

Research at Ramsay Impact Report 2022-2023



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Welcome from the Chair – Professor Sir Edward Byrne AC

Australia boasts abundant healthcare expertise and infrastructure, yet disparities in how individuals access care continue. Social determinants significantly affect our well-being.

As the Chair of the Ramsay Hospital Research Foundation (RHRF), I am committed to ensuring that every Australian has an equal opportunity to lead a healthy life.

Our mission is clear: to achieve better health outcomes and more equitable healthcare through innovative research, with a strong focus on social determinants of health.

During the 2022-23 period, the RHRF Board reviewed over 50 applications for funding and supported the establishment of 6 diverse research projects. Witnessing the enthusiasm and scope of research development within Ramsay Hospitals and collaboration with external research organisations has been rewarding.

I extend my gratitude to my fellow Directors for their unwavering support – Ms Carmel Monaghan, Dr Robert Herkes, Professor Sally Redman AO, Professor John Horvath AO, Scientia Professor Helen Christensen AO, Professor Cheryl Jones, and Ms Jennifer Samson.

I commend the leadership and dedication of our CEO, Ms Nicola Ware, and her team, whose hard work has driven RHRF's continued prosperity.

I am grateful to the Paul Ramsay Foundation for their unwavering support, enabling us to deliver an extensive research program benefiting patients.

I would also like to extend my thanks to Mr Craig McNally and the Ramsay Health Care board for their ongoing support of the development of outstanding research embedded in Ramsay's operations.

This year, we celebrate Ramsay Hospital Research Foundation's remarkable achievements, from groundbreaking clinical trials to innovative healthcare approaches. Our researchers exemplify dedication and passion, which have culminated in research excellence.

I extend my gratitude to our researchers, partners, and supporters who have made our progress possible. Your unwavering commitment to the Ramsay Hospital Research Foundation is commendable, and I eagerly anticipate our future achievements.

Warm regards,

Professor Sir Ed Byrne AC FMedSci

Chair, Ramsay Hospital Research Foundation
Group Chief Medical Officer, Ramsay Health Care



Welcome from the CEO — Ms Nicola Ware

I'm delighted to share our annual Impact Report with you, a testament to the progress we've made at the Ramsay Hospital Research Foundation (RHRF) since its inception.

As we reflect on the past twelve months, we are reminded of the incredible dedication and unwavering commitment of our team, our researchers, and our hospitals. It is wonderful to see the reach of RHRF expand and to see the growth of research activity within Ramsay Health Care as a result of the work undertaken by RHRF.

RHRF is not just an organisation; it's a collaborative force for positive change in healthcare. This year, we've witnessed the power of unity as we rallied around our mission to break the cycle of disadvantage, improve patient outcomes, and address critical social determinants of health.

Our Translational Challenge Grant stream has been a pillar of innovation, supporting research projects that tackle some of the most pressing issues in healthcare. We've fostered partnerships, explored new avenues of research, and embraced the potential for transformative change.

Our commitment to the future extends beyond research, with a keen focus on learning, sharing, and partnering. We've grown, adapted, and nurtured a culture of progress, thanks to our diverse range of projects and collaborations that continue to drive the organisation forward.

None of this could be achieved without the amazing team of people who support the day-to-day operations of the Foundation, the Clinical Trials Network, and the research activities within Ramsay. I am incredibly grateful to the amazing team that I have whose dedication and hard work has led to the continuous growth and development of our research.

I would also like to acknowledge the unwavering support and contributions of the RHRF Board of Directors. In particular, their contributions on our broader strategy and how we position RHRF to meaningfully address key social determinants of health in women, regional & rural populations, and in populations aged over 60 has been invaluable.

We look forward to expanding our impact, further nurturing partnerships, and pushing the boundaries of healthcare research. We welcome your support and involvement in this exciting journey ahead.

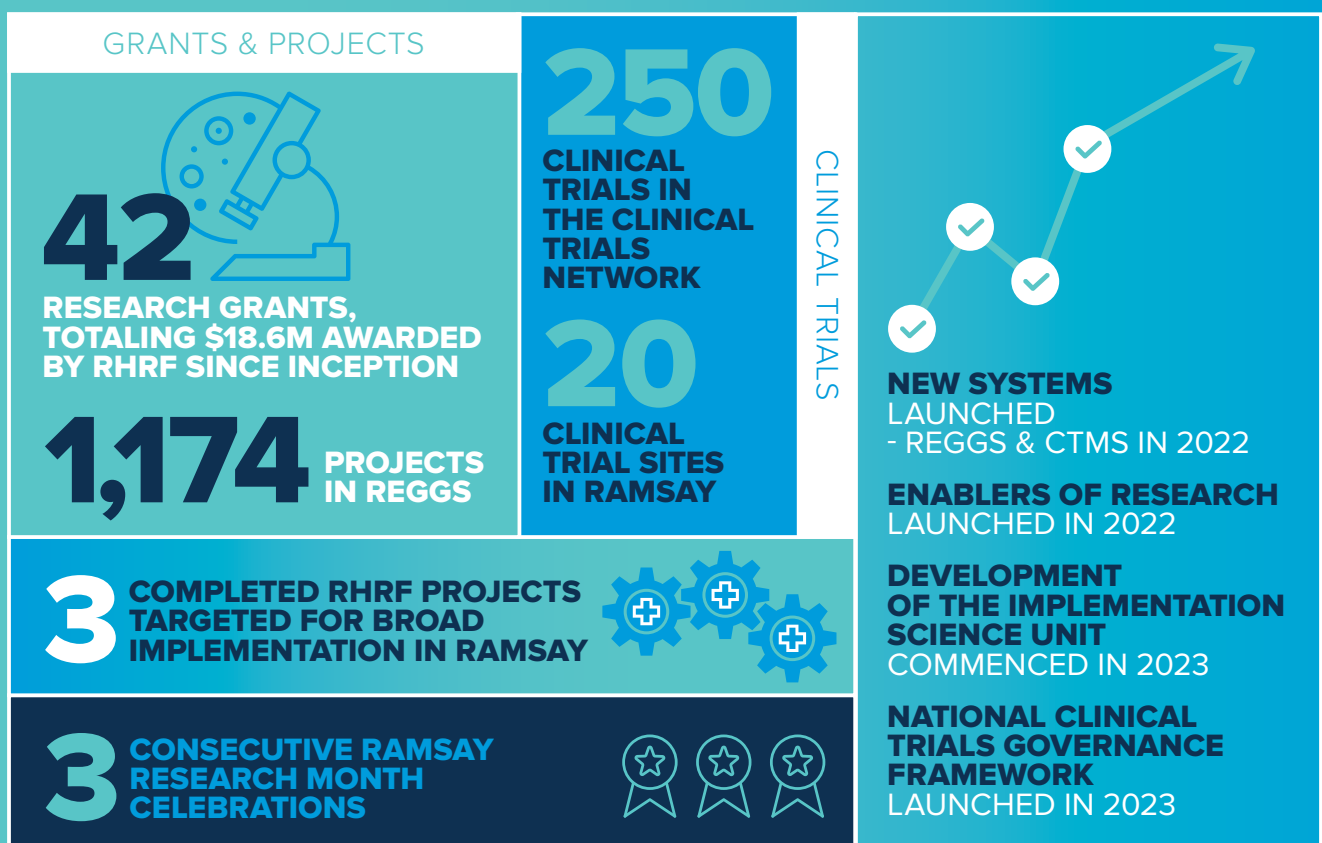
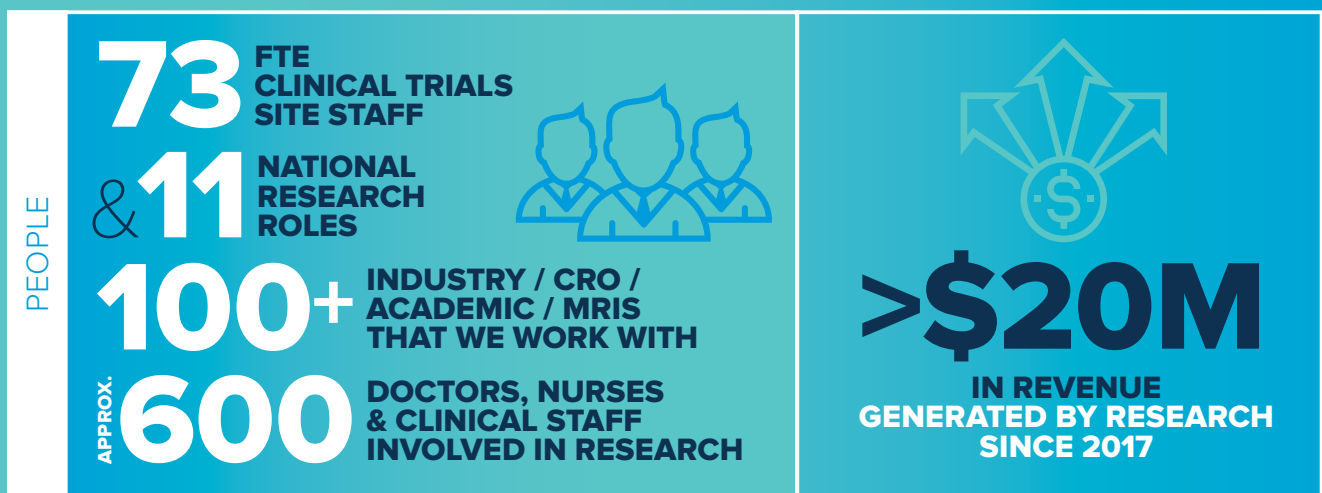
Warm regards,

Nicola Ware

CEO, Ramsay Hospital Research Foundation
Head of Research, Innovation & Integrated Care



Research at Ramsay – The Past Five Years



Introduction to research at RHRF



Ramsay Hospital Research Foundation (RHRF) is proud to play a leading role in Australia's health and medical research sector.

In 2021, we launched an extensive new grants program, made possible by the support of the Paul Ramsay Foundation.

Since inception, we have supported 43 projects to date, 16 which have been completed and 27 still in progress.

► With up to \$4 million in funding available every year over a five-year period, our grants program aims to make a meaningful difference, particularly in the lives of people living with disadvantage, by challenging the social, environmental, and societal factors that have driven health inequities of the past.

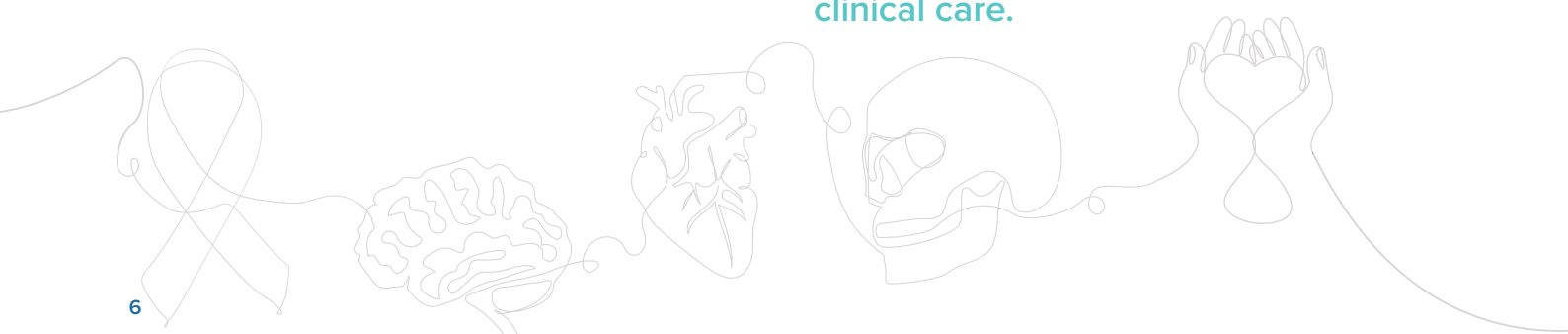
RHRF offers two grant opportunities for researchers: The **Collaborative Research Request (CRR)** grant round and the **Translational Challenge Grant (TCG)** round. Both rounds offer opportunities for innovative, impactful and life changing research to be awarded funding and be implemented into clinical practice and advance patient outcomes.

More recently, RHRF has focused on funding research that addresses social determinants of health covering the following focus areas:

- **Education**
- **Socioeconomic status**
- **Lifestyle Risk Factors**
- **Environment**

By funding research that addresses these social determinants of health, we aim to reduce health inequalities amongst patients and advance meaningful and focused care.

► RHRF supports 100 researchers and 29 entities to undertake key research in four key focus areas of clinical care: **Cancer, Mental Health, Musculoskeletal Injury and Cardiovascular Disease**. Other clinical areas have also been funded and will continue to be funded in the future if they align with Ramsay Healthcare and RHRF strategies with a particularly innovative approach to advancing patient outcomes and clinical care.



An overhead, high-angle shot of four medical professionals in a clinical setting. They are wearing light blue scrubs. One man on the left is wearing glasses and has a stethoscope around his neck. They are gathered around a table, looking at several sheets of paper and a tablet. The image has a blue color overlay and a diagonal split.

Our Funded Research

Newly Funded Grants



Brain Cancer Registry: Australian Brain Cancer Registry Project

“We’re building the Registry to deliver equitable care for all Australian brain cancer patients, regardless of where they live across the country”. (BCBA Founder)

Project Title	Brain Cancer Registry: Australian Brain Cancer Registry Project	
Chief Investigator	Associate Professor Rosalind L. Jeffree	
Organisation	University of Sydney & Brain Cancer Biobanking Australia	
Investigative Team	Brain Cancer Biobanking Australia Cancer Alliance Queensland Australian eHealth Research Centre, CSIRO	
Clinical Area(s)	Cancer	
Site(s)	<ul style="list-style-type: none"> • Canberra Hospital • Westmead Private Hospital • North Shore Private Hospital • John Hunter Hospital • Royal Prince Alfred Hospital • Westmead Hospital • Liverpool Hospital • Lake Macquarie Private Hospital • Royal Melbourne Hospital • Royal Brisbane and Women’s Hospital • Greenslopes Private Hospital • Princess Alexandra • Flinders Medical Centre • Royal Hobart Hospital • Sir Charles Gairdner 	

Amount Awarded: \$400,000	Date Grant Awarded: 15/12/2021	Date of Expected Completion: 03/09/2025
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Project Overview	Brain cancer is a significant issue in Australia, with limited survival rate improvements and no new treatments on the horizon. The project aims to incorporate electronically acquired clinical data from private hospitals into the Australian Brain Cancer Registry (ABCR). Ramsay Health Care’s role includes establishing ethics and governance for data collection, advising on data extraction processes, providing clinical data for Brain Cancer Clinical Quality Indicators, and reviewing the information.
Why is this research important?	Ramsay Health Care’s participation in this national initiative identifies the organisation as a key player in brain cancer care, demonstrating a commitment to quality improvement and clinical excellence. There is considerable variation in brain cancer care across Australia, and the ABCR aims to address this through data collection, led by Brain Cancer Biobanking Australia (BCBA). Registry reporting has proven to improve care and survival in other areas, and similar benefits are expected for brain cancer patients through the ABCR. It will enhance awareness of best practices, changes in management protocols, and staff behaviour, leading to better patient outcomes and reduced healthcare costs.
How will this research impact patient care?	By optimizing the use of existing treatments and reducing unwarranted variation in care, patient outcomes can be enhanced. The ABCR has the potential to revolutionize brain cancer treatment by facilitating clinical trials, making them more cost-effective and quickly implementable. It also supports translational research by linking patient care data with molecular data from biospecimens, potentially leading to breakthroughs in brain cancer treatment. The project’s expected outcomes include identifying indicators for improved data collection and reporting, encouraging necessary changes by governments and stakeholders.

Achievements	<ul style="list-style-type: none"> ▶ 48 collaborating investigators ▶ 13 partner organisations ▶ 10 supporting specialist and consumer groups
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DrumBeat.ai: Addressing Paediatric Indigenous Ear Disease in Rural and Remote Australia Using Artificial Intelligence

“DrumBeat.ai provides valuable triage information, allowing us to make informed decisions about patient care. The clear and intuitive interface can improve our diagnostic capabilities and gives us more confidence in our assessments.”

Project Title	DrumBeat.ai: Addressing Paediatric Indigenous Ear Disease in Rural and Remote Australia Using Artificial Intelligence.	
Chief Investigator	Associate Professor Narinder Singh	
Organisation	University of Sydney & Western Sydney University	
Investigative Team	Dr Al-Rahim Habib	
Clinical Area(s)	Ear Disease & Hearing Loss	
Determinant of Health	Social Determinants of Health	
Site(s)	<ul style="list-style-type: none"> • Westmead Private • Greenslopes • Cairns Private • Joondalup Health Campus • Deadly Ears Program • Queensland Health • Royal Darwin Hospital • Westmead Hospital • Hearing Australia 	

Amount Awarded:
\$400,000

Date Grant Awarded:
21/06/2023

Date of Expected Completion:
30/03/2028

Project Overview

This project focuses on addressing the urgent public health crisis of ear disease in Aboriginal and Torres Strait Islander children, particularly in rural and remote areas of Australia. Ear infections in these children often lead to long-term hearing loss, affecting speech and language development, academic performance, social skills and job prospects. Access to Ear, Nose, and Throat (ENT) specialists is limited in these areas, and telehealth relies on frontline healthcare workers to perform ear examinations and relay findings to specialists, resulting in delays and missed treatment opportunities. To bridge this gap, the project has developed an artificial intelligence (AI) algorithm to instantly triage ear disease and detect hearing loss at the point of data capture, assisting healthcare workers with limited experience.

Why is this research important?

The prevalence of ear disease in Indigenous children is significantly higher than in non-Indigenous populations, with remote Indigenous children being particularly vulnerable. Long-term hearing loss can impact various aspects of their lives, including speech development, academic performance, behaviour, social skills, and employment opportunities.

How will this research impact patient care?

The project's primary goal is to mitigate the lifelong consequences of childhood ear disease in rural and remote Indigenous children. By deploying an AI algorithm, it enables immediate triage and diagnosis of ear disease at the point of patient interaction. This real-time assessment reduces delays in treatment, preventing further morbidity. In addition to improving the health outcomes of Indigenous children, the technology can have secondary benefits, potentially being utilised in primary care and hospital emergency departments for all Australians. The project also plans to integrate the algorithm into the existing workflow of telemedicine services in New South Wales, Queensland, and the Northern Territory. Successful completion of the project may lead to the widespread adoption of this technology in 1 to 2 years.

Achievements

- **Keynote presentations at the 2023 International Federation of Otorhinolaryngology Societies (IFOS) annual scientific meeting and the 2023 AI Summit in London.**
- **Winner of the 2022 Artificial Intelligence in Medicine (AIMed) Global Summit research competition in San Francisco, California, USA.**
- **Winner of the 2022 Australian Society of Otolaryngology Head and Neck Surgery research competition in Adelaide, South Australia.**

The MOMENTUM Project: Maternal outcomes in mental health after birth



Project Title	The MOMENTUM Project: Maternal outcomes in mental health after birth.	
Chief Investigator	Professor Meaghan O'Donnell	
Organisation	Phoenix Australia – Centre for Posttraumatic Mental Health	
Investigative Team	Dr Vijaya Lakshmi Karanam Professor Malcom Hopwood Dr Winnie Lau Professor Susan Walker Dr Gaynor Blankley Dr Josephine Power	Dr Catherine Lazaroo Dr Neelofar Rehman Deborah Pidd Jemma Binney Amy Dawes
Clinical Area(s)	Mental Health	
Determinant of Health	Health Literacy Social Determinants of Health	
Site(s)	<ul style="list-style-type: none"> • Frances Perry House • Mercy Hospital for Women • Phoenix Australia University of Melbourne 	

Amount Awarded: \$400,000	Date Grant Awarded: 21/06/2023	Date of Expected Completion: 31/07/2027
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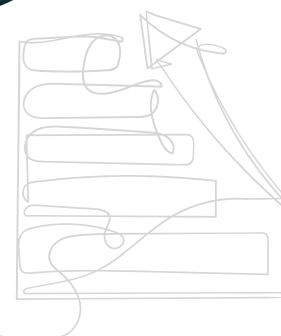
Project Overview This new project aims to address the issue of Posttraumatic Stress Disorder (PTSD) in women following childbirth, a condition that affects approximately 6% - 18% of women. It seeks to develop a predictive screening tool to identify women at risk of developing PTSD after giving birth. This tool will assess pre, peri, and post-birth risk factors and provide insights into the mother's perspective on her birth experience. The goal is to create a self-report screen that is simple to administer and can be used across maternity and hospital settings.

Why is this research important? PTSD following childbirth is often under-recognized and undertreated, leading to long-term negative effects on mothers and their infants. Current diagnostic screens for PTSD are not suitable for the immediate post-birth period when symptoms may not yet be present. This project aims to develop a proactive and preventive approach to identifying women at risk shortly after birth, enabling earlier intervention and support. By doing so, it addresses a significant gap in maternal mental health care, improving outcomes for vulnerable women following childbirth.

How will this research impact patient care? The development of a predictive post-natal PTSD screening instrument will allow maternity health care professionals to identify, monitor, and treat women at risk of postnatal PTSD. This early awareness and active screening can prevent the development of post-natal PTSD and provide timely treatment to those affected. The project also highlights the importance of addressing PTSD following birth, raising awareness of this under recognised experience in maternal health. Additionally, it can benefit marginalized populations who face higher risk, helping to reduce healthcare inequalities. Ultimately, this multi-disciplinary driven project comprising perinatal mental health, obstetric, midwifery and lived experience aims to enhance the care and support offered to women after childbirth, improving their mental health and well-being.

- Achievements**
- ▶ Development of the latest International WHO Guidelines for the treatment of PTSD.
 - ▶ Initiation of Victoria's first Statewide Trauma Service co-led and designed with Lived Experience following Victoria's Royal Commission into Mental Health.
 - ▶ Establishment of a traumatic stress clinic designed to provide access to gold standard and cutting-edge new treatments for PTSD and complex PTSD.

RICH: Rehabilitation in the Community and Hospital Outpatient Setting



Project Title	RICH: Rehabilitation in the Community and Hospital Outpatient Setting.
Chief Investigator	Ms Tara Alexander
Organisation	University of Wollongong
Investigative Team	Claire Stewart Ross Clifton
Clinical Area(s)	Rehabilitation
Determinant of Health	Social Determinants of Health
Site(s)	<ul style="list-style-type: none"> Over 30 public and private sites

Amount Awarded: \$400,000	Date Grant Awarded: 21/06/2023	Date of Expected Completion: 31/03/2028
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Project Overview The RICH project aims to establish a national data collection system for ambulatory rehabilitation services based on condition. This initiative will encompass both Ramsay ancillary rehabilitation providers and various private and public ancillary rehabilitation providers across Australia and New Zealand. The project builds upon Ramsay's leadership in delivering rehabilitation services and the existing Ramsay rehabilitation outcomes measures, as well as the Australasian Rehabilitation Outcomes Centre's (AROC) leadership in rehabilitation outcome benchmarking and the existing AROC ambulatory data collection. Collaboration between Ramsay and AROC strengthens the project's foundation.

Why is this research important? Rehabilitation is a crucial element in healthcare, spanning various medical areas such as cancer, mental health, cardiovascular disease, orthopaedic surgery, and musculoskeletal injuries. The RICH project addresses the need for equity in rehabilitation care, particularly for socially disadvantaged groups, indigenous populations, and individuals in rural or remote areas. By establishing a national benchmarking system and expanding the scope of current ambulatory rehabilitation outcome measures, the project seeks to be able to measure, and therefore improve, people's health outcomes and provide targeted reports to decision-makers and advocacy groups, which in turn can lead to reduced disparities in healthcare.

How will this research impact patient care? The RICH project's primary focus is on creating a national data collection system to measure ambulatory service provision. Utilising the Health Learning Systems (LHS) approach, it will establish national benchmarks for patient outcomes based on specific conditions. This data-driven approach enables equitable improvements in healthcare outcomes and can benefit socially disadvantaged populations, including those typically treated in the public sector. Quality Improvement Facilitators (QIFs) will play a crucial role in engaging with clinicians at multiple levels of the health system to implement improvements in patient care and outcomes. The project also aims to assess potential inequities in rehabilitation access and evaluate the impact of new technologies like telehealth.

Heart Failure: Improving communication to enhance patients' health literacy, empowerment & self-management of heart failure



Project Title	Heart Failure: Improving communication to enhance patients' health literacy, empowerment & self-management of heart failure.
Chief Investigator	Professor Diana Slade and Professor Chris Etherton-Beer
Organisation	Australian National University
Investigative Team	Dr Rosemary Saunders Liza Goncharov
Clinical Area(s)	Cardiovascular
Site(s)	<ul style="list-style-type: none"> • The Canberra Hospital (ACT) • Hollywood Private Hospital (WA)

Amount Awarded:
\$726,146

Date Grant Awarded:
06/09/2021

Date of Expected Completion:
30/11/2026

Project Overview

Heart failure (HF) is a prevalent chronic cardiovascular condition affecting around 476,000 Australians. Vulnerable populations, including those with economic disadvantage and lower health literacy and empowerment, experience higher rates of HF and related hospitalisations, coupled with lower rates of evidence-based treatment. This project aims to measure patients' health literacy, empowerment, quality of life, and HF knowledge at different points in their care journey and develop communication interventions for both patients and clinicians to enhance health literacy and self-management.

Why is this research important?

Chronic diseases are a significant burden on individuals and healthcare systems. Self-managing diet, lifestyle and medication can slow the progress of HF, yet only 25-50% of those diagnosed live longer than five years, suggesting many Australians face barriers to self-managing their condition. To self-manage effectively, people need the communication skills to source, understand, evaluate and apply knowledge about their condition (health literacy) and the motivation and confidence to accept shared responsibility for their care (empowerment). The improvements for the patient population will result from enhanced self-management associated with improved health literacy and empowerment, and successful implementation of better communication and management processes in HF care.

How will this research impact patient care?

By assessing health literacy and tracking patient experiences, this research will develop evidence-based communication interventions, including strategies, tools, and protocols, for both patients and clinicians. These interventions aim to enhance patient safety, satisfaction, and agency, reduce risks, and decrease economic burdens associated with HF care. The project's impact extends beyond HF, as the methodology can be applied to improve communication strategies for other chronic diseases.



Our Funded Research

Ongoing Projects



CNS Dose: Pharmacogenetics for Severe Mood Disorders: A Randomised Controlled Trial

“Patients have reported feeling privileged to be included in the study.”

Project Title	CNS Dose: Pharmacogenetics for Severe Mood Disorders: A Randomised Controlled Trial.
Chief Investigator	Professor Malcolm Hopwood
Organisation	University of Melbourne
Investigative Team	Melanie Hurley Angela Komiti Marta Villen Jordan Chapman
Clinical Area(s)	Mental Health
Site(s)	• Ramsay Clinic Albert Road

Amount Awarded:
\$762,216

Date Grant Awarded:
01/04/2019

Date of Expected Completion:
30/06/2026

Project Overview

Major depression (MDD) and bipolar disorder (BD) are highly prevalent and disabling conditions in Australia, affecting a significant portion of the population. Current treatment outcomes for these disorders, including the effectiveness of antidepressants for MDD, are often suboptimal. One key factor contributing to variable treatment outcomes is the genetic variability in how medications are transported and metabolized in the body, which can impact the required medication dose for a positive response. To address this, research has focused on identifying genetic markers that can help determine treatment response and appropriate medication dosages for individuals with MDD and BD.

Why is this research important?

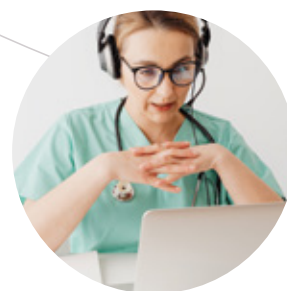
Improving treatment outcomes for mood disorders like MDD and BD is essential to alleviate the substantial burden these conditions place on individuals and society. Identifying genetic markers that influence medication response holds promise for tailoring treatments to individual needs, potentially increasing remission rates and reducing the impact of these disorders.

How will this research impact patient care?

The project utilises a genetic test developed by CNS Dose, which assesses variations in 16 genes associated with the body's transportation and metabolism of antidepressant medications. By simply using a cheek swab, this test can identify biomarkers in an individual's genes, helping doctors make more informed decisions about which antidepressant medications are likely to be effective for that person. The study aims to further evaluate the utility of this genetic test, known as Amplis – EVO™ Mental Health, in guiding treatment decisions for severe mood disorders. Additionally, the study provides valuable information for policymakers to inform changes in the treatment of these disorders. By tailoring treatments based on an individual's genetic profile, healthcare providers can optimize care and potentially reduce the burden of these debilitating disorders.

Achievements

- ▶ **198 participants recruited.**
- ▶ **75% of patients introduced to the study have now been enrolled (63% female, 37% male).**
- ▶ **8% dropout rate.**
- ▶ **35% of recruitment target completed.**



eCLiPSE: Enhancing social inclusion through the implementation of evidence-based digital health interventions for mental health and alcohol/other drug use problems in the wake of COVID-19.

“eCLiPSE holds a lot of promise in being able to transform the way we all seek and access support for our mental health and wellbeing. Our research shows that the programs in eCLiPSE help just as much and in a similar way to traditional therapy provided in traditional ways.”

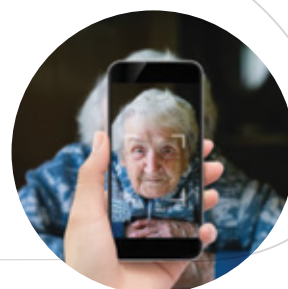
Professor Frances Kay-Lambkin (CEO of HMRI and co-developer of eCLiPSE)

Project Title	eCLiPSE: Enhancing social inclusion through the implementation of evidence-based digital health interventions for mental health and alcohol/other drug use problems in the wake of COVID-19.
Chief Investigator	Professor Frances Kay Lambkin
Organisation	University of Newcastle
Investigative Team	Jane Rich Dara Sampson Louise Thornton Milena Heinsch Kate Filia Brian Kelly Alan Weiss Murray Wright Danielle Simonnette Maree Teesson
Clinical Area(s)	Mental Health
Site(s)	<ul style="list-style-type: none"> • Warners Bay Private Hospital • Northside Clinic St Leonards • NSW Ramsay Psychology Clinics

Amount Awarded: \$734,892	Date Grant Awarded: 26/04/2022	Date of Expected Completion: 30/11/2025
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Project Overview	Mental illness is a pressing health concern in Australia, particularly exacerbated by the COVID-19 pandemic. A significant number of Australians seek assistance for mental health conditions, including digital interventions and crisis support. However, the mental health sector faces workforce shortages, posing challenges in meeting the increasing demand for services. While digital tools hold promises in enhancing mental health treatment, they are currently underutilized. This research project focuses on eCLiPSE, an online portal developed by the investigators, which offers easy access to mental health services, online screening tools, digital treatments, and other resources for individuals dealing with mental health and substance abuse issues.
Why is this research important?	The pandemic has intensified the need for accessible mental health services. Digital tools have the potential to extend mental health services and support patients more effectively. Understanding the impact of social determinants of health on access to these digital solutions is crucial for addressing disparities in mental health care.
How will this research impact patient care?	This project aligns with the increasing interest in utilising digital solutions to extend mental health services, especially in the context of rising mental health conditions. By leveraging activities in the public sector and through collaboration with various entities, including Ramsay Health Care, the research seeks to expand capacity and capability in this field.
Achievements	<p>► Implementation of eCLiPSE portal across Ramsay NSW is designed to reach 1500 service users across all Ramsay Psychology Services Team is currently designing an engagement strategy.</p>

Frailty: Optimising outcomes for frail hospitalised older adults



“The point prevalence study found that 26.7% of patients were frail, 68.1% were experiencing current pain and 81.3% experienced pain in the last 24 hours.”

Project Title	Frailty: Optimising outcomes for frail hospitalised older adults - volunteer support and pain assessment interventions: A cluster randomised control trial.	
Chief Investigator	Associate Professor Rosemary Saunders	
Organisation	Edith Cowan University	
Investigative Team	Dr Kate Crookes Professor Christopher Etherton-Beer Emeritus Professor Jeff Hughes Professor Caroline Bulsara Dr Olivia Gallagher Professor Max Bulsara Dr Kaoru Nosaka	Associate Professor Bev Ewens Professor Bev O'Connell Ms Karen Gullick Ms Sue Haydon Dr Kim-Huong Nguyen Dr Karla Seaman Dr Marcus Ang
Clinical Area(s)	Frailty Pain Assessment Volunteer Support	
Site(s)	<ul style="list-style-type: none"> Hollywood Private Hospital 	

Amount Awarded:
\$734,070

Date Grant Awarded:
02/12/2019

Date of Expected Completion:
30/01/2024

Project Overview

Australia's aging population presents a growing challenge for healthcare services, as aging is closely linked with frailty. With the number of Australians aged 65 and over projected to increase significantly by 2057, addressing frailty becomes crucial. Frailty is associated with adverse outcomes like falls, fractures, functional dependence, complications during hospitalisation, and increased mortality. Moreover, frailty is often linked to inadequate pain assessment and management, particularly in older adults with cognitive impairments. This project seeks to evaluate the effectiveness of nurse-led volunteer support and technology-driven pain assessment, specifically the PainChek® Universal app, compared to standard care, in improving frailty and clinical outcomes in older adults during and after hospitalisation.

Why is this research important?

Enhance care delivery for the vulnerable aging demographic is critical: as the population ages and frailty becomes more prevalent, it's essential for hospitals to have effective processes for identifying frailty and assessing and managing pain in older adults.

How will this research impact patient care?

The study evaluates the impact of nurse-led volunteer support and technology-driven pain assessment on frailty and clinical outcomes. The PainChek® Universal app uses facial recognition technology and checklists to assess pain in patients unable to self-report using traditional scales, particularly those with cognitive impairments. The project's findings may lead to improvements in pain management and the prevention of frailty progression among older adults during and after hospitalisation.

Achievements

- **Developed and implemented a volunteer support program for hospitalised older adults include a novel volunteer support care plan, volunteer and staff training program. Recruited and trained 60 volunteers who delivered approximately 2700 hours of support to patients between March 2021 and January 2022.**
- **Ran the cluster randomised control study across four wards during pandemic conditions recruiting 423 patients. The final sample after exclusion of 323 participants is currently being analysed.**

Genes, cLinical Assessment and Depression (GLAD study)



“This study has shown that it is possible to undertake high quality mental health research studies in Ramsay Mental Health Clinics such as Ramsay Clinic Northside. It is not possible to recruit large numbers of depressed inpatients in the public sector.”

Project Title	Genes, cLinical Assessment and Depression (GLAD study): Testing risk genes in conjunction with clinical characteristics to develop a clinically applicable algorithm for predicting outcomes in patients with depression.
Chief Investigator	Scientia Professor Philip Mitchell AM, FAHMS, FASSA
Organisation	University of New South Wales & Ramsay Clinic Northside
Investigative Team	Philippa Boss Sarah-Jane Hall A/Professor Janice Fullerton (Molecular Geneticist at Neuroscience Research Australia)
Clinical Area(s)	Mental Health
Site(s)	<ul style="list-style-type: none"> • Ramsay Clinic Northside • Ramsay Clinic Cremorne

Amount Awarded: \$678,994	Date Grant Awarded: 25/06/2018	Date of Expected Completion: 30/06/2024
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Project Overview	Major depressive disorder (MDD) and bipolar disorder (BD) are highly prevalent and disabling conditions. Our current capacity to predict outcome for individuals suffering depressive episodes is limited. A major and tractable means of improving our capacity to predict outcome of depressive episodes would be to incorporate an individual's genomic information in relation to their genetic risk for these conditions, in conjunction with historical clinical features. The GLAD study will explore the use of polygenic risk scores (PRS) for MDD and BD in conjunction with relevant clinical features to predict outcome in patients with MDD and bipolar depression.
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Why is this research important?	There is a need for tests that will improve prediction of outcome, enabling a more rational approach to treatment choice. The risk genes for MDD and BD, and the genetic determinants of treatment response are now being identified. It is now apparent that specific molecular genetic risk factors are significantly involved in determining response to psychotropic medications. Multiple genome-wide significant genetic risk loci for MDD and BD have been identified. Many of the MDD genes identified are targets of antidepressants. Therefore, it is possible that assessment of multiple risk alleles using PRS in conjunction with relevant clinical characteristics may determine outcome in patients with MDD and bipolar depression. As a result, this would allow for more rational choice of treatments for these severe and disabling mood disorders.
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How will this research impact patient care?	The GLAD study will clarify if assessment of polygenic risk scores (PRS) in conjunction with relevant clinical characteristics (e.g., melancholic features, psychotic features, family history, comorbid anxiety and/or substance use, and comorbid physical illness) assists clinically in the prediction of outcome for patients with MDD and bipolar depression. If the resulting algorithms are found to be significant predictors of outcome, this project will enable more rational treatment decision making for clinicians treating acutely depressed patients and improve both prognosis and treatment outcome.
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Achievements	<ul style="list-style-type: none"> ➤ 452 participants enrolled. ➤ 252 samples have been successfully genotyped to date by the Australian Genome Research Facility (AGRF). ➤ The study was extended to Ramsay Clinic Cremorne and 3 other units at Ramsay Clinic Northside (e.g., Mood Disorders, Adolescent, and General Mental Health).
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Mental Health and the Early Loss of a Pregnancy (M-HELP)

“Despite knowing how common early pregnancy loss was, when it happened to me, I felt blindsided. I was pleased to be able to participate in the research project that led to the development of this booklet, with the hope that sharing my experience, including the type of information and clarity that I sought at the time, may lead to other women and partners feeling more supported when faced with their own loss.”

Project Title	Mental Health and the Early Loss of a Pregnancy (M-HELP): an in-tervention to support and guide bereaved parents and their health care providers through the loss.
Chief Investigator	Dr Marjolein Kammers
Organisation	University of Melbourne
Investigative Team	Dr Katrin Gerber Lysha Lee Winn Ma
Clinical Area(s)	Mental Health
Site(s)	• Frances Perry House

Amount Awarded: \$198,919	Date Grant Awarded: 03/06/2020	Date of Expected Completion: 30/11/2024
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Project Overview Every year around 147,000 pregnancies in Australia end in early loss. While early pregnancy loss is often seen as a routine medical procedure, it often has profound emotional and psychological effects on both women and their partners. These impacts can include clinical depression, anxiety, and post-traumatic stress disorder but these are often under-acknowledged by healthcare providers. Importantly, the healthcare providers themselves report a lack of confidence and training in providing appropriate emotional care around EPL. This project addresses these gaps by identifying what constitutes optimal emotional care after EPL from all different perspectives, developing written resources for patients and partners that meets their needs, and training material to empower the healthcare providers who provide this important care.

Why is this research important? Early pregnancy loss is a common yet emotionally challenging experience, and the psychological distress it causes is often underestimated. This project recognizes the need to support patients and partners through this difficult journey, as well as the need to support and empower their healthcare providers to provide emotional care in addition to medical management.

How will this research impact patient care? The M-HELP project has created valuable resources for patients, partners, and healthcare providers. An Early Pregnancy Loss Support Booklet has been developed, offering comprehensive information on medical and emotional care for patients and partners, individually tailored to their needs. Additionally, a staff eLearning Training Module has been created to educate healthcare providers about the emotional care needs of individuals experiencing early pregnancy loss. These resources aim to empower and support all parties involved, ultimately improving the emotional well-being of patients and partners, and increasing the confidence and competence of their healthcare providers. By addressing the emotional impact of early pregnancy loss and ensuring that healthcare providers are equipped to provide compassionate and individualised care, this project has the potential to significantly enhance patient experiences and well-being in maternity hospitals across the country.

- Achievements**
- **7 additional maternity hospitals have expressed interest in joining the study and are currently being added to the project.**
 - **Preliminary analysis of healthcare provider's feedback after completing the Training Module shows that it significantly increases their knowledge, skill, and confidence when providing emotional care around early pregnancy loss.**
 - **This is the first study in a private maternity hospital setting as well as the first study that has interviewed different parties within one setting to create a comprehensive understanding of best possible early pregnancy loss care from all different perspectives.**



Cohort investigation of women admitted with their infants or toddlers

“The assistance from the nurses was great and very much appreciated. Thank you for giving me the tools for when I go home.”

Project Title	Cohort investigation of women admitted with their infants or toddlers to Masada Private Hospital Early Parenting Centre to identify indicators of immediate and medium-term program impact.
Chief Investigator	Monash University
Organisation	University of Melbourne
Investigative Team	Karin Stanzel Thach Tran Hau Nguyen Patsy Thean Danielle French Sally Popplestone

Clinical Area(s) Mental Health
Children

Site(s) • Masada Private Hospital Early Parenting Centre

Amount Awarded: \$506,434	Date Grant Awarded: 04/03/2020	Date of Expected Completion: 12/12/2023
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Project Overview Postnatal mental health problems are a significant concern in Australia, affecting approximately 15% of women in the year after giving birth. These conditions can influence the care mothers provide to their infants or toddlers, potentially affecting the social and emotional development of the child. Unsettled infant behaviours, including sleep disturbances are common and can contribute to maternal mental health problems. This project aims to gather data contributed routinely by women and their infants or toddlers admitted to the Masada Private Hospital Early Parenting Centre, to identify factors associated with short and medium-term impact of the program on women’s psychological functioning and infant behaviours. These data will inform the benchmarking of current clinical services and provide a basis for the development of enhanced services.

Why is this research important? Postnatal mental health problems and infant sleep disturbances can be long-lasting. First, this research will enable us to describe the social circumstances and psychological characteristics of women and their infants or toddlers who seek care at Masada Early Parenting Centre. Second, it will identify the factors associated with program benefits including improved mental health and more manageable infant behaviour. Third, it will identify the characteristics of women and their children for whom the five-night program is insufficient to treat their problems. All are crucial to inform service extensions and improvements and address a critical gap in knowledge.

How will this research impact patient care? This project found that there were significant improvements in maternal depression, anxiety and fatigue and in infant crying and sleeping behaviours from pre-admission to discharge. The project’s findings suggest that structured psycho-educational residential early parenting programs are highly effective in treating maternal mental health problems and dysregulated infant behaviours. The project demonstrates the feasibility of digitising routinely collected data, enabling better assessment protocols and continuous quality improvement in early parenting and mother-baby psychiatric services. The first long-term goal of this project is to implement this protocol at all Ramsay Healthcare Early Parenting Centres and Mother-Baby Psychiatric Units to benchmark clinical protocols and outcomes.

Plasma Neurofilament Light:

A simple screening blood test to help in the early identification of neurological and neurodegenerative disorders in people with mood and anxiety disorders.



“It’s important to me to feel part of the search for solutions. It helps me feel useful and proactive for my own mental health, to not lose hope, and to feel like my life with all its pain and challenges, is not wasted.”

Project Title	Plasma Neurofilament Light: A simple screening blood test to help in the early identification of neurological and neurodegenerative disorders in people with mood and anxiety disorders.
Chief Investigator	Professor Dennis Velakoulis
Organisation	The Royal Melbourne Hospital
Investigative Team	Professor Malcolm Hopwood Professor Philip Mitchell Dr Dhamidhu Eratne Dr Matthew Kang
Clinical Area(s)	Mental Health
Site(s)	<ul style="list-style-type: none"> • The Royal Melbourne Hospital, Parkville VIC • Ramsay Mental Health Albert Road Clinic, Melbourne VIC • Ramsay Mental Health, Northside Clinic, Sydney NSW

Amount Awarded: \$749,845	Date Grant Awarded: 26/04/2022	Date of Expected Completion: 30/05/2025
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Project Overview	The Markers in the Neuropsychiatric Disorders Study (MiND) aims to transform the care of people with symptoms of the mind and brain, through an accessible blood test that can measure brain health. The project focuses on addressing the diagnostic challenges in distinguishing between mental health disorders, medication-related symptoms, and early signs of neurological conditions. The project’s primary objective is to validate whether neurofilament light (NfL), a blood biomarker released when brain cells are damaged, can assist psychiatrists and healthcare professionals in making this crucial distinction. While elevated NfL levels are established in neurodegenerative disorders, its behavior in individuals with primary psychiatric disorders remains uncertain, despite symptom overlaps. This project, an extension of the MiND Study, endeavors to recruit individuals with primary mood and anxiety disorders in private psychiatric settings to gain a deeper understanding of NfL’s behavior within this population.
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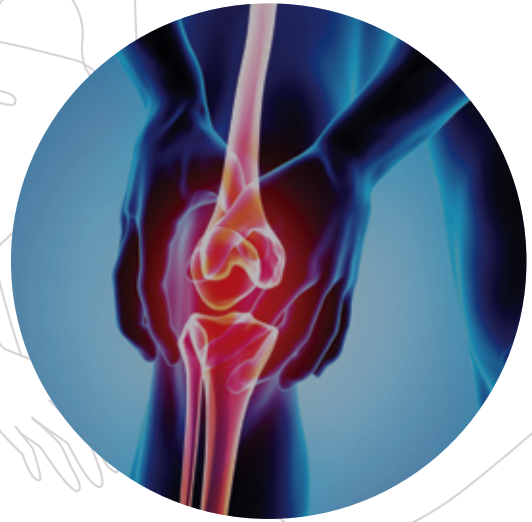
Why is this research important?	Accurate diagnosis in psychiatry is often challenging, and misdiagnosis can have significant consequences for patients and their families. This project addresses the urgent need for reliable blood biomarkers in psychiatry to improve diagnostic accuracy and patient outcomes. By differentiating between psychiatric and neurological disorders, this test could lead to reduced diagnostic delays, improved access to appropriate services, and reduced healthcare costs. It could also help reduce disparities in healthcare outcomes.
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How will this research impact patient care?	The development and implementation of a screening blood test for neuronal injury using NfL can have a transformative impact on patient care. It will aid psychiatrists, general practitioners, and specialists in making quicker and more accurate diagnoses. This will lead to more appropriate investigations, referrals, and treatment strategies, ultimately improving clinical outcomes for patients. Additionally, it has the potential to become a routine health check test, allowing for early interventions and risk reduction. This project has broad implications for the mental health service system, including private psychiatric and specialist mental health hospital settings, and aims to benefit patients across various clinical settings nationally and internationally.
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Achievements	<p>► 300 potential Project Participants</p> <p>► 75% Recruitment Rate</p> <p>► 40 Participants Enrolled</p>
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RASKAL:

Robotic-assisted surgery and kinematic alignment in total knee arthroplasty. A registry-nested, multi-centre, 2 x 2 factorial randomised trial of clinical, functional, radiographic and survivorship outcomes.



Project Title	RASKAL: Robotic-assisted surgery and kinematic alignment in total knee arthroplasty. A registry-nested, multi-centre, 2 x 2 factorial randomised trial of clinical, functional, radiographic and survivorship outcomes.	
Chief Investigator	Dr Samuel MacDessi	
Organisation	Australian Orthopaedic Association	
Investigative Team	Durga Bastiras Khashayar Ghadirinejad Libby Poole	
Clinical Area(s)	Orthopaedic Musculoskeletal	
Site(s)	<ul style="list-style-type: none"> • St George Private Hospital • Wollongong Private Hospital • North Shore Private Hospital • Kareena Private Hospital • The Avenue Private Hospital • Royal Prince Alfred Hospital/Institute of Rheumatology and Orthopaedic Surgery • Gosford Private Hospital • Calvary St Lukes Campus • Mater Hospital Sydney • Mater Private Hospital, Townsville • Northern Beaches Hospital 	

Amount Awarded: \$437,770	Date Grant Awarded: 03/06/2020	Date of Expected Completion: 30/06/2026
Project Overview	This project addresses the critical issue of the effectiveness of robotic-assisted surgery, particularly in the context of kinematic alignment (KA), which is an innovative approach to knee replacement. Currently, there's a lack of robust evidence supporting the claims of improved outcomes in robotic-assisted surgeries. Additionally, it's unclear whether the benefits in robotic knee replacement stem from surgical precision, KA techniques, or a combination of factors.	
Why is this research important?	Given the substantial investments in robotic-assisted surgery, it's crucial to analyse patient outcomes and implant survivorship compared to established surgical methods. Presently, there's a dearth of appropriately designed randomised trials to answer these essential questions. This study aims to fill this gap in knowledge and provide clarity on the effectiveness of these surgical approaches.	
How will this research impact patient care?	The primary objective of this trial is to determine whether there are differences in Patient Reported Outcome Measures (PROMs) before and after surgery among various surgical groups, including robotic-assisted surgery and kinematic alignment. These findings will be collected through the Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR) RAPID platform. Additionally, the study will assess radiographic outcomes, functional measures, and the long-term survival of prostheses. The outcomes of this research will inform decision-making processes to provide the best, most cost-effective care for patients undergoing Total Knee Arthroplasty (TKA). By comparing different surgical approaches, the study will contribute to improving patient outcomes and optimising resource allocation in healthcare delivery.	
Achievements	<ul style="list-style-type: none"> ▶ The target of 300 participants (100%) to be recruited has been achieved based on the number of patients consented. ▶ 288 procedures completed as of 20th September 2023. ▶ 10 surgeons reached their targets including 3 high-volume surgeons with additional recruitments. 	



SuPeR Knee: Development and implementation of an advanced clinical decision-making support tool for the delivery of efficient, personalised rehabilitation for patients undergoing Total Knee Arthroplasty (TKA).

“To our understanding, this is the first comprehensive biopsychosocial prediction tool that can objectively predict recovery outcomes. This prediction tool provides an evidence-based method, that can be used to identify those who may benefit from engagement with specialist rehabilitation and related allied health services.”

Project Title	SuPeR Knee: Development and implementation of an advanced clinical decision-making support tool for the delivery of efficient, personalised rehabilitation for patients undergoing Total Knee Arthroplasty (TKA).	
Chief Investigator	Professor Michael Nilsson	
Organisation	Hunter Medical Research Institute	
Investigative Team	Professor Rohan Walker Associate Professor Michael Pollack Professor Sarah Johnson Dr Karen Ribbons Associate Professor Adrian Wills Dr Elizabeth Ditton Ms Jodie Cochrane	Ms Gillian Mason Mr Thomas McNamara Miss Sarah Creasey Miss Loren Parish Miss Bella Sherring Dr Nicolette Hodyl Dr Nattai Borges
Clinical Area(s)	Orthopaedics Musculoskeletal Injury	
Site(s)	<ul style="list-style-type: none"> • Lake Macquarie Private Hospital • Gateshead NSW • Kareena Private Hospital • Caringbah NSW • Baringa Hospital • Coffs Harbour NSW • Wollongong Private Hospital • Wollongong NSW 	
Amount Awarded: \$1,546,860	Date Grant Awarded: 25/06/2018	Date of Expected Completion: 30/12/2023
Project Overview	This project aims to develop a clinical decision support (CDS) tool focused on individual biopsychosocial needs to guide rehabilitation after Total Knee Arthroplasty (TKA). It goes beyond traditional medical parameters and includes factors like anxiety, stress, resilience, pain quality, social support, and sense of purpose, which have been increasingly recognised as significant predictors of patient outcomes following TKA.	
Why is this research important?	Currently, patient information collected during TKA primarily focuses on medical and joint-related parameters, overlooking crucial psychosocial aspects. This project is vital because it explores the impact of these often-neglected factors on recovery and well-being after TKA. By doing so, it lays the groundwork for a more comprehensive therapeutic approach, acknowledging the multifaceted nature of patient needs.	
How will this research impact patient care?	If successful, this project will provide healthcare professionals with a valuable tool for tailoring rehabilitation programs to meet individual patient requirements. By identifying 'at-risk' individuals early in their recovery journey, it will facilitate the implementation of appropriate follow-up services. Ultimately, this approach will improve patient outcomes, reduce the time and cost of rehabilitation, and lead to a more holistic and personalised approach to healthcare delivery. In the long term, it may also enable the evaluation and enhancement of alternative rehabilitative programs for even better patient results.	
Statistics	<ul style="list-style-type: none"> ➤ 90% had improvement in physical health quality of life 3 months after their TKA. ➤ 47% had improvement in mental health quality of life 3 months after their TKA. ➤ 3 months after TKA patients had 48% improvement in knee function, 53% reduction in knee pain and 66% reduction in knee stiffness. 	

Ramsay Hospital Research Foundation Publications

Research publications play a pivotal role in the world in translating research and improving patient care. We are proud to present the below research publications from our funded grants.

Brain Cancer Registry: Australian Brain Cancer Registry Project.

Matsuyama, M., et al., What matters for people with brain cancer? Selecting clinical quality indicators for an Australian Brain Cancer Registry. 2021, *Neuro-Oncology Practice*. 9(1): 68-78. Doi. [org/10.1093/nop/npab055](https://doi.org/10.1093/nop/npab055).

DrumBeat.ai: Addressing Paediatric Indigenous Ear Disease in Rural and Remote Australia Using Artificial Intelligence.

Habib AR, Xu Y, Bock K, Mohanty S, Sederholm T, Weeks WB, Doddia R, Ferrer JL, Perry C, Sacks R, Singh N. Evaluating the generalizability of deep learning image classification algorithms to detect middle ear disease using otoscopy. *Nature Scientific Reports*. 2023 Apr 1;13(1):5368.

Habib AR, Crossland G, Patel H, Wong E, Kong K, Gunasekera H, Richards B, Caffery L, Perry C, Sacks R, Kumar A, Singh N. An Artificial Intelligence Computer-vision Algorithm to Triage Otoscopic Images from Australian Aboriginal and Torres Strait Islander Children. *Otology & Neurology*. 2022 Apr 24;43(4):481-8.

Habib AR, Kajbafzadeh M, Hasan Z, Wong E, Gunasekera H, Perry C, Sacks R, Kumar A, Singh N. Artificial intelligence to classify ear disease from otoscopy: A systematic review and meta-analysis. *Clinical Otolaryngology*. 2022 May;47(3):401-13.

eCLIPSE: Enhancing social inclusion through the implementation of evidence-based digital health interventions for mental health and alcohol/other drug use problems in the wake of COVID-19.

Kay-Lambkin, F., J. L. Rich, D. Sampson, L. Thornton, M. Heinsch, K. Filia, B. Kelly, A. Weiss, M. Wright, D. Simmonette and M. Teeson (2023). "Enhancing social inclusion through the implementation of evidence-based digital health interventions for mental health and alcohol other drug use problems in the wake of COVID-19: A study protocol." *medRxiv*: 2023.2009.2020.23295867

Sampson D (2022), *Mental health support at your fingertips*, Stem Matters, NSW Ministry of Health

Frailty: Optimising outcomes for frail hospitalised older adults - volunteer support and pain assessment interventions: A cluster randomised control trial.

Saunders, R., Crookes, K., Seaman, K., Ang, S. G. M., Bulsara, C., Bulsara, M. K., Ewens, B., Gallagher, O., Graham, R. M., Gullick, K., Haydon, S., Hughes, J., Nguyen, K.-H., O'Connell, B., Scaini, D., & Etherton-Beer, C. (2023). Frailty and pain in an acute private hospital: an observational point prevalence study. *Scientific Reports*, 13, 3345. <https://doi.org/10.1038/s41598-023-29933-x>.

Saunders, R., Crookes, K., Seaman, K., Ang, S. G. M., Bulsara, C., Bulsara, M. K., Ewens, B., Gallagher, O., Graham, R. M., Gullick, K., Haydon, S., Hughes, J., Atee, M., Nguyen, K.-H., O'Connell, B., Scaini, D., & Etherton-Beer, C. (2022). Effectiveness of nurse-led volunteer support and technology-driven pain assessment in improving the outcomes of hospitalised older adults: protocol for a cluster randomised controlled trial. *BMJ Open*, 12(6), e059388. <https://doi.org/10.1136/bmjopen-2021-059388>

Saunders, R., Crookes, K., Gullick, K., Gallagher,

O., Seaman, K., Scaini, D., Ang, S. G. M., Bulsara, C., Ewens, B., Hughes, J., O'Connell, B., Etherton-Beer, C. (2022). Nurses leading volunteer support for older adults in hospital: A discussion paper. *Collegian*, 29(6), 931-936. <https://doi.org/10.1016/j.collegn.2022.08.005>

Genes, cLinical Assessment and Depression (GLAD study): Testing risk genes in conjunction with clinical characteristics to develop a clinically applicable algorithm for predicting outcomes in patients with depression.

Boss, P., Loo, C.K., Fullerton, J.M., and Mitchell, P.B. Genes, clinical Assessment and Depression (GLAD) study. International Society for Bipolar Disorders (ISBD) Conference, Sydney, March 20th-23rd 2019. (Poster presentation).

Mental Health and the Early Loss of a Pregnancy (M-HELP): an intervention to support and guide bereaved parents and their health care providers through the loss.

Lee L, Ma W, Davies S, Kammers M. Toward Optimal Emotional Care During the Experience of Miscarriage: An Integrative Review of the Perspectives of Women, Partners, and Health Care Providers. *J Midwifery Womens Health*. 2023 Jan;68(1):52-61. doi: 10.1111/jmwh.13414.

Lee L, Gerber K, Kammers M. What does good emotional care for miscarriage look like? Experiences of patients and partners in an Australian private hospital setting.

The MOMENTUM Project: Maternal outcomes in mental health after birth.

O'Donnell ML., Lau W, Chisholm K., Agathos J., Little J., Terhaag S., Brand R., Putica A., Holmes A., Katona L., Felmingham, K., Murray, K., Hosseiny, F., Gallagher MW. (2021). A pilot study of the efficacy of Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in treating posttraumatic psychopathology: A Randomized Controlled Trial. *Journal of Traumatic Stress*. 34, 563-574.

O'Donnell, M. L., Lau, W., Fredrickson, J., Gibson, K., Bryant, R. A., Bisson, J., ... & Forbes, D. (2020). An open label pilot study of a brief psychosocial intervention for disaster and trauma survivors. *Frontiers in psychiatry*, 11, 483.

O'Donnell, M.L., Creamer, M., Parslow, R., Elliott, P., Holmes, A., Ellen, S., Judson, R., McFarlane, A., Silove, D., Bryant, R. A. (2008): A predictive screening instrument for posttraumatic stress disorder and depression following traumatic injury. *Journal of Consulting and Clinical Psychology*, 67, 923-932.

Cohort investigation of women admitted with their infants or toddlers to Masada Private Hospital Early Parenting Centre to identify indicators of immediate and medium-term program impact.

Stanzel K, Honda T, Tran T & Fisher J. Behavioural interventions for problematic infant sleeping and cry/fuss behaviour: a systematic review and meta-analyses. *Infant and Child Development: Prenatal, Childhood, Adolescence, Emerging Adulthood* (under review).

Fisher, J, Stanzel, K, Nguyen, H, Thean P, French D, Popplestone S, Tran T. Impact of a residential early parenting program on clinically significant postnatal depressive symptoms experienced by women: audit of routinely collected data. *Acta*

Psychiatrica Scandinavica (under review).

Fisher J, Stanzel K, Nguyen, H, Thean P, French D, Popplestone S, Tran T. Effects of a residential psychoeducational parenting program on maternal anxiety and fatigue symptoms: An analysis of routinely collected data. *Archives of Women's Mental Health* (under review)

Plasma Neurofilament Light: A simple screening blood test to help in the early identification of neurological and neurodegenerative disorders in people with mood and anxiety disorders.

Eratne, D., Kang, M., Malpas, C., Velakoulis, D., 2023. Plasma neurofilament light in behavioural variant frontotemporal dementia compared to mood and psychotic disorders. *Aust N Z J Psychiatry* 00048674231187312. <https://doi.org/10.1177/00048674231187312>

Kang, M.J., Eratne, D., Walterfang, M., Velakoulis, D., 2023. Cerebrospinal fluid neurofilament light predicts longitudinal diagnostic change in patients with psychiatric and neurodegenerative disorders. *Acta Neuropsychiatrica* 1-36. <https://doi.org/10.1017/neu.2023.25>

RASKAL: Robotic-assisted surgery and kinematic alignment in total knee arthroplasty. A registry-nested, multi-centre, 2 x 2 factorial randomised trial of clinical, functional, radiographic and survivorship outcomes.

Samuel MacDessi, Gregory C Wernecke, Durga Bastiras, Tamara Hooper, Emma Heath, Michelle Lorimer, Ian Harris Robotic-assisted surgery and kinematic alignment in total knee arthroplasty (RASKAL study): a protocol of a national registry-nested, multicentre, 2x2 factorial randomised trial assessing clinical, intraoperative, functional, radiographic and survivorship outcomes. *BMJ Open* Jan 2022, 12(6):e051088; DOI:10.1136/bmjopen-2021-051088

SuPeR Knee: Development and implementation of an advanced clinical decision-making support tool for the delivery of efficient, personalised rehabilitation for patients undergoing Total Knee Arthroplasty (TKA).

Karen Ribbons, Sarah Johnson, Elizabeth Dittton, Adrian Wills, Gillian Mason, Traci Flynn, Jodie Cochrane, Michael Pollack, Frederick R. Walker, Michael Nilsson. Using Presurgical Biopsychosocial Features to Develop an Advanced Clinical Decision-Making Support Tool for Predicting Recovery Trajectories in Patients Undergoing Total Knee Arthroplasty: Protocol for a Prospective Observational Study. *Journal of Medical Internet Research, Research Protocols* 2023, Aug 9;12:e48801.

Elizabeth Dittton, Sarah Johnson, Nicolette Hodyl, Traci Flynn, Michael Pollack, Karen Ribbons, Frederick R. Walker, Michael Nilsson. Improving Patient Outcomes Following Total Knee Arthroplasty: Identifying Rehabilitation Pathways Based on Modifiable Psychological Risk and Resilience Factors. *Frontiers in Psychology*, 2020, 11.

Jodie Cochrane, Traci Flynn, Adrian Wills, Frederick R. Walker, Michael Nilsson, Sarah Johnson. Clinical Decision Support Tools for Predicting Long-Term Outcomes in Patients Undergoing Total Knee Arthroplasty: A Systematic Review. *The Journal of Arthroplasty* 2020, 36(5): 1832-1845.

Social Determinants of Health

The Ramsay Hospital Research Foundation aims to align with the Paul Ramsay Foundation's goal of breaking the cycle of disadvantage by addressing key social determinants of health.

Based on post code analysis done in 2022, approximately 30% of Ramsay patients come from a lower socio-economic background, indicating that a proportion of Ramsay Health Care patients may already be impacted by key social determinants of health.

Through this initiative we hope to work with these patients to identify meaningful ways to improve health outcomes in three key cohorts:

- **Women**
- **Rural and Regional**
- **People Aged Over 60**

This is an emerging initiative for RHRF.

Following identification of our cohorts, we are now working to identify key programs and initiatives that enable the development of an innovative approach to partnerships, a focus on improvement in health literacy, assessing disadvantage and impact on outcomes in our four therapeutic areas developing an approach that has the potential to bring key groups together with a focus on systems change and achieving improved health outcomes for all patients.

Following the identification of the cohort groups, RHRF will identify the significant social determinants that affect individuals and develop an understanding of how these determinants affect outcomes in our therapeutic areas.

To do this, RHRF will work with partners, clinical teams, and patients to map outcomes and understand the key factors impacting populations experiencing these diseases.

This mapping exercise will not only help reveal essential clinical questions but also assist in identifying potential partners for developing innovative solutions to the key issues identified in these groups.

By pursuing these action themes, RHRF seeks to make a meaningful contribution to improving health outcomes and breaking the cycle of disadvantage as part of its commitment to the broader Ramsay Cares strategy.



Impact of Implementation Research

Implementation science is a multidisciplinary field dedicated to bridging the gap between research findings and their integration into real-world healthcare settings.

It focuses on systematically examining the methods and strategies required to ensure that evidence-based interventions are effectively and sustainably adopted by healthcare providers and organisations.

Implementation Science serves as the conduit through which transformative medical discoveries become standard practice, improving patient care, and maximising the benefits of scientific research.

Current estimates indicate that it takes a **minimum of ten years** to translate published research into health service delivery in Australia.

► In Ramsay, we are planning on tackling the delayed implementation of research into service delivery by establishing an implementation framework that is suited to the Ramsay environment and supports the rapid translation of key research projects into health service delivery.

RHRF has initiated discussions with **four pilot projects**.

- **Mental Health and the Early Loss of a Pregnancy (M-HELP): an intervention to support and guide bereaved parents and their health care providers through the loss**
– Dr Marjolein Kammers
- **SuPeR Knee: Development and implementation of an advanced clinical decision-making support tool for the delivery of efficient, personalised rehabilitation for patients undergoing Total Knee Arthroplasty (TKA)**
– Professor Michael Nilsson
- **Cohort investigation of women admitted with their infants or toddlers to Masada Private Hospital Early Parenting Centre to identify indicators of immediate and medium-term program impact**
– Professor Jane Fisher
- **The PATHway Trial: Participatory health through behavioural engagement and disruptive digital technology for post-operative rehabilitation**
– Professor David Hunter

These projects have been chosen for their capacity to yield favorable results for patients, their impact across various healthcare domains, and their potential for long-term patient benefits upon full-scale implementation.

As we progress this initiative, we look forward to sharing the meaningful steps that Ramsay and RHRF are taking to address the length of time that it takes to translate research into practice.

National Clinical Trials Network

Ramsay Health Care established a National Clinical Trial Network in 2017, recognising the potential and pivotal role of clinical trials in delivering high-quality healthcare.

Ramsay Health Care established a National Clinical Trial Network in 2018, recognising the potential and pivotal role of clinical trials in delivering high-quality healthcare.

Clinical trials are an important element of a functioning system of research within the health care environment and play a substantial role in the advancement of health outcomes and the ongoing development of health services.

The role of clinical trials in research is substantial and include:

- **Accelerated Progress in Treatment:** Clinical trials contribute to the rapid advancement of treatment. An example of this is the significant advances in cancer treatment over the past 20 years - this has been driven by significant investment in cancer research, particularly in the realm of targeted cancer therapies.
- **Access to Cutting-Edge Treatments:** Patients enrolled in clinical trials may receive treatments that surpass the current standard of care, offering hope for improved outcomes.
- **Streamlined Regulatory Processes:** Collaboration in clinical trials allows for regulatory harmonization, granting patients early access to innovative drugs and medical devices.
- **Enhanced Quality of Life and Survival:** Targeted therapies investigated in trials can significantly enhance both the quality of life and survival rates of patients.
- **Wider Beneficial Impact:** Clinical trials not only benefit participants but also lead to improved outcomes for all patients, including those not directly involved in the trials.
- **Elevated Quality of Care:** The pursuit of excellence in clinical trials translates to an overall enhancement in the quality of care, ultimately benefiting all patients, regardless of their trial participation.

Ramsay's commitment to conducting these studies extends beyond the immediate trial participants; the knowledge gained from these endeavors often informs and shapes clinical practice, resulting in tangible benefits for all patients facing similar medical conditions.

Clinical trials offer the opportunity for doctors and nurses to engage in a continuous cycle of improvement. By actively participating in these trials, healthcare professionals gain access to cutting-edge treatments, therapies, and medical technologies that are often at the forefront of innovation. This exposure enhances their knowledge and expertise and empowers our clinical teams to provide superior patient care.

Our Clinical Trial Sites

Ramsay Hospital Research Foundation has provided seed funding for up to three years to help each of the Clinical Trials sites to establish. Together these sites make the Ramsay Clinical Trial Network.

Our ongoing role is to support the growth and development of the Network, support the development of our clinical trials teams and ensure that these sites can support RHRF funded clinical research in addition to sponsored clinical trials activity.

The network also offers the opportunity for us to connect to patients directly impacted by research to ensure that we can have patient input into the ongoing development of clinical research across our sites. Ultimately, access to the clinical trials network to support the delivery of research that is designed to support patient outcomes is key to RHRF achieving its mission.



Clinical Trial Network Sites

New South Wales

- Albury Wodonga Private Hospital
- Lake Macquarie Private Hospital
- North Shore Private Hospital
- Ramsay Clinic Lakeside
- Ramsay Clinic Northside
- St George Private Hospital
- Southern Highlands Private Hospital
- Westmead Private Hospital
- Wollongong Private Hospital

Queensland

- John Flynn Private Hospital
- Pindara Private Hospital
- Sunshine Coast University Private Hospital

Victoria

- Ramsay Clinic Albert Road
- Peninsula Private Hospital
- The Avenue Private Hospital
- Warrigal Private Hospital

Western Australia

- Hollywood Private Hospital
- Joondalup Health Campus

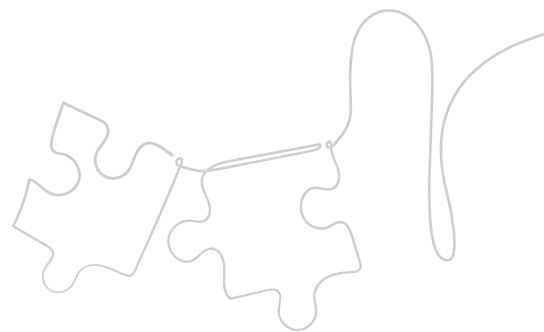
Trials done with collaborating organisations:

- Gallipoli Medical Research Foundation with The Greenslopes Private Hospital
- Border Medical Oncology Research Unit with Border Cancer Hospital

Ramsay Health Care Clinical Trials Network Capability

	ONCOLOGY	HAEMATOLOGY	MENTAL HEALTH	CARDIOLOGY	ORTHOPEDICS	RESPIRATORY	NEUROLOGY	OTHER
Warrigal Private Hospital	✓							
Peninsula Private Hospital	✓	✓						Intensive Care
The Avenue Private Hospital					✓			
Southern Highlands Private Hospital	✓				✓			
St George Private Hospital	✓				✓			
North Shore Private Hospital	✓			✓				
Lake Macquarie Private Hospital	✓			✓	✓		✓	
Ramsay Clinic Lakeside			✓					
Ramsay Clinic Northside			✓				✓	
Westmead Private Hospital	✓			✓			✓	
Wollongong Private Hospital	✓	✓						Gastroenterology, Urology
John Flynn Private Hospital	✓	✓			✓		✓	
Pindara Private Hospital	✓	✓						
Sunshine Coast University Private Hospital	✓					✓		
Albury Wodonga Private Hospital				✓	✓			
Hollywood Private Hospital	✓	✓	✓					Nuclear Medicine
Joondalup Health Campus	✓							Paediatrics
Ramsay Clinic Albert Road			✓					
CLINICAL TRIALS RUN BY ANOTHER ENTITY, BUT USING RAMSAY HOSPITALS								
The Border Cancer Hospital (Border Medical Oncology)	✓							
Greenslopes Private Hospital (Gallipoli Medical Research Foundation)	✓	✓				✓		Liver disease

Ramsay Clinical Trials Network – The Past Five Years



Supported by RHRF, Ramsay Health Care established a Clinical Trials Network in 2017.

The network has now expanded to 20 sites nationally and we expect the growth and development of our capacity and capability in clinical trials to continue.

Over the past six years, this network has achieved significant milestones in advancing clinical research and improving patient outcomes.

The Clinical Trials Network has the following **target KPIs** and all sites are benchmarked against these key metrics:

STUDY START UP TIME	42 DAYS
PATIENT EXPERIENCE SCORE (NPS)	95
DATA ENTRY	2 DAYS
PATIENT SAFETY	1 BUSINESS DAY FROM NOTIFICATION OF EVENT

As of 2023, the Network has grown significantly.

94	PRINCIPAL INVESTIGATORS
20	ACTIVE SITES WITH THE RAMSAY NETWORK
165	CLINICAL TRIALS ACTIVELY RECRUITING
250	TRIALS INCLUDING BMOU & GMRF (192% GROWTH SINCE 2017)
1,531	PARTICIPANTS ACTIVE IN CURRENT CALENDAR YEAR (2023)
49,387	PATIENTS REGISTERED IN VISION TREE OUTCOME MEASURE PROJECTS
44	FTE STAFF ACROSS THE NETWORK (73 INCLUDING BMOU AND GMRF)
82%	OF CLINICAL TRIALS IN THE NETWORK ARE IN ONCOLOGY OR HAEMATOLOGY
5%	OF TRIALS ARE RELATED TO ORTHOPAEDICS
13%	ARE RELATED TO MENTAL HEALTH
5%	ARE IN CARDIOVASCULAR DISEASE

Network Achievements

As the clinical trials network has grown in capacity, we are continuing to advance our capabilities to ensure that we are able to play a key role.

Over the past five years, we have focused on the continuous development of our standard operating procedures and guidelines to ensure that our services provide to our patients, doctors, and our key sponsors are exemplary. As these areas are embedded into our sites and become a cycle of continuous improvement, we have also focused on:

Clinical Trial Management System (CTMS)

The Ramsay Clinical Trials Network successfully launched a Clinical Trial Management System (CTMS) across its sites. The CTMS streamlines trial oversight and management, enabling efficient planning, tracking, and compliance management.

Patient Engagement

In 2023 we have launched the clinical trials NPS score for patients, to enable patients in each clinical trials unit to provide feedback regarding activities in our units. We also plan to launch a clinical trial consumer panel that will enable our patients to provide feedback to grant recipients, clinical trial sponsors and researchers.



New Partnerships

In 2023, we launched a new partnership with SCRS (Society for Clinical Research Sites)

The SCRS is the leading advocacy organisation dedicated to unifying the voice of the global clinical research site community. Representing more than 10,000 sites in 47 countries, SCRS facilitates industry collaborations and conversations dedicated to site-focused advocacy, education, mentorship, and connection.

In 2022, a new partnership with ClinTrial Refer

ClinTrial Refer is a mobile app and website platform that makes it easy to search for suitable trials and locations for patients. The ability to review key eligibility criteria, trial summary and recruiting location and site contact information allows access to Ramsay Health Care's growing number of trials across an expanding range of disciplines.

In 2022, Partnership with Australian Clinical Trials Alliance (ACTA)

Australian Clinical Trials Alliance is the national peak body supporting and representing networks of clinician-researchers conducting investigator-initiated clinical trials, maintaining clinical quality registries, and operating clinical trial coordinating centres within the Australian healthcare system.

In 2022, Partnership with CT:IQ

CT:IQ's mission is to develop and implement recommendations that will improve the impact, quality and efficiency of clinical trials, leading to more rapid, lower cost and higher quality evaluation of healthcare interventions in Australia.

In 2022, Presence at ARCS Australia Annual Conferences

ARCS is an Australian based professional organisation which focuses on career long professional development for its members in the therapeutic goods sector. ARCS provides education, competency building and information sharing within communities of practice, and targeted advocacy and collaboration with a range of stakeholders.

Ramsay Health Care exhibited in 2022 and 2023 increasing the Network visibility and engagement with key industry leaders.

Future Treatment and Research Themes at Ramsay

We are focused on developing the clinical trials network to ensure that we have the capability to offer clinical trials in emerging treatment areas in our core clinical areas. These clinical areas are a core focus due to the volume of services and patients within Ramsay Health Care itself.

Oncology

CAR-T: A type of treatment in which a patient's T cells (a type of immune system cell) are changed in the laboratory so they will attack cancer cells. T cells are taken from a patient's blood. Then the gene for a special receptor that binds to a certain protein on the patient's cancer cells is added to the T cells in the laboratory. The special receptor is called a chimeric antigen receptor (CAR). Ramsay Health Care is undertaking its 1st CAR-T study at Hollywood Private Hospital in WA.

Radiopharmaceuticals: Innovative approach involving molecules and drugs tailored to selectively target specific cells in the body. These molecules are linked with radionucleotides, which effectively eliminate cancer cells upon absorption. This groundbreaking method notably reduces toxicity for patients, and Theranostics serves as a current example of the successful application of this technology.

Gene Therapy: A strategy involving the identification of mutated genes and their subsequent replacement to restore normal cell function. This technique may also encompass the introduction of new genes into the cell to replace a faulty function. This approach has shown promising results, particularly in the treatment of childhood diseases.

Personalized Therapy – Likely to be driven by advances in AI: Use of large data sets to predict patient responses to treatment based on unique characteristics of each individual

Vaccine Therapy: Development of vaccines that are personalised to each individual to stimulate immune system to attack cancer cells

Neoadjuvant Therapy: The utilisation of precision-targeted treatments before surgical intervention is a transformative approach aimed at reducing tumor size, ultimately enhancing surgical safety and patient outcomes. This technique holds the potential to streamline complex surgeries, leading to shorter hospital stays and improved results.

Immunotherapy: A diverse array of molecules designed to target specific pathways within cancer cells that hinder the immune response. By blocking these barriers, these molecules stimulate the patient's immune system, prompting it to mount an attack against the cancer cells. This breakthrough has made a substantial impact on the prognosis of several cancer types, opening new avenues for more effective treatments.

Detection – Molecular Testing: Development of tests that identify cancer molecules in the blood before disease is evident.

Site of Care Shift: Development of tests that identify cancer molecules in the blood before disease is evident.

Ramsay Clinical Trials Network – The Past Five Years

Future Treatment and Research Themes at Ramsay

Orthopaedics & Musculoskeletal Disease

Stem Cell Treatment: Stem cells have the potential to develop into any type of cell that the body requires. They are essential for growth and maintenance of the body as we age. Research is focused on identification of ways that stem cells could be injected or placed into a joint to replace damaged tissue and bone.

3D Printing & AI Planning for Surgery: Medical advancements have led to the development of 3D models that accurately replicate a patient's bone structure. Combining these models with AI and VR technology, surgeons can meticulously plan procedures, optimizing resource utilization and minimizing invasiveness. Furthermore, 3D printing has enabled the creation of custom joints and surgical devices, further enhancing the precision and effectiveness of surgical interventions.

Vascular & Inflammatory Response Modification: Involves the injection of microparticles containing drugs designed to modify the inflammatory response and vascularization within the joints. These injections effectively mitigate pain, reduce swelling, and potentially delay the need for surgical intervention.

Joint Replacement: Innovative prostheses are being developed to enhance the outcomes of joint replacement surgeries. These advancements are poised to revolutionise joint replacement procedures, offering patients improved results and increased longevity of joint replacements.

Real Time Imaging: The miniaturisation of CT and MRI scanners makes it possible to have these tools readily available in the operating theater. This innovation promises to provide real-time imaging of patients during surgery, allowing surgeons to make immediate, informed decisions and enhance the precision of medical procedures.

Mental Health

Digitally Delivered Therapy: The utilisation of digital tools, often designed around cognitive behavioral therapy principles, offers a promising approach for mental health treatment. These tools do not necessarily require the direct involvement of a psychiatrist or psychologist. They are often integrated into a stepped care pathway, which initially employs digital therapy alone and progressively adds components such as health coaching or psychologist interaction.

Genetic Profiling: There are no single genes identified as direct causes of mental health issues. The prevailing hypothesis suggests that genetic factors, if implicated, are likely to interact with a variety of environmental influences. These factors can activate different cellular pathways and potentially result in gene mutations. The central focus in this field now centers on understanding and predicting the effects of treatment by modeling the complex interplay between these environmental factors and possible genetic mutations.

Brain Stimulation: A novel approach in the field of brain modulation involves the use of sound waves and pulse waves to influence the brain's electrical currents. Administering these waves at varying frequencies can effectively "reset" abnormal brain patterns back to a normal state. However, it's crucial to note that this form of stimulus application can lead to cognitive impairment and memory loss.

Recent advancements have resulted in treatments with reduced impact on cognitive functions, offering a more balanced approach to brain modulation.

Psychedelics & Ketamine: Drugs directly stimulating the brain have demonstrated substantial effectiveness in enhancing the well-being of patients. One of the primary areas of ongoing research pertains to the optimal method of administering these therapies, whether through injection, nasal spray, or tablets.

Interventional Radiology: Use of interventional radiology to deliver deep brain stimulation, drugs or targeted therapy to areas of the brain is likely result of move to brain health.

Neurology: Anticipations within the field suggest a convergence between neurology and mental health, giving rise to an integrated discipline known as "brain health." This transformation is poised to lead to a heightened emphasis on neurological imaging, scans, and the identification of biological disease markers. This could pave the way for more precisely targeted drug therapies and increased utilization of techniques designed to stimulate brain function. Ultimately, this shift is expected to broaden the spectrum of treatment approaches and foster collaboration among diverse medical specialties.

Cardiovascular Disease

Site of Care Shift: Advancements in technology have brought about substantial transformations in cardiovascular disease treatment. Ongoing developments suggest that, thanks to these improvements and enhanced patient results, treatments will progressively transition towards procedures characterised by shorter durations and reduced hospital stays. The growing trend indicates that the move towards hybrid catheterisation laboratories ("cath labs") is set to persist.

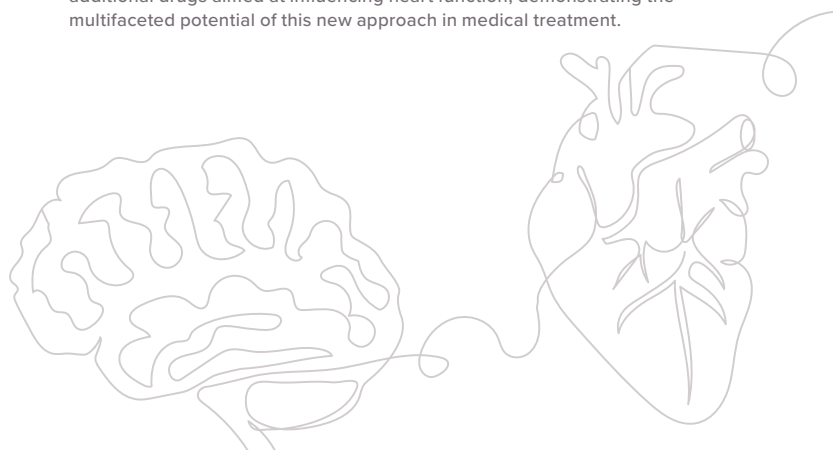
Interventional Radiology: Use of interventional radiology to deliver targeted therapy, through electrical stimulation, drugs or other devices directly into specific locations in the heart

Increased Focus on prevention / early intervention: As the landscape of medical treatment evolves, there is a growing emphasis on prevention and early intervention. This increased focus is expected to lead to more effective management of patient risk factors and potentially delay the need for medical interventions. However, it's important to recognise that this trend has been under discussion for quite some time. The real challenge for public health lies in implementing large-scale changes to public health practices, which has historically proven to be a formidable task.

Implantable Devices – Valve Replacement: A new type of procedure that results in replacement of a defective or damaged valve in the cath lab, rather than through surgery. This procedure is minimally invasive and results in improved outcomes for patients

Gene Therapy: Involves identifying mutated genes and then either replacing them to restore normal cell function or introducing new genes into the cell to compensate for any defective functions. Notably, this method has shown remarkable success in the treatment of childhood diseases, offering a glimpse into the potential for advanced genetic therapies in the realm of medicine.

Cardio - Metabolomics: Emerging in the field of pharmaceuticals are innovative drugs designed to target metabolism, with a primary focus on promoting weight loss or aiding individuals in managing their weight. These drugs were initially developed to address the needs of patients with Type II Diabetes but are now finding expanded applications in the realm of weight management. Furthermore, within this category, there are additional drugs aimed at influencing heart function, demonstrating the multifaceted potential of this new approach in medical treatment.



Enablers of Research and Broader Research Projects at Ramsay

There are more than 1,100 unique research projects within Ramsay Health Care.

By identifying key research enablers, we aim to enhance the support available for research development within Ramsay Health Care, with the aim of supporting the successful establishment of research within Ramsay and developing an ecosystem that will promote ongoing development and growth of research.

Broadly, within Ramsay our goal is to facilitate the publication of research findings and to promote improved outcomes for patients. To achieve this, we are focused on the development of systems that support training, education and development of research while ensuring we maintain research integrity and quality.

Our longer-term focus is to support the translation of research into the health system and reduce the length of time it takes to translate research outcomes into practice. This approach ensures that valuable research translates into tangible improvements in healthcare practices and patient outcomes, promoting a more robust and impactful research ecosystem.

Key Enablers:

- **Developing Research:** We will be working with key stakeholders including The University of Melbourne, Hunter Medical Research Institute, University of Sydney and Western Australian Health Translation Network to enable access to health economists, protocol writers, statisticians and other fundamental capabilities that will support research development and establishment at Ramsay sites.
- **Research Ethics and Governance:** We will continue to lead high quality processes, supporting researchers both internally and externally and making it easy to establish research.
- **Research Integrity:** We are focused on ensuring that there are internal systems that support the development of high-quality research and promote patient safety.
- **Training and Education:** We are enhancing opportunities for the clinical trials workforce, Ramsay executives and clinical teams to ensure there are training opportunities and the ability for engagement in research.
- **Increase Research Capacity:** Beyond our 20 clinical trials sites, we are ensuring each Ramsay hospital that is developing research has sufficient clinical and academic input.

Our role is to remove barriers, whether they are related to funding, access to data, collaboration opportunities, or infrastructure, and empower investigators to explore, discover, and innovate.

By fostering a culture of knowledge exchange, being an enabler of research plays a vital role in advancing knowledge and finding solutions for our patients.

By supporting investigators and researchers, we hope to accelerate the research process and ensure that valuable insights reach the wider community for the betterment of patient outcomes.



Research at Ramsay Health Care

Research publications are fundamental to advancing healthcare, knowledge dissemination, and societal advancements. They help ensure the integrity and transparency of research and allow for the continuous growth of human understanding and innovation.

We are proud to present the following high impact publications from doctors and VMOs at Ramsay. This is a highlight list only - there were over 200 publications in 2022 produced by our VMOs.

We would like to acknowledge and thank all VMOs who are undertaking research at Ramsay, who have affiliations with universities across the country. We thank the many stakeholders for their contribution to the development of this research.

Publications

Zanubrutinib versus bendamustine and rituximab in untreated chronic lymphocytic leukaemia and small lymphocytic lymphoma (SEQUOIA): a randomised, controlled, phase 3 trial

Authors: Constantine S Tam, Jennifer R Brown, Brad S Kahl, Paolo Ghia, Krzysztof Giannopoulos, Wojciech Jurczak, Martin Simković, Mazyar Shadman, Anders Österborg, Luca Laurenti, Patricia Walker, Stephen Opat, Henry Chan, Hanna Ciepluch, Richard Greil, Monica Tani, Marek Trněný, Danielle M Brander, Ian W Flinn, Sebastian Grosicki, Emma Verner, Alessandra Tedeschi, Jianyong Li, Tian Tian, Lei Zhou, Carol Marimpietri, Jason C Paik, Aileen Cohen, Jane Huang, Tadeusz Robak, Peter Hillmen

Abstract: This study compares the effectiveness of zanubrutinib with bendamustine-rituximab as frontline therapy in patients with chronic lymphocytic leukemia (CLL) or small lymphocytic lymphoma (SLL). Zanubrutinib significantly improved progression-free survival compared to bendamustine-rituximab, with a safety profile consistent with previous studies. These findings support zanubrutinib as a potential new treatment option for untreated CLL and SLL.

Published In: The Lancet Oncology

Hospital: Peninsula Private Hospital

Pertuzumab study in the neoadjuvant setting for HER2-positive nonmetastatic breast cancer in Australia (PeRSIA)

Authors: Sheau Wen Lok, Richard De Boer, Sally Baron-Hay, Peter Button, Bianca Devitt, Benjamin C Forster, Peter Fox, Michael Harold, Sahisha Ketheeswaran, Ganessan Kichenadasse, Belinda E Kiely, Gavin Marx, Louise Nott, Laura Pellegrini, Ali Tafreshi, Peter Gibbs

Abstract: The Pertuzumab study in the neoadjuvant setting for HER2+ nonmetastatic breast cancer in Australia (PeRSIA-ML39622) analyzes safety and effectiveness data from the pertuzumab patient registry. It examines the effectiveness of neoadjuvant pertuzumab on surgical outcomes, medium-term effectiveness outcomes, and anticancer treatment regimens of patients treated with pertuzumab.

Published In: International Journal of Cancer

Hospital: Wollongong Private Hospital

Genesis of improved quality in imaging through a national Australian echocardiography registry

Authors: David Eccleston, Gregory Scalia, Leighton Kearney, David Cross, Daniel Cehic, Patrick Disney, Xiao-Fang Xu, Peter Cain, Piyush M Srivastava

Abstract: This collaboration establishes a platform for major quality improvement initiatives in echocardiography. The introduction of local quality assurance programs significantly improved reporting completeness of echo quality measures and reduced interstate variability of echo data. A centralized database allowed rapid national adoption of local quality improvements.

Published In: Open Heart

Hospital: Warrigal Private Hospital

Prevalence of frailty and pain in hospitalised adult patients in an acute hospital: a protocol for a point prevalence observational study

Authors: Rosemary Saunders, Kate Crookes, Mustafa Atee, Caroline Bulsara, Max K Bulsara, Christopher Etherton-Beer, Beverley Ewens, Olivia Gallagher, Renee M Graham, Karen Gullick, Sue Haydon, Kim-Huong Nguyen, Bev O'Connell, Karla Seaman, Jeff Hughes

Abstract: This study aims to determine the prevalence of frailty and pain in adult inpatients, including those with cognitive impairment, in an acute care private metropolitan hospital in Western Australia. Frailty and pain often interact, impacting patient outcomes and healthcare system costs.

Published In: BMJ Open

Hospital: Hollywood Private Hospital

Predicting outcome following mild traumatic brain injury: protocol for the longitudinal, prospective, observational Concussion Recovery (CREST) cohort study

Authors: Gozt AK, Hellewell SC, Thorne J, Thomas E, Buhagiar F, Markovic S, Van Houselt A, Ring A, Arendts G, Smedley B, Van Schalkwyk S, Brooks P, Iliff J, Celenza A, Mukherjee A, Xu D, Robinson S, Honeybul S, Cowen G, Licari M, Bynevelt M, Pestell CF, Fatovich D, Fitzgerald M

Abstract: The CREST study is a prospective, longitudinal observational cohort study conducted in Perth, Western Australia, focusing on adults aged 18–65 with a mild traumatic brain injury (mTBI). The study aims to create a state-wide research dataset of mTBI cases through data collection in two phases.

Published In: BMJ Open

Hospital: Joondalup Health Campus

Efficacy and safety of a 4-week course of repeated subcutaneous ketamine injections for treatment-resistant depression (KADS study): randomised double-blind active-controlled trial

Authors: Colleen Loo et al.

Abstract: This phase 3, double-blind, randomized, active-controlled multicenter trial conducted in Australia and New Zealand evaluates the efficacy and safety of repeated subcutaneous ketamine injections for treatment-resistant depression.

Published In: The British Journal of Psychiatry

Hospital: Ramsay Clinic Northside

Effect of Aspirin vs Enoxaparin on Symptomatic Venous Thromboembolism in Patients Undergoing Hip or Knee Arthroplasty: The CRISTAL Randomised Trial

Authors: CRISTAL Study Group; Verinder S Sidhu, Thu-Lan Kelly, Nicole Pratt, Stephen E Graves, Rachelle Buchbinder, Sam Adie, Kara Cashman, Ilana Ackerman, Durga Bastiras, Roger Brighton, Alexander W R Burns, Beng Hock Chong, Ornella Clavisi, Maggie Cripps, Mark Dekkers, Richard de Steiger, Michael Dixon, Andrew Ellis,

Elizabeth C Griffith, David Hale, Amber Hansen, Anthony Harris, Raphael Hau, Mark Horsley, Dugal James, Omar Khorshid, Leonard Kuo, Peter Lewis, David Lieu, Michelle Lorimer, Samuel MacDessi, Peter McCombe, Catherine McDougall, Jonathan Mulford, Justine Maree Naylor, Richard S Page, John Radovanovic, Michael Solomon, Rami Sorial, Peter Summersell, Phong Tran, William L Walter, Steve Webb, Chris Wilson, David Wysocki, Ian A Harris

Abstract: Among patients undergoing hip or knee arthroplasty for osteoarthritis, aspirin compared with enoxaparin resulted in a significantly higher rate of symptomatic VTE within 90 days.

Published In: JAMA

Hospitals: Westmead Private Hospital, Greenslopes Private Hospital, Kareena Private Hospital, St George Private Hospital

Effect of Aspirin vs Enoxaparin on 90-Day Mortality in Patients Undergoing Hip or Knee Arthroplasty: A Secondary Analysis of the CRISTAL Cluster Randomized Trial

Authors: CRISTAL Study Group; Verinder S Sidhu, Thu-Lan Kelly, Nicole Pratt, Stephen E Graves, Rachelle Buchbinder, Sam Adie, Kara Cashman, Ilana Ackerman, Durga Bastiras, Roger Brighton, Alexander W R Burns, Beng Hock Chong, Ornella Clavisi, Maggie Cripps, Mark Dekkers, Richard de Steiger, Michael Dixon, Andrew Ellis, Elizabeth C Griffith, David Hale, Amber Hansen, Anthony Harris, Raphael Hau, Mark Horsley, Dugal James, Omar Khorshid, Leonard Kuo, Peter L Lewis, David Lieu, Michelle Lorimer, Samuel J MacDessi, Peter McCombe, Catherine McDougall, Jonathan Mulford, Justine Maree Naylor, Richard S Page, John Radovanovic, Michael Solomon, Rami Sorial, Peter Summersell, Phong Tran, William L Walter, Steve Webb, Chris Wilson, David Wysocki, Ian A Harris

Abstract: In a secondary analysis of a cluster randomized trial comparing aspirin with enoxaparin following hip or knee arthroplasty, there was no significant between-group difference in mortality within 90 days when either drug was used for VTE prophylaxis.

Published In: JAMA

Hospitals: Westmead Private Hospital, Greenslopes Private Hospital, Kareena Private Hospital, St George Private Hospital

Title: Intraoperative pressure sensors improve soft-tissue balance but not clinical outcomes in total knee arthroplasty: a multicentre randomised controlled trial

Authors: Samuel J. MacDessi, Jil A. Wood, Ashish Diwan, Ian A. Harris

Abstract: Despite improved quantitative soft-tissue balance, the use of sensors intraoperatively did not differentially improve the clinical or functional outcomes two years after TKA.

Published In: The Bone & Joint Journal

Hospital: St George Private Hospital



Research Publications

Please scan the QR code to see the 2022 Research Publications across Ramsay Health Care.

Celebrating Research

In September, the Ramsay Hospital Research Foundation (RHRF) hosts Ramsay Research Month to celebrate the achievements of Ramsay's dedicated research teams and clinical trial units across Australia.

During 2023, we unveiled that 1,750 research projects actively in progress within the Ramsay Health Care network, led more than 550 researchers, including our dedicated doctors and nurses. Together, we're caring for over 22,000 patients, including our volunteers who step forward to shape and test innovative treatments, devices, and diagnostic tools.



Promoting Research

In 2023, the RHRF launched the 'Rapid Research' series, with the aim of promoting research publications that come out of Ramsay. VMOs, doctors, and researchers have the opportunity to explain their research and its importance in just five minutes. You can view all the interviews by scanning the QR code.

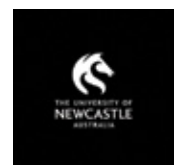
RHRF proudly announced the winners of the National e-Poster Competition:

- **Hanalie Antalan took 1st Place in the Internal Stream and secured the 1st place in the People's Choice Vote category** with her research titled "Investigating the use of Monitored Medicines, Antidepressants, and Antipsychotics Prescribed within an Inpatient Mental Health Facility" (conducted at Ramsay Clinic New Farm).
- **Kiran Dhillon earned 2nd Place in the Internal Stream** with the project "Transformation Of Hospital Pharmacy Services: Improving the Discharge Process at John Flynn Private Hospital" (conducted at John Flynn Private Hospital).
- **Professor Jane Fisher was awarded 1st Place in the External Stream** for her research on the "Impact of residential early parenting program on maternal mental health" (conducted at Masada Private Hospital).
- **Marcus Ang secured 2nd Place in the External Stream** with his research titled "Are you afraid of falling? A prospective analysis of family carers' and older adults' concern about falls during hospitalization and discharge" (conducted at Hollywood Private Hospital).

Thank You

Acknowledgements

We wish to acknowledge the organisations that we support and work with to deliver our research programs.



Thank you to the **Paul Ramsay Foundation**

Ramsay Hospital Research Foundation would like to thank its major supporter, the Paul Ramsay Foundation.

About the Paul Ramsay Foundation

At the Paul Ramsay Foundation, we believe that people and communities across Australia deserve to thrive.

PRF's vision is to end cycles of disadvantage, so that everyone has access to opportunities, regardless of their circumstance or postcode. We seek to identify and partner with individuals, communities, and organisations, and work across sectors to collectively work together in achieving this vision.

The late Paul Ramsay AO established the Foundation in his name in 2006 and, after his death in 2014, left most of his estate to continue his philanthropy for generations to come.



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