Catalyst Partnership Grants

Heart Foundation

Changing the cardiovascular landscape

in Australia and beyond

Showcase Prospectus

25 - 26 March 2025 | Melbourne

Network: **Hyatt Meeting**
Password: **HEART**

"*Imagine*

a shark tank approach for cardiovascular health! We are excited to have uncovered

big, bold ideas

that have the potential to change the cardiovascular landscape in Australia and beyond."

David Lloyd, CEO Heart Foundation

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Book a
1:1 conversation
with our finalists

From the CEO

Welcome to the Catalyst Partnership Grants Showcase, an event dedicated to celebrating innovation and collaboration in the fight against heart disease.

I am thrilled to extend a warm welcome to each of you: our valued supporters, partners, researchers, and advocates, who share our unwavering commitment to building healthier hearts and stronger communities. Your presence here today reflects a shared passion for driving transformative change in cardiovascular health.

This showcase is not only an opportunity to highlight the outstanding potential of our Catalyst Partnership Grants finalists but also a chance to foster meaningful connections and inspire new horizons. Together, we've already accomplished incredible milestones—empowering researchers, supporting bold ideas, and addressing critical gaps in cardiovascular health. Today, we come together to explore new innovations in heart health, sparking conversations that will propel us towards the next wave of groundbreaking advancements.

Thank you for being part of this journey towards saving lives and improving heart health for all people in Australia. Your dedication and support are truly inspiring and remind us of the extraordinary power of collaboration. I invite you to fully immerse yourself in today's Showcase, connect with fellow attendees, and celebrate the extraordinary possibilities that emerge when we work together.

Together, we can make heart health achievable by everyone in Australia by 2050.

Warm regards,

David Lloyd
Chief Executive Officer
Heart Foundation

About Catalyst Partnership Grants

Accelerating innovation, advancing heart health

For over 60 years, the Heart Foundation has funded the brightest minds to undertake research to improve cardiovascular health, investing more than $737 million (in today's dollars).

Catalyst Partnership Grants are an exciting addition to our traditional Research Funding Portfolio. They are a novel, collaborative way of funding innovative ideas and solutions to improve heart health in Australia. They aim to accelerate innovation through longer-term, high-impact investment and by fostering partnerships across multiple sectors and industries.

This approach has uncovered big, bold and brilliant 'game-changing' ideas that have the potential to change the cardiovascular landscape in Australia.

What makes Catalyst Partnership Grants different?

Applicants from all sectors were invited to apply - anyone with an idea that has the potential to transform heart health.

Catalyst Partnership Grants offer a fresh focus on collaboration, leveraging the strengths and capabilities of all parties - the applicant, the Heart Foundation, and the investor/donor.

Ten Catalyst awardees will each receive $100,000 and the opportunity to partner with the Heart Foundation to seek further funding to bring their idea to life.

Showcase program

Day 1 - Tuesday, 25 March 2025

Time	Topic
8:00 am	**Registration opens** (Exhibition booths available)
8:30 am	**Welcome to Country** • Wurundjeri Elder Annette Xiberras
8:45 am	**Introductions and welcome** • James O'Loghlin • David Lloyd
9:00 am	**Pitch presentations – Session 1** 1. Beating the clock: a nationwide network for AED access within a minute 2. Unlocking heart health literacy: AI-powered tools to deliver fast, accessible information for everyone 3. HeartStrong: Better cardiac care for every heart 4. Digital hearts: using big data and AI to predict heart disease and test treatments safely 5. A clinical lipidomics platform for early detection of cardiovascular disease 6. Stroke of genius: telerobotic clot removal reaching rural Australia
10:50 am	**Morning tea break** (Exhibition booths available)
11:20 am	**Pitch presentations – Session 2** 7. Mending our blood vessels to combat dementia 8. Breakthrough for heart attack survivors: living free from recurrences 9. New life for scarred hearts: regenerating the heart after a heart attack 10. AIG Remote Laundries project: building stronger communities through washing 11. TEN4TEN - Because where you live shouldn't determine if you live
1:00 pm	**Lunch break** (Exhibition booths available)
2:00 pm	**Pitch presentations – Session 3** 12. Springfield Healthy Hearts: local action to revolutionise global action on CVD through a living laboratory 13. A Healthier Start for our children with lifelong impact 14. Switch the salt to save your heart 15. Message from the heart: a new solution to screen for blood vessel calcification 16. Hybrid 3D-printed imaging device for precision heart care 17. A revolutionary method of performing closed chest beating heart surgery through robotic catheters
3:50 pm	**Afternoon tea break** (Exhibition booths available)
4:20 pm	**Pitch presentations – Session 4** 18. Next-generation 3D-printed heart valves: designed to last, built to heal 19. Detecting danger: advanced clot sensor for safer life support systems 20. Heart first initiative: personalised heart health across generations, anytime, anywhere
5:15 pm	**Catalyst reflections and event close** • Prof Garry Jennings (Chair) • Anna-Maria Arabia OAM • Rebecca Davies AO • Vicky Stavroulakis • Dr Chris Nave
5:45 pm	**Cocktail function** • Guest speaker - Dr Geoff Lester

Day 2 - Wednesday, 26 March 2025

Time	Topic
8:30 am	**Registration opens** Exhibition booths available and 1:1 meetings with finalists available by appointment from 9am – 3.00pm
9:00 am	**Welcome and keynote presentation** • James O'Loghlin
9:45 am	**Panel discussion: Innovation in health** • Elizabeth Koff AM • Stephanie Newey • Umah Ranchigoda • Matthew Hallam • Richard Macliver
10:45 am	**Morning tea break** (Exhibition booths available)
11:15 am	**Panel discussion: Innovation in Cardiovascular health** • Dr Ryan Perry • Prof Sandra Eades AO • Tanya Hall • Prof Clara Chow AM • Dr David Tancredi • Assoc Prof David Colquhoun
12:15 pm	**Next Steps: Heart Foundation Vision and Catalyst Partnership Grants** • James O'Loghlin • David Lloyd
12:45 pm	**Lunch break** (Exhibition booths available)
1:45 pm	**1:1 meetings with finalists continue through to 3:00pm**

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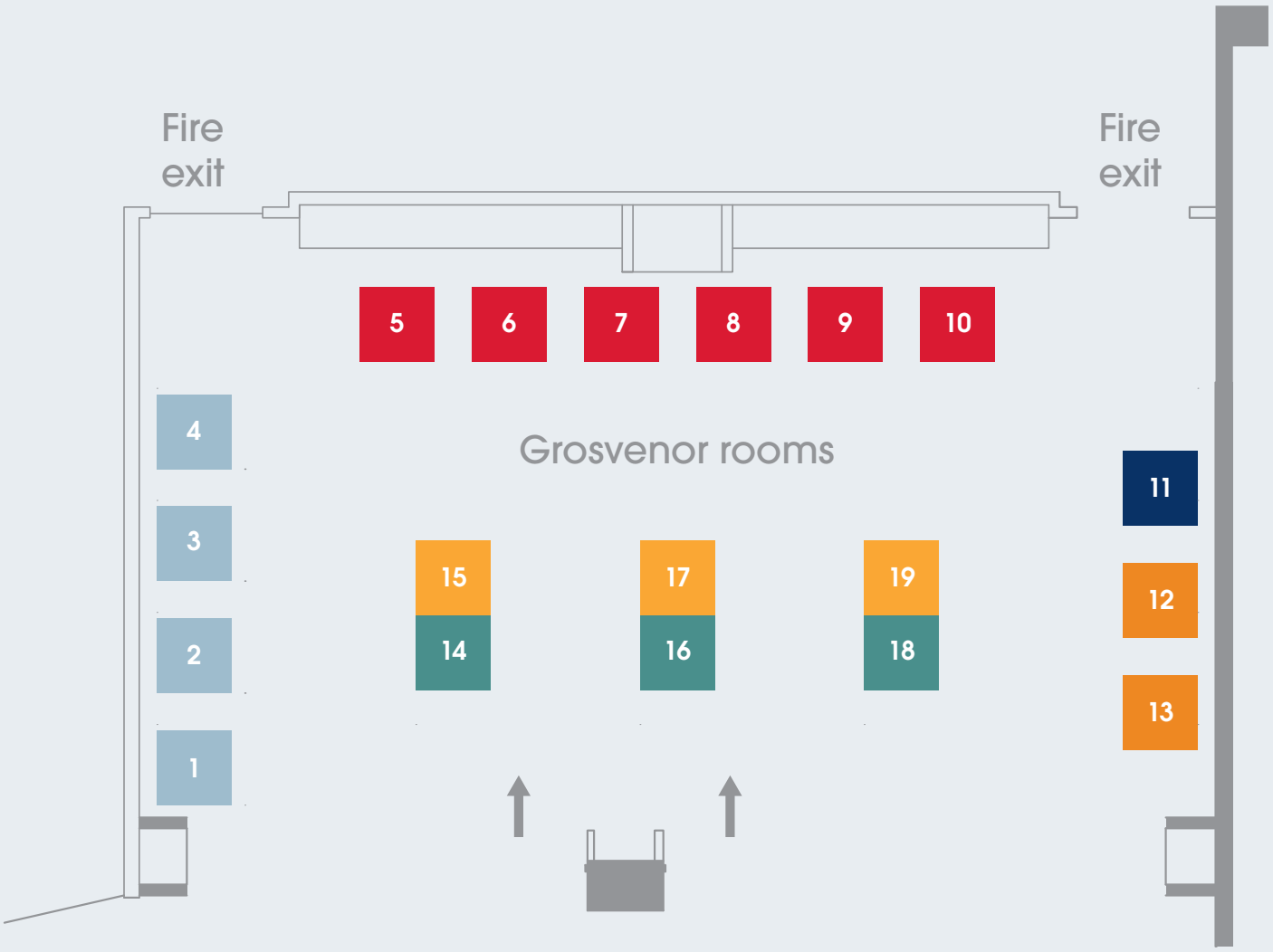
Network: **Hyatt Meeting**
Password: **HEART**

Floor plan

Category	Project title	Booth #
Clinical	A clinical lipidomics platform for early detection of cardiovascular disease	11
Data & informatics	Unlocking heart health literacy: AI-powered tools to deliver fast, accessible information for everyone	1
	Digital hearts: using big data and AI to predict heart disease and test treatments safely	2
	Beating the clock: a nationwide network for AED access within a minute	3
	HeartStrong: Better cardiac care for every heart	4
First Nations	TEN4TEN - Because where you live shouldn't determine if you live	12
	AIG Remote Laundries project: building stronger communities through washing	13
Medical devices	Heart first initiative: personalised heart health across generations, anytime, anywhere	5
	Next-generation 3D-printed heart valves: designed to last, built to heal	6
	Message from the heart: a new solution to screen for blood vessel calcification	7
	Hybrid 3D-printed imaging device for precision heart care	8
	Detecting danger: advanced clot sensor for safer life support systems	9
	A revolutionary method of performing closed chest beating heart surgery through robotic catheters	10
Policy & implementation	Springfield Healthy Hearts: local action to revolutionise global action on CVD through a living laboratory	16
	A Healthier Start for our children with lifelong impact	14
	Switch the salt to save your heart	18
Therapeutics	Mending our blood vessels to combat dementia	15
	A breakthrough for heart attack survivors: living free from recurrences	17
	New life for scarred hearts: regenerating the heart after a heart attack	19



- Clinical
- Data & informatics
- First Nations
- Medical devices
- Policy & implementation
- Therapeutics

About our finalists

Big ideas. Bold solutions.

Selected from over 220 applications, our 'Twenty of the Best' were shortlisted for their ambitious ideas that are innovative, impactful, feasible and fundable.

These applicants are receiving support from the Heart Foundation and L.E.K. Consulting Australia to better equip them to create an impact and investment statement that will maximise the potential for investment in their proposal. At our Catalyst Showcase event, they will pitch their ideas to the Heart Foundation and Catalyst Advisors and in attendance will also be a diverse audience of investors and donors.

From there, 10 Catalyst awardees will be selected. Each awardee will receive $100,000 from the Heart Foundation to accelerate their idea, partnering with the Heart Foundation team to help them to deliver their innovation, including valuable support on attracting donors and funders required to bring their idea to life.

About the Catalyst Showcase

The Catalyst Showcase is a shark-tank style event where groundbreaking ideas in cardiovascular health take centre stage.

On 25 and 26 March 2025, this inspiring launch event will spotlight the bold and innovative projects from our 'Twenty of the Best'.

The purpose of this event is to celebrate the finalists and determine the Catalyst Partnership Grants recipients, showcasing their innovation and excellence to all attendees. Awardees will be announced 4-6 weeks following the showcase.

For more information about the Catalyst Showcase, please email catalyst@heartfoundation.org.au

Like to speak directly with one of the Catalyst finalists?

Book a 1:1 conversation with them now

Meet our ‘Twenty of the Best’

Our finalists have game-changing ideas – innovative projects that have the potential to transform heart health in Australia and beyond.

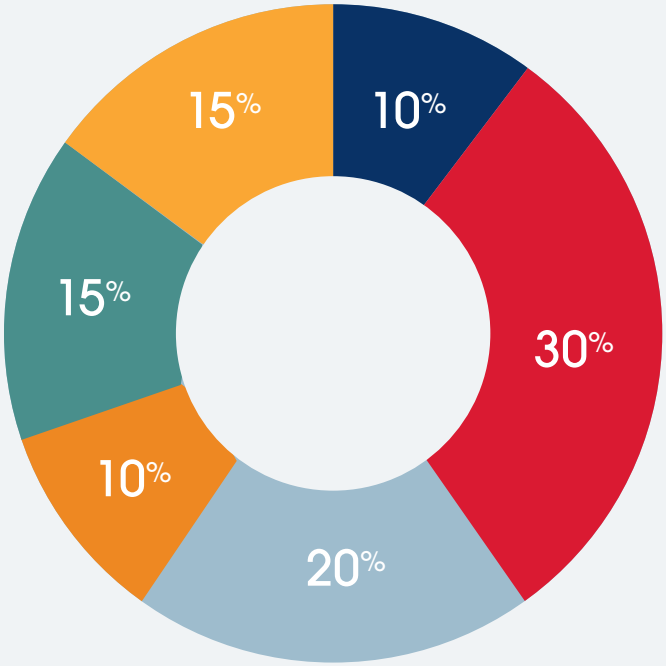
These projects cover themes including equity and accessibly, early prevention, repeat heart events, cardiac rehabilitation and so much more. They leverage the latest technologies across robotics, artificial intelligence, 3D printing and genomic engineering.

These are more than just ideas; they are a portfolio of solutions designed to help save lives, improve equity, and inspire a healthier tomorrow.

Each of these projects addresses a critical challenge in heart health, bringing forward bold solutions with real-world impact.

Finalists by theme

- Clinical
- Data & informatics
- First Nations
- Medical devices
- Policy & implementation
- Therapeutics



The following highlights, provided by the finalists themselves, offer a glimpse into the challenges they aim to solve, and the transformative solutions they are developing to impact heart health.

Beating the clock: a nationwide network for AED access within a minute

Project lead Greg Page

Problem

An Automated External Defibrillator (AED) can increase survival rates for sudden cardiac arrest up to 5-fold when used by a member of the community prior to paramedics' arrival on scene, but an AED is only used in around 1.8% of cases of cardiac arrest[1]. For this reason, it is vital that location data of AEDs is accessible to community members via multiple platforms – a dedicated app to display data, overlayed on existing apps such as Google Maps, and shared with 000 call takers when someone notifies ambulance services of a cardiac arrest event.

Currently, there is no aggregation of AED location data that occurs. Registering an AED is done on a state or territory level, with no single point of registration or displaying of data, making AED information siloed and difficult to achieve for national entities with multiple AEDs to register and hard for interstate residents to look for AEDs nearby where they plan to stay or visit.

The result of this current state is that there is:

- a lack of understanding of actual coverage of AEDs and completeness of coverage;
- a lack in the accuracy of the data – when are the AEDs available, and are they actually operational at the time of need?
- a lack of accessibility by the community of the data, and therefore a lack of awareness by the community of where their nearest operational AED is.

The net effect of this current state is that many saveable lives are not being saved.

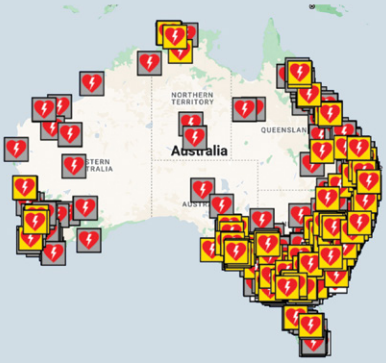
Solution

A National network of AEDs and an associated AED Register is not a novel idea. National networks and registries for AEDs exist in other countries such as Denmark, Sweden and Japan[2,3,4]. In Sweden, where AEDs are registered at a national level, the number of cases of cardiac arrest that were covered by an accessible AED increased to ~11.3%[3]. In Japan, the accessibility of AEDs increased from 1 per square km of inhabited area to 4 per square km over a 2-year period, helping achieve a rapid mean time to defibrillation of just 2.2 minutes, the percentage of cases where a shock was delivered by a member of the community increased from 1.2% to 6.2%[4].

Providing a national, single point of registration makes it easier for uniform and complete AED data to be captured and then disseminated to various points within the community to ensure that there is the greatest chance that an AED can be present in more cases of sudden cardiac arrest.

Data obtained can be shared with the community via a number of platforms, including with 000 call takers who can share the information with members of the public who make a call to 000 in cases of suspected cardiac arrest.

Cardiac arrests strike without warning, and AEDs can save lives — if they're accessible. The National AED Register will help ensure that an AED can be found as rapidly as possible, anywhere.



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Opportunity

If successfully implemented, a national network of AEDs and a unified AED registry in Australia would revolutionise the accessibility and effectiveness of life-saving defibrillation during cardiac arrest events. This system would empower bystanders, to locate and utilise AEDs swiftly, bridging critical time gaps in providing care.

The immediate impact would be a significant increase in survival rates for out-of-hospital cardiac arrests (OHCA). In Australia, with more than 32,000 OHCAs annually[1], the registry could save thousands of lives every year.

Beyond survival, the network would unify Australia's approach to AED management, setting a standard for integration, accessibility, and public engagement.

In the long term, this proposal would foster a culture of preparedness and community resilience, ensuring more Australians feel empowered to act in emergencies.

The National Network of AEDs and National AED Register would provide a cohesive approach to AED deployment and data management and maximize the life-saving potential of these already-available AEDs.

The net savings to the health system are estimated to be approximately $100 million per annum, with productivity returned to the economy of around $123 million in year 1 alone – a benefit/cost ratio of around 50:1, and societal benefits of $400m per year (a BCR of 200:1) based on just 100 additional lives saved.

Funding

- $8.7m across 5 years will deliver the project across both the development and implementation milestones.
- This will fund the further development of API's required to share data, User Interface and User Experience updates and staffing to ensure ongoing accuracy and reliability of location and accessibility data as well as national awareness campaigns.

Contact

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Unlocking heart health literacy: AI-powered tools to deliver fast, accessible information for everyone

Project lead Associate Professor Carissa Bonner

Problem

60% of people in Australia have low health literacy, which leads to worse health outcomes

- Low health literacy means having trouble accessing, understanding, appraising and acting on health information
- Low health literacy is associated with more cardiovascular risk factors, less engagement in prevention activities, increased hospitalisations and higher mortality rates

Most health information does not meet community needs

- 95% of health information does not meet basic health literacy principles, such as using simple terms instead of medical jargon, making it hard to understand and act on

  An analysis of all cardiology procedure information in one state of Australia showed that none would meet the needs of a patient with low health literacy, impeding informed consent

Failure to meet health literacy needs increases health system costs

- Failure to meet health literacy needs increases costs in the health system
- For example, in Blacktown Local Government Area (1 of over 500 LGAs in Australia) the cost of unmet health literacy needs was estimated to be AU$12-15m in 2020

Imagine you need to explain a cardiovascular procedure to a patient. You enter your clinically accurate information into the Heart Health Literacy Tool, and within minutes you have patient friendly text, supporting images, and a short animation to explain key messages, in any language.

Solution

Our health literacy editing software helps health communicators develop better information

- The Sydney Health Literacy Lab (SHeLL) Heath Literacy Editor was initially developed to automate the assessment of text complexity
- It was codesigned with professional health writers to provide real time feedback on text complexity and provide patient centred language suggestions, as a training tool
- It has been used 50,000 times including government, non-profit and industry organisations, and is currently being integrated into the NSW Health system

Our software is backed by health literacy guidelines and trial evidence, unlike other tools

- A randomised trial showed our health literacy editing tool helps professional health writers to simplify text, without losing key messages (Ayre et al., JAMA Network Open 2024)
- Online readability tools have low accuracy, grammar feedback tools do not use health literacy principles to simplify text, and AI generation tools can produce errors due to uncontrolled training sets

Booth #
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Proposal

The Heart Health Literacy Tool will create patient friendly text, images & videos from your clinical information in minutes

- Patient centred language suggestions, to explain heart-related medical terms
- Image generation to support common cardiovascular concepts
- Short animations to convey key messages in 1-2 minutes
- Automated language translation to reach all communities

Every interaction with a patient is an opportunity to support heart health literacy, and our software could support 15 million people across Australia

- Every interaction with a patient is an opportunity to support heart health literacy
- Our software could support 15 million people in Australia with low health literacy who need better heart health information that is easier to understand and act on
- This would improve a huge number of health interactions in Australia, including patient information and discharge summaries for over 500,000 CVD-related hospitalisations, and 100 million uses of the Federal government's HealthDirect services every year

Investment

With your investment, we will deliver a new AI-powered tool to support heart health literacy at speed & scale

- **Year 1** product development: $600k will support 3 FTE staff to develop the Heart Health Literacy Tool with consumer codesign and user UX testing, integrate this with a range of AI content generation tools, and establish clinically accurate training sets and quality testing protocols embedded within the tool for the user
- **Year 2** statewide integration in NSW: $600k will support 3 FTE staff and integration costs to deliver the product statewide via our existing NSW Health systems and established subscriber and API offerings
- **Years 3–5** national scaleup in Australia: $1m will support 5 FTE staff to secure and deliver new integration contracts with government (e.g. Health Direct, Primary Health Networks) and health organisations (e.g. private hospitals) throughout Australia
- **Years 6–10** international partnerships: $2m will support 10 FTE staff to deliver international partnerships with non-profits (e.g. World Heart Federation) and companies (e.g. integration with internationally established graphic design and grammar editing software)

With your support, we will unlock heart health literacy for everyone. If every patient receives fast and accessible information they can actually understand, we can reduce inequity in cardiovascular outcomes and ensure everyone can take action for heart health.

Contact

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Health Literacy Solutions

HeartStrong: Better cardiac care for every heart

Project lead Professor Julie Redfern

Problem

Over the past 60 years, medical advancements have led to a 75% decline in cardiovascular death rates in Australia. However, this success has created a new and escalating challenge. There is a growing patient population with chronic disease who need long-term support and care. The time is ripe to protect and future-proof our health system to ensure all Australians with heart disease have access to quality care.

Cardiac rehabilitation programs have traditionally been the approach for supporting survivors. The programs involve weekly exercise and education sessions for around 6-8 weeks and are proven to reduce heart attacks, hospitalisations and improve cardiovascular health and quality of life. However, Australian programs are underutilised, underfunded and lacking infrastructure. Every year, 375,000+ Australians are added to the ballooning cohort who miss out. The impact on people's lives is immeasurable and the financial cost exceeds $14 billion/year - and growing.

Solution

HeartStrong aims to take on this new and growing challenge, stop the cycle of repeat heart attacks and provide better care for all people living with a heart condition. We will tackle this by taking a 3-pronged approach to providing better care more efficiently.

1. **For patients**, a quality traffic light system embedded in the National Heart Foundation of Australia website so they can easily identify a high-quality local rehabilitation program that suits their needs.
2. **For clinicians**, an internationally recognised training certification to improve standardisation and recognition of expertise in cardiac rehabilitation.
3. **For hospitals and health systems**, we will establish national data infrastructure, processes, governance and reporting systems that aim to drive quality improvement, access and efficiency.

We are inspired by progress made in the UK where the British Heart Foundation implemented data infrastructure and reporting that led to an estimated 30% improvement in cardiac rehabilitation quality coupled with increased patient uptake. The approach is now embedded in the National Health Service.

> Australian cardiac rehabilitation programs are frozen in time. The time is ripe. Our team are the world leaders. HeartStrong will ensure equitable access to high-quality post-heart attack care for all.

Opportunity

Taken together, HeartStrong will reduce repeat heart attacks, hospitalisations and healthcare costs. It will also enhance patient choice and satisfaction, deliver standardised training for clinicians and embed systems that support efficiency, improvement and informed decision-making.

Our world-class team unites the Australian cardiac rehabilitation community and come from a unique and future-focused perspective. HeartStrong will place Australia front and centre of global transformation.

Booth #
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Success will deliver:

1. **Improved health outcomes and patient satisfaction**
   Reduced number of repeat heart attacks and avoidable hospital admissions, improved heart health of Australians (e.g., lower blood pressure, cholesterol levels, increased exercise, improved diets), improved social and mental health for patients, improved consumer healthcare satisfaction, and readily available patient choice and access to high quality programs.
2. **Standardised clinician training and skills**
   This will provide recognition for all health professionals working in the area and ensure standardised certification for all. Availability of automated quality systems will allow real-time collection of clinical data, automated reporting and benchmarking for identification of improvement opportunities.
3. **National quality infrastructure**
   Quality traffic light embedded in National Heart Foundation of Australia website alongside delivery of data infrastructure and governance and systems will enable workforce and system efficiency for hospitals and health systems to ensure no patients miss out and programs provide programs that optimise value for money.

Ultimately, all people with heart disease, clinicians and policy-makers will benefit. Within 5-years, we will see substantial reductions in hospital admissions and deaths associated with improvements in cardiac rehabilitation quality similar to those reported in the UK (30% improvement in quality in 5 years between 2014-2019). Australia and the Heart Foundation will also be well positioned to lead the growing international focus on this escalating area of need.

Investment

We are seeking financial and in-kind partners to ensure HeartStrong is transformative. With strategic investment of $2M over 5 years, we will deliver the project across progressive milestones that culminate with a fully embedded solution that benefits patients, clinicians and health systems across society at large. The project has a future-focus and will conservatively save thousands of Australian lives and $28M in hospitalisation costs annually.

Milestone 1: establishment and co-design ($100K) to set-up project infrastructure, deliver nationwide clinician certification, and co-design of a quality traffic light system using existing Queensland data.

Milestone 2: validation and pilot testing ($500k): validate quality algorithm and pilot test across 30 Queensland cardiac rehabilitation programs, generate a quality report template and embed traffic light within the National Heart Foundation of Australia website.

Milestone 3: scale-up infrastructure and governance ($500k) will prepare for nationwide deployment including building resources, governance frameworks, robust IT infrastructure, centralised data lake, cybersecurity measures, proprietary algorithms and an accompanying evaluation plan.

Milestone 4: national roll-out and impact evaluation ($500,000/year for 2 years) will deliver full-scale deployment with continuous data collection, infrastructure maintenance, project management, annual impact reporting, continued advocacy and dissemination of annual cardiac rehabilitation quality reports and project impact evaluation report along with parallel user experience, cost evaluations.

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HeartStrong

BOND UNIVERSITY

INSTITUTE FOR Evidence-Based Healthcare

Digital hearts: using big data and AI to predict heart disease and test treatments safely

Project lead Dr Shane Nanayakkara

Problem

Despite advances in cardiovascular treatment, clinical decision-making remains hindered by fragmented data and reactive care models. Patient information is dispersed across electronic health records, imaging databases, genetic testing repositories, and wearable health devices, creating silos that prevent clinicians from gaining a comprehensive view of an individual's health. As a result, treatments are often based on outdated risk models and retrospective data rather than real-time physiological changes. This lack of integration leads to delayed intervention, inconsistent treatment strategies, and a higher rate of hospital readmissions.

Existing predictive tools rely on static scoring systems and population-based guidelines that fail to account for individual variability. Clinicians need a solution that enables real-time, patient-specific decision support, allowing them to intervene proactively rather than reactively. By integrating multiple data streams into a single dynamic model, AI has the potential to transform cardiovascular care from a reactive process to a predictive and personalised approach.

Solution

Digital Hearts is pioneering an AI-driven digital twin platform that creates a real-time virtual model of each patient by integrating clinical, imaging, genetic, and wearable data into a continuously evolving system. This digital twin allows clinicians to predict disease progression, identify high-risk patients before symptoms appear, simulate the impact of different treatment strategies, and personalise care with unparalleled accuracy. Unlike traditional population-based models, which rely on retrospective data, the digital twin continuously refines its predictions based on real-world inputs, ensuring that treatment decisions are optimally tailored to each patient.

The Digital Hearts platform will deliver significant clinical and economic benefits by enabling early intervention, reducing unnecessary hospitalisations, and optimising healthcare resource allocation. This approach provides a scalable and cost-effective solution for hospitals, insurers, and research institutions looking to enhance precision medicine initiatives.

Opportunity

Current cardiovascular care relies on static, one-size-fits-all treatment models that do not account for real-time patient variability. Clinicians must navigate fragmented data systems, leading to inefficiencies in decision-making. The Digital Hearts platform offers a paradigm shift by integrating real-time, AI-powered predictive analytics with a dynamic patient model, allowing for early intervention and personalised treatment strategies. The ability to simulate treatment responses before applying them in real world clinical settings provides a level of precision that no existing risk model can achieve.

Unlike other healthcare AI tools, this platform is designed for seamless integration into existing hospital systems and can be deployed across public and private healthcare settings. With applications ranging from government-backed public health initiatives to commercial partnerships with medical device manufacturers and pharmaceutical companies, the scalability of this solution makes it an attractive investment opportunity.

Booth #
2

This digital twin isn't just a static record—it's a dynamic tool that evolves with the patient. It can simulate how the heart and body might respond to different treatments or how a condition might progress over time. Doctors can use it to make predictions and explore the best options for each person's care, creating treatment plans that are tailored to their specific needs.

Budget overview

The project is structured across two phases: an initial pilot phase of $620,000 to demonstrate feasibility and validate early-stage AI models, followed by a full-scale implementation with a total budget of $2.2 million. The pilot phase is designed to establish core infrastructure, refine AI-driven predictive analytics, and test data integration across clinical environments. With $350,000 allocated to personnel, including two dedicated data scientists, a research coordinator, and key technical staff, the pilot phase ensures a strong foundation for AI development and clinical alignment.

An additional $140,000 has been allocated to cloud infrastructure, ensuring that computing resources are available to process real-world cardiovascular datasets efficiently. Data expansion and linkage costs, totalling $100,000, cover the integration of structured and unstructured clinical data, including initial natural language processing capabilities and ongoing validation of dataset quality. Regulatory and compliance measures, including ethics approvals and security audits, have been allocated $30,000 to meet Australian healthcare standards.

Following the successful completion of the pilot, the full-scale project will receive a total investment of $2.2 million. This phase expands personnel, computing infrastructure, and data linkage capabilities, with dedicated funding for cybersecurity, penetration testing, and scalable machine learning models. The project is designed to integrate seamlessly into both public and private healthcare settings, ensuring long-term sustainability and clinical impact.

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MONASH University

A clinical lipidomics platform for early detection of cardiovascular disease

Project lead Professor Peter Meikle

Problem

Despite a decrease in the incidence of cardiovascular disease (CVD) over recent decades, CVD remains the single largest cause of death in Australia. Furthermore, improvements in CVD mortality have not been experienced by all populations, driving widening gaps for minority populations, those at low socioeconomic position, or regional and remote communities.

Current management of cardiovascular risk using intensive lipid lowering treatment and blood pressure control is very effective at reducing risk and preventing future cardiovascular events (CVE). However, a major challenge is that most CVE occur unexpectedly in those individuals classified as low or intermediate risk (up to 65% of all events), who often do not receive adequate preventative treatment. This group includes individuals showing standard modifiable cardiovascular risk factors that sit below commonly accepted clinical thresholds (SMuRFless), who represent an increasing proportion of patients presenting with ST elevation myocardial infarction in the Australian population.

Traditional risk scores like the Framingham Risk Score and more recently the AusCVDRisk score are the mainstay of CV risk assessment. However, they underperform in individuals classified as at intermediate-risk, women and Indigenous Australians, leading to missed opportunities for targeted prevention.

If we are to continue to lower the rate of CVE, it is imperative that we improve identification of individuals with subclinical CVD, so that they can be treated early in the disease process and thereby obtain better outcomes.

Solution

There are two sources of cardiovascular risk: our inherited (genetic) risk and our environmental (diet, lifestyle, pollutants) risk. This proposal will deliver a new approach to risk assessment that leverages molecular profiling (lipidomics and genomics) to enhance both genetic and environmental risk prediction, thereby enabling targeted intensive treatment to newly identified patients at increased risk of future heart attack and stroke.

Over the past three years, with support from the NHMRC and the National Heart Foundation, we have been able to develop a Clinical Lipidomics Platform (CLP) and a combined lipidomic risk score and polygenic risk score (mCVDRisk) to predict cardiovascular risk. Our studies on over 16,000 people provide validation of the performance of both the CLP and the mCVDRisk score.

Our new approach (mCVDRisk) captures both our environmental risk and our genetic risk and will enable more precise, efficient and effective patient triaging for integration into existing clinical pathways. Some of these pathways may involve more costly imaging technologies, such as coronary artery calcium scores (CACS). The mCVD Risk score will also have the potential to drive immediate intensive treatment to lower CVD risk and marks a significant step towards precision medicine in CVD prevention and management.

Booth #
11

Impact

Implementation of a combined lipidomic and polygenic risk score (mCVDRisk) that targets this intermediate risk group could reclassify more than 50% of those who will go on to have a CVE into a high-risk group to improve targeting of intensive treatment to lower CVD risk, thereby preventing up to 75,000 CVE and saving thousands of lives. This is a key step towards a future without heart disease.

At the end of this program of work we will have brought to market a new Therapeutic Goods Administration (TGA) approved CVD risk product (mCVDRisk) that will provide patients with better health outcomes and reduce economic burden of CVD on the Australian health system. We will have extended the reach of this technology into Indigenous and remote communities. Finally, we will establish the evidence base and apply for Medicare Benefits Schedule (MBS) reimbursement to support the rapid uptake of this new technology.

With the framework in place to provide lipidomic/polygenic profiling to the Australian population, this technology can be readily "tuned" to also provide risk assessment for type 2 diabetes, Alzheimer's disease and other cardiometabolic outcomes.

Funding requirements

$4 Million will enable the delivery this new clinical test over the next two years

- There are several key steps required to translate and implement this new technology
- Regulatory approval; Economic impact; Integrate into clinical pathways; Equity studies; Clinical studies

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There are 2.0 million people in Australia who are currently at intermediate risk for a cardiovascular event (CVE, heart attack, stroke, heart surgery); within this group we expect to see 150,000 CVE over the next five years. Unless we make fundamental changes in how we manage this group many of these will die from heart attack and stroke.

Mending our blood vessels to combat dementia

Project lead Professor Jennifer Gamble

Problem

New therapies are urgently needed for dementia.

Although there has been >250 clinical trials and billions of dollars spent, there is still no effective drug which slows the course of Alzheimer's disease (AD). There are three drugs which have been given FDA approval although one of these has now been withdrawn. The remaining two drugs show limited effects on progression of the disease and on cognition and up to 45% of patients treated can develop adverse side effects, while 1 in 4 patients develop a serious side effect called ARIA (amyloid-related imaging abnormalities) characterised by brain swelling and haemorrhaging.

New approaches are essential given the growing incidence of dementia and its significant societal, medical and financial impact. In 2020 it was estimated that 55 million people were living with dementia globally. By 2050 it is predicted that 152 million people will be living with dementia at an estimated cost of USD 9.12 trillion annually. In Australia it is estimated that by 2058 1.1million people will be living with dementia at an estimated cost of AUD36 billion annually. Growth in AD is being driven by the ageing population, with a declining cardiovascular health. We are seeing an increase in diabetes, hypertension, obesity and a decreased physical activity, all risk factors for dementia as well as for cardiovascular disease.

Solution

We are developing a therapy targeting vascular leak to treat AD, with potential future applicability to CVD.

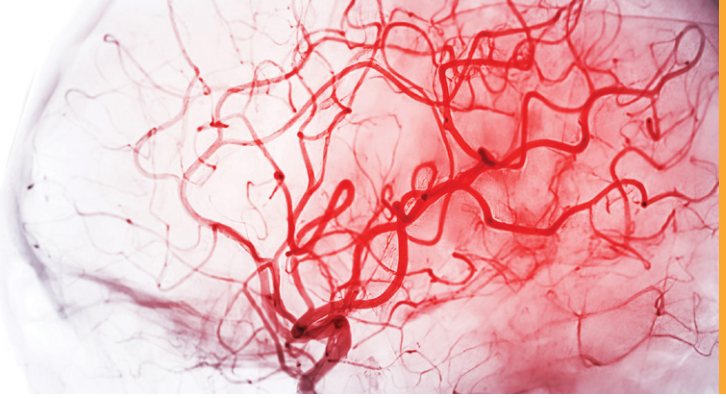
Vascular leak is evident in the brains of AD patients and is seen before the build-up of the hallmark of AD, amyloid plaques. Further, vascular leak is linked to cognitive decline.

Vascular leak is also a complication of anti-amyloid treatment in the form of ARIA and is a feature of the small vessel disease, cerebral amyloid angiopathy (CAA), a major contributor to dementia of the elderly.

Our novel concept is that the damaged leaky blood vessels seen early in the development of AD are a target for therapy. Indeed, we now have strong preliminary data showing that inhibiting vascular leak and mending the damaged blood vessels in the brain associated with AD results in a decrease in the pathologies associated with dementia including clearance of amyloid.

We have identified a therapeutic target on blood vessels, VE-cadherin, a key protein in vascular stability and functioning. Further, we have developed a novel drug design in which to stabilise VE-cadherin and promote blood vessel mending. The novel target and new drug design will be combined to deliver a small molecule orally active drug which will address a highly significant medical issue for the ageing population-dementia.

Although the development of drugs targeting a damaged vasculature in the brain is a relatively new concept, we have identified two early-stage companies who are also developing neurological therapies targeting the vasculature. These are NeuVasQ and Reservoir Neurosciences, which have received Euros20m and US$4m funding respectively, demonstrating the investment potential in this nascent field.



Booth #
15

We have a new approach, to target the damaged blood vessels to inhibit the pathologies seen in Alzheimer's.

Opportunity

Our lead indications and opportunity size.

Our two lead indications are CAA a degenerative disease that affects the cerebral vasculature. CAA is seen in >70% of the elderly, is present in 23-48% of AD patients. An estimated ~16-21 million people globally and ~120K-170K people in Australia suffer from the disease. CAA can lead to spontaneous intracerebral microbleeds that are independently associated with loss of cognitive functions.

The other lead indication is ARIA, an effect associated with anti-amyloid treatment and is characterized by swelling or bleeding in the brain. There are no drugs available for the treatment of ARIA. It is estimated that globally ~16.4m-20.7m and in Australia ~ 300K-145K people will suffer from ARIA, especially with the increase in use of anti-amyloid therapies.

Funding

We have identified 6 hits with appropriate biological and biochemical features. We are seeking $10m total funding over 5 years to develop this small molecule and conduct Phase 1 trials. The funds we seek are based on 4 tranches over the 5 years each with clearly defined milestones.

Stage 1 Identification of 2 lead families. $0.5m is requested to obtain essential data to develop our lead compound series. We propose to develop two classes of lead compounds.

Stage 2 Validation of lead compounds in disease. $1.2m is requested to perform medchem studies and to validate the biological activity of these lead compounds in AD, CAA and ARIA models.

Stage 3 Performing preclinical testing. $3m is requested to take the lead molecules through preclinical testing.

Stage 4 Conducting a Phase 1 clinical trial. $5m is requested to take our drug through a Phase 1 clinical trials for toxicity and dosage effects.

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Breakthrough for heart attack survivors: living free from recurrences

Project lead Dr Tin Kyaw

Problem

- About 30% - 40% of people who survive a first heart attack will experience another. These recurrent attacks are unpredictable and often more severe, with a 15–30% mortality rate—that is 1.5- to 6-fold higher than the 5–10% mortality rate for initial attacks.
- Globally, these fatal recurrences account for roughly one-third of all heart attack–related deaths, amounting to an estimated 3 million of the 9 million annual fatalities.
- This increased risk is largely independent of lipid levels and is driven by heightened plaque inflammation.
- The greatest danger lies within weeks to months following the first heart attack.

Solution

- Our therapy uniquely targets the surge in harmful plaque-destructive antibodies—established early and stored in immune memory—that occurs during a heart attack.
- Delivered as a single low-dose treatment, it selectively halts the expansion of existing immune memory, effectively suppressing the heightened plaque inflammation that follows a heart attack.
- Currently, no therapy directly addresses plaque inflammation. Statin, anti-platelet, and anti-thrombotic therapies remain the standard of care, yet they do not eliminate recurrence risk and may be vulnerable to patient noncompliance.
- Systemic anti-inflammatory strategies have been tested, but they require “low-dose, long-term administration”—limiting early impact and risking immune dysfunction and severe infections.

Our work seeks to fill this gap by offering a one-time treatment that can be administered immediately after a heart attack to target and stop these harmful processes. Imagine a world where heart attack survivors can live without the constant fear of another attack. This isn’t just about extending lives—it’s about transforming them. Our solution has the potential to change how we care for millions of heart attack survivors worldwide, offering hope and freedom.

What makes this solution extraordinary is its simplicity, affordability, and effectiveness. Unlike traditional approaches that require ongoing medications or lifestyle changes, our one-time treatment works quickly and provides lasting protection. It avoids the risks of prolonged therapies, such as infections and immune suppression, offering a safer and more practical option for survivors worldwide.

Booth #
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Impact

If successfully implemented in clinical practice, our proposal will transform the future for heart attack survivors. Today, millions live under the constant fear of a second, potentially fatal heart attack. Our solution—a one-time treatment to prevent recurrences—offers renewed hope, saves lives, reduces healthcare costs, and improves the quality of life for survivors and their families.

In the short term, this breakthrough will dramatically lower the risk of recurrent heart attacks, which account for nearly 40% of global heart attack deaths. Survivors will face fewer hospitalizations, reduced fear of life-threatening complications, and an improved ability to lead normal, healthy lives.

Families will be spared the emotional and financial burdens of losing a loved one or navigating the prolonged recovery from a second attack.

In the long term, our innovation could redefine the standard of care for heart attack survivors. It will inspire future research into precision-targeted therapies, not only for cardiovascular diseases but also for other chronic conditions. With fewer repeat heart attacks, healthcare systems worldwide could save billions in emergency care, hospitalizations, and ongoing treatments, allowing resources to be directed toward other pressing needs.

This is more than a medical breakthrough—it's a societal transformation. By addressing the root causes of recurrent heart attacks, we are solving a global problem, improving lives, and paving the way for a healthier, more resilient future. The ripple effects of this success will benefit millions today and for generations to come.

Funding

We have a well-defined roadmap from successful mouse studies to human trials, underpinned by compelling preclinical data.

We seek partnerships and funding to accelerate this paradigm-shifting therapy into clinical trials within two to five years, guided by clear milestones.

Our first milestone is a Phase I trial involving up to 100 participants, which will establish safety, evaluate side effects, and determine dosage—requiring A$1.5 million.

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New life for scarred hearts: regenerating the heart after a heart attack

Project lead Associate Professor Alex Pinto

Problem

- Each year 7 million people worldwide, including 57k in Australia, suffer a heart attack. Approximately 30% of these people will develop heart failure.
- Heart attacks cause permanent damage to the heart, and this often leads to heart failure.
- The current standard of care after heart attack primarily focuses only on reducing cardiac load (e.g. ACE inhibitors, beta blockers) or secondary prevention (e.g. lipid lowering or anti-thrombotic drugs).
- There are currently no treatments that aim to restore the heart to a healthy state.

We are developing a therapy based on mRNA-lipid nanoparticle technology that regenerates functional heart muscle cells, minimises scar tissue and reduces risk of heart failure following heart attack.

Solution

Thanks to powerful new technologies, we now have the capacity to address this critical problem directly. This project seeks to develop a world-first drug that will replace scarring and regenerate heart cells in the injured heart. This has the potential to transform treatment following heart attack, with far-reaching benefits for people in Australia and around the world.

- This project aims to develop a pharmaceutical approach leveraging mRNA-loaded lipid nanoparticles to reprogram scar tissue and regenerate damaged cardiac muscle after a heart attacks to reduce the risk of heart failure.
- This approach is likely to be safer, more scalable and more efficient than alternative novel therapies (e.g. stem cell treatments and viral vector therapies).
- Our approach has only very recently become possible, given advances in RNA and lipid nanoparticle technology.
- We have completed an in-depth market scan and could not identify any comparable technologies in pre-clinical or clinical development.

Regenerating the heart will transform the lives of heart attack victims and generate substantial economic benefits through decreased hospitalizations and increased workforce productivity.

Booth #
19

Impact

There are currently no drugs to restore heart tissue and function of those who have suffered a heart attack. This is an ambitious project that aims to change that and revolutionize how we treat victims of heart attacks.

Our therapy would set a new standard of health care of heart attack patients. Potentially, it may even make death and suffering of those who have survived a heart attack a thing of the past.

Beyond heart attacks, there is no reason to think this type of therapy would not be able to treat many types of heart disease driven by scarring, such as in those with experiencing diabetes and hypertension.

The success of this project would give us the power to transform the heart from the inside out, regenerating and renewing it in ways previously thought impossible.

Investment and funding

- Supported by over A$3m in public funding, our work to date has led to the discovery of the key target cells and their active gene networks that drive scar formation.
- We have filed a patent that identifies several genes (transcription factors) which can be modulated to reduce cardiac scar formation following a heart attack.
- We have also recently demonstrated successful delivery of our mRNA loaded LNPs into cardiac tissue impacted by heart attack.
- We are now seeking $4M for a highly focused project to deliver a candidate for Phase 1 clinical trials.
- This funding will support the following stages:
  1. Improve delivery of RNA to heart cells after heart attack
  2. Refine candidate RNA to optimise therapeutic benefit
  3. Complete preclinical animal studies to demonstrate efficacy and safety.

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AIG Remote Laundries project: building stronger communities through washing

Project lead Elizabeth Morgan-Brett

Problem

Remote Aboriginal communities are disproportionately impacted by scabies, which can lead to acute rheumatic fever and rheumatic heart disease. Housing challenges including lack of access to utilities such as reliable power, hot water, and washing facilities make it difficult to keep parasites and bacteria under control. Remote Aboriginal communities in northern Australia have the world's highest prevalence of skin sores with more than 80% of children affected by their first birthday. Repeated infections lead to secondary complications including acute rheumatic fever and rheumatic heart disease (RHD), with the result being that 98% of people living with RHD in the NT are Indigenous.

Solution

Despite the Remote Laundries Project's success to date, our expansion into very remote communities and those without reliable access to power/water has been challenging and expensive. These communities include but are not limited to Lajamanu, Yarralin, Tiwi Islands, Wadeye, Borroloola, Gunbalanya and Umbakumba.

We are proposing to develop a 100% off-the-grid fully self-contained solution leveraging solar power and water recycling technology. Ultimately, this will allow the laundry unit to be delivered to any community or homelands across Australia, including in very remote areas without access to services. This solution will also reduce expenses for the community and AIG (no power / water bills).

Impact

In 2020 AIG, with our partner KPMG, undertook a cost/benefit analysis assessing the impact of the Remote Laundries Project. The review demonstrated that every dollar AIG invested in the Remote Laundries Project delivered $6 in cost savings for the healthcare system.

AIG Remote Laundries deliver tangible action and impact on the four priority reforms of the National Agreement on Closing the Gap:

1. Formal Partnerships and Shared Decision Making: The project demonstrates strong partnerships with Indigenous communities, as it was created by Traditional Owners and is 100% Indigenous owned and operated. First Nations representatives are involved in decision-making at all stages, ensuring cultural appropriateness and community input. Our detailed community consultation ensures we deliver a laundry that is purpose built and operated for each community it is delivered to. This process often takes up to 12 months and engages Aboriginal Corporations operating in the community, health clinics, councils and schools.
2. Building the Community-Controlled Sector: Recognises Indigenous communities' right to self-determination and supports capability building by creating employment opportunities and providing training in maintenance, customer service and educational workshops on health, conducted in culturally appropriate ways.
3. Transforming Government Organisations: The project promotes government responsiveness and accountability to First Nations communities. Continuous monitoring and improvement mechanisms are in place, supported by the Remote Laundries Social Impact Framework, developed and being delivered in partnership with the Heart Foundation, Flinders University and CSIRO.
4. Shared Access to Data and Information at a Regional Level: Data sharing is transparent, involving First Nations Communities in collection and dissemination, ensuring community control over what is measured and valued. Remote Laundries collects data on # of cycles, operating capacity and delivery, staff recruitment/retention/attendance. As we operationalise the Social Impact Framework, we will also be collecting data including infection rates, school attendance and qualitative data around general health and wellbeing.

Booth #
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AIG's off grid solution will ensure we are able to deliver our Remote Laundries to any community, anywhere in Australia. This greater geographical reach and roll out will further benefit First Nations communities with permanent, year-round free access to fully automated commercial grade laundries to fight the prevalence of disease.

Funding

AIG is seeking $1,005,081 to build, implement and monitor a pilot 100% off grid Remote Laundry in our Casuarina community, in order to test its effectiveness and durability for remote Aboriginal communities.

The project will be staged in 4 phases and it is expected to be completed by 1 December 2026.

Phase 1: **30 May 2025 - $50,000**
Finalise design and documentation for pilot plant development, lodge DA

Phase 2: **1 July 2025 - $643,405 (Phase 2 & 3)**
Commence build of pilot plant

Phase 3: **30 November 2025**
Completion of build and pilot plant is operational

Phase 4: **1 December 2025 - $311,676**
Commence 12 month monitoring of pilot plant to ensure effectiveness of solar/water recycling and that it is fit for remote communities.

Project completion by 1 December 2026.

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BUILDING STRONGER COMMUNITIES

Remote Laundries™

TEN4TEN - Because where you live shouldn't determine if you live

Project lead Associate Professor Kylie Gwynne

Problem

Australians living in Tiny Towns face poorer health outcomes

- Key Issue: Around 7 million Australians (28%) live in rural and remote areas, where geographic location impacts health outcomes.
- Evidence:
  - Far higher rates of chronic illnesses, including cardiovascular disease, diabetes, and mental health disorders.
  - Mortality rates for CVD are up to 70% higher than in urban areas.
  - Indigenous Australians, migrants, older women, children and other priority populations who live in these areas experience far higher rates of heart disease, untreated illnesses, and avoidable deaths.
- Impact: Australians living in Tiny Towns suffer more significant mortality and morbidity than urban peers, driven by structural, behavioural and sociological factors.

Structural, behavioural and socio-economic factors contribute to poorer health in Tiny Towns

Challenges:

- A fragmented healthcare system that can be difficult to access, often with higher costs and longer waits.
- Increased behaviour risk factors: smoking, obesity, low activity, alcohol use, and poorer nutrition.
- Health messaging is inaccessible or unrelatable.
- Poor access to new health technologies, employment & educational opportunities.

Impact:

This means prevention is rarely prioritised, because the system focuses on treating advanced conditions rather than investing in early intervention. As a result, delayed diagnosis and poor chronic disease management lead to more severe health consequences and higher economic and social costs. Ten4Ten is driven by prevention and early intervention.

Solution

Place-based approaches can sustainably address structural, behavioural and socio-economic factors in Tiny Towns.

What is it?

- Evidence-driven: we know what works in tackling cardiovascular disease but almost none of it is implemented in Tiny Towns.
- Place-based: Ten4Ten works with Tiny Towns to implement what we already know, in ways that work in the bush.
- Community-led: Tailored to specific priorities and needs, integrating the best evidence with community-specific strengths and resources.
- Tech first: remote places typically get tech late or never – Ten4Ten brings the latest innovation and tech first to Tiny Towns.

Why it works:

- Twelve years of place-based, high impact research – we know how to do this.
- Shared resources and power, empowering local voices, building on community assets and strengths.
- Builds local capacity and skills to deliver the best care, in town.
- Together they ensure programs are accessible, relevant and sustainable to Tiny Towns and their diverse populations.

Booth #
12

Impact

Ten4Ten will deliver significant health and economic benefits, driven by prevention
Ten4Ten will normalise good health, challenging the notion that complex chronic disease is inevitable.

Reduce the prevalence of cardiovascular disease at a community level

- Within 2 years of joining Ten4Ten the absolute CVD risk is known to each participating community
- Within 5 years, absolute risk is reduced by 20% through evidence-based interventions that aim to reduce risk factors

Delay onset of CVD and other chronic diseases

- Within 1-year we will have baseline data for each community about physical activity and identified health assessments
- Each participant will have their own data, their plan and ways to track through Year 1 so that people can share (or not) their own data with their family, their community, their healthcare providers and us.
- Community members will have the knowledge, skills and opportunity to act thereby immediately improving health outcomes.
- Incentivising clinicians to act on evidence with their patients.

Proactive management of CVD & other chronic diseases

- Within 1-year routine CVD screening and assessment using AI assisted and other technology will commence providing reliable streaming of data so that specialist advice is available at the right time
- Within 3 years, build a local, skilled and credentialed health workforce, engaging with para-professions with accessible pathways to the professions – our work in this area has delivered 600+ graduates with a 90% completion rate.

Impact

- 10% fewer evacuations for medical emergencies
- Reduced morbidity and better management of CVD leading to lower morbidity and mortality of CVD and other chronic diseases within 10 years
- Economic benefits (increased QALYs and DALYs) to individuals and communities with less reliance on FIFO, longer, healthier work-life for community members

Funding requirements

We are seeking $30 million AUD to seed with 3 towns, scaling to $100m to achieve long-term impact across 10 towns.

	Year 1 establishment	Year 2-3	Year 4-7	Year 8-10
CVD evidence implementation	$2.0m	$5.5m	$6.7m	$4.3m
Health assessments	$0.75m	$2.25m	$1.5m	$1.13m
Training, equipment and credentials	$1.0m	$2.05m	$2.9m	$1.37m
Health literacy and local programs	$0.24m	$0.6m	$1.1m	$0.78m
Other, e.g.,EOI, iYarn	$0.78m	$0.65m	$1.3m	$0.98m
Core research team	$0.9m (5.5 FTE)	$2.1m (6.8 FTE)	$2.9m (5 FTE)	$1.6m (3.6 FTE)
Govermance and miscellaneous	$0.6m	$0.8m	$1.3m	$0.8m
TOTAL	**$3.5m**	**$8.4m**	**$10.9m**	**$6.7m**

$29.5m across 3 towns, over 10 years
Additional communities can be added at ~$7.8m per community

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UNSW SYDNEY

Springfield Healthy Hearts: local action to revolutionise global action on CVD through a living laboratory

Project lead Professor Lauren Ball

Problem

The future trajectory for CVD is unsustainable

Despite extensive research and known preventative strategies, there is a large gap in national and international coordinated action to address cardiovascular disease (CVD) at a systemic level. This lack of coordinated action means there are major residual lifestyle, biological and social risks for CVD that continue to drive its prevalence.

CVD remains the leading cause of death in Australia and globally, responsible for over 20.5 million deaths and costing the global economy over US$1 trillion annually. In Australia alone, it kills 1 in every 4 people and costs the healthcare system more than $14.3 billion per year. CVD also causes major secondary health impacts, including a greater risk of cancer, diabetes and frailty – all with additional cost to people, communities and the health system.

On the current trajectory, CVD is forecast cost to the Australian healthcare system $22 billion per year by 2050. The scale of this disease burden will be simply unsustainable for the Australian economy. We cannot afford to ignore the situation. A change in our approach to managing cardiovascular health, backed by robust real world evidence, is urgently required. We need a reset on CVD – Springfield Healthy Hearts offers the solution.

Springfield Healthy Hearts will set a new standard for coordinated action on CVD, making Springfield a demonstration city for heart health globally.

Solution

Considered a world-first, Springfield Healthy Hearts comprises two parts:

1. **Demonstration of coordinated action in the Living Lab of Springfield**, in Queensland. Here, multiple overlapping city-wide initiatives will take place that target residual risk for CVD alongside a longitudinal observation of CVD risk factors and broader health outcomes.
2. **A Collaborative Research Platform** which will attract global researchers and industry and policy thought leaders ready to utilise our living laboratory to advance their strategic priorities. We aim to position Queensland as the global research epicentre for CVD – and equip Australia with a unique piece of Living Research Infrastructure on heart health.

The Springfield Healthy Hearts program will create a scalable, place-based model for heart health. It's a whole-of-city undertaking, leveraging multi-sector collaborations to implement innovative, evidence-based strategies for heart disease prevention, treatment, and care – involving health, education, sport, retail and other community segments.

Springfield is a forward-thinking, culturally and socioeconomically diverse city. It is Australia's largest master-planned community (52ha), with a current population of over 55,000 people. Springfield is a diverse community (29% born overseas), with a higher proportion of First Nations peoples than the state or national population and is rapidly growing (~7% growth rate year on year for >20 years). Given its master-planned scale, Springfield City Group can rapidly and effectively host ongoing engagements in public spaces (shopping centres, parks, libraries), health services (hospital, general practice, allied health) and other facilities (community centres, schools) to facilitate the delivery of city-wide heart health initiatives.

Booth #
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Impact

Based on conservative international modelling; by stimulating coordinated action we will see across Australia:

- 1.5 million cases of CVD prevented over 25 years
- Reduced expenditure on CVD with total savings of AU$61 billion over 25 years
- 2.2 million Quality Adjusted Life Years gained from prevented CVD cases over 25 yrs

At a local level, Springfield has a population of 55,000 people, with an estimated 2000 living with CVD, and 22,000 with poorly managed risk factors for CVD.

Our Collaborative Research Platform will provide additional benefit through:

- Springfield, and Queensland, becoming a global epicentre and Centre of Excellence for CVD action and research
- A boost in the capability of the domestic workforce and place Australian researchers at the forefront of CVD research, globally
- Cluster benefits, such as attracting foreign investment and top talent, enhancing Australia's international reputation and driving the development of innovative partnerships

The 10-year initiative will be driven through three backbone organisations: the Heart Foundation, the Springfield City Group and the University of Queensland. An Alliance of organisations have already committed cash and in-kind support, including Health and Wellbeing Queensland, The Mater, Darling Downs and West Moreton Primary Health Network, and West Moreton Hospital and Health Service. The Alliance can be joined by additional organisations who share our vision and want to contribute.

Funding

Appropriate investment is critical to realise the full potential impact of Springfield Healthy Hearts. To ensure the successful implementation and scalability of our program, we require at least $5 million per year, for at least ten years.

We seek cash and in-kind support from diverse groups, and will work with organisations regarding opportunities for acknowledgement, exposure and involvement.

Support will be used for:

- Delivery of targeted community interventions and health promotion activities.
- Program infrastructure, including a physical activity/gym/clinic delivery space.
- Development of workforce capacity, including training for healthcare providers.
- Implementation of digital health tools and data systems to monitor progress.
- Rigorous evaluation of program outcomes to inform future policy and practice.

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THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

A Healthier Start for our children with lifelong impact

Project lead Professor Terence Dwyer

Problem

Cardiovascular disease prevention must start in childhood to have major impact.

- Compelling new evidence indicates at least 30% of cardiovascular disease will not be prevented without intervention in childhood.[1]
- For every 20 Australian children: 5 are overweight/obese, 2 have high blood pressure, 15 have inadequate physical activity, and 19 are not meeting dietary recommendations.
- Children with a high cardiovascular risk score (top 5%) have more than 6 times higher risk of experiencing a heart attack or stroke by mid-adulthood.[2]
- Our review of 190 prevention programs in Australia revealed that existing child-focused interventions are fragmented and lack a coordinated, large-scale approach, limiting their long-term impact across all community and demographic groups

Many children grow up without the right tools to lead heart healthy lives and live within unhealthy 'environments' that perpetuates unhealthy lifestyles. This can mean young people have fewer opportunities to be active and eat well. Our healthcare system also requires improvement, with much of the focus falling on acute care and treatment and not disease prevention or health promotion.

Solution

Healthier Start Initiative: co-ordinated, evidence-based, high impact roadmap for cardiovascular disease prevention.

The Healthier Start Initiative will:

1. Transform public narrative through well-designed communication campaigns.
2. Support policy transformation with a real-time food environment monitoring and evaluation platform.
3. Conduct Victoria-wide multi-component 'stacked' trials of high potential interventions.
4. Develop hub-and-spoke model of clinical care that embeds prevention into clinical practice and builds capacity in the community to identify early disease risk and deliver care.
5. Roll out and embed a cardiovascular disease prevention roadmap that is integrated across modules with a focus on sustainable implementation.

Our goal to decrease childhood overweight/obesity by at least 5% will lead to projected cost savings of $1 billion over 10 years, and will support real-world implementation of the National Obesity Strategy and National Preventive Health Strategy.

Booth #
14

Impact

The 'Healthier Start' Initiative will lead to tangible, large scale action in Australia to address the 'big-ticket' influences on cardiovascular health in childhood.

A strength of our strategy is that it encompasses all levels of risk exposure (individual, community, population/society) and acknowledges many overlapping elements.

We anticipate the following positive impacts from this program:

- Transformed public narrative so the importance of cardiovascular health in childhood is considered a major priority
- Research and evidence-backed policies that lead to tangible differences in children's homes and environments to support their heart health
- Embedding these findings and evidence into schools and primary healthcare while ensuring their long-term sustainability and relevance to families and teachers
- Substantial reductions in long-term cardiovascular disease risk and other chronic diseases
- Numerous short-term benefits to wellbeing, mental health and the education system
- A 5% reduction in overweight/obesity is projected to result in cost savings of $1 billion over 10 years[3]

Investment

Partnering to drive major health and economic impact

- We're seeking $3.85 million over 2 years (Phase 1) to co-design the public engagement strategy, develop the food environment monitoring platform, establish the GenV intervention hub/roadmap, and build a child-focused preventive healthcare hub.
- Phase 2 roll-out (3-5 years) will involve estimated investment of $28 million that will see significant impact across policy, public health and clinical settings.

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murdoch children's research institute

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Switch the salt to save your heart

Project lead Dr Kathy Trieu

Problem

There is an unmet need for practical and acceptable ways to reduce sodium intake and lower blood pressure for all Australians

- Almost all Australians eat too much sodium (as salt) raising blood pressure levels
- 1 in 3 Australians (7 million) have high blood pressure – the biggest cause of death and disability
- Decades of interventions to cut salt use in food products and at home have had limited success
- Medicines only reach and treat a fraction of those that need it and half of Australians with high blood pressure are unaware of their condition.

For decades, doctors, health organisations and government have recommended that we cut our salt intake and that the food industry puts less salt in its products.

Unfortunately, most people struggle to make sustained reductions, and the food industry has not been able to meaningfully lower salt levels in food.

Solution

The solution is to 'switch' rather than 'cut' the salt we eat

'Switching' to potassium-enriched salt – a heart-healthier salt where some of the sodium (bad for health) is replaced with potassium (good for health) – is a game-changer for three main reasons:

- Potassium-enriched salt tastes and looks like regular salt, so most people won't notice the change
- Switching to potassium-enriched salt lowers blood pressure and heart disease risk not just by reducing sodium intake, but also by increasing potassium intake - a mineral most Australians don't eat enough of, found in fruits and vegetables
- Potassium-enriched salt is already available for consumers and food industry to purchase, just no one knows about it!

The health benefits of switching from regular salt to potassium-enriched salt are proven in multiple large, high-quality studies. Importantly, it has also been shown that 'switching' salt use is acceptable to people in the long term, unlike 'cutting' salt use.

Countries worldwide have switched their salt supply to iodised salt once before for health, so now it can be done again for the prevention of heart disease.

Booth #
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Switching Australia's salt supply from regular salt to potassium-enriched salt will benefit most Australians and prevent thousands of heart attacks and strokes every year. It would accelerate a worldwide switch and there is opportunity to work with the Australian mining sector to make the extra potassium needed for a worldwide switch.

Impact

- 'Switching' to potassium-enriched salt benefits almost all Australians regardless of age, ethnicity, education and normal or high blood pressure levels. But 7 million with high blood pressure will benefit the most.
- Switching Australia's salt supply can prevent around 3000 cardiovascular disease deaths, and 9000 debilitating heart attacks and strokes every year.
- Switching the salt supply would be cost-saving for the government. Relative to medicines for high blood pressure, potassium-enriched salt is cheap and its benefits are far more wide reaching.

It is possible to switch the salt supply. It has been done before by switching from regular salt to iodised salt. That switch, led by Australians, has prevented millions of children worldwide from suffering lifelong neurological deficits. This next switch, also led from Australia, will lower the risks of heart disease and stroke for millions in Australia and billions more worldwide.

Funding

- With $1.5M, we will ensure 7 million patients with high blood pressure are systematically recommended potassium-enriched salt by healthcare professionals.
- With $15M over 10 years we will make the switch for 27 million Australians, and $100M we will do the same worldwide.

Contact

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The George Institute for Global Health

UNSW SYDNEY

Medical devices

Message from the heart: a new solution to screen for blood vessel calcification

Project lead Professor Joshua Lewis

Problem

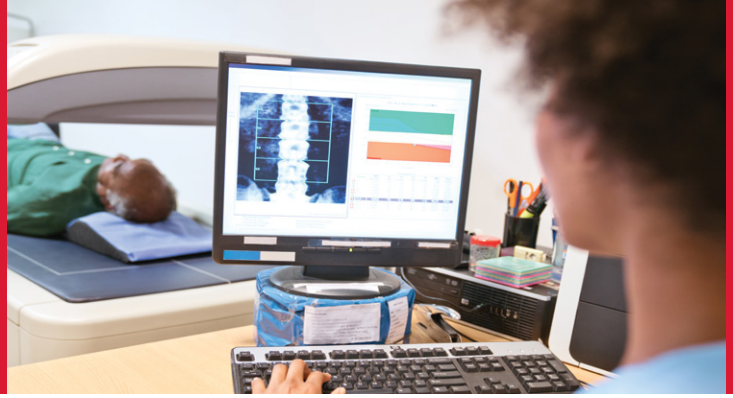
- Cardiovascular Disease (CVD) is responsible for 11% of all hospitalisations, whilst 1 in 4 deaths had CVD as the underlying cause of death.[1]
- More than 1 in 4 Australians suffering a heart attack have no known risk factors for CVD.[2]
- CVD costs the Australian healthcare system $12.7B per year.[4]
- Heart health checks and heart calcium scores only tell part of the story.
- In 2024, 209,025 Australians underwent a Heart Health Check – representing 2.14% of the population aged between 45-79 years of age.[3]
- Calcium is often detectable earlier in the abdominal aortic blood vessel than heart blood vessels, providing an opportunity for earlier detection.

Heart attacks are a leading cause of death globally. Existing screening initiatives focus on risk factors and risk equations and provide little insight into the actual health of an individual's blood vessels. Information that we know improves an individual's likelihood of undertaking risk-reducing behaviours. To date, there are no widely available community-based vascular imaging solutions to screen for blood vessel calcification.

Solution

- We have developed an AI-driven solution to automatically detect and estimate Abdominal Aortic Calcium (AAC) from low-cost, widely available Dual-Energy X-Ray Absorptiometry (DEXA) scans.
- Our solution can predict those patients which are 1.8 – 2 x more likely to have a future CVD event.
- AAC is a low cost, easily applied solution that allows early CVD risk detection and intervention, in addition to predicting late-life dementia, falls and fractures.
- There are ~700,000 clinical DEXA scans performed per annum in Australia and ~3M scans performed per annum in the USA.
- We have access to >100,000 DEXA scans and a pipeline to develop solutions for non-regulated and regulated markets from these images.
- We have clinical validation and published our results in leading scientific journals.
- Obtained >$6M in research grant funding from 2016 to date, used to understand why AAC occurs, develop and validate our solution.

Our state-of-the-art artificial intelligence solution automatically assesses the extent of abdominal aortic calcification (AAC). This solution compliments, rather than replaces, existing tests. Our approach is scalable and will transform our ability to monitor and change the trajectory of cardiovascular disease, addressing health inequities, saving lives and reducing healthcare costs in the process.



Booth #
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Widely available DEXA machines are good at detecting calcium in our bones, they are also good at detecting calcium in the largest blood vessel in the body, providing unique and clinically important insights into an individual's actual level of blood vessel disease.

Impact

Our solution has been developed, tested and validated by our multidisciplinary team of global experts who are trusted voices in the field. In our discussions with significant global and US-based companies, there is strong interest in low cost and accessible screening solutions. Widespread availability of DEXA machines enhancing scalability combined with first mover-advantage with large-scale clinical validations in multiple jurisdictions (currently Australian, UK, US and Canadian) make our AI solution attractive to global wellness and health "non-regulated" and healthcare "regulated" markets.

Our solution empowers wellness enthusiasts as well as patients and healthcare professionals with a person's actual level of blood vessel disease – something we know provokes startlingly high and lasting levels of heart healthful behaviour change. This will suddenly offer a genuine chance for people to change and monitor the trajectory of their own heart health.

Collectively this low-cost solution will provide new and clinically meaningful results to many in a time efficient, reliable and scalable way. The solution has untapped potential for new uses or to be integrated into many areas of the health and wellness and medical device markets.

Funding requirements

We are seeking $4.0M over the next 3 years to enable us to deliver our solution to market.

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Nutrition and Health Innovation Research Institute
Strategic Research Institute

Hybrid 3D-printed imaging device for precision heart care

Project lead Associate Professor Jiawen Li

Problem

Each year, more than 20 million patients with coronary artery disease (CAD) suffer an acute coronary syndrome event, such as myocardial infarction (MI), worldwide. CAD is caused by the buildup of complex atherosclerotic plaques that cause narrowing of the coronary arteries. Although most plaques remain stable, some continue to grow and destabilise until they rupture or erode and cause thrombotic occlusions that lead to MI or sudden cardiac death.

These deaths are preventable if we can diagnose and treat high-risk plaques. However, cardiologists do not have accurate enough tools to confidently distinguish between low and high-risk plaques in vivo. Existing diagnostic technologies, including conventional angiography and adjuvant intracoronary imaging modalities suffer from poor predictive ability due to their intrinsic limitations (e.g., low spatial resolution and/or lack of molecular contrast).

Not being able to classify plaque into high-risk/unstable or stable/low-risk, results in either undertreatment or overtreatment of plaque, with the former leading to recurrent heart attacks and readmission to hospitals in approximately 20% of cases worldwide.

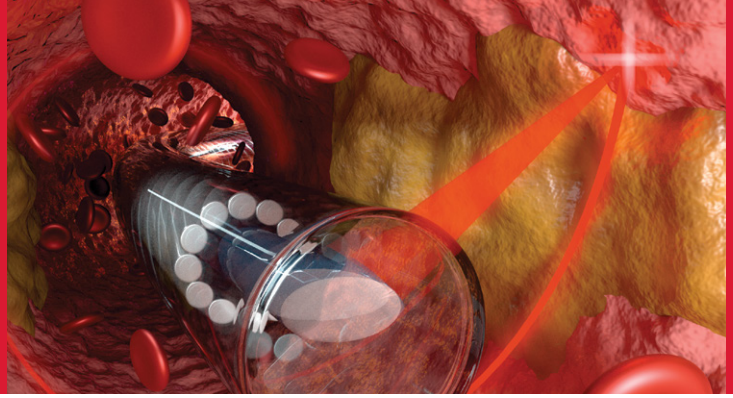
Solution

We have developed the world's smallest intravascular imaging catheter, to enable more accurate detection of high-risk plaques with near-cellular-resolution and molecular insights. This solution leverages 3D nano-printing to create a complex imaging micro-lens, that can combine two imaging modalities (optical coherence tomography (OCT) and autofluorescence) to characterise plaque stability with 12x greater fluorescence detection sensitivity than commercially available systems.

Technological advancement and clinical benefits include:

- the combination of two imaging modalities (OCT and autofluorescence) in a single optical fibre multimodality catheter with high resolution and sensitivity;
- an accurate assessment of plaque morphology, molecular characteristics and stability, altogether enabling the detection and diagnosis of high-risk plaques;
- minimisation of vascular damage with a catheter of 0.7 mm in diameter incorporating the micro-lens, optical fibre and torque coil;
- a 12x sensitivity boost and near cellular resolution imaging >1 mm range; and
- the potential to use and commercialise the system for other applications such as gene therapy, gastrointestinal tract and the bile duct for cancers such as cholangiocarcinoma.

Our Medical Device Classification for Australia and the United States of America (USA) will respectively be a Class III for the Therapeutic Goods Administration (TGA) and a Class II for the Food and Drug Administration (FDA). Although no existing commercial systems combine OCT and autofluorescence, our system's predicate device would be a mobile OCT imaging system such as Abbott Medical's OPTIS™ Integrated System unit used for intra-operative imaging in coronary arteries.



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No existing solutions combine OCT and autofluorescence efficiently. Our combined OCT and autofluorescence 3D-printed micro-lens will enable cardiologists to visualise plaque morphology and molecular characteristics so that treatment approaches may be personalised to the patient.

Opportunity

Using known and existing surgical methods of angiography arterial entry and associated reimbursement codes, our imaging system will enable cardiologists to offer a personalised cardiac treatment approach with the ability to characterise the plaque present (stable or high-risk) and eliminate erroneous misclassification of plaques which currently results in over-treatment of stable plaques or recurrent heart attacks in more than 20% of cases.

Catheter-based procedures such as angiograms are performed in catheterisation laboratories (widely referred to as cath labs) in hospitals with a cardiac unit, and where our product will be used.

The total addressable market (TAM) for our product in our primary target markets is estimated at AU$15 billions (US$9.4 billions) in 2025. This includes Australia, USA, China, Japan, Europe and India. This represents 12% of the global catheterisation laboratory services market, which is expected to reach US$78.2 billion by 2032 (Allied Market Research 2023).

Investment

We are seeking an investment of $22.6million to fund path-to-market activities, distributed across the following tranches.

- Design for Manufacturing within ISO13485 (2025-2026) -$2.9million
- Medical Device Trial Stage 2: Traditional clinical trial (2027) - 30 participants to confirm initial efficacy and accuracy clinical trial and inform large trial - $2.7million
- Medical Device Trial Stage 3: Pivotal Effectiveness Trial (2028-2029) - 100 participants: statistically driven large clinical trial to confirm safety and efficacy - $6million
- First batch manufacturing (x100), regulatory approvals in initial markets, first product launch and post- market surveillance (2030 – 2032) - $11million

Contact

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A revolutionary method of performing closed chest beating heart surgery through robotic catheters

Project lead Professor Saeid Nahavandi

Problem

Large Unmet Clinical Need

Approximately 70 million patients worldwide suffer from mitral and tricuspid valve disease annually, resulting in an estimated economic cost of $60-80 billion USD. Of these patients, only 15% are eligible for open-heart surgery due to high surgical risks, and many of them remain untreated. The global economic burden of valvular heart disease is approximately USD 80 billion.

Current transcatheter repair and replacement solutions, such as MitraClip and PASCAL, provide alternatives but have significant drawbacks, including tissue distortion, thrombosis, and long-term durability issues. Moreover, there are no secondary treatment options available when these devices fail.

The absence of an effective, minimally invasive solution with minimal tissue impact leaves millions of patients with limited or no treatment options, restricting their long-term management solutions.

Solution

Revolutionary and Differentiated Solution

Our solution is a robotic-haptics-enabled, minimally invasive alternative to open-heart surgery. It enables surgeons to perform precise, catheter-based suturing on a beating heart without the need for general anesthesia or heart-lung bypass. This approach reduces procedure and patient recovery times by more than half.

This innovation replicates surgical suturing techniques through robotic haptic technology, enhancing precision while preserving native heart tissue.

Integrated cardiac imaging and mapping facilitate efficient procedures, mirroring the current workflow of Interventional Cardiologists in the cardiac catheterisation laboratory/hybrid operating room, significantly reducing procedure times and patient recovery.

The ideal solution to this enormous clinical unmet need is to develop technology that allows one to deliver sutures and other cardiac suture-based devices through a groin catheter directed into the heart in an awake or mild-moderately sedated patient (live beating-heart scenario). This would drastically reduce any body trauma and complications while providing an almost immediate recovery. In addition, using advanced robotics-haptics technologies that can provide tactile sensing, the surgeon would still be able to feel the sutures entering the heart tissue, just like as if they were operating using their hands directly in an open-heart procedure. If successful, the proposed technology stands to revolutionize cardiac interventional and surgical care to humans young an old, fit and frail, leading to dual optimized outcomes and minimal-to-no recovery.

Developing transcatheter cardiac suturing/valve repair techniques, and conducting appropriate longitudinal clinical studies, could revolutionize the management of patients with valvular heart disease over their lifetime. In many instances, this may eliminate the need for open heart surgery/ cardiopulmonary bypass, particularly minimizing the number of operations in younger patients with cardiac defects.

Booth #
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Our goal is to create a novel catheter-based haptics-enabled robotic suturing technique. These catheters would be placed via the groin veins into the beating heart of an awake or semi-conscious individual just like current transcatheter technologies, but would be significantly differentiated by enabling high-fidelity touch/feel sensing and deliver suture-based therapies that repair (rather than replace) tissue. This innovation has the potential to revolutionize transcatheter valve repair and usher in a new era in cardiac surgical and interventional practices and techniques.

Opportunity

A $60 Billion Market Opportunity
According to investor relations at Edwards Life Sciences and Abbot, as well as reports from GlobalData, Fortune Business Insights, and MRG, the estimated market opportunity for the Mitral valve is approximately $40 billion, while for the tricuspid valve it is around $20 billion.

Our solution targets both the surgical and transcatheter valve repair markets, positioning us to capture a significant share (approximately 50%) of the growing demand for minimally invasive cardiac interventions.

Funding requirements

We are seeking $9 million in immediate funding to develop a prototype, complete benchtop and preclinical testing, and obtain regulatory approvals for first-in-human trials involving Australian patients, along with an early feasibility study in the US by the end of 2027.

Beyond this point, it is anticipated that an additional $125-145 million AUD would be required to complete the clinical trials necessary to receive market authorisation.

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SWINBURNE UNIVERSITY OF TECHNOLOGY

Next-generation 3D-printed heart valves: designed to last, built to heal

Project lead Assoc Prof Abdul Rahman Ihdayhid

Problem

- Aortic stenosis is the most common and severe form of valve disease affecting 1 in 8 Australians over 65 years, with severe cases leading to death within two years if untreated, and valve replacement being the only effective solution.
- Transcatheter aortic valve replacement (TAVR) has revolutionized treatment by offering a less invasive alternative to traditional open-heart valve replacement surgery. TAVR represents a rapidly growing market with anticipated increase in global revenue from $8.5B in 2025 to $15.7B by 2030, with a compound annual growth rate of 12.8%.
- The treatment for aortic stenosis requires new solutions. TAVR valves are made from animal tissue, and often deteriorates within five years, requiring additional high-risk surgeries and failing to last younger patient's lifetime.
- Traditional valve manufacturing processes are expensive, involving up to 150 staff and 40 days per valve, further limiting affordability and scalability.
- TAVR is increasingly being used in younger patients, highlighting the critical unmet need for durable valve solutions that can withstand longer life expectancy and higher physical demands.

CoraMetix Valve is designed to provide long-term durability, closely mimics the opening and closing biomechanics of a natural valve.

Solution

- CoraMetix's leading design closely mimics the opening and closing biomechanics of a natural valve and is designed to provide long-term durability to last a patient's lifetime, well beyond existing bioprosthetic options (e.g., animal valves).
- The implication of increased durability is an expanded addressable target patient population for TAVR - which could include patients aged 50-65 with moderate aortic stenosis. Currently, treatment is only recommended for patients with severe disease, aged >65 years.
- CoraMetix is pioneering the next generation of heart valves using advanced 3D printing, and implementing automated, scalable, and cost-efficient manufacturing process.
- Using a high-resolution 3D-printing technique, we have designed, tested, and patented a heart valve microarchitecture which exquisitely and uniquely mimics the opening and closing of native human valves, outperforming commercial valves.
- Following successful pre-clinical and clinical trials, our valve will vastly improve the quality of life and life expectancy for individuals with AS by providing far better opening and closing performance, and durability exceeding the patient's lifespan. This will result in reduced rates of rehospitalisation, premature valve failure, repeat surgeries, and valve-related mortality.

Booth #
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Impact

What sets our solution apart is its affordability and scalability. Our manufacturing process is compatible with automation and utilises readily available medical-grade polymers, allowing us to target a production cost of under $100/valve compared to existing solutions, which cost ~$1000/valve. This makes our valves accessible to patients worldwide, including those in underserved regions where cost is a major barrier. Our valves are also compatible with existing minimally invasive surgical procedures, making them easy for doctors to use without need for additional training.

Beyond aortic stenosis, our technology has potential to address other valve diseases, such as mitral and tricuspid regurgitation. By solving the shortcomings of current valve technology, we aim to improve patient outcomes while reducing the burden on healthcare system.

Funding

- Our development plan will require A$20m to get to first in human by 2029. This will be done in 2 stages. Today we are asking for A$5m for us to complete stage 1 including design, development and testing required to be GLP-ready in the next 2 years. Stage 2 will involve GLP-compliant pre-clinical studies for FDA submission to be ready for first in human trials.
- Key stage 1 technical milestones include the design and integration of our patented leaflets into a transcatheter frame and delivery system, iterative studies to achieve optimized valve design-lock, valve sterilization and optimization and automation of manufacturing processes.
- Key stage 1 regulatory milestones include QMS development, internal audits, and transition to an independent manufacturing facility in preparation for ISO13485 or MDSAP Certification.

Contact

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CORAMETIX

Detecting danger: advanced clot sensor for safer life support systems

Project lead Dr Charles Lindall

Problem

Extracorporeal circuits, including ECMO (Extracorporeal membrane oxygenation) and CRRT (Continuous Renal Replacement Therapy), are life-saving interventions for critically ill patients. For critically ill cardiopulmonary patients, ECMO machines are often used for days or weeks to oxygenate blood and keep patients alive. For seriously ill kidney dialysis patients, blood needs to be purified for days using CRRT machines. However, circuit clotting is a frequent and life-threatening complication, contributing to 5-15% of ECMO patient deaths. Clot formation in a circuit can cause thromboembolism in a patient, leading to possible stroke or cardiac arrest. This can also lead to circuit component failure, necessitating expensive and high-risk replacements. Some patients are more prone to bleeding, some to clotting. Clinicians often don't know precisely how to manage anti-coagulation of patients on life support because every patient is different.

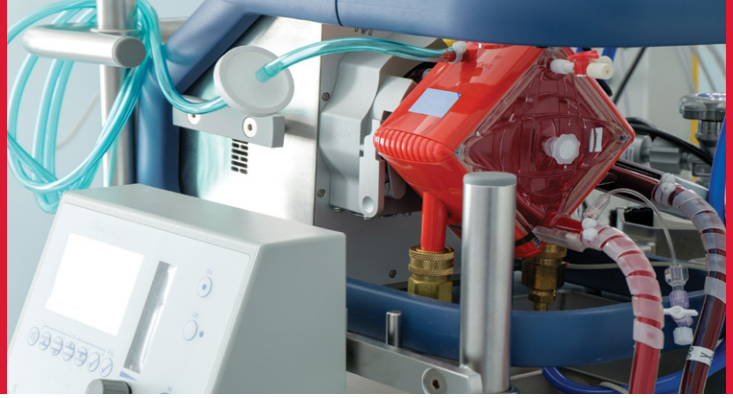
Current clot detection methods are very manual and inadequate. Clinicians rely on standard anti-coagulation protocols and visual inspection of clots or pressure drops in the circuit. There is currently no commercially available device that can detect the location and size of clots within a circuit.

In critically ill patients such as those patients with cardiac and pulmonary failure there is often a need to use bypass circuits during surgery and/or to improve the quality of the blood supply. These are acute life or death situations where unintended clotting of the blood can dramatically increase the likelihood of death.

Solution

Our solution is a standard ultrasound sensor enabled by machine learning to detect and potentially predict clots. Our patent-pending system integrates with extracorporeal circuits to reconstruct and display clot geometries in real-time, predicting clot formation before it becomes a clinical emergency.

Our prototype has demonstrated it can detect clotting in an ECMO oxygenator, outperforming standard ultrasound machines and traditional pressure-drop monitoring methods. Our sensor will be easy to use, can be hand-held or clamped on to tubing or oxygenators. It will give a visual display of early clot formation and will serve as a warning and confirmatory system for clinicians. Our prototype clot detector will enable early intervention which decreases risk of stroke and cardiac arrests, and reduces hospital costs by reducing circuit replacements, staff time and patient ICU stays. It will also reduce clinician workload in clot monitoring.



Booth #
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We have developed a prototype automated ultrasound clot detection system that uses machine learning analysis to detect clot formation in ECMO circuit oxygenators.

Impact

Our strategy is to have a single device that can be used by clinicians in ECMO, CRRT or any other procedure where blood is pumped externally from seriously ill patients. Potentially 100,000 patients would benefit annually and costs to the health system would decrease as a result of the reduction in intensive monitoring and testing.

We are still developing our commercial strategy but CSIRO and RMIT wish to transfer the technology to an Australian company to productise, control the IP and manufacture the devices.

Funding

We believe we need an initial $2m to refine the prototype, design for manufacture, obtain regulatory advice and prepare for a phase 1 clinical trial. We estimate that concurrent technical and regulatory milestones will take 24 months to be ready for a small clinical trial.

We are looking for technical, clinical and commercial partnerships to contribute to the development. We are keen to find investor or philanthropic funding to leverage possible grant applications and R&D tax incentives to licence an Australian company.

Contact

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CSIRO

RMIT UNIVERSITY

Heart First initiative: personalised heart health across generations, anytime, anywhere

Project lead Professor Girish Dwivedi

Problem

A Preventable Crisis

- Cardiovascular disease (CVD) is the #1 global killer, yet early symptoms are often missed
- Current standard of care is reactive, fragmented, and expensive, leading to delayed intervention, irreversible damage and inequitable access
- Barriers to access — geography, costs, and healthcare delays — leave millions undiagnosed

Solution

Lubdub is revolutionizing heart health with three game-changing devices that bring advanced medical technology directly to people's homes. A wearable ECG patch tracks heart activity for two weeks, a saliva-based biosensor checks critical heart markers without blood tests, and a wireless ultrasound captures detailed heart images—all without visiting a hospital.

These affordable, user-friendly tools enable early detection of heart problems, particularly for people in remote areas. By making sophisticated heart monitoring accessible and convenient, Lubdub aims to save lives, reduce healthcare costs, and give everyone—regardless of location or background—the power to monitor their heart health proactively.

A Holistic, Accessible Approach

Lubdub integrates three cloud-connected point-of-care technologies to close the diagnostic gap

- Electro – Wearable, low-cost 3-lead ECG with 12-lead equivalent reporting
- Bio – Saliva-based test detecting 5 key cardiac biomarkers with high sensitivity
- Echo – Wearable ultrasound for hands-free, real-time cardiac imaging

Opportunity

Lubdub's proposal isn't just about creating sophisticated medical devices—it's about fundamentally reshaping how we approach heart health, particularly for vulnerable and underserved populations.

Immediate Impact: Our technologies promise to democratize cardiovascular care by bringing advanced diagnostic tools directly to people's homes. For remote communities, Indigenous populations, and rural areas with limited healthcare access, these devices represent a lifeline. Imagine catching a potential heart problem before it becomes critical, without the need to travel hundreds of kilometers or wait months for specialist appointments.

Long-Term Societal Transformation: This project has the potential to:

- Reduce cardiovascular mortality rates by enabling early detection
- Dramatically lower healthcare system burden through preventative monitoring
- Create a new paradigm of personalized, continuous health tracking
- Potentially save billions in healthcare costs by preventing advanced-stage interventions
- Inspire a global shift towards accessible, user-friendly medical technologies

Booth #
5

The goal is simple: catch heart problems early, make monitoring easy, and potentially save lives by bringing sophisticated health technology to everyone's doorstep.

Investment

Timing and Market Readiness

- $450k pre-seed and $500k in grants secured
- $3M seed round opening late-2025
- Strong market demand and pathway to market entry established, enabling smooth adoption
- ISO 13485-ready scalable manufacturing, ensuring efficient production
- Strong clinical validation pipeline and strategic partnerships accelerating market entry

A High-Growth Opportunity

- >1,863M devices annually in total addressable market across ECG, biomarkers, and ultrasound
- First-mover advantage in multi-modal, wearable, and AI-enabled cardiac diagnostics
- Investment fuels key milestones – clinical validation, regulatory approvals, commercialisation preparations
- Proven MedTech leadership team with deep expertise in product development and market strategy

Strategic Support to Scale

- Funding – To accelerate product development, validation activities, and commercialisation preparations
- Partnerships – Clinical, market access, and strategic multinational collaborations for wider and deeper impact
- Brand Promotion – Industry and clinical champions to amplify awareness and adoption

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lubdub

Meet our Advisors

Professor Garry Jennings AO - Catalyst Advisors Facilitator

Chief Medical Advisor, Heart Foundation

Professor Garry Jennings is the Chief Medical Advisor at the Heart Foundation. He has a distinguished career as a cardiologist in clinical practice and was previously Director of Cardiology at The Alfred Hospital, Melbourne and Chair of the Division of Medicine, and Executive Director of Sydney Health Partners. He was Director of the Baker Heart and Diabetes Institute for 15 years. Professor Jennings is past President of the Association of Australian Medical Research Institute, the High Blood Pressure Research Council of Australia, the Asia Pacific Society of Hypertension and Head of a WHO Collaborating Centre for Research and Training in Cardiovascular Health. His research interests cover the causes, prevention and treatment of cardiovascular diseases and he has received national and international awards. He has published several books on heart disease and has over 700 research publications cited more than 50,000 times.

Anna-Maria Arabia OAM

Chief Executive, Australian Academy of Science

Anna-Maria is Chief Executive at the Australian Academy of Science, an independent organisation of distinguished Australian scientists, championing science for the benefit of all. Starting her career as a neuroscientist, Anna-Maria has worked nationally and globally in scientific research, policy development, politics, and advocacy. Her leadership has led to significant reform at the science-policy interface. She has established novel mechanisms to facilitate evidence-informed decision making in parliaments and the justice system; spearheaded new approaches to science communication; and implemented global initiatives to make visible underrepresented scientists. She provides policy advice to the highest levels of government in Australia and contributes to global policy fora, most recently leading the establishment of the International Science Council Regional Focal Point for Asia and the Pacific. Anna-Maria has earnt the Knight of the Order of the Star of Italy for her constant commitment to promoting the role of science in society and her determination in enabling young and diverse people to access science. Anna-Maria is routinely called upon to serve as an agent of change.

Dr Brandon Carp

President & Founder, Australian Society for Medical Entrepreneurship & Innovation (ASME)

Dr Carp's professional journey spans three phases: clinician, entrepreneur, and advisor. Dr Carp worked as a clinician for over 20 years, notably at the Alfred Hospital and in General Practice. Throughout his career Dr. Carp has used his training, experience and understanding of the health system to help drive innovations to improve healthcare for all Australians. Dr Carp co-founded UHG Australia's leading platform connecting businesses and healthcare providers, serving as managing director until 2014, then as executive chairman until its acquisition by US private equity backed Examworks in 2019. Today, he has a portfolio of healthcare interests in entrepreneurial commercial enterprises and not-for-profits. In 2022 he cofounded the Australian Clinical Entrepreneur Program (AUSCEP), which was designed to develop entrepreneurial skills and networks to advance clinician-led innovation. Since then he has served as the National Entrepreneurial Lead, keen to see a pathway for health entrepreneurship established to empower more clinicians to improve healthcare through innovation. He is also director of the Murdoch Children's Research Institute, Chair of the Victorian Clinical Genetics Service, founder and President of the Australian Society for Medical Entrepreneurship and Innovation (ASME). Brandon is an Honorary Enterprise Fellow of the University of Melbourne.

Rebecca Davies AO

Board Director, Heart Foundation and Chair, Heart Foundation Research Advisory Committee

Rebecca Davies is a Heart Foundation Board Member and Chair of the Heart Foundation's Research Advisory Committee. Rebecca is an experienced non- executive director with experience across a range of sectors and settings. As a highly regarded lawyer, she acted for many high profile Australian and international clients, with a particular focus on technology, media and financial services. As a director, she has been board chair, committee chair and member. Her experience includes government, not for profit, health, research and financial services sectors. She has seen both sides of the regulatory equation - being a director of a regulator and regulated entities. Rebecca understands the need to balance the necessity for compliance with the imperative of improved performance and has been involved in driving organisational change and development. She has been a consumer advocate for medical research for many years and a consumer representative in this area both in Australia and overseas, including for the NHMRC, MRFF and British Heart Foundation.

Glenn Dillon

Vice President of Research and Grants Administration, American Heart Association

Glenn H. Dillon, PhD, is Vice President of Research and Grants Administration for the American Heart Association (AHA), the largest non-governmental, non-profit funder of cardiovascular and cerebrovascular disease in the United States. In this role, he works with AHA volunteers, AHA leadership and an excellent research team in facilitating and managing all aspects of AHA's research portfolio. Prior to joining AHA, Glenn had spent his career in academia. Most recently, he was Professor of Pharmacology and Neuroscience and Vice Provost for Health Institutes at University of North Texas Health Science Center. He also served for several years as Vice President for Research at UNTHSC. While at West Virginia University, he was Professor of Physiology and Pharmacology at West Virginia University Health Sciences Center's School of Medicine, and Vice President for Research and Graduate Education. Glenn earned his PhD from the Department of Physiology and Biophysics at the University of Illinois Urbana-Champaign, then did postdoctoral research in molecular neuropharmacology in Central Nervous Systems Diseases Research at the Upjohn Company in Kalamazoo, MI. His research lab focused on the molecular pharmacology and cellular physiology of ligand-gated ion channels in the brain.

Professor Sandra Eades AO

Chief Medical Advisor – First Nations Health, Heart Foundation
Deputy Dean - Indigenous and Rowden White Chair, Faculty of Medicine, Dentistry and Health Sciences, The University of Melbourne

Professor Sandra Eades is the Chief Medical Advisor – First Nations Health at the Heart Foundation, and the Associate Dean - Indigenous and Rowden White Chair at the Faculty of Medicine, Dentistry and Health Sciences at The University of Melbourne. Professor Eades is a Noongar woman from Mount Barker, WA, is recognised as a leader in Aboriginal health and was the first Indigenous Australian trained in medicine to be awarded a PhD. Her work influenced the introduction of Commonwealth funded maternal and child health services in Aboriginal Community Controlled Health Services through the Healthy for Life policy initiative; early cohort studies of infant health demonstrate very high rates of smoking in pregnancy among Aboriginal women and high rates of environmental tobacco smoke exposure among infants. She advocated heavily for investments to tackle high rates of Indigenous smoking with much greater investments following the release of the first Indigenous Burden of Disease report. Professor Eades was named NSW Woman of the Year 2006 in recognition of her research contributions to Aboriginal communities and has received a 'Deadly Award' (National Aboriginal and Torres Strait Islander Awards) for Outstanding Achievement in Health.

Richard Hersey

Managing Director and Head of M&A Australia, Morgan Stanley

Richard Hersey is a Managing Director and Head of M&A Australia at Morgan Stanley. Richard joined the firm in 2010 and has advised clients on over A$100Bn+ of M&A transactions, focusing primarily on public and complex M&A situations. Richard also has a strong interest in medical research and biotech, including leading and participating in equity raisings for multiple early stage biotech companies. Richard holds a Bachelor of Commerce and Bachelor of Laws (with Honours) from the University of Adelaide.

Elizabeth Koff AM

Managing Director, Telstra Health

Elizabeth Koff is the Managing Director of Telstra Health, Australia's largest digital health company and a subsidiary of Telstra Corporation. Prior to this Elizabeth was Secretary, NSW Health for a six-year term. As Secretary, Elizabeth was responsible for the management of the NSW health system, the largest health system in Australia. Key strategic achievements include the implementation of value-based care across NSW, the progression of e-Health initiatives and a $2 billion per year capital infrastructure program. In 2020-21 Elizabeth led the NSW Health system through the COVID-19 pandemic and advised NSW crisis cabinet on the management of covid in NSW, and the subsequent vaccination roll out. Elizabeth was chair of the Australian Health Ministers Advisory Council (AHMAC) and its subsequent iteration of Health Chief Executives Forum. She is also a member of Chief Executive Women. Elizabeth was appointed a Member of the Order of Australia in the Queen's Birthday 2022 Honours.

Professor James Leiper

Director of Research, British Heart Foundation

Professor James Leiper is the Director of Research at the British Heart Foundation and a Professor of Molecular Medicine in the School of Cardiovascular and Metabolic Health at the University of Glasgow. Professor Leiper's research focuses on the translation of findings from basic science to human health and disease. His laboratory studies nitric oxide (NO), a key molecule in the body that plays an important role in the heart, immune system, and brain. Disruptions in NO production can lead to conditions such as high blood pressure, plaque buildup in artery walls, and septic shock. Prior to his move to Glasgow, Professor Leiper worked at University College London studying how blood vessels function, and later became a Program Leader at the MRC London Institute of Medical Sciences. He has undertaken internationally leading research in the field of vascular physiology and his work had led to the creation of a new biotechnology company focused on developing new medicines for the treatment of sepsis.

Diego Marchese

Executive Vice President, Mission, Research and Social Enterprise, Heart and Stroke Foundation of Canada

Diego Marchese is the Executive Vice President of Mission, Research, and Social Enterprise at the Heart and Stroke Foundation of Canada. With over 25 years of dedicated service as a health executive in the not-for-profit sector, Diego has been a pivotal force in advancing the foundation's mission. He oversees critical areas including research, health promotion, health systems, patient education, and advocacy. Throughout his career, Diego has held several senior positions at Heart & Stroke, including interim national CEO, national COO, CEO of British Columbia and Yukon, and national vice president of prevention. His leadership has been instrumental in the development and delivery of numerous renowned health initiatives and strategies at both provincial and national levels that have enhanced public health and improved care and health outcomes across Canada. Diego's contributions have significantly shaped and advanced health policy and programs in areas such as tobacco and vaping, nutrition, physical activity, pharmacare, and health system changes in stroke, heart failure, and cardiac arrest. He has also spearheaded several strategic research initiatives, driving innovation and progress in cardiovascular health. A respected member of the Canadian College of Health Service Executives, Diego currently serves on the board of the Global Cardiovascular Research Funders Forum.

Dr Chris Nave

Founding Partner & Managing Director, Brandon Capital

Dr Chris Nave is the Founding Partner and Managing Director of Brandon Capital. Chris was previously the Director of Commercialisation at the Baker IDI Heart and Diabetes Institute, Melbourne, Australia. Prior to this, Chris was the Manager of the Biotechnology Team at Melbourne Ventures, the commercialisation company of the University of Melbourne. Concurrently he was an Investment Manager for, and on the investment committee of, Uniseed Pty Ltd. Chris has international experience working for the business development group of Leiras Pharmaceuticals in Finland, a wholly owned subsidiary of Schering AG. Chris is currently a director of Azura Ophthalmics, Certa Therapeutics, PKG Health (Global Kinetics), OccuRx, Osprey Medical, PolyActiva and Que Oncology. He is also an advisory board member for The WILD Program. Chris was the former Chairperson of Fibrotech Therapeutics (acquired by Shire in 2014) and a former director of Spinifex Pharmaceuticals (acquired by Novartis in 2015).

Vicky Stavroulakis

Founder & Chief Executive Officer, PintarHealthConnect

Vicky Stavroulakis is the Founder and leader of PintarHealthConnect, a boutique marketing and commercialisation company. A company that has attracted some of the most curious and innovative minds in healthcare. Vicky's experience spans 25+ years in healthcare and life science. She has worked in numerous commercial and senior roles for companies such as Boehringer Ingelheim, Sanofi, Allergan, Mylan (nee Viatris), South Eastern Area Health Service, and, more recently, as the founder and CEO of PintarHealthConnect. Her experience includes creating customer-centric solutions and innovations in healthcare that have attracted numerous industry awards. PintarHealthConnect is a company on a mission to solve challenging healthcare business challenges, through its proprietary innovative and entrepreneurial approach. With a genuine customer centric, Pintar Health has successfully partnered with Australian and overseas companies in re-establishing mature brands, and in launching new MedTech/Ai and pharmaceuticals, using a carefully crafted mix of commercial, regulatory, and medical solutions.

Notes

Invest
in groundbreaking ideas
to make a difference to heart health
in Australia and beyond.

Who we are

For over 60 years, the Heart Foundation has been the trusted peak body working to improve heart disease prevention, detection and support for all Australians.

Whilst our work has had a major impact on the survival rates of those suffering a heart attack and those living with heart disease, we will not be satisfied until it is completely eradicated.

To help us realise our vision of an Australia free of heart disease, we continue to harness the energy and intellect of Australia's best minds, and combine this with the teamwork and passion of our supporters and the generosity of millions of Australians by:

- Funding high-impact research, supporting both emerging and leading heart health researchers
- Advocating to governments and industry for increased funding and resources for heart health
- Building community awareness about living a heart-healthy lifestyle through public health awareness campaigns, accessible information and resources
- Supporting health professionals in their work to prevent, diagnose, treat and manage heart disease

heartfoundation.org.au

Heart Foundation

Contact us

e. catalyst@heartfoundation.org.au

t. 13 11 12

For more information about the Catalyst Partnership Grants, including information about the Twenty of the Best, please visit **heartfoundation.org.au/catalyst**

Like to **speak directly** with one of the catalyst finalists?

Book a 1:1 conversation with them now

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