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MED NORRTH Conference

(Northern Outcomes in Regional Research, Translation, and Health)

From Reef to Remote

1 August 2026



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Welcome to MED NORRTH 2026

From Reef to Remote: Advancing Research Skills for Health Challenges in Northern Australia

Following a successful inaugural conference in Townsville, MED NORRTH returns in 2026 as a forum for showcasing and supporting emerging research across Northern Queensland. Designed for medical students, prevocational doctors, registrars, and early-career medical researchers, the conference provides a welcoming and collaborative environment to present research, share ideas, develop research skills, and build meaningful professional connections. Through celebrating the work of emerging clinician-researchers, MED NORRTH aims to strengthen research capacity and foster a culture of inquiry, innovation, and continuous learning across the region.

This year's program brings together a diverse range of keynote presentation, panel discussion, oral presentations, and poster sessions, highlighting research and quality improvement activities that address the unique health challenges of Northern Australia. A special feature of the conference is the Research Speed Networking session, providing an informal opportunity for students and early-career doctors to engage with peers and mentors, gain insights into different research pathways, and learn from the experiences of researchers at various stages of their careers.

MED NORRTH 2026 is delivered through a collaboration between the Northern Queensland Regional Training Hubs (NQRTH), James Cook University College of Medicine and Dentistry (CMD), and the Tropical Australian Academic Health Centre (TAAHC). This year, the conference will be held alongside the North Queensland Physicians' Conference (NQPC), creating additional opportunities for delegates to network, collaborate, and participate in shared sessions across both events. We extend our sincere thanks to our presenters, delegates, sponsors, partners, and scientific and organising committees for their contributions, and we hope you enjoy an engaging, inspiring, and rewarding conference experience.



Meet the Team behind MED NORRTH 2026

Scientific Committee

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Associate Dean Research, JCU CMD

Assoc Prof Rebecca Evans

Associate Dean Research Education, JCU CMD

Ms Susan Wright

Medicine Impact Research Advisor, JCU CMD

Dr Sonia Minooee

Senior Research Officer, JCU CMD

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Research Lead, Mackay Clinical School

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Ms Alexandria Struthers

Stakeholder Engagement Advisor, JCU CMD/NQRTH

Mr Adwitya Upadhyaya

Medical Student Representative

Conference Program

7:45am	Registration Opens
Session 1 8:30am	Welcome & Introduction – Joint NQPC & MED NORRTH Plenary <i>Bringing together delegates from the Northern Queensland Physicians Conference (NQPC) and MED NORRTH for a shared opening session.</i> <i>Conference Opening Address by Dr Ben Vogler, co convenor Northern Queensland Physician Conference.</i> <i>Keynote address by Professor Eddy Strivens, Geriatrician, Director of Research and Clinical Director in Cairns</i> Panel Discussion Panel Topic: “Looking Back and Looking Forward” Panel Chair: Dr Peter Bourke, Consultant Physician and Clinical Dean, Cairns Hospital Panellists: Dr Tom Kite: Cardiologist, Cairns Hospital and Cairns Private Hospital Dr Elias Bitzer: Research and Luminal PHO, Gastroenterology Department, PAH Ms Mia White: MBBS (Hons) student, James Cook University
9:40am	Morning Tea
Session 2 10:10am	<i>Supporter Presentation – Tropical Australian Academic Health Centre (TAAHC) by Dr Scott Davis, Director</i> Oral Presentations <i>Iron deficiency without anaemia in pre- and postmenopausal females: to scope or not to scope?</i> Presenter: Dr Mirko Farruggia, Prevocational Medical doctor <i>Emergency department care for women presenting with pelvic pain: a scoping review of drivers of presentation, care patterns, and barriers to optimal management.</i> Presenter: Mia White, Medical student <i>Psychosocial Impacts of Adenomyosis: Findings from a Scoping Review and National Australian Survey.</i> Presenter: Sarah McDonnell, Medical student

Bridging the Simulation Gap: Low-cost 3D-printed procedural skills training in a regional health service

Presenter: Dr Preethi George Pandeth, Medical Registrar

- Quick Break -

Low-value Venous Blood Gas Use in Emergency Departments: Preliminary scoping review results.

Presenter: Simoni Shirwadkar, Medical student

Assessing Antigen-Induced T-Cell Responses Using HTS-RTqPCR.

Presenter: Jasmeen Kaur, Medical student

Value-based use of blood cultures in the Townsville University Hospital Emergency Department.

Presenter: Amy Weber, Medical student

Hirayama Disease: A Rare Cause of Unilateral Distal Upper Limb Atrophy in a Young Male.

Presenter: Dr Keshav Nagpal, NQ IMG Prep Medical Practitioner

CpG-Level DNA Methylation Differences Between Filipino ULA and ULP Cleft-Affected Tissue Phenotypes.

Presenter: Ioannis Chatzipapas, Medical student

12:00pm

Lunch Break & Posters

Barriers to Detection of Myocardial Injury After Non-Cardiac Surgery in Regional Australian Hospitals: A Narrative Review – Dr Larissa Martin, Prevocational Medical Doctor

Mapping Learning: A Scoping Review of Study Resources Used by Australian Medical Students – Elijah Martins, Medical student

Intracranial Extension of Sinonasal Adenocarcinoma Presenting as a Presumed Olfactory Groove Meningioma: A Case Report – Dr Kanako Brooke, Prevocational Medical Doctor

Rapid Labor Progression in a Woman Requesting Cesarean After Previous Perinatal Loss: A Case Report on Trauma-Informed Care and Ethical Decision-Making – Pravnoor Singh Mundra, Medical student

Teenage births in Far North Queensland, Australia: trends, rurality, antenatal engagement, and postpartum contraception uptake – Imogen Martin, Medical student

5-Fluorouracil Associated Myopericarditis Presenting as Acute Coronary Syndrome in a Regional Victorian Centre – Dr Sampathawaduge Ashail Silva, Medical Registrar

STEMI Mimics in Regional Practice: Diagnostic Challenges in Rural and Remote Medicine – Dr Sampathawaduge Ashail Silva, Medical Registrar

Barriers to Cardiac Rehabilitation Uptake in Rural and Remote Australia: Lessons from the Northern Territory – Dr Sampathawaduge Ashail Silva, Medical Registrar

A case of watermelon-induced hyperkalaemia presenting with cardiac syncope in an indigenous Australian woman with End-Stage renal failure – Dr Farnaz Jahani, Basic Physician Trainee

Post-operative Outcomes Following Below Knee Amputations at Townsville University Hospital – Dr Lauren Bosley, Prevocational Medical Doctor

Session 3
1:00pm

Oral Presentations

A Research Snapshot: Australian Institute of Tropical Health & Medicine (AITHM).

Presenter: Professor Alex Loukas, Director, AITHM

Post-polypectomy bleeding in a regional endoscopy service: risk factors, management, and outcomes.

Presenter: Dr Christopher James Shephard, Advanced Trainee – Gastroenterology & Hepatology

“Speak as if your words echo because they do”: A qualitative analysis of medical students learning following parent-led teaching in FaST-ER.

Presenter: Charlotte Bulat, Medical student

FaST-ER: Impact of Parent-Led Teaching on Medical Student Empathy and Family-Centred Care.

Presenter: Autumn Flint, Medical student

Miles apart: Rural-Metro gaps in orthopaedic research across Queensland.

Presenter: Jill Myatt, Medical student

The Use of Rurality Models in Queensland General Practitioner-Led Primary Care Accessibility Research: A Scoping Review.

Presenter: Aidan Hughes, Medical student

Intramuscular Cranial Extension of the Small Saphenous Vein with Deep Femoral Triangle Termination: A Donor Case Report and Literature Synthesis.

Presenter: Pravnoor Singh Mundra, Medical student

Biological and Clinical Determinants of the Immunotherapy Response in Child-Pugh B Advanced Hepatocellular Carcinoma.

Presenter: Robert Field, Medical student

The Impact of Remoteness on Maternal and Perinatal Outcomes in Queensland.

Presenter: Pema Hayman, Medical student

Evaluating the Appropriateness of Coagulation Studies in Adults Presenting to The Townsville University Hospital Emergency Department: A Retrospective Chart Review.

Presenter: Taylor Edgley, Medical student

2:30pm	Break
Session 4 2:45pm	Research Speed Networking Event Station 1: <i>The Accidental Researcher – From Clinician to Researcher and Back Again.</i> Presenter: Professor Eddy Strivens, Geriatrician & Director of Research, CHHHS Station 2: <i>Small Question, Big Impact – How Research Can Change the Future.</i> Presenter: Dr Louis Peachey, General Practitioner, Life Fellow, Australian College of Rural and Remote Medicine. Station 3: <i>Research Grants – Where Do I Start?</i> Presenter: Dr Paul Giacomini, Research Development and Partnership Advisor, JCU Station 4: <i>Tips for Publishing Your Research.</i> Presenter: Melissa Storey, Senior Editor, Rural and Remote Health Station 5: <i>Starting Research? Let's Talk Ethics</i> Presenter: Dr Kath McFarlane, Senior Research Fellow Health Practitioner Research Capacity, CHHHS Evaluation Survey, Conference Wrap & Awards
4:00pm – 5:00pm	MED NORRTH & NQPC Post Conference Networking on the Balcony Join delegates from both conferences on the terrace for some AVANT sponsored refreshments.

Keynote Speaker



Professor Edward Strivens

Geriatrician, Director of Research and Clinical Director in Cairns

Eddy Strivens is a Geriatrician, Director of Research and Clinical Director in Cairns, Far North Queensland, a Professor with James Cook University School of Medicine, leading HART, the Healthy Ageing Research Team, and a former President of the Australia and New Zealand Society for Geriatric Medicine. Clinically, Eddy is based in Cairns, where he came for a 12 month job in 1996 and is still there 30 years later.

Clinically he's led the development of integrated community and sub-acute care, dementia in acute care and regional outpatient memory clinics in the Far North, including outreach to Aboriginal and Torres Strait Islander Communities in the Torres Strait and Cape York.

His research interests include Successful Ageing and Dementia in Aboriginal and Torres Strait Islander Communities and Models of Integrative Service Delivery, including Transitions in Sub-Acute Care and Community Care. He leads the Healthy Ageing Research Team at James Cook University, with 10 years of continuous NHMRC grants and over \$8 million in competitive grants funding and over 60 peer reviewed publications.

Eddy was made a Member of the Order of Australia (AM) in the 2023 Australia Day Honours for significant service to geriatric medicine and to professional organisations. Previously in 2015 Eddy was awarded the Public Service Medal (PSM) in the Queens Birthday Honours for services to Queensland Health in the area of Aged Care and the biennial Louis Ariotti Award for Excellence and Innovation in the field of Rural and Remote Health. In 2019, Eddy was appointed to Pre-Eminent Status within Queensland Health.

Outside of medicine, Eddy is married to Mary Anne, with 3 children and a keen photographer/videographer, hiker, scuba diver and travel enthusiast. He can be contacted via Twitter/X/Instagram as @edstrivens.

Panel Discussion

Panel Chair

Dr Peter Bourke

Consultant Physician and Clinical Dean, Cairns Hospital

Panelist

Dr Thomas Kite

Cardiologist, Cairns Hospital and Cairns Private Hospital



Dr Tom Kite is an interventional and structural cardiologist working at Cairns Hospital and Cairns Private Hospital. Dr Kite completed specialist training in cardiology in the UK before undertaking a prestigious British Cardiovascular Intervention Society fellowship at Flinders Medical Centre in Adelaide, with a focus on complex coronary and structural intervention.

During his PhD research, he investigated timing of coronary angiography in non-ST elevation myocardial infarction and the impact of COVID-19 on acute coronary syndromes, leading large multicentre randomised controlled trial and registry studies. This work resulted in numerous high impact publications that have changed international guidelines and influenced practice patterns. He has presented his work at major international conferences and has a passion for teaching, training and quality improvement.

Panelist

Dr Elias Bitzer

Research and Luminal PHO, Gastroenterology
Department at the PAH

Panelist

Mia White



Mia White is a fifth-year medical student in her Honours year at James Cook University. Her current research projects span a scoping review on emergency department care for women with pelvic pain, an original retrospective study on ED re-presentations among pelvic pain patients in Cairns, and an international scoping review linking personal and electronic health records. She's interested in women's and family health. Outside of medicine, Mia's usually on the hunt for Cairns' best brunch spot.

Research Speed Networking

Station Topic: Research Grants: where do I start?



Dr Paul Giacomini

Research Development and Partnership Advisor, JCU

Dr Paul Giacomini is currently a Research & Development Partnerships Advisor within James Cook University Research & Innovation Services. He holds a PhD in Microbiology and Immunology and has 15 years postdoctoral experience in the fields of immunology, infectious diseases, parasitology and chronic inflammatory diseases. Paul has had considerable experience with a range of small and large medical research grant and fellowship schemes, IP commercialisation and formation of biotech startups, clinician-researcher collaborations, as well as clinical trial implementation. Paul uses this experience and expertise to engage with health and medical researchers and support their current and future research goals. This includes a strong focus on engaging with industry, external partners and fostering internal collaborations.

Station Topic: Journey of an Accidental Researcher: From Clinician to Researcher and back again



Dr Edward Strivens

Geriatrician, Director of Research and Clinical Director in Cairns

Eddy Strivens is a Geriatrician, Director of Research and Clinical Director in Cairns, Far North Queensland, a Professor with James Cook University School of Medicine, leading HART, the Healthy Ageing Research Team, and a former President of the Australia and New Zealand Society for Geriatric Medicine. Clinically, Eddy is based in Cairns, where he came for a 12 month job in 1996 and is still there 30 years later.

His research interests include Successful Ageing and Dementia in Aboriginal and Torres Strait Islander Communities and Models of Integrative Service Delivery, including Transitions in Sub-Acute Care and Community Care. He leads the Healthy Ageing Research Team at James Cook University, with 10 years of continuous NHMRC grants and over \$8 million in competitive grants funding and over 60 peer reviewed publications.

Research Speed Networking

Station Topic: Small Questions, Big Impact: How Research Can Change the Future



Dr Louis Peachey

**Rural Generalist, Senior Medical Officer
at the Atherton District Hospital**

Dr Louis Peachey is a Girrimay and Djirribal man from the Djirribaligan language group (Rainforest People) of North Queensland. He is a General Practitioner at Mulungu Aboriginal Medical Service and a Senior Medical Officer at Lotus Glen Correctional Centre.

Dr Peachey was the founding President of the Australian Indigenous Doctors Association, and is a former Board member of the Australian College of Rural and Remote Medicine. Dr Peachey served on the National Board of Headspace between 2012 and 2016.

In 2021, Dr Peachey was awarded a Life Fellowship of the Australian College of Rural and Remote Medicine in recognition of service to the College and significant contribution to Rural and Remote Medicine and Aboriginal and Torres Strait Islander Health. In 2025, he was awarded an Honorary Fellowship of the Royal Australasian College of Medical Administrators.

Station Topic: Tips for Publishing Your Research



Ms Melissa Storey

Senior Editor, Rural and Remote Health Journal

Melissa is Senior Editor of Rural and Remote Health, an international open-access journal serving rural and remote communities. She provides editorial assistance to authors, reviewers and editorial board members at each stage in the publication process and manages publication standards and editorial development. She has been working in scholarly publishing for 25 years.

Station Topic: Starting Research? Let's Talk Ethics



Dr Kath McFarlane

**Senior Research Fellow Health Practitioner
Research Capacity, CHHS**

In the Senior Research Fellow role, Kath provides support to all allied health staff and teams to build research capacity. Her background is in public health, and she completed a PhD titled: *Strengthening organisational capacity in health promotion and research practice: The experiences of an Aboriginal Community Controlled Health Service*. She is the deputy chair of the FNQ Human Research Ethics Committee. Kath also chairs the working group that organises the annual CHHS Research and Innovation Symposium (abstracts due 17 August).

Oral Presentations



Iron deficiency without anaemia in pre- and postmenopausal females: to scope or not to scope?

Presenter: Mirko Farruggia – Pre-vocational medical doctor

Co-authors:

Mirko Farruggia, Pre-vocational medical doctor (1), Rozemary Karamatic (SMO) (1), Zainul Azhar (AT) (1)

1. Townsville University Hospital

Abstract

Background: Iron deficiency, with anaemia (IDA) or without anaemia (ID), is a common indication for endoscopic investigation. However, guidance on when to perform endoscopy in premenopausal females with ID is limited, leading to potential overuse of resources.

Aim: To compare endoscopic diagnostic yield and malignancy rates between pre- and postmenopausal females with IDA and ID, and identify predictors of positive findings.

Methods: This retrospective cohort study included 535 females (≥ 15 years) referred for endoscopy at a regional Queensland hospital (2021–2024). Patients were categorised by menopausal status and by the presence of anaemia. Outcomes included positive endoscopic yield (clinically relevant gastrointestinal pathology) and the detection of malignancy. Logistic regression identified independent predictors.

Results: Among 535 patients, 305 (57%) had IDA and 230 (43%) had ID. Premenopausal ID patients had a significantly lower colonoscopy yield than their postmenopausal counterparts (12.4% vs 23.3%, $p=0.02$), with similar gastroscopy yields and low malignancy rates (1.8% vs 2.5%). In postmenopausal females, gastroscopy yield was significantly higher in IDA compared to ID (67.6% vs 46.7%, $p<0.01$). Independent predictors of positive endoscopic yield included postmenopausal status and anaemia. No significant predictors of malignancy were identified, and overall malignancy rates remained low across groups.

Conclusion: Premenopausal females with ID demonstrate low diagnostic yield and malignancy rates, supporting a more selective, individualised approach to endoscopy. In contrast, postmenopausal status and anaemia are associated with higher yield, reinforcing current practice for routine investigation in these groups. These findings may help optimise resource allocation and reduce unnecessary procedures.



Emergency department care for women presenting with pelvic pain: a scoping review of drivers of presentation, care patterns, and barriers to optimal management

Presenter: Mia White – Medical student

Co-authors:

Mia White, Fifth year student of MBBS (Honours) (1), Dr Natalie Drever, MBBS, FRANZCOG (1,2), Dr Vinay Gangathimmaiah, Masters of Public Health, FACEM (3,4), Dr Zinat Mohammadpour, PhD (1), Dr Madison Bailey, MBBS (Honours) (5)

1. College of Medicine and Dentistry, James Cook University, Cairns
2. Department of Obstetrics and Gynaecology, Cairns Hospital
3. College of Medicine and Dentistry, James Cook University, Townsville
4. Department of Emergency Medicine, Townsville University Hospital
5. Gold Coast University Hospital

Abstract

Background: Persistent pelvic pain (PPP) is pelvic pain lasting ≥ 6 months that is not exclusively associated with menstruation, intercourse, or pregnancy. Affecting up to one in four women globally, PPP is recognised by the World Health Organization as a neglected reproductive health morbidity. Patients with PPP often experience ED representations, prolonged healthcare journeys, and fragmented care, contributing to patient distress, clinician uncertainty, and potentially avoidable healthcare utilisation.

Aim: To map barriers and facilitators influencing acute care for women presenting with PPP.

Methods: This scoping review follows Joanna Briggs Institute methodology. Studies examining ED or acute care presentations for pelvic pain, excluding pregnancy-related, malignant, and acute surgical causes, were identified. Only primary original research was included. Studies were independently screened by three reviewers and synthesised using a socioecological framework across patient, clinician, organisational, and system levels.

Results: Analysis is ongoing, with final synthesis to be completed before conference presentation. Preliminary findings demonstrate persistent ED utilisation despite healthcare engagement, with 84% of patients reporting annual primary care attendance and 73% having a regular gynaecologist. Compared with non-PPP cohorts, patients with PPP demonstrated higher prior ED utilisation and more frequent non-diagnostic investigations. Recurring barriers included clinician uncertainty following exclusion of acute pathology, limited confidence, fragmented referral pathways, and restricted access to multidisciplinary care. Patients frequently described feeling dismissed, unheard, or uncertain about management.

ED utilisation among patients with PPP reflects interacting patient, clinician, organisational, and system-level barriers. This review will provide a comprehensive map to inform pathways of care to improve patient outcomes and reducing avoidable ED presentations.



Psychosocial Impacts of Adenomyosis: Findings from a Scoping Review and National Australian Survey

Presenter: Sarah McDonnell– Medical Student

Co-authors:

Sarah McDonnell (MBBS6 Honours Student JCU)(1), Associate Professor Tracey Ahern (PhD) (2), Dr Madelyn Pardon (PhD)(2)

1. James Cook University, Townsville, Bebegu Yumba Campus. College of Medicine and Dentistry.
2. James Cook University, Townsville, Bebegu Yumba campus. College of Healthcare Sciences, Division of Tropical Health and Medicine. Townsville, Australia.

Abstract

Background: Adenomyosis is a chronic gynaecological condition associated with pelvic pain, heavy menstrual bleeding, fatigue, and reduced quality of life. Despite increasing recognition of its physical symptoms, its broader psychosocial impacts remain poorly understood.

Aim: To map existing literature on the psychosocial experiences of women with adenomyosis and investigate these impacts within a national Australian population.

Methods: A scoping review was conducted in accordance with the PRISMA-ScR framework. Five databases were systematically searched without date restrictions. Findings informed a national cross-sectional online survey of Australian women with adenomyosis. The survey, adapted from the Endometriosis Impact Questionnaire, assessed physical, psychological, social, educational, and relationship impacts. Statistical analyses included t-tests, correlations, and regression modelling.

Results: Sixteen studies met inclusion criteria and identified significant impacts across psychological wellbeing, intimate relationships, daily functioning, and quality of life. The national survey received 1,116 responses, with 903 included in analysis, making it one of the largest studies of adenomyosis globally. Psychological and social domains demonstrated the greatest burden. Women with coexisting gynaecological conditions reported significantly greater psychosocial impact, while longer diagnostic delay was associated with increased burden across multiple domains. Rural participants also reported significantly greater psychological burden than metropolitan participants. The adapted survey demonstrated excellent reliability (Cronbach's $\alpha = 0.807\text{--}0.928$).

Conclusion: Adenomyosis is associated with substantial psychosocial burden extending far beyond physical symptoms. Findings highlight the need for earlier diagnosis and holistic, patient-centred care that addresses psychological, social, and functional wellbeing alongside symptom management, particularly for women living outside metropolitan centres.



Bridging the Simulation Gap: Low-cost 3D-printed procedural skills training in a regional health service

Presenter: Preethi George Pandeth– Medical Registrar

Co-authors:

Preethi George Pandeth, MBChB (1), Alison Huynh, MD (1)

1. Department of Anaesthesia, Mildura Base Public Hospital

Abstract

Background: Regional hospitals often have limited access to procedural skills training resources, particularly where commercial simulation equipment is costly or difficult to obtain. Governance concerns regarding variation in technique and aseptic practice highlighted the need for a safe, standardised training environment. 3D printing may offer a practical way to develop low-fidelity models reflecting local needs.

Aim: To assess feasibility, reproducibility and cost of locally produced 3D-printed procedural skills models, and evaluate usability, educational value and learner confidence.

Methods: This pilot mixed-methods study is being conducted at a regional health service.

Locally developed low-fidelity 3D-printed models are being introduced for procedural skills teaching, focusing initially on ultrasound-guided vascular access.

Junior doctors, registrars and clinical staff will complete pre- and post-session questionnaires. Outcomes include self-reported confidence, skill, understanding and preparedness using Likert-scale items.

Post-session evaluation will assess usefulness, confidence after training and educational value.

Free-text responses will be reviewed to identify themes, strengths, limitations and suggestions.

Cost and feasibility will be described. By the conference date, pilot sessions and analysis are expected.

Results: At submission, model development is complete and implementation is due to commence. Preliminary results will report participant numbers, changes in confidence and competence, educational value ratings, qualitative feedback, and cost compared with commercial equipment.

Conclusion: Low-fidelity 3D-printed models may improve access to procedural training by providing a safe, standardised environment for clinicians to practise technique and aseptic principles. This may support consistent training and contribute to safer care in regional settings.



Low-value Venous Blood Gas Use in Emergency Departments: Preliminary scoping review results

Presenter: Simoni Shirwadkar– Medical student

Co-authors:

Simoni Shirwadkar, MBBS 5 (1), Associate Professor Joseph Moxon, Principal Research Fellow, PhD (1), Dr Vinay Gangathimmaiah, FACEM, Emergency Physician, Senior Staff Specialist (2)

1. College of Medicine and Dentistry, James Cook University
2. Townsville University Hospital

Abstract

Background: Low-value care encompasses practices that are inefficient, ineffective and provide minimal benefit to patients, representing a significant burden on healthcare systems globally. Venous blood gas (VBG) analysis is a commonly used point-of-care test in emergency departments (ED), yet the existing guidelines are limited to six indications and use in non-critical conditions is governed by clinician discretion. This paucity of governance increases likelihood of test overuse and risks unnecessary harm to patients, thus constituting low-value care. No review to date has explored low-value VBG use in ED settings.

Methods: Five databases (MEDLINE, CINAHL, Scopus, EMCARE, Web of Science) were searched from inception to May 2026. Search strategy was developed with a health sciences librarian. Eligible studies were peer-reviewed English-language articles, examining low-value VBG use in adult ED populations (≥ 18 years old).

Results: The literature search identified 194 records; 13 underwent full-text screening and 4 met the inclusion criteria – reflecting a critical evidence gap. ED clinicians across Australia and New Zealand identified VBG as the second most likely test to be used in a low-value manner. Two Australian audits found only one-third of VBGs met appropriate use criteria, with targeted educational intervention achieving a one-third reduction in VBG ordering.

Discussion: Despite the prevalence of VBG testing, evidence surrounding appropriate use in non-critical situations is virtually absent. The limited available literature suggests low-value VBG use is ubiquitous but modifiable with targeted intervention, highlighting an urgent need for primary research to generate evidence supporting development of comprehensive VBG ordering guidelines in the ED.



Assessing Antigen-Induced T-Cell Responses Using HTS-RTqPCR

Presenter: Jasmeen Kaur- Medical student

Co-authors:

Jasmeen Kaur, Bachelor of Medicine, Bachelor of Surgery Undergraduate student Year 3 (1), Dr Daniel Browne (1)

1. College of Medicine and Dentistry, James Cook University

Abstract

SARS-CoV-2-specific immune exposure is now widespread in Australia, arising from vaccination, infection, or both. However, the durability of population-level humoral and cellular immunity to SARS-CoV-2 remains poorly characterised. This uncertainty is particularly relevant in regional Australian settings such as Far North Queensland (FNQ), where high population mobility, the region's role as a major healthcare hub, and the presence of regional, remote, and disadvantaged communities may increase vulnerability to future SARS-CoV-2 outbreaks. Characterising both humoral and cellular immunity is essential for understanding the durability of long-term immune protection. However, conventional methods for assessing cellular immunity, such as ELISpot and flow cytometry, are costly and resource-intensive, limiting their utility for large-scale immune surveillance.

During my summer research bursary, I learned and applied a recently developed high-throughput screening RT-qPCR (HTS-RTqPCR) assay designed for cellular immune surveillance. This assay characterises SARS-CoV-2-specific cellular immunity by quantifying T-cell IFN- γ mRNA expression following stimulation with SARS-CoV-2-specific peptide epitopes. I isolated peripheral blood mononuclear cells (PBMCs) from whole blood and assessed donor cellular immune responses. This presentation will describe the HTS-RTqPCR methodology and its application to future immunological surveillance studies, including TropCOVID, which aims to determine the durability of population-level SARS-CoV-2 immunity in FNQ. I will also outline plans to optimise this technique to improve efficiency, scalability, and cost-effectiveness.



Value-based use of blood cultures in the Townsville University Hospital Emergency Department

Presenter: Amy Weber– Medical student

Co-authors:

Amy Weber, (MBBS6) (1), Joseph V. Moxon, (PhD) (1), Vinay Gangathimmaiah, (FACEM) (2)

1. College of Medicine and Dentistry James Cook University

2. Department of Emergency Medicine Townsville University Hospital

Abstract

Background: Blood cultures (BCs) are critical for the management of sepsis in the emergency department (ED) but are frequently ordered without a clear clinical indication, contributing to patient harm through false-positive results, unnecessary investigations, and increased healthcare resource utilisation. Value-based healthcare (VBHC) promotes testing that meaningfully informs care while minimising harm. In this context, a value-based BC is one obtained out of reasonable likelihood of sepsis. In the absence of explicit guidelines, sepsis-related scoring tools—including the modified Shapiro Rule (mSR), Systemic Inflammatory Response Syndrome (SIRS) criteria, and the quick Sepsis-related Organ Failure Assessment (qSOFA) score—offer objective means of assessing whether BC use aligns with VBHC principles. Examining current BC practices in the Townsville University Hospital Emergency Department (TUH ED) is necessary to characterise strengths and shortcomings to subsequently inform further study, improvements and guideline development to optimise patient care.

Aim: To evaluate the value-based use of BCs in the TUH ED using scoring tools.

Methods: A retrospective chart review was conducted for immunocompetent adult patients who had a BC performed in ED during 2024. Demographic, clinical, and pathology data were used to calculate mSR, SIRS, and qSOFA scores. BCs were classified as value-based if a score of ≥ 2 was met using any tool. Statistical analysis using SPSS will include descriptive statistics to quantify the proportion of value-based BCs, with secondary analyses comparing the performance of the scoring tools and evaluating relevant differences in subgroups.

Results: The study is currently in the analysis phase (at the time of abstract submission). Results will be available by the time of presentation.



Hirayama Disease: A Rare Cause of Unilateral Distal Upper Limb Atrophy in a Young Male

Presenter: Keshav Nagpal- NQ IMG Prep Medical Practitioner

Co-authors:

Keshav Nagpal MBBS (1), Rohan Raj MD (2), Neha Boski MD, FRCR (3)

1. Townsville University Hospital (Queensland, Australia)

2. Memorial Hospital at Gulfport (MS, USA)

3. Motherland Hospital, (Noida, India)

Note on Case Study Content: To maintain patient confidentiality, the case presentation details have been intentionally omitted from this abstract to ensure complete de-identification and adherence to ethical and privacy standards.



CpG-Level DNA Methylation Differences Between Filipino ULA and ULP Cleft-Affected Tissue Phenotypes

Presenter: Ioannis Chatzipapas- Medical student

Co-authors:

Ioannis Chatzipapas, Medical Student (1), Daniel J. Browne, PhD (1), Kevin Dudley, PhD (2), Erika de Guzman, BBS (3), Doris Pierce, PhD (1), Ulf Schmitz, PhD (4, 5, 6), Siu Wai Choi, PhD (7), Justin Curtin, MB BS, FRACDS(OMS), FRCSEd, PhD (1)

1. College of Medicine and Dentistry, James Cook University, Cairns, QLD, Australia 2. Faculty of Science, School of Biology & Environmental Science, Queensland University of Technology 3. Australian Translational Genomics Centre, Translational Research Institute, Queensland University of Technology 4. Computational Biomedicine Lab, College of Science and Engineering, James Cook University, Townsville 5. Centre for Tropical Bioinformatics and Molecular Biology, Australian Institute of Tropical Health and Medicine, James Cook University, Cairns 6. Centenary Institute, The University of Sydney, Camperdown, NSW 7. Department of Orthopaedics and Traumatology, Faculty of Medicine, The University of Hong Kong, Pok Fu Lam, Hong Kong

Abstract

Background: Non-syndromic orofacial clefts are heterogeneous congenital anomalies with genetic, environmental and epigenetic contributors. However, the molecular basis of variation between cleft subtypes remains incompletely understood, particularly in underrepresented populations.

Aim: To determine whether CpG-level DNA methylation profiles differ between unilateral lip alone (ULA) and unilateral lip and palate (ULP) cleft-affected tissue.

Methods: Illumina EPIC v2 methylation-array data from a North Queensland-led Filipino cleft cohort were analysed. Following preprocessing and sample-type assessment, differential methylation between ULA (n=8) and ULP (n=11) tissue samples was analysed using limma on M-values. Significant CpGs were evaluated using FDR and Bonferroni correction, missingness filtering, visual inspection, annotation, gene ontology testing and sensitivity analyses adjusting for sex and family history.

Results: Sample-type assessment supported tissue-only phenotype analysis. Initial ULP-versus-ULA modelling tested 868,280 CpGs and identified 3,131 FDR-significant CpGs, predominantly hypomethylated in ULP. Following strict missingness filtering, 738,173 CpGs were retained, with 319 FDR-significant and 3 Bonferroni-significant CpGs. Top-ranked CpGs visually separated ULA and ULP samples, and the Bonferroni-significant loci included one CpG at chromosome 16q24.1, near a FOX-family developmental genomic region. Adjustment for sex and family history yielded a similar pattern of differential methylation, with 1,456 FDR-significant and 3 Bonferroni-significant CpGs identified. No gene ontology categories remained significant after FDR correction.

Conclusion: This analysis identified consistent CpG-level methylation differences between ULA and ULP cleft-affected tissue in a Filipino cohort. Findings support phenotype-associated epigenetic variation and contribute to characterising the cleft methylome in an underrepresented population. Region-level validation is warranted before pathway-level or clinical interpretation.



“Speak as if your words echo because they do”: A qualitative analysis of medical students learning following parent-led teaching in FaST-ER.
Presenter: Charlotte Bulat- Medical student

Co-authors:

Charlotte Bulat, 3rd year medical student* (1) Autumn Flint, 5th year medical student* (1) Aisha Bryan, Clinical Nurse (2) Dr Mohan Swaminathan, Specialist Neonatologist & Paediatrician, Senior Staff Specialist Paediatrician, senior lecturer (1, 3) Dr Torres Woolley, Evaluation Coordinator, PhD (1) Dr Tarun Sen Gupta, MBBS, FRACGP, FACRRM, PhD (4) Dr Guan THH Koh, Professor, BA Hons(Oxon) MA(Oxon) MBBChir(Cantab) MD(Cantab) Cert Hlth Mgmt (QUT) FRCPCH FRACP (1)

*Equal first authors

1. College of Medicine & Dentistry, James Cook University
2. Digital Health Trainer Digital Health Clinical Services, Cairns Hinterland Hospital and Health Service
3. Cairns Hospital, Queensland Health
4. Head Townsville Clinical School; Dean and Academic Head, Medicine (Acting)

Abstract

Background & Aim: Family-Centred Care (FCC) recognises parents as essential partners in healthcare. The FaST-ER (Families and Students Tutorial-Evaluation Research) parent-led teaching session was developed to enhance JCU medical students’ understanding and future practice of FCC.

Methods: A qualitative study was conducted with JCU fifth-year medical students participating in the inaugural FaST-ER tutorial. Following the tutorial, students completed two open-ended survey questions exploring key lessons learned from parents and anticipated impacts on future practice. Responses were analysed using reflexive thematic analysis.

Results: 160 students attended the session. Ninety-three (58%) completed the post-session survey, generating 113 free-text responses from 81 students. Analysis identified eight interconnected themes (>1 themes in 4 responses): (1) Empathy and Human Connection (n=24); (2) Partnership and Shared Decision-Making (n=15); (3) Communication Matters (n=16); (4) Small Acts Make a Big Difference (n=16); (5) Long-Term Trauma and Grief (n=14); (6) Hope and Emotional Support (n=8); (7) Parents as Advocates (n=8); and (8) Professional Identity Formation (n=18). Representative comments included: “Speak as if your words echo because they do”; “Parents are invaluable advocates for their child—trust their instincts”; “It is very important to be sensitive and empathetic”; “I will carry these lessons into my future practice.”

Conclusions: Parent-led teaching provided a transformative learning experience. Students demonstrated a clear learning of FCC principles and commitment to incorporating them into future practice. The overarching finding was recognition of the importance of relational competence alongside technical competence. Parent educators can potentially contribute to students' professional identity formation and development of future family-centred doctors.



FaST-ER: Impact of Parent-Led Teaching on Medical Student Empathy and Family-Centred Care

Presenter: Autumn Flint- Medical Student

Co-authors:

Autumn Flint, 5th year medical student* (1) Charlotte Bulat, 3rd year medical student* (1) Aisha Bryan, Clinical Nurse (2) Dr Mohan Swaminathan, Specialist Neonatologist & Paediatrician, Senior Staff Specialist Paediatrician, senior lecturer (1, 3) Dr Torres Woolley, Evaluation Coordinator, PhD (1) Dr Tarun Sen Gupta, MBBS, FRACGP, FACRRM, PhD (4) Dr Guan THH Koh, Professor, BA Hons(Oxon) MA(Oxon) MBBChir(Cantab) MD(Cantab) Cert Hlth Mgnt (QUT) FRCPCH FRACP (1)

***Equal first authors**

1. College of Medicine & Dentistry, James Cook University
2. Digital Health Trainer Digital Health Clinical Services, Cairns Hinterland Hospital and Health Service
3. Cairns Hospital, Queensland Health
4. Head Townsville Clinical School; Dean and Academic Head, Medicine (Acting)

Abstract

Background: Family-centred care (FCC) is a cornerstone of high-quality paediatric practice. Parent-led teaching can strengthen FCC principles among healthcare professionals and students but remains underutilised in medical education.

Aim: To evaluate the impact of a structured parent-led teaching session, Families and Students Together – Evaluation Research (FaST-ER), on medical students' empathy and intention to adopt FCC principles.

Methods: Fifth-year James Cook University medical students attended a tutorial delivered by parents of an ex-24-week premature infant. Participants completed pre- and post-session surveys incorporating the Jefferson Scale of Empathy© (JSE)⁴ and seven FCC-related questions. Pre-post differences were analysed using paired-samples t-tests and Cohen's-d.

Results: Of 160 attendees, 93 completed post-session surveys and 77 provided matched JSE responses. Mean JSE scores increased significantly from 98.5 to 104.3 following FaST-ER representing a large effect size ($p < 0.001$, Cohen's $d = 1.4$).

Significant improvements were observed across all FCC domains, including: understanding families' emotions, recognising the therapeutic value of empathy, perspective-taking, confidence discussing difficult clinical situations, responding to parental distress, maintaining hope (all $p < 0.001$); and appreciating the long-term psychological impact of childhood illness on families, and valuing parental expertise regarding their child ($p < 0.005$).

Post-session, 100% of students reported improved understanding of the family experience, 97.5% increased empathy, 96.3% anticipated an influence on future clinical practice, and 93.8% recommended ongoing parent-led teaching.

Conclusion: Parent-led FCC teaching significantly improved students' empathy, communication confidence, understanding of family experiences, and intention to practice FCC. Integrating family voices into medical curricula may potentially be a transformative and scalable strategy for developing family-centred clinicians.



Miles apart: Rural-Metro gaps in orthopaedic research across Queensland

Presenter: Jill Myatt- Medical Student

Co-authors:

Stephanie D'Elia(1), Cate Ostwald (1), Jill Myatt (1), Zaid Ali (1,2) & Simon Fleming (1,2)

1. School of Medicine, Rural Clinical Unit, University of Queensland, Rockhampton, Australia

2. Rockhampton Base Hospital, CQHHS, Queensland

Abstract

Background: Over the past 25 years, efforts have focused on improving equity in healthcare access across rural and regional Australia. This study aimed to evaluate differences in orthopaedic research output and impact between rural/regional and metropolitan centres in Queensland using bibliometric analysis. The bibliometric analysis of academic literature can provide useful insights into trends, volume, and impact of research, identifying deficits in output.

Methods: An affiliation-based search of Elsevier Scopus identified publications from Queensland hospitals between 2000 and 2025. Search terms included “orthopedic* OR orthopaedic* AND [hospital title].” Bibliometric data extracted included number of publications, citation counts, journal impact factor (JIF), and H-index. Journal metrics were sourced from Clarivate Journal Citation Reports and SCImago Journal Rank where required.

Results: A total of 775 publications were identified, 101 (13%) from rural/regional centres and 674 (87%) from metropolitan centres. Metropolitan centres demonstrated higher research output and impact across all metrics, with 567% more publications, 103.7% higher average citations, 88.5% higher H-index, and 11.9% higher average JIF.

Conclusions: Metropolitan centres outperform rural/regional centres in orthopaedic research output and impact. However, these findings should be interpreted in the context of substantial differences in workforce size, funding, infrastructure, and institutional research capacity between settings. The observed disparities likely reflect structural inequities rather than differences in academic engagement or capability. As regional Queensland continues to experience rapid population growth, there is a need for targeted investment in research infrastructure and collaborative networks to ensure equitable representation of rural populations in orthopaedic research.



The Use of Rurality Models in Queensland General Practitioner-Led Primary Care Accessibility Research: A Scoping Review

Presenter: Aidan Hughes– Medical student

Co-authors:

Aidan Hughes (MBBS 4) (1), Imogen Clark (MBBS 4) (1), Zinat Mohammadpour (PhD, MSc, BSc) (1)

1. College of Medicine and Dentistry, James Cook University

Abstract

Background: Geographic inequities in access to primary health care remain a persistent challenge within the Australian health system, particularly in Queensland, where much of the population resides outside the capital across a geographically diverse landscape. Research examining health service access relies on area-based classifications, that may not adequately reflect the access disparities faced by rural communities.

Aim: To explore how rurality classifications are operationalised in Queensland General Practitioner (GP)-led primary care research, and to examine the implications for interpreting health service access and availability.

Methods: This scoping review was conducted according to PRISMA-ScR guidelines. MEDLINE, PubMed, CINAHL, Scopus, and Web of Science, were searched from inception to mid-January 2026. Included studies examined Queensland GP-led primary care, utilising rurality analytically. Screening and data extraction were conducted independently by two investigators. The rurality model, justification, analytic purpose, equity considerations, and reported limitations were thematically synthesised.

Results: Twenty-three studies were included. Area-based classifications were most often utilised, while accessibility-based approaches incorporating drive-time modelling and floating catchment methods were used less frequently but provided more direct measures of primary care access. Only five studies fully justified their choice of rurality model. Reported limitations included reliance on broad geographic categories that assume uniform access within regions, and omit important determinants of access including transport, service capacity, financial burden, and cultural factors.

Conclusion: Current approaches to measuring rurality inadequately capture the complex nature of primary care access in Queensland. Future research should consider utilising multidimensional models that better reflect community need, existing service availability, and acceptability.



Intramuscular Cranial Extension of the Small Saphenous Vein with Deep Femoral Triangle Termination: A Donor Case Report and Literature Synthesis

Presenter: Pravnoor Singh Mundra– Medical Student

Co-authors:

Pravnoor Singh Mundra, Year 4 Medical Student (1), Monika A Zimanyi BSc (hons), PhD Professor (Associate) (1), Dr Amanda J. Meyer, BSc(Hons) PhD FHEA Senior Lecturer (1)

1. College of Medicine and Dentistry, James Cook University

Abstract

Background: The small saphenous vein (SSV) demonstrates significant anatomical variability in its proximal course and termination. Cranial extensions and Giacomini-type continuations are clinically important due to their implications in venous reflux, duplex ultrasonography, and endovenous intervention planning.

Aim: To describe a rare SSV variant identified during donor dissection featuring an intramuscular cranial extension and deep femoral triangle termination.

Methods: A donor anatomical dissection was performed to trace and document an anomalous superficial venous pathway from the lateral malleolus to the proximal thigh. Landmark-based mapping and linear measurements were used to define the venous course and its anatomical relationships to surrounding musculature and major venous junctions.

Results: The SSV was identified at the lateral femoral epicondyle and continued proximally into the short head of biceps femoris, traversing an intramuscular segment before re-emerging in the posterior thigh. A single unbranched venous trunk extended from the lateral malleolus to the femoral triangle, where it communicated with the femoral venous system. The profunda femoris vein joined the femoral vein 42 mm proximal to this communication, while the great saphenous vein entered 28 mm distal at the saphenofemoral junction. This configuration aligns with a high/proximal SSV termination variant with additional atypical intramuscular morphology.

Conclusion: This case demonstrates a rare hybrid SSV variant combining cranial extension, intramuscular traversal through biceps femoris, and femoral triangle deep-system termination. Recognition of such anatomy is important for duplex mapping and surgical planning, as unrecognised variant pathways may contribute to incomplete treatment or recurrent venous insufficiency. This report expands current understanding of Giacomini-type and proximal SSV variants.



Post-polypectomy bleeding in a regional endoscopy service: risk factors, management, and outcomes

Presenter: Christopher James Shephard – Advanced Trainee – Gastroenterology & Hepatology

Co-authors:

Christopher James Shephard (BPharm MBBS MMed) (1,2), Montri Gururatsakul (MD PhD) (1,2)

1. Department of Gastroenterology, Cairns Hospital, Queensland, Australia
2. College of Medicine and Dentistry, James Cook University, Queensland, Australia

Abstract

Background: Post-polypectomy bleeding (PPB) occurs in 0.3–1.0% of standard polypectomies, and 4–10% of advanced resection procedures, including endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD). Risk factors include lesion size, proximal location, antithrombotic therapy, and comorbidities.

Aim: To evaluate PPB risk factors, management, and outcomes, and identify opportunities to improve endoscopic practice and patient care.

Methods: Retrospective audit of consecutive PPB presentations in the Cairns and Hinterland region over 64 months from January 2021, identified through medical records and incident reports.

Results: 54 PPB presentations occurred in 49 patients (mean age 61.6 years, 73.5% male). 34.7% of events followed planned therapeutic large polypectomies. Bleeding risk factors were present in 32/49 patients, and 20/49 were receiving antithrombotic therapy. Lesions ranged from 4–>80 mm (endoscopist-reported), most commonly involving the rectum/sigmoid colon. Resection techniques comprised hot snare EMR (29 patients), cold snare EMR (3), ESD (3); and conventional hot/cold snare. Prophylactic haemostatic measures were applied in all ESD cases but inconsistently in EMR. Eighteen presentations occurred <24 hours; mean presentation time was 106.4 hours (range 0.017–409.25 hours). Most required hospitalisation, including two intensive care admissions for haemodynamic instability. Eighteen received blood transfusion. Five patients had recurrent bleeding <30 days post-polypectomy. Endoscopic therapy (predominantly haemoclips) was performed in 21/23 repeat endoscopies. One deep mural injury post-EMR was managed conservatively. One patient required surgery for transverse colonic intramural haematoma with perforation following cold snare polypectomy.

Conclusion: PPB appeared infrequent despite advanced resection techniques. Hot snare EMR was associated with the highest bleeding burden. Inconsistent prophylactic haemostasis suggests potentially preventable events. Rare but significant complications of conventional and advanced polypectomy were observed.



Biological and Clinical Determinants of the Immunotherapy Response in Child-Pugh B Advanced Hepatocellular Carcinoma

Presenter: Robert Field- Medical student

Co-authors:

Robert Field (1), Eric Kalo (1), Rozemary Karamatic (1,3), Ulf Schmitz (1,2), Golo Ahlenstiel (4,6,7), Lionel Hebbard (1,2,3,4,5)

1. Department of Biomedical Sciences and Molecular and Cell Biology, College of Medicine and Dentistry, College of Science and Engineering, James Cook University

2. Centre for Tropical Bioinformatics and Molecular Biology, James Cook University, Cairns

3. Gastroenterology and Hepatology, Townsville University Hospital

4. Storr Liver Centre, Westmead Institute for Medical Research, Westmead Hospital and University of Sydney

5. Australian Institute for Tropical Health and Medicine, Townsville

6. Blacktown Clinical School and Research Centre, School of Medicine, Western Sydney University, Blacktown

7. Blacktown Hospital, Western Sydney Local Health District, Blacktown

Abstract

Background: Atezolizumab-bevacizumab and other immunotherapy regimens have improved survival in advanced hepatocellular carcinoma (HCC), yet clinical trials and subsidised access programs largely exclude Child-Pugh B (CP-B) patients. CP-B treated with immunotherapy demonstrates heterogeneous rather than uniformly poor outcomes, suggesting Child-Pugh status alone is insufficient for patient selection. Both European and American societies for liver disease have called for a developed evidence base for immunotherapy in patients with CP-B HCC.

Aim: To synthesise the clinical and tumour-biological determinants of immunotherapy response in CP-B HCC that may refine immunotherapy patient selection beyond Child-Pugh classification.

Methods: Narrative review with searches across PubMed and Scopus using developed keywords relating to HCC, immunotherapy, CP-B status, and hepatic decompensation.

Results: Inferior CP-B outcomes are driven predominantly by hepatic decompensation rather than tumour-intrinsic resistance or adverse events, which occur at comparable rates to Child-Pugh A. Decompensation risk is incompletely captured by Child-Pugh status and is better characterised by ALBI grade, suPAR, and decompensation trajectory. Cirrhosis-associated immune dysfunction produces an immunosuppressive microenvironment that PD-1/PD-L1 blockade does not reverse and requires further evaluation in CP-B patients. Tumour immunophenotypes and liquid biopsy markers such as ctDNA and GPC3 offer discriminative potential but remain unvalidated in CP-B populations.

Conclusion: Hepatic decompensation risk, rather than Child-Pugh class alone, should anchor patient selection for immunotherapy in CP-B HCC. Dynamic hepatic reserve assessment and emerging immune biomarkers may identify the CP-B patients most likely to benefit from immunotherapy. This review supports further retrospective cohort studies for factors that modulate immunotherapy response in CP-B patients.



The Impact of Remoteness on Maternal and Perinatal Outcomes in Queensland

Presenter: Pema Hayman- Medical student

Co-authors:

Pema Hayman (1), Dr Cecelia O'Brien, PhD (2), A/Prof Clare Heal, PhD (1)

1. College of Medicine and Dentistry, James Cook University

2. Women's Health Circle; College of Medicine and Dentistry, James Cook University

Abstract

Introduction: Women in rural and remote Australia experience significant maternal and perinatal health disparities compared to their metropolitan counterparts. Geographical isolation introduces many obstacles to accessing timely obstetric care, which includes those targeted at preventing pre-term birth and pre-eclampsia. National reporting demonstrates higher rates of pre-term birth and other neonatal and maternal morbidity in rural and remote populations.

Aim: Quantify the extent to which geographical isolation is an independent contributor to obstetric outcomes and at what level/s of obstetric care it primarily impedes.

Methods: 2021 to 2024 antenatal and neonatal data from the Perinatal Data Collection, a state data registry, has been collected. A generalised linear model will be used to model the association between remoteness and all dependent variables including type of antenatal care, engagement in antenatal care, and clinical outcomes (i.e. pre-eclampsia, pre-term birth, low birth weight).

Results: Data from over 240,000 births between 2021 and 2024 is in the process of being analysed. Preliminary results can be expected in mid-2026. The primary outcomes of this study will be the accessibility and characteristics of antenatal care in rural and remote Australia and the rates of pre-term birth and hypertensive diseases of pregnancy in these populations.

Conclusion: Preliminary results are pending, but we expect that with increasing remoteness, there will be delayed first trimester screening and antenatal care which will contribute to higher rates of pre-eclampsia, pre-term birth and low birth weight infants.



Evaluating the Appropriateness of Coagulation Studies in Adults Presenting to The Townsville University Hospital Emergency Department: A Retrospective Chart Review

Presenter: Taylor Edgley– Medical student

Co-authors:

Taylor Edgley (1), Vinay Gangathimmaiah (2) (FACEM), Joseph Moxon (PhD) (1)

1. College of Medicine and Dentistry, James Cook University

2. Department of Emergency Medicine, Townsville University Hospital

Abstract

Background: Diagnostic stewardship, which aims to deliver the right test for the right patient at the right time, is a rapidly evolving field and powerful tool for improving patient safety. It is a key principle of value-based medicine; a framework that challenges clinicians to weigh the benefit of an intervention against its cost, and identify contexts for low-value tests. Coagulation studies are among the most frequently ordered tests on admission to the Emergency Department (ED). The Australasian College for Emergency Medicine (ACEM) and the Royal College of Pathologists of Australasia (RCPA), supported by Choosing Wisely, suggest that coagulation studies should only be ordered in the ED under unique circumstances as an abnormal profile can often be predicted through history-taking and physical examination. While these guidelines have been disseminated in multiple countries, there is evidence that low-value coagulation studies continue to be ordered in the ED and often do not influence management.

Aim: To evaluate the appropriateness of coagulation testing at The Townsville University Hospital (TUH) ED.

Methods: A retrospective observational chart review will be conducted to identify the proportion of coagulation studies ordered for adult patients presenting to the TUH ED in 2025 that met evidence-based criteria for appropriateness, and explore contexts associated with low-value coagulation study use. Primary analysis will use descriptive statistics to characterise the overall cohort while secondary analysis will assess presenting characteristics that may have contributed to inappropriate coagulation test use.

Stage: Planning. Project protocol complete, ethics approval in progress. Site governance and PHA approvals pending.

Poster Presentations



Barriers to Detection of Myocardial Injury After Non-Cardiac Surgery in Regional Australian Hospitals: A Narrative Review

Presenter: Larissa Martin – Pre-vocational medical doctor

Co-authors:

Larissa Martin, MD, Master of Specialist Paramedic (Intensive Care) (1,2)

1. Junior Medical Officer, Hervey Bay Hospital, Wide Bay Hospital and Health Service, Queensland
2. Adjunct Lecturer, School of Rural Medicine, Charles Sturt University

Abstract

Background: Myocardial injury after non-cardiac surgery (MINS) is a common postoperative complication affecting approximately 12–18% of patients undergoing major non-cardiac surgery and is associated with increased mortality and adverse cardiovascular outcomes. Most cases occur without overt ischaemic symptoms, therefore detection relies largely on routine postoperative troponin surveillance. However evidence suggests implementation remains inconsistent and may be particularly challenging in regional hospitals due to workforce constraints, limited access to specialist services and resource limitations. Consequently, patients in regional and rural centres may be at risk of under-recognition of postoperative myocardial injury, potentially limiting opportunities for timely risk stratification, secondary prevention and specialist follow-up. This variation in practice raises concerns regarding inequitable detection and may contribute to disparities in perioperative and cardiovascular outcomes.

Aim: To identify and synthesise barriers to the detection of MINS in regional Australian hospitals and explore implications for perioperative care and patient outcomes.

Methods: A narrative review of literature relating to MINS and postoperative troponin surveillance in regional and rural settings was undertaken using PubMed, MEDLINE and Google Scholar.

Results: Identified barriers included the absence of standardised surveillance protocols, variable clinician awareness, uncertainty regarding management of postoperative troponin elevations, pathology funding constraints, restricted access to specialist services and workforce shortages.

Conclusion: The under-recognition of MINS in regional settings may represent an important but potentially modifiable contributor to disparities in perioperative outcomes. Addressing barriers to surveillance should be considered a priority for regional health services, with improved access to practical surveillance pathways offering opportunities for earlier identification of high-risk patients and more equitable delivery of evidence-based perioperative care.



Mapping Learning: A Scoping Review of Study Resources Used by Australian Medical Students

Presenter: Elijah Martins- Medical student

Co-authors:

Elijah Martins (1), A/Professor Anna Vnuk – MBBS DRANZCOG FRACGP MClined EdD FPAA (Cert) FANZAHPE (1), Dr Zinat Mohammadpour – PhD, MSc, BSc (1)

1. College of Medicine and Dentistry, James Cook University

Abstract

Background: Medical students use a range of resources for learning, including university-provided materials, peer-generated content, and online platforms. While the use of these resources has been extensively studied in medical education worldwide, there has been a need for comprehensive evidence specific to Australia. Furthermore, the impact of COVID-19 in accelerating the shift toward online learning and the rapid expansion of digital resources and generative AI highlight the need to understand contemporary study practices.

Aim: This study aimed to systematically review the literature on the resources used by Australian medical students and map how they are used throughout their degree.

Methods: A thorough search was conducted in Scopus, PubMed, MEDLINE, Web of Science, CINAHL, and ERIC. Peer-reviewed published articles were included in the study if they reported on the resources used by medical students in Australia. Each article was reviewed by two investigators for the screening and data extraction phases. Results were used to synthesise the evidence for the outcomes.

Results: The title and abstract review were completed for 1624 articles, of which 58 are undergoing full-text review. Preliminary results suggest that resource preferences vary by stage and purpose; students favour traditional materials for initial learning, but rely on interactive and online tools for revision. Additionally, clinical students favour more applied and self-directed methods/resources compared to preclinical years.

Discussion: These findings may inform resource allocation within universities, aligning it more with students' diverse needs. It is recommended that institutions consider implementing practices and/or subscriptions that facilitate interactive learning and self-directed study.



Intracranial Extension of Sinonasal Adenocarcinoma Presenting as a Presumed Olfactory Groove Meningioma: A Case Report

Presenter: Dr Kanako Brooke– Pre-vocational medical doctor

Co-authors:

Dr Kanako Brooke (1), Dr Piers Thomas, FRACS (1) , Dr Liam Coulthard, PhD (1)

1. Department of Neurosurgery, Townsville University Hospital

Abstract

Background: Tumours of the anterior skull base may present with non-specific neurological symptoms and can be difficult to distinguish radiologically. Sinonasal adenocarcinoma is a rare malignancy that may extend intracranially through the cribriform plate and mimic more common intracranial tumours such as olfactory groove meningioma.

Case presentation: We report a case of a 45-year-old previously well Indigenous man from Far North Queensland who presented with progressive headaches, diplopia, anosmia and personality change over two months. MRI demonstrated a large enhancing anterior skull base mass with bifrontal involvement and extension through the cribriform plate, initially interpreted as an olfactory groove meningioma.

Management: The patient underwent craniotomy and resection of the lesion, with intraoperative findings consistent with the provisional diagnosis; however, histopathological analysis revealed sinonasal adenocarcinoma.

Outcome and follow-up: Staging investigations demonstrated no distant metastatic disease, and multidisciplinary review favoured a primary intestinal-type sinonasal adenocarcinoma, with adjuvant radiotherapy recommended.

Conclusion: This case highlights an important diagnostic pitfall in anterior skull base pathology and emphasises that sinonasal malignancies should be considered in the differential diagnosis of lesions centred at the cribriform plate, particularly when imaging demonstrates paranasal sinus involvement.



Rapid Labor Progression in a Woman Requesting Cesarean After Previous Perinatal Loss: A Case Report on Trauma-Informed Care and Ethical Decision-Making

Presenter: Pravnoor Singh Mundra- Medical student

Pravnoor Singh Mundra, Year 4 Medical Student (1), Nichole Harvey, RN, RM, BN, MNSt, CritCareCert, GradCertTT, PhD Professor (Associate) (1)

1. College of Medicine and Dentistry, James Cook University

Abstract

Background: Perinatal loss can result in significant psychological trauma, including anxiety and tokophobia in subsequent pregnancies. These experiences may contribute to cesarean delivery on maternal request (CDMR) without medical indication. Current obstetric guidelines recommend trauma-informed counselling, shared decision-making, and individualized care when managing CDMR.

Aim: To examine how trauma-informed care and ethical decision-making guided management of maternal request for cesarean delivery following previous stillbirth during rapidly progressing labour.

Methods: This case study describes the management of a 33-year-old G2P1 woman with a history of term stillbirth who presented at 38+5 weeks in spontaneous labour requesting immediate cesarean delivery due to severe anxiety and fear of vaginal birth. Clinical management was analysed using principles of trauma-informed care and biomedical ethics.

Results: On admission, the patient was 5 cm dilated with reassuring fetal status. A trauma-informed approach was implemented, including validation of fears, continuous communication, multidisciplinary support, and a “double setup” strategy involving simultaneous preparation for emergency cesarean delivery while supporting labour progression. Within 45 minutes, labour progressed rapidly to full dilation, making vaginal delivery clinically safer than intrapartum cesarean delivery. Following urgent shared decision-making and informed consent, the patient proceeded with vaginal birth of a healthy male infant. Both mother and infant recovered well with psychological and postnatal support.

Conclusion: Trauma-informed care supported ethical, patient-centred obstetric management in this emotionally complex case while balancing autonomy, beneficence, and maternal-fetal safety.



Teenage births in Far North Queensland, Australia: trends, rurality, antenatal engagement, and postpartum contraception uptake

Presenter: Immogen Martin– Medical student

Co-authors:

Immogen Martin (1), Madeleine Johnston (MBBS) (2), Katarina Gomola (MBBS)(2), Natalie Drever (FRANZCOG) (1,2)

1. Cairns Clinical School, College of Medicine and Dentistry, James Cook University

2. Department of Obstetrics and Gynaecology, Cairns Hospital

Abstract

Background: Teenage birth rates in Australia have declined overall but remain disproportionately high in rural and very remote regions. In Far North Queensland (FNQ), adolescent pregnancy occurs within a context of geographic isolation, redistribution of maternity services, and a high proportion of Aboriginal and Torres Strait Islander populations. National datasets do not adequately capture region-specific care factors such as relocation for birth, patterns of antenatal engagement within regional referral systems, or the experiences of very young adolescents, who are often underrepresented in population-level analyses despite distinct demographic and care profiles.

Methods: A retrospective audit was conducted of all teenage births (≤ 19 years, ≥ 20 weeks' gestation) at Cairns Hospital between 2018 and 2024 ($n = 751$). Routinely collected perinatal data were analysed descriptively, including age, Aboriginal and Torres Strait Islander status, remoteness, antenatal engagement, smoking, birth outcomes, and postpartum contraception uptake.

Results: Teenage births declined by 16% during the study period, while births among adolescents aged <16 years remained stable at 5%. Most adolescents were from remote or very remote areas. Among those aged <16 years, 29% lived in very remote communities and 92% identified as Aboriginal and Torres Strait Islander, compared with 15% and 72% overall. Antenatal engagement was high, with a median of 8 visits and 82% attending by 20 weeks, although younger adolescents booked later (median 18 weeks). Relocation for birth occurred in 21% overall and 39% of those aged <16 years. Smoking prevalence remained high (31%). Caesarean section rates were low (17%), preterm birth occurred in 14%, and stillbirth rates were comparable to national estimates. Only 28% received postpartum contraception prior to discharge.

Conclusion: Adolescent pregnancy in FNQ is marked by substantial geographic and social complexity. Despite strong antenatal engagement and generally reassuring outcomes, smoking, preterm birth, and low postpartum contraception uptake remain key areas for improvement.



5-Fluorouracil Associated Myopericarditis Presenting as Acute Coronary Syndrome in a Regional Victorian Centre

Presenter: Ashail Silva- Medical Registrar

Co-authors:

Dr. Sampathawaduge Ashail Silva MD (1), Dr. Shiidheshwar Ravichandran MBBD (2)

1. Department of Cardiology, Latrobe Regional Health

2. Department of Medicine, Latrobe Regional Health

Abstract

Background: Fluoropyrimidine cardiotoxicity is a recognised complication of 5-fluorouracil (5-FU) chemotherapy and most commonly presents as coronary vasospasm or acute coronary syndrome (ACS). Inflammatory cardiotoxicity such as myocarditis or myopericarditis is less frequently described and may present a significant diagnostic challenge, particularly in regional centres with limited access to advanced cardiac imaging. **Aim:** To describe a case of suspected 5-FU associated myopericarditis presenting as ACS in a regional Victorian health service.

Case Description: A 49-year-old male with metastatic rectal adenocarcinoma presented with acute pleuritic chest pain and shortness of breath several days after receiving his first cycle of FOLFOXIRI chemotherapy. Initial electrocardiography demonstrated diffuse ST elevation. Troponin levels progressively increased, peaking at 2994 ng/L. Computed tomography pulmonary angiography excluded pulmonary embolism. The patient was initially managed as a non-ST elevation myocardial infarction and underwent coronary angiography, which demonstrated angiographically normal coronary arteries with normal left ventricular end-diastolic pressure. Transthoracic echocardiography revealed moderate to severe global left ventricular systolic dysfunction with an ejection fraction of 30–35%. No infective aetiology was identified. Differential diagnoses included chemotherapy-associated myopericarditis, coronary vasospasm secondary to 5-FU causing an ischemic event, and previously undiagnosed cardiomyopathy precipitated by chemotherapy. The patient was treated with colchicine, ibuprofen, and guideline-directed heart failure therapy, and was referred for tertiary cardiac magnetic resonance imaging.

Conclusion: This case highlights the diagnostic complexity of fluoropyrimidine-associated cardiotoxicity in regional practice. Inflammatory cardiotoxicity should be considered in oncology patients presenting with ACS-like symptoms following 5-FU therapy, particularly when investigations demonstrate non-obstructive coronary arteries and global ventricular dysfunction.



STEMI Mimics in Regional Practice: Diagnostic Challenges in Rural and Remote Medicine

Presenter: Sampathawaduge Ashail Silva– Medical Registrar

Co-authors:

Sampathawaduge Ashail Silva (1), Shenelie Silva (MBBS) (2)

1. Department of Cardiology, Latrobe Regional Health

2. Sir John Kotelawala Defence University, Sri Lanka

Abstract

Background: Acute ST-segment elevation on electrocardiography (ECG) commonly prompts urgent reperfusion pathways for presumed ST-elevation myocardial infarction (STEMI). In regional and rural settings, limited access to on-site cardiology, advanced imaging, and primary percutaneous coronary intervention can make differentiating STEMI from mimics particularly challenging.

Aim: To review common STEMI mimics encountered in regional practice and highlight practical diagnostic considerations for rural clinicians.

Methods: A narrative review of published literature and guideline recommendations was undertaken. Six conditions were reviewed: acute pericarditis/myocarditis, Takotsubo cardiomyopathy, hyperkalaemia, early repolarisation, left ventricular aneurysm, and left bundle branch block. Diagnostic features, clinical clues, and management implications were summarised.

Results: All six conditions can produce ECG findings that overlap with acute coronary occlusion, including ST-segment elevation, reciprocal changes, and elevated cardiac biomarkers. Distinguishing features included diffuse rather than territorial ST elevation, PR depression, atypical symptom patterns, preceding systemic illness, and discordance between ECG findings and angiographic results. In regional practice, diagnostic uncertainty may lead to unnecessary thrombolysis, avoidable interhospital transfer, or delayed treatment of alternative pathology.

Conclusion: Recognition of STEMI mimics is an essential skill in rural and regional medicine. Careful ECG interpretation, thorough clinical assessment, and early specialist discussion may improve diagnostic accuracy and reduce unnecessary resource use. Targeted education may further support clinicians in resource-limited settings.



Barriers to Cardiac Rehabilitation Uptake in Rural and Remote Australia: Lessons from the Northern Territory

Presenter: Sampathawaduge Ashail Silva– Medical Registrar

Co-authors:

Sampathawaduge Ashail Silva (1), Dr. Binita Duwadi (2), Shenelie Silva (3)

1. Department of Cardiology, Latrobe Regional Health

2. Department of Medicine, Royal Darwin Hospital

3. Faculty of Medicine, General Sir John Kotelawela Defence University, Sri Lanka

Abstract

Background: Cardiac rehabilitation (CR) is a cornerstone of secondary prevention following acute coronary syndromes, heart failure, and coronary revascularisation. Despite reducing mortality, hospital readmissions, and cardiovascular risk, participation remains low worldwide. Rural and remote populations experience additional barriers to access, contributing to ongoing cardiovascular inequities.

Aim: To synthesise contemporary evidence on barriers to CR participation in rural and remote Australia and identify strategies to improve access, with particular focus on the Northern Territory (NT).

Methods: A narrative review of published literature, policy documents, and guideline statements was undertaken. Relevant evidence relating to CR participation, rural health service delivery, Aboriginal and Torres Strait Islander health, telehealth, and alternative CR models was reviewed and synthesised through a rural health systems lens.

Results: Barriers to CR uptake occur across patient, clinician, and health system domains. Common barriers include low health literacy, financial constraints, transport difficulties, under-referral, limited program availability, workforce shortages, and geographic isolation. These challenges are amplified in the NT due to dispersed populations and long travel distances. Aboriginal and Torres Strait Islander peoples face additional cultural and structural barriers to engagement. Emerging evidence supports home-based, telehealth-delivered, and hybrid CR models, alongside community-led and culturally safe approaches, as effective strategies to improve participation.

Conclusion: Cardiac rehabilitation remains underutilised in rural and remote Australia despite strong evidence of benefit. Improving referral pathways, expanding flexible models of care, and strengthening partnerships with Aboriginal Community Controlled Health Organisations represent important opportunities to improve cardiovascular outcomes and reduce health inequities in the NT and similar settings.



A case of watermelon-induced hyperkalaemia presenting with cardiac syncope in an indigenous Australian woman with End-Stage renal failure.

Presenter: Farnaz Jahani- Basic Physician Trainee

Co-authors:

Farnaz Jahani, MD, Basic Physician Trainee (1), Shiidheshwar J Ravichandran, MBBS, Advanced Trainee (1,2,3), Sampathawaduge Ashail Silva, MD, Advanced Trainee (1,2,3)

1. Division of Medicine, Latrobe Regional Health, Traralgon
2. Monash Rural Health, Traralgon
3. Division of Medicine, Royal Darwin Hospital, Darwin

Abstract

Background: Hyperkalaemia is an acute life-threatening metabolic imbalance that is commonly seen in emergency departments. The primary cause is renal disease, but it also results from increased potassium intake in the diet, severe volume contraction, some medications, and other metabolic disturbances. We report a case of severe hyperkalaemia secondary to excessive watermelon consumption, presenting with syncope secondary to bradyarrhythmia in a haemodialysis-dependent patient.

Case presentation: A 38-year-old Indigenous Australian woman with end-stage kidney disease secondary to pre-eclampsia, managed with thrice-weekly haemodialysis, and a history of non-ischaemic cardiomyopathy presented following a witnessed syncopal episode while driving. Initial investigations revealed severe hyperkalaemia (serum potassium 7.8 mmol/L) with peaked T waves on electrocardiography. Despite standard medical treatment, her potassium level increased to 8.3 mmol/L and she subsequently developed symptomatic sinus bradycardia (heart rate 44 beats/min), sinus pauses, and a junctional escape rhythm associated with pre-syncope. Repeated treatment with intravenous calcium gluconate, insulin-dextrose, and nebulised salbutamol resulted in resolution of the bradyarrhythmia. Due to persistent severe hyperkalaemia, she was transferred to the intensive care unit for continuous renal replacement therapy, following which her potassium levels progressively improved. The patient reported adherence to all scheduled haemodialysis sessions and no recent medication changes. Further history revealed consumption of approximately half a watermelon daily for four weeks before presentation, with progressively elevated potassium levels noted during recent dialysis sessions.

Conclusion: This case highlights excessive watermelon consumption as a potentially overlooked contributor to life-threatening hyperkalaemia in susceptible patients with end-stage kidney disease. It also emphasises the importance of recognising hyperkalaemia-induced bradyarrhythmia as a reversible cause of syncope and the critical role of detailed dietary assessment in patients presenting with severe hyperkalaemia despite adherence to regular dialysis.



Post-operative Outcomes Following Below Knee Amputations at Townsville University Hospital

Presenter: Lauren Bosley- Pre-vocational medical doctor

Co-authors:

Dr Lauren Bosley (MBBS Hons) (1), Dr Jack Hopkins (MD) (1), Dr Jonathan Sheldon (FANZCA) (1)

1. Townsville University Hospital

Abstract

Background: Understanding post-operative outcomes following BKA is essential for evaluating treatment success. However, limited literature describes functional recovery after BKA, particularly in regional Australia.

Aim: To define demographics and post-operative outcomes of BKA patients at Townsville University Hospital (TUH). Secondary aims were to determine the prevalence of regional anaesthesia, emergency surgeries, prosthesis use and mortality in this cohort.

Methods: A retrospective cohort study of BKA patients at TUH between 1 July 2018 and 1 July 2024. Demographic factors, anaesthetic modality and post-operative outcomes including mobility and mortality were collected from medical records. Functional outcomes were assessed using the Amputee Mobility Predictor with Prosthesis (AMPPRO) and without prosthesis (AMPnoPRO). Analysis included descriptive statistics with sub-analyses, multivariable logistic regression for prosthesis predictors, and Cox survival analyses.

Results: Patients were predominantly male (71%) with a median age of 61 years. Most procedures were performed emergently (70%) using regional anaesthesia (80%). Median time to mortality was 517 days. Most patient's functional outcome was K2, representing a "limited community ambulator". ATSI patients (27%) were 10 years younger ($p=0.002$) and all had diabetes ($p=0.013$); however, no significant difference was observed in survival or prosthesis utilisation. Prosthetic use decreased by 5.3% per year of increased age ($p=0.034$).

Conclusion: Most BKA patients, regardless of prosthesis, had limited ambulation. Older patients were less likely to access a prosthesis. Despite over-representation and younger age of ATSI patients, mortality and prosthesis utilisation did not significantly differ. These findings provide valuable insight into BKA outcomes to inform targeted rehabilitation and prevention.

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