait Islander peoples has been identified and a diet high in fruits and vegetables can reduce the risk for many leading causes of death. <sup>130</sup> <sup>131</sup> <sup>132</sup> <sup>133</sup>
Prevention of rheumatic heart disease	Comprehensive approaches to preventing rheumatic heart disease. 134135 136 137 138 139
Surgical referral for rheumatic heart disease	Explore and address barriers to surgical referrals for Aboriginal and Torres Strait Islander people with rheumatic heart disease. Roberts-Thompson 2021 highlights delays to referral and notes 'Although the reasons for non-referral in patients with surgical indications was not included in this study, language, cultural factors and implicit bias have previously been reported as barriers to surgical and tertiary health care Aboriginal people."
Delivery of secondary prophylaxis antibiotic injections	Programs to improve delivery of secondary prophylaxis antibiotic injections for people with acute rheumatic fever or rheumatic heart disease. <sup>141</sup> <sup>142</sup> <sup>144</sup>

# Step 2 - Developing a criteria for Prioritisation

During the **Prioritisation** stage of this process, a multidisciplinary stakeholder group reviewed areas of unmet health and medical needs in D&CVD for Aboriginal and Torres Strait Islander peoples and engaged in broad discussions, providing input to the assessment of potential priorities for the TTRA program.

To guide these discussions and allow for an assessment of each area of unmet need to be completed, criteria for prioritisation were developed. They incorporated themes identified during the development of the Prioritisation Framework, to ensure the criteria proposed identified priorities that align with the overarching strategic direction of the TTRA program.

Each criteria includes a series of questions to guide the assessment, as well as a priority rating scale. In using these criteria, each area of unmet need was allocated a priority rating.

The criteria for prioritisation include:

#### **Status**

The status of unmet clinical and research needs in D&CVD

# **Potential Impact**

The potential impact of research funding

# Criteria for Prioritisation

## **Sustainability**

The sustainability and effectiveness of the investment

# **Equitability**

The equitability of opportunities and investments

#### Criteria 1 - Status

Aboriginal and Torres Strait Islander peoples are significantly and disproportionately burdened by D&CVD. To improve the health outcomes for Aboriginal and Torres Strait Islander people with D&CVD we must understand the extent of the problem and how this translates into an increased burden of disease and disparities in mortality and morbidity.

#### **Assessment Questions**

In assessing areas of unmet health and medical needs under these criteria, the following should be considered:

- · Will research investment in this area have the potential to reduce the burden of disease?
- Does this area of unmet need impact on mortality and morbidity outcomes for Aboriginal and Torres Strait Islander peoples with D&CVD?
- Will research investment in this area of unmet need address an existing research gap?
- Is research focused on improving health outcomes for Aboriginal and Torres Strait Islander peoples with D&CVD?

#### **Assessing Priority**

A priority rating may be allocated to each unmet medical and research need identified using the below rating scale.

#### **Priority Rating**

Filolity Ratif	<b>5</b>
High	• Addresses an area with a <b>high</b> impact on burden of disease.
	Focuses on a <b>significant</b> research knowledge gap.
	Potential to have a <b>substantial</b> impact on mortality and morbidity outcomes.
	• <b>Significant</b> focus on improving the health outcomes for Aboriginal and Torres Strait Islanders peoples with D&CVD.
Medium	Addresses an area with a <b>moderate</b> impact on burden of disease.
	• Focuses on a <b>reasonable</b> research knowledge gap.
	Potential to have a <b>moderate</b> impact on mortality and morbidity outcomes.
	• <b>Reasonable</b> focus on improving the health outcomes for Aboriginal and Torres Strait Islanders peoples with D&CVD.
Low	Addresses an area with a <b>limited</b> impact on burden of disease.
	• Focuses on a <b>small</b> research knowledge gap.
	Limited impact on mortality and morbidity outcomes.
	• <b>Limited</b> focus on improving the health outcomes for Aboriginal and Torres Strait Islanders peoples with D&CVD.

#### Criteria 2 - Potential Impact

To advance research which addresses the specific needs of Aboriginal and Torres Strait Islander peoples with D&CVD, the potential impact of investment must be considered. Assessing the potential impact of research on quality of life for Aboriginal and Torres Strait Islander peoples should include consideration of both the cultural and geographical relevance, potential for improvements and innovations to practices and the impact on health care costs.

#### **Assessment Questions**

In assessing areas of unmet health and medical needs under these criteria, the following should be considered:

- What is the likelihood of research contributing to a reduction in the burden of disease and improving the health outcomes for the Aboriginal and Torres Strait Islander peoples in rural, remote, regional, and urban Australia, living with D&CVD?
- Will research investment contribute to reduced health care costs as a result of disease prevention for Aboriginal and Torres Strait Islander peoples in rural, remote, regional, and urban Australia, living with D&CVD?
- Will research investment contribute to improved practices in prediction, identification, prevention, and management of D&CVD for Aboriginal and Torres Strait Islander peoples?
- Does research investment support innovation in preventative, diagnostic, therapeutic and disease management products or solutions for Aboriginal and Torres Strait Islander people with D&CVD.

#### **Assessing Priority**

A priority rating may be allocated to each unmet medical and research need identified using the below rating scale.

Priority Ra	ating
High	Potential to result in <b>significant</b> reduction in burden of disease and improved health outcomes.
	Result in reasonable reduction in health care costs.
	Potential for <b>significant</b> impact on practices in prediction, identification, prevention, and management.
	Capable of <b>major</b> innovation in preventative, diagnostic, therapeutic and disease management products or solutions.
Medium	Potential to result in <b>moderate</b> reduction in burden of disease and improved health outcomes.
	Result in <b>some</b> reduction in health care costs.
	Potential for <b>moderate</b> impact on practices in prediction, identification, prevention, and management.
	Capable of <b>reasonable</b> innovation in preventative, diagnostic, therapeutic and disease management products or solutions.
Low	Minor potential to result in reduction in burden of disease and improved health outcomes.
	No impact on health care costs.
	Likely to have <b>minimal</b> impact on practices in prediction, identification, prevention, and management of the D&CVD for Aboriginal and Torres Strait Islander peoples.
	Unlikely to provide innovation in preventative, diagnostic, therapeutic and disease management products or solutions.

#### Criteria 3 – Sustainability

An assessment of **sustainability** will consider the cost-effectiveness of investments in a particular area of unmet health and medical needs for Aboriginal and Torres Strait Islander peoples living with D&CVD. It will also consider if investment in a particular area can significantly improve health outcomes for Aboriginal and Torres Strait Islander peoples with D&CVD by improving health systems in Australia.

Assessment Questions

In assessing areas of unmet health and medical needs under these criteria, the following should be considered:

- · What is the current level of knowledge and investment in this area?
- Does this area of unmet need address a significant gap in funding for D&CVD research and allow for increased research efforts?
- Will investment in this area of unmet need contribute to improving health systems in Australia by improving policies and practices?
- Will research contribute to building capacity in Aboriginal and Torres Strait Islander researchers, health practitioners and Aboriginal and Torres Strait Islander and non-Indigenous clinicians?
- Will research contribute to improved patient experiences and improvements in the quality of life for Aboriginal and Torres Strait Islander peoples with D&CVD?

#### **Assessing Priority**

A priority rating may be allocated to each unmet medical and research need identified using the below rating scale.

#### **Priority Rating**

T HOTTEY IX		
High	There is <b>limited</b> knowledge in this area and current levels of investment in research are <b>small.</b>	5
	Investment is this area will fill a <b>significant</b> gap.	
	Potential to have <b>significant</b> contribution to improving policies and practices.	
	Likely to have a <b>substantial</b> focus on building capacity of Aboriginal and Torres Strait Islander researchers, health practitioners and Aboriginal and Torres Strait Islander and non-Indigenous clinicians.	
	Potential to have <b>significant</b> impact on improving patient experiences and quality of life	e.
Medium	There is <b>reasonable</b> levels of knowledge in this area and current levels of investment in research are <b>moderate</b> .	٦
	Investment is this area will fill a <b>modest</b> gap.	
	Potential to have <b>sufficient</b> contribution to improving policies and practices	
	Likely to have an <b>acceptable</b> focus on building capacity of Aboriginal and Torres Strait Islander researchers, health practitioners and Aboriginal and Torres Strait Islander and non-Indigenous clinicians.	
	Potential to have <b>sufficient</b> impact on improving patient experiences and quality of life	
Low	There is <b>substantial</b> knowledge in this area and current levels of investment in research are <b>high.</b>	h
	Investment is this area will fill a <b>small</b> gap.	
	Potential to have <b>small</b> contribution to improving policies and practices.	
	Likely to have a <b>limited</b> focus on building capacity of Aboriginal and Torres Strait Island researchers, health practitioners and Aboriginal and Torres Strait Islander and non-Indigenous clinicians.	er
	Potential to have <b>limited</b> impact on improving patient experiences and quality of life.	

#### Criteria 4 - Equitability

Assessing the **equitability of opportunities and investments** in research funding should be considered in determining priority areas for investment. Ensuring equity for Aboriginal and Torres Strait Islander peoples means that Indigenous leadership and decision making is embedded and Aboriginal and Torres Strait Islander peoples are involved as researchers, consumers and practitioners.

In ensuring equity in opportunities and investments, research which supports improvements to health systems that address the cultural determinants of health should be prioritised.

#### **Assessment Questions**

In assessing areas of unmet health and medical needs under these criteria, the following should be considered:

- Will investment in this area improve participation and partnership with Aboriginal and Torres Strait Islander peoples.
- · Will Aboriginal and Torres Strait Islander leadership and decision making be embedded?
- Does research address the cultural determinants of health and structural drivers of inequity?
- Does research include a focus on place-based solutions and allow for community priorities to be embedded?
- Is research focused on health systems and improving policies and practices to ensure equitability and to address racism?

#### **Assessing Priority**

A priority rating may be allocated to each unmet medical and research need identified using the below rating scale.

Priority Ra	ating
High	Significant opportunity to improve participation and partnership with Aboriginal and Torres Strait Islander peoples.
	Meaningful opportunity for Aboriginal and Torres Strait Islander leadership and decision making.
	• <b>Substantial</b> focus on cultural determinants of health and structural drivers of inequity.
	• <b>Significant</b> opportunity for place-based solutions and embedding community priorities.
	Substantial focus health systems and improving policies and practices.
Medium	Reasonable opportunity to improve participation and partnership with Aboriginal and Torres Strait Islander peoples.
	Acceptable opportunity for Aboriginal and Torres Strait Islander leadership and decision making.
	Modest focus on cultural determinants of health and structural drivers of inequity.
	Reasonable opportunity for place-based solutions and embedding community priorities.
	Reasonable focus health systems and improving policies and practices.
Low	• <b>Limited</b> opportunity to improve participation and partnership with Aboriginal and Torres Strait Islander peoples.
	Limited opportunity for Aboriginal and Torres Strait Islander leadership and decision making.
	Lacks focus on cultural determinants of health and structural drivers of inequity.
	• <b>Limited</b> opportunity for place-based solutions and embedding community priorities.
	Lacks focus health systems and improving policies and practices.

## Step 3 - Prioritising areas of unmet need

To assist in refining the broader list of unmet needs and identify priority areas for D&CVD, a prioritisation process was undertaken.

#### Roundtable discussion

A Prioritisation Roundtable was held on 6 December 2022, bringing together members of the Indigenous Advisory Group, as well as clinicians, researchers, patient advocacy groups and people with lived experience to discuss areas of unmet health and medical needs of Aboriginal and Torres Strait Islander peoples in rural, remote, regional and urban Australia.

During the roundtable participants completed a prioritisation assessment, via an online questionnaire and utilising the Prioritisation Framework. Invitees who were unable to attend the roundtable were also able to submit their responses to the questionnaire.

As experts in the field, participants were asked to provide their feedback on what are the priorities for health and medical research for Aboriginal and Torres Strait Islander peoples with D&CVD, and where research investment can have the most positive impact.

Areas of unmet health and medical needs discussed included

- 1. Unmet needs for cardiovascular disease.
- 2. Unmet need for diabetes.
- 3. Unmet needs where there is an interaction between D&CVD.
- 4. Any other areas of unmet need irrespective of disease end point.

The need for priority areas to enable a holistic approach to health and wellbeing, rather than focusing on specific aspects or complications of D&CVD, was a key point of feedback received during the roundtable. This is reflected in the results of the prioritisation process, with areas of health of medical needs which promote culturally safe, holistic and strengths based approached to improving the experience and quality of life for Aboriginal and Torres Strait Islander peoples with D&CVD, receiving the highest priority ratings.

#### Embedding Aboriginal and Torres Strait Islander leadership and perspectives

A core principle of this needs assessment and prioritisation process was to determine Indigenous-specific priority areas for research into D&CVD, through an approach that facilitated input and leadership from Aboriginal and Torres Strait Islander researchers, clinicians, policy makers and thought leaders.

#### How did we do this?

To help get a sense of the importance or priority for individual areas of unmet need, and to ensure the voices of Aboriginal and Torres Strait Islander peoples were elevated and emphasised, a weighing matrix was used in analysing results from the prioritisation step of the process. Results were adjusted to ensure that the views of Aboriginal and Torres Strait Islander participants in the process were adequately reflected in results and constitute leadership in setting priorities.

Sample weighting was applied to results to ensure proportional representation of Aboriginal and Torres Strait Islander peoples.

#### What constitutes Aboriginal and Torres Strait Islander leadership in the process?

A minimum of 51% of participants identifying as Aboriginal and a maximum of 49% of participants being non-indigenous.

#### Weighting of assessment criteria

Along with a sample weighting, individual prioritisation criteria were also weighted.

Criteria	Description	Weight
Status	The status of unmet clinical and research needs in D&CVD.	1
Potential Impact	The potential impact of research funding	1
Sustainability	The sustainability and effectiveness of the investment	1
Equitability	The equitability of opportunities and investments	2

#### **Results**

Responses to the roundtable discussion were analysed to identify the areas of need which were allocated the highest priority rating. Of the participants in the prioritisation process, 5 of 13 or 38%, identified as Aboriginal and/or Torres Strait Islander.

In conducting this analysis, responses were weighted to adjust the results and ensure that the views of Aboriginal and Torres Strait Islander participants were adequately reflected.

The final priority areas for funding that emerged from the prioritisation process are included below:

#### Unmet needs for cardiovascular disease

The unmet needs listed below include needs specific to cardiovascular disease and related conditions such as coronary artery disease, cardiomyopathy, stroke and transient ischaemic attack.

These areas of need were rated **highest priority** (in no particular order) during the roundtable.

#### **Priority areas:**

- **Strengths-based perspectives to chronic disease** A need to adopt a strengths-based perspective to chronic disease, which builds and develops the existing strengths, skills and capacities of Aboriginal and Torres Strait Islander peoples.
- **Culturally safe stroke services** Improved access to culturally safe stroke services, rehabilitation, and resources, including a focus on communication resource.
- Cardiac patients' continuity of care Address severe breakdowns in Aboriginal and Torres Strait Islander cardiac patients' continuity of care following discharge. Various communication and system level barriers affect patients' ability to receive test results, follow-up care and cardiac rehabilitation services.

#### Unmet needs for diabetes

Unmet needs which have been listed include needs specific to diabetes, including diabetic kidney disease, peripheral neuropathy, and diabetic foot syndrome.

These areas of need were rated **highest priority** (in no particular order) during the roundtable.

#### **Priority areas:**

- **Prevention knowledge for young people** To improve models of care and educational strategies and increase prevention knowledge from a young age, there is a need to investigate perspectives of Aboriginal and Torres Strait Islander young people and families to understand how diabetes and health are conceptualised amid the many competing priorities of life.
- **Screen for diabetes and other related conditions** Improve systems of screening for diabetic retinopathy for Aboriginal and Torres Strait Islander peoples living in remote areas, including a scale-up of telehealth screening systems for diabetic retinopathy.

#### Unmet needs where there is an intersection between diabetes and cardiovascular disease

Unmet needs which have been listed as areas of interaction between D&CVD include mental health associations, chronic kidney disease, and cardiac and vascular complications. This also includes areas of unmet need which relate to both D&CVD.

These areas of need were rated **highest priority** (in no particular order) during the roundtable.

#### **Priority areas:**

- **Culturally safe programs and supports** Development of culturally safe programs and supports for D&CVD prevention and 'healthy lifestyles' among Aboriginal and Torres Strait Islander peoples, using empowering, evidence-based, health promotion campaigns.
- Culturally safe strategies to address cardiometabolic disease Culturally safe strategies to address cardiometabolic disease / risk factors to improve the health of women prior to pregnancy and during pregnancy. This should also include a focus on babies through the life course, including management of women with pre-existing and gestational diabetes.
- Self-management, shared decision making and peer support Support engagement of Aboriginal and Torres Strait Islander peoples in their own health and the wider health system potentially including support for self-management, shared decision making and peer support groups. There is a need for investment into patient's knowledge of their illness, with a cultural angle if needed, and the ability to initiate self-care.

#### Other unmet needs and unmet needs irrespective of the disease end point

Unmet needs which have been listed include other areas of need, nonspecific to D&CVD and irrespective of disease end point.

These areas of need were rated highest priority (in no particular order) during the roundtable.

#### **Priority areas:**

- Capability building for Aboriginal and Torres Strait Islander health practitioners Extended role / scope / capacity / engagement / training of Aboriginal and Torres Strait Islander health practitioners / workers / liaison officers.
- Strategies to address geographic distance from health services Strategies to address geographic distance from health services across a range of service needs, including primary care, cardiac rehabilitation and specialist cardiac and other outreach services. Novel and innovative approaches/models of care may include telehealth, online application development.
- Research leadership Investment in multidisciplinary teams led by Aboriginal and Torres Strait Islander peoples and driven by community priorities that demand transformational change in health and health systems. There is benefit and imperative t building integrative, diagonal approaches to care across all maternity, Aboriginal, and primary and public healthcare services (including RHD programmes), to support an optimal pathway of care, particularly early diagnosis and assessment.
- Impacts of food supply and quality Strategies to increase access to food supply and quality. Low fruit and vegetable consumption by Aboriginal and Torres Strait Islander peoples has been identified and a diet high in fruits and vegetables can reduce the risk for many leading causes of death.

# Step 4 - Results of the prioritisation process

Results from the prioritisation roundtable were reviewed and areas of unmet need which were most highly rated overall and across all categories were included in the final list of Indigenous-specific priority areas for research into D&CVD.

Each area of unmet need is listed below in order of the priority rating received, irrespective of category and classification:

- 1. Culturally safe programs and supports.
- 2. Capability building for Aboriginal and Torres Strait Islander health practitioners.
- 3. Culturally safe strategies to address cardiometabolic disease.
- 4. Strengths-based perspectives to chronic disease.
- 5. Impacts of food supply and quality.
- 6. Research leadership.
- 7. Strategies to address geographic distance from health services.
- 8. Cardiac patients' continuity of care.
- 9. Culturally safe stroke services.
- 10. Self-management, shared decision making and peer support.
- 11. Prevention knowledge for young people.
- 12. Screen for diabetes and other related conditions.

These results were reviewed and considered, with three of the four most highly rated unmet needs proposed as the priority areas of TTRA Research Projects Round 3. These were endorsed by the Indigenous Advisory Group and TTRA Board.

These priority areas include:

**Priority 1:** Strengths-based perspectives to chronic disease – a need to adopt a strengths-based perspective to chronic disease, which builds and develops the existing strengths, skills and capacities of Aboriginal and Torres Strait Islander peoples.

**Priority 2:** Culturally safe programs and supports – development of culturally safe programs and supports for D&CVD prevention and promotion of 'healthy lifestyles' among Aboriginal and Torres Strait Islander peoples, using empowering, evidence-based, health promotion campaigns.

**Priority 3:** Culturally safe strategies to address cardiometabolic disease – culturally safe strategies to address cardiometabolic disease / risk factors to improve the health of Aboriginal and Torres Strait Islander women prior to and during pregnancy. This should also include a focus on babies through the life course, including management of women with pre-existing and gestational diabetes.

MTPConnect recognise the importance of capability building for Aboriginal and Torres Strait Islander health practitioners, as reflected by its high priority rating. This unmet need is out of scope as a priority area for the TTRA program. However the MTPConnect funding model includes significant capacity building support for all awardees, which will allow the program to partially address this unmet need through Research Projects Round 3. Additionally, the selection criteria for this round were designed to select for applications that have embedded sustantial capability building opportunities within the project.

#### Limitations

While experts were engaged in the process, wider community consultation was not completed due to time constraints. Community consultation allows for new or emerging areas of unmet needs, which have not yet been documented, to be identified and for diverse stakeholder groups to engage in the process. To ensure that wide ranging views were captured, a detailed literature review was completed. While this approach allowed us to identify potential areas of unmet need, detailed within literature, this was also a limitation of the project as it did not allow for unpublished and emerging areas of unmet need to be considered.

## Conclusion

Setting priorities for research funding is important to ensure that investment has impact, is of benefit to the public and contributes to improving health outcomes for individuals and communities. It is essential that the design and execution of processes to identify areas of need and set priorities for future funding into Aboriginal and Torres Strait Islander research are led by individuals and groups that have deep knowledge of the health challenges facing Aboriginal and Torres Strait Islander people.

The approach used to set funding priorities for the TTRA program's Research Projects Round 3 was designed to ensure that Indigenous-specific priority areas for research were identified, and this was done through a process that engaged experts in the field. This includes clinicians, researchers, patient advocacy groups or people with lived experience who understand best where research investment will have a positive impact.

The approach and the respective results demonstrate that an Aboriginal and Torres Strait Islander led, evidence-based approach to identifying and assessing priorities, is achievable. The impact of this approach is to ensure that priority areas are accurately identified and represent key areas of unmet health and medical need for Aboriginal and Torres Strait Islander peoples with D&CVD. While also ensuring input and leadership from Aboriginal and Torres Strait Islander researchers, clinicians, policy makers and thought leaders are embedded, and the voices of Aboriginal and Torres Strait Islander peoples are elevated

Targeted Translation Research Accelerator Needs Assessment and Prioritisation Project

# References

- Australian Bureau of Statistics, 2019, Causes of Death, Australia, Accessed on 14 August 2022 at Causes of Death, Australia (cat. no. 3303.0)
- 2 Diabetes Australia, **What is Diabetes?** Accessed on 12 October 2022 at https://www.diabetesaustralia.com.au/what-is-diabetes:
- 3 Australian Bureau of Statistics, 2019, **National Aboriginal and Torres Strait Islander Health Survey**. Accessed on 13 August 2022 at National Aboriginal and Torres Strait Islander Health Survey, 2018-19 financial year | Australian Bureau of Statistics (abs.gov.au)
- 4 Australian Bureau of Statistics, 2019, **National Aboriginal and Torres Strait Islander Health Survey**. Accessed on 13 August 2022 at National Aboriginal and Torres Strait Islander Health Survey, 2018-19 financial year | Australian Bureau of Statistics (abs.gov.au)
- Australian Government Department of Health, 2020, *National Strategic Action Plan For Heart Disease and Stroke*. Accessed 13 September 2022 at https://www.health.gov.au/sites/default/files/documents/2021/09/national-strategic-action-plan-for-heart-disease-and-stroke.pdf
- Australian Government Department of Health, 2021, *Australian National Diabetes Strategy 2021* **2030**. Accessed 13 September 2022 at https://www.health.gov.au/sites/default/files/documents/2021/11/australian-national-diabetes-strategy-2021-2030\_0.pdf
- Australian Institute of Aboriginal and Torres Strait Islander Studies and Lowitja Institute. 2013, 'Researching Right Way', **Aboriginal and Torres Strait Islander Health Research Ethics: A domectic and international law review**, National Health and Medical Research Council. Accessed 18 September 2022 at evaluation-literature-review-atsi-research-ethics.pdf (nhmrc.gov.au),p. 3.
- 8 The University of Adelaide, 8 February 2002, *Apology for past experiments on Aboriginal People*, accessed on 12 June 2022 at Apology for past experiments on Aboriginal people (adelaide.edu.au)
- 9 Productivity Commission, *Closing the Gap Information Repository*, Australian Government. Accessed on 25 August 2022 at Aboriginal and Torres Strait Islander people enjoy long and healthy lives - Dashboard | Closing the Gap Information Repository - Productivity Commission (pc.gov.au)
- 10 M, Salmon., K, Doery., P, Dance., J, Chapman., R, Gilbert., R, Williams., R & R, Lovett., 2019, **Defining the indefinable: descriptors of Aboriginal and Torres Strait Islander Peoples' cultures and their links to health and wellbeing**, Aboriginal and Torres Strait Islander Health Team, Research School of Population Health, The Australian National University, Canberra, p. 1.
- 11 M, Salmon., K, Doery., P, Dance., J, Chapman., R, Gilbert., R, Williams., R & R, Lovett., 2019, **Defining the indefinable: descriptors of Aboriginal and Torres Strait Islander Peoples' cultures and their links to health and wellbeing**, Aboriginal and Torres Strait Islander Health Team, Research School of Population Health, The Australian National University, Canberra, p. 1.
- TH, Teng., JM, Katzenellenbogen., J, Hung., M, Knuiman., FM, Sanfilippo., E, Geelhoed., D, Bessarab, M, Hobbs., SC, Thompson., 2015, *A cohort study: temporal trends in prevalence of antecedents, comorbidities and mortality in Aboriginal and non-Aboriginal Australians with first heart failure hospitalization, 2000–2009,* Int J Equity Health. 2015 Aug 12;14:66. doi: 10.1186/s12939-015-0197-4.
- 13 TH, Teng., JM, Katzenellenbogen., J, Hung., M, Knuiman., FM, Sanfilippo., E, Geelhoed., M, Hobbs., SC, Thompson., 2014, *Rural-urban differentials in 30-day and 1-year mortality following first-ever heart failure hospitalisation in Western Australia: a population-based study using data linkage*, BMJ Open. 2014 May 2;4(5):e004724. doi: 10.1136/bmjopen-2013-004724.
- 14 R, Mitchell., Sanders., D, Spicer., S, Stewart., V, Wade., 2014, **A systematic approach to chronic heart failure care: a consensus statement,** National Heart Foundation of Australia. Med J Aust. 2014 Aug 4;201(3):146-50. doi: 10.5694/mja14.00032.
- M, McGee., L, Shephard., S, Sugito., D, Baker., S, Brienesse., M, Al-Omary., R, Nathan-Marsh., DTM, Ngo., P, Oakley., AJ, Boyle., G, Garvey., AL, Sverdlov., 2022, *Mind The Gap, Aboriginal and Torres Strait Islander Cardiovascular Health: A Narrative Review,* Heart Lung Circ. 2022 Nov 3:S1443-9506(22)01130-1. doi: 10.1016/j.hlc.2022.09.017. Online ahead of print.

- A, Prabhu., PJ, Tully., JS, Bennetts., SC, Tuble., RA, Baker., 2013, *The morbidity and mortality outcomes of indigenous Australian peoples after isolated coronary artery bypass graft surgery: the influence of geographic remoteness*, Heart Lung Circ. 2013 Aug;22(8):599-605. doi: 10.1016/j. hlc.2013.01.003. Epub 2013 Mar 29.
- J, Eng-Frost., J, Marangou., N, McMurdock., N, Kangaharan., M, Ilton., E, Wing-Lun., 2021, *Inpatient cardiac care for acute coronary syndromes in the Top End of Australia*, Intern Med J. 2021 Oct 25. doi: 10.1111/imj.15597. Online ahead of print.
- L, Alston., S, Allender., K, Peterson., J, Jacobs., M, Nichols., 2017, *Rural Inequalities in the Australian Burden of Ischaemic Heart Disease: A Systematic Review*, Heart Lung Circ. 2017 Feb;26(2):122-133. doi: 10.1016/j.hlc.2016.06.1213. Epub 2016 Aug 22.
- 19 KTH, Win., B, Thomas., TI, Emeto., L, Fairley., H, Thavarajah., VN, Vangaveti., N, Danda., HN, Wai., RH, New., MA, Muñoz., S, Basu., R, Yadav., 2022, *A Comparison of Clinical Characteristics and Outcomes Between Indigenous and Non-Indigenous Patients Presenting to Townsville Hospital Emergency Department With Chest Pain*, Heart Lung Circ. 2022 Feb;31(2):183-193. doi: 10.1016/j.hlc.2021.06.450. Epub 2021 Aug 7.
- 20 L, Merone., R, McDermott., J, Mein., P, Clarke., M, McDonald., 2020, *Primary Prevention of Cardiovascular Disease in Minority Indigenous Populations: A Systematic Review,* Heart Lung Circ. 2020 Sep;29(9):1278-1291. doi: 10.1016/j.hlc.2019.06.720. Epub 2019 Jul 8.
- 21 SR, Yiallourou., GP, Maguire., MJ, Carrington., 2020, **Sleep quantity and quality and cardiometabolic risk factors in Indigenous Australians,** J Sleep Res. 2021 Apr;30(2):e13067. doi: 10.1111/jsr.13067. Epub 2020 Jun 11.
- LJ, Maple-Brown., J, Brimblecombe., PW, Connelly., SB, Harris., M, Mamakeesick., B, Zinman., K, O'Dea., AJ, Hanley., 2013, **Similarities and differences in cardiometabolic risk factors among remote**Aboriginal Australian and Canadian cohorts, Diabetes Res Clin Pract. 2013 Apr;100(1):133-41. doi: 10.1016/j. diabres.2012.12.017. Epub 2013 Jan 9.
- M, McGee., L, Shephard., S, Sugito., D, Baker., S, Brienesse., M, Al-Omary., R, Nathan-Marsh., DTM, Ngo., P, Oakley., AJ, Boyle., G, Garvey., AL, Sverdlov., 2022, *Mind The Gap, Aboriginal and Torres Strait Islander Cardiovascular Health: A Narrative Review,* Heart Lung Circ. 2022 Nov 3:S1443-9506(22)01130-1. doi: 10.1016/j.hlc.2022.09.017. Online ahead of print.
- LJ, Maple-Brown., JT, Hughes., ZX, Lu., K, Jeyaraman., P, Lawton., GR, Jones., A, Ellis., A, Sinha., A, Cass., RJ, MacIsaac., G, Jerums., K, O'Dea., 2014, **Serum vitamin D levels, diabetes and cardio-metabolic risk factors in Aboriginal and Torres Strait Islander Australians,** Diabetol Metab Syndr. 2014 Jul 16;6:78. doi: 10.1186/1758-5996-6-78. eCollection 2014.
- X, Fitzgerald., A, Herceg., K, Douglas., N, Siddiqui, 2020, **Cardiovascular disease risk assessment in an Aboriginal community-controlled health service: comparing algorithms,** Aust J Prim Health. 2020 Aug;26(4):281-286. doi: 10.1071/PY19216.
- M, McGee., L, Shephard., S, Sugito., D, Baker., S, Brienesse., M, Al-Omary., R, Nathan-Marsh., DTM, Ngo., P, Oakley., AJ, Boyle., G, Garvey., AL, Sverdlov., 2022, *Mind The Gap, Aboriginal and Torres Strait Islander Cardiovascular Health: A Narrative Review,* Heart Lung Circ. 2022 Nov 3:S1443-9506(22)01130-1. doi: 10.1016/j.hlc.2022.09.017. Online ahead of print.
- WD, Raymond., S, Lester., DB, Preen., HI, Keen., CA, Inderjeeth., M, Furfaro., JC, Nossent., 2021, Hospitalisation for systemic lupus erythematosus associates with an increased risk of mortality in Australian patients from 1980 to 2014: a longitudinal, population-level, data linkage, cohort study, Lupus Sci Med. 2021 Oct;8(1):e000539. doi: 10.1136/lupus-2021-000539.
- DJ, Chan., V, Furner., DE, Smith., M, Dronavalli., RI, Bopage., JJ, Post., AK, Bhardwaj., 2018, **Non-AIDS** complexity amongst patients living with HIV in Sydney: risk factors and health outcomes, AIDS Res Ther. 2018 Mar 8;15(1):6. doi: 10.1186/s12981-018-0193-z.
- 29 L, Pule., E, Buckley., T, Niyonsenga., D, Banham., D, Order., 2018, **Developing a comorbidity index for comparing cancer outcomes in Aboriginal and non-Aboriginal Australians**, BMC Health Serv Res. 2018 Oct 16;18(1):776. doi: 10.1186/s12913-018-3603-y.

- 30 E, Ellis., M, Gibson-Helm., JA, Boyle., 2018, *Polycystic ovary syndrome in Central Australia: Diagnosis and screening of cardiometabolic risk and emotional wellbeing,* Aust J Gen Pract. 2018 Apr;47(4):227-232. doi: 10.31128/AFP-09-17-4327.
- 31 A, Zengin., LJ, Maple-Brown., S, Brennan-Olsen., JR, Center., S, Eades., PR, Ebeling., 2018, *Musculoskeletal health of Indigenous Australians*, Arch Osteoporos. 2018 Jul 14;13(1):77. doi: 10.1007/s11657-018-0493-x.
- L, Bishop., A, Ransom., M, Laverty., 2018, **Cardiovascular Health in Remote and Rural Communities,** Royal Flying Doctor Service.
- AH, Balabanski., K, Goldsmith., B, Giarola., D, Buxton., S, Castle., K, McBride., S, Brady., AG, Thrift., J, Katzenellenbogen., A, Brown., J, Burrow., GA, Donnan., S, Koblar., TJ, Kleinig., 2020, **Stroke incidence and subtypes in Aboriginal people in remote Australia: a healthcare network population-based study,** BMJ Open. 2020 Oct 8;10(10):e039533. doi: 10.1136/bmjopen-2020-039533.
- RD, Grenfell., V, Wade., E, Clune., K, O'Donohue., P, Power., 2012, *Improving the patient journey for Aboriginal and Torres Strait Islander people with acute coronary syndromes*, Med J Aust. 2012 Jul 2;197(1):27. doi: 10.5694/mja12.10443.
- M, McGee., L, Shephard., S, Sugito., D, Baker., S, Brienesse., M, Al-Omary., R, Nathan-Marsh., DTM, Ngo., P, Oakley., AJ, Boyle., G, Garvey., AL, Sverdlov., 2022, *Mind The Gap, Aboriginal and Torres Strait Islander Cardiovascular Health: A Narrative Review,* Heart Lung Circ. 3: S1443-9506(22)01130-1. doi: 10.1016/j. hlc.2022.09.017
- 36 R, Quigley., J, Mann., J, Robertson., S, Bonython-Ericson., 2019, *Are we there yet? Exploring the journey to quality stroke care for Aboriginal and Torres Strait Islander peoples in rural and remote Queensland*, Rural Remote Health.19(3):4850. doi: 10.22605/RRH4850. Epub 2019 Sep 6.
- L, Dimer., T, Dowling., J, Jones., C, Cheetham., T, Thomas., J, Smith., A, McManus., AJ, Maiorana., 2013, *Build it and they will come: outcomes from a successful cardiac rehabilitation program at an Aboriginal Medical Service*, Aust Health Rev. 2013 Feb;37(1):79-82. doi: 10.1071/AH11122.
- 38 N, Freene., R, Brown., P, Collis., C, Bourke., K, Silk., A, Jackson., R, Davey., HL, Northam., 2021, *An Aboriginal and Torres Strait Islander Cardiac Rehabilitation program delivered in a non-Indigenous health service (Yeddung Gauar): a mixed methods feasibility study,* BMC Cardiovasc Disord. 2021 May 1;21(1):222. doi: 10.1186/s12872-021-02016-3.
- 39 J, Kelly., A, Dowling., S, Hillier., A, Brown., T, Kleinig., K, Goldsmith., K, McBride, J, Pandian., S, Castle., AG, Thrift., **Perspectives on rehabilitation for Aboriginal people with stroke: a qualitative study,** Top Stroke Rehabil. 2022 May;29(4):295-309. doi: 10.1080/10749357.2021.1911771. Epub 2021 Jun 28.
- JM, Katzenellenbogen., D, Bond-Smith., AP, Ralph., M, Wilmot., J, Marsh., R, Bailie., V, Matthews., 2020, Priorities for improved management of acute rheumatic fever and rheumatic heart disease: analysis of cross-sectional continuous quality improvement data in Aboriginal primary healthcare centres in Australia, Aust Health Rev. 2020 Apr;44(2):212-221. doi: 10.1071/AH19132.
- S, Artuso., 2013, Factors influencing health care utilisation among Aboriginal cardiac patients in central Australia: a qualitative study, BMC Health Serv Res. 2013 Mar 6;13:83. doi: 10.1186/1472-6963-13-83.
- 42 A, Titmuss., 2019, *Emerging diabetes and metabolic conditions among Aboriginal and Torres Strait Islander young people*, Med J Aust. 2019 Feb;210(3):111-113.e1. doi: 10.5694/mja2.13002. Epub 2019 Jan 18.
- 43 N, Quinn., 2021, Screening for diabetic retinopathy and reduced vision among Indigenous Australians in Top End primary care health services: a TEAMSnet sub-study, Intern Med J. 2021 Nov;51(11):1897-1905. doi: 10.1111/imj.14971. Epub 2021 Oct 24.
- L, Brazionis., 2018, Diabetic retinopathy in a remote Indigenous primary healthcare population: a Central Australian diabetic retinopathy screening study in the Telehealth Eye and Associated Medical Services Network project, Diabet Med. 2018 May;35(5):630-639. doi: 10.1111/dme.13596. Epub 2018 Feb 27.

- T, Ballestas., S, McEvoy., V, Swift-Otero., M, Unsworth., 2014, *A metropolitan Aboriginal podiatry and diabetes outreach clinic to ameliorate foot-related complications in Aboriginal people*, Aust N Z J Public Health. 2014 Oct;38(5):492-3. doi: 10.1111/1753-6405.12268. Epub 2014 Aug 28.
- V, Chuter., F, Quigleyl., P, Tosenovsky., JC, Ritter., J, Charles., J, Cheney., R, Fitridge., Australian Diabetes-related Foot Disease Guidelines & Pathways Project, 2022, *Australian guideline on diagnosis and management of peripheral artery disease: part of the 2021 Australian evidence-based guidelines for diabetes-related foot disease*, J Foot Ankle Res. 2022 Jul 5;15(1):51. doi: 10.1186/s13047-022-00550-7.
- 47 V, Chuter., M, West., F, Hawke., A, Searle., 2019, *Where do we stand? The availability and efficacy of diabetes related foot health programs for Aboriginal and Torres Strait Islander Australians: a systematic review,* J Foot Ankle Res. 2019 Mar 18;12:17. doi: 10.1186/s13047-019-0326-1. eCollection 2019.
- 48 D, Isa., D, Pace., 2021, **Is ethnicity an appropriate measure of health care marginalization? A systematic review and meta-analysis of the outcomes of diabetic foot ulceration in Aboriginal populations**, Can J Surg. 2021 Oct;64(5):E476-E483. doi: 10.1503/cjs.004619.
- 49 KTH, Win., B, Thomas., TI, Emeto., L, Fairley., H, Thavarajah., VN, Vangaveti., N, Danda., HN, Wai., RH, New., MA, Muñoz., S, Basu., R, Yadav., 2022, *A Comparison of Clinical Characteristics and Outcomes Between Indigenous and Non-Indigenous Patients Presenting to Townsville Hospital Emergency Department With Chest Pain*, Heart Lung Circ. 2022 Feb;31(2):183-193. doi: 10.1016/j.hlc.2021.06.450. Epub 2021 Aug 7.
- 50 E, Haynes., JM, Katzenellenbogen., S, Noonan., I, Stacey., AG, Mitchell., V, Wade., D, Bessarab., 2022, *Is the Australian primary healthcare system ready for the Rheumatic Heart Disease Endgame strategy? Data synthesis and recommendations*, Aust N Z J Public Health. 2022 Oct;46(5):554-557. doi: 10.1111/1753-6405.13259. Epub 2022 Jul 19.
- 51 E, Haynes., M, Marawili., BM, Marika., AG, Mitchell., J, Phillips., D, Bessarab., R, Walker., J, Cook., AP, Ralph., 2019, **Community-based participatory action research on rheumatic heart disease in an Australian Aboriginal homeland: Evaluation of the 'On track watch' project,** Eval Program Plann. 2019 Jun;74:38-53. doi: 10.1016/j.evalprogplan.2019.02.010. Epub 2019 Feb 18.
- A, Rohit., T, Roulston., T, Henderson., IL, Lee., V, Webster., HD, McIntyre., C, Connors., A, Brown., JE, Shaw., LJ, Maple-Brown., ELM, Barr., 2021, **Screening rates for diabetic retinopathy among Aboriginal and Torres Strait Islander women with hyperglycaemia in pregnancy: The PANDORA cohort study,** Clin Exp Ophthalmol. 2021 Sep;49(7):765-767. doi: 10.1111/ceo.13985. Epub 2021 Sep 2.
- J, Scheetz., D, Koca., M, McGuinness., E, Holloway., Z, Tan., Z, Zhu., R, O'Day., S, Sandhu., RJ, MacIsaac., C, Gilfillan., A, Turner., S, Keel., M, He., 2021, *Real-world artificial intelligence-based opportunistic screening for diabetic retinopathy in endocrinology and indigenous healthcare settings in Australia*, Sci Rep. 2021 Aug 4;11(1):15808. doi: 10.1038/s41598-021-94178-5.
- J, Meyer., K, Johnson., J, Bowyer., J, Muir., A, Turner., 2016, *Evaluating a health video on diabetic retinopathy*, Health Promot J Austr. 2016 Apr;27(1):84-87. doi: 10.1071/HE15056.
- FW, Gardiner., L, Bishop., A, Dos Santos., P, Sharma., D, Easton., F, Quinlan., L, Churilov., M, Schwarz., S, Walter., K, Fassbender., SM, Davis., GA, Donnan., 2020, *Aeromedical Retrieval for Stroke in Australia*, Cerebrovasc Dis. 2020;49(3):334-340. doi: 10.1159/000508578. Epub 2020 Jun 24. PMID: 32580203.
- L, Stoner., KR, Stoner., JM, Young., S, Fryer., 2012, *Preventing a Cardiovascular Disease Epidemic among Indigenous Populations through Lifestyle Changes*, Int J Prev Med. 2012 Apr;3(4):230-40.
- 57 G, Xu., D, Modi., KE, Hunter., LM, Askie., LM, Jamieson., A, Brown., AL, Seidler., 2022, *Landscape of clinical trial activity focusing on Indigenous health in Australia: an overview using clinical trial registry data from* **2008-2018,** BMC Public Health. 2022 May 14;22(1):971. doi: 10.1186/s12889-022-13338-y.
- 58 L, Merone., R, McDermott., J, Mein., P, Clarke., M, McDonald., 2020, *Primary Prevention of Cardiovascular Disease in Minority Indigenous Populations: A Systematic Review,* Heart Lung Circ. 2020 Sep;29(9):1278-1291. doi: 10.1016/j.hlc.2019.06.720. Epub 2019 Jul 8.
- WE, Hoy., CM, Reid., M, Huq., BJ, McLeod., SA, Mott SA., 2019, *A randomised controlled trial of potential for pharmacologic prevention of new-onset albuminuria, hypertension and diabetes in a remote Aboriginal Australian community,* **2008–2013**, Contemp Clin Trials Commun. 2019 Jan 14;14:100323. doi: 10.1016/j.conctc.2019.100323. eCollection 2019 Jun.

- M, Kennedy., J, Bennett., S, Maidment., C, Chamberlain., K, Booth., R, McGuffog., B, Hobden., LJ, Whop., J, Bryant., 2022, *Interrogating the intentions for Aboriginal and Torres Strait Islander health: a narrative review of research outputs since the introduction of Closing the Gap.* Med J Aust. 2022 Jul 4;217(1):50-57. doi: 10.5694/mja2.51601. Epub 2022 Jun 10. PMID: 35686477; PMCID: PMC9545599
- L, Alston., S, Allender., K, Peterson., J, Jacobs., M, Nichols., 2017, *Rural Inequalities in the Australian Burden of Ischaemic Heart Disease: A Systematic Review*, Heart Lung Circ. 2017 Feb;26(2):122-133. doi: 10.1016/j.hlc.2016.06.1213. Epub 2016 Aug 22.
- 62 K, Gwynne., Y, Flaskas., C, O'Brien., TL, Jeffries., D, McCowen., H, Finlayson., T, Martin., L, Neubeck., B, Freedman., 2016, *Opportunistic screening to detect atrial fibrillation in Aboriginal adults in Australia*, BMJ Open. 2016 Nov 15;6(11):e013576. doi: 10.1136/bmjopen-2016-013576.
- R, Macniven., J, Gwynn., H, Fujimoto., S, Hamilton., SC, Thompson., K, Taylor., M, Lawrence., H, Finlayson., G, Bolton., N, Dulvari., DC, Wright., B, Rambaldini., B, Freedman., K, Gwynne., 2019, *Feasibility and acceptability of opportunistic screening to detect atrial fibrillation in Aboriginal adults*, Aust N Z J Public Health. 2019 Aug;43(4):313-318. doi: 10.1111/1753-6405.12905. Epub 2019 May 29.
- M, McGee., L, Shephard., S, Sugito., D, Baker., S, Brienesse., M, Al-Omary., R, Nathan-Marsh., DTM, Ngo., P, Oakley., AJ, Boyle., G, Garvey., AL, Sverdlov., 2022, *Mind The Gap, Aboriginal and Torres Strait Islander Cardiovascular Health: A Narrative Review,* Heart Lung Circ. 2022 Nov 3:S1443-9506(22)01130-1. doi: 10.1016/j.hlc.2022.09.017. Online ahead of print.
- 65 K, McBride., NJ, Howard., C, Franks., V, King., V, Wade., A, Dowling., J, Rigney., N, Burton., JA, Mitchell., S, Hillier., SJ, Nicholls., C, Paquet., A, Brown., 2022, *Providing guideline-recommended preventive cardiovascular care to Aboriginal and Torres Strait Islander women: exploring gender differences with a medical record review in primary health care,* Aust J Prim Health. 2022 Aug 19. doi: 10.1071/PY22064. Online ahead of print.
- 66 K, Gausia., JM, Katzenellenbogen., FM, Sanfilippo., MW, Knuiman., PL, Thompson., MS, Hobbs., SC, Thompson., 2014, *Evidence-based prescribing of drugs for secondary prevention of acute coronary syndrome in Aboriginal and non-Aboriginal patients admitted to Western Australian hospitals*, Intern Med J. 2014 Apr;44(4):353-61. doi: 10.1111/imj.12375.
- FW, Gardiner., K, Rallah-Baker., A, Dos Santos., P, Sharma., L, Churilov., GA, Donnan., SM, Davis., F, Quinlan., P, Worley., 2021, *Indigenous Australians have a greater prevalence of heart, stroke, and vascular disease, are younger at death, with higher hospitalisation and more aeromedical retrievals from remote regions.* EClinicalMedicine. 2021 Nov 2;42:101181. doi: 10.1016/j.eclinm.2021.101181. PMID: 34765955; PMCID: PMC8573152
- 68 CX, Wong., SW, Lee., SW, Gan., R, Mahajan., G, Rangnekar., RK, Pathak., D, Twomey., C, Schultz., AN, Ganesan., AG, Brooks., KC, Roberts-Thomson., A, Brown., DH, Lau., P, Sanders., 2015, *Underuse and overuse of anticoagulation for atrial fibrillation: A study in Indigenous and non-Indigenous Australians,* Int J Cardiol. 2015 Jul 15;191:20-4. doi: 10.1016/j.ijcard.2015.03.064. Epub 2015 Mar 4.
- 69 B, Scalley., A, Gee., JM, Katzenellenbogen., M, Gilles., E, Jegasothy., SC, Thompson., 2016, *Improving the management of acute coronary syndrome for Aboriginal and non-Aboriginal patients in a regional hospital*, Aust N Z J Public Health. 2016 Dec;40(6):529-534. doi: 10.1111/1753-6405.12550. Epub 2016 Aug 14.
- LK, Taylor., MA, Nelson., M, Gale., J, Trevena., DB, Brieger., S, Winch., MA, Cretikos., LA, Newman., HN, Phung., SC, Faddy., PM, Kelly., K, Chant, 2020, *Cardiac procedures in ST-segment-elevation myocardial infarction the influence of age, geography and Aboriginality,* BMC Cardiovasc Disord. 2020 May 14;20(1):224. doi: 10.1186/s12872-020-01487-0.
- 71 MS, Al-Omary., T, Majeed., H, Al-Khalil., S, Sugito., M, Clapham., DTM, Ngo., JR, Attia., AJ, Boyle., AL, Sverdlov., 2022, *Patient characteristics, short-term and long-term outcomes after incident heart failure admissions in a regional Australian setting,* Open Heart. 2022 May;9(1):e001897. doi: 10.1136/openhrt-2021-001897.
- FW, Gardiner., L, Bishop., A, Dos Santos., P, Sharma., D, Easton., F, Quinlan., L, Churilov., M, Schwarz., S, Walter., K, Fassbender., SM, Davis., GA, Donnan., 2020, *Aeromedical Retrieval for Stroke in Australia*, Cerebrovasc Dis. 2020;49(3):334-340. doi: 10.1159/000508578. Epub 2020 Jun 24. PMID: 32580203.

- N, Khanal., P, Clayton., S, McDonald., M, Jose., 2016, **Overview of dialysis in indigenous compared to non-Indigenous Australians,** Clin Nephrol. 2016 Supplement 1;86 (2016)(13):123-127. doi: 10.5414/CNP86S119.
- 74 C, Seib., S, Moriarty., N, McDonald., D, Anderson., J, Parkinson., 2022, **Changes in health behaviours in adults at-risk of chronic disease: primary outcomes from the My health for life program, BMC** Public Health. 2022 Aug 30;22(1):1648. doi: 10.1186/s12889-022-14056-1.
- L, Stoner., KR, Stoner., JM, Young., S, Fryer., 2012, *Preventing a Cardiovascular Disease Epidemic among Indigenous Populations through Lifestyle Changes*, Int J Prev Med. 2012 Apr;3(4):230-40.
- SK, Campbell., J, Lynch., A, Esterman., R, McDermott., 2013, **Pre-pregnancy predictors of hypertension in pregnancy among Aboriginal and Torres Strait Islander women in north Queensland, Australia; a prospective cohort study, BMC Public Health.** 2013 Feb 15;13:138. doi: 10.1186/1471-2458-13-138.
- K, Canuto., E, Aromataris., C, Lockwood., C, Tufanaru., A, Brown., 2017, **Aboriginal and Torres Strait Islander health promotion programs for the prevention and management of chronic diseases: a scoping review protocol,** JBI Database System Rev Implement Rep. 2017 Jan;15(1):10-14. doi: 10.11124/JBISRIR-2016-003021.
- 78 M, Li., R, McDermott., 2015, **Obesity, albuminuria, and gamma-glutamyl transferase predict incidence of hypertension in indigenous Australians in rural and remote communities in northern Australia,** J Hypertens. 2015 Apr;33(4):704-9; discussion 709-10. doi: 10.1097/HJH.00000000000000462.
- 79 L, Merone., R, McDermott., J, Mein., P, Clarke., M, McDonald., 2020, *Primary Prevention of Cardiovascular Disease in Minority Indigenous Populations: A Systematic Review,* Heart Lung Circ. 2020 Sep;29(9):1278-1291. doi: 10.1016/j.hlc.2019.06.720. Epub 2019 Jul 8.
- AP, Ralph., C, Read., V, Johnston., JL, de Dassel., K, Bycroft., A, Mitchell., RS, Bailie., GP, Maguire., K, Edwards., BJ, Currie., A, Kirby., JR, Carapetis., 2016, *Improving delivery of secondary prophylaxis for rheumatic heart disease in remote Indigenous communities: study protocol for a stepped-wedge randomised trial*, Trials. 2016 Jan 27;17:51. doi: 10.1186/s13063-016-1166-y.
- 81 H, Lord., C, MacPhail., J, Cherry., R, Fernandez., 2021, *Perceptions of Aboriginal and Torres Strait Islander Australians toward cardiovascular primary prevention programs: A qualitative systematic review*, Public Health Nurs. 2021 Mar;38(2):197-211. doi: 10.1111/phn.12837. Epub 2020 Nov 20.
- 82 BJ, McNamara., L, Gubhaju., C, Chamberlain., F, Stanley., SJ, Eades., 2021, *Early life influences on cardio-metabolic disease risk in aboriginal populations--what is the evidence? A systematic review of longitudinal and case-control studies*, Int J Epidemiol. 2012 Dec;41(6):1661-82. doi: 10.1093/ije/dys190. Epub 2012 Dec 3.
- 83 K, Wicik., B, Bahrami., M, Halliday., T, Henderson., T, Roulston., K, Ullrich., 2022, **Rates of diabetic retinopathy screening in pregnant patients with type 1 and type 2 diabetes in a predominantly Indigenous Central Australian population,** Aust N Z J Obstet Gynaecol. 2022 Jun; 62(3):364-369. doi: 10.1111/ajo.13467. Epub 2021 Dec 9.
- SK, Campbell., J, Lynch., A, Esterman., R, McDermott., 2013, **Pre-pregnancy predictors of hypertension in pregnancy among Aboriginal and Torres Strait Islander women in north Queensland, Australia; a prospective cohort study, BMC Public Health.** 2013 Feb 15;13:138. doi: 10.1186/1471-2458-13-138.
- P, Iyngkaran., N, Kangaharan., H, Zimmet., M, Arstall., R, Minson., MC, Thomas., P, Bergin., J, Atherton., P, MacDonald., DL, Hare., JD, Horowitz., M, Ilton., 2016, *Heart Failure in Minority Populations Impediments to Optimal Treatment in Australian Aborigines*, Curr Cardiol Rev. 2016;12(3):166-79. doi: 10.2174/1573403x1 2666160606115034.
- 86 S, Kildea., S, Tracy., J, Sherwood., F, Magick-Dennis., L, Barclay., 2016, *Improving maternity services for Indigenous women in Australia: moving from policy to practice*, Med J Aust. 2016 Oct 17;205(8):374-379. doi: 10.5694/mja16.00854.
- 87 I, Ibiebele., M, Coory., GC, Smith., FM, Boyle., S, Vlack., P, Middleton., Y, Roe., V, Flenady., 2016, **Gestational age specific stillbirth risk among Indigenous and non-Indigenous women in Queensland, Australia: a population based study, BMC Pregnancy Childbirth.** 2016 Jul 15;16(1):159. doi: 10.1186/s12884-016-0943-7.

- AJ, Wood., JA, Boyle., ELM, Barr., F, Barzi., MJL, Hare., A, Titmuss., DK, Longmore., E, Death., J, Kelaart., M, Kirkwood., S, Graham., C, Connors., E, Moore., K, O'Dea., JJN, Oats., HD, McIntyre., PZ, Zimmet., ZX, Lu., A, Brown., JE, Shaw., LJ, Maple-Brown., 2021, *Type 2 diabetes after a pregnancy with gestational diabetes among first nations women in Australia: The PANDORA study,* Diabetes Res Clin Pract. 2021 Nov;181:109092. doi: 10.1016/j.diabres.2021.109092. Epub 2021 Oct 13.
- 89 MA, Ahmed., HD, Bailey., G, Pereira., SW, White., K, Wong., CCJ, Shepherd., 2022, **Trends and burden of diabetes in pregnancy among Aboriginal and non-Aboriginal mothers in Western Australia, 1998-2015,** BMC Public Health. 2022 Feb 9;22(1):263. doi: 10.1186/s12889-022-12663-6.
- 90 M, Gracey., 2014, *Why closing the Aboriginal health gap is so elusive*, Intern Med J. 2014 Nov;44(11):1141-3. doi: 10.1111/imj.12577.
- L, Sivak., M, O'Brien., O, Paolucci., V, Wade., C, Lizama., C, Halkon., S, Enkel., K, Noonan., R, Wyber., 2022, *Improving the well-being for young people living with rheumatic heart disease: A peer support pilot program through Danila Dilba Health Service*, Health Promot J Austr. 2022 Jul;33(3):696-700. doi: 10.1002/hpja.533. Epub 2021 Aug 30.
- 92 R, Wyber., AC, Bowen., AP, Ralph., D, Peiris., 2021, *Primary prevention of acute rheumatic fever,* Aust J Gen Pract. 2021 May;50(5):265-269. doi: 10.31128/AJGP-02-21-5852.
- 93 D, Govil., I, Lin., T, Dodd., R, Cox., P, Moss., S, Thompson., A, Maiorana., 2014, *Identifying culturally appropriate strategies for coronary heart disease secondary prevention in a regional Aboriginal Medical Service*, Aust J Prim Health. 2014;20(3):266-72. doi: 10.1071/PY12117.
- 94 P, Iyngkaran., N, Kangaharan., H, Zimmet., M, Arstall., R, Minson., MC, Thomas., P, Bergin., J, Atherton., P, MacDonald., DL, Hare., JD, Horowitz., M, Ilton., 2016, *Heart Failure in Minority Populations Impediments to Optimal Treatment in Australian Aborigines*, Curr Cardiol Rev. 2016;12(3):166-79. doi: 10.2174/1573403x12666160606115034.
- 95 R, Quigley., J, Mann., J, Robertson., S, Bonython-Ericson., 2019, *Are we there yet? Exploring the journey to quality stroke care for Aboriginal and Torres Strait Islander peoples in rural and remote Queensland*, Rural Remote Health.19(3):4850. doi: 10.22605/RRH4850. Epub 2019 Sep 6.
- 96 R, Tavella., K, McBride., W, Keech., J, Kelly., A, Rischbieth., C, Zeitz., JF, Beltrame., PA, Tideman., A, Brown., 2016, *Disparities in acute in-hospital cardiovascular care for Aboriginal and non-Aboriginal South Australians*, Med J Aust. 2016 Sep 5;205(5):222-7. doi: 10.5694/mja16.00445.
- 97 T, Deshmukh., P, Abbott., J, Reath., 2014, 'It's got to be another approach': an Aboriginal health worker perspective on cardiovascular risk screening and education, Aust Fam Physician. 2014 Jul:43(7):475-8.
- 98 L, Dimer., T, Dowling., J, Jones., C, Cheetham., T, Thomas., J, Smith., A, McManus., AJ, Maiorana., 2013, *Build it and they will come: outcomes from a successful cardiac rehabilitation program at an Aboriginal Medical Service*, Aust Health Rev. 2013 Feb;37(1):79-82. doi: 10.1071/AH11122.
- 99 V, Chuter., F, Quigley., P, Tosenovsky., JC, Ritter., J, Charles., J, Cheney., R, Fitridge., 2022, **Australian guideline on diagnosis and management of peripheral artery disease: part of the 2021 Australian evidence-based guidelines for diabetes-related foot disease**, Australian Diabetes-related Foot Disease Guidelines & Pathways Project. J Foot Ankle Res. 2022 Jul 5;15(1):51. doi: 10.1186/s13047-022-00550-7.
- 100 K, Gwynne., Y, Flaskas., C, O'Brien., TL, Jeffries., D, McCowen., H, Finlayson., T, Martin., L, Neubeck., B, Freedman, 2016, *Opportunistic screening to detect atrial fibrillation in Aboriginal adults in Australia*, BMJ Open. 2016 Nov 15;6(11):e013576. doi: 10.1136/bmjopen-2016-013576.
- J, Kelly., A, Dowling., K, McBride., W, Keech., A, Brown., 2020, 'We get so task orientated at times that we forget the people': staff communication experiences when caring for Aboriginal cardiac patients, Aust Health Rev. 2020 Feb;44(1):1-6. doi: 10.1071/AH17290.
- 102 L., Bishop, A., Ransom, M., Laverty, 2018, *Cardiovascular Health in Remote and Rural Communities*, Royal Flying Doctor Service.
- 103 V, Kerrigan., A, Kelly., AM, Lee., V, Mungatopi., AG, Mitchell., R, Wyber., AP, Ralph., 2021, **A community-based program to reduce acute rheumatic fever and rheumatic heart disease in northern Australia,** BMC Health Serv Res. 2021 Oct 20;21(1):1127. doi: 10.1186/s12913-021-07159-9.

- 104 E, Haynes., R, Walker., AG, Mitchell., J, Katzenellenbogen., H, D'Antoine., D, Bessarab., 2021, **Decolonizing Indigenous health: Generating a productive dialogue to eliminate Rheumatic Heart Disease in Australia,** Soc Sci Med. 2021 May;277:113829. doi: 10.1016/j.socscimed.2021.113829. Epub 2021 Mar 9.
- 105 S, Togni., I, Nangala., M, Heffernan., E, Bonney., M, Smith., A, Nelson., K, Taylor., G, Robinson., B, Gonos. & G, Gorham., 2017, *Final Report Patient-led Participatory Action Research Project: Patient-led pathways to cultural understanding and better patient-nurse relationships in renal care.* Darwin: Menzies School of Health Research.
- 106 A, Mitchell., V, Wade., E, Haynes., J, Katzenellenbogen., D, Bessarab., 2022, **"The world is so white":** *improving cultural safety in healthcare systems for Australian Indigenous people with rheumatic heart disease*, Aust N Z J Public Health. 2022 Oct;46(5):588-594. doi: 10.1111/1753-6405.13219. Epub 2022 Jul 19.
- 107 G, Vaughan., A, Dawson., M, Peek., J, Carapetis., V, Wade., E, Sullivan., 2021, *Caring for Pregnant Women with Rheumatic Heart Disease: A Qualitative Study of Health Service Provider Perspectives*, Glob Heart. 2021 Dec 22;16(1):88. doi: 10.5334/gh.1086. eCollection 2021.
- 108 A, Brown., L, Kritharides., 2012, **Overview: the 2nd Indigenous Cardiovascular Health Conference of the Cardiac Society of Australia and New Zealand**, Heart Lung Circ. 2012 Oct;21(10):615-7. doi: 10.1016/j. hlc.2012.07.001. Epub 2012 Aug 9.
- 109 L, Bishop., M, Laverty., and L, Gale., 2016, *Providing aeromedical care to remote Indigenous communities*. Canberra: Royal Flying Doctor Service of Australia.
- 110 M, McGee., L, Shephard., S, Sugito., D, Baker., S, Brienesse., M, Al-Omary., R, Nathan-Marsh., DTM, Ngo., P, Oakley., AJ, Boyle., G, Garvey., AL, Sverdlov., 2022, *Mind The Gap, Aboriginal and Torres Strait Islander Cardiovascular Health: A Narrative Review,* Heart Lung Circ. 2022 Nov 3:S1443-9506(22)01130-1. doi: 10.1016/j.hlc.2022.09.017. Online ahead of print.
- FW, Gardiner., L, Bishop., A, Dos Santos., P, Sharma., D, Easton., F, Quinlan., L, Churilov., M, Schwarz., S, Walter., K, Fassbender., SM, Davis., GA, Donnan., 2020, *Aeromedical Retrieval for Stroke in Australia*, Cerebrovasc Dis. 2020;49(3):334-340. doi: 10.1159/000508578. Epub 2020 Jun 24. PMID: 32580203.
- 112 Gardiner, FW, Bishop, L, de Graaf, B, Campbell, JA, Gale, L, Quinlan, F, 2020, *Equitable patient access to primary healthcare in Australia*, Report, viewed 12 October 2022, https://www.nintione.com.au/?p=22814.
- 113 L, Worrall-Carter., K, Daws., MA, Rahman., S, MacLean., K, Rowley., S, Andrews., A, MacIsaac., PM, Lau., S, McEvedy., J, Willis., K, Arabena., 2016, *Exploring Aboriginal patients' experiences of cardiac care at a major metropolitan hospital in Melbourne*, Aust Health Rev. 2016 Jan;40(6):696-704. doi: 10.1071/AH15175.
- 114 CS, Tuttle., MJ, Carrington., S, Stewart., A, Brown., 2016, **Overcoming the tyranny of distance: An analysis of outreach visits to optimise secondary prevention of cardiovascular disease in high-risk individuals living in Central Australia,** Aust J Rural Health. 2016 Apr;24(2):99-105. doi: 10.1111/ajr.12222. Epub 2015 Aug 19.
- 115 TK, Teng., JM, Katzenellenbogen., E, Geelhoed., AS, Gunnell., M, Knuiman., FM, Sanfilippo., J, Hung., Q, Mai., A, Vickery., SC, Thompson., 2018, *Patterns of Medicare-funded primary health and specialist consultations in Aboriginal and non-Aboriginal Australians in the two years before hospitalisation for ischaemic heart disease*, Int J Equity Health. 2018 Aug 2;17(1):111. doi: 10.1186/s12939-018-0826-9.
- 116 E, Haynes., JM, Katzenellenbogen., S, Noonan., I, Stacey., AG, Mitchell., V, Wade., D, Bessarab., 2022, *Is the Australian primary healthcare system ready for the Rheumatic Heart Disease Endgame strategy? Data synthesis and recommendations*, Aust N Z J Public Health. 2022 Oct;46(5):554-557. doi: 10.1111/1753-6405.13259. Epub 2022 Jul 19.
- 117 E, Haynes., M, Marawili., A, Mitchell., R, Walker., J, Katzenellenbogen., D, Bessarab., 2022, "Weaving a Mat That We Can All Sit On": Qualitative Research Approaches for Productive Dialogue in the Intercultural Space, Int J Environ Res Public Health. 2022 Mar 19;19(6):3654. doi: 10.3390/ijerph19063654.
- 118 E, Haynes., M, Marawili., BM, Marika., AG, Mitchell., J, Phillips., D, Bessarab., R, Walker., J, Cook., AP, Ralph., 2019, **Community-based participatory action research on rheumatic heart disease in an Australian Aboriginal homeland: Evaluation of the 'On track watch' project,** Eval Program Plann. 2019 Jun;74:38-53. doi: 10.1016/j.evalprogplan.2019.02.010. Epub 2019 Feb 18.

- 119 A, Titmuss., EA, Davis., A, Brown., LJ, Maple-Brown., 2019, *Emerging diabetes and metabolic conditions among Aboriginal and Torres Strait Islander young people*, Med J Aust. 2019 Feb;210(3):111-113.e1. doi: 10.5694/mja2.13002. Epub 2019 Jan 18.
- 120 AG, Mitchell., J, Diddo., AD, James., L, Guraylayla., C, Jinmarabynana., A, Carter., SD, Rankin., G, Djorlom., C, Coleman., M, Scholes., E, Haynes., B, Remenyi., J, Yan., JR, Francis., 2021, *Using community-led development to build health communication about rheumatic heart disease in Aboriginal children: a developmental evaluation*, Aust N Z J Public Health. 2021 Jun;45(3):212-219. doi: 10.1111/1753-6405.13100. Epub 2021 May 10.
- 121 L, Bishop., A, Ransom., M, Laverty., 2018, **Cardiovascular Health in Remote and Rural Communities,** Royal Flying Doctor Service.
- 122 KA, Thurber., KJ, Bell., 2019, **Socio-economic disadvantage and cardiovascular risk factors in young Aboriginal and Torres Strait Islander Australians,** Med J Aust. 2019 Sep;211(6):259-260. doi: 10.5694/mja2.50327. Epub 2019 Aug 29.
- 123 L, Bishop., A, Ransom., M, Laverty., 2018, **Cardiovascular Health in Remote and Rural Communities,** Royal Flying Doctor Service.
- M, Kennedy., J, Bennett., S, Maidment., C, Chamberlain., K, Booth., R, McGuffog., B, Hobden., LJ, Whop., J, Bryant., 2022, *Interrogating the intentions for Aboriginal and Torres Strait Islander health: a narrative review of research outputs since the introduction of Closing the Gap.* Med J Aust. 2022 Jul 4;217(1):50-57. doi: 10.5694/mja2.51601. Epub 2022 Jun 10. PMID: 35686477; PMCID: PMC9545599
- 125 G, Vaughan., K, Tune., MJ, Peek., L, Jackson Pulver., B, Remenyi., S, Belton., EA, Sullivan., 2018, *Rheumatic heart disease in pregnancy: strategies and lessons learnt implementing a population-based study in Australia*, Int Health. 2018 Nov 1;10(6):480-489. doi: 10.1093/inthealth/ihy048.
- 126 KS, Ong., R, Carter., T, Vos., M, Kelaher., I, Anderson., 2014, **Cost-effectiveness of interventions to prevent cardiovascular disease in Australia's indigenous population,** Heart Lung Circ. 2014 May;23(5):414-21. doi: 10.1016/j.hlc.2013.10.084. Epub 2013 Oct 29.
- 127 E, Haynes., M, Marawili., A, Mitchell., R, Walker., J, Katzenellenbogen., D, Bessarab., 2022, "Weaving a Mat That We Can All Sit On": Qualitative Research Approaches for Productive Dialogue in the Intercultural Space, Int J Environ Res Public Health. 2022 Mar 19;19(6):3654. doi: 10.3390/ijerph19063654.
- 128 E, Haynes., M, Marawili., BM, Marika., AG, Mitchell., J, Phillips., D, Bessarab., R, Walker., J, Cook., AP, Ralph., 2019, **Community-based participatory action research on rheumatic heart disease in an Australian Aboriginal homeland: Evaluation of the 'On track watch' project,** Eval Program Plann. 2019 Jun;74:38-53. doi: 10.1016/j.evalprogplan.2019.02.010. Epub 2019 Feb 18.
- 129 KTH, Win., B, Thomas., TI, Emeto., L, Fairley., H, Thavarajah., VN, Vangaveti., N, Danda., HN, Wai., RH, New., MA, Muñoz., S, Basu., R, Yadav., 2022, *A Comparison of Clinical Characteristics and Outcomes Between Indigenous and Non-Indigenous Patients Presenting to Townsville Hospital Emergency Department With Chest Pain*, Heart Lung Circ. 2022 Feb;31(2):183-193. doi: 10.1016/j.hlc.2021.06.450. Epub 2021 Aug 7.
- 130 L, Stoner., AG, Matheson., LG, Perry., MA, Williams., A, McManus., M, Holdaway., L, Dimer., JR, Joe., A, Maiorana., 2017, *Principles and strategies for improving the prevention of cardio-metabolic diseases in indigenous populations: An international Delphi study,* Prev Med. 2017 Mar;96:106-112. doi: 10.1016/j. ypmed.2016.12.050. Epub 2017 Jan 2.
- 131 SK, Campbell., J, Lynch., A, Esterman., R, McDermott., 2013, **Pre-pregnancy predictors of hypertension in pregnancy among Aboriginal and Torres Strait Islander women in north Queensland, Australia; a prospective cohort study,** BMC Public Health. 2013 Feb 15;13:138. doi: 10.1186/1471-2458-13-138
- 132 L, Knudsen., JG, Lyons., K, O'Dea., DL, Christensen., JK, Brimblecombe., 2021, *Antioxidant biomarkers and cardiometabolic risk markers in an Aboriginal community in remote Australia: a cross-sectional study*, Public Health Nutr. 2021 Oct;24(15):4937-4948. doi: 10.1017/S1368980020004899. Epub 2020 Dec 2.
- 133 M, Gracey., 2014, *Why closing the Aboriginal health gap is so elusive*, Intern Med J. 2014 Nov;44(11):1141-3. doi: 10.1111/imj.12577.

- 134 E, Haynes., M, Marawili., BM, Marika., AG, Mitchell., J, Phillips., D, Bessarab., R, Walker., J, Cook., AP, Ralph., 2019, **Community-based participatory action research on rheumatic heart disease in an Australian Aboriginal homeland: Evaluation of the 'On track watch' project,** Eval Program Plann. 2019 Jun;74:38-53. doi: 10.1016/j.evalprogplan.2019.02.010. Epub 2019 Feb 18.
- 135 C, Read., AG, Mitchell., JL, de Dassel., C, Scrine., D, Hendrickx., RS, Bailie., V, Johnston., GP, Maguire., R, Schultz., JR, Carapetis., AP, Ralph., 2018, *Qualitative Evaluation of a Complex Intervention to Improve Rheumatic Heart Disease Secondary Prophylaxis*, J Am Heart Assoc. 2018 Jul 17;7(14):e009376. doi: 10.1161/JAHA.118.009376.
- 136 AP, Ralph., C, Read., V, Johnston., JL, de Dassel., K, Bycroft., A, Mitchell., RS, Bailie., GP, Maguire., K, Edwards., BJ, Currie., A, Kirby., JR, Carapetis., 2016, *Improving delivery of secondary prophylaxis for rheumatic heart disease in remote Indigenous communities: study protocol for a stepped-wedge randomised trial*, Trials. 2016 Jan 27;17:51. doi: 10.1186/s13063-016-1166-y.
- 137 E, Haynes., A, Mitchell., S, Enkel., R, Wyber., D, Bessarab., 2020, *Voices behind the Statistics: A Systematic Literature Review of the Lived Experience of Rheumatic Heart Disease*, Int J Environ Res Public Health. 2020 Feb 19;17(4):1347. doi: 10.3390/ijerph17041347.
- 138 R, Wyber., K, Noonan., C, Halkon., S, Enkel., J, Cannon., E, Haynes., AG, Mitchell., DC, Bessarab., JM, Katzenellenbogen., D, Bond-Smith., R, Seth., H, D'Antoine., AP, Ralph., AC, Bowen., A, Brown., JR, Carapetis; END RHD CRE Investigators Collaborators. *Ending rheumatic heart disease in Australia: the evidence for a new approach,* Med J Aust. 2020 Nov;213 Suppl 10:S3-S31. doi: 10.5694/mja2.50853.
- 139 JR, Francis., C, Gargan., B, Remenyi., AP, Ralph., A, Draper., D, Holt., V, Krause., K, Hardie., 2019, **A** cluster of acute rheumatic fever cases among Aboriginal Australians in a remote community with high baseline incidence, Aust N Z J Public Health. 2019 Jun;43(3):288-293. doi: 10.1111/1753-6405.12893. Epub 2019 Apr 17.
- 140 RL, Roberts-Thomson., AAW, Baumann., J, Reade., L, Culgan., A, Kaethner., M, Ilton., N, Kangaharan., HM, Tayeb., A, Sinhal., DP, Chew., JS, Bennetts., SJ, Nicholls., PJ, Psaltis., A, Brown., 2021, **Surgical and percutaneous management of Aboriginal Australians with rheumatic heart disease: Timeliness and concordance between practice and guidelines**, Int J Cardiol. 2021 Jul 15;335:80-84. doi: 10.1016/j. ijcard.2021.04.030. Epub 2021 Apr 18.
- 141 J, Chamberlain-Salaun., J, Mills., PM, Kevat., MG, Rémond., GP, Maguire., 2016, **Sharing success understanding barriers and enablers to secondary prophylaxis delivery for rheumatic fever and rheumatic heart disease**, BMC Cardiovasc Disord. 2016 Aug 31;16(1):166. doi: 10.1186/s12872-016-0344-x.
- 142 R, Wyber., K, Noonan., C, Halkon., S, Enkel., J, Cannon., E, Haynes., AG, Mitchell., DC, Bessarab., JM, Katzenellenbogen., D, Bond-Smith., R, Seth., H, D'Antoine., AP, Ralph., AC, Bowen., A, Brown., JR, Carapetis; END RHD CRE Investigators Collaborators., 2020, *Ending rheumatic heart disease in Australia: the evidence for a new approach,* Med J Aust. 2020 Nov;213 Suppl 10:S3-S31. doi: 10.5694/mja2.50853.
- AP, Ralph., M, Fittock., R, Schultz., D, Thompson., M, Dowden., T, Clemens., MG, Parnaby., M, Clark., MI, McDonald., KN, Edwards., JR, Carapetis., RS, Bailie., 2013, *Improvement in rheumatic fever and rheumatic heart disease management and prevention using a health centre-based continuous quality improvement approach*, BMC Health Serv Res. 2013 Dec 18;13:525. doi: 10.1186/1472-6963-13-525.
- 144 C, Read., AG, Mitchell., JL, de Dassel., C, Scrine., D, Hendrickx., RS, Bailie., V, Johnston., GP, Maguire., R, Schultz., JR, Carapetis., AP, Ralph., 2018, *Qualitative Evaluation of a Complex Intervention to Improve Rheumatic Heart Disease Secondary Prophylaxis*, J Am Heart Assoc. 2018 Jul 17;7(14):e009376. doi: 10.1161/JAHA.118.009376.



