

Metro North Hospital and Health Service *Putting people first*

SNAPSHOT OF RESEARCH

2017

Together we deliver exceptional health outcomes
through globally recognised discovery and translation

ACKNOWLEDGEMENTS

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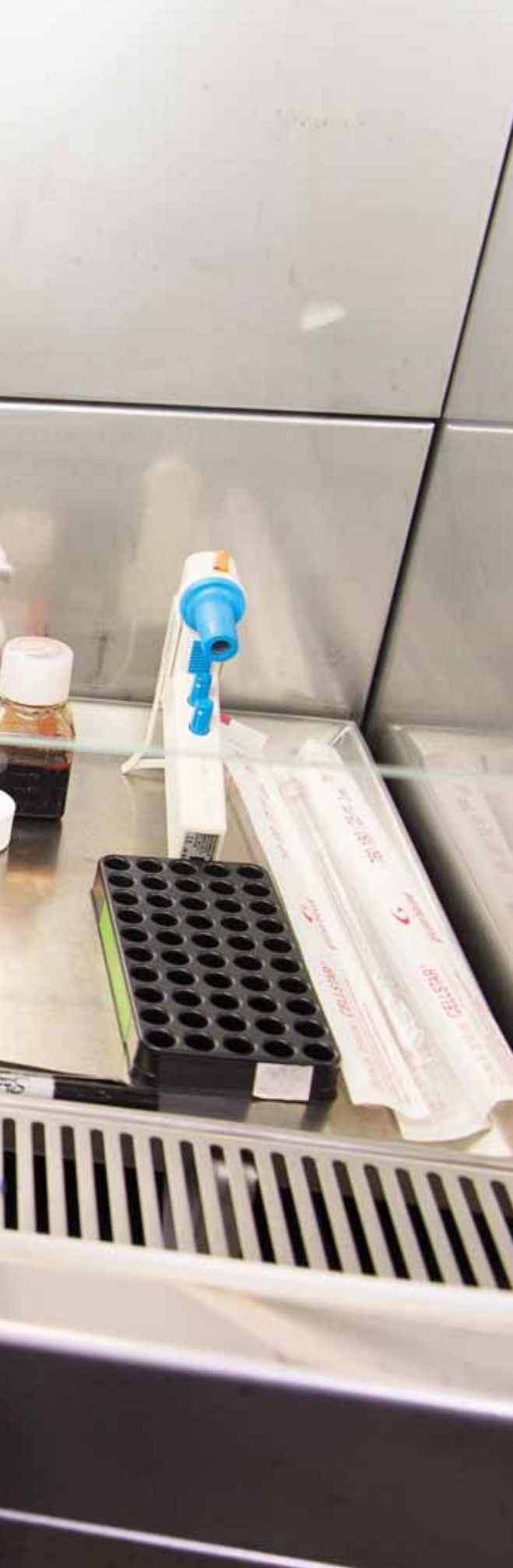
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METRO NORTH BOARD CHAIR AND CHIEF EXECUTIVE

Research is crucial to advancing healthcare and improving lives. Whether it's discovery, clinical trials, quality improvement or implementing evidence, research takes time, commitment and support.

Across Metro North, hundreds of dedicated researchers are working to solve the mysteries of human illness. Many are doing research on top of a busy clinical load, spending evenings analysing data and weekends writing papers.

Researchers inhabit all parts of our organisation; they are doctors, nurses, physiotherapists, dietitians, receptionists, biologists, phlebotomists, statisticians, business managers, technicians, audiologists, mentors, administrators, students and participants.

Dr Robert Stable AM

Chair, Metro North Hospital and Health Board

Our researchers include drivers of global change and people with simple ideas that make a big difference. Through our Research Strategy, we aim to embrace the entire research continuum and improve diagnostics, therapeutics and health services for our patients.

The *Snapshot of Research* highlights some of the people and projects making a difference now and working to make a difference in the future.

Shaun Drummond

Chief Executive

Medical Research Future Fund – 2017 to commence in 2018

Lifting Clinical Trials and Registries Capacity Round
Three successful grants that include clinicians based in Metro North

\$2.0+\$1.5+\$1.2 Million over the next 5 years (total \$4.7 million)

Fields covered – Haematology, Obstetric Health, Cystic Fibrosis

NHMRC Grants – 2017 to commence in 2018

Led by clinician scientists based within Metro North and administered by one of our academic partners (UQ, QIMR Berghofer, QUT)

A Program grant (\$19.8 million), a Partnership grant (\$656,000), a Centre of Research Excellence (\$2.5 million), and three project grants (totalling \$4.2 million)

Fellowship support (totalling \$1.4 million)

Total value of \$29.3 million

Fields include: Dementia, Podiatry, Infectious Diseases, Haematology, Critical Care, Gynaecology and Neonatal Medicine.



METRO NORTH EXECUTIVE DIRECTOR, RESEARCH

Research is essential for a vibrant and evidence based healthcare system. The Metro North Office of Research was established in 2016 to provide strategic direction and support for research across our health service. Through the *Metro North Research Strategy 2017-2022*, we aim to foster and support new and existing research in the areas of therapeutics, diagnostics and health service improvement that will lead to the delivery of exceptional health outcomes through globally recognised discovery and translation.

The Metro North Office of Research is proud to support the annual Research Excellence Awards, entering their third year in 2018. The awards represent Metro North's commitment to recognising and celebrating the breadth and depth of research excellence, and profiling the valuable contribution that research plays in advancing healthcare for our patients.

This publication, the annual *Snapshot of Research*, provides a person-centred overview of the diversity of research programs. It shares the stories of research, profiles the research teams leading the advances in healthcare and acknowledges the continuum of research activity. Importantly, it aims to complement the comprehensive facility and service based annual research reports. This year's *Snapshot of Research* builds on the inaugural issue by highlighting our important research metrics across the past year.

The Metro North Office of Research also recognises the value of integrated and consistent research information, management and communication systems. The Research Policy and ten procedures provide a framework to promote the responsible and ethical design, conduct,

and communication of research. These documents have been developed collaboratively, with the primary intent to promote consistency in research processes and can be viewed online on the Metro North Research website: <https://metronorth.health.qld.gov.au/research>.

This year, Metro North has sponsored the inaugural cohort of the Graduate Certificate in Health Services Innovation, a joint partnership with the Australian Centre for Health Services Innovation (AusHSI), Queensland University of Technology (QUT). The course supports Metro North's drive to increase the capacity of health professionals to implement innovative change in health services. The first cohort of students, who all have roles within Metro North, will undertake real-life projects designed to innovate and improve health care.

In 2017, our researchers were successful in \$4.7 million of Medical Research Future Fund grants to support innovative clinical trial approaches to challenging questions. Furthermore, our researchers working with our academic partners received \$29.3 million in grant and fellowship support from the National Health and Medical Research Council (NHMRC).

Professor Scott Bell

Executive Director, Research



"RESEARCH WILL PROVIDE
OUR PATIENTS WITH
THE BEST ACCESS IN
AUSTRALIA TO NOVEL
DIAGNOSTICS, INNOVATIVE
THERAPEUTICS
AND ADVANCED
HEALTH SERVICES."

METRO NORTH HHS RESEARCH STRATEGY

VISION

Changing the face of healthcare through compassion, commitment, innovation and connection.

MISSION

Together we deliver exceptional health outcomes through globally recognised discovery and translation.

ENABLERS

Our **enablers** – **patients, people, systems, infrastructure** and **partners** – will actively support our **themes** and **direction** to deliver excellence in discovery and translation.

THEMES

Our **themes** – **diagnostics, therapeutics** and **health services** – embrace the entire research continuum, from basic discovery through clinical translation to public health and health services research, in the context of our patients' journey through our health service.

DIRECTION

To **define** clinically relevant questions, **discover** and **translate** new knowledge into evidence for patient care and **implement** this knowledge into informed practice that will lead to research **impact**.

TOGETHER WE DELIVER WITH OUR



PATIENTS

Patients, healthcare consumers and the community

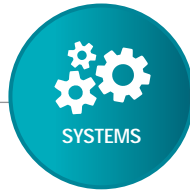
Lead excellence in patient centred research



PEOPLE

People engaged with research

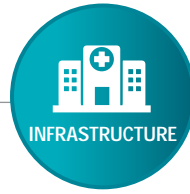
Engage our people with a research-active culture to develop attract and retain high calibre research expertise



SYSTEMS

Research information, management and communication systems

Establish integrated research information, management and communication systems



INFRASTRUCTURE

Research infrastructure and resources

Enhance sustainable research capacity through management of infrastructure and resources



PARTNERS

Collaborations and partnerships

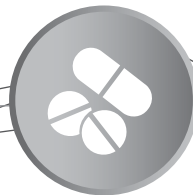
Support strategic collaborations and partnerships to drive globally recognised discovery and translation

EXCEPTIONAL HEALTH OUTCOMES BY EMBRACING



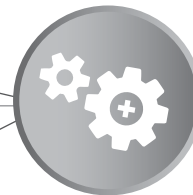
DIAGNOSTICS

From discovery research that advances fundamental understanding of disease-related mechanisms which influence diagnosis, to translational research, which successfully tests the application, efficacy and translatability of diagnostic tests, services and devices.



THERAPEUTICS

Through the integration of therapeutic research and clinical care, we will become leaders in the prevention and management of disease and the specific, highly complex health problems facing our patient population.



HEALTH SERVICES

Through health services research we will embrace the design of sustainable, integrated and safe models of healthcare with the capacity to improve health outcomes, reduce disparities for disadvantaged and vulnerable groups, increase efficiency and provide value-based healthcare.

THROUGH GLOBALLY RECOGNISED DISCOVERY AND TRANSLATION

DEFINE

Continuous data integration and knowledge synthesis

DISCOVER

Address fundamental knowledge gaps

TRANSLATE

Translate new knowledge and innovations

IMPLEMENT

Bring new knowledge into practice

IMPACT

Positively impact long-term health outcomes

HEALING BRAIN INJURIES IN INFANTS



Babies who have suffered a serious interruption of oxygen supply during birth are at a high risk of brain injury. Around 25 per cent develop cerebral palsy and another 25 per cent have other neurodevelopmental disabilities.

Director of the Royal Brisbane and Women's Hospital and The University of Queensland Perinatal Research Centre Professor Paul Colditz leads a team of researchers using stem cells sourced from a baby's own placenta to heal brain injuries.

Early results from the study suggest that, if used immediately after birth, the treatment is safe and leads to reduced brain inflammation.

"At the moment we use hypothermia to protect babies' brains but still many suffer these long-term effects," Prof Colditz says.

"Stem cell therapy shows great promise as a treatment. This problem happens so suddenly in labour to healthy mothers whose babies have previously been developing totally normally."

The ground-breaking research could not be done without collaboration and partnership between the team at RBWH and research partners.

"It is a collaborative effort," Prof Colditz says.

"Dr Tracey Bjorkman and Dr Julie Wixey from University of Queensland Centre for Clinical Research, and Professor Kiarash Khosrotehrani and Dr Jatin Patel from The University of Queensland Diamantina Institute are key members of the research team."

The research is funded by the National Health and Medical Research Council.

Professor Paul Colditz's research is using stem cells to repair brain injury in babies. Photo courtesy of UQ.







Occupational Therapists are trialling new guidelines and therapies to support people with post stroke fatigue.

POST STROKE FATIGUE IMPACTS REVEALED AS PART OF INNOVATIVE NEW STUDY



Community allied health researchers are leading the way with another innovative study looking at the significant impact that post stroke fatigue has on the recovery of older patients who have suffered a stroke.

Senior Occupational Therapist Anthony Walsh says post stroke fatigue is a debilitating issue that could have a serious impact on recovery and ongoing quality of life.

“It has been found that close to 70 per cent of stroke patients are likely to feel the effects of fatigue, and this can reduce the level of participation and effort in their therapy and home exercise programs,” Anthony says.

“In particular, recent research has shown that around 62 per cent of patients who suffer post stroke fatigue experience significant difficulty focusing on exercise and recovery efforts over short or sustained periods of time.

“At the moment, there is limited evidence about older patients to help us to deliver effective long term treatment and planning of post stroke fatigue, and we are trying to change that.”

In the absence of clinical guidelines and therapies for post stroke fatigue, community based occupational therapists have developed a new suite of clinical tools and guidelines aimed at improving engagement in therapies.

“We have developed post stroke fatigue management guidelines and therapies to fill the gap in post stroke treatment and planning, and to better engage patients with attention and memory deficits,” Anthony says.

“In particular, these tools are aimed at better promoting relaxation and reducing the signs of mental fatigue, by reducing multitasking, distractions and extra decision making.”

The trial between Metro North and The University of Queensland will evaluate the effectiveness of the new suite of clinical tools and review the usefulness of fatigue management guidelines for staff.

Anthony says the randomised trial would target 40 older patients aged 60 years and over who have suffered a stroke, have fatigue issues and are accessing the Community Based Rehabilitation Service.

“It will be the first trial to assess the effectiveness of a new fatigue management guideline for stroke incorporated into community practice,” he says.

The clinical guidelines and tools were developed following in depth internal and external evaluation of clinicians working across community based services.

EARLY PSYCHOSIS FOCUS SEES BETTER PATIENT OUTCOMES



A common food preservative could reduce psychosis symptoms and improve function.

Early Psychosis Psychologist Anne Gordon is working with psychiatrist Dr James Scott and a team of youth mental health clinicians and researchers to investigate various interventions for young people experiencing psychosis or schizophrenia.

"I'm an everyday clinician assisting with letting clients and colleagues know about various research projects that can be accessed to provide people with innovative new treatments to enhance their wellbeing," Anne says.

"It's excellent for clients who access the health service to be offered the chance to participate in research, should they choose to do so."

Royal Brisbane and Women's Hospital is a leading site for the Cadence Trials, a platform of studies established in Queensland to investigate the novel treatments for psychosis. Anne is working with colleagues in the latter stages of recruiting young people to a randomised controlled trial investigating whether sodium benzoate will reduce symptoms associated with psychosis, and improve functioning in the young participants.

"We've recruited a young client group to find out if it will be a helpful adjunctive intervention alongside antipsychotic medication," Anne says.

"The antipsychotic medication commonly used for psychosis has a lot of side effects. It's part of the approach of looking at other interventions that are safer and aren't necessarily medication based."

Anne has also worked with colleagues conducting a randomised controlled trial using Social Cognition and Interaction Training (SCIT). The study is investigating whether the group therapy program improves social functioning and relationships, and symptoms for people who experience psychosis or schizophrenia.

"The program incorporates various media to assist with skill development and theoretical knowledge to reduce common experiences like paranoia, delusions and anxiety," Anne says.

SCIT comprises three phases: introducing emotions, figuring out situations and actioning social and worrying situations.

"It uses short DVD vignettes featuring university actors demonstrating socially savvy situations and social situations that are clunky that participants and clinicians can critique," Anne says.

"The spotlight is on the actors and not the participants and, as sessions progress, the spotlight can come onto the participants a bit more and people can feel comfortable enough to talk about distressing experiences."

In the five years the SCIT program has been running researchers have conducted two studies into its effectiveness. The first study found that while there was no significant difference in outcomes of patients who participated in SCIT compared to the usual treatment, there was strong engagement with the SCIT intervention.

A second randomised controlled trial compared SCIT to a control group, the befriending group. Results are due to be published shortly.

Anne says being part of the research was valuable because it was a psychological intervention.

"Most research is medication based and there is less research of psychological interventions. Our clinical experience is that therapy is so important to young people experiencing psychosis," she says.



Pictured: Early Psychosis Psychologist Anne Gordon is supporting research.



CHIPPING AWAY AT MENTAL HEALTH MYSTERY



Child and adolescent psychiatrist Associate Professor James Scott is edging closer to unravelling the mystery behind what causes schizophrenia and psychosis in young people. His research using immunotherapy to treat the mental illnesses is enabling practitioners to gain a better understanding of their causes.

Psychosis and schizophrenia remain medical mysteries, their causes unknown. But Associate Professor Scott's research is slowly changing that. This breakthrough has found that immunotherapy improves the outcomes of patients with inflammation related psychosis.

It's what he calls a minor revelation, but it's making a big impact in the way we understand how mysterious mental health disorders like psychosis are diagnosed and treated.

"About ten years ago, we read about a new illness, NMDA receptor encephalitis, where people presented with psychosis as a result of an autoimmune illness that affects the brain," Assoc Prof Scott says.

"We wondered if people with psychosis or schizophrenia in our mental health service had this auto immune illness but were not being diagnosed or receiving appropriate care."

In a partnership with Royal Brisbane and Women's Hospital, Assoc Prof Scott and his collaborators recruited 113 patients. Five of the patients tested positive for autoimmune encephalitis and were successfully treated with immunotherapy.

"What we know is when people have psychosis that is due to underlying encephalitis and they don't get immunotherapy, they remain psychotic; but by identifying them and treating them appropriately with immunotherapy, we've changed the lives of these five individuals," Assoc Prof Scott says.

The research, which has been accepted into the *British Journal of Psychiatry Open*, is of enormous importance to psychiatry, explaining the underlying medical cause in around three percent of patients admitted to hospital with psychosis.

"It is now very obvious that schizophrenia is not a single illness," Assoc Prof Scott says.

"The schizophrenias comprise a lot of different illnesses and when we unpick them, we can provide better and more targeted treatments."

The discovery has become the catalyst for further exploration into the mental illness mystery, with Assoc Prof Scott expanding the scope of psychosis testing across the east coast of Australia.

"The next question is how we target this test. Universal testing on everyone with psychosis has problems and is expensive. We are now conducting research to answer this," he says.

"We're asking whether we can we actually identify clinical features that makes a person high risk of having an autoimmune disorder, and we think we can."

Assoc Prof Scott and his team have applied for National Health and Medical Research Council funding to conduct this large scale study which would recruit 1200 people with psychosis to prospectively validate proposed high risk clinical criteria.

In recognition of his ground-breaking research in psychosis, bullying and child maltreatment, Assoc Prof Scott received Royal Australia and New Zealand College of Psychiatrists 2018 Senior Research Award.

Pictured: Associate Professor James Scott received an international award for his research into bullying.

CREATING A PATIENT-CENTRED ICU OF THE FUTURE



As medical and technology advancements have improved the survival of critically ill patients, focus is now turning to ensuring the quality of life in intensive care.

Researchers at The Prince Charles Hospital are working with industry leaders LendLease, Wilson Architects and a diverse group of clinicians from across Metro North to create an intensive care unit (ICU) that puts a positive patient experience at the centre of care.

Critical Care Research Group project officer Oystein Tronstad says the physical environment of the ICU can have a profound effect on patients and their families.

"We know that environmental factors such as excessive light and sound are common problems in the ICU. This is known to cause sleep disruptions and can also contribute to delirium and distress. This is potentially preventable," Oystein says.

"ICU delirium is a condition affecting up to 80 per cent of ICU patients and is associated with long term mental and physical health problems, such as cognitive impairment and post-traumatic stress disorder."

Evidence shows delirium can have devastating effects on the patient and cause distress for their family and relatives. It can also lead to extended ICU and hospital stays and an increased financial cost to the health service.

"We know that lack of mental stimulation and engagement with the care provided are also known environmental detriments, and simple things such as a view of the outside world, even by video link, is known to contribute to better outcomes," Oystein says.

Current hospital design has traditionally been driven by architects and engineers with input from clinicians but not patients.

"The patient is essentially the centre of the ICU bedspace and may offer the best insight into what environmental factors could be altered in order to improve their ICU stay," Oystein says.

"Alongside the patient are their friends and relatives who may spend hours, weeks, or even months sitting at the bedside with them, giving them invaluable understanding as to what could be improved in the critical care environment."

The evidence available to guide medical treatments in ICU has grown rapidly over the last few years. However, the evidence available to guide the design of the ICU environment has not developed at the same rate, and has often been overlooked when new hospitals have been designed. The development and incorporation of available technology has not corresponded to the rapid technological advances occurring in other fields.

The project aims to develop an improved ICU model that encompasses what the patient and their families value – quality of survival and an improved journey for patients spending time in an ICU.

The two-year project will see the project team engaging with former ICU patients and their families, the ICU multi-disciplinary team as well as with external medical technology companies, with the view to create an evidence based and redesigned ICU bedspace prototype that employs the latest relevant IT and technology solutions.

"Many survivors have long term complications and impairments. We can continue to improve outcomes of importance to ICU survivors. Ultimately we want the patients to thrive and not just survive," Oystein says.

The project is supported by Metro North Hospital and Health Service and The Prince Charles Hospital Foundation.



Dr Paul Chapman

CABOOLTURE HOSPITAL'S NEW RESEARCHERS



Caboolture Hospital's research culture is young but flourishing as medical, allied health and nursing staff complete research higher degrees in addition to their clinical work.

This commitment to work and study highlights a dedication to developing new or improved models of care for patients and the community.

Dr Paul Chapman

Dr Paul Chapman is completing a Master of Philosophy, in conjunction with QIMR Berghofer Medical Research Institute. Dr Chapman is conducting a randomised controlled trial investigating the safety and effectiveness of a hookworm vaccine.

Dr Chapman continues to work part-time as an infectious diseases consultant at Caboolture Hospital and study at the University of Queensland. His goal is to work on eliminating neglected tropical diseases that continue to affect millions of people.

Annabelle Marozza

Senior Occupational Therapist (Paediatrics) Annabelle Marozza received a scholarship from the Collaborative for Allied Health Research, Learning and Innovation (CAHRLI) last year to complete a Master of Science.

Annabelle's research into sensory processing of information is aimed at improving the diagnosis process for children with Attention Deficit Hyperactivity Disorder (ADHD) or Autism Spectrum Disorder (ASD). Her research question has come from an interest in sensory processing issues after many years of clinical experience

and directly relates to Annabelle's current role as part of the paediatric outpatient multidisciplinary assessment team at Caboolture Hospital.

Jackie Goldberg

With more than 20 years of experience as a perioperative nurse, Jackie Goldberg has seen first-hand the negative outcomes for patients who get too cold in the operating theatre.

Jackie is currently enrolled in a part-time Masters degree through the University of the Sunshine Coast investigating preoperative warming of day surgery patients to ensure improve the patient's surgical experience.

Dr Laurel Teoh

Dr Laurel Teoh is a Consultant Paediatric Respiratory and Sleep Physician who is currently working at Caboolture Hospital. Her research into common respiratory problems in young children is forming the basis of her PhD studies with Charles Darwin University.

Dr Teoh's most recent manuscript 'Presence of atopy increases the risk of asthma relapse' was published in the *Archives of Disease in Childhood*.

MEASURING EMERGENCY DEPARTMENT VIOLENCE



Caboolture Hospital researchers have examined the incidence of verbal abuse and physical aggression towards emergency department workers in an effort to understand the extent of the problem.



Research Support Officer Julia Affleck, Research Coordinator Thuy Frakking and Research Officer Brad Partridge

Researchers Dr Bradley Partridge and Julia Affleck explored the rates of violence towards emergency department (ED) staff, and perceptions of safety and security.

“It can be problematic to rely solely on incident reports as a proxy for actual levels of violence,” says Bradley.

“We asked staff across all ED roles in Metro North to tell us whether they had been abused or assaulted, what kinds of incidents take place and how often, and then other things like how safe they feel at work, and what their attitudes towards security are.”

The researchers found that while nurses are more likely to incur violence and abuse from patients, staff across all roles including administration, allied health and operational staff experience violence in the workplace. Official reporting of violence and abuse was low among all ED staff. Since the survey was completed, Metro North has employed dedicated ED security officers.

“We’ve recently done a follow up survey that shows having a security officer embedded in the ED has made a lot of staff members feel much safer although abuse and violence still occurs frequently,” says Bradley.

The effects of occupational violence in EDs can leave workers feeling stressed and with low morale and can adversely affect patient quality of care.

Bradley and Julia looked into measures to prevent and reduce violence in emergency departments, exploring the effectiveness of the Brøset Violence Checklist (BVC), a six item checklist that security officers can use to rate and predict acts of aggression in patients.

“This was the first time worldwide that the BVC had been used in an ED by security officers and the results were encouraging,” Bradley says.

“Patients who scored high risk on the BVC were around 70 times more likely to be violent than patients who scored low risk.”

The research suggests that the test could be pre-emptively used to prime ED workers for situations that heighten the risk of occupational violence, increasing safety for healthcare workers and patients. The team have also completed in-depth interviews with ED nurses at Caboolture and The Prince Charles Hospital about how they manage aggression from patients and are hopeful this work can help them develop a more thorough understanding of occupational violence.

“In order to do something about violence in the ED you have to first understand the scope of the problem, who it actually occurs to, and what kinds of factors might contribute,” Bradley says.

DR JOEL DULHUNTY: CLINICIAN, RESEARCHER AND MENTOR



Growing up in Zambia and Nepal with parents in healthcare, becoming a doctor was a logical career goal for Joel Dulhunty. Joel completed his undergraduate degree in America and when he returned to Australia, undertook his first research project as part of a Master of Public Health while waiting for medical school to begin.

"I completed a three month research project in the Solomon Islands with fellow master students from Eritrea, Tonga and Kazakhstan. We were working with villagers on malaria prevention and understanding how people were using insecticide-impregnated bed nets," Joel says.

"It was a really interesting study and showed me the importance of understanding people's behaviour from their perspective. I learnt a lot of skills that shaped who I've become and it reinforced the vital role teamwork plays in all research endeavours."

Joel was one of the first graduates of The University of Queensland's combined medical degree and PhD program. As part of the course he met Professor Jeffrey Lipman, who remains a research mentor.

"A couple of years later, as a junior registrar in the Intensive Care Unit, I had the opportunity to take part in my first clinical research project, looking at how we gave fluid resuscitation to burn victims," Joel says.

"From the first moment the ambulance arrived we started recording all fluid and blood products. We identified that if there's too much fluid given, we get swelling and compartment syndrome. I was very fortunate to have the opportunity to undertake this work, which shaped my ongoing research interest in critical care medicine."

During his training at Royal Brisbane and Women's Hospital, Joel had to decide whether to follow the intensive care path or become a medical administrator, which aligned with his public health interest. He completed his final year of medical administration training in 2011 at Redcliffe Hospital and since then has worked at Redcliffe Hospital, while also continuing as a researcher in intensive care medicine at RBWH.

Most recently, Joel has been project lead of a major research program led by Professor Lipman. It has grown from a pilot study of optimising antibiotic use for sepsis with 60 patients in four intensive care units in 2010 to now 7000 patients in 100 intensive care units around the world. In addition to his love of statistics, it's also given Joel new skills in being a research investigator.

"I've learnt how to be successful with grants, how to manage a multicentre randomised control trial, and how to engage and collaborate with multiple groups of people. Research can be something that is obscure until you actually do it. People think it's just about collecting and analysing data, however that's just part of the journey," Joel says.

Over the last few years, Joel has fine-tuned his advice to clinicians thinking of getting into research. He's worked hard to have an open door policy and develop research education opportunities for emerging researchers.

"Part of my mentorship is about getting people ready for the journey: where to start, ethics and governance considerations, links to key research supports and understanding what to expect along the journey," Joel says.

"Whatever work you are involved in, look for ways to hone your research skills and add to your research toolkit."



"WHATEVER WORK YOU ARE INVOLVED IN, LOOK FOR WAYS TO HONE YOUR RESEARCH SKILLS AND ADD TO YOUR RESEARCH TOOLKIT."



IMPROVING MATERNITY OUTCOMES FOR INDIGENOUS FAMILIES

IBUS study team (L-R) Dr Yvette Roe, Dr Sophie Hickey, Sarah-Jade Maidment and Kayla Heinemann.

A five year study is providing evidence to improve maternity outcomes for Aboriginal and Torres Strait Islander families in South East Queensland.

The Indigenous Birthing in an Urban Setting (IBUS) study is funded by the National Health and Medical Research Council in partnership with the Mater Mothers Hospital, the Institute for Urban Indigenous Health, and the Aboriginal and Torres Strait Islander Community Health Service Brisbane Ltd.

Pregnant women are recruited at the Ngarrama maternity service at Royal Brisbane and Women's Hospital (RBWH) as the comparison site and the Birthing in our Community (BIOC) program at Mater Mothers Hospital as the intervention site.

IBUS Research Officer Dr Sophie Hickey says by the end of this year over 600 women will have been recruited to the study with two surveys conducted pre and post childbirth.

"We have two Aboriginal community research assistants, Kayla Heinemann and Sarah-Jaide Maidment, undertaking recruitment and data collection according to Good Clinical Practice Guidelines and in a culturally safe and supportive manner," Sarah says.

Sarah, an Arrernte woman from Alice Springs, attends the Ngarrama clinics at RBWH and Zillmere Community Health Centre each week.

"What interested me in this role was being able to talk to women and hear their stories. As a mother I feel like I can relate to these women and I like that I can give them the opportunity to reflect on their birthing experience," Sarah says.

Dr Yvette Roe, Senior Research Fellow at Mater Research's Midwifery Research Unit, says the participatory action research (PAR) allows for continual service improvements and policy development integral to the research process.

"It's responding to what is needed. For example, if there is a decrease in breastfeeding rates we can provide this information back to the midwives who can then make changes to improve breastfeeding rates," Dr Roe says.



"PAR is responding to the client's need. The workforce is actually informed of the data straight away and it's an organic change agent research design."

Dr Roe says the findings have led the employment of a full time social worker at BIOC and two transport officers to assist women with attending their antenatal clinic appointments.

She says since the study commenced, there has been a higher referral rate into BIOC. There is evidence that the women are happy with services and it's meeting their expectations in regards to continuity of care, community engagement, cultural safety and improved birthing outcomes.

"If we don't do anything to change how maternity services are delivered to Indigenous mothers, we are not going to close the gap in child mortality and improve birthing outcomes. We know that if you have a culturally competent workforce it can result in better outcomes," Dr Roe says.

"If women have access to services, transport, Indigenous liaison officers in hospital and a timely and quality service, that makes a difference. If you engage with women early in their pregnancy, ensure that the service is mother-and baby-centred and has Indigenous-led community governance, it makes a difference to reducing pre-term birth rates."

The long term aim of the study is to push for testing the birthing on country model, an Indigenous-led midwifery service with its own midwifery group practice and holistic wrap around service that meets the social and cultural needs of the women.

"The next step for us is having a community birthing service. The Indigenous community will decide what that looks like and it has to be done in partnership with tertiary hospitals," Dr Roe says.

UNCOVERING THE HEALTH BENEFITS OF SOCIAL INCLUSION FOR OLDER ADULTS



An Australian-first study is aiming to uncover the benefits of social inclusion for older patients who are transitioning home following hospitalisation due to a chronic or acute condition.

Social worker Louise Lynch says returning home following rehabilitation or care for an acute condition such as a stroke can often be challenging, but becomes even harder as we age.

“People, especially the elderly, have greater care needs and often require extra support from their loved ones, friends and extended families,” Louise says.

“Often, when the elderly are recovering from a severe condition such as a stroke they lose connection with their social supports and are at increased risk of becoming socially isolated. This isolation can lead to anxiety and depression, lower immune responses and slower recovery.”

Research to date has shown social isolation after a patient’s first stroke increased the risk of a recurrent stroke within five years. The rate is almost twice as high (31%) for those who are socially isolated as those with social connections (18%).

“In fact, isolation was found to be a more of a risk factor for further health decline than more traditional predictors such as coronary heart disease and physically inactivity,” Louise says.

The Groups 4 Health: Going Home is a randomised controlled trial at Brighton Health Campus with participants who have experienced a major health challenge and are facing significant adjustment issues.

The Brighton research team, led by Senior Social Worker Juliann Whitmore, is looking forward to embedding new findings into clinical practice.

“It will be the first time that older patients in this context will be focused on to understand the impacts of social inclusion and isolation. Effects on loneliness, mental health, social participation and connectedness, cognitive health and health-related quality of life will be measured at three time points during the study,” Juliann says.

“The research will build on pilot data and initial feasibility studies to test vulnerable older adults at this critical point of transition.”

Groups 4 Health is being delivered at Brighton Heath Campus through a community partnership between Metro North, The University of Queensland and BallyCara Retirement Village. The research trial will recruit 70 participants over the year to participate in the study.



WHO

ARE OUR RESEARCHERS IN METRO NORTH?

WHAT

AREAS ARE WE WORKING IN?

Across Metro North, we have over 1,500 staff members who are leading or directly involved in conducting research.

APPROX. 10% OF METRO NORTH CLINICAL AND SCIENTIFIC STAFF



ARE RESEARCHERS



Research is undertaken in all clinical fields by all disciplines across Metro North.

Much of the work is collaborative across fields and disciplines and is truly multi-disciplinary in its scope. Many projects involve more than one site within MNHHS.

Internationally renowned fields of research include:



Intensive
Care



Thoracic
Medicine



Haematology and
Medical Oncology



Infectious
Diseases



Gastroenterology



Internal
Medicine



Perinatal and
Obstetric Medicine



Anaesthetics



Orthopaedics



Cardiology



Renal
Medicine



Mental
Health



Emergency
Medicine



Neurology



Nursing
Research



Allied Health
Research



HOW MANY CLINICAL RESEARCH PROJECTS?

THERE ARE OVER

1,300 
**RESEARCH
PROJECTS**

CURRENTLY UNDERWAY
ACROSS METRO NORTH

OF THESE, THERE ARE OVER

390 CLINICAL
TRIALS

underway – including three first-in-man clinical trials, over 100 drug trials and 30 new devices.

DRUG AND DEVICE CLINICAL TRIALS ARE UNDERTAKEN ACROSS THE ENTIRE RANGE OF CLINICAL TRIAL PHASES (FIRST IN MAN PHASE I-IV), WITH A CONCENTRATION OF PHASE II AND III STUDIES. THE CLINICAL TRIALS SPAN THE COMPLETE SPECTRUM OF THERAPEUTIC AREAS AND ARE UNDERTAKEN AT RBWH, TPCH, CABOOLTURE AND REDCLIFFE.

PROJECTS UNDERWAY AT
METRO NORTH INCLUDE

400 HEALTH
RESEARCH
PROJECTS

540 CLINICAL
RESEARCH
PROJECTS

OVER 1,400
PUBLICATIONS

CO-AUTHORED PAPERS
IN OVER 65 COUNTRIES

54 SYSTEMATIC
REVIEWS

9 PUBLISHED IN THE
COCHRANE DATABASE OF
SYSTEMATIC REVIEWS

WHO DO WE PARTNER WITH?

LOCAL HEALTH
PARTNERS:
MSHHS, CHQ,
SCHHS, MATER HS,
PATHOLOGY QLD

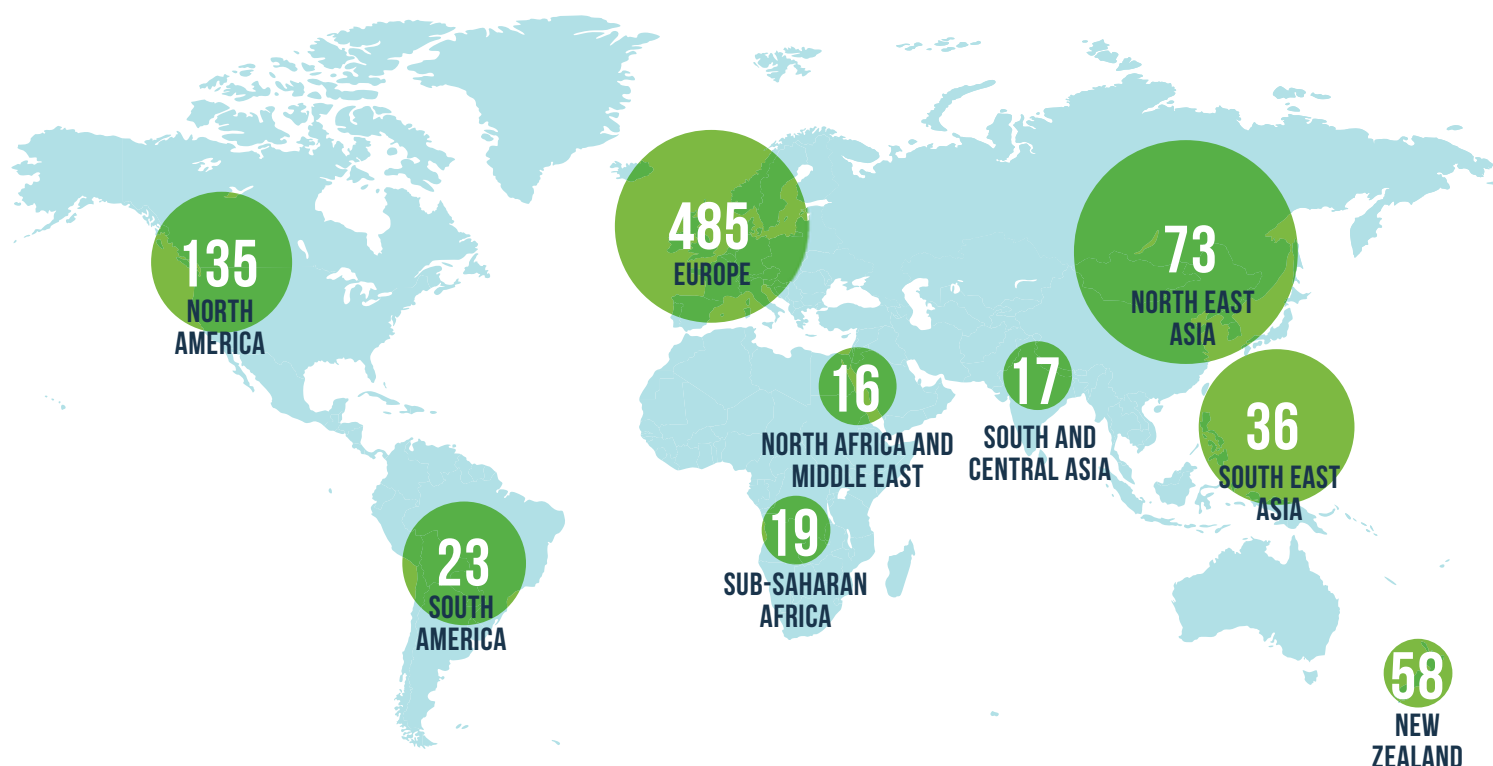
INSTITUTION
PARTNERS:
UQ, QUT, QIMRB, TRI,
CSIRO, ACU, GRIFFITH,
SCU, CQU

Metro North is one of 10 partners in the Brisbane Diamantina Health Partnership.

Extensive partnerships both nationally and internationally with leading Medical Research Institutes, Universities, industry, commercial sponsors, specialist societies and not for profit partners.

INTERNATIONAL RESEARCH ENGAGEMENT*

* Numbers of publications with co-authored collaborators in 2017.



EXEMPLAR CLINICAL TRIALS

The following are examples of clinical trials and trial programs, both investigator-led and industry-sponsored:

- **Mental Health:** Royal Brisbane and Women's Hospital Mental Health investigators are assessing neuro-inflammation and degeneration in people at high risk of or who have experienced their first episode of psychosis.
- **Cystic Fibrosis:** Researchers from The Prince Charles Hospital Adult CF Centre have participated in novel modulator trials to address the underlying cause of CF.
- **Coeliac Disease:** Gastroenterologists at The Prince Charles Hospital are coordinating a multi-centre clinical trial to test the safety of sustained and escalating gluten challenges in people with coeliac disease.
- **Intensive Care:** Researchers from Metro North are leading the BLING 3 international study to test the optimal dose of beta-lactam antibiotics for sepsis in 7,000 patients across up to 100 intensive care units.
- **Malaria:** Royal Brisbane and Women's Hospital and QIMR Berghofer researchers are testing the safety and tolerability of a potential antimalarial drug in healthy adult participants.
- **Cardiology:** Cardiologists at The Prince Charles Hospital are trialling new drugs and devices with a focus on the impact on clinical and quality of life outcomes of percutaneous delivery.
- **Headaches:** Emergency medicine researchers at Redcliffe Hospital are investigating the safety and effectiveness of intravenous propofol for refractory migraine-like headaches.

Prepared by Dr Tania Crough, Dr Roxanne Machen, Professor Scott Bell Office of Research, Metro North HHS.



MEET THE METRO NORTH OFFICE OF RESEARCH TEAM

Claire Harrison, Dr Tania Crough, Tanya Quesnel, Associate Professor Janet Davies, Professor Scott Bell, Seán Ó Cinnéide and Dr Roxanne Machen.

Professor Scott Bell, Executive Director Research, Metro North

Scott is a thoracic physician with a special interest in the care of adults with cystic fibrosis. He is the inaugural Executive Director Research for Metro North, lead the Lung Bacteria lab at QIMR Berghofer and is Editor-in-Chief of the Journal of Cystic Fibrosis. With the pain of personal publication rejections and unsuccessful grant applications fresh in his memory, he is passionate to support the next generation of budding clinician researchers.

Associate Professor Janet Davies, Assistant Director Research, Metro North

Janet's vision for her role as Assistant Director of Research is to embed a culture of research innovation within Metro North so we deliver to our community the best healthcare system that is informed by current knowledge. Through development and implementation of our Research Strategy, and leadership of the Clinical Research Education Program, transdisciplinary research partnerships and gender equity initiatives, she assists in positioning Metro North as a national and global leader in clinical research.

Dr Roxanne Machen, Research Project Officer

Roxanne is responsible for working collaboratively within the Metro North Research Office and across the HHS to develop, implement and evaluate the Metro North Research Strategy. She is an avid reader, she is at home when at the beach, and believes that research will shape our future healthcare.

Dr Tania Crough, Research Monitoring Officer

Tania works across facilities and helps meet its obligations in verifying that all Metro North research is being conducted according to the approved ethics, governance and regulatory requirements and that the relevant study documentation is being maintained. She also acts as another support mechanism for researchers to learn and adopt best research practices.

Tanya Quesnel, Research Ethics and Governance Officer

Tanya's role is to relieve Research Ethics and Governance Officers within Metro North and to work on research ethics and governance projects with the Office of Research. She is passionate about paperless systems!

Claire Harrison, Learning Coordinator

Claire provides support and assistance to students undertaking the Graduate Certificate in Health Services Innovation and contributes to building a culture of innovation in Metro North. Claire is also the occasional 'agony Aunt' for our Metro North students!

Seán Ó Cinnéide, Senior Administrative Support Officer

Seán is often the first point of contact for the Office of Research. His role is to assist in coordinating, organising and communicating the work of the Office of Research.

PREVENTING FALLS IN HOSPITAL



Patients who fall while in hospital often experience lost confidence, delayed recovery and an extended length of stay.

Patient falls are the most frequent adverse clinical incident in Australian hospitals with more than 13,600 reported in Queensland public hospitals over 12 months. One in three people over the age of 65 will experience a fall with 30 per cent of these people requiring medical treatment.

Researchers at The Prince Charles Hospital (TPCH) have investigated a new aspect of inpatient falls in an effort to assist health professionals develop more effective falls prevention methods. The nursing based study looks at the patient's experience of falling in hospital rather than the causes of falls which is the frequent focus of research in this area.

TPCH's Nursing Director of Research and Practice Development Professor Paul Fulbrook says the research shows having a fall does not have the same effect on everyone.

"It is important to understand the individual patient's perspective and attitude towards their own falls risk. We found that some patients were not willing to accept that they were at risk of falling. Other patients did not want to be labelled as a 'falls risk' as this made them feel old and frail," Professor Fulbrook says.

"While some patients asked staff for assistance with activities that could result in a fall, others had a false sense of security in the ward environment, and therefore did not consider asking for help."

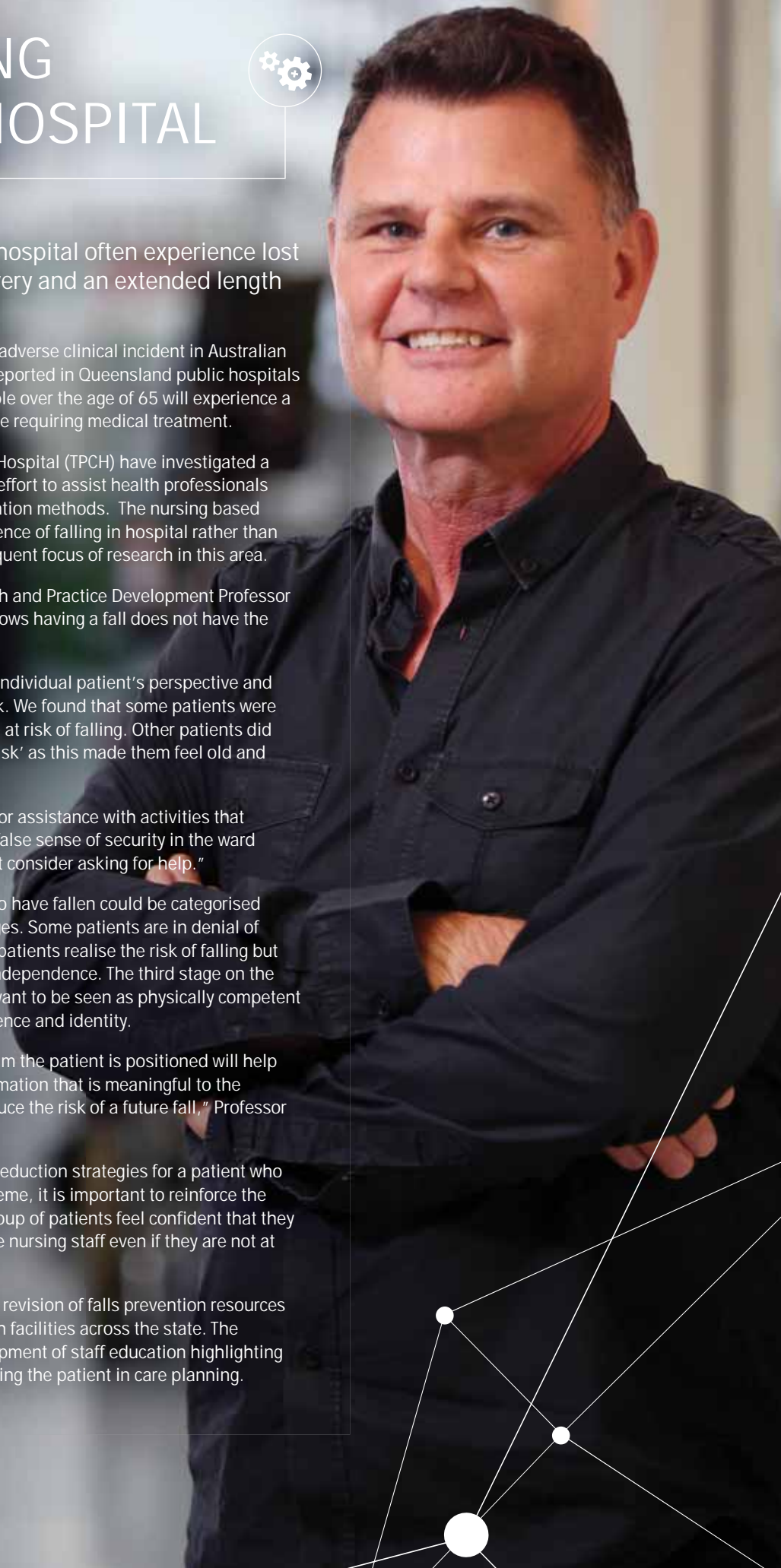
Research showed that patients who have fallen could be categorised into one of three psychosocial stages. Some patients are in denial of their falls risk and feel safe. Other patients realise the risk of falling but are concerned about losing their independence. The third stage on the continuum is those patients who want to be seen as physically competent and are recovering their independence and identity.

"Identifying where on the continuum the patient is positioned will help clinicians to provide relevant information that is meaningful to the patient, which in turn can help reduce the risk of a future fall," Professor Fulbrook says.

"For example, when planning risk reduction strategies for a patient who identifies with the 'feeling safe' theme, it is important to reinforce the use of the nurse call bell as this group of patients feel confident that they will be protected from falling by the nursing staff even if they are not at their side."

This research is contributing to the revision of falls prevention resources that are used in Queensland Health facilities across the state. The evidence will support the redevelopment of staff education highlighting the value and importance of involving the patient in care planning.

Professor Paul Fulbrook



INTERN RESEARCHERS AT REDCLIFFE



A medical intern will typically rotate through many different areas of a hospital in a program designed to add depth to clinical skills and provide experience in different fields. For the first time, Redcliffe Hospital's medical interns are also carrying out a research project as part of their rotation through the emergency department.

Emergency department Staff Specialist Dr Ryan Windish says the research element is designed to help to foster and further the hospital's research culture.

"As part of their ten-week rotation in the emergency department, our interns are tasked with designing, researching and writing up an audit with an emergency department theme. The intent is to introduce new doctors to basic research in a way that benefits and furthers patient care and service delivery in the emergency department," Dr Windish says.

Interns are encouraged to come up with a clinical question that interests them and to design and carry out an audit of the emergency department's performance that tests that question.

"It's a win-win for both the intern and the emergency department. It allows interns to develop a better understanding of research, and it also provides the department and the hospital with usable and valuable research that could help us improve our practices and patient care," Dr Windish says.

Dr Windish says the overall attitude of the interns undertaking the research audits has been very positive.

"Most of the interns have had some research experience or exposure to research while in medical school. The research audit they undertake here helps to develop their research skills, and gain a better understanding of research methodologies," he says.

"Interns are also paired with an emergency staff specialist who has an interest in the topic they are auditing, serving as a mentor and supporting them during their audit."

The Redcliffe Hospital internship program is providing junior doctors with exposure and experience to research early in their career in a structured and supportive environment.

"For some, it may also spur on a real interest in research that can be used as a springboard to develop more research projects or a career in medical research," Dr Windish says.

"The emergency department at Redcliffe Hospital has a tremendously supportive research support staff through both our Director of Research, Dr Erik Wood, and Dr Julia Hocking, Research Development Manager with EMF.

"When some of these doctors come back to us as junior or senior house officers – or even as registrars – they may take on more extensive research projects. For now though, being a medical intern is a busy and challenging year, and this experience in research is something each of them will be able to use in applying for training programs in the future."



Redcliffe Hospital emergency department.

PROTECTING AND IMPROVING COMMUNITY HEALTH



The Metro North Public Health Unit (MNPBU) has responsibility for a suite of health protection functions with the aim of preventing illness and disease and improving the health of the community.

The skill set of the unit's staff, as well as the perspective that comes from a population health approach, means MNPBU contributes to a broad range of research activities.

In 2017, the team's efforts were focused by the need to inform and harness changes in both the regulatory and technological environments in which we operate. For example, whole genome sequencing as a tool for routine public health surveillance has the potential to impact many aspects of how we operate. Similarly, the increasing access to data presents a significant opportunity to better target interventions. Continual developments in public health methods also require evaluation, bridging the gap between practice and research.

These challenges led to MNPBU co-authoring 13 peer-reviewed publications during the year.

The MNPBU team also collaborated with other organisations on topics as diverse as Australia's record-breaking 2014/15 Ross River Virus epidemic; use of molecular typing and genomics to enhance surveillance of gonorrhoea and associated antibiotic resistance in Queensland; evaluating the effectiveness of one dose of chickenpox vaccine in an outbreak setting; Dengue virus prediction through mobile data fusion; Ciguatera fish toxin in Australia over the last decade; Alphavirus surveillance; and sexual health disease prevention and control.

MNPBU continues to coordinate the Queensland-wide Peri-urban Alphavirus Surveillance Program. Fifteen participating Queensland local governments trap mosquitoes at 86 different sites on a weekly or fortnightly basis. Each trap contains a sugar feeding station comprised of a honey-coated nucleic acid preservation card to collect mosquito saliva and bind arbovirus (mosquito borne disease) RNA. These cards are tested for the Ross River and Barmah Forest viruses.

This research continues to build upon the capability of Queensland Health Forensic and Scientific Services and also strengthens the relationship with local governments. The data will be used to help identify temporal or spatial patterns in mosquito-borne alphavirus activity to ultimately better focus timely mosquito control efforts.

During 2017 the team collaborated extensively on sexual health research in recognition of the increasing community burden of disease (23,000 notifications of chlamydia and almost 5,000 notifications of gonorrhoea). These included a collaborative study with The University of Queensland's Poche Centre to develop systems to increase chlamydia testing among young people accessing Aboriginal Medical Services and general practitioners.

MNPBU is also assessing self-reported knowledge, vaccination and testing for Hepatitis B among African community members living in Southeast Queensland. The results will help better support migrant communities to protect themselves from vaccine preventable disease. A second project, in partnership with general practitioners, seeks to increase access to voluntary HIV testing and HIV prevention medication access for culturally and linguistically diverse community members across Metro North.

Another small but important HIV prevention project focuses on the short-term use of PrEP HIV prevention medication by migrants who are visiting their country of origin. Travel to countries where HIV is highly prevalent presents a risk of HIV infection which is now preventable with the right knowledge.

MOBILE HEALTH FOR COPD



Researchers at The Prince Charles Hospital (TPCH) are trialling the use of mobile health technologies to improve the management of a chronic lung condition that is currently the world's third leading cause of death.

Chronic obstructive pulmonary disease (COPD) is a complex lung disease involving the progressive deterioration of respiratory function due to chronic narrowing of the air passages to the lungs. The condition is characterised by the occurrence of unexpected exacerbations which can result in hospitalisation.

TPCH Director of Thoracic Medicine Professor Ian Yang says the research is using mobile technology to provide COPD patients with consistent information about their condition. Self-management is an important component of living well with COPD. Symptoms of the disease include breathlessness, cough and sputum production.

"Clinical experience has shown that regular and timely access by patients to these resources remains problematic, and that patients can become confused by the multiple instructions provided by different health professionals," Prof Yang says.

"This can result in non-adherence to basic principles of self-management of COPD. This research will look to address these gaps by using mobile health technologies to deliver self-management tools to patients, for the enhanced management of COPD."

COPD affects one in seven Australians over the age of 45. Various resources are available for COPD patients including written action plans, exercise plans and educational resources. As part of the trial, patients will be use a mobile phone app, developed by CSIRO's Australian eHealth Research Centre, for self-management, goal setting and monitoring.

The app allows patients to access and record information about their smoking cessation, symptoms, prescribed medications, physical activity and respiratory education. TPCH clinicians will analyse the information to determine the effectiveness of this new type of intervention.

"This new mobile technology has the potential to improve the way in which patients with COPD manage and respond to their condition. Having ready access to the necessary information and educational tools means patients can get the information they need to help them manage their condition better," Prof Yang says.

"The app will allow patients to have their COPD information all the time with them on their mobile phone. This will enhance our patients' ability to respond quickly to any clinical deterioration, which will potentially help prevent unnecessary hospital admissions."

The trial is supported by funding from The Prince Charles Hospital Foundation.

Professor Ian Yang with the mobile app for COPD management.





Clive Holloway



BETTER HEARING THROUGH TYMPANOMETRY

Clive Holloway is a seasoned paediatric audiologist at Caboolture Hospital who recently started his first clinical research project working with the emergency department at Caboolture Hospital.

Clive is investigating whether tympanometry screening of children in an emergency department (ED) setting could help reduce the use of antibiotics to treat acute otitis media (AOM), a common childhood ear infection.

AOM is a rapid onset active infection of the middle ear, characterised by earache, irritability and fever. It is a common presentation to the ED and generalised otitis media is the most common reason that physicians prescribe antibiotics to children.

Correctly identifying AOM as opposed to other middle ear concerns, such as otitis media with effusion (OME), is important because antibiotics are not indicated for children with OME but can be beneficial for some children with AOM.

Currently, diagnosis is made by a case history and examination of the eardrum. This can be difficult in a distressed and anxious child who is in acute pain, compounded by a small and narrow ear canal.

Tympanometry is a quick and objective measure of middle-ear function. It has diagnostic utility in differentiating normal versus abnormal middle ear function and may be helpful in diagnosis of AOM. It is a painless and low risk procedure that takes about 60 seconds per ear.

Clive's research will determine whether performing tympanometry in addition to the standard investigation results in a reduction of antibiotics use for children presenting with suspected AOM and whether it can reduce length of stay times in the ED for those children.

The research participants are children between six months and five years of age presenting to the Caboolture Hospital emergency department with symptoms of AOM in one or both ears. Children are

randomly allocated into one of two participant groups. The 'standard' cohort will receive the standard medical care for children with suspected AOM. The tympanometry group will be given the standard care plus tympanometry.

"The response from ED staff was brilliant and helped formulate how do we actually do this, what can we do to help you to get this done," Clive says.

"I'm very happy to work at a hospital that supports staff to undertake research that they would like to do and ultimately improves the model of care that we can provide to the community."

Reducing antibiotic use is an important goal for healthcare, especially if other options are available. Adopting a 'watchful waiting' approach for 24-48 hours rather than prescribing antibiotics has shown to reduce antibiotics usage by up to two-thirds but this relies on physicians being certain with their diagnosis. Clive is also hoping to length of stay for young patients.

Clive's work as the principal investigator has been a long journey to date, with his clinical caseload taking priority. The strong support of key staff at Caboolture Hospital has kept him on-track.

"It's been almost two years since I started talking to people about this research idea, undertook background literature review and received ethics approval to start this study," Clive says.

"Receiving the ethics approval to undertake the study and the unwavering help from Caboolture Hospital colleagues have been the most satisfying part of this project to date. I have been amazed how many people are supportive and take time out of their busy days to help progress this research."

CHANGING CANCER OUTCOMES THROUGH THERANOSTICS



General and colorectal surgeon at Redcliffe Hospital Dr Andrew Riddell hopes his research in theranostics, combining therapeutic and diagnostic technology, will revolutionise the treatment of colorectal and other cancers.

Dr Riddell says theranostics essentially means using the same molecule used in the diagnosis of cancer to fight the cancer, in a personalised and targeted treatment.

"It uses a molecule that specifically targets cancer cells, together with a molecular cage to bind a radioactive isotope to the molecule, delivering cellular level targeted radiotherapy against the cancer cells," Dr Riddell says.

"It is a fantastic technology as each patient can have a non-radioisotope fluorescently labelled PET scan before treatment to demonstrate specificity and sensitivity and calculate exact dosage required to deliver a locally lethal dose of radiation to cancer cells."

Dr Riddell says he's not aware of theranostic research into the treatment of colorectal metastases being carried out anywhere else in the world.

In June last year, Dr Riddell established the Brisbane Colorectal Theranostics Collaborative, bringing together colorectal surgeons, the Herston Imaging Research Facility (HIRF), The University of Queensland, and the Mater Research Institute.

"We are very lucky in Brisbane that we have a perfect combination of a research imaging

institute and capable scientists collaborating across sites and specialties," Dr Riddell says.

"Our ultimate aim is to produce a treatment for people with colorectal metastases who currently have no option except palliation. We aim to do this through theranostics."

The group has made good progress since last year and has received funding for a pilot study to test whether a molecule used in prostate cancer treatment will also help patients with colorectal cancer metastasis. Patients will be recruited from Redcliffe Hospital and Royal Brisbane and Women's Hospital.

"The duration of the trial starting in May will be relatively short, but this study is part of a much larger project. I fully expect this research to take at least the next five years, to a decade. We would expect multiple publications over that time from the group," Dr Riddell says.

"In advancing this field, I am indebted to my collaborators across many disciplines. In particular, Professor J Hooper from the Translational Research Institute, Dr Simon Puttick from UQ and CSIRO, Prof Paul Thomas at HIRF, Drs David Clark and John Lumley, and Associate Professor Andrew Stevenson have all been instrumental in encouraging theranostic and colorectal research in Brisbane.

"It also been possible thanks to the foresight of our Director of Surgery at Redcliffe Hospital, Dr Denise MacGregor, and our strong foundation in research across Metro North Hospital and Health Service, and at Redcliffe Hospital."



Dr Andrew Riddell



Dr Eamonn Eeles

IMAGING ALZHEIMER'S



Researchers at The Prince Charles Hospital are investigating the use of innovative methods of clinical imaging in an effort to better understand Alzheimer's disease.

TPCH Specialist Geriatrician Dr Eamonn Eeles is leading the project in partnership with CSIRO and The University of Queensland's Queensland Brain Institute.

About 30 million people worldwide have Alzheimer's disease, the most common form of dementia. The progressive brain disorder interrupts signals between nerves, a process known as cholinergic transmission, which affects memory and other thinking functions.

"With Alzheimer's disease, there is currently a lack of robust tools that can measure affected brain function, how the chemical messages are affected, and which patients are helped by current treatment," Dr Eeles says.

People with Alzheimer's have a build-up of amyloid protein in the brain which leads to cell death and dementia. The condition represents a massive upheaval in the life of the individual affected and often carries a significant burden to the caregiver.

The research project is measuring basal forebrain abilities, cholinergic function and amyloid accumulation in people with and without early stage Alzheimer's disease using navigational tasks and brain imaging techniques such as Positron Emission Tomography and Magnetic Resonance Imaging.

"These revolutionary techniques would help us to understand how and where chemical signals are affected in Alzheimer's disease and would potentially enhance the possibilities for better diagnosis and targeted therapies," Dr Eeles says.

The study is funded by The Prince Charles Hospital Foundation's Common Good campaign.

USING TWINS TO UNLOCK THE SECRETS OF EPILEPSY



Royal Brisbane and Women's Hospital (RBWH) researchers are using identical twins to develop personalised treatments for epilepsy.



Professor Lata Vadlamudi

Associate Professors Lata Vadlamudi and Jeff Craig and Northwestern University Assistant Professor Gemma Carvill are investigating how to more accurately diagnose the different subtypes of epilepsy.

By studying human identical twins, where only one has epilepsy, the trio are hoping to identify markers for different epilepsy subtypes. This will allow medication choices to be optimised to manage the condition more effectively.

"Studying identical twins allows us to create a case and control to compare, matching for shared factors including genetics and family environment," Dr Vadlamudi says.

This is the first discordant identical twin study exploring peripheral biomarkers for epilepsy subtypes, and the first to integrate genetic and non-genetic data. Around two thirds of epilepsies are idiopathic, meaning they have no known underlying cause and are of presumed genetic or environmental origin.

Dr Vadlamudi says the research represents a critical step in customising and optimising treatment choices for people with epilepsy.

"Our ultimate goal is a precision medicine platform in which peripheral tissue biomarkers can be used to improve the accuracy of classifying idiopathic epilepsies into different subtypes," she says.

The research is a joint effort between RBWH, Deakin University's School of Medicine, Murdoch Children's Research Institute and Northwestern University Medical School.

UNDERSTANDING MOTOR NEURONE DISEASE



Royal Brisbane and Women's Hospital (RBWH) Associate Professor Robert Henderson and his team are leading the way to a better understanding of devastating Motor Neurone Disease (MND).

Muscle weakness in MND starts in one region and rapidly spreads to involve muscles of speech and swallow, and upper and lower limbs. Those who have been diagnosed often die within three years of diagnosis.

Assoc Prof Henderson says most MND patients from Queensland and Northern NSW will have seen the RBWH multidisciplinary clinical team, which paves the way for involvement in a number of research projects based at RBWH and The University of Queensland Centre for Clinical Research at Herston.

"Our research team comprises two neurologists, myself and Professor Pamela McCombe, two research nurses Susan Heggie and Kathryn Thorpe and a research Fellow," Assoc Prof Henderson says.

"National and International Clinical Trials for MND have occurred in the last five years. RBWH has been a national leader with involvement in four major trials, one of which was an Australian first."

The team has recently completed a phase one study of a promising compound, in partnership with RBWH Foundation, QPharm and Seattle-based Implicit Bioscience.

"There is a desperate need for useful biomarkers of disease progression and the RBWH team has led neurophysiological, imaging, blood and genetic biomarker studies," Assoc Prof Henderson says.

The clinical expertise and experience of the RBWH MND team has expanded to other neuromuscular diseases such as Pompe Disease and neuropathy, with a strong collaborative link to the Brain and Mind Centre in Sydney.

"NATIONAL AND INTERNATIONAL CLINICAL TRIALS FOR MND HAVE OCCURRED IN THE LAST FIVE YEARS. RBWH HAS BEEN A NATIONAL LEADER WITH INVOLVEMENT IN FOUR MAJOR TRIALS, ONE OF WHICH WAS AN AUSTRALIAN FIRST."



Pictured: Associate Professor Robert Henderson

MORE PATIENTS ACCESSING SWALLOW TESTS VIA TELEHEALTH



Telehealth technology is giving more Queenslanders access to speech pathology services, saving patients the time and expense of travel.

Speech pathologists at Royal Brisbane and Women's Hospital have developed and evaluated the telehealth swallow assessment model in partnership with researchers from The University of Queensland, ensuring it was as safe and effective as standard, face to face care.

Speech pathologist Dr Clare Burns says the team evaluated the efficiency of the service including whether it reduced travel and waiting times for patients and if there was a difference in clinical outcomes for patients seen via telehealth.

"Once we validated the model, we wanted to implement it into routine clinical practice, and there were speech pathology services in Metro North, Sunshine Coast, Wide Bay, South West and Cairns and Hinterland HHS who were interested in establishing the telehealth service at their local facilities," Clare says.

The telehealth service provides rural and remote patients with the option of swallowing assessments at their local health facility via video conferencing rather than waiting until the next time a speech pathologist is available.

THE TELEHEALTH SERVICE PROVIDES RURAL AND REMOTE PATIENTS WITH THE OPTION OF SWALLOWING ASSESSMENTS AT THEIR LOCAL HEALTH FACILITY VIA VIDEO CONFERENCING RATHER THAN WAITING UNTIL THE NEXT TIME A SPEECH PATHOLOGIST IS AVAILABLE.

"If an urgent referral is received for a patient who lives two hours away, then existing appointments need to be rescheduled and this causes stress and inconvenience," Clare says.

"The telehealth service allows the speech pathologist to dial into the local health facility and conduct the swallowing assessment with the patient who is supported by a trained healthcare worker via a live video link. It's very convenient."

As part of the research study, Clare and Professor Liz Ward from the Queensland Health Centre for Functioning and Health Research supported facilities to establish telehealth speech pathology services and examined the outcomes of the sessions. Preliminary results found that the telehealth service provides shorter waiting times, reduced clinician travel and also cost savings.

"As clinicians we can identify opportunities to change practice. This includes improving patient access to services to reduce risk, support them to get the care they need, and enhance their quality of life," Clare says.

"The clinicians value it because they can deliver services efficiently from their local facility without the need for additional travel or the inconvenience of needing to reschedule appointments. The patients were happy with the telehealth sessions and some provided suggestions of other areas of their speech pathology care that they'd like to explore via telehealth."

The research has earned Clare and her team the National Foundation of Swallowing Disorders Award at the Dysphagia Research Society Meeting in the United States earlier this year. The award recognises translational research that is of great benefit to the patient and/or the carer.

The research was supported by the Allied Health Professions Office of Queensland.



Dr Clare Burns received the National Foundation of Swallowing Disorders Award.

HEALTHCARE PATHWAYS FOR CHILDREN WITH CHRONIC CONDITIONS STUDY



A randomised controlled trial evaluating integrated healthcare pathways for children with a chronic condition is also uncovering a new perspective for researchers.

The research team led by Caboolture Hospital's Research Coordinator Dr Thuy Frakking received a \$152,000 grant from the Allied Health Professions of Queensland to undertake the trial.


"Obtaining the necessary ethical approvals across health, education and the federal human services sectors was challenging," Dr Frakking says.

"However, working with the children and their caregivers while navigating the many systems and barriers outside a hospital setting has really given the research team a new perspective on this issue."

The multidisciplinary team has published its study protocol with online medical journal *BMC Pediatrics* and is now recruiting participants at both Gold Coast University and Caboolture Hospitals. Twenty-three children and families are participating in the study.

"The trial has uncovered how easy it is for communication breakdowns to occur while the family battles with day-to-day activities while also trying to organise treatment for their sick child," Dr Frakking says.

"I hope that the collection of real patient stories, coupled with scientific measures, will help advocate for more evidence-based distribution of services for our most vulnerable children."



A RANDOMISED
CONTROLLED TRIAL
EVALUATING INTEGRATED
HEALTHCARE PATHWAYS
FOR CHILDREN WITH A
CHRONIC CONDITION
IS ALSO UNCOVERING
A NEW PERSPECTIVE
FOR RESEARCHERS



Dr Matthew Burge

MILDER TREATMENT FOR BOWEL CANCER



An Australian-wide trial has begun at Royal Brisbane and Women's Hospital (RBWH) for elderly patients with advanced bowel cancer.

RBWH has joined the GI Cancer Institute – Australasian Gastro-Intestinal Trials Group to begin the MONARCC study to identify milder and more effective treatments for patients aged 75 and over.

Cancer Care Services Medical Officer and MONARCC Study Principal Investigator Dr Matthew Burge says up until now elderly patients in this age group had been under researched and the impact of current treatments not fully understood.

"To date, the majority of patients who have participated in clinical trials for advanced bowel cancer have been quite young with an average age of 60 years," Dr Burge says.

"Approximately, half of the Australian patients who are diagnosed with advanced bowel cancer are actually aged 70 years and over. It is not fully clear whether elderly cancer patients can withstand current treatments in the same way as younger patients, or whether they might benefit from milder or different clinical options."

Currently, patients with advanced bowel cancer are treated with a combination of chemotherapy and an antibody treatment.

"We want to increase our understanding of what truly is the best way of treating elderly patients, and providing them with the best outcomes in terms of survival and quality of life," Dr Burge says.

"To be eligible for the MONARCC trial patients need to be over the age of 75 or they need to be over 70 but have other medical problems, and be suitable for low intensity chemotherapy treatment."

MONARCC researchers will recruit 80 patients across 15 Australian health facilities including the RBWH over the next two years. Dr Burge says the study would involve using a lighter chemotherapy regimen together with the antibody treatment panitumumab.

"We will also test the effectiveness of using panitumumab by itself. These options could provide effective cancer control while minimising side effects," he says.

For further information about the MONARCC trial please visit <https://gicancer.org.au/>



NEW APPS TO IDENTIFY DELIRIUM



Patients most at risk of experiencing delirium will soon be identified earlier thanks to a new tool being developed at Royal Brisbane and Women's Hospital (RBWH).

More than a third of inpatients over the age of 65 experience delirium during their time in hospital. The condition can be distressing to patients and carers, and carries higher risks of death, long stays and nursing home admission.

RBWH's Dr Dylan Flaws, Professor Alison Mudge, Professor Gerard Byrne and QUT Professor Adrian Barnett are using data from the multi-site CHERISH study to develop a user-friendly delirium prediction tool that can be used at the time of admission to better predict which patients are most at risk during their time in hospital so that preventive interventions can be put in place.

Dr Flaws says the tool should help target evidence-based prevention programs such as the Eat Walk Engage program developed at RBWH.

"It has been shown that treating delirium once present has minimal impact on patient outcomes. In contrast, preventative measures have been shown to reduce the incidence of delirium by as much as 30 per cent," Dr Flaws says.

"Our aim is to create not only the best clinical outcomes, but also the best patient experience during a patient's time in hospital by reducing the number of delirium cases that occur."

Dr Flaws is also working with Professor John Fraser and the Critical Care Research Group in a multidisciplinary team that spans RBWH and The Prince Charles Hospital, to develop an electronic delirium screening app for the Intensive Care Unit (ICU).

Dr Flaws says the team are also reviewing the ICU environment to reduce the risk of causing delirium.

"Early screening for delirium in ICU patients would facilitate early detection and treatment, and a delirium-sensitive environment could reduce the number of delirium cases caused by the hospital itself," Dr Flaws says.

"We hope the app will reach a state of clinical implementation soon, but the process is still underway."

SERVING UP A DECADE OF NUTRITION RESEARCH



Malnutrition and poor food intake are almost accepted as a normal part of an admission to hospital, but work conducted by Royal Brisbane and Women's Hospital (RBWH) Nutrition and Dietetics Research Coordinator Adrienne Young and a team of RBWH clinicians has seen a decade of research culminate in results for patients.



Dr Adrienne Young

Led by Dr Young, Dr Merrilyn Banks, Professor Alison Mudge and Prue McRae, the research endeavoured to understand and improve poor nutrition for RBWH inpatients. Starting with a series of observational studies, the researchers discovered only one in ten older inpatients met their nutritional requirements. The team then moved to understand the complexity of the problem from the perspective of both staff and patients.

Dr Young says the research informed a ten-year program to progressively implement and evaluate the systems of nutrition care at RBWH.

"We have seen a progressive and significant improvement in nutritional intake, with most recent data showing that older inpatients are now consuming 20 per cent more energy and protein per day," Dr Young says.

"Importantly, results from pilot work combining our nutritional interventions with strategies to prevent delirium and functional decline suggest decreased length of hospital stays for older inpatients.

"We know good nutrition care is critical to good hospital outcomes, so this is an important challenge for us to solve."

The team are currently working to extend this work beyond RBWH, and are leading two multicentre trials which test implementation of these nutrition care models in other sites in Metro North and across Queensland.

"To date there is little 'real-world' research to help clinicians know how to successfully implement, and most importantly, sustain improvements to nutrition care in hospital. That's why we're so proud of this research, and what it means for patients," Dr Young says.

"Through this we hope to share our experiences and teach and mentor other clinician-researchers who are also attempting to overcome complex challenges in their practice."



CONNECTING RESEARCH AND CLINICIANS FOR CARE OF THE FRAIL OLDER PERSON



With more than 100 residential aged care facilities in its local community, Redcliffe Hospital is focused on delivering the best possible care for older people.

The hospital is following up their clinical work during Metro North's Year of the Frail Older Person in 2017 by developing a program of research which will align research capacity with advances in clinical care.

Redcliffe Hospital Director of Research and Medical Education Dr Joel Dulhunty says demographics show the hospital's catchment includes a higher proportion of older people than in Metro North as a whole.

"That is backed up too by the lived experience of our clinicians day to day. Caring for the frail older person is a big part of our business at Redcliffe," Dr Dulhunty says.

"What we've embarked on is not a single project, but an ongoing program of research where we will have multiple teams, and different groups of people, working on separate and related elements of improving the care for the frail older person."

The hospital has enlisted the support of QUT Professor Elizabeth Beattie, Director of the Dementia Research Collaborative Network. Professor Beattie has helped to guide the research program which is starting with three specific research projects.

Dr Dulhunty says the first project is a partnership with post-doctoral fellows at QUT, working on establishing models of care pathways for patients with delirium and dementia, with a particular focus on how patients move in and out of facilities and hospitals.

"The second priority area is around building a research program targeted at the education of clinical staff who manage and treat patients with delirium and dementia," he says.

"The available Dementia Training Australia resources are quite comprehensive, and through this research into their use, we'll be able to see, in a hospital setting, what impact they're having."

The third project is a partnership with Royal Brisbane and Women's Hospital, looking at a combination of strategies to prevent and assess deterioration and whether those methodologies are applicable in other settings.

"Together, these projects will help us better understand where we can improve, as clinicians, and as a hospital," Dr Dulhunty says.

NUTRITION RESEARCH BRINGS FRESH CHANGE TO PATIENT MEAL TIMES



An innovative research project at The Prince Charles Hospital (TPCH) is changing the mealtime experience of patients and improving nutrition.

Patients of TPCH's Rehabilitation and Acute Stroke (RAS) Unit are now enjoying their meals in the Green Room, the Unit's recently upgraded dining area. The Green Room adopts a communal approach to patients' mealtimes through the introduction of lunchtime buffet food service where patients can choose their own food, with the help of staff if needed.

Café style seating is provided to encourage social interaction among patients, and an outside alfresco style dining area on the Unit's balcony where patients can eat with their family is available.

The initiative is the result of a research project led by a team of TPCH nutrition and dietetics staff, which investigated challenges and initiators for dining room attendance within the Hospital's RAS Unit.

THE GREEN ROOM
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TPCH Dietitian Rebecca Moore said that traditional delivery of meals at the bedside does not encourage social interaction or normalise meal time in preparation for a patient's discharge home.

"A communal approach to mealtimes gives patients a range of desired food choices closer to meal times and creates a more personalised and interactive environment where they enjoy coming to eat," Rebecca says.

Rebecca says communal dining and mealtime assistance has also been shown to improve rehabilitation and dietary intake in addition to greater patient satisfaction.

"The new mealtime arrangement provides an opportunity for patients to undertake therapy during meal times and promotes greater independence among patients which are important factors in preparing them for discharge," she says.

The Green Room model also actively involves members of the hospital's nursing, medical and allied health team in the patient meal time experience. This model capitalises on the RAS mantra of everything is an opportunity for therapy. Staffs of all levels and professions and patients have worked in partnership to create a shared vision for mealtimes that reaches beyond food provision.

"Staff are on hand to assist patients with tasks including food selection, mobilising to their seat, carrying their tray, opening packages and cutting up their food if needed," Rebecca says.

"This promotes interdisciplinary contribution to patient meal times and facilitates innovative ways to promote patient meal consumption, reduce meal waste and encourage social, physical and cognitive rehabilitation into the meal time experience."



Patient Barbara enjoys the Green Room experience with dietitian Rebecca Moore.

EMERGENCY DOCTORS GET TOOLS TO QUICKLY RULE OUT HEART ATTACK



Australians are the first in the world to benefit from landmark research which is allowing emergency medicine doctors to quickly and safely rule out the risk of a heart attack in 75 per cent of patients with chest pain.

This year, more than 500,000 Australians will present to a hospital emergency department with chest pain.

Less than a quarter of these patients are at risk of having a heart attack, but until now emergency doctors had to run tests over 24 hours before they could rule out the patients who weren't at risk.

Using a new protocol, known as the 'Improved Assessment of Chest pain Trial' (IMPACT), emergency doctors will be able to identify and safely send home, within hours, three quarters of these patients without the need for additional testing.

The breakthrough research was jointly led by specialists at the Royal Brisbane and Women's Hospital (RBWH), Professor Louise Cullen, Pre-eminent Staff Specialist in Emergency Medicine, and Professor Will Parsonage, Cardiologist and Clinical Director of the Australian Centre for Health Services Innovation at the Queensland University of Technology.

IMPACT is changing the care emergency doctors give to chest pain patients and improving the testing efficiency.

"The protocol allows us to rule out low risk patients, who account for about 17 per cent of chest pain patients in the emergency department, and safely discharge them in under five hours," Professor Cullen says.

"Significantly, IMPACT also helps us identify nearly 60 per cent of patients at an intermediate risk. We have shortened the duration of testing for this group so that they can be safely sent home in seven and a half hours."

In a health economic analysis it was estimated that if all Queensland hospitals adopted IMPACT, it would result in released capacity worth \$12.4 million annually to the healthcare system.

Queensland Health is funding the state-wide roll out of IMPACT, with the protocol live at the RBWH, Cairns, Nambour, Ipswich and the Sunshine Coast University Hospitals.

The Emergency Medicine Foundation (EMF) awarded more than \$1 million in research grants to Professor Louise Cullen to develop IMPACT.

Queensland Health has also introduced the research team's earlier accelerated diagnostic protocol (ADP) to 16 of the state's emergency departments. The protocol uses a simple troponin test to identify, within two hours, patients with chest pain who are at a low risk of having a heart attack.

In a recent evaluation of the protocol roll out, the research team found it had led to a 13 per cent fall in hospital admissions in Queensland hospitals.

"A large majority of patients presenting with chest pain are at low risk of a heart attack, but earlier clinical guidelines have been inefficient in identifying these individuals. We looked at using ADP to evaluate 30,769 patients and found that we were able to rule out 21 per cent of patients as being low risk by using the protocol," Professor Parsonage says.

"This led to a drop not just in hospital admissions, but also meant these patients were discharged earlier. This is leading to an estimated \$13.5 million in savings per year for Queensland hospitals in released financial capacity as a direct result of using ADP.

"Emergency departments in hospitals are buckling under pressure from increasing numbers of patient presentations. A really important driver for our research was trying to find new ways that are safe and efficient for diagnosing patients."



Professor Louise Cullen's research is being rolled out across Queensland hospitals.

DIGGING DEEPER INTO CHRONIC KIDNEY DISEASE



Royal Brisbane and Women's Hospital Nephrologist Associate Professor Andrew Mallett is leading an investigation into Fabry disease which could reveal how many Queenslanders with chronic kidney disease (CKD) also suffer from the rare condition.

Assoc Prof Mallett says the CKD.QLD Fabry Epidemiology (aCQuiRE) study aims to provide more information about the prevalence of Fabry disease at all stages of CKD.

"Fabry disease is a rare multisystem genetic enzyme condition that results in the build-up a special type of fat called globotriaosylceramide in the body's cells," Assoc Prof Mallett says.

"The study may help us identify an unknown cause of a patient's CKD, early identification markers of Fabry disease when therapy is more likely to provide benefit, and screening of family members that may be at risk."

Assoc Prof Mallett says the proportion of people with end stage renal disease—late-stage kidney disease involving kidney failure—with Fabry disease is approximately two in every 1,000 people.

"What we don't know is how common it is in people that have earlier stages of CKD, before the disease has become more severe," Assoc Prof Mallett says.

"We hope to get a more comprehensive view of the disease at all stages. We are curious to determine how common the disease is in women as well."

Screening for the project is expected to continue until mid-2019. aCQuiRE is a collaborative project between Metro North Hospital Health Service, CKD. QLD and The University of Queensland CKD Centre for Research Excellence, Qld Statewide Fabry Disease Treatment Service at RBWH, Royal Perth Hospital, and Westmead Hospital.



"THE STUDY MAY HELP US IDENTIFY AN UNKNOWN CAUSE OF A PATIENT'S CKD, EARLY IDENTIFICATION MARKERS OF FABRY DISEASE WHEN THERAPY IS MORE LIKELY TO PROVIDE BENEFIT, AND SCREENING OF FAMILY MEMBERS THAT MAY BE AT RISK."

Associate Professor Andrew Mallett is looking for biomarkers of Fabry disease in people with chronic kidney disease.

TRANSFORMING RESEARCH CULTURE THROUGH EDUCATION

Metro North has developed an innovative education program to support and enhance our clinical research capabilities. The education program raises awareness of the benefits of research and aims to embed research as a core practice to improve outcomes for our patients.

Assistant Director of Research Associate Professor Janet Davies says the program aims to go beyond minimum training requirements to design a multifaceted program that increases capabilities for undertaking research, extends knowledge and helps build connections between clinicians and scientists.

“The first phase of the program focuses on opportunities for learning basic research skills and the second phase of the program introduces advanced concepts to expose participants to research translation and knowledge transfer approaches,” Assoc Prof Davies says.

Presenters include researchers and experts in a broad range of topics such as research design, biostatistics, ethics and governance, grant writing, knowledge transfer, intellectual property, commercial translation and implementation science.

“The program includes research interactive workshops to consolidate learning, facilitate connections between clinicians and scientists, and seed ideas for research solutions to clinical problems,” Assoc Prof Davies says.

“A highlight of 2017 was the Research Partner Showcase provided opportunity for directors and representatives of 12 partner facilities and institutes to showcase their research capabilities and fostered interactions amongst our clinician researchers and scientists.”

The research education program reached over 550 participants in 2017 with 520 people attending in person and others connecting via video or teleconferencing. There has been strong positive feedback with most of participants rating good to excellent overall as well as for content and delivery.

The program was supported in 2017 by The University of Queensland, QUT, QIMR Berghofer and Griffith University.

Research education topics in 2017

- Designing a clinical research project
- Using literature to define knowledge gaps
- Planning analysis when designing research
- Seeking approvals to undertake clinical research
- Communicating research outcomes via social media
- Moulding your first grant proposal
- Research solutions to clinical problems
- Implementing research outcomes to change clinical practice
- Using advanced technology to enhance clinical research
- Assessing and conveying your research impact



SUPPORTING RESEARCH

METRO NORTH INVESTS IN RESEARCH CAPABILITY

Thirty Metro North staff are learning the skills to translate research and knowledge into clinical practice through a new tertiary qualification.

The Graduate Certificate in Health Services Innovation is the first university qualification aimed at enabling senior clinicians and health service administrators to develop, assess and implement innovations within the healthcare setting. It has been developed by Metro North in partnership with the Australian Centre for Health Services Innovation (AusHSI) at QUT.

Metro North Chief Executive Shaun Drummond says the graduate certificate is a commitment to both staff and patients to shift to value based healthcare decision making.

"Metro North is committed to delivering high quality healthcare and outcomes that matter most to patients. The graduate certificate is one way we are equipping staff with the knowledge to evaluate and implement projects in their work life," Mr Drummond says.

As well as training in health economics, policy analysis and implementation science they will develop real world research projects, based in their workplaces and evaluated with assistance from AusHSI's leading researchers.

"We have invested not only in the development of individual staff but in the cohort as a whole to create a network that will support colleagues to translate their research and quality improvement projects into clinical practice. This will deliver better outcomes for patients and empower staff with high value decision making," Mr Drummond says.

The academic program has been designed to address a perceived skills shortage in health economics and policy analysis as well as in implementation science, an emerging field that examines how to best implement research findings into practice.



The inaugural Graduate Certificate HSI cohort.



Researchers Dr Anthony Bell, Professor Louise Cullen, Dr Nathan Brown and Dr James Hughes are developing strategies to manage patients presenting to EDs due to medication errors.

SUPPORTING RESEARCH IN EMERGENCY MEDICINE

The Emergency Medicine Foundation (EMF) provides funding for research to improve the quality of care and outcomes for patients attending emergency departments.

Redcliffe Hospital specialists Dr Jason Chan and Dr Jonathan Hunter are trialling a new tool that will allow staff to detect patients who are suffering from serious health issues when presenting to EDs with fainting. The research team hope the Canadian Syncope Risk Score will allow staff to safely determine low risk fainting patients, enabling them to be discharged quickly from hospital.

With over 400,000 people presenting to general practitioners with medication errors, an EMF grant has funded research by RBWH Emergency Medicine Specialist Professor Louise Cullen into how emergency departments are impacted by medication-related harm. She'll work with her team to determine how many medication-related visits occur and develop strategies to reduce the burden on EDs.

Professor Cullen has also conducted research into reducing unnecessary cannula insertions, benefitting patients by lowering discomfort and the risk of infection while also reducing hospital costs. The research highlighted high numbers of unnecessary cannula insertions, and a successful three month trial by Prof Cullen was introduced, reducing the number of cannula insertions in emergency patients to just three in ten.

"In almost all emergency patients cannulas are put in too soon. They're great to easily give patients fluids and medications or have blood taken, but they aren't always needed," Prof Cullen says.

Other initiatives funded by the EMF included upskilling emergency nurses through a successful training model and the introduction of a dedicated Clinical Research Coordinator to support research activities.

THE PRINCE CHARLES HOSPITAL FOUNDATION

The Prince Charles Hospital Foundation proudly partners with world-class researchers at TPCF to deliver outcomes that will improve the diagnosis, treatment and quality of life for all patients. In 2017, the Foundation supported researchers and research projects across all disciplines and departments enabling lifesaving and innovative studies into a range of chronic illnesses.

All of this was made possible through the generous support of community donors and corporate supporters through The Common Good initiative, which connects everyday people with the research areas they are most passionate about. Together with support of two cafés onsite at TPCF and the Kedron Emergency Services Complex, the Foundation self-funds its operating costs, allowing 100 per cent of donor funds to be directed to medical research – it only takes \$44 to fund an hour of research!

In 2017 TPCF Foundation distributed \$4.7 million in research funding, equating to over 106,000 hours of medical and health research. It awarded over \$3.2 million to fund peer-reviewed grants, with another \$2 million committed for a further two years. Two new grant opportunities were launched, Team Grants and Research Fellowships. The aim of these grants is to sustain large, productive research teams and post-doctoral researchers with a collective \$4.5 million dollar three-year investment.

The Foundation is proud to support the careers of post-doctoral Research Fellows Dr Louise See-Hoe, Dr Brendan O'Sullivan, Dr Indira Prasad, Dr Nicole Bartnikowski and Annalicia Vaughan. TPCF Foundation continued to support researchers at all levels of their research careers by awarding five PhD Scholarships, a record number of 23 New Investigator Grants and seven Emerging Researcher Grants.

In 2017 the Foundation also saw a rise in the number of outputs and outcomes from supported researchers including 200 publications, eight PhDs completed and winning The University of Queensland's Innovators of the Year Award for the OpenHeart Project. This project was run by the Innovative Cardiovascular Engineering and Technology Laboratory and Critical Care Research Group.

A number of other innovative studies were undertaken last year including recruitment for phase II clinical trials into the use of stem cells to improve lung transplant functioning. The Osteoarthritis Research Group headed by Professor Yin Xiao identified a link between metabolic syndrome and osteoarthritis which not only attracted a large amount of media coverage, but also saw the team recognised in the Discovery and Innovation Category at the Metro North Research Excellence Awards.

Key patient outcomes were produced by TPCF researchers such as the changes to clinical practice in relation to ECMO cannulae securement and adhesives – a direct translation of research into practice.

TPCF Foundation strives to support and provide sustainability to world-class researchers across all areas of the TPCF campus to allow them to do what they do best, tackling chronic disease and improving patient outcomes. To find out more about all the different research projects, visit www.thecommongood.org.au.

"I'VE SEEN THEIR BREAK THROUGHs;
I'VE SEEN THE PASSION THAT
DRIVES THEM, A PASSION FOR THE
COMMON GOOD"

KERRY O'BRIEN, AMBASSADOR FOR THE
COMMON GOOD, ON THE WORLD-CLASS MEDICAL
RESEARCHERS WORKING WITH THE PRINCE CHARLES
HOSPITAL FOUNDATION



THE COMMON GOOD
THE PRINCE CHARLES HOSPITAL FOUNDATION

ROYAL BRISBANE & WOMEN'S HOSPITAL FOUNDATION

RBWH Foundation is committed to ensuring Royal Brisbane and Women's Hospital remains at the forefront of healthcare in Queensland by providing funds for research, equipment and patient care initiatives that fall outside government funding.

The Foundation is very active in the community, raising these funds through donations, events, corporate sponsorships and other activities. In the 2016/17 financial year, RBWH Foundation achieved a total income of \$14.06 million through these activities.

One of the Foundation's key goals is to foster new researchers by providing 'seed funding' to enable their projects to be established so the evidence can be gathered to support applications to larger funding bodies. One of the key ways it does this is through its annual Research Grant Awards program. This program is competitive with all applications reviewed on merit by the RBWH's Research Advisory Committee. Based on its recommendations, grants are awarded to both new and established research projects.

In 2017, in conjunction with the Private Practice Trust Fund, \$1.28 million was distributed through grants, scholarships and fellowships. This included 38 Research Initiative Grants, 19 Postgraduate Scholarships and three Patricia Dukes Postdoctoral Fellowships.

RBWH Foundation is incredibly proud that its seed funding has enabled several RBWH researchers to obtain substantial grants from the National Health and Medical Research Council in the past few years. Examples of these are Dr Andrew Mallett with his research into inherited kidney disease and Dr Jason Roberts's continuing study into antibiotic resistance.

A further \$4.92 million in funding was provided the RBWH Foundation in 2017 to a range of ongoing research projects and other patient care initiatives.

While the research funding is generally spread across the hospital campus, RBWH Foundation has built particularly strong collaborations with some key research groups including the Burns, Trauma and Critical Care Research Centre, the Perinatal Research Centre, the Motor Neurone Disease Research Group, and Cancer Care Services. Many of these groups also work closely with the Foundation to raise funds and have established tied funds which they are able to draw on when needed.

To find out more about RBWH Foundation, the projects and programs it funds, and its fundraising activities, visit www.rbwhfoundation.com.au

RBWH FOUNDATION IS INCREDIBLY PROUD THAT ITS SEED FUNDING HAS ENABLED SEVERAL RBWH RESEARCHERS TO OBTAIN SUBSTANTIAL GRANTS FROM THE NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL IN THE PAST FEW YEARS.



METRO NORTH RESEARCH EXCELLENCE AWARDS 2017

Our annual Research Excellence Awards recognise the stand-out achievements in research across our vast health service. The 2017 awards attracted 74 high calibre submissions throughout seven categories.

Researcher of the Year

Professor Jeffrey Lipman

Intensive care specialist Professor Jeffrey Lipman's research has been instrumental in changing antibiotic prescribing habits worldwide for critically ill patients, first with aminoglycosides and more recently with B-lactam antibiotics. He has inspired countless emerging researchers and developed a world-class research team at RBWH.

Rising Star

Dr Jonathon Fanning

Dr Jonathon Fanning has earned a reputation as a high calibre early career researcher. His research into multi-centre research to identify the characteristics of neurological injury associated with transcatheter aortic valve implantation has gained international interest. Dr Fanning has published high quality articles in the fields of neurology and cardiology on research which will improve outcomes for high risk and inoperable patients.

Research Support Award

Dr Alka Kothari

Dr Alka Kothari is Deputy Head of The University of Queensland Northside Clinical School and a Staff Specialist in Obstetrics and Gynaecology at Redcliffe Hospital. Dr Kothari has brought a passion and dedication for research that has led many junior doctors, medical students and other health professionals take their first steps as clinician-researchers. She has mentored junior clinicians in the completion, publishing seven research projects with a further 25 research projects in the works.

Clinical Research Award

Queensland Centre for Gynaecological Cancer Research, Laparoscopic Surgery for endometrial cancer

The Queensland Centre for Gynaecological Cancer cares for women diagnosed with gynaecological cancer from the Metro North catchment and is a major tertiary referral hub across Queensland, northern New South Wales and the Northern Territory. Their team is committed to working with patients, funders and partners to grow research and clinical trials. Over the past 10 years, the research team has worked on large and worldwide unique trials, with the aim of improving the quality of life and treatment outcomes for women with gynaecological cancer.

Discovery and Innovation Research Award

Translational Osteoarthritis Research Group

The Translational Osteoarthritis Research Group has been recognised for their work identifying risk factors and evaluating new ways of imaging osteoarthritis. The internationally recognised team are working towards new treatment to repair damaged joints and making significant progress in new technologies for early detection of cartilage degeneration. The team has published over 60 journal articles in the last five years, with their research significance and impact evident in their 25 fellowships, awards and prizes received in recent years. With a focus developing the next generation of researchers, the team has trained more than 10 PhDs and several visiting scholars.



TPCH Foundation's Jacqueline Ryan and Stephanie Yerkovich with Indira Prasadam.



Kidney Supportive Care Program and Professor Jeffrey Lipman.

Complex Health Challenges Research Award Obstetric Medicine Research Team

Over the past decade the Obstetric Medicine Research Team at RBWH has grown into an internationally acclaimed group of highly productive researchers, making local, national and international contributions to the complex issues of obesity and diabetes in pregnancy. The team has mentored six clinicians and has made wide ranging contributions to several national committees and guidelines and received more than \$8 million in research funding.

Health Services and Implementation Research Award Kidney Supportive Care Program

The Kidney Supportive Care program comprises researchers and clinicians from QUT, The University of Queensland and Metro North. It is an innovative program based on cutting-edge research that also evaluates the program's impact on patients and families using implementation science. The program is the first dedicated Kidney Supportive Care transdisciplinary program in Queensland, focusing on the person and their quality of life. Within 12 months of operation, it has demonstrated better patient symptom control and coordinated health services, along with reduced healthcare costs.

www.health.qld.gov.au/metronorth

