



Research Annual Report 2020



Townsville Hospital and Health Service Research Annual Report 2015/16
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Message from the Health Service Chief Executive

I am delighted to contribute to the Townsville Research, Education, Support and Administration (TRESA) Unit's 2020-2021 annual report.

Research is one of the bedrocks on which our health service's strategic direction is built. Our purpose to deliver excellent care, research, and education to improve the health of the people and communities of northern Queensland pivots on the efforts of units like TRESA and the commitment and dedication of its researchers to advancing healthcare. We are in the unique position in North Queensland of being located in the tropics which gives us a fertile earth to sow the seeds of original and innovative research that benefits a population characterised by its diversity, dispersal, and Indigeneity. The breadth and imagination of the research undertaken and supported through TRESA never ceases to amaze and inspire.

The health service welcomed a new Director of Clinical Research, Professor Andrew Mallett, in 2020. Professor Mallett's drive and insight are helping to shape and define our research capabilities as we continue our evolution into a 21st century health service. We continued our strong connection with James Cook University as a teaching partner and research collaborator. We know that research will be key to our shared goal of creating a Health and Knowledge Precinct, TropIQ, linking the university and hospital campuses, and helping to attract the brightest and best research and clinical talent from around the world.

In 2020-2021, the Townsville Hospital and Health Service injected more than \$1 million into Study, Education and Research Trust Account (SERTA) grants and clinical trials for local researchers. I'm very proud that this funding is available to researchers who live and work in our community. Grants were awarded to researchers to investigate the structural integrity of personal protective equipment, facial characteristics impacting the selection and fit testing on P2/N95 masks (both particularly pertinent in the age of COVID-19), and a trial using antibiotics to treat uncomplicated appendicitis.

Congratulations to everyone involved in the creation of this annual report. I'm proud to lead a health service that fosters such a rich research culture hallmarked by curiosity, originality, and passion.

Associate Professor Kieran Keyes
Health Service Chief Executive
Townsville Hospital and Health Service

Message from the Director Clinical Research and Executive Director Clinical Governance

Whilst 2020 is a year which upon reflection has had many twists and turns, it is also a landmark year specifically for research activities within THHS. Even in spite of myriad local, national and international challenges provided by the global COVID-19 Pandemic, the research undertaken by THHS staff continues to grow in caliber, volume and impact.

With the appointment of the next Director of Clinical Research late in 2020, our health service is now able to leverage this renewed research leadership as it similarly renews its focus upon research excellence. We are immensely proud of the many and varied research activities both continued and already established throughout 2020 at THHS, especially as the impact stories that result for our community are growing in number. It is important that we celebrate these impacts in all of their forms, extending from high-impact journal articles and conference presentations, to clinical innovations and quality assurance activities. Collectively these are delivering upon the THHS Research Strategy's vision for research excellence in traditional and practical ways.

In the closing months of 2020, we have also challenged ourselves to identify new ways in which to support research and research development across THHS in coming years. Several of these initiatives were close to implementation as we marked the closing of the year, and we look forward to delivering those initiatives in the coming years. These will position our organization and staff to further broaden and deepen our research leadership in health for our region.

Partnerships are key to research within our sector, and we especially reflect upon the strong and productive relationships that we enjoy with James Cook University, the Tropical Australian Academic Health Centre, and our regional partner Hospital and Health Services. These relationships are enabling research activities that deliver in so many ways, whilst strengthening our focus on shared goals and aspirations. We look forward to continuing and deepening these partnerships in the coming years.

As we are now at the close of the decade and of a significant year, we reflect on what has been achieved in research at THHS and also the challenges we have set for ourselves in years to come. As always, our staff are the core strength that underpins our research success. We are excited by new possibilities to further uplift supporting staff in their pursuit of research excellence and congratulate one and all on the fantastic work undertaken to date.

Marina Daly

Executive Director Clinical Governance

Andrew Mallett

Director Clinical Research

Message from the Townsville Research Education, Support & Administration (TRESA) Unit Manager & Research Governance Officer

After a challenging year in 2019 with the Townsville floods, 2020 brought another challenge for THHS researchers with the emergence of COVID-19. Researchers had to quickly respond to the challenge by creating COVID-19 risk mitigation plans and introducing innovative ways of following up clinical trial participants. Unfortunately, COVID-19 saw a decrease in clinical trial participation for some studies, with study participants unwilling to present to the Townsville University Hospital for study visits. I would like to commend the researchers at Townsville Hospital and Health Service for their continued efforts to enroll patients onto clinical trials during these difficult times.

Townsville Hospital and Health Service continues to offer its researcher skills course, once over 12 weeks as 1-1½ hour per week lunchtime sessions and again at the end of the year as a two-day block workshop. This researcher skills course is the only course of its type offered in Queensland and we have attendees from across both private and public sectors, ranging from SEQ to NT. As a result of the course the HREC Coordinator: Ms Sara Potts and TRESA Manager: Ms Sue Jenkins-Marsh have been asked to present the 2-day course to Central West WHHS in Longreach in early 2021. In addition, the Torres and Cape HHS will be videorecording the course in 2021 to be made available on the web.

In 2020, THHS underwent a review of research processes: Improving Research processes within THHS using the Clinician-Management Partnership Model (CMP) model. This was a fantastic collaboration between researchers, research administrators and executive resulting in some streamlining of research processes and improved communication between researchers and research administrators.

From 1st January 2021, Australian hospitals and day procedure facilities providing a clinical trials service will be assessed against the actions in the National Clinical Trials Governance Framework under the Australian Health Service Safety and Quality Accreditation (AHSSQA) Scheme. In 2020, THHS participated as one of the 14 Level 2 sites for the pilot of the Australian Commission on Safety and Quality in Health Care (the Commission) National Clinical Trials Governance Framework.

The assessment for Townsville HHS was conducted by IHCA on 17 November -18 November involving;

- a series of meetings/interviews with more than 40 THHS staff involved in one or more interviews including Executive, TRESA unit, Principal Investigators, Trial Coordinators, Medical Officers and patients.
- a review of governance documents and other evidence provided by THHS via the Commission's online portal
- the review of 5 THHS current clinical trials (selected independently by the assessment agency).

The Final Assessment Report was received in December describing a successful accreditation assessment for Townsville HHS with the following results:

**Maturity rating (% & # of actions)	Established systems	Growing Systems
Standard 1 Clinical Governance	83% (15/18)	17% 3/18
Standard 2 Partnering with Consumers	89% 8/9	11% 1/9

An overall rating of 'Growing' was determined by the assessment team who commented that staff are to be congratulated on their achievements to date in the integration of the clinical trials function with the operations of the health service.

I look forward to another positive year for research in 2021.

Sue Jenkins-March

Manager, Townsville Research Education, Support & Administration and Research Governance Officer

** The assessment rating used is based on the 'maturity' of the HHS to implement the actions of the framework; it is expected that improvements should be achievable over a planning cycle of three years. The maturity levels are; Established systems (100% awarded in all categories), Growing systems and Initial systems.

Message from the Human Research Ethics Committee Chair

We at THHS are fortunate in having a Human Research Ethics Committee (HREC) that is certified at the highest level awarded by the NHMRC. Townsville is becoming increasingly a centre for advanced research, not only in tropical diseases but in all aspects of health care and disease prevention, including public health, allied health, pharmacology, in fact all areas of STEM.

The HREC has not seen the expected increase in research applications over the past year, largely due to the COVID pandemic. What we have seen is the expected increase in complexity of applications, with novel designs and new variants of the standard clinical trial format.

The HREC maintains two rosters of members to ensure timely turnaround of applications without overloading individual members. We have been fortunate to have continually found experts from all categories of potential members; lay, legal, faith-bases, as well as clinical, willing to serve. The present competence of the HREC is due to the contributions of these volunteer members, and to the development work undertaken by the past chairs, Kelvin Robertson and Nicola Stepanov.

Reviewers spend a great deal of time on each application, and frequently do their own literature reviews to cross-check elements of applications presented to us. We have also called on experts from outside the HREC to give us an independent expert opinion on research merit.

Central to the Committee's functioning is our Coordinator, Sara Potts, who has a depth of understanding of the work required of the HREC and the processes necessary to meet them. We are aided by our two Deputy Chairs, Wendy Smyth and Mary Leech, clinicians and researchers in their own right.

Many people working in health research view an ethics committee as being responsible solely for protection of human subjects - protection against adverse medical events, release of confidential information, and misleading information about the intent of research they are invited to participate in.

While this protection is an essential, core element of HREC responsibility, under the National Statement on Ethical Conduct in Human Research (2007, updated 2018) Australian HRECs are also charged with evaluating an application's scientific merit - firm groundings in published science and what is known, sound plans for answering a research question, and appropriate rigorous data collection and analysis techniques. This is where having a broad base of expertise in the HREC, and the ability to call on outside expertise when needed, enables us to be accurate in our evaluations.

Of equal importance is the input of our lay members, who can review a patient information statement with the same eyes as a potential research participant. If our lay members can understand an information statement, we can be confident that any potential participant can.

Whilst 2020 brought many new challenges, overcoming these has meant innovation for the THHS HREC and created greater connections to our fellow committees in Queensland, as we worked together to facilitate critical COVID research. We are excited to see the great work our local researchers produce in response and in spite of the COVID pandemic.

Hudson Birden

*Chair, Human Research Ethics Committee,
Townsville Hospital and Health Service (THHS,
HREC))*

Message from the Allied Health Principal Research Fellow

The diversity of disciplines under the banner of 'allied health' creates an opportunity for multi-disciplinary collaboration like no other. The 2020 highlights are listed below. These outputs belie the constant and consistent work behind the scenes from a group of health professionals without dedicated research time and supported by a single Research Fellow. Because of these seeming limitations, allied health have built research capacity via 'communities of practice' led by PhD graduates. Active teams include Audiology, the Emergency Department AlliedHhealth, Kirwan Adult Allied Health and Children's Development Services, Occupational Therapy, Pharmacy, Psychology Radiation Therapy, Social Work and Speech Pathology.

Measurement of capacity building via the Capability Framework shows improvements in capacity and capability across most departments and teams. To maintain momentum in research capability, the Allied Health Research special interest group agreed to focus education and training on research methods, particularly methods of health services research (HSR). In 2020, several HSR projects were funded or commenced including economic evaluations and discrete choice experiments.

Major achievements include:

- 12 publications
- 1 Advancing Queensland Fellowship (PhD Fellowship)
- 1 Fullbright Scholar
- HP Research Fellow appointed Secretary of the Health Services Research Association of Australia and New Zealand
- Winner of 3MT at HSR Conference in Auckland
- Inclusion of THHS audiology research in the American Audiology Association's education curriculum

The constant challenge is time and money. These two challenges are unlikely to be resolved without the input of funding from the HHS or an external source. Therefore, the allied health teams and departments are working towards a Category 1 grant application.

2020 brought about the additional challenge of COVID-19 which reduced participant recruitment in some areas and slowed down the review process for our publications.

Future Direction of Allied Health Research for 2021

Over the next few years, it is the strategic intent of the allied health research special interest group to increase capability in health services research methods, apply for a Category 1 grant to employ fractional clinician researchers at THHS, incentivise research outputs and to include a research translation metric into our report.

Tilley Pain

Allied Health Principal Research Fellow



Health conference puts Townsville researchers on the map

Three Townsville Hospital and Health Service allied health staff traversed the Tasman representing Townsville at the Health Services and Policy Research Conference.

Townsville HHS principal research fellow Dr Tilley Pain PhD, who also sits on the executive of the Health Services Research Association of Australia and New Zealand, said local clinicians gained great value from the conference.

“In total our health service submitted three abstracts to the conference and all three were accepted, suggesting the calibre of the research we conduct in the north is outstanding,” Dr Pain said.

“We received strong interest in our research with a number of follow-up questions asked, and one of the presentations now being used as a case study for the NSW Government. Our clinicians have formed some valuable relationships thanks to the conference,” she said.

“There is now talk of setting up national special interest groups and forming research collaborations on health economics with a number of other health services and universities.”

Fellow THHS conference attendee, radiation therapist Amy Brown, won the three-minute thesis competition.

“The three-minute thesis was a concept developed at Queensland University as a means of disseminating theses for PhD students,” Dr Pain said.

“The aim is to be able to condense an entire PhD topic into a logical, engaging and informative presentation of three minutes in length.

“Amy was up against some fairly tough competition from not only Australia, but also New Zealand, Canada and the United States.”

Dr Pain said she was delighted to have had so many positives come out of the conference.

“It was great to be so well represented at the conference, and to see the growing interest in research by Townsville HHS staff. We are excited to take everything we have learnt and our new networks to continue to improve patient care and put Townsville at the forefront of health research.”

2020 Townsville Health Research Showcase

In a year that saw health conferences cancelled worldwide due to COVID, Townsville Hospital and Health Service decided to embrace the challenge and move our annual Health Research Showcase to a digital format. With a combined effort from the Townsville Research Education Support and Administration (TRESA unit) and THHS Information Technology Services a program was delivered with a keynote address from Prof Paul Glasziou, Professor of Evidence Based Practice at Bond University and the Director of the Institute for Evidence Based Health Care presented from the Gold Coast.

Local presentations included twenty-nine oral abstracts and thirty-two posters. The combined audience across the 2-day event totalled 431 individual audience log-ins making the 2020 Showcase the best-attended event yet.



2020 Townsville HHS Research Showcase Presentation Winners

- E-poster - mini oral
Duron Prinsloo, on behalf of the research team: Gary Nolan, Nadine Pyne and Suzy Munns for his presentation: **How 'Global' are the Global Lung Initiative (GLI) Spirometry reference equations?**
- Hard copy poster
Krystle Lander, on behalf of the research team: P Thakeria, Aha and S Nayyar for her presentation: **Stroke Prevention by Non-Vitamin K Oral Anticoagulant (NOAC) Agents in the Absence of Atrial Fibrillation: Meta-Analysis of Randomized Control Trials**
- Tuesday - oral presentation
Wendy Smyth, on behalf of the research team: Wendy Smyth, Joleen McArdle, Kristin Wicking, Cate Nagle for her presentation on **Success! Facilitating choice for renal patients in the tropics with central venous lines to maintain the integrity of their dressings while attending to personal hygiene**
- Wednesday morning – oral presentation
Sonja Brennan, on behalf of the research team: Yoga Kandasamy, David Watson, Donna Rudd, Michal Schneider for her presentation on **Does Diabetes During Pregnancy Effect Fetal Kidney Growth?**
- Wednesday afternoon – oral presentation
Kylie Lopes Floro, on behalf of the research team: Madhavi Chilkuri, Justin Smith, Vibooshini Ganeshalingam, Lionel Hebbard, Marcus Powers, Ashley Shackelford, and Rhys Gillman for her presentation on **Radiation induces head and neck cancer cells to undergo an epithelial-to-mesenchymal transition; a stem cell phenotype**



2020 Study Education Research Trust Account (SERTA) Grants

Prof Jonathan Golledge

Developing innovative approaches to preventing diabetes-related foot disease

Through workshops and surveys, this research aims to investigate stakeholders' opinions and preferences for a diabetes foot disease (DFD) prevention program; investigate stakeholders' understanding of the barriers and facilitators to DFD prevention; and develop a co-designed prototype prevention program for DFD.

Laura Irving

Exploring the impact of fixed wall computers in patient bays on patient care in a northern Queensland Cardiac Centre

This research is exploring the impact of fixed wall computers compared to computers on wheels on quality and safety of patient care in a northern Queensland Cardiac Centre; and to explore the impact of fixed wall computers compared to computers on wheels on the provision of person centred care from the perspectives of patients and nurses.

Kara Finnimore

Exploring nursing and midwifery knowledge, practices, and perceptions regarding inpatients with Clostridium difficile infection: A pre/post-test study

The aim of this study is to evaluate the impact of an educational intervention on the prevention and management of Clostridium difficile infection (CDI) within inpatient hospital environments in northern Queensland.

Andrew White

Improving renal function measurement in paediatric and neonatal populations. A proof of concept study validating the use of Cystatin C for determining renal function in these populations at the Townsville University Hospital.

Early diagnosis and management of renal impairment in neonates and infants is important for the prevention of renal failure and end stage renal disease. This study will compare Cystatin C (Cys-C), a marker of renal function decline, against the standard of care renal function marker, serum creatinine (SCr), to determine if Cys-C is a more sensitive marker of impaired renal function and decline in infants (<2 years) and neonates admitted to the TUH.

Yogavijayan Kandasamy

Exploring the Long-Term Effects of Probiotic Supplementation in Premature Infants

Probiotic supplementation has now become part of standard care for pre-term infants in the neonatal intensive care unit (NICU); significantly reducing the risk of Necrotising Enterocolitis (NEC) and mortality. This observational cohort study that will compare the gut microbiomes of two groups; preterm infants who received probiotics during admission in the NICU at TUH and those that did not to ascertain if the positive effects observed during and as a result of probiotic supplementation persist through the first year of life and are preterm infants who did not receive probiotic supplementation at a disadvantage relative to those that did?

Clinton Gibbs

Trauma Care in the Tropics: A Multicentre Retrospective Analysis

This study aims to define and describe the type and extent of injury in trauma patients; to determine the nature and frequency of clinical interventions and administration of blood products, fluids, and other therapeutic agents in the prehospital environment and to compare patient characteristics and outcomes between 'inner regional', 'outer regional', 'remote' and 'very remote' areas of North Queensland transported by aeromedical emergency services to or between Townsville, Cairns, Mt Isa and Mackay Hospitals.

Pranavan Palamuthusingam

Establishing the North Queensland Liver Cancer Library

In Australia hepatocellular carcinoma (HCC) is one the fastest growing malignancies in terms of incidence and has a survival rate of only 18% at 5 years. This funding will be used to develop a liver cancer and organoid library in Townsville for future research studies.

Savannah Brown

Patient Experiences and Perceptions of the new MR-Linac treatment machine in Radiation Oncology: A Qualitative Study

In December 2019, Townsville Cancer Centre (TCC) introduced the first MR-Linac in the southern hemisphere. This technology combines a 1.5T Magnetic Resonance Imaging (MRI) scanner with a linear accelerator (Linac) which treats localised cancers by using high energy radiation beams. The aims of this study are to explore patients' perspective and experiences of the standard radiation oncology Linac treatment machine and the MR-Linac and to further improve patient care, education, and day to day workflows on the MR-Linac.

Nathan Engstrom

Primary Prevention Outcomes in Heart Failure Patients with Implantable Cardiac Defibrillators in the Townsville, Mackay, and Cairns Health Districts (2008-2015)

The aim of this study is to examine the primary prevention outcomes (mortality and risk factors) in heart failure patients with implantable cardiac defibrillators in the regional and rural Townsville, Mackay and Cairns Health Services, with the aim to develop new evidence-based guidelines for device implantation.

Zulfiqer Otty

Implementation and evaluation of referral pathway for people with lung cancer in Townsville Hospital and Health Service

The Townsville Lung Cancer Referral Pathway (TLCRP) emerged from a consultative process that has been ongoing since 2018. This study aims to understand the experience and outcomes of implementing an optimal care referral pathway (that is, the TLCRP) for people with lung cancer at THHS and associated clinicians.

Deepti Patel

An economic evaluation of the costs and consequences of a clinical practice change in radiation oncology

Townsville Hospital and Health Service introduced a clinical practice change eliminating the one-week delay between fiducial marker insertion and radiation treatment simulation for patients with prostate cancer. This study will calculate the costs and consequences (patient outcomes) of a clinical practice change introduced to the Townsville Cancer Centre for the treatment of prostate cancer.

Magenta Schaffer

Townsville Indigenous Mothers Thoughts About Milk-Bank

Breast milk, including donor breast milk, when compared to the use of artificial feeding (infant formula) has been proven to reduce the incidence of necrotising enterocolitis (NEC) in preterm infants. Some studies have shown there are cultural considerations in the acceptance of donor breast milk. This study aims to identify perceptions, feelings, beliefs, and cultural practices that inform a First Nations woman's decision about using donor breast milk for their premature infant.

Latifeh Horrocks

Chronic Pelvic Pain Faecal Microbiome Study

Chronic pelvic pain (CPP) is defined as non-cyclical pain in the area of the pelvis for most days for more than 3-6 months, unrelated to pregnancy. There has been limited research done into CPP, and its aetiology remains complex. Pain may be due to a specific diagnosis such as endometriosis, infection, inflammatory bowel syndrome or interstitial cystitis. However, in other cases, no specific pathology can be demonstrated. This study will compare differences in the faecal microbiome of patients with chronic pelvic pain (CPP) with normal controls and explore the relationship of gut microbiome and females living with CPP.

Alexandra Webster

Prospective study to evaluate patient adherence to recommended regimens of oral nicotinamide for the prevention of keratinocyte carcinomas (KCs)

Keratinocyte carcinomas (KCs) comprise two types of skin cancers: basal cell carcinoma and cutaneous squamous cell carcinoma. A large study has shown nicotinamide (Vitamin B3) taken regularly in high doses (500mg BD) reduced the risk of KCs by more than 20%, in people with a history of two or more KCs. This observational study will number patients who commence and continue nicotinamide chemoprophylaxis as recommended by a dermatology team and identify reasons for patient non-adherence to recommended regimen of nicotinamide chemoprophylaxis.

Nadine Pyne

A tailored application of nationally accepted reference ranges for adult and paediatric respiratory patients in North Queensland.

Lung function tests (LFT) underpin the diagnosis lung conditions and are required to determine condition severity, monitor progression, and assess treatment effectiveness. Spirometry is the most common LFT. In 2016, Australia and New Zealand's Society for Respiratory Science (ANZSRS) endorsed the use of Global Lung Function Initiative (GLI) 2012 reference equations in Australian populations. This observational study will determine the impact of applying the new GLI references values on spirometry testing outcomes at Townsville University Hospital, Respiratory Unit's regional catchment, with the aim of developing an evidence-based protocol for applying GLI ethnic reference equations for the NQ population.

Kerrie Aitken

Impact of a penicillin allergy de-labelling pilot project at the Townsville University Hospital: A prospective cohort study

Inappropriate use of antibiotics contributes to adverse outcomes like increasing microbial resistance to antibiotics and Clostridium difficile infections. This study will evaluate the impact of a pilot program of de-labelling patients presenting to Townsville University Hospital Emergency Department (TUH-ED) with a known or documented penicillin allergy.

Vinay Gangathimmaiah

Safety and Effectiveness of a clinical policy utilizing a raised D-dimer threshold in adult patients presenting to Townsville University Hospital Emergency Department with a low clinical pre-test probability of pulmonary embolism: A single-center before and after study

Acute Pulmonary Embolism (PE) is a potentially fatal diagnosis with a significant burden of disease. Clinicians use a combination of clinical probability, D-dimer (a type of protein the body produces to break down a blood clot) and imaging modalities to investigate patients with suspected PE. This study will evaluate the impact of the clinical policy raising the D-dimer threshold from 500ng/mL to 1000ng/mL for excluding the diagnosis of pulmonary embolism (PE) in adult patients assessed as having a low clinical pre-test probability (C-PTP) of PE at the Townsville University Hospital Emergency Department.

Tilley Pain

Improving access, cost and outcomes of rural and remote children undergoing burn rehabilitation

Burn injuries are common in young children. An Occupational Therapy-led telehealth model of care was developed to address the rural and remote inequity to access paediatric burn rehabilitation. In the new model, an Occupational Therapist takes responsibility for the post burn review and rehabilitation. This study will compare access to specialist paediatric burn rehabilitation for rural and remote children before and after the introduction of the Occupational Therapy (OT) - Led Paediatric Burn Telehealth Review Clinic (OTPB Clinic); costs of the OTPB Clinic and the prior service model for review of paediatric burns and clinical outcomes of rural and remote paediatric burns patients following discharge before and after the introduction of the OTPB Clinic.

Luciana Theodoro de Freitas

How to diagnose Mild Cognitive Impairment: the voice of the experts

Mild Cognitive Impairment (MCI) is described as the transitional phase between a cognitively normal state for age and the early manifestation of dementia and can be reversible depending on the cause. This research aims to identify current assessments used for the early diagnosis of people with MCI; to identify barriers and enablers of MCI diagnosis by the perspective of MCI people and their caregivers and to create a consensus tool for the diagnosis and management of MCI.

Nerida Firth

Planning for the worst: The Opioid Treatment Program and a person-centred approach to disaster preparedness, response, and recovery.

The Queensland Opioid Treatment Program (QOTP) Natural Disaster Procedure was developed to ensure continuity of the Opioid Treatment Program (OTP) during and after a cyclone event in the Townsville Hospital and Health Service (THHS). This study aims to evaluate the THHS Alcohol, Tobacco and Other Drugs Service (ATODS) preparedness for and response to natural disasters specific to provision of OTP and develop a draft natural disaster management plan to pilot.



Study puts rural children with burns in focus

The recovery of children with severe burns in rural and remote communities is the focus of a study looking at the role of telehealth in rehabilitation.

Principal research fellow Dr Tilley Pain said the Townsville University Hospital rehabilitation model was unique because it was led by an occupational therapist rather than a paediatric surgeon.

“That coupled with telehealth makes this highly innovative and perfect for children and parents in rural and remote areas. The service was created to improve access to paediatric burn rehabilitation for people in rural areas,” she said.

“Previously patients would have post-surgery follow-up care with a paediatric surgeon and have to travel to Townsville for these appointments. This travel was onerous and took a toll on families. Now they can have a review via telehealth in their own community. Children with serious burns often require complicated post-surgical care and rehabilitation to get them back to playing and doing the activities that children love, with minimal scarring and the full range of movement.”

“Providing this care via telehealth led by an occupational therapist is much better for our small patients and their families and focuses on a recovery that enables children to get back to being children.”

Paediatric burns senior occupational therapist Deb Phillips said families loved the service.

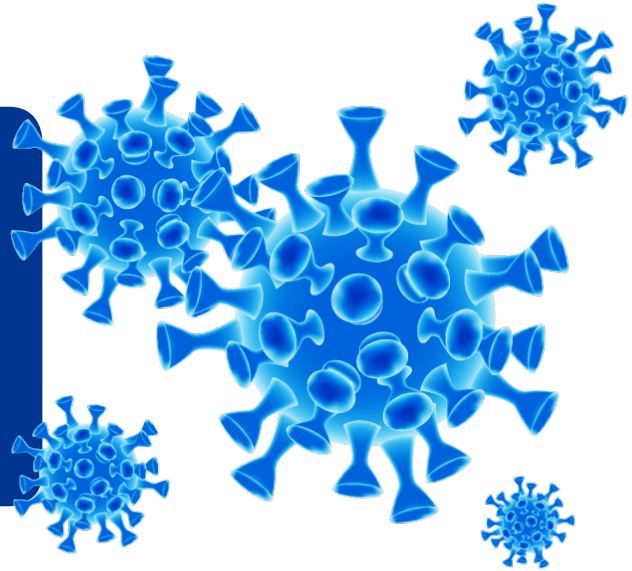
“Families have expressed that this service has benefited them by decreasing disruption to daily routines, fewer interruptions to work or school and fewer costs associated with travelling to and from the hospital,” she said.

“We anticipate the research project will determine categorically that this approach offers benefits to the patients as well as reducing the cost of care without compromising a great outcome. It is critical that we continue to strive for excellence in patient care and innovation and harnessing technology is part of how we achieve that.”

Dr Pain said during the two-year study she would survey families cared for by the paediatric burn telehealth review clinic. “I will analyse anecdotal data on their experiences, collect patient travel subsidy scheme data and compare the burns recovery of rural and remote patients against those of Townsville patients,” she said. “I hope the study will demonstrate the benefits of this kind of care and how it results in good outcomes for children with burns in rural and remote communities.”

The study is one of 20 projects funded by Townsville Hospital and Health Service’s Study, Education and Research Trust Account (SERTA) funding round.

SERTA COVID-19 Research Grants



Chris Heather

Australasian COVID-19 Trial (ASCOT study)

Large multi-centre study. The object of this study is to investigate a combination of therapies for the treatment of COVID-19.

Siva Senthuran

Randomized Embedded Multifactorial Adaptive Platform trial for Community Acquired Pneumonia (REMAP-CAP)

Large multi-centre study. The objective of this study is to determine and continuously update the optimal set of treatments for community-acquired pneumonia related to COVID-19.

Vinay Gangathimmaiah

Informing Emergency Care for COVID-19 patients: The COVID-19 Emergency Department (COVED) project

Large multi-centre study. The specific aim of the project is to determine the demographic and clinical predictors of being COVID-19 positive and requiring intensive respiratory support among patients who present to the Emergency Department with acute symptoms and/or signs consistent with potential COVID-19 and undergo testing.

Arjun Chavan

Impact of ultraviolet germicidal irradiation and moist heat for decontamination of personal protective equipment (PPE): A feasibility study looking at structural integrity of PPE and efficacy of the decontamination to inform a crisis capacity strategy during a pandemic.

Townsville Hospital and Health Service led study, aiming to validate the local process of decontamination of PPE prior to any potential shortage due to high demand or supply chain interruptions related to the impact of COVID-19.

Arjun Chavan

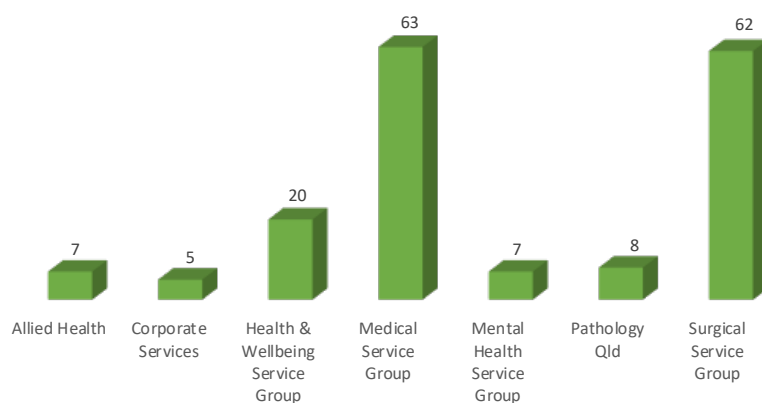
Facial Characteristics impacting the selection and quantitative fit testing of P2/N95 mask.

Townsville Hospital and Health Service led study, looking to create biometric data sets of staff undergoing mandatory quantitative (p2 / N95) mask fit testing. It is proposed that the generation of these biometric data sets will assist with the prediction of a 'best fit' mask for a particular end user based on their facial features.

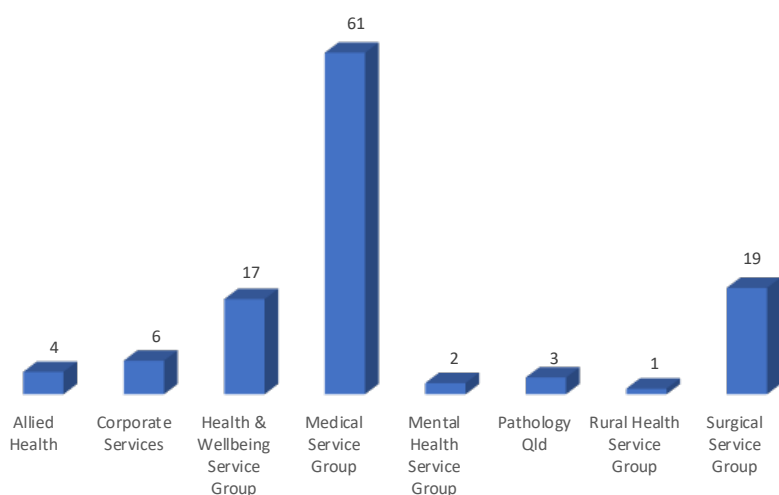
Research Activity



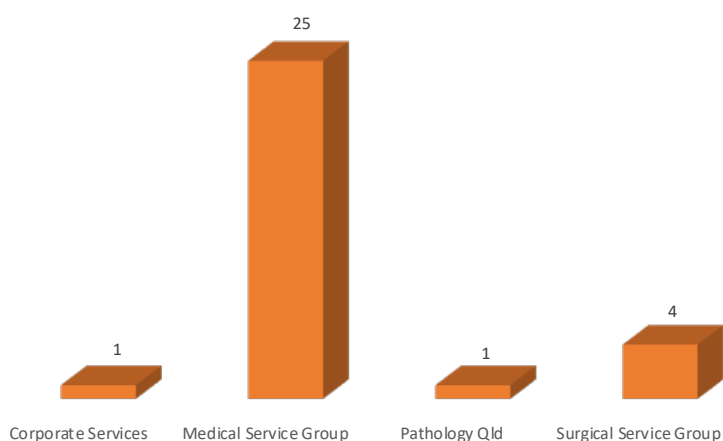
No. of publications



No. of RGO authorised studies



No. of externally funded studies

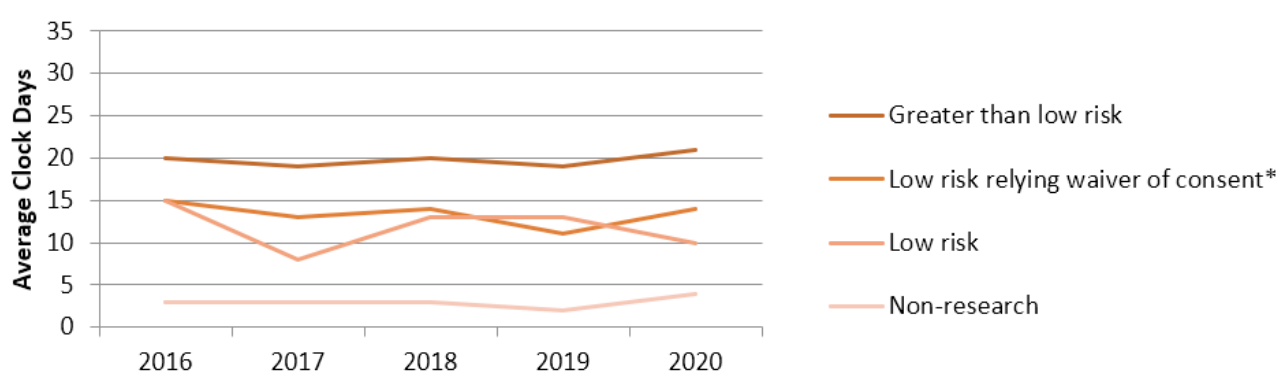




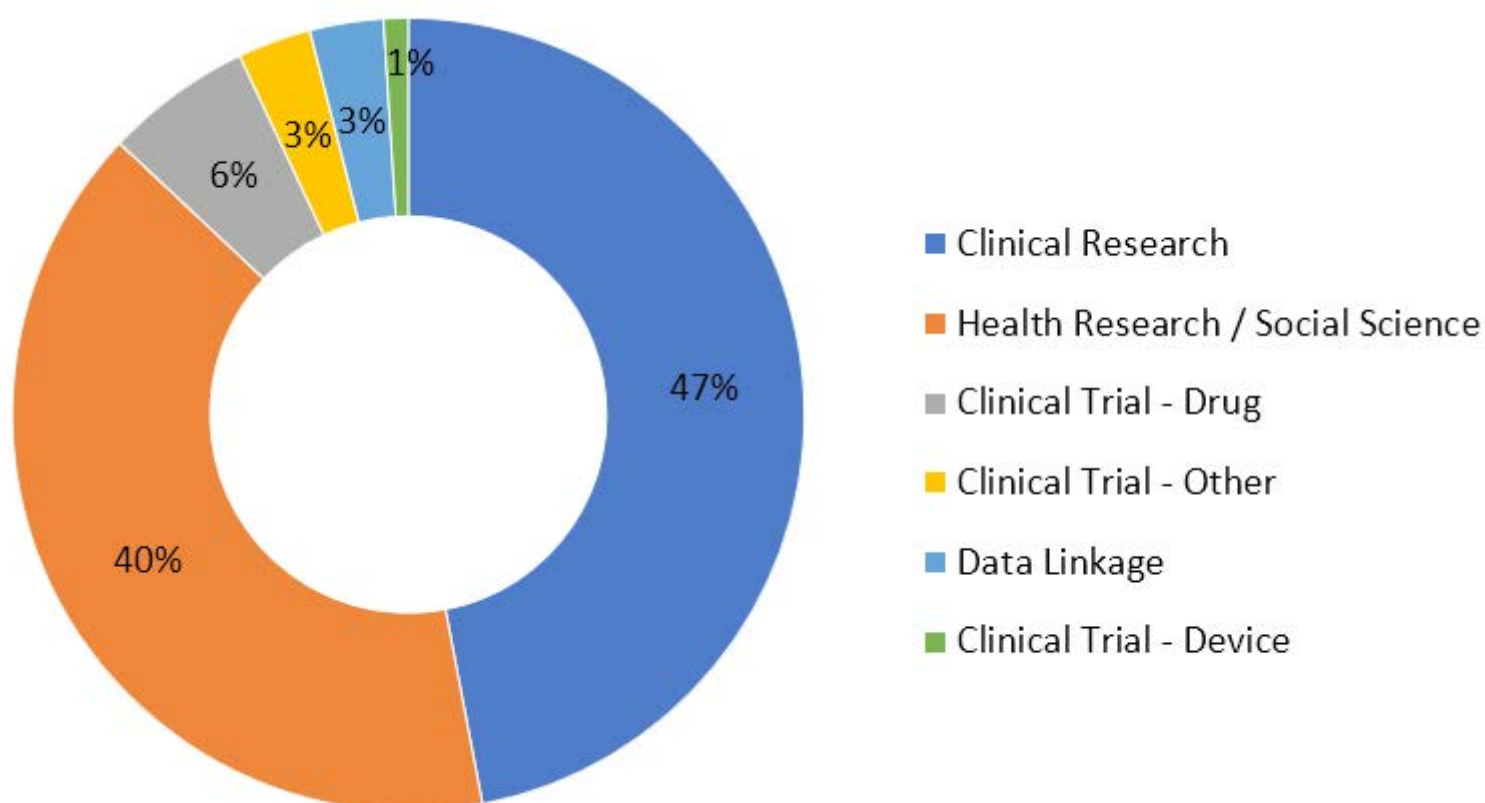
Research Activity

HREC Report

Review timeframes



Categories of research



Research Activity



RG Report

THHS Research Governance Activity

THHS research governance applications received in 2020	132	↑ from 100 in 2019
New research projects authorised in 2020	113	↑ from 95 in 2019
Applications withdrawn or not authorised in 2020	15	↑ from 7 in 2019
Applications invalid or awaiting a decision as at 31 December 2020	12	

THHS Research Governance Timeframes for Reaching a Decision on an Application

	Clock Days	Overall Days
Minimum	1 day	1 day
Maximum	23 days	282 days
Average	8 days	54 days
Median	7 days	40 days



Major Institutions Collaborating with or Conducting Research at THHS

Alfred Health
Austin Health
Australasian Gastro-Intestinal Trials Group
Australasian Leukaemia & Lymphoma Group
Cairns & Hinterland Hospital and Health Service
Central Queensland University
Eli Lilly Australia Pty Ltd
Griffith University
James Cook University (JCU)
Keros Therapeutics Australia Pty Ltd
Mackay Hospital and Health Service
Macquarie University
Melanoma and Skin Cancer Trials Limited
Menzies School of Health Research
Merck Sharp & Dohme (Australia) Pty Ltd
Metro North Hospital and Health Service
Metro South Hospital and Health Service
Monash Health
Monash University
PAREXEL International Pty Ltd

Pathology Queensland
Peter MacCallum Cancer Institute trading as Peter MacCallum Cancer Centre
Pharmaceutical Research Associates Pty Ltd
Queensland University of Technology
RM Miller Medical Pty Ltd
Roche Products Pty Limited
SpineThera Australia Pty Ltd
St Vincent's Hospital Melbourne Limited
Sunshine Coast Hospital and Health Service
The Council of the Queensland Institute of Medical Research (QIMR)
The State of Queensland acting through Queensland Health
The University of Melbourne
The University of Queensland
The University of Sydney
University of Southern Queensland
University of the Sunshine Coast
University of Western Australia

New Chair excited about future of research

Townsville is perfectly positioned to capitalise on a growing focus on complex tropical research, according to new Human Research Ethics Committee (HREC) Chair Dr Hudson Birden.

Dr Birden has a long association with the HREC having served as a member since 2014 before assuming the Chair role on 20 February 2020. The HREC assesses about 60 research projects a year and grants ethics approval for studies to go ahead. Hudson said it was an essential component of delivering research that wasn't only effective but safe.

"Ethics approval is one of the first things a researcher needs to obtain after the basic design of their study is mapped out," he said.

"The suggestions we come up with make sure the study is safe for patients but also makes suggestions for better quality research. A poorly designed study can't be an ethical study and our role is to support researchers in doing the best research possible."

Dr Birden spent two years in Townsville between 2014 and 2016 lecturing in epidemiology at James Cook University. He has previously been a director of public health in the Connecticut in the United States before moving to Australia in 2002.

"I've been on several research committees over the years and the HREC in Townsville is one of the leading ethics committees in Australia," he said.

"What many people may not know is that our committee is certified at the highest level in Australia and so is able to evaluate the most complex research applications across a range of study designs. This means we'll be able to capitalise on the work being done in the region in building stronger research ties and developing the TropiQ health and knowledge precinct."

Hudson also lectures in public health at the University of Sydney.





Allied Health Services Division

Message from the Director of Allied Health Services

The Allied Health Services Division (AHSD) has maintained a focus on enhancing research capacity and capability in our workforce throughout 2020. AHSD staff have participated in Allied Health Translating Research into Practice (AHTRIP) and Stepping into Research development opportunities, and our discipline departments have been actively involved in research that informs excellence in clinical care.

Physiotherapy has continued to focus on developing and evaluating a Paediatric Primary Contact Physiotherapy Continence Service. They have also commenced a collaboration with Children's Health Queensland, Queensland Paediatric Rehabilitation Service and the Queensland Cerebral Palsy and Rehabilitation Research Centre Research Program, regarding Knowledge Translation of Early Cerebral Palsy (Kite-CP), Learning through Everyday Activities with Parents (LEAP) and the Queensland Early Detection and Early Intervention Network (QEDIN) for the early identification and appropriate interventions for children with Cerebral Palsy.

Physiotherapy and Social Work have continued their collaboration with Princess Alexandra Hospital to evaluate a new model of care to improve health service responsiveness to domestic and family violence, with the use of a standardised screening and assessment tool aimed at enhancing effective identification and response to domestic violence during acute hospital presentations. Social Work has also progressed research regarding domestic and family violence screening practices in the emergency department, and they have commenced a systematic review regarding the effect that telehealth has on attendance rates for Aboriginal and Torres Strait Islander people requiring outpatient specialist review, as compared to face to face appointments.

Psychology has progressed a randomised controlled trial investigating treatment efficacy of cognitive behaviour therapy for people presenting with non-cardiac chest pain, and Occupational Therapy has been finalising data analysis and preparing a manuscript for peer review and publication for the validation of the Occupational Therapy Needs Assessment tool. They have also had one journal article accepted for publication and one undergoing peer review for the Occupational Therapy-led paediatric burns Telehealth Review Clinic.

And last, but certainly not least, Speech Pathology has successfully completed Allied Health Professions Office of Queensland (AHPOQ) funded Cancer Capabilities Research, which examined care for people with head and neck cancer from rural areas, trialled shared care models with rural clinicians, examined service capability frameworks, developed rural learning portfolios and has produced 5 manuscripts and 9 presentations.

A fantastic effort from the Allied Health Services Division team!

Joanne Stitt
Director, Allied Health Services

Allied Health Services Division

Health Practitioner Research Fellow Report

The diversity of disciplines under the banner of 'allied health' creates an opportunity for multi-disciplinary collaboration like no other. The 2020 highlights are listed below. These outputs belie the constant and consistent work behind the scenes from a group of health professionals without dedicated research time and supported by a single Research Fellow. Because of these seeming limitations, allied health have built research capacity via 'communities of practice' led by PhD graduates. Active teams include Audiology, the Emergency Department Allied Health, Kirwan Adult Allied Health and Children's Development Services, Occupational Therapy, Pharmacy, Psychology Radiation Therapy, Social Work and Speech Pathology.

Measurement of capacity building via the Capability Framework shows improvements in capacity and capability across most departments and teams. To maintain momentum in research capability, the Allied Health Research special interest group agreed to focus education and training on research methods, particularly methods of health services research (HSR). In 2020, several HSR projects were funded or commenced including economic evaluations and discrete choice experiments.

Achievements

- 12 publications
- 1 Advancing Queensland Fellowship (PhD Fellowship)
- 1 Fullbright Scholar
- HP Research Fellow appointed Secretary of the Health Services Research Association of Australia and New Zealand
- Winner of 3MT at HSR Conference in Auckland
- Inclusion of THHS audiology research in the American Audiology Association's education curriculum

Challenges

The constant challenge is time and money. These two challenges are unlikely to be resolved without the input of funding from the HHS or an external source. Therefore, the allied health teams and departments are working towards a Category 1 grant application.

2020 brought about the additional challenge of COVID-19 which reduced participant recruitment in some areas and slowed down the review process for our publications.

Future Direction of Allied Health Research for 2021

Over the next few years, it is the strategic intent of the allied health research special interest group to increase capability in health services research methods, apply for a Category 1 grant to employ fractional clinician researchers at THHS, incentivise research outputs and to include a research translation metric into our report.

Allied Health Services Division

Research Groups

Allied Health Research Group

Ongoing monthly meetings to plan strategic direction of allied health research continues. AHSD were successful in applying for THHS SERTA funding for a 'team' membership to the Health Services Research Association of Australia and New Zealand (HSRAANZ).

This will enable THHS to stay informed of regular events on the most topical issues on the HSRAANZ website and news bulletins synthesizing the latest health services news, research, career advice and opportunities and events.

The HSRAANZ is also a hub for learning and professional development in health services research and policy and THHS will benefit greatly from being a member.

Several THHS allied health staff members achieved milestones in their research careers, including Stephanie Bushell graduating with Masters in Psychology (thesis accepted without any corrections); Alexandra Ryan, Nathan Engstrom and Angie Nielsen accepted into PhD JCU Cohort program; Luciana Theodoro de Freitas accepted into MSc through the JCU Cohort and the HP Research Fellow was an invited speaker at state-wide allied health forum

There were eleven first author publications across the team and eight successful SERTA grants.

Research Team

Amy Brown
Gail Kingston
Kelvin Robertson
Stephen Perks
Sonja Brennan
Venkatesh Aithal
Megan Harbourne
Stephen McCormack
Nadine Pyne

Department of Psychology Research Group

The THHS Psychology Research Group carried out chart reviews of nonspecific chest pain frequent re-presenters to the Emergency Department (ED) (over a 3 month period) and followed up these individuals over a period of 3 years.

Based on the result of the findings the researchers have studied the mortality and morbidity over this period and carried out cross-cultural comparisons.

The findings are interesting from health equity perspective and provide additional information regarding health inequalities as seen in frequent ED re-presenters.

Research Team

Principal investigator
Vidula Garde

Investigator
Caitlin Duffy

Investigator
Madelyn Pardon

Allied Health Services Division

Research Publications

1. Edelman A, Brown A, Pain T, Larkins S, Harvey G. Evaluating research investment and impact at a regional Australian Hospital and Health Service: A programme theory and conceptual framework. *Health Res Policy Syst.* 2020;18(1).
2. Furness L, Tynan A, Ostini J. What students and new graduates perceive supports them to think, feel and act as a health professional in a rural setting. *Austr J Rural Health.* 2020;28(3):263-7
3. O'Leary S, Raymer M, Window P, Swete Kelly P, Elwell B, McLoughlin I, O'Sullivan W, Wake A, et al. Patient characteristics associated with a poor response to non-surgical multidisciplinary management of knee osteoarthritis: A multisite prospective longitudinal study in an advanced practice physiotherapist-led tertiary service. *BMJ Open.* 2020;10(10).
4. O'Leary S, Raymer M, Window P, Swete Kelly P, Lee D, Garsden L, Phillips B, O'Sullivan W, Wake A, et al. A multisite longitudinal evaluation of patient characteristics associated with a poor response to non-surgical multidisciplinary management of low back pain in an advanced practice physiotherapist-led tertiary service. *BMC Musculoskelet Disord.* 2020;21(1).
5. Stoikov S, Maxwell L, Butler J, Shardlow K, Gooding M, Kuys S. The transition from physiotherapy student to new graduate: Are they prepared? *Physiotherapy Theory Pract.* 2020.
6. Bede Ashley, Tilley Pain, Heidi Clark, Ellen O'Connor, Liana Schnierer, Kathryn Laspina, Meghan Fitzpatrick. A survey to guide the emerging role of allied health teams in a regional tertiary hospital emergency department. *Internet Journal of Allied Health and Practice* 2020 Mar 17;18(2), Article 3.
7. Tilley Pain, Daniel Lindsay, Malindu Fernando. Predictors of future research interest among allied health professionals at an Australian regional tertiary hospital. *FoHPE* 2020 Vol 21. No 3. 78-92

Allied Health Services Division

RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Mrs Angela Tonge	Physiotherapy	Evaluating a New Model of Care to Improve Health Service Responsiveness to Domestic and Family Violence	Allied Health Fellowship
Dr Peter Window	Physiotherapy	Choosing non-surgical multidisciplinary management of knee osteoarthritis in tertiary care wisely: A prospective validation of a clinical prediction rule.	
Miss Rachel McMahon	Nutrition and Dietetics	Increasing research capacity and capability within a Dietetics department through development of a team specific research strategy and framework using a modified Delphi method	
Mr Ian Meade	Dietetics Allied Health Stroke Team	Improving participation and comparing effectiveness of stroke-specific training modalities in nurses working in acute and sub-acute settings	



Clinical trial to support people with non-cardiac chest pain

An Australian-first clinical trial is aiming to reduce representations to emergency departments by providing alternative treatments to people with non-cardiac chest pain.

Every year, thousands of North Queenslanders present to Townsville University Hospital with non-cardiac chest pain with national research showing about 10 per cent return to hospital with chest pain within a month.

Director of psychology and principal investigator Vidula Garde has begun recruiting to a trial that will look at determining whether supporting these patients with psychotherapy will assist in improving quality of life and reduce the rates of re-presentations to ED.

Mrs Garde said chest pain was among the top five reasons for people presenting to emergency departments and was broken down into two main categories: cardiac (heart-related) or non cardiac chest pain.

“What we know is that psychological conditions such as high anxiety and depression can be underlying causes of non-cardiac chest pain,” she said.

“Through this study we want to determine whether there is a benefit in offering these people psychological intervention in the hope of addressing the underlying psychological cause of their chest pain.

“If this trial is successful it has the potential to not only improve the quality of life of thousands of people but will also free up capacity in our emergency departments by reducing repeat presentations.”

Mrs Garde presented her research at the Australasian College of Emergency Medicine in Hobart in December 2019. The research has received \$47,000 through the Townsville Hospital and Health Service’s Study, Education and Research Trust (SERTA).



Corporate Services

The research activities within THHS Corporate Services continues to grow and flourish. This is occurring in parallel with further fortified research management and leadership functions provided by the Director of Clinical Research and Townsville Research Education, Support and Administration (TRESA) Unit.

By both supporting priority research groups and activities, as well as providing critical research leadership and management functions, we are playing a

critical role in delivering upon the current THHS Research Strategy.

Further, we are looking towards the future and look forward to defining this further over the next year in preparation for the next THHS Research Strategy.

Corporate Services

Research Groups

Nursing and Midwifery Research Group

Whilst COVID-19 necessitated some modifications to their research studies, it did not slow down the achievements of this group. In 2020 NMRG had 13 current projects, 10 of which are funded. They were successful with grant applications, with six grants, two THHS SERTA grants, three TAAHC seed-funding grants and a tender from Queensland Health. Most of the projects are multidisciplinary in nature.

Nursing and Midwifery Research had five abstracts accepted at the Townsville Health Research Showcase, with the presentation "Success! Facilitating choice for renal patients in the tropics with central venous lines to maintain the integrity of their dressings while attending to personal hygiene" being judged the Best Oral Presentation, Tuesday afternoon session, 27/10/2020. The Nursing and Midwifery Research team was again nominated for a THHS Australia Day Staff Excellence Award in the category of Vision

There has been significant growth in nurses and midwives undertaking Higher Degree research supervised by Prof Nagle and Dr Smyth (OAM) and in 2020 there were 10 nurses and midwives enrolled across two universities.

Research Team:

Dr Wendy Smyth was the THHS representative on the Project Advisory Group that developed the Queensland Health Nursing and Midwifery Research Framework and the Nursing and Midwifery Supplemental Research Toolkit and Resources. Wendy co-edited the Framework and supporting documents, which guide nursing and midwifery research Statewide and throughout external jurisdictions.

Professor Cate Nagle is leading a team to develop midwifery specific domains and descriptors of midwifery practice to inform Queensland Health's Generic Level Statements. This is the first time in Australia that this would have been undertaken and professionally and industrially this is an important project for midwifery.

Research Grants, 2020:

Smyth, W., Nagle, C., McArdle, J., Body-Dempsey, J., Manickam, V., Swinbourne, A., Lee, I., & Holdsworth, J. Immersive virtual reality in a northern Queensland haemodialysis unit: A cross-over randomised controlled feasibility trial. Tropical Australia Academic Health Centre Seed Funding Grant.

Finnimore, K., Carrucan, J., Butters, R., Luetchford, H., Smyth, W., & Nagle, C. Exploring nursing and midwifery knowledge, practices and perceptions regarding inpatients with *Clostridium difficile* infection: A pre/post-test study. Townsville Hospital and Health Service Study, Education and Research Trust Fund.

Irving, L., Gallagher, J., Lancuba, L., Morton, J., Smyth, W., & Nagle, C. (2020). Exploring the impact of fixed wall computers in patient bays on patient care in a northern Queensland Cardiac Centre. Townsville Hospital and Health Service Study, Education and Research Trust Fund.

Nagle, C., Yates, K., McAuliffe, M., Brown, L., & Byrne, M. Development of Midwifery Generic Level Statements Queensland Health and Department of Education.

Downing S, Campbell S, Nagle, C. Use of telemedicine to improve access to medical termination of pregnancy services in Cape York: A pilot implementation study. Tropical Australian Academic Health Centre.

Geia, L., Dimmock, J., Nagle, C. West, C., Cairns, A., Law, B., & Jackson, B. Working with Indigenous communities to develop health care partnerships for long term health outcomes in Indigenous communities in North Queensland. Tropical Australia Academic Health Centre Seed Funding Grant.

Corporate Services

Research Groups

Peer-reviewed Conference Presentations:

1. Chapman, A., Nagle, C., Bick, D., Lindberg, R., Kent, B. and Hutchison, A. (2020, 3 June). Organisational interventions to reduce non-medically indicated caesarean section rates: A systematic review and meta-analyses. Barwon Health and Deakin University Research Symposium (Best Poster presentation)
2. Blake M., Kerr, D., Nagle, C., Hutchinson, A. (2020, 3 September). The influences on mothers when breastfeeding a late preterm infant within the context of a Special Care Nursery. Australian College of Neonatal Nurses, Virtual Conference
3. Smyth, W., McArdle, J., Wicking, K., & Nagle, C. (2020, 27 October). Success! Facilitating choice for renal patients in the tropics with central venous lines to maintain the integrity of their dressings while attending to personal hygiene Paper presented at the Townsville Health Research Showcase, Townsville University Hospital. (Best Oral Presentation, Tuesday afternoon session, 27/10/2020.)
4. Omonaiye, O., Smyth, W., & Nagle, C. (2020, 28 October). Impact of virtual reality interventions on haemodialysis patients: A scoping review. Paper presented at the Townsville Health Research Showcase, Townsville University Hospital.
5. Hadland, M., Holland, S., Taylor, R., Smyth, W., & Nagle, C. (2020, 28 October). An Immersive Sensory Experience during Childbirth: A proof of concept study. Paper presented at the Townsville Health Research Showcase, Townsville.
6. Archer, V., Smyth, W., & Nagle, C. (2020, 27-28 October). Success! Exploring an alternative to showering for frail, elderly persons living in the community. Poster presented at the Townsville Health Research Showcase, Townsville University Hospital
7. McCahill, R., Clarke, P. & Nagle, C. (2020, 28 October). Use of Virtual Reality for minor procedures in the Emergency Department: A scoping review. Paper presented at the Townsville Health Research Showcase, Townsville.
8. Blake M., Kerr, D., Nagle, C., Hutchinson, A. (2020, 30 October). The influences on mothers when breastfeeding a late preterm infant within the context of a Special Care Nursery. Oral presentation at Children's Inpatient Research Collaboration Australian and New Zealand, Virtual conference.

Tropical Centre for Telehealth Practice and Research (TC-TPR)

The Tropical Centre for Telehealth Practice and Research (TC-TPR) is the leading telehealth innovation and research organisation in North Queensland. Tele-trials refer to the use of telehealth by clinical trial units (primary sites) to enable access by patients at remote sites (satellite site) to some or all aspects of clinical trials.

The Australasian Tele-trial Model (ATM) involves the use of telehealth technology to conduct clinical trials at satellite sites. Under the direction of state governments, led by Queensland Health (QH) and the Clinical Oncology Society of Australia (COSA), a streamlined process for review, authorisation and conduct of the teletrials model has been developed. Some state governments and cancer centres around the country have developed new standard operating procedures (SOPs) to incorporate teletrials into routine practice. Queensland Health has undertaken reforms in governance and contract approval processes to facilitate its implementation in Queensland. Several pharmaceutical companies and trial groups have begun incorporating teletrials into trial protocols to enhance rural and regional access to trials, access to rare cancer trials even within a metropolitan setting and overall rate of recruitment.

Research Team:

Prof Sabe Sabesan

Participating Networks:

- Telehealth Emergency Management Support Unit (TEMSU)
- Townsville Hospital and Health Service Mental Health Services
- Townsville TeleDiabetes and TeleEndocrinology Network
- Townsville TeleGero - Telehealth Geriatric Medicine
- Townsville Telehealth Medical Cyber Centre
- Townsville TeleOncology Network

Sub-specialties:

- Allied Health Services
- Clinical Nursing Network
- Townsville Hospital Cardiac Surgery
- Transitional Research in Endocrinology and Diabetes (TREAD)

Corporate Services

Research Publications

1. Gibson S, Nagle C, Paul J, McCarthy L, Muggli E. Influences on drinking choices among indigenous and non-indigenous pregnant women in Australia: A qualitative study. PLoS ONE. 2020;15(4).
2. McCahill RJ, Nagle C, Clarke P. Use of Virtual Reality for minor procedures in the Emergency Department: A scoping review. Australas Emerg Care. 2020.
3. Rasmussen B, Nankervis A, Skouteris H, McNamara C, Nagle C, Steele C, et al. Factors associated with breastfeeding to 3 months postpartum among women with type 1 and type 2 diabetes mellitus: An exploratory study. Women Birth. 2020;33(3):e274-e9.
4. Shields L, Jomeen J, Smyth W, Stanley D. Matthew Flinders Senior (1751–1802): Surgeon and 'man midwife'. J Med Biogr. 2020;28(2):115-20.
5. Rogers C, Al Mamun A, Smyth W, Shields L. Perceptions of working with children and their parents in a rural health setting in Australia. Journal of Children and Young People's Health, 2020; 1(1).

Corporate Services

RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Dr Paul Lane	ICU	Implementation of an ICU escalation plan and daily handover meeting: A follow-up study of sustainability	
Prof Richard Murray	Medical Workforce	Evaluation of Regional Training Hubs in Northwest Queensland	
Ms Kara Finimore	Infection Control and Prevention	Exploring nursing and midwifery knowledge, practices and perceptions regarding inpatients with Clostridium difficile infection: A pre/post-test study	THHS SERTA Grant
Mr Vikrant Kalke	N/A	QLD Sepsis Algorithm	Clinical Excellence Queensland
Ms Kerrie Aitken	Infection Prevention and Control Emergency	Impact of a penicillin de-labelling pilot project at Townsville University Hospital: A prospective cohort study	THHS SERTA Grant

Aboriginal and Torres Strait Islander Health Dictorate

RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Miss Laura Wright	Palm Island Primary Health Care	Remote Area Safety Project (RASP): Workforce safety in the very remote primary health care sector: A policy analysis	

Top doc to lead Townsville's research agenda

A kidney specialist with strong ties to North Queensland has taken on Townsville Hospital and Health Service's most senior research position.

Professor Andrew Mallett began in November 2020 as the Director of Clinical Research with ultimate accountability for the research vision, capacity and projects across the HHS.

Prof Mallett said there were great opportunities to develop and deliver exciting research projects out of Townsville University Hospital. "I can see the opportunities that we have here in North Queensland to do some really exciting research," he said. "Research is often mystified as this complex and mysterious thing, but it really isn't. Research is just asking questions and finding answers."

"The reason we do research is because the population benefits from those answers whether it is through a new product becoming available or participating in a trial or by benefitting from a better way of doing business."

Prof Mallett grew up in Bowen where his father Dr Tony Mallett was a medical superintendent and local GP. He was educated at James Cook University and did some of his junior years in Townsville before moving to Mackay and later the Royal Brisbane Women's Hospital where he has been for the past 12 years including seven as a consultant nephrologist. Prof Mallett is one of just a handful of national experts specialising in inherited kidney disease and nephrogenetics.



"Recognising genetic causes of kidney disease helps because we can determine treatment options earlier and tailor it more specifically to an individual's needs," he said. "The exciting thing about genetics and the growing genomics field is that it allows us to understand better the underlying causes of kidney disease. It is much easier to treat or fix a problem when you understand why the thing, in this case the kidney, is broken."

Prof Mallett said his priority was to establish a culture that understood that research and clinical excellence go hand in hand. "It is almost impossible to have a good clinical research agenda if you don't have a strong clinical excellence culture," he said. "I think it is one of the really exciting things about coming to a major tertiary hospital with a strong partnership with a regional university."

"Ultimately what we are looking for is digestible, practical outcomes that will benefit our community."





Rural Hospitals Service Group

2020 saw the Rural Hospitals Service Group's (RHSG), Hughenden Multi-purpose Health Service included in the "Improving access to cardiac rehabilitation in rural and remote areas of North Queensland" study.

With so many barriers and challenges faced by rural and remote communities within the Townsville HHS, the findings have been crucial in ensuring as a key service provider for the Hughenden community, we continue to develop more patient focused sustainable models of care for discharging cardiac clients and ongoing rehabilitation.

The Service Group, whilst acknowledging the profound impact research results can have in improving the health care services provided and assist in identifying new approaches in how health care services are delivered, the ability to support our rural staff who are passionate about their small communities and provide opportunity for upskilling and diverse opportunities through research, significantly raises the value of research projects for our Service Group.

RHSG recognises and appreciated the importance of research projects and will continue to encourage and support rural and remote staff who wish to undertake research in their chosen fields.

Rural Hospitals Service Group

RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Ms Patricia Field	Hughenden Multipurpose Health Service	Improving access to cardiac rehabilitation in rural and remote areas of North Queensland	

Bay
P7

Health & Wellbeing Service Group

There is much to celebrate in our health service group's research over the past year with valuable research being undertaken.

We continue to strive towards growing existing relationships with our academic partners and build partnerships at regional, national and international levels.

Our service group has been focused on increasing the translation of research into clinical practice. The future intent is to develop a stronger framework where translation and outcomes from research are prioritised and communicated.

Our future includes a renewed emphasis on supporting staff and building research capacity which will enable the ongoing embedding of a strong research culture across our clinical departments.



Health & Wellbeing Service Group

Research Groups

Perinatal Neonatal Research Group

Recruitment for the NMHRC funded KIDMIN renal research project, led by Dr Yoga Kandasamy, remained on track despite the pandemic and the temporary restriction imposed in early 2020.

There were several successful completion of research projects by neonatologists, advanced neonatal-perinatal trainees, RMOs and JCU Medical students, including:

- *'Do you people ever think about the lives you ruin?'* Perspectives and influences on the provision of care for extreme preterm and periviable babies in North Queensland.
- Survival rate and neurodevelopmental outcomes of extremely premature babies: A 3-year experience of a tertiary neonatal centre
- Association between umbilical cord clamping time, haemoglobin and total serum bilirubin in term neonates admitted for phototherapy
- Is peripartum maternal fever alone a reliable predictor of neonatal sepsis? A single-centre, retrospective cohort study

The Service Group was well represented with both oral and poster presentations at the 2020 THHS Research Showcase and also participated as an invited speaker (via Zoom) at Australian College of Neonatal Nurses (ACNN) conference, TAAHC and University of Newcastle's Hunter Medical Research Institute research events.

There continued to be collaboration with JCU researchers and participation in supervision of JCU medical students (MBBS honours), PG Certificate Researchs, M Phil. and PhD students.

The collaboration lead to nine publications by the team.

Research Team:

Neonatologist
Dr Yoga Kandasamy

Neonatologist
Dr Susan Ireland

Project Manager
Helena McInnes (CN)

Research Nurse
Nicole Clapham (CN)

Research Midwife
Amanda Martin (CN)

Research Midwife
Katie Nye (RM)

Research Assistant
Chlow Sobieralski

Health & Wellbeing Service Group

Research Publications

1. Aithal S, Aithal V, Kei J, Anderson S. Wideband Absorbance in Ears with Retraction Pockets and Cholesteatomas: A Preliminary Study. *J Am Acad Audiol*. 2020;31(10):708-18.
2. Aithal V, Aithal S, Kei J, Anderson S, Wright D. Predictive Accuracy of Wideband Absorbance at Ambient and Tympanometric Peak Pressure Conditions in Identifying Children with Surgically Confirmed Otitis Media with Effusion. *J Am Acad Audiol*. 2020;31(7):471-84.
3. Bolisetty S, Osborn D, Schindler T, Sinn J, Deshpande G, Wong CS, et al. Standardised neonatal parenteral nutrition formulations-Australasian neonatal parenteral nutrition consensus update 2017. *BMC Pediatr*. 2020;20(1).
4. August DL, Ray RA, Kandasamy Y, New K. Neonatal skin assessments and injuries: Nomenclature, workplace culture and clinical opinions—Method triangulation a qualitative study. *J Clin Nurs*. 2020;29(21-22):3986-4006.
5. Jones AR, Tuckwell C, Wright IMR, Morrison JL, Kandasamy Y, Wittwer MR, et al. The impact of maternal asthma during pregnancy on offspring retinal microvascular structure and its relationship to placental growth factor production in utero. *Microcirculation*. 2020;27(6).
6. Kandasamy Y, Rudd D, Lumbers ER, Smith R. An evaluation of preterm kidney size and function over the first two years of life. *Pediatr Nephrol*. 2020;35(8):1477-82.
7. Cook S, Ali S, Pracher F, Gautam A. Chylothorax complicating central venous access and thoracocentesis in an infant with parapneumonic empyema. *J Paediatr Child Health*. 2020.
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Health & Wellbeing Service Group

RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Mr Joshua Liaw	Paediatrics	Evaluation of Townsville Hospital Health Service secondary prophylaxis delivery for rheumatic fever and rheumatic heart disease.	
Dr Pat Ryan	Paediatrics	Evaluation of a Neurology Outreach teleconference teaching programme for metropolitan, rural and remote clinicians in Australia.	
Dr Helen Buschel	Paediatric Surgery	Paediatric Renal Abscesses in North Queensland: A 10 year retrospective review	
Mr Saji Sebastian	Kirwan Health Campus	Qualitative evaluation of the Queensland Health Aboriginal and Torres Strait Islander Brief Intervention Training Program, the B.strong Program	
Dr Vanessa Lusink	Obstetrics & Gynaecology	The introduction of a new outpatient hysteroscopy service: Patient satisfaction and workload impacts	
Donna-Marie Bloice	Offender Health	Who cares about the health of female former prisoners? Exploring the journey of care for female former prisoners living with chronic conditions through the eyes of nurse navigators	
Dr Vanessa Lusink	Obstetrics & Gynaecology	Project Title: Intraperitoneal instillation of Ropivacaine at gynaecological laparoscopy: A randomised control trial	THHS SERTA GRANT
Dr Yoga Kandasamy	Neonatology	Exploring the Long-Term Effects of Probiotic Supplementation in Premature Infants	THHS SERTA GRANT
Distinguished Professor Patsy Yates	Paediatrics	Evaluation of the Paediatric Palliative Care Outreach Collaborative	
Dr Maheesha Ridmee Seneviratne	Neonatology Paediatrics Pathology	A retrospective cohort study of antenatal findings, neonatal presentation and neurodevelopmental outcomes of congenital Cytomegalovirus (CMV) infection in a North Queensland regional hospital	
Miss Emily Everson	Paediatric Surgery	Paediatric Pancreatic Trauma in North Queensland: A 10 year retrospective review	
Dr Latifeh Horrocks	Obstetrics & Gynaecology	Chronic Pelvic Pain Faecal Microbiome Study	THHS SERTA GRANT

Health & Wellbeing Service Group

RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Dr Matthew Rogers	Paediatrics	Characterizing the diagnosis, treatment and outcomes of infants with Chronic Neonatal Lung Disease in North Queensland: A retrospective cohort study	
Miss Emily Everson	Obstetrics & Gynaecology	Large loop excision of the transformation zone for human papilloma virus clearance in women with normal cervical cytology or lowgrade squamous intraepithelial lesions: A 3-year retrospective review	
Ms Kristi Izod	Maternity Services	Evaluating the impact of a national stillbirth campaign on awareness and knowledge among pregnant women	
Dr Carol Flavell	Sexual Health	Disability and Frailty in People Living with HIV in regional Australia	JCU
Dr Jason Yates	Paediatrics	Identifying challenges of paediatric to adult transitional care in Type 1 Diabetes Mellitus, and the role of transition clinics. Short Title: Transitioning from Paediatric T1DM to Adult Care	



NICU Babycams to be showcased state-wide

Townsville University Hospital's Babycams took centre stage again with invitations from CSIRO and Queensland Health's Clinical Excellence Division to showcase the innovation to some of Australia's foremost clinicians, researchers and digital health leaders.

Babycam architect neonatologist Dr Yoga Kandasamy presented the Babycams to CSIRO's 2020 Australian e-Health Research Colloquium at the Royal Brisbane and Women's Hospital in March followed by a presentation at Queensland Health's Clinical Excellence Division Showcase at the Brisbane Convention and Exhibition Centre.

Babycams are webcams affixed to cots in the neonatal unit which live stream pre-term babies to their parents' smart devices 24/7. Yoga said he was delighted yet humbled to have been asked by both CSIRO and Queensland Health to present the innovation.

"Our research has shown a significant improvement to the mental health of parents of pre-term and critically unwell babies by using the Babycams," he said.

"Babycams have reassured parents that they can take a break from the unit and still see their babies in real time," he said. "Pre-term babies experience prolonged lengths of stay and when families, mostly fathers, have to return to their homes, often hundreds of kilometres away, to work and look after older children, the anxiety and distress can be overwhelming.

"Babycams have meant the whole family can connect to the baby via a smart device. I'm grateful to our partners at CSIRO, Optus and James Cook University for the role they have played in bringing this idea to fruition," he said.

"I'd especially like to thank my team Michelle Baxter, Michelle Evans and Meegan Kilcullen."

The Babycams won both the Innovation Award and the Minister's Award for Outstanding Achievement at the 2019 Queensland Health Awards.

Townsville mum Samantha Hayden was one of the first parents to be part of the Babycams trial. "When I found out I was pregnant, I made the decision to pursue parenthood alone and then when I found out I was having twins and the boys arrived three months early, I was worrying every minute about their wellbeing," she said.

"The Babycam changed everything for the better because it gave me the freedom to take a break from the hospital knowing my babies were with me, albeit virtually."

"I was able to express more easily at home because I could watch them on my phone and then I arrived at NICU with lots of milk for them."

"I truly believe the Babycam was a big part of my being ready to take the boys home and be the best mum I could be."

Staff wellbeing in focus for Staff Welfare Initial Support Team

As Staff Welfare Initial Support headed into its third year of operation, founding members Dr Paul Lane and Lauren Camilleri reflected on the program and its impact.

Dr Lane said so far feedback on Staff Welfare Initial Support was overwhelmingly positive, and that the organisation had partnered with Macquarie University in Sydney to properly research the positive impact having these supports in place had.

“We’ve also garnered interest from other HHSs in Queensland that are looking to implement a similar model in their organisations,” he said.

Ms Camilleri said the idea for the program came after she and Paul identified a need in the organisation. “Paul and I worked together in ICU a number of years ago and following a traumatic event our NUM would bring the team together for a debrief and talk about the emotional impact of the event. While the same thing was happening in pockets around the hospital, we realised that there was no whole-of-organisation approach to helping staff deal with traumatic events and we wanted to change that.”

Dr Lane said Staff Welfare Initial Support didn’t look at an event from a clinical point of view, but instead from a staff welfare point of view.

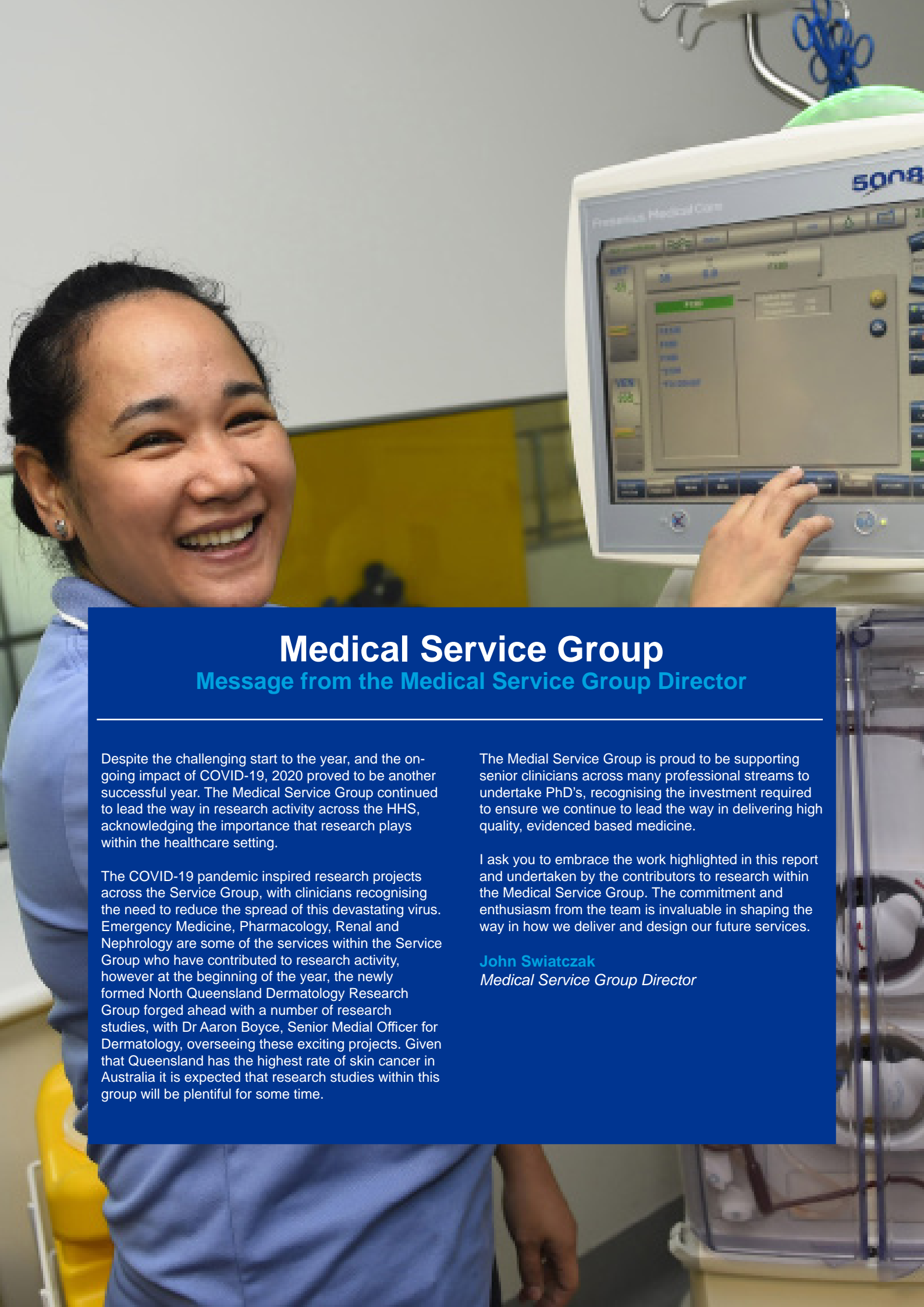
“This isn’t about a clinical review of an incident, this is about how an event may have impacted on a person or a team, and how we can help them, emotionally, deal with the situation. When a critical incident or adverse event occurs it’s not just the clinicians involved who are impacted, it’s also the cleaners, the administration staff, the kitchen staff, our security officers; that’s why this program focuses on how to get the person through the event, not to see if there was anything clinically that could have been done differently.”

“We aren’t counsellors; Staff Welfare Initial Support is an initial peer support. It’s almost like first aid. If people need more support, we then refer them onto the employee assistance program.”

There are currently 32 staff from across a number of disciplines including medical, nursing, allied health and administration who were members of the Staff Welfare Initial Support team, with everyone trained in facilitating people to talk through traumatic incidents.

“It’s also important to recognise that a traumatic incident isn’t always a stand-alone tragic event. A NUM may recognise that, for example, staff are struggling with the emotional impact of a long-term patient who isn’t improving. These staff give up their time purely because they believe in supporting their colleagues and are properly trained in delivering that initial peer support,” Ms Camilleri said.





Medical Service Group

Message from the Medical Service Group Director

Despite the challenging start to the year, and the on-going impact of COVID-19, 2020 proved to be another successful year. The Medical Service Group continued to lead the way in research activity across the HHS, acknowledging the importance that research plays within the healthcare setting.

The COVID-19 pandemic inspired research projects across the Service Group, with clinicians recognising the need to reduce the spread of this devastating virus. Emergency Medicine, Pharmacology, Renal and Nephrology are some of the services within the Service Group who have contributed to research activity, however at the beginning of the year, the newly formed North Queensland Dermatology Research Group forged ahead with a number of research studies, with Dr Aaron Boyce, Senior Medical Officer for Dermatology, overseeing these exciting projects. Given that Queensland has the highest rate of skin cancer in Australia it is expected that research studies within this group will be plentiful for some time.

The Medical Service Group is proud to be supporting senior clinicians across many professional streams to undertake PhD's, recognising the investment required to ensure we continue to lead the way in delivering high quality, evidenced based medicine.

I ask you to embrace the work highlighted in this report and undertaken by the contributors to research within the Medical Service Group. The commitment and enthusiasm from the team is invaluable in shaping the way in how we deliver and design our future services.

John Swiatczak
Medical Service Group Director

Medical Service Group

Research Groups

North Queensland Dermatology Research Group

2020 marked the first year of activity for the newly formed North Queensland Dermatology Research Group. Since inception, the group have commenced a number of prospective studies, including:

- A prospective study assessing patient adherence to recommended regimens of nicotinamide chemoprophylaxis for the prevention of keratinocyte carcinoma in high risk skin cancer patients. Nicotinamide is an OTC oral supplement that is thought to reduce risk of common skin cancers by up to 23%. Our experience with many patients is that uptake and adherence is oftentimes suboptimal. This study aims to identify barriers to the uptake of treatment and aiming to identify pathways to improve adherence. The study will be led by Dr Alexandra Webster, and supervised by Dr Aaron Boyce. The study was made possible with the support of a SERTA grant.
- A prospective study evaluating photoprotective behaviour among patients with cutaneous lupus. This study is being led by Dr Danielle McGeachie, under the supervision of Dr Aaron Boyce. It aims to uncover opportunities to improve photoprotective behaviours among patients with a condition known to be aggravated by sunlight.
- A prospective study to evaluate the implementation of a 'Store-and-Forward Tele-dermatology referral service, based at Townsville University Hospital. This project will be led by Miss Celine Lee, a third-year medical student at JCU, with the support of the Amuthan Research Bursary. This study will engage users of a newly developed Store and Forward Telemedicine platform, primarily community GPs, and to learn of their experiences. It is hoped that this study will lead to improvements in future services of this nature that will enhance uptake of the technology. The study will be co-supervised by Dr Rebecca Evans (JCU) and Dr Aaron Boyce (TUH).
- A prospective study evaluating a novel model of dermatology outpatient care, designed to enhance services to underserved rural areas. This new model of care will employ a GP with a special interest in dermatology to consult patients in an regional area underserved by Dermatologists, and provide a combination of store and forward telemedicine and videoconferencing support. This study attracted a TAAHC seed funding grant, and will be led by Dr Aaron Boyce, in collaboration with Dr Rebecca Evans (JCU) and Dr Toni Weller (TUH)

Research Team:

Staff Medical Officer, Dermatology
Dr Aaron Boyce

Principal House Officer, Dermatology
Dr Danielle McGeachie

Principal House Officer, Dermatology
Dr Alexandra Webster

Medical Service Group

Research Groups

Respiratory and Sleep Unit / Pulmonary Health in the Tropics (PHiTT)

PHiTT is a collaborative research team with active student, academic, and clinical members from:

- Respiratory and Sleep Unit (RSU), Townsville University Hospital (TUH)
- Biomedical Sciences, James Cook University (JCU)
- School of Medical and Health Sciences (SMHS), University of Papua New Guinea (PNG).

The overarching goal for the group is to enable both earlier and more accurate diagnosis of non-communicable respiratory diseases, and thereby improve outcomes for both patients and health systems

Nadine Pyne was awarded a SERTA grant in 2020 to assist with facilitating research into a tailored application of nationally accepted reference ranges for adult and paediatric respiratory patients in North Queensland. The grant assisted in purchasing equipment and disposables to conduct respiratory function testing to provide data for the Honors project outlined below.

Key Research Collaborations:

- Duron Prinsloo (JCU honor student) presented his poster 'How 'Global' are the Global Lung Initiative (GLI) Spirometry reference equations' to THHS Health Research Showcase in 2020. Duron won with his submission doing a poster with 3-minute presentation. His final report presented to complete his Honors year 'Assessing the current state and impact of implementing ethnic corrections on pulmonary function testing in Northern Queensland' gained him a Class 1 Honors. Duron was supervised by Nadine Pyne from TUH, Gary Nolan and Suzy Munns from JCU for his Honors year.
- Allysha Barry (4th JCU student) was selected to display her poster 'Is the Epworth Sleepiness Scale an appropriate screening tool for male and female patients within the Townsville Hospital and Health Service' at the THHS research week in 2020. Allysha's poster was selected to be presented at the European Respiratory Society (ERS) conference in April 2021 and as a result the abstract was published in the European Respiratory Journal (ERJ) open research at the following link (https://openres.ersjournals.com/content/7/suppl_7/55).
- Justin Jones (4th JCU student) conducted a quality improvement activity assessing the accuracy of using Alveolar Volume and Anatomical Dead Space from DLCO as a substitute for total lung capacity measured by body plethysmography. Quality Assurance – comparative agreement of testing methodologies. The goal of the activity was to validate lung volumes measured by two different techniques to assist with lab throughput. The project was completed and presented as part of his final assessment in November 2020.

Medical Service Group

Research Groups

Translational Research in Endocrinology and Diabetes (TREAD)

TREAD pioneered novel landmark studies for treatment and monitoring of diabetes in North Queensland. These include electromagnetic stimulation and shockwave therapies for diabetic foot ulcers and nurse practitioner-led inpatient (dashboard) management of diabetes.

TREAD also participated in a multicentre international clinical trial -The effect of Tirzepatide Versus Dulaglutide on Major Cardiovascular Events in Patients with Type 2 Diabetes (SURPASS-CVOT). In addition, 4 JCU honours medical students and 3 MPhil/PhD candidates were supervised in 2020 with successful outcomes.

Research Team:

Head of TREAD
Prof Usman Malabu

Director of Endocrinology / Research Advisor
A/Prof Kunwarjit Sangla

Clinical Research Nurse
Mrs Jacqueline Bulbrook

Clinical Research Podiatrist
Mrs Julie Goodall

Advance Trainee & Clinical Research Fellow
Dr Pierre-Nicolas Boyer

Diabetes Research Nurse Practitioner
Mrs Casey Thompson

Diabetes Research Nurse Practitioner
Mrs Ursula Togialua

Clinical Nurse Consultant – Diabetes Research
Ms Robyn Chadwick

TREAD Research Grants:

- Eli Lilly Australia Pty Limited: The effect of Tirzepatide Versus Dulaglutide on Major Cardiovascular Events in Patients with Type 2 Diabetes (SURPASS-CVOT)

TREAD Research Collaborations:

- Queensland Centre of Excellence for Vascular Diseases
“Ulcer and wound HEALing consortium (UHEAL)”
- University of Notre Dame
“Telediabetes foot care in rural/remote North Queensland”
- PNG Institute of Medical Research
“Telediabetes in rural/remote PNG Islands”

Medical Service Group

Research Groups

Emergency Medicine Research Program (TUH EMRP)

Clinician researchers at the TUH Emergency Department (ED) have been actively involved in the conduct of robust, high-quality observational and interventional research projects leading to nine publications in 2020 including in the Lancet and New England Journal of Medicine. In 2020, the program has established new research collaborations at state and national levels to study COVID-19, adult and paediatric sepsis, international health, imaging in trauma, geriatric trauma, procedural sedation, pain management and pre-hospital medicine and retrieval medicine. TUH EMRP was part of the research collaboration that underpinned the 2020 Australasian paediatric head injury guideline thus fast-tracking knowledge translation and delivery of improved patient outcomes at the bedside.

In 2020, TUH EMRP was involved in 14 projects investigating a diverse array of topical issues in current emergency care. In collaboration with the TUH Departments of Anaesthesia and Orthopaedic Surgery, our researchers are leading a truly innovative, state-wide, multisite clinical trial exploring better ways to manage pain in patients with hip fractures.

Other collaborations include an observational study of less radiation whilst investigating blood clots (James Cook University [JCU]), an observational study of better tests for possible cardiac chest pain (State-wide Cardiology Network), an observational study about reducing low value care (the Choosing Wisely Campaign), an observational study of penicillin allergy de-labelling (TUH Department of Infectious Diseases & the Antimicrobial Stewardship team), and an observational study of brain injury (Retrieval Services Qld [RSQ]) and TUH Department of Intensive Care Medicine).

We have significant multi-site involvement including an observational study of the impact of COVID-19 on other patients seeking emergency care, an observational study of neck injuries in children, and an ongoing collaborative

effort with the JCU School of Public Health and RSQ.

Research Team:

Director of Emergency Medicine Research and Clinician Researcher

Vinay Gangathimmaiah

Director of Emergency Medicine and Clinical Researcher

Luke Lawton

Senior Staff Specialist and Clinical Researcher

Colin Banks

Senior Staff Specialist and Clinical Researcher

Clinton Gibbs

Senior Staff Specialist and Clinical Researcher

Denise Blake

Senior Staff Specialist and Clinical Researcher

Graeme Maw

Staff Specialist and Clinical Researcher

Tanya Mellett

Staff Specialist and Clinical Researcher

Kate Hooper

Staff Specialist and Clinical Researcher

Emma Wawn

Staff Specialist and Clinical Researcher

Tristan Turner

Staff Specialist and Clinical Researcher

Michael Durkin

Senior Physiotherapist and Clinical Researcher

Krystel Land

Nurse Practitioner and Clinical Researcher

Medical Service Group

Research Groups

Bethany Roche

TUH EMRP Research Grants:

- Gangathimmaiah V (Chief Applicant): Informing Emergency Care for COVID-19 patients: The COVID-19 Emergency Department (COVED) project. THHS-SERTA 2020
- Gangathimmaiah V (Chief Applicant): Safety and Effectiveness of a clinical policy utilizing a raised D-dimer threshold in adult patients presenting to Townsville University Hospital Emergency Department with a low clinical pre-test probability of pulmonary embolism: A single-centre before and after study. THHS-SERTA 2020
- Gangathimmaiah V (Co-applicant): Impact of a penicillin de-labelling pilot project at the Townsville University Hospital: A prospective cohort study. THHS-SERTA 2020
- Gangathimmaiah V (Co-applicant): Impact of ultraviolet germicidal irradiation and moist heat for decontamination of personal protective equipment (PPE): A feasibility study looking at structural integrity of PPE and efficacy of the decontamination to inform a crisis capacity strategy during a pandemic. THHS-SERTA 2020

TUH EMRP Research Collaborations:

- Royal Brisbane and Women's Hospital, Queensland
"Emergency Department Imaging in Trauma (EDIT)"
- Princess Alexandra Hospital, Queensland
"Neck Of Femur Fascia Iliaca Catheters in Emergency Department (NOFFICSED)"
- Retrieval Services Queensland, Queensland Ambulance Service and Royal Flying Doctor Service, Queensland
"North Queensland Aeromedical Retrieval in suspected Traumatic Brain Injury (NQAR- sTBI)"
- Royal North Shore Hospital, New South Wales
"Frailty in Elderly Trauma"
- Royal Children's Hospital, Victoria
"Pragmatic Paediatric Trial of Balanced vs Normal Saline Fluid in Sepsis (PROMPT BOLUS)"
- Alfred Health, Victoria
"COVID-19 Emergency Department (COVED) Project"
- University Hospital Geelong, Victoria
"Emergency Department Ondansetron for Ketamine-associated Vomiting (EDOK)"

Medical Service Group

Research Groups

Infectious Diseases Research Group

THHS enrolled in the Australian multicentre COVID-19 trial (ASCOT) with the aid of an urgent SERTA grant, however participation was hampered by lack of recruitment.

Good progress was made on existing research, with the real-time nanopore diagnostics for rapid sepsis response study completing recruitment.

Additional studies examining ESBL E. coli epidemiology in North Queensland, and sequencing Burkholderia pseudomallei clinical isolates associated with the 2019 Townsville floods were commenced.

The groundwork was laid for future studies examining antibiotic allergy delabelling (supported by a SERTA grant) and base of skull osteomyelitis, which are due to commence in 2021.

Research Team:

Staff Specialist
Dr Christopher Heather

AMS Pharmacist
Ms Kerrie Aitken

Registrar
Dr Maxwell Braddick

Registrar
Dr Stephanie Hendry

Research Collaborations:

- Australian Institute of Tropical Health and Medicine
"Real-time nanopore diagnostics for rapid sepsis response"

Head and Neck Cancer Research Group

Awards:

- Townsville Health Research Showcase Best Oral Presentation
"Radiation induces head and neck cancer cells to undergo an epithelial-to-mesenchymal transition; a stem cell phenotype" – Kylie Lopes Floro

Oral Presentations:

- Clinical Oncology Society of Australia (COSA) 2020 ASM & Townsville Health Research Showcase
"Smoking cessation in Head and Neck Cancer Patients" – Justin Smith

Oral Presentations:

- Evaluating Delays in Head and Neck Cancer Patients Treated with Post-Operative Radiation Therapy (PORT)

Research Team:

Research Lead
Dr Madhavi Chilkuri

Study Investigator
Dr Kylie Lopes Floro

Study Investigator
Dr Justin Smith

Study Investigator
Dr Ravi Marwah

Study Investigator
Dr Daniel Goonetilleke

Medical Service Group

Research Groups

Pharmacy Research Orientated Group (PhROG)

The PHROG has been extremely active in 2020 leading to several of the team members either completing or commencing post graduate studies including:

- Stephen Perks – PhD awarded: “Suboptimal dosing from elastomeric home infusion pumps in Outpatient Parenteral Antimicrobial Therapy”
- Kelvin Robertson – PhD awarded: “Pharmacological Management of Chronic Sciatica”
- Alexandra Ryan – PhD Candidate: “Design, Implementation and Evaluation of processes used for the safe storage, selection and administration of medications in both the Pharmacy Department/ Operating Theatres at the Townsville University Hospital (TUH)
- Sophie Mokrzecki – PhD Candidate: “Pharmacist-led prescribing education to final year medical students”

The group remains engaged in conducting research which will be of direct benefit to patients including:

- Developing non-oncology MAB Infusion protocols to increase infusion safety in the Oncology Day Unit –
- Medication Reconciliation at TTH
- Evaluating the accuracy of documentation of allergies between iPharmacy, iEMR and the patient in the outpatient or discharge setting
- IV Thiamine LAM Compliance
- Dose Administration Aid scripts for DVA Patients

Nephrology Research Group

The Nephrology Research Group at THHS is an emerging force in research. The group is looking to increase the number of research studies being conducted, including industry sponsored clinical trials. Current studies include:

- Queensland Renal biopsy registry – PI Dr Manickam
- Immersive virtual reality in a northern Queensland haemodialysis unit: A cross-over randomised controlled feasibility trial – Dr Manickam
- Use of Flash Monitors in PD patients – Vicki Nebbia
- Symptom monitoring With Feedback trial (SWIFT). ANZDATA – Dr Vikas Srivastava
- Bayer's Phase III study – Finerenone in non-diabetic CKD patients – Dr Vikas Srivastava
- A Phase IIb Randomized, Double-Blinded, Placebo-Controlled, Dose-Ranging Study to Evaluate the Efficacy and Safety of investigational drug with novel mechanism of action in Subjects with IgA Nephropathy (IgAN) – Dr Vikas Srivastava
- An open-label, international, multi-centre, randomised clinical trial to compare Obinutuzumab + Calcineurin Inhibitor to Prednisolone + Cyclophosphamide induction regimens in Primary Membranous Nephropathy Implementation of Metformin therapy to Ease Decline of kidney function in PKD (IMPEDE-PKD)
- Implementation of Metformin therapy to Ease Decline of kidney function in PKD (IMPEDE-PKD)

Research Team:

Dr Vikas Srivastava

Dr Valli Manickam

Vicki Nebbia

Medical Service Group

Research Groups

TUH Renal Department Research Group

In close collaboration with the THHS Nephrology Research Group, the Renal Department Research Group is also looking to increase research within THHS. Active and upcoming studies include:

- Queensland Renal biopsy registry – PI Dr Manickam
- Immersive virtual reality in a northern Queensland haemodialysis unit: A cross-over randomised controlled feasibility trial – Dr Manickam
- Use of Flash Monitors in PD patients – Vicki Nebbia
- Symptom monitoring With Feedback trial (SWIFT). ANZDATA – Dr Vikas Srivastava
- Bayer's Phase III study – Finerenone in non-diabetic CKD patients – Dr Vikas Srivastava
- A Phase IIb Randomized, Double-Blinded, Placebo-Controlled, Dose-Ranging Study to Evaluate the Efficacy and Safety of investigational drug with novel mechanism of action in Subjects with IgA Nephropathy (IgAN) – Dr Vikas Srivastava
- An open-label, international, multi-centre, randomised clinical trial to compare Obinutuzumab + Calcineurin Inhibitor to Prednisolone + Cyclophosphamide induction regimens in Primary Membranous Nephropathy/Implementation of Metformin therapy to Ease Decline of kidney function in PKD (IMPEDE-PKD)
- Implementation of Metformin therapy to Ease Decline of kidney function in PKD (IMPEDE-PKD)

Palliative Care Service Research Group

Palliative Care Service Research Group is involved in the start of two projects and one possible trial in to Medicinal Cannabis. CARS/SPARTA is one project (which is supported by research from UQ) that is supporting remote and rural clinicians to provide palliative care in Ingham, Ayr, Home Hill, Charters Towers, Richmond Hughenden, North West HHS and Mackay HHS.

SPACE is one project (which is supported by research from UQ) that is supporting RACF staff to provide palliative care in RACF. The potential trial is one looking into the benefits of CBD/THC medicinal cannabis in palliative care patients linked with the Mater in Brisbane with Professor Janet Hardy and Dr Phillip Good but is in the preliminary phase.

More data from these project would be available in one year's time

Research Team:

Dr Richard Corkill

Dr Ofra Fried

Dr Claus Bader

Medical Service Group

Research Publications

1. Adegboye OA, McBryde ES, Eisen DP. Epidemiological analysis of association between lagged meteorological variables and pneumonia in wet-dry tropical North Australia, 2006–2016. *J Expos Sci Environ Epidemiol.* 2020;30(3):448-58.
2. Albantow C, Hargrave C, Brown A, Halsall C. Comparison of 3D printed nose bolus to traditional wax bolus for cost-effectiveness, volumetric accuracy and dosimetric effect. *J Med Radial Sci.* 2020;67(1):54-63.
3. Babl FE, Franklin D, Schlapbach LJ, Oakley E, Dalziel S, Whitty JA, et al. Enteral hydration in high-flow therapy for infants with bronchiolitis: Secondary analysis of a randomised trial. *J Paediatr Child Health.* 2020;56(6):950-5.
4. Babl FE, Pfeiffer H, Kelly P, Dalziel SR, Oakley E, Borland ML, et al. Paediatric abusive head trauma in the emergency department: A multicentre prospective cohort study. *J Paediatr Child Health.* 2020;56(4):615-21.
5. Barbour AP, Walpole ET, Mai GT, Barnes EH, Watson DI, Ackland SP, et al. Preoperative cisplatin, fluorouracil, and docetaxel with or without radiotherapy after poor early response to cisplatin and fluorouracil for resectable oesophageal adenocarcinoma (AGITG DOCTOR): results from a multicentre, randomised controlled phase II trial. *Ann Oncol.* 2020;31(2):236-45.
6. Blake DF, Crowe M, Lindsay D, Brouff A, Mitchell SJ, Leggat PA, et al. Comparison of tissue oxygenation achieved breathing oxygen using different delivery devices and flow rates. *Diving Hyperbaric Med.* 2020;50(1):34-42.
7. Boyer PN, Woods ML. Burkholderia pseudomallei sepsis with osteoarticular melioidosis of the hip in a patient with diabetes mellitus. *BMJ Case Rep.* 2020;13(12).
8. Bressan S, Monagle P, Dalziel SR, Borland ML, Phillips N, Kochar A, et al. Risk of traumatic intracranial haemorrhage in children with bleeding disorders. *J Paediatr Child Health.* 2020;56(12):1891-7.
9. Grob JJ, Gonzalez R, Basset-Seguin N, Vornicova O, Schachter J, Joshi A, et al. Pembrolizumab monotherapy for recurrent or metastatic cutaneous squamous cell carcinoma: A single-arm phase II trial (KEYNOTE-629). *J Clin Oncol.* 2020;38(25):2916-25.
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Research Publications

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Medical Service Group

RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Miss Luciana Theodoro de Freitas	Emergency, Rehabilitation, Gerontology	Identification of clinical pathways for the diagnosis and referral of people with mild cognitive impairment	THHS SERTA GRANT
Mrs Amy Brown	Radiation Therapy	Dosimetric Impact of the Clarity Autoscan Transperineal Ultrasound Probe Pressure on Perineal Skin Dose in Prostate Cancer Patients	
Dr Georgina Hodges	Haematology	Myeloma & Related Diseases Registry	
Ms Brenda Cronin	Radiation Therapy	Multicentre review of breast DIBH radiation therapy	
Miss Madhu Edirisinghe	Emergency Paediatrics	Acute detection of Mild Traumatic Brain Injury in Children presenting to the Emergency Department at The Townsville Hospital.	
Dr Alex Tan	Radiation Oncology Medical Oncology	DASL-HiCaP: Darolutamide Augments Standard Therapy for Localised Very High-Risk Cancer of the Prostate (ANZUP1801).	The University of Sydney
Dr Zulfiquer Ottay	Medical Oncology	Nivolumab in the treatment of patients with non-small cell lung cancer: The Australian experience Acronym: NIVO PAP	

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RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Dr Abhishek Joshi	Medical Oncology	Open-Label Phase 2 Study of Ladiratuzumab Vedotin (LV) for Unresectable Locally Advanced or Metastatic Solid Tumors Acronym: SGNLVA-005	Pharmaceutical Research Associates Pty Ltd
Dr Abhishek Joshi	Medical Oncology	A Phase III, Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Efficacy and Safety of GDC-0077 plus Palbociclib and Fulvestrant versus Placebo plus Palbociclib and Fulvestrant in Patients with PIK3CA-mutant, Hormone Receptor-Positive, HER2-Negative Locally Advanced or Metastatic Breast Cancer Acronym: Biostar	Roche Products Pty Ltd
Dr Christopher Heather	Infectious Disease/ Microbiology	Australasian COVID-19 Trial (ASCOT) A multi-centre randomised clinical trial to assess clinical, virological and immunological outcomes in patients with SARS-CoV-2 infection (COVID-19) treated with lopinavir/ritonavir and/ or hydroxychloroquine compared to standard of care	UQ
Dr Kunwarjit Sangla	Diabetes & Endocrinology	The Effect of Tirzepatide versus Dulaglutide on Major Adverse Cardiovascular Events in Patients with Type 2 Diabetes. (SURPASSCVOT)	Eli Lilly Australia Pty Ltd
Dr Joel Wight	Haematology	Phase 3 evaluation of PET-guided, Response-Adapted therapy in patients with previously untreated, high tumour burden follicular lymphoma Acronym: PETReA NHL30	ALLG
Dr Suresh Varma	Medical Oncology	An open label, multicenter extension study in patients previously enrolled in a Genentech and/or F. Hoffmann-La Roche Ltd sponsored atezolizumab study (IMBRELLA B)	Pharmaceutical Research Associates Pty Ltd
Dr Megan Lyle	Medical Oncology	A Phase 3, Randomized, Double-Blind Study of Adjuvant Immunotherapy with Nivolumab versus Placebo after Complete Resection of Stage IIB/C Melanoma Acronym: CA209-76K	Bristol Myers Squibb
Dr Zulfiqar Otty	Medical Oncology	Implementation and Evaluation of referral pathway for people with Lung cancer in Townsville Health Service District	THHS SERTA Grant

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RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Dr Kate Hooper	Emergency Department Anaesthetics	Neck Of Femur fracture pain management with ultrasound-guided single bolus versus repeated bolus Fascia Iliaca CathetersS in the Emergency Department: A double-blind, randomized controlled trial (NOF-FICSED study)	THHS SERTA GRANT EMF Funding
Dr Vinay Gangathimmaiah	Emergency Medicine	CoV-ED-QI: Monitoring and Improving Emergency Care for COVID19	THHS SERTA COVID-19 Funding Grant
Dr Vinay Gangathimmaiah	Emergency Medicine	Reducing Radiation by raising D-Dimer threshold (R2D2) Study	THHS SERTA GRANT
Dr Alex Tan	Radiation Oncology Medical Oncology	A randomized, placebo-controlled phase II trial of simvastatin in addition to standard chemotherapy and radiation in preoperative treatment for rectal cancer Acronym: SPAR	AGITG
A/Prof Stephanie Topp	Infectious Disease Emergency Department General Medicine Public Health	A Qualitative study of the governance of three communicable disease surveillance and response systems in north Queensland, Australia	
Dr Abhishek Joshi	Medical Oncology	YH25448-301: A Phase III, Randomized, Double-blind Study to Assess the Efficacy and Safety of Lazertinib versus Gefitinib as the First-line Treatment in Patients with Epidermal Growth Factor Receptor Sensitizing Mutation Positive, Locally Advanced or Metastatic Non-Small Cell Lung Cancer Acronym: LASER 301	PAREXEL International
Dr Crispin Musumba	Gastroenterology and Endoscopy	EUS experience in a North Queensland tertiary hospital - Are we hitting the benchmark? A retrospective review of safety and diagnostic yield of EUS-FNA/EUS-FNB for solid and cystic pancreatic lesions, gastrointestinal sub-epithelial lesions and lymphadenopathy and comparison of high priority EUS quality indicators with the internationally recommended benchmark.	
Dr Helen Haydon	Palliative Care	Evaluation of the State-wide Rural and Remote Supportive and Specialist Palliative Care Telehealth Service Acronym: SPARTA	

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RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Prof Jonathan Golledge	Recruiting across various facilities and clinics	an Innovative prograM to Prevent diAbetes-related foot ComplicaTions (IMPACT)	THHS SERTA Grant
Dr Andrew Charmley	Neurology	Assessing methods for testing joint position sense	
Dr Hock Lai	Haematology	A phase 3 multicenter double-blind randomized placebo-controlled study of ivosidenib or enasidenib with combination therapy in patients with AML and MDS-EB2 with IDH1 or IDH2 mutations	ALLG
Dr Matthew Burge (PI) Dr Abhishek Joshi (Lead Sub Inv at THHS)	Medical Oncology	Protocol No (X17-0248)& HREC/17/RPAH/365-“AGO116CR/CTC 0151: A randomised phase 2 study of panitumumab monotherapy and panitumumab plus 5 fluorouracil as first line therapy for RAS and BRAF wild type metastatic colorectal cancer. MONARCC “	AGITG
Dr Megan Lyle (PI) Dr Abhishek Joshi (Local AI)	Medical Oncology	A Randomised Phase III study of Duration of Anti-PD-1 Therapy in Metastatic Melanoma (STOP-GAP)	UQ
Dr Georgina Hodges	Haematology	Frailty-stratified, randomised controlled Bayesian adaptive trial of bortezomib versus lenalidomide in transplant ineligible myeloma (TINDMM) Acronym: FRAIL-M ALLG M22	ALLG
Dr Georgina Hodges	Haematology	An ALLG Window Study of Acalabrutinib plus Rituximab followed by R-DHAOx+ASCT in fit Mantle Cell Lymphoma Acronym: WAMM (NHL33)	ALLG
Dr Abhishek Joshi	Medical Oncology	A Phase 2, randomized, open-label three-arm clinical study to evaluate the safety and efficacy of lenvatinib (E7080/MK-7902) in combination with pembrolizumab (MK-3475) versus standard of care chemotherapy and levnatinib monotherapy in participants with recurrent/metastatic head and neck squamous cell carcinoma (R/M HNSCC) that have progressed after platinum therapy and immunotherapy (PD-1/PD-L1 inhibitors) (LEAP-009) NMA/ERM Reference Number: 64010 Monash Health Reference: RES-20-0000-346A Protocol number: MK-7902-009	Merck Sharp & Dohme

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RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Ms Nadine Pyne	Respiratory and Sleep Unit	A tailored application of nationally accepted reference ranges for adult and paediatric respiratory patients in North Queensland. Part A: Assessing the impact of ethnic corrections on pulmonary function testing outcomes	THHS SERTA GRANT
Dr Joel Wight	Haematology	Lymphoma and Related Diseases Registry Acronym: LaRDR	Monash University
Dr Michael Collins	Radiation Oncology Medical Oncology	The Multi-Arm GlioblastoMa Australasia (MAGMA) Trial	University of Sydney
Dr Georgina Hodges	Haematology	An ALLG Phase 2 study to Investigate Novel Triplets to Extend Remission with Venetolax in Elderly Acute Myeloid Leukaemia	
Dr Valli Manickam	Renal	QLD Renal Biopsy Registry	THHS
Dr Zaeem Ahmed	Cardiology	Attainment of low-density-lipoprotein cholesterol (LDL-C) targets in patients on cholesterol lowering therapy (CLT) for secondary prevention of coronary artery disease (CAD) re-presenting to a tertiary hospital	
Dr Madhavi Chilkuri	Radiation Oncology	Immunotherapy Merkel Adjuvant Trial (I-MAT)	MASC
Prof Usman Malabu Note: Fathmath Nabaha Mohamed Waheed (Associate Investigator) completing study towards MBBS Honours	Department of Endocrinology & Diabetes	Clinical features and outcomes of diabetic foot ulcers at the Townsville University Hospital: A retrospective review	
Dr Maxwell Braddick	Infectious Disease	ESBL E.coli Bloods Stream Infections: A retrospective case control study	
Jane Lewis	Pharmacy Birth Suite	A single centre, pilot study to determine if a Pharmacist led in-service supports Midwives to provide discharge counselling to patients for postpartum VTE prophylaxis	

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RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Dr Abhishek Joshi	Medical Oncology	A phase III, multicenter, randomized, open-label, controlled study to evaluate the efficacy, safety, and pharmacokinetics of atezolizumab given in combination with cabozantinib versus docetaxel monotherapy in patients with metastatic nonsmall cell lung cancer previously treated with an antiPD-L1/PD-1 antibody and platinum-containing chemotherapy Acronym: CONTACT-01	Roche Products Pty Limited
Dr Madhavi Chilkuri	Radiation Oncology	RE: Project Title: Evaluating delays in patients treated with post operative radiation therapy for head and neck cancer: A retrospective study.	
Dr Joel Wight	Haematology	Primary Central Nervous System Lymphoma (PCNSL): Australasian practices and outcomes	
Dr Danielle McGeachie	Dermatology/ Rheumatology	Photoprotective behaviours in adults with Cutaneous Lupus Erythematosus: A prospective observational cohort study in North Queensland, Australia	
Dr Vinay Gangathimmaiah	Emergency	Characteristics and outcomes of patients presenting to Townsville University Hospital with suspected Acute Coronary Syndrome: A Retrospective Chart Review Short Title: Townsville University Hospital Suspected Acute Coronary Syndrome (TUH_SACS) study.	
Dr Joel Wight	Haematology	A Phase 2, Open-Label, Ascending Dose Study of KER-050 for the Treatment of Anemia in Patients with Very Low, Low, or Intermediate Risk Myelodysplastic Syndromes (MDS). Acronym: KER050-MD-201	
Dr Vinay Gangathimmaiah	Emergency Department	Use of the Siemen's Atellica high sensitivity troponin assay for assessment of patients with suspected acute myocardial infarction Short Title: Atellica Evaluation	Pathology Qld
Dr Vinay Gangathimmaiah	Emergency Medicine	Prophylactic use of ondansetron to reduce ketamine associated vomiting in children undergoing procedural sedation at three Australian emergency departments: A retrospective chart review Short Title: Emergency Department Ondansetron for Ketamine associated vomiting study Acronym: EDOK study	

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RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Mrs Kara Lawlor	Renal (Haemodialysis)	A prospective survey of nursing clinical practice of Isolated Ultrafiltration (Iso Uf) for select haemodialysis patients across Queensland	
Dr Vinay Gangathimmaiah	Emergency	Emergency Department Imaging in Trauma (EDIT) study	
Dr Abhishek Joshi	Medical Oncology	A Phase 4, single-arm, open-label clinical study of pembrolizumab (MK-3475) to evaluate the efficacy and safety of MK-3475 plus carboplatin and paclitaxel as firstline treatment of recurrent/metastatic head and neck squamous cell carcinoma (KEYNOTE10) Short Title: MK-3475-B10	Merck Sharp & Dohme (Australia) Pty Ltd
Deepti Patel	Radiation Oncology	An economic evaluation of the costs and consequences of a clinical practice change in radiation oncology	THHS SERTA Grant
Dr Vasant Shenoy	Diabetes & Antenatal Clinics	Design and evaluation of the effectiveness of an adaptive digital health intervention in improving self-efficacy for women diagnosed with gestational diabetes. Short Title: Educational smartphone application to improve self-efficacy in women with gestational diabetes.	
Sarah Webster	ICU/Emergency Theatre/Trauma	Reaction of Emergency Services uPON Disasters in Queensland - the RESPOND study	
Ms Savannah Brown	Radiation Therapy	Patient Experiences and Perceptions of the new MR-Linac treatment machine in Radiation Oncology: A Qualitative Study MR-Linac Patient Perspectives Short Title: MRL Patient Perspectives	THHS SERTA Grant
Dr Alex Tan	Radiation Oncology	Stereotactic Radiotherapy for Oligoprogressive ER-positive Breast Cancer (AVATAR)	PMCC
Dr Georgina Hodges	Haematology and Bone Marrow Transplantation	Factors influencing outcome in Ritchers Transformation; results of a multi-centre retrospective study on Richter's Transformation of Chronic Lymphocytic Leukemia or Small Lymphocytic Leukemia to Diffuse Large B-cell Lymphoma or Hodgkin Lymphoma	
Prof Sabe Sabesan	Medical Oncology	PROMISE:Patient Reported Outcome Measures in cancer care: A hybrid effectiveness-Implementation trial to Optimise Symptom control and health service Experience	QIMR Berghofer



National recognition for North Queensland research alliance

The National Health and Medical Research Council, Australia's preeminent body for health and medical research, has issued a challenge to the Tropical Australian Academic Health Centre (TAAHC) in North Queensland to continue to deliver research excellence that directly benefits people in regional and remote communities.

This month, TAAHC became just the third Centre for Innovation in Regional Health to be accredited by the National Health and Medical Research Council. TAAHC is a research collaboration in North Queensland comprising five northern Hospital and Health Services (Townsville, Cairns and Hinterland, Mackay, North West and Torres and Cape) along with James Cook University and the Northern Queensland Primary Healthcare Network focused on rural, remote, regional, Indigenous and tropical health.

Minister for Health and Minister for Ambulance Services Steven Miles said the national accreditation was further proof of the growing reputation of Townsville as a hub for world-leading health research. "TAAHC has already made major breakthroughs that complement a proud history of research excellence across North Queensland," he said. "There are unique health challenges in North Queensland that require world-leading research to overcome."

"I am proud of the recognition of TAAHC and believe it is another essential step in establishing North Queensland as an internationally renowned hub for research."

Chair of TAAHC Professor Ian Wronski said accreditation meant that national, independent experts had reviewed the work done by the conglomerate since it formed in late 2018 and found that it was delivering research and innovation to a high standard.

"This national accreditation is validation that the research that has already been commissioned and delivered through TAAHC is making a tangible, life-changing difference to the lives of people in the remotest corners of northern Queensland," he said.

"It also throws down the gauntlet for us to continue to deliver world-class research to ensure we are meeting our obligation to make healthcare as accessible as possible for people who face the tyranny of distance in accessing healthcare. As Chair, I'm extremely proud of the work that has been delivered so far and I'm excited about future projects in areas such as: innovative health workforce models, chronic disease, health service delivery, infectious disease and biosecurity that'll make a huge difference to the health of our communities."

Townsville Hospital and Health Service Director of Medical Oncology Professor Sabe Sabesan was one of the first researchers to be supported through TAAHC, developing an Australasian-first tele-trial model for cancer patients. Professor Sabesan said as part of the model life-saving cancer drug trials were, for the first time in Australia, being delivered to people in rural areas via telehealth.

"In the past, drug companies have predominately targeted metro areas because the reach of potential patients was much higher," he said. "By linking areas of North Queensland, we can increase the availability of suitable patients and really incentivise attracting cutting-edge trials to our communities."

"There has been significant progress in treating cancers and it is important our communities are able to access the latest developments."

Townsville Hospital and Health Service Board Chair Tony Mooney said the partnership between northern HHSs, James Cook University and the Northern Queensland Primary Healthcare Network was a natural fit. "Together our ability to attract funding for research is much stronger than it is on our own," he said.

"This is an important partnership that will continue to shape new, better and more efficient ways of delivering healthcare to North Queenslanders."



Mental Health Service Group

Message from the Mental Health Service Group Director

The Mental Health Service Group continues to focus on supporting and developing staff in research science to enhance patient outcomes, even with the challenges of 2020.

We have put an emphasis on developing our staff skills and participation and we have seen a strong response particularly in low risk research and research supporting quality activities. We expect to see an increase in ethics approved research activity as our skills mature.

There has also been an increase in staff applying for SERTA grants with some being approved. We look forward to seeing the outcomes of their research and how it influences the care that we provide our consumers.

Senior Research Officer - Corianne Richardson continues to provide support and assistance in research and the use of evidence-based practice. Additionally, supports nursing, allied health and medical staff in the preparation of quality improvement projects or research project plans.

Ann Marie Mallett
Mental Health Service Group Director

Mental Health Service Group

Research Groups

Mental Health Service Group Research Program

Research activity for this period has been challenging in a COVID-19 environment with some delays to research projects. We have increased our success in increased numbers of staff applying for SERTA grant funding and success for some of our staff in obtaining research funding. Staff member Nerida Firth was successful in SERTA funding for the project 'Planning for the worst; The Opioid Treatment Program and a person-centred approach to disaster preparedness, response and recovery'.

Another mental health staff member to receive funding was Luciana Theodora de Freitas. Her project focused on 'How to diagnose Mild Cognitive Impairment: The voice of the experts'. We look forward to seeing the completion of these projects, which are currently underway.

As a service group, we are focused on increasing our capabilities in research and are also supporting several of our staff to undertake Higher Degrees and PhD studies. Current SARAS support is being provided to our Senior Research Officer undertaking a PhD through JCU. This research topic is 'Coaching of Clinical Nurses in a Mental Health Setting: An Exploratory Case Study.

Our service group celebrates the increasing involvement of our staff in areas of research and publication activity. The following are areas of activity within the service group in progress are:

- Dr Gabrielle Mata: Survey of psychiatry trainees' experience of the Townsville Psychotherapy Written Care supervision group'.
- Elizabeth McNamara: Completing a service review for current consumer utilisation of yPIET and its fidelity to the Queensland state-wide Service Model.
- Dr Amuthanila Kasianandan: Understanding the misuse of pregabalin among the ATODS consumers in a regional city of Australia.
- Dr Suparna Chakrabarty: Prevalence of Neurodevelopmental Abnormalities in children involved in the Justice System – A case series.
- Dr Mark Mayall: ICD-10 Z codes and Adverse childhood experiences (ACE)

Our Senior Research Officer has provided an increased level of support this year to medical and nursing staff looking to develop research projects or explore how they can commence research with some initial quality improvement projects. It is exciting to see an increase in the activity of staff applying for Low, Negligible Risk ethics approval to publish the results of these projects.

We note the successful publication by; Husodo C, McDermott B, Longhitano C, Matta G. Functional outcomes in rural Australia of two continuing care teams: A regional town–city comparison of the 16-item Life Skills Profile. *Australasian Psychiatry*. February 2021. The primary aim of this study was to examine differences in functional health outcomes in consumers entering a regional mental health service compared with a city service.

Research Team:

A/Program Manager & Senior Research Officer SERQU
Corianne Richardson

Professor of Psychiatry
Brett McDermott

Mental Health Service Group

Research Publications

1. Hurley J, Lakeman R, Cashin A, Ryan T. The remarkable (Disappearing Act of the) mental health nurse psychotherapist. *Int J Ment Health Nurs*. 2020;29(4):652-60.
2. Hurley J, Lakeman R, Cashin A, Ryan T, Muir-Cochrane E. Mental Health Nurses are not quite 'all in this together': The struggle for equitable access to the Medicare Benefit Scheme. *Int J Ment Health Nurs*. 2020;29(4):745-6.
3. Lakeman R, Cashin A, Hurley J, Ryan T. The psychotherapeutic practice and potential of mental health nurses: An Australian survey. *Aust Health Rev*. 2020;44(6):916-23.
4. Marano AT, Seaton JA. Promoting and improving the well-being of junior doctors in Australia: Did you know? *Practical Practice Pointers*. *Austr J Rural Health*. 2020;28(1):92-3.
5. Mitchell R, McKup JJ, Bue O, Nou G, Taumomoa J, Banks C, et al. Implementation of a novel three-tier triage tool in Papua New Guinea: A model for resource-limited emergency departments. *Lancet Reg Health West Pac*. 2020;5.
6. Mitchell RD, Banks C. Emergency departments and the COVID-19 pandemic: Making the most of limited resources. *Emerg Med J*. 2020.
7. Siskind DJ, Wu BT, Wong TT, Firth J, Kisely S. Pharmacological interventions for smoking cessation among people with schizophrenia spectrum disorders: A systematic review, meta-analysis, and network meta-analysis. *Lancet Psychiatry*. 2020;7(9):762-74.

Mental Health Service Group

RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Dr Pallavi Dham	ATODS and Specialist Services, Psychiatry	Evaluation of psychiatric and medical needs of older adults admitted to the Townsville Hospital: A cross-sectional retrospective chart review	
Ms Nerida Firth	ATODS	Planning for the worst: A person-centred approach to disaster preparedness, response and recovery	THHS SERTA Grant

Mental Health nurse one of the rare few

A Townsville HHS mental health nurse achieved a goal that few before her have reached last month when she completed her PhD in mental health nursing.

Dr Debra Klages, a nurse educator in the Mental Health Service Group, started her academic journey in 2007 after moving to Australia from Canada as a registered nurse.

"I first completed my masters in Advanced Nursing Practice in Mental Health at Melbourne University before relocating to Townsville in 2012," Dr Klages said.

"I had a bit of a break after my masters and then when I became a nurse educator, I decided to continue my studies."

Dr Klages completed her PhD by publication, with her study 'Mental health nurses as mothers' exploring the double-duty caring role of health professionals who are mothers of adult children with schizophrenia.

"I was surprised by my findings; despite having a background in health a lot of people struggled to get support," she said.

Dr Klages said she was grateful to the HHS for its support and encouraged others considering further education to 'go for it'.

"I accessed SERTA funding to assist with my education which was excellent. It's surreal to see the end of my PhD but I'm excited to use this newfound knowledge to help shape policy and make changes in mental health services.

I'd absolutely encourage anyone who is thinking about taking the leap into research to go for it; if I can do it, anyone can do it."





Pathology Queensland

Townsville's Pathology Queensland recognised for melioidosis state-wide centre of excellence

Townsville University Hospital and Pathology Queensland are in close partnership not only in the delivery of Pathology services but also in research.

The collaborative research done in both Infectious Diseases and Microbiology reflects both the close linkage in these disciplines and the relevance of this to the region.

Pathology Queensland

Research Groups

Infectious Diseases / Microbiology Research Group

The group concentrates on research on local infectious diseases which are overrepresented here. In addition, more general aspects of Infectious Diseases and Microbiology research are also undertaken. The group has a track record of encouraging junior researchers to participate under appropriate supervision. The group continues to be involved in ongoing national and international collaborative research on Melioidosis, Q fever, Rheumatic fever, multiresistant gram-negative infections and Antimicrobial Stewardship.

Melioidosis is caused by an environmental pathogen *Burkholderia pseudomallei* which is present in the soil across North Queensland. The disease can affect at risk groups in a variety of ways with a mortality of up to 20%. Melioidosis research done here reflects the position of this laboratory as the State Reference Laboratory in Melioidosis. Townsville was the first laboratory in Australia to identify the soil-borne organism in Australia and has significant expertise in diagnosing and researching the pathogen. "Melioidosis can be difficult to diagnose through serology and even cultures can be difficult to identify if laboratories are not familiar with the organism. Townsville pathology staff have collectively published over 40 peer-reviewed journal articles and contributed to the development of an international guideline for diagnosing the condition as part of the Centre for Disease Control in Atlanta.

Other areas of research include exploring the spread of multiresistant organisms in the community; the local distribution and risk factors for Q fever which is endemic in this region; the utility of sequencing to improve the diagnosis of sepsis and the search for a better way to diagnose Rheumatic fever which is a major cause of illness particularly in First Nations communities.

Research Team:

Director of Microbiology and Pathology
Dr Robert Norton

Staff Specialist Infectious Diseases and Clinical Microbiologist
Dr Christopher Heather

AMS Pharmacist
Ms Kerrie Aitken

Registrar Microbiology
Dr Ferris Satyaputra

Registrar Microbiology
Dr Pirathaban Sivabalan

Microbiology Research Group Grants:

- Pathology Queensland Study, Education and Research Committee: Laboratory safety. Handling *B.pseudomallei* without a biosafety cabinet
- Pathology Queensland Study, Education and Research Committee: Molecular Epidemiology of *Burkholderia pseudomallei*
- SERTA: Penicillin De-labelling Pilot study
- SERTA: Real-time nanopore diagnostics for rapid sepsis response

Microbiology Research Collaborations:

- Queensland Centre for Clinical Research, University of Queensland, Brisbane
"Burkholderia pseudomallei clinical isolates are highly susceptible in vitro to cefiderocol, a siderophore cephalosporin"
- EUCAST Development Laboratory, Växjö, Sweden
"Burkholderia pseudomallei multi-centre study to establish EUCAST MIC and zone diameter distributions and epidemiological cut-off (ECOFF) values"
- Australian Institute of Tropical Health and Medicine
"Real-time nanopore diagnostics for rapid sepsis response"

Pathology Queensland

Research Publications

1. Kelly M, Hendry S, Norton R. The utility of the syphilis enzyme immunoassay IgM in the diagnosis of congenital syphilis. *Diagn Microbiol Infect Dis*. 2020;98(3).
2. Gassiep I, Armstrong M, Norton R. Human melioidosis. *Clin Microbiol Rev*. 2020;33(2).
3. Gassiep I, Bachmeier C, Hendry S, Emeto TI, Armstrong M, Sangla K, et al. Antimicrobial stewardship in diabetic ketoacidosis: A single-centre experience. *Intern Med J*. 2020;50(2):173-7.
4. Alizzi1 M, Rathnayake R, Sivabalan P, Emeto TI, Norton R. Group B Streptococcal bacteraemia - Changing trends in a tropical region of Australia. *Intern Med J*. 2020 Dec 21. doi: 10.1111/imj.15164
5. Delaney B, Robertson G, Henderson A, Falconer C, Bauer MJ, Cottrell K, Gassiep I, Norton R, Paterson DL, Harris PNA. *Burkholderia pseudomallei* clinical isolates are highly susceptible in vitro to cefiderocol, a siderophore cephalosporin. *AAC (In press)*. *AAC (In press)*
6. Diolombi M, Seneviratne M, Norton R. Erythema nodosum and melioidosis. An unreported association. *Am J Trop Med Hyg* 2020 <https://doi.org/10.4269/ajtmh.20-0320>
7. Karatuna O, Dance DAB, Matuschek E, Åhman J, Turner P, Hopkins J, Amornchai P, Wuthiekanun V, Cusack T, Baird R, Hennessy J, Norton R, Armstrong A, Zange S, Zoeller L, Wahab T, Jacob D, Grunow R, Kahlmeter G. *Burkholderia pseudomallei* multi-centre study to establish EUCAST MIC and zone diameter distributions and epidemiological cut-off (ECOFF) values. *Clin Microbiol Inf* 2020, <https://doi.org/10.1016/j.cmi.2020.07.001>
8. Manchal N, Mohamed MRS, Ting M, Luetchford H, Francis F, Carrucan J, Norton R. Hospital acquired viral respiratory tract infections: An underrecognized nosocomial infection. *Infecti, Dis Health*. 2020;25(3):175-80.

Pathology Queensland

RGO Approved Research

Principal Investigators	Department	Study Title	Funding Source
Dr Rathnayake Rathnayake	Microbiology	Epidemiology of Group B Streptococcal Bacteraemias in North Queensland: A follow up study of changing trends during 2010-2020	
Dr Stephanie Hendry	Microbiology	Determination of genomic difference between isolates of <i>Burkholderia pseudomallei</i> , relative to disease presentation	THHS SERTA Grant & STP Trainee Research Grant
Dr Robert Norton	Microbiology	WGS of <i>Burkholderia pseudomallei</i> isolates, Queensland	
Kerrie Aitken	Microbiology	WGS of <i>Burkholderia pseudomallei</i> isolates, Queensland	
Dr Christopher Heather	Infectious Diseases	Penicillin De-labelling Pilot study	THHS SERTA Grant
Dr Christopher Heather / Dr Maxwell Braddick	Infectious Diseases/ Microbiology	Real-time nanopore diagnostics for rapid sepsis response	THHS SERTA Grant



Surgical Service Group

Message from the Surgical Service Group Director

2020 was a great year for the Surgical Service Group in terms of the number of research projects and submitted research papers.

The Surgical Service Group recognises the significant role research plays in enhancing patient care.

We want to build our reputation as research leaders where research drives service delivery improvement care and the sustainability of regional and rural healthcare.

Surgical Service Group

Research Groups

TUH Intensive Care Research Group (TUH ICU)

The group consists of researchers in Adult and Paediatric Intensive Care as well as from the Dept of Anaesthesia and Perioperative Medicine. The year was challenging for research given the impact of the COVID-19 pandemic.

Key Achievements:

Dr Arjun Chavan FCICM FRACP (Paediatric Intensivist) has provided clinical leadership to a team consisting of TUH mask fit testing staff, COVID-19 Analytics Unit from Qld Health and UQ's Artificial Intelligence division to develop a novel software solution which analyses a photograph of the face to suggest the best fitting face masks for fit testing. The project has now been scaled to allow state-wide usage by Ehealth division of Queensland Health as it can reduce wastage of masks involved in the traditional trial and error method of fit testing.

Dr Chavan has further led the PPE recycling in the context of extenuating circumstances and lab based Phase 1 study is completed (awaiting publication). He is also leading the BET-LPOCUS (teaching lung ultrasound in medical curriculum) study, which is now underway following relaxation of COVID-19 restrictions for medical students.

Following on from a retrospective study on Vancomycin dosing in children published as an abstract for the PCCM WFPICCS conference, Dr Chavan is now mentoring TUH APMS pharmacist for the prospective tri-arm VANIK study. He remains the PI for the multi-centre KIDS THRIVE and RAPIDS studies

Dr Sutrisno Gunawan FCICM DDU (Adult Intensivist) has a special interest in teaching echocardiography and clinical ultrasound. He has represented our ICU in studies exploring the use of Point of Care ultrasound. He has partnered with colleagues around Australia and published in prestigious critical care journals on the role of short courses in point of care ultrasound and competence of clinicians (see Publications)

Dr Siva Senthuran FANZCA FCICM (Adult Intensivist) has an interest in perioperative medicine and the role of the Intensivists in advance care planning prior to high risk or marginal benefit surgery. In partnership with experts from the Australian Institute of Health Innovation they have published on challenges involved in identifying high risk surgical patients. He has also led a team which explored the potential of data linkage techniques in determining short and long term outcomes of emergency laparotomies at Townsville (in preparation for publication). He has led and recently completed a pilot study with gastroenterologists (Dr Roze Karamatic) and cardiac surgeons (Dr Pankaj Saxena and Dr Sumit Yadav) on whether liver stiffness is related to clinical outcomes after cardiac surgery (in preparation for publication).

Research Team:

Lead for ICU Clinical Research
Dr Siva Senthuran

Paediatric ICU Researcher
Dr Arjun Chavan

Ultrasound in ICU Researcher
Dr Sutrisno Gunawan

Surgical Service Group

Research Groups

North Queensland Foregut Surgery Research Collaborative (NQFSRC)

This group aims to foster research excellence in the field of Hepatobiliary, Pancreatic and Upper Gastrointestinal Surgery and thus improve outcomes for our patients. There is rich collaboration across all health sectors and JCU. Research activities span from lab based translational work to clinical trials.

Research Team:

Staff Specialist General Surgery
Dr Pranavan Palamuthusingam

Collaborator
Simon Wary

Collaborator
Jhambh Shaurya

NQFSRC Presentations:

- Hepatobiliary Surgery in Regional Australia: The North Queensland Experience. Provincial Surgeons Australia Annual Conference 2019 – Presented by Dr Simon Wary
- Impact of establishing a specialised hepatobiliary unit on liver resections in a non-specialised tertiary centre in regional Australia. RACS Annual Scientific Congress 2021 (Melbourne). ePoster – Dr Johnny Yeh

NQFSRC Research Grants:

- SERTA grant: “Establishing a North Queensland Liver Tumour Biobank”

TUH Department of Neurosurgery Research

Research Team:

Researcher
Anson Chan

Contributor
Simon Smith

Contributor
Edwin Tan

Supervisor
Sarin Kuruvath

Supervisor
A/Prof Laurence Marshman

Supervisor
Dr Maria Hennessy

Medical student
Alex Vile

Surgical Service Group

Research Publications

1. Abola MTB, Golledge J, Miyata T, Rha SW, Yan BP, Dy TC, et al. Asia-Pacific Consensus Statement on the Management of Peripheral Artery Disease. *J Atheroscler Thromb*. 2020;27(12):1374.
2. Abola MTB, Golledge J, Miyata T, Rha SW, Yan BP, Dy TC, et al. Asia-Pacific consensus statement on the management of peripheral artery disease: A report from the Asian Pacific society of atherosclerosis and vascular disease Asia-Pacific peripheral artery disease consensus statement project committee. *J Atheroscler Thromb*. 2020;27(8):809-907.
3. Drovandi A, Fernando ME, Singh TP, Woolley T, Golledge J. Opinions of vascular surgeons and podiatrists in Australia and New Zealand on the use of hyperbaric oxygen therapy for lower limb ulcers. *BMJ Open Diabetes Res Care*. 2020;8(1).
4. Golledge J, Drovandi A, Velu R, Quigley F, Moxon J. Survival following abdominal aortic aneurysm repair in North Queensland is not associated with remoteness of place of residence. *PLoS ONE*. 2020;15(11 November).
5. Golledge J, Fernando M, Lazzarini P, Najafi B, Armstrong DG. The potential role of sensors, wearables and telehealth in the remote management of diabetes-related foot disease. *Sensors*. 2020;20(16):1-15.
6. Golledge J, Krishna SM, Wang Y. Mouse models for abdominal aortic aneurysm. *Br J Pharmacol*. 2020.
7. Golledge J, Leicht AS, Yip L, Rowbotham SE, Pinchbeck J, Jenkins JS, et al. Relationship Between Disease Specific Quality of Life Measures, Physical Performance, and Activity in People with Intermittent Claudication Caused by Peripheral Artery Disease. *Eur J Vasc Endovasc Surg*. 2020;59(6):957-64.
8. Golledge J, Moxon JV, Rowbotham S, Pinchbeck J, Quigley F, Jenkins J. High ankle brachial index predicts high risk of cardiovascular events amongst people with peripheral artery disease. *PLoS ONE*. 2020;15(11 November).
9. Golledge J, Moxon JV, Singh TP, Bown MJ, Mani K, Wanhainen A. Lack of an effective drug therapy for abdominal aortic aneurysm. *J Intern Med (GBR)*. 2020;288(1):6-22.
10. Golledge J, Pinchbeck J, Rowbotham SE, Yip L, Jenkins JS, Quigley F, et al. Health-related quality of life amongst people diagnosed with abdominal aortic aneurysm and peripheral artery disease and the effect of fenofibrate. *Sci Rep*. 2020;10(1).
11. Golledge J, Pinchbeck J, Tomee SM, Rowbotham SE, Singh TP, Moxon JV, et al. Efficacy of Telmisartan to Slow Growth of Small Abdominal Aortic Aneurysms: A Randomized Clinical Trial. *JAMA Cardiol*. 2020;5(12):1374-81.
12. Golledge J, Rowbotham S, Velu R, Quigley F, Jenkins J, Bourke M, et al. Association of serum lipoprotein (A) with the requirement for a peripheral artery operation and the incidence of major adverse cardiovascular events in people with peripheral artery disease. *J Am Heart Assoc*. 2020;9(6).
13. Golledge J, Singh TP. Effect of blood pressure lowering drugs and antibiotics on abdominal aortic aneurysm growth: A systematic review and meta-analysis. *Heart*. 2020.
14. Golledge J, Singh TP, Moxon JV, Bown M, Mani K, Wanhainen A. Response to letter about 'Lack of an effective drug for abdominal aortic aneurysm'. *J Intern Med (GBR)*. 2020;288(1):152-4.
15. Huynh P, Phie J, Krishna SM, Golledge J. Systematic review and meta-analysis of mouse models of diabetes-associated ulcers. *BMJ Open Diabetes Res Care*. 2020;8(1).
16. Krishna SM, Morton SK, Li J, Golledge J. Risk factors and mouse models of abdominal aortic aneurysm rupture. *Int J Mol Sci*. 2020;21(19):1-17.
17. Krishna SM, Omer SM, Li J, Morton SK, Jose RJ, Golledge J. Development of a two-stage limb ischemia model to better simulate human peripheral artery disease. *Sci Rep*. 2020;10(1).
18. Liu B, Granville DJ, Golledge J, Kassiri Z. Pathogenic mechanisms and the potential of drug therapies for aortic aneurysm. *Am J Physiol Heart Circ Physiol*. 2020;318(3):H652-H70.
19. Meneses AL, Nam MCY, Bailey TG, Anstey C, Golledge J, Keske MA, et al. Skeletal muscle microvascular perfusion responses to cuff occlusion and submaximal exercise assessed by contrast-enhanced ultrasound: The effect of age. *Physiol Rep*. 2020;8(19).
20. Singh TP, Moxon JV, Golledge J. Systematic review and meta-analysis of the association between intraluminal thrombus volume and abdominal aortic aneurysm rupture. *J Vasc Surg*. 2020;71(3):1070-1.
21. Singh TP, Moxon JV, Iyer V, Gasser TC, Jenkins J, Golledge J. Comparison of peak wall stress and peak wall rupture index in ruptured and asymptomatic intact abdominal aortic aneurysms. *Br J Surg*. 2020.
22. Singh TP, Wong S, Quigley F, Jenkins J, Golledge J. Association of gout with major adverse cardiovascular events and all-cause mortality in patients with peripheral artery disease. *Atherosclerosis*. 2020;312:23-7.
23. Thanigaimani S, Phie J, Golledge J. Animal models of ischemic limb ulcers: A systematic review and meta-analysis. *BMJ Open Diabetes Res Care*. 2020;8(1).

Surgical Service Group

Research Publications

24. Alahakoon C, Fernando M, Galappaththy C, Matthews EO, Lazzarini P, Moxon JV, et al. Meta-analyses of randomized controlled trials reporting the effect of home foot temperature monitoring, patient education or offloading footwear on the incidence of diabetes-related foot ulcers. *Diabet Med*. 2020;37(8):1266-79.
25. Brennan S, Kandasamy Y, Rudd D, Schneider M, Watson D. Fetal kidney charts of a novel measurement of the renal parenchymal thickness to evaluate fetal kidney growth and potential function. *Prenat Diagn*. 2020;40(7):860-9.
26. Brennan S, Kandasamy Y, Rudd DM, Schneider ME, Jones RE, Watson DL. The effect of diabetes during pregnancy on fetal renal parenchymal growth. *J Nephrol*. 2020;33(5):1079-89.
27. Hazratwala K, Brereton SG, Grant A, Dlaska CE. Computer-assisted technologies in arthroplasty: Navigating your way today. *JBJS Rev*. 2020;8(3).
28. Hennessy MJ, Marshman LAG, delle Baite L, McLellan J. Optimizing and simplifying post-traumatic amnesia testing after moderate-severe traumatic brain injury despite common confounders in routine practice. *J Clin Neurosci*. 2020;81:37-42.
29. Carter JL, Morris DR, Sherliker P, Clack R, Lam KBH, Halliday A, et al. Sex-Specific Associations of Vascular Risk Factors With Abdominal Aortic Aneurysm: Findings From 1.5 Million Women and 0.8 Million Men in the United States and United Kingdom. *J Am Heart Assoc*. 2020;9(4).
30. Cox R, Roche E. Gastrointestinal: Inflammatory bowel disease therapy-induced triple-hit lymphoma. *J Gastroenterol Hepatol*. 2020;35(11):1856.
31. Dlaska CE, Jovanovic IA, Grant AL, Graw G, Wilkinson MP, Doma K, et al. Correction to: Short-term results of a new self-locking cementless femoral stem: A prospective cohort study of the Lima MasterSL (MUSCULOSKELETAL SURGERY, (2020), 10.1007/s12306-020-00651-1). *Musculoskeletal Surg*. 2020.
32. Carelli M. G., Nour D, Kanaganayagam E, Wright D, Kerr P, Malghan R, et al. Importance of perioperative planning in an impalement injury of neck highlighted by an aberrant right subclavian artery. *ANZ J Surg*. 2020;90(12):E193-E5.
33. Galappaththy CJG, White V, Velu RB. Transcaval approach to treat a type II endoleak. *J Vasc Surg*. 2020;72(6):2166.
34. Lalzad A, Wong FY, Singh N, Coombs P, Brockley C, Brennan S, et al. Surveillance Practice for Sonographic Detection of Intracranial Abnormalities in Premature Neonates: A Snapshot of Current Neonatal Cranial Ultrasound Practice in Australia. *Ultrasound Med Biol*. 2020;46(9):2303-10.
35. McEwen PJC, McArthur M, Brereton SG, O'Callaghan WB, Wilkinson MPR. Flexion deformity and laxity as a function of knee position at the time of tensioning of rigid anatomic hamstring ACL grafts. *Asia-Pac J Sports Med Arthroscopy Rehabil Technol*. 2020;22:67-73.
36. Mebberson K, Colditz M, Marshman LAG, Thomas PAW, Mitchell PS, Robertson K. Prospective randomized placebo-controlled double-blind clinical study of adjuvant dexamethasone with surgery for chronic subdural haematoma with post-operative subdural drainage: Interim analysis. *J Clin Neurosci*. 2020;71:153-7.
37. Moran CS, Seto SW, Biros E, Krishna SM, Morton SK, Kleinschnitz C, et al. Factor XII blockade inhibits aortic dilatation in angiotensin II-infused apolipoprotein E-deficient mice. *Clin Sci*. 2020;134(9):1049-61.
38. Moxon JV, Rowbotham SE, Pinchbeck JL, Lazzaroni SM, Morton SK, Moran CS, Golledge J, et al. A Randomised Controlled Trial Assessing the Effects of Peri-operative Fenofibrate Administration on Abdominal Aortic Aneurysm Pathology: Outcomes From the FAME Trial. *Eur J Vasc Endovasc Surg*. 2020;60(3):452-60.
39. Nayyar S, Downar E, Bhaskaran AP, Massé S, Nanthakumar K. Signature signal strategy: Electrogram-based ventricular tachycardia mapping. *Heart Rhythm*. 2020;17(11):2000-9.
40. Ngoo AG, Tan AHM, Mushaya CD, Ho YH. Short and long course neoadjuvant therapy compared for management of locally advanced rectal cancer: 11 years' experience at a regional centre. *ANZ J Surg*. 2020;90(5):812-20.
41. Nicholson KJ, Lee JA, Lundgren CI, Meade SP, Triponez F, Carty SE. Proceedings and Insights of the 2019 International Association of Endocrine Surgeons Symposium on Surgeon Well-Being. *World J Surg*. 2020;44(2):625-37.
42. Nsengiyumva V, Krishna SM, Moran CS, Moxon JV, Morton SK, Clarke MW, et al. Vitamin D deficiency promotes large rupture-prone abdominal aortic aneurysms and cholecalciferol supplementation limits progression of aneurysms in a mouse model. *Clin Sci*. 2020;134(18):2521-34.
43. Page S, Yong MS, Sinha A, Saxena P. Clear cell sugar tumour: A rare tumour of the lung. *ANZ J Surg*. 2020;90(3):E54-E6.
44. Paw E, Saxena P. Women in surgery: A capital decision. *ANZ J Surg*. 2020;90(1-2):14-5.
45. Paw E, Vangaveti V, Zonta M, Heal C, Gunnarsson R. Effectiveness of fibrin glue in skin graft survival: A systematic review and meta-analysis. *Ann Med Surg*. 2020;56:48-55.

Surgical Service Group

Research Publications

46. Qian T, Sun H, Xu Q, Hou X, Hu W, Zhang G, Golledge J, et al. Hyperuricemia is independently associated with hypertension in men under 60 years in a general Chinese population. *J Hum Hypertens.* 2020.
47. Rajamani A, Shetty K, Parmar J, Huang S, Ng J, Gunawan S, et al. Longitudinal Competence Programs for Basic Point-of-Care Ultrasound in Critical Care: A Systematic Review. *Chest.* 2020;158(3):1079-89.
48. Ramponi F, Carelli MG, Ang N, Win KTH, Shah P, Palamuthusingam P, et al. An Unusual Case of Intermittent Cardiac Tamponade. *Heart Lung Circul.* 2020;29(9):e258-e9.
49. Reddy Pulusu SS, Srinivasan A, Krishnaprasad K, Cheng D, Begun J, Keung C, et al. Vedolizumab for ulcerative colitis: Real world outcomes from a multicenter observational cohort of Australia and Oxford. *World J Gastroenterol.* 2020;26(30):4428-41.
50. Singh TP, Rizvi SAA, Pretorius CF. Acute variceal haemorrhage in the context of posterior flail chest. *ANZ J Surg.* 2020;90(4):627-9.
51. Wang Y, Nguyen DT, Yang G, Anesi J, Chai Z, Charchar F, Golledge J, et al. An Improved 3-(4,5-Dimethylthiazol-2-yl)-5-(3-Carboxymethoxyphenyl)-2-(4-Sulphophenyl)-2H-Tetrazolium Proliferation Assay to Overcome the Interference of Hydralazine. *Assay Drug Dev Technol.* 2020;18(8):379-84.
52. Yeap BB, Alfonso H, Chubb SAP, Center JR, Beilin J, Hankey GJ, Golledge J, et al. U-shaped association of plasma testosterone, and no association of plasma estradiol, with incidence of fractures in men. *J Clin Endocrinol Metab.* 2020;105(5).
53. Bhandari A, Koppen J, Agzarian M. Convolutional neural networks for brain tumour segmentation. *Insights Imaging.* 2020;11(1).
54. Hewson A, McAllister A, Reddie I. Autologous neurosensory retinal flap for closure of refractory macular hole in a patient with macular telangiectasia. *Am J Ophthalmol Case Rep.* 2020;18.
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Surgical Service Group

Approved Research

Principal Investigators	Department	Study Title	Funding Source
Dr Toni Kinneally	Cardiology	Review of the epidemiology, management, and clinical outcomes of patients with infective endocarditis in North Queensland	
Dr Ashley Jenkin	General Surgery Infectious diseases	Townsville flood infections	
Dr Ekta Paw	Surgery	Retrospective Review of Fibrin Glue in Skin grafts for Skin cancer	
Dr Siva Senthuran	Intensive Care Infectious Disease/ Microbiology	Randomized, Embedded, Multifactorial, Adaptive, Platform Trial for Community Acquired Pneumonia (REMAP-CAP)	Monash University THHS SERTA Grant
Dr Stephen Gilbert	NQPPMS	A Double-Blind, Randomized, Placebo-Controlled, Parallel-Group Study to Assess the Safety and Efficacy of Two Doses of SX600 Administered by Lumbosacral Transforaminal Epidural Injection in Patients with Radicular Pain Secondary to Lumbar Intervertebral Disc Herniation	SpineThera Australia Pty Ltd
Dr Stephen Gilbert	NQPPMS	Pain Understanding and Confidence in Healthcare Students and General Practitioners	
Dr Stephen Gilbert	North Queensland Persistent Pain Management Service	Survey of discharge prescribing of analgesia after surgery and Emergency Department attendance	
Dr Rebecca Stewart	Cardiology	Review of the acceptability and impact of Telephone consultations during COVID-19 for Cardiac Outpatient Clinics at Townsville University Hospital	
Dr Matthew Bryant	NQPPMS	Clinical Yarning: Improving communication and health outcomes for Aboriginal and Torres Strait Islander people living with chronic pain	QIMR
Dr Arjun Chavan	Paediatric Intensive Care Unit, ICU, Cardiology, Emergency, General Medicine	Brief Educational Training for Lung-Point of Care Ultrasound (BET L-POCUS)	THHS SERTA Grant

Surgical Service Group

Approved Research

Principal Investigators	Department	Study Title	Funding Source
Dr Arjun Chavan	PICU	Impact of ultraviolet germicidal irradiation, hydrogen peroxide vapour and moist heat for decontamination of personal protective equipment (PPE) : A feasibility study looking at structural integrity of PPE and efficacy of the decontamination to inform a crisis capacity strategy during a pandemic Short Title: PPE Decontamination Study	THHS SERTA Grant
Dr Carolyn Jack	Cardiology Internal medicine	A retrospective observational review of the prevalence of iron deficiency in patients with heart failure in a North Queensland Community referred to a tertiary heart failure service Short Title: Prevalence of Iron Deficiency in patients with Heart Failure	
Dr Matheus Carelli	Cardiothoracic Surgery	Is preoperative non-contrast CT chest associated with a lower rate of neurological complications following isolated coronary artery bypass surgery?	
Dr Arjun Chavan	PICU	Facial Characteristics impacting the selection and quantitative fit testing of P2/N95 mask	THHS SERTA Grant
Dr April Win	Intensive Care Unit	The EXCEL Registry - The Australian and New Zealand ECMO Registry	Monash University
Dr Donald Cameron	General Surgery	Laparoscopic Appendectomy versus Antibiotics for Imaging Confirmed Acute Uncomplicated Appendicitis: A Multisite Randomised Controlled Trial. An initiative of the Trainees and Registrars Appendicitis Investigation Network (TRAIN). Short Title: Antibiotics for appendicitis trial	THHS SERTA Grant
Dr Soon Yee Teoh	Anaesthesia	General vs. Regional Anaesthesia on Arteriovenous Fistula patency: A randomised controlled pilot and feasibility trial. Acronym: GiRAF	
Dr Elzerie de Jager	Surgery	Ticking all the boxes for equitable surgical care	
Dr Pranavan Palamuthusingam	General Surgery	Establishing a North Queensland Liver Tumour Library Note: study being conducted at JCU lab	THHS SERTA Grant

Researching a matter of life and limb

People who have an increasingly common complication of diabetes are being asked to share their experience as part of a new research project. Vascular surgeon and researcher Prof Jonathan Golledge, pictured, said the IMPACT study aimed at developing a way to better prevent complications for people who already had diabetic foot disease. Diabetic foot disease is where sores or infection develop in areas of the foot as a result of poor blood circulation or nerve damage.

Diabetic foot disease can lead to minor or major amputations of the foot or leg. "Within one year of a hospital admission for a diabetic foot disease, 40 per cent of people will be readmitted to hospital," he said.



"That isn't good for the hospital and the patients so what we are doing is talking to the patients, and the people who look after them, about how we can lower this rate of readmission."

"It is important that the methods to implement better prevention are in line with the requirements and beliefs of the key stakeholders, particularly the patients."

Professor Golledge said diabetic foot disease was becoming more common across North Queensland.

"We have between 2 and 10 admissions every week directly related to diabetic foot disease," he said.

"There are a range of mechanisms in place to prevent further damage or amputations, but we really need to test how effective they are from a patient and professional point of view. We will be surveying and interviewing patients with diabetic foot disease or who have had diabetic foot disease as well as the various health professional that provide management to these patients. The hope is that for the first time we'll get a comprehensive understanding of the patient and system challenges associated with managing diabetic foot disease after a hospital admission."

Prof Golledge said secondary prevention measures included specially fitted shoes that relieved pressure from vulnerable areas of the foot and gauging the effectiveness of medication management for diabetes, cholesterol and blood pressure.

The research project will take two years to complete and Prof Golledge hopes that any findings or areas identified for improvement can then be tested as part of a clinical trial in the coming years.



Researchers in the Spotlight

Ms Chloe Sobieralski

An insatiable curiosity, a passion for giving back to her community and a desire to care at the bedside are three of the qualities driving Townsville Hospital and Health Service research assistant Chloe Sobieralski in her health career.

Chloe, a Kuku Yalanji woman in her second year of nursing at James Cook University, said when she saw an advertisement for research assistant to neonatologist Dr Yoga Kandasamy and his four-year study into kidney growth in premature babies she jumped at the chance.

"This research project looks at how a mother's health can impact on a baby's kidney function into adulthood," Ms Sobieralski said.

"Being Indigenous myself I want to give back to my community and kidney disease is such a big thing for my people; being able to contribute to research that may help prevent kidney failure would be incredible. One of my projects was setting up a database so we can enter all the data that has been collected in the antenatal clinics and at the one-and-two-year follow-up appointments and link it directly to the mum. I also assist the nurses with post-natal clinic appointments where I can interact with our mums and take retinal images which are later analysed. I'm learning so much and it's great to work alongside healthcare workers to see what's on the other side of my nursing degree."

Ms Sobieralski said her role had also changed her perspective and broadened her career options. "When I was 13, I had a baby sister who was born prematurely and was looked after by some of the neonatal nurses I'm now

lucky enough to work alongside. Unfortunately, my sister didn't make it and I was fairly traumatised; I was adamant that I didn't want to work with babies after that. However, working with the neonatal team has given me more of an appreciation for the neonatal unit and completely changed my perspective. I'm a really curious person and love to know how things work so I know whatever road I take I will definitely continue to research."

Dr Kandasamy's research has been funded by a \$1.55 million grant from the National Health and Medical Research Council, one of the largest grants in the council's history.

Dr Kandasamy said the neonatal unit was thrilled to have Chloe as part of the research teams and her recruitment was also part of a strong focus on building capacity in Indigenous research.

"Chloe is passionate about research and about making a difference for her people and I'm beyond delighted to have her on board. It's so important that we create opportunities for Indigenous researchers; their passion and cultural perspective is invaluable especially in those areas where we are working toward closing the gap in health outcomes."

Chloe then had her work cut out for her over the 2020 end of year university break after being accepted into the National Health and Medical Research Council's (NHMRC) 2020-2021 Indigenous Internship Program.

The internship, which runs from November to January, provides an opportunity for Aboriginal and Torres Strait Islander undergraduate and post-graduate students to learn about government processes, gain experience in developing guidelines and create an understanding of the demands of public administration and accountability. Ms Sobieralski said she was looking forward to seeing the 'other side' of research.

"The internship provides an opportunity to learn how to fund high-quality health and medical research, build research capacity, how to translate research into clinical practice, and learn about research and guideline development. It was cool to learn how NHMRC respond to national health priorities, researchers, consumers' needs, the community's perspectives and the requirements and directions of the government."

Ms Sobieralski said she was grateful to the NHMRC for the opportunity. "There's a lot of research being done into the Indigenous population, so it'd be great to have more of our own people doing that research," she said.





Researchers in the Spotlight

Dr Stephen Perks

A focus on the chemical stability of medication in the tropics has led to a Townsville University Hospital pharmacist completing his PhD and challenging what we thought we knew about Hospital in the Home (HiTH) intravenous antibiotics.

Dr Stephen Perks said his PhD, which evolved over the course of five-and-a-half years, investigated both the chemical stability and device functionality of 24-hour HiTH intravenous antibiotics.

“Completing a PhD is about creating a researcher, and I’ve learnt so much since starting this journey,” he said. “It’s been wonderful being able to share what I’ve learnt with others, and to encourage them to embark on their own research.”

“I’m looking forward to continuing my research into antibiotic stability in higher temperatures, but also to help foster a culture of research for pharmacists across North Queensland.”

“When we look at the chemical stability of intravenous antibiotics, most of what we know is based on the understanding that a patient is receiving them at room temperature, or around 25 degrees. Part of the HiTH program see patients receiving their antibiotic infusion in their home, rather than in hospital, which is generally agreed to be better for patients for a number of reasons. What isn’t taken into account however, is that patients treated in hospital are done so in a very controlled environment, including temperature.”

“Though the Townsville University Hospital HiTH service has a management protocol in place to ensure the temperatures of all medications does not exceed those recommended for drug efficacy, other centres do not. I worked closely with various HiTH experts, and 24-hour HiTH programs around the country external to the Townsville University Hospital and found that some antibiotics were reaching temperatures of 34 degrees while being administered.”

“What we now need to investigate is whether or not this heightened temperature is affecting the integrity of the medication and, in turn, making it less effective.” Dr Perks said in addition to chemical stability, his research also looked at device functionality in the hyperbaric medicine unit. “Previously, patients who were receiving intravenous antibiotics weren’t able to use the infusion pumps in the hyperbaric chamber. This meant that patients would have three hours without receiving the antibiotics and were ultimately receiving a lower dose than recommended.”

“I worked closely with the fantastic team in the hyperbaric unit and found that the infusion pumps were actually completely safe to use in the chamber, which means that patients can now continue to receive their intravenous medication while also receiving hyperbaric oxygen therapy.”





Researchers in the Spotlight

Dr Aaron Boyce

The dermatology service at Townsville University Hospital grew with the arrival of consultant dermatologist Dr Aaron Boyce.

Dr Boyce began his specialist dermatology training in Adelaide and completed it at the world's most celebrated centre for dermatology, St John's Institute of Dermatology in London. Prior to commencing at Townsville University Hospital Dr Boyce was based at the Dermatology Institute of Victoria in Melbourne.

Dr Boyce said it was the opportunity to make a big difference to people in North Queensland with skin disease which appealed to him about the position.

"I also saw the opportunity to get involved with research and teaching as a major drawcard," he said. "I got a strong sense that the Medical Service Group was committed to building a great dermatology service and that they'd support me to do that; that sort of opportunity doesn't come along every day."

Acting Executive Director Medical Services Dr Niall Small said Aaron's arrival was a coup for the health service.

"I'm very pleased to welcome Aaron to deliver a dermatology service to the people of North Queensland," he said.

"I know he is a passionate and knowledgeable clinician with a real vision for the kind of service he wants to develop. We are privileged to have his expertise within our health service."

