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TUESDAY 7 OCTOBER, 2014 – FRIDAY 10 OCTOBER, 2014
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THE TOWNSVILLE HOSPITAL
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Cover photo: The Australian Institute of Tropical Medicine in 1916 (photo courtesy of James Cook University)
RESEARCH INTEGRITY IN THE TROPICAL NORTH: SUPPORTING RESEARCH THROUGH GOOD GOVERNANCE

Associate Professor Andrew Crowden
Chairperson, Townsville Hospital and Health Service Human Research Ethics Committee

The overarching vision for health and medical research is one where research is fully embedded in all aspects of healthcare to deliver ‘better health through research’ and achieve the aspiration for Australia to build and maintain the world’s best and most efficient health care system.

My first editorial task is to warmly acknowledge the Bindal and Wulgurukaba people, who are the traditional custodians of the land where the Townsville Research Week takes place. I pay respect to the elders past and present of the Bindal and Wulgurukaba nations and extend that respect to other Aboriginal and Torres Strait Islander people.

Acknowledgments of traditional custodianship of the land where we live, work and play are important. A respectful nod to Indigenous Australians is an all-too-brief moment where we all are allowed an opportunity to critically reflect on important matters. We have much to learn from Indigenous people about the values and ethics that underpin good research practice. Consider the experience of Eddie Mabo.

In the late 1970s and early 1980s Edward Koiki Mabo was working as a gardener at James Cook University (JCU) in Townsville. Mabo realised, through conversations with academics, and by extensive reading in the JCU library during his lunch breaks, that according to Australian law, he and other Torres Strait Islander people didn’t really own their land. He was determined to challenge existing European assumptions about native title and land rights. Academic Noel Loos gives an insight into Mabo’s realisation:

One lunch hour, this black gardener in work clothes sat nonchalantly among the then, all-white students. He had the six encyclopedia-sized reports of the hallowed Cambridge Expedition to the Torres Strait in front of him, one of them open. When I went over to greet him, he looked up very seriously, and pointed to a paper by one of these revered academics: ‘Hey, Noel. This guy’s got it wrong!’

Mabo, like a good researcher, aimed to test, challenge, and seek the truth about existing assumptions. For him, a ten-year battle began. The struggle culminated in the High Court decision of June 3 1992 that gave Native Title to all Indigenous Australians. To paraphrase Australian musicians Kev Carmody and Paul Kelly, from little things, big things grew. It is heartening that the library where he first began to read about the way the law applied to Indigenous people is now named after him. The Eddie Koiki Mabo Library proclaims to all that Indigenous Australians, Australia’s first peoples, are an intrinsic part of the fabric of JCU.

Eddie Mabo’s experience provides a telling metaphor for the importance of ensuring that the right questions guide our research efforts. Experienced researchers know that identifying sound research questions is essential. The right questions ensure useful answers. Good research questions lead to effective responses to the challenge of providing sustainable, equitable healthcare in a rapidly changing world.

The purpose of health and medical research is to achieve better health for all. Australia performs well internationally in terms of healthcare compared to similar OECD countries (countries within 25% of Australian GDP). Life expectancy mirrors other comparable countries (about 82 years). However there are serious equity concerns. Australia has very poor performance for our indigenous populations, whose average life expectancy is about ten years shorter than non-indigenous Australians. Poorer Australians also have worse outcomes. Access to care for people in rural and remote Australia is much worse than in metropolitan areas, causing problems not only in terms of health status but also in increased cost of care.

In Australia, research is an important activity within the $135 billion per annum health sector budget. Research is vital for delivering effective health outcomes, creating national wealth and ensuring the efficiency and sustainability of the health system. Research directly contributes to the health and wellbeing of individuals and populations. Research contributes to wealth creation and jobs (for instance biomedical research contributes about $18 billion to the Australia economy; in Australia this represents about 3% of the world’s published medical research). Australia, however, is comparatively poor in translating research into commercialisation success (ranked 20th in the world). Australia has a significant competitive advantage as a place to conduct research (including clinical trials), in particular because of its reputation for conducting quality research and the quality and transparency of its governance arrangements.

Research is about adding new information to a body of knowledge. The awareness of the need to embed research in healthcare is influenced by the now widespread recognition of the importance of basing clinical healthcare decisions on the best available evidence. The sources of information related to healthcare decision-making are the clinician’s mind, other people’s minds (including the patient and his or her family), textbooks, health and medical journals, electronic repositories of information, the internet (formal moderated sources like the Cochrane Library, MEDLINE and PubMed, as well as informal non-moderated sources), and research.

Research integrity in this sense is often seen as the ‘trustworthiness’ of research. Research is trustworthy when its methods are sound and there is honesty and accuracy of presentation. The value, benefits and significance of research are vitally dependent on the integrity of research.

For an institution, research integrity is closely connected to research culture. A strong research culture will demonstrate honesty and integrity, respect for human research participants, animals and the environment, good stewardship of public resources used to conduct research, appropriate acknowledgment of the role of others in research and the responsible
communication of research results. Research active institutions ensure integrity of research when they develop a research governance framework that supports the development of a strong ethically sensitive research culture. A sound institutional governance framework for research helps to create an environment where ethics and integrity become intrinsic to good research practices. Research participants are given the respect that they are due, while institution and researcher risk is diminished.

Research governance thus provides a framework through which an institution acknowledges accountability for the scientific quality, ethical acceptability and safety of the research that is conducted under its auspices. An appropriate institution research governance framework is essential to ensure the responsible ethical conduct of research. Good research governance enhances research merit and integrity, and the ethical and scientific quality of research; it promotes good research practice and accountability, reduces adverse incidents and promotes a positive research culture. Research governance reduces research risk and any likelihood of poor performance and research misconduct. Moreover, governance frameworks that include peer review and measures for negating conflicts of interest ensures that the right research questions are developed and answered.

The pace of progress in health and medicine will continue to accelerate. The future will bring huge advances in knowledge and practice. New understandings in bioscience will lead to further advances in drug therapy, the implantation of genes and cells to regenerate body function, new imaging techniques, more personalised medicine, better integrated health information and smart devices that combine bioengineering with intelligence. Clinicians will develop advanced specialisms and expert systems will revolutionise their working lives. The future of tropical research will have a continuing strong focus on exotic pathogens, infectious and other diseases, and a broadened research effort that includes health systems research, health economics and clinical research.

The 2014 Townsville Health Research Week program is evidence of a broader, more inclusive approach to tropical health and medical research. Presentations cover the breadth of health research methodology from qualitative research designs through to randomised control trials. The content reflects the diverse nature of different disciplinary interests. In Townsville and the Tropical North it is clear that a significant research culture is developing within and across the disciplines of medicine, nursing and allied health, as well as in indigenous health. There are many innovative projects and successful interdisciplinary research activities.

The growth in existing, emerging and developing research collaborations ensures that health services across Tropical North Queensland are well-placed to embrace further formal links with broader regional initiatives. The opportunity for North Queensland’s health services to further collaborate with partners like James Cook University within an integrated Tropical Australian Academic Health Centre should be embraced. Such an initiative will ensure that the vision to fully embed research into all aspects of healthcare to deliver ‘better health through research’ and achieve the aspiration for Australia to build and maintain the world’s best and most efficient health care system will be on the way to being realised. Such new initiatives will have more chance of success if they are underpinned by innovative health and medical research that in turn, is supported by sophisticated and responsive clinical and research governance frameworks.

It must be stressed that innovative regional collaborations will succeed only if all partners ensure that their own research governance processes are well managed with strong leadership and robust management. Integrity in financial reporting, regular disclosure, and ethical and responsible decision-making must be encouraged. These principles will ensure that Human Research Ethics Committees are supported in their decision-making, and that the essential ethics approval and site authorization of individual research projects are sensitive to researcher needs and occur in a robust, timely manner. Importantly, good responsive research governance will ensure that research participants are given the respect and protection that they deserve, and the interests of institutions, researchers, as well as the wider Tropical Queensland community will be met. Good research governance will engender a culture of research integrity where research will have best opportunity to flourish. Doing so will be one step toward improving the health of all, meeting rural and remote health needs, and reducing inequalities between indigenous and non-indigenous outcome in line with the Australian Government’s Close the Gap Initiative.

REFERENCES
2. Loos N. Along the way. Reflections of an academic drifter, presented as a Graduation Address at the James Cook University Faculty of Law, Business and the Creative Arts in Townsville on 13 March 2013 in Voices of the North: a collection of stories and poetry from North Queensland. Writers in Townsville Society, Inc, 2013, p. 82.
6. Crowden A. Clinical trials are useful – here’s how we can ensure they stay so. The Conversation, September 5, 2013.
<table>
<thead>
<tr>
<th>Day</th>
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<tr>
<td>Day 1</td>
<td>Tuesday 7 October</td>
<td>08:00 – 11:30</td>
<td>Morning Session</td>
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<td>Research Symposium</td>
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<td>Closing Session</td>
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<td>Day 2</td>
<td>Wednesday 8 October</td>
<td>8:30 – 10:00</td>
<td>Workshop 1 - Excel to SPSS - Dr Tilley Pain - RDA</td>
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<td>Day 3</td>
<td>Thursday 9 October</td>
<td>8:00 – 10:00</td>
<td>Workshop 3 - Issues in the design and analysis of qualitative studies in healthcare</td>
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<td>Workshop 4 - Continued</td>
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<td>Day 4</td>
<td>Friday 10 October</td>
<td>8:00 – 9:00</td>
<td>Workshop 5 - Ten habits of resilient health care, the Townsville Model - Dr Paul Lane and Dr Andrew Johnson - RDA</td>
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<td>Workshop 6 - Does science ever override ethics?</td>
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For further information: TSV-ResearchSupportUnit@health.qld.gov.au
THE GREAT DEBATE

“Spending money on sport promotes public health”

Debate Chair: Dr Carl O’Kane

Staff Specialist, Emergency Medicine, The Townsville Hospital

Carl studied medicine at the University of NSW and completed his junior years at Royal North Shore Hospital in Sydney and Port Macquarie Hospital on the mid-NSW coast. He took a year off to complete a diploma in boogie boarding and worked in England for a spell. He fell into emergency medicine training in Gosford and completed it in Townsville where he stayed on in a consultant role. He misses his surfing but enjoys movies and teaching and intends to maybe do further study when his Xbox breaks again.

Debaters for the Affirmative

Ms Jayne Arlett

Multiple business owner with almost 20 years of active board memberships, 9 of them as chairperson, in some of the region’s leading sporting, cultural, not-for-profit, and government organisations, Jayne has developed a solid understanding of the impacts of leadership, diversity, and collaboration towards the bottom line. Her passion and commitment towards women in sports led to the revival of Townsville Fire, the only female professional sporting team in northern Australia. She ensured the team’s longevity through skilful financial management and strong community engagement. She wants to incorporate her business experiences in order to maximize the positive impacts of culture and sports within her community. Jayne is the Chair of the Townsville Fire.

Professor Anthony Leicht

Anthony Leicht is an experienced exercise scientist, educator and researcher within the areas of exercise physiology, exercise assessment and cardiovascular function. He is a current member of several national and international professional bodies associated with exercise science and physiology, a Fellow of the Australian and European Sport and Exercise Science Associations, and an associate editor of Australia’s leading sport and exercise science journal. He is a former national/international basketball referee and an avid sports fan.

Dr Mary Hardimon

Mary Hardimon is a junior doctor with a keen interest in paediatrics (which is lucky as she is a PHO in Paeds!). Mary’s interests include Crossfit, magic, puppies, and sweeties (like cakes, biscuits and slices). Mary is notorious for her many headbands and for carrying bubbles and toys. She says she is loud and obnoxious but she loves her job and enjoys laughing every day. Mary says, “It is very normal to catch me dancing in my car.”

Debaters for the Negative

Mr Kelvin Robertson

Kelvin was born and raised in Townsville and commenced a Bachelor of Pharmacy degree at JCU in 2001. The same year he signed his first contract to play professional basketball for the Townsville Crocodiles. Kelvin graduated from pharmacy in 2004 while still continuing to play professional sport. He registered as a pharmacist in 2006 after his intern year. Kelvin continued playing professional basketball for nine years and during the off-season he worked as a locum pharmacist to maintain his professional status. After his successful sporting career, he started full-time work as the clinical trials pharmacist at TTH 4 years ago. Kelvin has since completed a Masters degree in Clinical Trials Research from the University of Sydney and has begun his PhD in Pharmacological management of neuropathic pain. Kelvin’s research interests are pharmacogenomics and pharmacoeconomics, on which he has published. He is a member of the Pharmacist Board of Australia, Australian Health Practitioner Regulation Agency, Society of Hospital Pharmacists of Australia, the Allied Health Research Sub-Committee and the HP Research Special Interest Group.

Kelvin founded, and continues to lead, the first pharmacy research group within TTH that has the creative name of PhROG (Pharmacy Research Oriented Group). The aim of PhROG is to increase the research capacity of the TTH pharmacy department and to translate research findings into pharmacists’ practice. PhROG has a strong membership base which now includes associates from James Cook University’s School of Pharmacy and Molecular Sciences.

Dr Ella van Raders

Dr van Raders is a researcher, a pain management specialist, an ethnographer, a project manager, a leader, a lean thinker, and a nurse. She has worked as a nurse since completing her training in Cairns in 1989, where she worked for a year before going to Sydney to learn more about operating room nursing. After two years in NSW she went to the UK and worked in the NHS for 20 years before thankfully returning to the tropics in April this year. During her time in England she completed a BSc, then an MSc, and finally a PhD, looking at what factors influence nurses when they make pain management decisions in a clinical setting. She is currently very happy indeed as Clinical Director of Clinical Safety, Innovation and Redesign at Townsville Hospital and Health Service, where she is utilising all her skills and varied experience in ensuring a patient centre is at the heart of all redesign processes.

Dr David Gilmore

Dr David Gilmore is a Staff Specialist in Geriatric Medicine. He recently arrived from the UK and has survived convoluted registration process earlier this year. He is thoroughly enjoying all aspects of life in Townsville and has become a dedicated Cowboys fan.

Adjudicators

Special thanks to our three adjudicators:

• Associate Professor Sabe Sabesan, Clinical Dean, Townsville;
• Ms Helen Wright, Lecturer in Nursing, Midwifery and Nutrition, JCU; and
• Mr Matthew Weston, Medical Education Officer in the PGMEU, Townsville.
WORKSHOPS

Workshop 1 – Tuesday 7 October, 2014 – 8.30 am to 10.00 am Room 064, Ground Floor, The Townsville Hospital

Excel to SPSS

Dr Tilley Pain

This workshop will be useful to THHS staff who use (or want to use) SPSS for research or quality improvement projects. You will learn how to set up an Excel spreadsheet to enter and store your data, which can then be directly imported to SPSS for analysis. The benefits of using Excel are free access to data on workstations without SPSS licence, and reduction of transcription errors via electronic transfer.

Tilley Pain is a Senior HP Research Fellow at THHS with extensive experience in using and teaching quantitative research methods. Her area of research interest is health services research and specifically integration between primary and secondary health care services.

Workshop 2 – Wednesday 8 October, 2014 – 8.30 am to 11.30 am with tea break Tutorial Room 2 - JCU Clinical School - 1st Floor, The Townsville Hospital

Design and analysis qualitative studies in healthcare

Professor Jane Edwards

As the enthusiasm for qualitative methods research expanded in healthcare, especially research focussed on the experience of the health service recipient, it became apparent through a series of international reviews of published literature that some key steps in designing studies and analysing results that are followed in social sciences research were not being used in healthcare studies. This workshop will engage participants in a series of exercises to make sure that a. their method follows their question; b. their design including recruitment and data sources are relevant to the question or topic; and c. their analysis follows good practice in qualitative research. Participants are encouraged to bring their current or proposed research for discussion in the group.

Jane Edwards is a music therapist and an expert in the use of qualitative methods to examine experiences of health service users and practitioners. She has extensive experience in developing healthcare training in Ireland, Germany and Australia. At present she is on leave of absence from University of Limerick and is working at Deakin University where she is the strategic lead for the development of new courses in mental health.

Workshop 3 – Thursday 9 October, 2014 – 8.00 am to 10.00 am Room 064, Ground Floor, The Townsville Hospital

Effective literature searching

Dr Wendy Smyth and Ms Bronia Renison

The workshop content includes PICO - framing your question, boolean operators, where to start searching – choosing databases, OVID – Medline, PsycInfo, Embase, CINAHL Ebsco (nursing & allied health), natural language programming, MeSH thesaurus, quick ways to find a single citation and Cochrane Library.

Workshop 4 – Thursday 9 October, 2014 – 10.30 am to 11.30 am Room 064, Ground Floor, The Townsville Hospital

Endnote reference manager

Ms Bronia Renison and Dr Wendy Smyth

Workshop content includes creating an EndNote library, adding references to Endnote manually, importing references from databases (Medline OVID, CINAHL etc), inserting citations into a Word document, and includes information on installation etc.

Bronia Renison has managed the Townsville Health Library since 1997. The Library supports informed decision-making in clinical care, teaching and research undertaken by Hospital and Health Service staff and James Cook University students & staff. Bronia is passionate about customer focussed library service, with a multidisciplinary emphasis. She is an evidence-based practice champion, and has a broad knowledge of research and publication processes.

Wendy Smyth has over 35 years nursing experience in clinical, education, management and research positions in the private and public health sectors as well as tertiary facilities. In 1984-85 Dr Smyth was a recipient of a short-term Kellogg Foundation Australian Nursing Fellowship, and spent six months at the University of Rochester, New York, exploring her interest in integrating theory with practice. Dr Smyth has held the position of Nurse Manager – Research, THHS, since February 2002.

Workshop 5 – Friday 10 October, 2014 – 8.00 am to 9.00 am Robert Douglas Auditorium, The Townsville Hospital

Ten habits of resilient health care, the Townsville Model

Dr Paul Lane and Dr Andrew Johnson

It is widely believed that to improve patient safety we need to reduce medical errors, but it is not always clear how to do this effectively and efficiently. Over the last two decades health systems have adopted techniques including teamwork training, checklists and standardisation from other industries, seeking high levels of reliability. While these interventions have shown promise in reducing some types of errors in specific circumstances, they are not always applicable across health care as a whole, and the impact has sometimes been disappointing, with spread and sustainability not well demonstrated. Research has shown that large, system-wide interventions, such as the introduction of Medical Emergency Teams to identify and manage deteriorating patients, have met with some – but often variable – success. Andrew and Paul’s presentation will examine what the current evidence tells us about how to reduce medical errors, what techniques work, and where. We will introduce the concept of resilient health care, and discuss two different types of thinking about patient safety – safety-I and safety-II approaches – that help us understand how best to manage errors in complex health care environments. The safety-II approach argues: instead of focusing on things going wrong, we must also direct our attention to things going right. We will discuss this new paradigm, and its potential for widespread application.

So how do we apply resilience in practice? Andrew and Paul will present the Ten C’s Resilience Model – a new, innovative model for conceptualising patient safety, which recognises the complex adaptive system (CAS) features of the delivery environment, and has emerged as a result of extensive collaborative efforts to improve patient care at Townsville Hospital and Health Service over the last decade. The model evolved from a simple ‘linear’ concept to one that recognises the complexity of the system, its inputs, processes and outputs, its feedback loops, redundancies and discontinuities. Mentoring this development process required a fundamentally different way of thinking, operationalizing new theoretical constructs, and applying innovative approaches to management and patient care. The model has been developed in collaboration with health executives, front line clinicians and educators, and presents a simple description of the rules underlying complex behaviours required for safe and effective patient care. The model considers the complementary and interrelated roles of management, clinicians, patients and support staff. It challenges the orthodoxy of ‘patient-centred’ care and suggests that it is not possible, nor desirable to characterise the patient as a ‘subject’ of care. Rather, there needs to be a more robust understanding of the patient as a ‘participant’ in care.

Dr Andrew Johnson

Andrew Johnson’s career background spans nine years in the Royal Australian Air Force followed by twenty years in senior executive roles across the public and private health sector. His current role, having commenced in 2000, is Executive Director, Medical Service, The Townsville Hospital and Health Service.

Andrew’s professional interests centre around resilience, incorporating patient safety, decision making, medical workforce, disaster medicine, medical education and health technology. In his spare time Andrew attempts to remain fit, enjoys photography and is almost as good at cooking as he is at eating.
He has a strong interest in medical education, patient safety and resilient healthcare. He has been a member of the Townsville Hospital Patient Safety Committee for over 10 years. He is a keen runner and golfer.

Andrew Crowden is a bioethicist with extensive experience in research integrity, research ethics, research governance, and clinical ethics. Andrew is honorary Associate Professor in Ethics, Law and Professional Practice in the School of Medicine, and in the School of History, Philosophy, Religion and Classics at the University of Queensland, honorary Associate Professor in the Rural Health Academic Centre in the Melbourne Medical School, University of Melbourne, and Principal Consultant with Crowden Consultants. He is Chairperson of Townsville Hospital Human Research Ethics Committee (HREC), the current research ethics stream leader for the Australasian Association of Bioethics and Health Law (AABHL), and a member of the NHMRC Certification Assessor Panel for the ethical review of multi-centre research.

In 2015, Professor Najman has authored, co-authored and co-edited ten monographs and over 400 research papers. In 1981 he initiated the Mater Hospital

ANNALS OF THE ACTM
• Invitations by Harvard University School of Public Health in 2006 and Harvard University Institute for Global Health in 2008 to discuss findings from her research.

Professor Jon Golledge
Keynote Address: Thursday 9 October, 2014 – 12.30 pm to 1.10 pm

Jonathan Golledge is Director of Vascular and Endovascular Surgery at The Townsville Hospital and Professor at James Cook University. He directs the Queensland Research Center for Peripheral Vascular Disease which focuses on better understanding PVD and examining ways to improve its management. Jon undertook undergraduate training in Cambridge, UK, and then trained in vascular surgery at various centres in the UK before emigrating to Australia in 2000. Jon currently leads an NHMRC-funded national center for research excellence focused on improving management of peripheral artery disease. He also leads a number of NHMRC-funded projects on a variety of peripheral vascular disease problems. Jon holds a Queensland Senior Clinical Research Fellowship and NHMRC Practitioner fellowship. He has published many studies focused on peripheral vascular disease.

Thank you to those who gave their time to participate in the abstract review process.

Andrew White
Anne Jones
Annemarie Lawrence
Corey Moran
David Lindsay
David Porter
Holger Jansen
Jenny Kelly
Jon Golledge
Joseph Moxon
Kunwarjit Sangla
Linda Shields
Lynn Woodward
Rene Jaeggi
Roby Jose
Sai Wang Seto
Snrithi Krishna
Tilley Pain
Usman Malabu
Venkat Vangaveti
Wendy Smyth
Yutang Wang

REVOLUTIONARY IDEAS SYMPOSIUM
Tuesday 7th October, 2014
1:30 pm – 4.00 pm
Robert Douglas Auditorium, Townsville Hospital

Program

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<tr>
<td>1:30</td>
<td>Introduction and overview</td>
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<tr>
<td>1:35</td>
<td>Non-invasive method of determining glomerulomegaly in preterm babies</td>
<td>Ms Sonja Brennan</td>
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<tr>
<td>1:50</td>
<td>Sweep frequency impedance measures in Australian Aboriginal and Caucasian neonates</td>
<td>Mr Venkatesh Aithal</td>
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<td>2:05</td>
<td>Prospects and challenges of using bone turnover markers in diagnosis of diabetic foot osteomyelitis: a clinical review.</td>
<td>Mr Oliver Hayes</td>
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<td>2:10</td>
<td>Prevalence of listeriosis amongst patients with rheumatoid arthritis being treated with anti-TNF- alpha therapy: a literature review</td>
<td>Mr Ritvik Gilhotra</td>
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<td>2:15</td>
<td>Comparison of diagnostic criteria for gestational diabetes and outcomes</td>
<td>Dr Erin FitzGerald</td>
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<td>2:20</td>
<td>Evaluation of prostate oedema following fiducial marker insertion</td>
<td>Mrs Deepti Patel</td>
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<td>2:25</td>
<td>Evidence-based mechanism of dipeptidyl peptidase IV (DPP4) inhibitors in diabetic foot ulcer healing</td>
<td>Mr Ayeshmanthe Rathnayake</td>
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<td>A novel immunoPCR-based strategy to detect serum concentrations of IgE antibodies specific to the major shrimp allergen tropomyosin in shrimp-allergic adults and children</td>
<td>Mr Sandip Kamath</td>
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<td>Hepatitis B status of Papua New Guinea (PNG) short-term students attending the Townsville Sexual Health service.</td>
<td>Ms Natasha Miller</td>
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<td>Afternoon tea</td>
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<td>3:15</td>
<td>Investigating the impact of a clinical pharmacist on the health outcomes of paediatric patients</td>
<td>Dr Niecole Robinson</td>
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<td>Assessment of a pilot rheumatology physiotherapy screening clinic at Townsville Hospital</td>
<td>Dr James Gray</td>
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<td>Genetic literacy of Australian registered nurses and midwives and their use of genetics in clinical practice</td>
<td>Ms Helen Wright</td>
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<td>3:30</td>
<td>Mum ICU – who are you?</td>
<td>Ms Marie McAuliffe</td>
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<td>3:45</td>
<td>From evidence- to science-based medicine</td>
<td>Dr David Kault</td>
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<td>4:00</td>
<td>Concluding remarks and awarding of prizes</td>
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**ORAL ABSTRACTS**

**Sweep frequency impedance measures in Australian Aboriginal and Caucasian neonates**

Venkatesh Aithal, 1 Joseph Kei2 and Carlie Driscoll2

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2 Hearing Research Unit for Children, University of Queensland, Queensland

**Background/Aims:** Australian Aboriginal infants have very high prevalence of otitis media (OM). Although they develop OM within weeks of birth, very few studies have reported their conductive mechanism at birth. The purpose of this study was to compare the acoustic-mechanical properties of outer and middle ear between two ethnic groups. **Methods:** A total of 40 ears from 24 Aboriginal neonates were compared with 160 ears of 119 Caucasian neonates. **Results:** The mean resonance frequency for outer ear (RF1 = 261.4 Hz) and middle ear (RF2 = 1144 Hz) for Aboriginal neonates was significantly lower than that of Caucasian neonates (RF1 = 295.3 Hz & RF2 = 1241.8 Hz). Middle ear resonance (RF2) was absent in 22.5% of Aboriginal ears whereas none of the Caucasian ears showed absence of RF2. There was no significant difference between the volume displacements. Nevertheless, Aboriginal neonates showed slightly lower volume displacement than their Caucasian counterparts. **Conclusion:** This study provided evidence that despite passing the standard test battery, the dynamic characteristics of outer and middle ears of Aboriginal neonates were significantly different to that of Caucasian neonates. SFI appears to be more sensitive than standard screening tests. Monitoring Aboriginal infants who fall below 5th percentile of Caucasian neonates during infancy should be useful in identifying infants at risk of OM later in life.

**Propects and challenges of using bone turnover markers in diagnosis of diabetic foot osteomyelitis: a clinical review**

Oliver Hayes, Venkat N. Vangaveli and Usman Malabu

Translational Research on Endocrinology and Diabetes (TREAD), College of Medicine and Dentistry, James Cook University, Townsville, Queensland

**Background/Aims:** Diabetic foot osteomyelitis, a complication of diabetic foot ulcers, involves both destruction and reactive formation of bone. When bone is formed and destroyed physiologically, substances referred to as bone turnover markers (BTMs) are released. It was thus theorized that osteomyelitis should raise serum BTMs; however, there is limited research into the area of BTMs in osteomyelitis and diabetic foot osteomyelitis. The aim of the study was to determine whether future research into BTM changes in subjects with diabetic foot osteomyelitis is viable. **Methods:** Published data on BTMs and osteomyelitis were sought from Medline, PubMed, Cochrane Reviews, and Google Scholar from 1990-2014, using key words such as ‘osteomyelitis’, ‘diabetic foot osteomyelitis’, ‘diabetic foot ulcer’, ‘bone turnover markers’, ‘metabolic bone disease’, ‘periodontitis’ and ‘mandibular osteomyelitis’. **Results:** The review demonstrated that BTM changes are seen in a range of conditions that involve pathological changes to bone. Conceptually and pathologically periodontitis and mandibular osteomyelitis are closely aligned to diabetic foot osteomyelitis. Review of the literature indicated that BTMs were raised in local fluid and serum levels. Technical issues surrounding the measurement of BTMs that were uncovered including diurnal variation, variation with food intake, as well as the non-specific nature of BTMs, may pose significant barriers to the research in osteomyelitis. **Conclusion:** Despite challenges uncovered, this literature review indicates that research into diabetic foot osteomyelitis is viable. Further prospective studies are needed to delineate whether BTM levels change in diabetic foot osteomyelitis, and ultimately whether they are a viable diagnostic marker.

**Prevalence of listeriosis amongst patients with rheumatoid arthritis being treated with anti-TNF-alpha therapy: a literature review**

Ritvik Gilhotra

College of Medicine and Dentistry, James Cook University, Townsville, Queensland

**Background/Aims:** Rheumatoid arthritis (RA) is a chronic, inflammatory, auto-immune disorder affecting 0.5-1% of the general population. Tumour necrosis factor alpha (TNF-alpha), a host resistance agent against intracellular bacteria, plays an essential role in the immunopathogenesis of RA. Hence, its treatment involves the use of anti-TNF-alpha therapy, one of the disease-modifying antirheumatic drugs. Listeriosis, a zoonotic bacterial infection due to *Listeria monocytogenes*, primarily occurs in patients that are immunocompromised. The aim of this study was to identify the prevalence of listeriosis amongst RA patients on anti-TNF-alpha therapy. **Methods:** A literature search was conducted on PubMed, Medline and Google Scholar using the terms ‘anti-TNF-alpha’ AND ‘listeriosis’ AND ‘rheumatoid arthritis’ for full text articles in English. **Results:** We identified that whilst listeriosis has a fairly low incidence rate, it is highly fatal, with some studies suggesting death rates as high as 30%. A large study across United States and Canada, through the Food & Drug Administration Adverse Event Reporting System, identified nine cases (5 deaths) of *Listeria* infection associated with anti-TNF-alpha treatment for RA over a two-year period. It also estimated the annual incidence of listeriosis amongst these patients at 43 per million as opposed to 13 per million in the general population over 60 years. **Conclusion:** Anti-TNF-alpha therapy increases susceptibility of patients with RA to listeriosis with fatal outcomes. Our review identified that TNF-alpha plays a major role in host resistance against *Listeria monocytogenes*, at the same time identifying a lack of research in the area of listeriosis amongst RA patients on anti-TNF-alpha therapy.

**Comparison of diagnostic criteria for gestational diabetes and outcomes**

Erin FitzGerald, Vasant Shenoy, Yong Mong Tan, Robyn Chadwick and Kunwarjit Sangla

Department of Endocrinology and Diabetes, The Townsville Hospital, Townsville, Queensland

**Background/Aims:** Gestational diabetes mellitus (GDM) is associated with adverse maternal and fetal outcomes. However there is a lack of consensus regarding the diagnostic criteria. Following publication of the Hyperglycaemia and Adverse Pregnancy Outcomes (HAPO) study, the International Association of Diabetes in Pregnancy Study Groups (IADPSG) proposed new criteria for the diagnosis of gestational diabetes. At The Townsville Hospital, the Australasian Diabetes in Pregnancy Society (ADIPS) and the new IADPSG criteria are used concurrently for diagnosis of GDM. This offers a unique opportunity to compare outcomes in women who meet a diagnosis based on one set of criteria but not the other. **Methods:** A retrospective chart audit of women diagnosed with GDM attending the high-risk antenatal clinic at The Townsville Hospital was conducted. Women were grouped according to whether they met the current (ADIPS) or new (IADPSG) criteria or both. Primary outcomes include the incidence of macrosomia based on routine growth scans and requirement for medication (insulin or metformin). **Results:** Data from one hundred and ten patients have been included in the study to date. Of the patients who met the IADPSG criteria 60% (6 of 10) required treatment, and 50% (5 of 10) had fetal macrosomia. Of those that met the ADIPS criteria 42% (8 of 19) required treatment and 42% (8 of 19) had evidence of fetal macrosomia. Of those who satisfied both criteria, 48% (39 of 81) required treatment and 27% (22 of 81) had evidence of macrosomia. **Conclusion:** Data suggest the IADPSG criteria may more accurately identify women who are likely to require treatment for GDM, but this does not reach statistical significance.
Evidence-based mechanism of dipeptidyl peptidase IV (DPP4) inhibitors in diabetic foot ulcer healing

Ayeshmanthe Rathnayake,1 Apoorva Saboo,1 Venkat N. Vangaveti2 and Usman H. Malabu1

1Townsville Clinical School, College of Medicine and Dentistry, James Cook University, Queensland
2Translational Research on Endocrinology and Diabetes (TREAD), College of Medicine and Dentistry, James Cook University, Townsville, Queensland

Background/Aims: Diabetic foot wounds are one of the most serious complications of the disease, giving rise to 84% of all diabetes-related lower limb amputations. The anti-diabetic dipeptidyl peptidase IV (DPP-4) inhibitors have been reported to improve diabetic foot wound healing. However little is known about how it occurs. The aim of the study was to review DPP-4 inhibitors’ mechanism of wound healing in subjects with diabetic foot ulcers. Methods: Published data on DPP-4 inhibitors in wound healing were sought from MEDLINE, PubMed and Google Scholar searches of English language literature from 1994 to 2014, using the key words ‘DPP-4 inhibitors’, ‘endothelial healing’ ‘diabetes’ and ‘chronic ulcers’. Results: DPP-4 inhibitors show a potential benefit in the processes of wound healing in diabetic chronic foot ulcers. The enzyme inhibitors promote recruitment of endothelial progenitor cells and allow the final scaffolding of wounds. Furthermore, DPP-4 inhibitors augment angiogenesis and have widespread effects on optimising the immune response to persistent hypoxia in chronic diabetes wounds. Conclusion: DPP-4 inhibitors show promise in the local wound healing of diabetic foot ulcers through multiple mechanisms. In the light of high rate of amputations due to non-healing ulcers, with profound psychological and economical liability, more investigations on the new role of DPP-4 inhibitors in treatment of diabetic foot ulcer are needed.

Hepatitis B status of Papua New Guinea (PNG) short-term students attending the Townsville Sexual Health Service

Natasha Miller, Monika Buhrer-Skinner, Earl Mazzoni and Arun Menon

Townsville Sexual Health Service, Queensland Health, Townsville, Queensland

Background/Aims: The WHO estimates that over 560 000 (>8%) of the PNG population have chronic hepatitis B, which frequently progresses to severe liver disease and cancer. In PNG in 2008, liver cancer was the leading cause of male cancer deaths. Following the diagnosis of STI-related complications in a number of PNG students accessing the nurse-led sexual health clinic, we initiated a targeted testing and STI education program. Methods: From 2012-2013, 226 PNG students were tested for several STIs including hepatitis B. Education sessions, including a hepatitis B target resource were developed and a vaccination program implemented. Results: All students (n=227) participated in the education sessions. Two hundred and twenty-six students (99.6%) were tested for hepatitis B. Serology indicated that 44 (19.5%) had infectious hepatitis B with 21 (47%) being surface antigen E positive. One hundred and twenty-nine (57.1%) were immune, of which 87 (67%) were core antibody positive. Fifty-three (23.5%) students had no antibodies. Those with infectious hepatitis received one-on-one health advice and all received written materials. All antibody-negative students commenced hepatitis B vaccination and all diagnosed STIs were treated and managed. Conclusion: The prevalence of hepatitis B was consistent with rates in endemic countries with over 58% of this population being exposed to hepatitis B and 19.5% remaining infectious. Although the students are only in the clinic’s region for one semester, as hepatitis B is transmitted through sexual as well as non-sexual contact, the awareness of status and vaccination are important public health measures to curb the spread of infection.

Mum ICU: who are you?

Marie McAuliffe,1, 2 Lee Stewart1 and Kim Usher3

1College of Healthcare Sciences, James Cook University, Queensland
2The Townsville Hospital and Health Service, Townsville, Queensland
3University of New England, School of Health, Armidale, New South Wales

Background/Aims: The need for critical care support in the intensive care unit (ICU) during pregnancy or in the postnatal period is relatively uncommon in the developed world at 0.7-13.5 per 1000 births. Recent epidemiological studies have reported rising rates of maternal morbidity in Australia. The aim of this study was to develop an understanding of the demographical and clinical picture of pregnant and postnatal women who require care in the ICU at The Townsville Hospital (TTH). Methods: A medical record review of all pregnant and postnatal women admitted to TTH ICU between 1 January 2006 and 31 December 2013 was undertaken (n=82). Results: The main diagnosis for women requiring ICU care at TTH is hypertensive disorder of pregnancy. The average length of stay is short (50.8 hours). Most women admitted to ICU require minimal interventions. Aboriginal women and women from rural and remote areas are disproportionately represented. Conclusion: There is minimal published research in this area of health care and further research is required.

From evidence- to science-based medicine

David Kault
College of Science, Technology and Engineering, James Cook University, Queensland

Background/Aims: Evidence-based medicine (EBM) tends to dismiss treatments which lead to non-statistically significant results and labels such treatments as having ‘no effect’. If all such treatments really had no effect, there would be as many non-significantly negative results as non-significantly positive results. In practice there is a considerable excess of weakly positive results. This presentation suggests possible ways of using data on the distribution of summary statistical values to improve the EBM paradigm. Methods: A sample of 100 summary statistical values was chosen randomly from the Cochrane collection for evidence-based medicine. Several models were used to analyse the data. Results: Weakly positive values outnumber weakly negative by about 3:1, suggesting that about two-thirds of weakly positive results are being produced by treatments which have at least a small positive effect rather than deserving the ‘no effect’ label. More complex models of this data agree with this estimate, albeit with wide confidence intervals. Conclusion: With further data collection and research, it will become possible to give a probability that a treatment is effective rather than assign dichotomous labels ‘effective’ and of ‘no effect’ to treatments. Knowledge about the treatment aside from the statistical result, and knowledge of the cost of making a wrong assessment of treatments can be further incorporated into decision making, so that treatments are based on science and not just the vagaries of statistical assessment.

Volume 15 Number 3

ANNALS OF THE ACTM
# COST AND CURIOSITY SYMPOSIUM

**Wednesday, 8th October, 2014**

1:30 pm – 4.00 pm  
Robert Douglas Auditorium, The Townsville Hospital

## Program

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<td>Implementing evidence in order to promote freedom of movement for women in labour</td>
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<td>A profile of CKD patients and their outcomes in a nurse practitioner model of care in north Queensland</td>
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<td>Information needs and priorities of parents of infants newly diagnosed with cystic fibrosis: literature review</td>
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<td>Telesupervision: an exploration of the use of the Townsville teleoncology model by junior doctors working in rural locations and their supervisors</td>
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<td>Prevalence and risk factors of lower limb amputation amongst diabetic foot ulcer patients at The Townsville Hospital</td>
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<td>Does the use of an antimicrobial disposable curtain reduce cleaning time, laundry costs and the rate of multi-resistant organism transmission?</td>
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<td>Remote supervision of chemotherapy under the Townsville Teleoncology model: What are the perspectives of its users?</td>
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ORAL ABSTRACTS

Comorbidities and management of gout patients in general practice
Andrew Jeyaruban, 1 Sarah Larkins 1 and Muriel Soden 1,2
1 College of Medicine and Dentistry, James Cook University, Townsville, Queensland
2 The Townsville Hospital, Townsville, Queensland

Background/Aims: To investigate the prevalence, comorbidities and management of gout in general practice in Townsville. Methods: Retrospective analysis of patients with gout, identified through the records of one general practice in Townsville. Terms such as ‘gout’ or ‘gouty arthritis’ were used to identify gout patients. Comorbidities such as obesity, ischaemic heart disease, and dyslipidaemia as well as aspects of management of chronic gout, including prescription of urate-lowering therapy (ULT), monitoring of serum urate levels in patients prescribed on ULT, diuretic cessation, and provision of lifestyle advise were assessed according to the therapeutic guidelines. The data was analysed using simple univariate and bivariate descriptive studies. Results: A pilot study was conducted with 58 patients attending one of the general practices. Obesity was the most common comorbidity (68%) followed by hypertension (62%) and dyslipidaemia (45%). In regards to management, current data shows ULT is prescribed in 38% (n=22) of patients. Of the patients prescribed allopurinol 59% of patients had a sUA of ≥0.36 mmol/l and 14% did not have a sUA level tested. Lifestyle advice was only provided in 14% of gout patients. Fifteen percent (15%) of patients with gout had a current prescription for diuretics. Conclusion: Chronic comorbidities associated with an increased risk of cardiovascular disease were common in gout patients. Furthermore, the primary care management of gout was not concordant with the national therapeutic guidelines, which is also evident in other studies. This data, although limited in sample size, reveals that guidelines alone are not enough to improve the quality of gout management.

Implementing evidence in order to promote freedom of movement for women in labour
Annemarie Lawrence, 1,2,3 Linda Shields 1,2 Jenny Kelly, 3,4 Lucy Lewis, 5 Vicki Carson 6 and Amanda Ostromski 1
1 Health & Wellbeing Service Group, The Townsville Hospital and Health Service, Townsville
2 Tropical Health Research Unit for Nursing and Midwifery Practice, The Townsville Hospital and Health Service, Townsville
3 Centre for Nursing and Midwifery Research, James Cook University
4 College of Medicine and Dentistry, James Cook University, Townsville
5 School of Nursing and Midwifery, Curtin University, Department of Nursing and Midwifery Education Research, King Edward Memorial Hospital, Perth, Western Australia

Background/Aims: There is clear and important evidence that upright positions in the first stage of labour reduces the duration of labour, the risk of caesarean birth and the need for epidural. Despite this evidence, conventional hospital labour management continues to restrict mobility and confine women to birthing beds. The aim of this study was to find evidence-based, new and innovative ways of promoting the use of upright and mobile positions for women who labour in conventional hospital settings. Methods: A literature review was conducted. The areas of focus included the reasons why, when and how promoting freedom of movement for women during labour could be achieved. Gaps and trends in research knowledge were considered. Strategies to overcome the theory-practice gap were developed for consultation and implementation. Results: Results indicate that optimising freedom of movement for women in labour requires a two-pronged approach. Firstly, research evidence must inform birth policies and guidelines. Secondly, policies and guidelines must inform labour ward design and midwifery intrapartum care. Each stage is equally important, as freedom of movement for women in labour can be restricted because of intrapartum policy and/or environment and/or care. Conclusion: As midwives, we are obliged to inform women of the benefits to themselves and their babies of being upright and mobile during labour. In order to optimise freedom of movement for women during labour, we must actively promote and implement mobility-friendly birth policies and practices in our conventional labour ward settings.

Prevalence of chronic complications of type 1 diabetes at The Townsville Hospital: a retrospective review
Siti H. Sahbudin, 1 Divya Srivastava, 2 Venkat N. Vangaveti, 1 Kunwarjit S. Sangha 6 and Usman H. Malabu 1,2
1 College of Medicine and Dentistry, James Cook University, Townsville, Queensland
2 Department of Endocrinology and Diabetes, The Townsville Hospital, Townsville, Queensland

Background/Aims: Macro and microvascular complications of type 1 diabetes mellitus (DM1) are the leading cause of morbidity and mortality in developed countries, yet no study has been conducted that analyses the magnitude of these long-term complications in our region. The aim of the study was to determine the prevalence and risk factors of chronic complications of DM1 in The Townsville Hospital. Methods: Hospital-based cross sectional study was retrospectively conducted on all DM1 patients attending diabetes clinic at The Townsville Hospital from 1 February 2013 to 31 March 2014. Prevalence and risk factors of microvascular (nephropathy, retinopathy and neuropathy) and macrovascular (cardiovascular, cerebrovascular and peripheral vascular diseases) complications were determined from the clinical and biochemical profiles of the patients. Results: We identified a 38% prevalence of long-term DM1 complications in 153 subjects, with microvascular and macrovascular being present in 27% and 11% respectively. The major risk factors of long-term DM1 complications in the study population were age group of 40 to 79 years old (RR 4.18, 95% CI 2.25-7.76, p<0.0001), duration of diabetes >30 years (RR 2.29, 95% CI 1.27-4.1, p=0.0057), glycaemic control (HbA1c) of more than 7% (RR 12.50, 95% CI 4.63-33.74, p<0.0001). Other variables were tested but fell short of statistical significance. We report high prevalence of DM1 complications. Conclusion: Subjects who have any of the following criteria are at risk of developing the complications: older age group, long duration of DM1 and poor glycaemic control. Further prospective analysis on a larger population is needed to confirm our findings.

Patients’ perceptions of hospital-acquired infections in two facilities in North Queensland, Australia: a pilot study
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1Infection Prevention and Control, Townsville Hospital and Health Service, Townsville, Queensland
2 Tropical Health Research Unit for Nursing and Midwifery Practice, The Townsville Hospital and Health Service, Townsville, Queensland
3Nursing, Midwifery and Nutrition, College of Healthcare Sciences, James Cook University, Townsville, Queensland
4School of Nursing and Midwifery, University of the Sunshine Coast, Queensland
5Nursing, Midwifery and Nutrition, College of Healthcare Sciences, James Cook University, Queensland

Background/Aims: Although it is known that there are significant consequences to patients and health services of hospital-acquired infections, there is a lack of Australian studies about patients’ knowledge of them. The aim of this study is to undertake a pilot study in two healthcare facilities in North Queensland about patients’ knowledge and perceptions about hospital-acquired infections. Methods: We used a questionnaire previously used in the United Kingdom, adapted with permission, in a tertiary-level North
Queensland hospital and a smaller, remote facility in Far North Queensland. A convenience sample of surgical inpatients in each facility was invited to complete the questionnaire. Results: Forty-two of the 51 respondents (29 men, 22 women) were from the large hospital. The majority (n=42) were aware of the risk of hospital-acquired infections before their surgery and had adequate information (n=36) and understanding (n=41). Sources of their information were diverse, with doctors, the hospital and television most frequently being nominated, although many indicated that the media did not accurately portray hospital-acquired infections. Knowledge of specific bacteria was quite poor. Staff and visitors using alcoholic hand-rub and involving patients more in their own care were the most frequently offered options for preventing hospital-acquired infections. Conclusion: We plan to administer the questionnaire to a larger number of patients across more Australian facilities. Responses will inform interventions to further improve the knowledge and understanding of hospital-acquired infections of future patients.

Understanding positive health outcomes and unmet needs after traumatic brain injury in The Townsville Hospital and Health Service

Maria Hennessy\textsuperscript{1,2} and Eliza Birtles\textsuperscript{1}

\textsuperscript{1}Community Rehab nQ, Townsville, Townsville-Mackay Medicare Local, Townsville, Queensland
\textsuperscript{2}Department of Psychology, College of Healthcare Sciences, James Cook University, Townsville, Queensland

Background/Aims: Previous research has suggested that individuals from regional areas have poorer health outcomes following a traumatic brain injury (TBI). The aim of our research was to use a positive health framework to investigate the long-term outcomes, unmet needs and obstacles to care for individuals with mild, moderate and severe traumatic brain injuries in the Townsville Hospital and Health Service area. Methods: Ninety individuals from north Queensland self-reported on several measures 6-18 months post-TBI including symptom experience, mental health, quality of life, community integration, perceived level of need, and obstacles to care. Results: There were no significant differences for rurality on any variables. Individuals with severe TBI reported significantly lower levels of community integration, higher levels of psychological distress, lower levels of psychological wellbeing, and higher levels of unmet need than individuals with mild or moderate injuries. TBI caused by assault was more likely to result in significantly higher psychological distress and significantly greater levels of unmet needs. Forty per cent (40\%) of the sample reported unmet psychological and social needs. The primary obstacle to care was difficulty accessing treatment resources. Conclusion: Severity and cause of injury places individuals at risk for poorer outcomes post-TBI, rather than rurality. Future service provision should address the high levels of unmet psychological and social needs and obstacles to treatment resources in regional communities.

Information needs and priorities of parents of infants newly diagnosed with cystic fibrosis: a literature review

Danielle Edwards\textsuperscript{1,2}, Wendy Smyth\textsuperscript{1}, Rhondda Jones\textsuperscript{3}, Claire Wainwright\textsuperscript{4}, Cindy Branch-Smith\textsuperscript{1,4}, Kristin Wicking\textsuperscript{5}, Tonia Douglas\textsuperscript{6,7,8} and Linda Shields\textsuperscript{1,4,10}

\textsuperscript{1}Tropical Health Research Unit for Nursing and Midwifery Practice, Townsville Hospital and Health Service and School of Nursing, Midwifery and Nutrition, James Cook University, Townsville, Queensland
\textsuperscript{2}Children’s Ward, The Townsville Hospital, Townsville, Queensland
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\textsuperscript{4}Queensland Children’s Medical Research Institute, University of Queensland, Royal Children’s Hospital, Herston, Queensland
\textsuperscript{5}School of Psychology and Social Science, Edith Cowan University, Western Australia

Background/Aims: Initial diagnosis and education are landmark events for parents whose children have cystic fibrosis (CF). Education delivery and content exert powerful influences on parental adjustment to diagnosis and ongoing engagement with the CF team. Even with good intentions, current practices may fail to meet parents’ information and care needs. Methods: A literature review of articles written in English and published between 2001 and April 2014 was undertaken. We searched CINAHL, MEDLINE, Cochrane Library, and Google Scholar using key words: cystic fibrosis, information needs, education*, parent*, chronic illness*, chronic disease*, infant diagnosis, newborn screening, quality of life, counselling, priorities*, communication*, NICU, respiratory illness*, and family-centred care. Results: The literature review revealed a dearth of studies investigating education needs of parents during this pivotal period. The main findings include: need for information, timing and type of information required changes over time. Parents seek information from a variety of sources; effective communication when disclosing results is crucial; and knowledge gives parents a sense of control. Conclusion: There is a gap in research about information needs and priorities of this group of parents. Chronic illnesses such as CF have significant impacts on family functioning and overall health outcomes, calling for increased support and education. Parents turn to the Internet as an additional source of information to meet their needs, but this can have varying positive and negative outcomes. This literature review has informed an Honours project about information needs of parents of children recently diagnosed with CF.

Telesupervision: an exploration of the use of the Townsville Teleoncology model by junior doctors working in rural locations and their supervisors

Miriam Cameron,\textsuperscript{1} Robin Ray,\textsuperscript{1} and Sabe Sabesan\textsuperscript{1,2}

\textsuperscript{1}College of Medicine and Dentistry, James Cook University, Townsville, Queensland
\textsuperscript{2}Townsville Cancer Centre, The Townsville Hospital and Health Service, Townsville Queensland

Background/Aims: Telemedicine has revolutionised the ability to provide care to patients, relieve professional isolation and provide guidance to junior doctors in rural areas. The prediction of an increased junior workforce in rural areas raises the issue of providing adequate supervision. Very few studies have explored the perspectives of rural physicians using videoconferencing for supervision, training and educational support. Therefore, this study evaluated the Townsville Teleoncology supervision model for the training of junior doctors in rural areas. Methods: Semi-structured interviews and observational field notes were used to collect data from ten junior doctors and ten senior doctors currently participating in the Townsville Teleoncology model. Descriptive template analysis was undertaken using NVivo data management software. Results: Five major themes (positive learning environment, beginning the learning relationship, stimulus for learning, costs, and practicalities of telesupervision) and several subthemes emerged from the data. While some of these themes were consistent with the current literature, new themes such as increased professional edge, recognising non-verbal cues and physical examination challenges, were developed. All participants expressed a positive attitude to adopting the telesupervision model with suggestions for future use. Conclusions: Telesupervision is an effective resource for alleviating the stress faced by junior doctors in rural areas. It provides professional support and guidance to ensure quality care. However, resources are required for up-skilling and training in the use of telesupervision. Other factors, such as administration issues and nursing support, as well as physical barriers to examinations, must be addressed prior to further implementation.
Prevalence and risk factors of lower limb amputation amongst diabetic foot ulcer patients at The Townsville Hospital

Beverly T. Rodrigues, 1 Rajit A. Gilhotra, 1 Venkat N. Vangaveti, 1 and Usman H. Malabu 2

1 College of Medicine and Dentistry, James Cook University, Townsville, Queensland
2 Department of Endocrinology and Diabetes, The Townsville Hospital, Townsville, Queensland

Background/Aims: Diabetic foot ulcer (DFU) is a common occurrence in up to 15% of the diabetic population. Lower limb amputation (LLA) is considered a frequent outcome yet, despite having the highest rate of diabetes in the country, there is limited published data on DFU in North Queensland. The aim of this study is to determine prevalence and risk factors for LLAs amongst DFU patients at The Townsville Hospital (TTH). Methods: A retrospective study was conducted on patients attending TTH High Risk Foot Clinic (HRFC) between 2010 and 2012. Clinical and biochemical features were extracted from the patients’ charts. Results: A total of 106 subjects presented with a DFU, out of which 43 (41%) underwent a LLA, with a male: female ratio of 1.7:1. The mean age of amputation was 69.20 ± 11.78 years, with no significant difference between the Indigenous Australians and Caucasians cohorts. Diabetic retinopathy (OR 4.13, 95% CI 1.772-9.628, P = 0.001) and past history of coronary artery bypass graft surgery (CABG) (OR 4.0, 95% CI 1.094-14.624, P = 0.028) were factors strongly associated with amputation. Other variables that showed positive associations but fell short of statistical significance included indigenous background, and history of hypertension, peripheral neuropathy and nephropathy. Conclusion: We report high prevalence of LLAs occurring in almost half of the DFU cohort at the HRFC, which were found to be closely linked with a history of retinopathy and CABG surgery. Further prospective studies are required to confirm our findings.

Gait speed, outcomes and frailty

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1 Gerontological Services, The Townsville Hospital, Townsville, Queensland
2 Physiotherapy Department, The Townsville Hospital, Townsville, Queensland

Background/Aims: Recent evidence suggests that gait speed reflects the level of frailty of an older person. While it is known that discharge mobility function reflects discharge outcomes for older inpatients admitted into the geriatric evaluation and management (GEM) unit, it is not known if the patient’s medical profile has any impact. The aim of this study was to determine whether gait speed and patient medical profile are related to discharge outcomes. Methods: Data was collected from all the patients who were admitted and discharged from the GEM unit in 2013. Age, readmission abode and discharge destination were routinely collected. To determine the patient’s medical/frailty profile, presenting Diagnostic Related Group (DRGs) and gait speed (distanced walked in 6 minutes) at admission and discharged, were collected. Results: Data was collected from 124 patients with an average age of 83 years. The three most common DRGs were musculoskeletal disorders (44%), neurological disorders (28%), and cardiac/respiratory disorders (20%). DRGs were also coded as complicated (77%) or simple (23%). Of those who died or were discharged to nursing home (RAfC) (11%), all had a medical/frailty profile of a complicated DRG and admitting average gait speed of 7 m/min. Those discharged home (86%) with mixed complicated (67%) and simple (23%) DRG had admitting average gait speeds of 13 m/min and 11 m/min, respectively. Those discharged to RAfC vs home gained similar difference in gait speed (7-8 m/min) and the same applied with complicated DRG vs simple DRG (9 m/min). Conclusion: The level of medical frailty is demonstrated with gait speed and may impact on older patients’ discharge outcomes.

Does the use of an antimicrobial disposable curtain reduce cleaning time, laundry costs and the rate of multiresistant organism transmission?

Mandy Davidson, 1 Janine Carrucan, 1 Kathleen McLean, 1 Wendy Smyth 2

1 The Townsville Hospital, Townsville, Queensland
2 Tropical Health Research Unit for Nursing and Midwifery Practice, Townsville Hospital and Health Service

Background/Aims: A multimodal approach was required to manage a vancomycin-resistant enterococcus outbreak on an oncology ward in a tertiary hospital in north Queensland. One component of the approach was to trial antimicrobial disposable curtains, since it is known that cloth curtains harbor micro-organisms. The aim of this study was to trial antimicrobial disposable curtains in the oncology ward and a medical ward over a 12-month period from June 2012 to May 2013. Methods: Disposable curtains were installed in June 2012. Samples were taken to test microbial growth at three, six, nine and 12 months. The ‘control’ was a sample curtain that had not been hung in a hospital ward. Results: There was no growth of either methicillin-resistant Staphylococcus aureus or vancomycin-resistant enterococcus on any of the curtains. Since the trial, the disposable curtains have been installed in 17 inpatient and outpatient areas of the hospital. Not having to change curtains after an infectious patient is discharged saves 50 minutes, which equates to 1.65 full-time staff per annum. There has also been a $61,590 saving in laundry costs. However, the rate of multi-resistant organism colonization has increased slightly. Conclusion: It is acknowledged that poor hand hygiene, poor cleaning practices and poor compliance with standard precautions also contribute to transmission of infections. However, this study has demonstrated that disposable curtains are a worthwhile tool to use in the complicated fight against multiresistant organism transmission.

Effect of Cyclone Yasi on metabolic control in patients with type 2 diabetes

Xirui Zhang 1, Sarah Larkins 1,2,3 Zoltan Sarnyai 4

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2 Anton Breel Research Centre for Health Systems Strengthening, James Cook University, Queensland
3 Australian Institute of Tropical Health, James Cook University, Queensland
4 Comparative Genomics Centre and Centre for Biodiversity and Molecular Development of Therapeutics, James Cook University, Queensland

Background/Aims: Natural disasters represent a severe form of acute stress which can lead to changes in metabolic profiles. The concept of allostatic load can be used to explain how individuals adapt to physical and social environments. The aim of this study was to examine the impact of Cyclone Yasi on the metabolic control of individuals with diabetes. Methods: A retrospective chart audit was conducted at two general practices hit the hardest by Cyclone Yasi and one general practice less affected. Files of adults with type 2 diabetes were identified and their metabolic parameters (eg. blood pressure, HbA1c, lipid profiles) were extracted from February to August, 2010 (pre-Yasi) and compared to February to August, 2011 (post-Yasi). Paired T-tests were used to determine significant changes in metabolic profiles before and after Yasi. Results: A total of 223 participants were included (141 affected, 82 less affected). Increases in all metabolic parameters were found in the affected areas post-Yasi with systolic blood pressure (+9.7 mmHg, p=0.00), HbA1c (+0.25%, p=0.01) and HDL (+0.04 mmol/L, p=0.034) being of statistical significance. The less affected areas showed increases in blood pressure, HDL and HbA1c, however only the increase in HbA1c was significant (+0.40%). Interestingly, there was a fall in LDL levels (-0.2 mmol/L, p=0.02) in the less-affected group. Conclusions: After Cyclone Yasi, a greater deterioration in metabolic control was observed in the severely-hit areas compared with less-affected areas. These results suggest that acute severe stress in patients with diabetes can contribute to allostatic load and thus affect metabolic parameters.
# PRACTICAL STRATEGIES SYMPOSIUM

**Thursday, 9th October, 2014**

**1:30 pm – 4.00 pm**

**Robert Douglas Auditorium, The Townsville Hospital**

## Program

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<td>Understanding factors that influence participation in physical activity among people with a neuromusculoskeletal condition: a review of qualitative studies</td>
<td>Mrs Rosemarie Newitt</td>
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<td>1:50</td>
<td>Significance of antenatal steroid treatment on the prevalence of pressure injuries in neonates</td>
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<td>Pseudomembranous colitis after ileostomy reversal: a case study and literature review</td>
<td>Dr Jeremy Johnson</td>
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<td>A little bit of help goes such a long way: experiences of a student research intern initiative</td>
<td>Dr Wendy Smyth</td>
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<td>Prostate motion during prostate cancer radiation therapy treatment: does patient BMI have an influence?</td>
<td>Mrs Amy Brown</td>
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<td>Limb amputation in Indigenous Australians on renal dialysis: The Townsville Hospital Experience</td>
<td>Mr Rajit Gilhotra</td>
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<td>Hypothyroidism in pregnancy: feto-maternal complications at The Townsville Hospital</td>
<td>Ms Robyn Chadwick</td>
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<td>Patients prefer being in a single room, even if they do not know they have an infection</td>
<td>Ms Kathleen McLean</td>
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<td>Development and review of interprofessional clinical placement evaluation tool</td>
<td>Ms Nerida Firth</td>
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<td>Concluding remarks and awarding of prizes</td>
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Pseudomembranous colitis after ileostomy reversal: a case study and literature review

Jeremy Johnson, Chrispen Mushaya and Pranavan Palamuthusingham
Surgical Service Group, The Townsville Hospital, Townsville, Queensland

**Background/Aims:** Pseudomembranous colitis due to *Clostridium difficile* (C.diff) infection is a rare, yet serious, complication following ileostomy reversal. Few published studies have been reported on this topic. We identified seven studies; however none were undertaken in Australia. Previous research indicates a twenty-fold increase in C.diff colitis after ileostomy reversal. Advanced age and proton pump inhibitors (PPIs) have been identified as risk factors. **Methods:** We present the case of an older male who developed pseudomembranous colitis after ileostomy reversal at The Townsville Hospital. He underwent an unremarkable reversal and was given intraoperative single doses of metronidazole and cephazolin, but no other perioperative antibiotics. Recovery was complicated by pseudomembranous colitis, presenting as worsening diarrhoea and abdominal distension. Abdominal x-ray and computed tomography identified dilated bowel and a transition point in the descending colon which led to a diagnostic colonoscopy. Treatment with oral vancomycin expedited recovery. **Conclusion:** Pseudomembranous colitis is a real and concerning complication after ileostomy reversal. Timely colonoscopy is recommended if there are concerns post-operatively. It is imperative to vigilantly monitor elderly patients who have worsening diarrhoea after ileostomy reversal, particularly if they are on long term PPIs.

A little bit of help goes such a long way: experiences of a student research intern initiative

Wendy Smyth1,2 and Megan Hayes1
1 Tropical Health Research Unit for Nursing and Midwifery Practice, Townsville Hospital and Health Service, Townsville, Queensland
2 Nursing, Midwifery and Nutrition, College of Healthcare Sciences, James Cook University, Townsville, Queensland

**Background/Aims:** Imagine having a nursing student intern for six weeks to progress a stalled research project. What would the benefits be to the research team, research unit, clinical unit, and student? How could the research unit provide the necessary guidance and instruction? What were reasonable expectations for such an initiative, and could you plan the experience to exceed everyone’s expectations? This presentation addresses those questions. **Methods:** Nursing and midwifery students at a northern Australian university were invited to apply for one of two inaugural summer scholarships. Our nursing research unit, located in the local hospital, proposed that a student could contribute to a clinical research project for which data had already been collected. We received an enthusiastic student who was methodical, willing to ask questions and willing to learn about undertaking nursing research in a busy clinical environment. The unit had previously mentored novice nurse researchers, but never a nursing student who had just completed her first undergraduate year. We structured the six weeks in order to maximize the benefits to all. **Results:** The student successfully learnt how to use a statistical computer package, enter the data, liaise with the clinical nurses when checking the data, establish a bibliographic database, update the literature review and draft the manuscript ready for publication. **Conclusion:** We were able to provide additional writing experiences and the student participated in committee meetings and other educational experiences. Owing to the success of this initiative, we will have another project ‘in the pipeline’ should the scholarships be offered again next summer.

Stroke thrombolysis at The Townsville Hospital

Rachel Norton and Richard White
Department of Neurology, The Townsville Hospital, Townsville, Queensland

**Background/Aims:** The aim of this study was to determine adherence to local thrombolysis case selection criteria, incidence of missed thrombolysis opportunities, sources of delay to thrombolysis and analyse disability outcomes data for both populations. **Methods:** A retrospective audit was conducted on stroke patients at The Townsville Hospital from 1 April - 30 June 2013 and all thrombolysed stroke patients until September 2013. **Results:** All thrombolysed patients met inclusion criteria. Two of these patients had relative contraindications (MI within 3 months), but no absolute contraindications or missed thrombolysis opportunities were found. For thrombolysed patients, triage-to-CT time of 24 minutes is consistent with international targets. However, the CT-to-thrombolysis time of 77 minutes is outside the sub-60 minute target. Pre-hospital delays account for the difference between inpatient (2 hours 8 min) and outpatient (2 hours 41 mins) stroke onset to thrombolysis intervals. Onset-to-CT time for inpatients strokes (54 mins) compares favourably with outpatients (1 hour 24 mins). Modified Rankin Scale scores were not different between the 3-month and thrombolysed cohorts at onset or discharge. Twenty-four hour post-thrombolysis National Institutes of Health Stroke Scale scores were completed in only 50%, precluding analysis. There were no thrombolysis-related deaths. **Conclusions:** Improve documentation of NIHSS scores 24 hours post-thrombolysis and identify factors pertinent to delays between CT and thrombolysis time.

Goal setting in an interprofessional community rehabilitation centre in northern Queensland

Kate Contos, Tanya Ashton and Eliza Birtles
Community Rehab northern Queensland, Townsville-Mackay Medicare Local, Townsville, Queensland

**Background/Aims:** Person-centred goal setting in rehabilitation is recognised to promote enhanced outcomes. Curiously, such goal setting is minimally adopted in practice due to various barriers. Identifying what matters to a person is recognised as the crucial first step in formulating a rehabilitation plan that encourages patient hope, motivation and confidence. Community Rehab Q is an interprofessional centre for neurological rehabilitation. The aim of this project was to provide clinicians with structured support to develop goal setting practices that ensure participant goals are at the centre of their rehabilitation. **Methods:** A goal planning and review program was developed and trialled with a sample of participants. Participants identified what was important to them in an initial individual assessment and then joined a 5-week group program. The program components include: exploring participant values, goal clarification, goal planning, identifying barriers and facilitators, implementation of goal plan, and review in group discussion. Ongoing goal progression was fostered by translation of rehabilitation activities to the home setting to promote sustainable change. **Results:** The program was trialled with 20 participants and was found to promote participant ownership of goals, reduce clinician-driven decision-making, increase participants’ understanding of how rehabilitation activities relate to personal goals and home life, and encouraged peer-support with sharing of strategies, fears and successes. **Conclusion:** The demonstrated benefit of this program supports future application for all participants attending Community Rehab Q. This program provides a structured person-centred goal setting model that could be adopted by other rehabilitation services to achieve enhanced participant outcomes.
Prostate motion during prostate cancer radiation therapy treatment: does patient BMI have an influence?

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1Townsville Cancer Centre, The Townsville Hospital, Townsville, Queensland
2Queensland University of Technology, Brisbane, Queensland

Background/Aims: To determine if the patient’s body mass index (BMI) influences the prostate motion during radiation therapy. Methods: Image sequences (movie capture mode) were acquired during the left, anterior and right aspects of radiation therapy treatment delivery in 130 prostate cancer patients. Prostate motion was assessed by measuring the displacement of fiducial markers implanted within the prostate. The mean displacements (in left/right (LR), superior/inferior (SI), anterior/posterior (AP) translations and pitch and yaw rotations) were analysed using one-way ANOVA to determine if there was significant difference between BMI categories. Results: The sample was representative of population BMIs with 1 overweight, 24 normal, 56 overweight and 49 obese patients (BMI range: 18.22 to 47.00; mean: 29.4). The mean ± standard deviations across the study population were 0.37±0.83, 0.34±1.48, -0.90±1.41 mm in the LR, AP and SI translations, and -1.55±5.38 and -0.28±1.93 degrees in the pitch and yaw rotations. There was no statistically significant difference across BMI categories except in LR (p=0.003) and pitch (p=0.007). Tukey HSD post-hoc analysis indicated LR difference from overweight to obese (0.575, 95% CI 0.185-0.965), and the pitch difference from overweight to obese (2.921, 95% CI 0.739-5.102) was statistically significant (p=0.002 and 0.005 respectively). Conclusion: There is no significant relationship between prostate motion and BMI, except in the left/right direction and in pitch. These results support the growing body of evidence that a patient’s body habitus is not the main influence on prostate motion.

Limb amputation in Indigenous Australians on renal dialysis: The Townsville Hospital experience

Rajit A. Gilhotra,1,2 Beverly T. Rodrigues,1,2 Venkat N. Vangaveti3, George Kan4, Kunwarjit S. Sangla4 and Usman H. Malabu2,5

1Department of Endocrinology and Diabetes, The Townsville Hospital, Townsville, Queensland
2College of Medicine and Dentistry, James Cook University, Townsville, Queensland
3Townsville Renal Service, The Townsville Hospital, Townsville, Queensland

Background/Aims: North Queensland has a high prevalence of diabetes, vascular disease and end stage renal failure (ESRF) requiring renal dialysis, particularly amongst Indigenous Australians. Recent reports have identified dialysis as a risk factor for lower limb amputations; however, no studies have been conducted to explore the differences between Indigenous Australians and the general population. The aim of this study was to document differences between Indigenous Australians and the general population for risk factor of non-traumatic limb amputation in North Queensland. Methods: All patients currently attending the Townsville dialysis centre were included in the study. Odds ratio and χ2 tests were performed to identify variables most strongly associated with amputation. Results: A total of 219 patients (114 Indigenous Australians) attended the service. We identified an overall prevalence of limb amputation of 13.7% in patients on renal dialysis (19.3% amongst Indigenous Australians). Indigenous Australians were found to have a higher susceptibility to amputations (RR1.58 [1.27-1.98] p=0.005). The major risk factors of amputations in the overall cohort were history of ulceration (OR 81 [18-360.44] p<0.001) and presence of diabetes (OR 41 [2.5-682.6] p=0.009). Conclusion: Indigenous Australians with ESRF on dialysis who have a past history of ulceration and have diabetes mellitus are at higher risk of having amputations compared with non-Indigenous Australians. Primary prevention of diabetes in the sub-population may help in reducing the limb loss. Further prospective studies on a larger population are needed to confirm our findings.

Hypothyroidism in pregnancy: feto-maternal complications at The Townsville Hospital

Robyn Chadwick,1 Divya Srivastava,1,3 Matthew Winkle,2 Daniel Paul,1 David Watson,1 Kunwarjit S. Sangla1 and Usman Malabu1,2,5

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2Department of Obstetrics and Gynaecology, The Townsville Hospital, Townsville, Queensland
3College of Medicine and Dentistry, James Cook University, Townsville, Queensland

Background/Aims: Untreated hypothyroidism in pregnancy is associated with increased risk of feto-maternal complications including premature birth, low birth weight, gestational hypertension and miscarriage. However, there is insufficient data on pregnancy outcome in adequately treated hypothyroidism in pregnancy. The aim of the study was to assess feto-maternal complications in hypothyroid pregnant women at the Townsville Hospital. Methods: We collected data by a retrospective chart audit of all the hypothyroid patients who attended the high-risk pregnancy clinic at the Townsville Hospital from 1st January to 31st December 2013. Only patients who were adequately treated with thyroxine and maintained TSH target of <2.5 mIU/L with regular follow up in the clinic were included in the study. Results: A total of 73 hypothyroid patients were reviewed. Fifty-two patients were previously diagnosed while 21 were diagnosed with hypothyroidism during the pregnancy period. Mean age in both groups was similar. Interestingly, higher feto-maternal complications were observed in the newly diagnosed hypothyroid patients compared with previously diagnosed hypothyroid patients: 25 out of 52 (48%) and 14 out of 21 (66.7%) respectively (X2 = 7.13; p = 0.008). These complications occurred in spite of the adequate thyroxine replacement. Conclusion: We report higher adverse pregnancy outcome in adequately treated newly diagnosed hypothyroid mothers. Our findings suggests early pre-pregnancy screening for hypothyroidism may lead to a reduction in feto-maternal complications in high risk subjects. Further prospective studies on a larger population are needed to verify our findings.

Patients prefer being in a single room even if they do not know they have an infection

Kathleen McLean,1 Janine Carrucan,1 Sharon Trait,1 Mandy Davidson,1 and Wendy Smyth2

1Infection Prevention and Control Unit, The Townsville Hospital, Townsville, Queensland
2Tropical Health Research Unit for Nursing and Midwifery Practice, Townsville Hospital and Health Service, Townsville, Queensland

Background/Aims: The literature reveals negative psychological impacts on patients who are isolated in single rooms because of infections. It was proposed that a lack of infection control education was a potential contributor to decreased satisfaction and increased anxiety amongst such patients. The aim of this study was to identify whether providing information brochures to infectious patients that are isolated in single rooms improves the patient experience. Methods: A convenience sample of 34 medical/surgical patients who were isolated in single rooms during the month of February 2013 was interviewed by infection control nurses. Between March and June 2013, ward nursing staff were asked to provide an information brochure for patients isolated in single rooms because of infections. From July 2013, 24 patients in single rooms were interviewed in a similar way as previously. Results: Pre-intervention, the majority of patients (n=23) knew they were in a single room due to infections, preferred being in a single room (n=25), and understood why staff wore personal protective clothing prior to entering their room (n=32). Post-intervention, fewer patients knew why they were being isolated, yet the majority (n=15) preferred the quietness of a single room. Only two-thirds of patients (n=16) were given the information brochure. Conclusion: Education pertaining to infection control is not easily delivered by ward nurses. There is clearly an opportunity for infection control
nurses to be directly involved in educating patients about transmission-based precautions. Consequently, the patient information brochures have been amended and the infection control nurses deliver and discuss these with the patients on their daily ward rounds.

Development and review of an interprofessional clinical placement evaluation tool

Nerida Firth1,2 and Eliza Birtles1

1Community Rehab northern Queensland, Townsville-Mackay Medicare Local, Townsville, Queensland
2Mount Isa Centre for Rural and Remote Practice, James Cook University, Queensland

Background/Aims: Evaluation of undergraduate student clinical placements is important as they inform practice and improve the quality of future placement experiences. Community Rehab nQ (CRnQ) offers interprofessional clinical placements to students from several health and social care disciplines. An apparent lack of validated interprofessional placement evaluation tools led to the development of an in-house questionnaire. The aim of this project was to evaluate the results of the piloted evaluation tool and plan the next phase of its development. Methods: The Interprofessional Clinical Placement Evaluation Tool assessed student satisfaction with pre-placement preparation, placement experience, clinical supervisors and interprofessional experience. A combination of quantitative and qualitative data was collected. Results: Overall, 26 students completed the evaluation tool and the results suggest high levels of satisfaction with the clinical placement experience and the clinical supervisors at CRnQ. Working in an interprofessional team was rated as a positive and beneficial aspect of the clinical placement. Completion rates of the placement evaluation tool were poor, posing a challenge to be resolved in the next phase of tool development. Professional growth and increase in clinical knowledge over the duration of placement were not measured. Several key topics were identified as needing more in-depth evaluation based on the results obtained and these will be heavily considered in future tool development. Conclusion: The results of this project will contribute to the further development and refinement of the Interprofessional Clinical Placement Evaluation Tool. This tool, when validated, may be utilised by other clinical placement sites offering an interprofessional learning experience.

POSTER ABSTRACTS

Adherence to haemodialysis regimens: how big is the problem and what can we do to make it easier?

Wendy Smyth,1,3 Vicki Hartig,2 Amy Burrows,2 Kimberley Quayle,2 Megan Hayes2 and Valli Manickam1

1Tropical Health Research Unit for Nursing and Midwifery Practice, Townsville Hospital and Health Service, Townsville, Queensland
2Townsville Renal Service, Townsville Hospital and Health Service, Townsville, Queensland
3Nursing, Midwifery and Nutrition, College of Healthcare Sciences, James Cook University, Townsville, Queensland

Background/Aims: Patients who require haemodialysis for end-stage renal disease are advised to make substantial lifestyle modifications. These include attending the renal unit for dialysis, usually three times per week, and minimising weight gain associated with fluid allowances between dialysis sessions. The aim of this study is to measure adherence to haemodialysis regimens as measured by attendance at scheduled sessions and average weight gain between dialysis sessions. Methods: Retrospective chart audit of a cohort of patients (n=72) attending an in-centre North Queensland renal unit having dialysis via an arteriovenous fistula, graft or central venous catheter over a 12-week period in 2013. Results: Ninety per cent (90%) of the 2405 scheduled sessions were attended: 41 (56.9%) patients attended all their scheduled sessions. The median number of missed sessions was 6.5. Non-Aboriginal and/or non-Torres Strait Islander people, those who did not have to relocate to the regional city, older people and those on a twice-weekly schedule were more likely to attend. The mean daily weight gain was 0.885 kg. The largest mean daily weight gain, over the period, was 1.017 kg/day. Patients 60 years or older were more likely to comply with fluid restrictions. Conclusion: Non-attendance at this unit is much higher than noted in the international literature. If a patient is not attending all scheduled dialysis sessions, their poor health status may deteriorate further. The renal service is considering additional strategies that will assist patients to adhere to their regimens. In doing so, they will improve outcomes for individual patients and better manage healthcare resources.

An automated assay for the measurement of CSF bilirubin

Lucky Kalyapu1 and Donna Rudd2

1Pathology Queensland, Townsville
2College of Public Health, Medical and Veterinary Sciences, James Cook University, Townsville, Queensland

Background/Aims: Subarachnoid haemorrhage (SAH) is a life-threatening condition, the successful management of which is dependent on accurate and rapid diagnosis. Laboratory detection of bilirubin in the cerebrospinal fluid (CSF) using a scanning spectrophotometer is the recommended method for laboratory assessment of SAH. However, this method is technologically challenging and a lack of after-hours expertise often results in the use of subjective visual inspection. We evaluate a modified Jendrassick Grof method for an automated clinical biochemistry analyser and compare the results with those from the gold standard scanning spectrophotometric method. The aim of this study is to validate a newly-developed automated assay for the analysis of CSF bilirubin in an effort to improve service delivery for clinicians diagnosing SAH in rural and remote areas.

Methods: Mock CSF samples containing increasing amounts of red cells, bilirubin and protein were evaluated for bilirubin, oxyhaemoglobin and methaemoglobin using a scanning spectrophotometer. These results were compared with results from the same samples using an automated method for CSF bilirubin (Beckman AU480) to assess interference. Results: The automated (AU480) method showed a 99% correlation when compared to the gold standard method. Furthermore, the new method demonstrated a reduced susceptibility to common pre-analytical interferences. Conclusion: Automating CSF bilirubin measurement will allow for SAH screening in rural and remote areas and improve after-hours service provision in more urban areas.

Autoimmune hypophysitis as a result of cancer treatment: a case series at The Townsville Hospital

Beverly T. Rodrigues,1 Zulfiquer Otty,2 Srivastava Divya,2 Kunwarjit Sangla3 and Vasant Shenoy3

1College of Medicine and Dentistry, James Cook University, Townsville, Queensland
2Department of Oncology, The Townsville Hospital, Townsville, Queensland
3Department of Endocrinology and Diabetes, The Townsville Hospital, Townsville, Queensland

Background/Aims: Iatrogenic hypophysitis (IAH) is an immune-related adverse event observed amongst advanced-stage cancer patients on immunomodulation therapy with the anti-cytotoxic T-cell antigen 4 (anti-CTLA-4) biological agent, Ipilimumab. IAH usually presents with subtle symptoms and a pituitary mass, however due to its fatal potential, a high index of clinical suspicion is important amongst cancer patients on anti-CTLA-4 therapy. The Townsville Hospital (TTH) has recently observed
Psychomotor activity was investigated both in novel and familiar environments to assess the potential interaction between stress and metabolism on behaviours relevant to schizophrenia and autism in mice. This study aims to examine the effect of pharmacological disruption of glucose metabolism on behaviours relevant to schizophrenia and autism in mice. Methods: Three key enzymatic steps of glycolysis were pharmacologically targeted by acute systemic administration of specific inhibitors, including 2-deoxy-D-glucose (2DG, inhibitor of hexokinase), iodoacetate (inhibitor of glyceraldehyde-3-phosphate dehydrogenase, G3PDH) and oligomycin (inhibitor of ATP synthase). The resultant behavioural endophenotype (alterations in psychomotor activity, social behaviour, working and reference memory) was investigated by using a battery of tests, including open field, social interaction test, and the working and reference memory versions of the Y-maze. Psychomotor activity was investigated both in novel and familiar environment to assess the potential interaction between stress and glucose metabolism. Results: Inhibition of hexokinase dose-dependently alters psychomotor activity and social behaviour while working memory remains intact. Inhibition of G3PDH and ATP synthase may result in specific alterations in behavioural endophenotypes of schizophrenia and autism. Conclusion: Preliminary results show that pharmacological inhibition of glycolysis results in abnormal behaviour suggesting that the perturbation of this metabolic pathway may play a causal role in the pathophysiology of neuropsychiatric disorders.

Behavioral effects of the pharmacological disruption of glucose metabolism in mice

Claire Moffatt, 1, 2, 3 Daniel Hook, 3 Bruna Costa Lima, 4 David Mitchell 2 and Zoltan Sarnyai 1, 2, 3, 4

1 Laboratory of Psychiatric Neuroscience, College of Public Health, Medical and Veterinary Sciences, James Cook University, Townsville, Queensland
2 Department of Psychology, College of Healthcare Sciences James Cook University, Townsville, Queensland
3 Australian Institute of Tropical Health and Medicine, James Cook University
4 Comparative Genomics Centre, James Cook University, Queensland

Background/Aims: Recent human genetic, proteomics and metabolomics studies suggest that abnormal glucose and energy metabolism may underlie the pathophysiology of a number of neuropsychiatric disorders, including schizophrenia and autism. However, the effects of specific disruption of glucose metabolism on behaviour have not been elucidated. This study aims to examine the effect of pharmacological disruption of glucose metabolism on behaviours relevant to schizophrenia and autism in mice. Methods: Three key enzymatic steps of glycolysis were pharmacologically targeted by acute systemic administration of specific inhibitors, including 2-deoxy-D-glucose (2DG, inhibitor of hexokinase), iodoacetate (inhibitor of glyceraldehyde-3-phosphate dehydrogenase, G3PDH) and oligomycin (inhibitor of ATP synthase). The resultant behavioural endophenotype (alterations in psychomotor activity, social behaviour, working and reference memory) was investigated by using a battery of tests, including open field, social interaction test, and the working and reference memory versions of the Y-maze. Psychomotor activity was investigated both in novel and familiar environment to assess the potential interaction between stress and glucose metabolism. Results: Inhibition of hexokinase dose-dependently alters psychomotor activity and social behaviour while working memory remains intact. Inhibition of G3PDH and ATP synthase may result in specific alterations in behavioural endophenotypes of schizophrenia and autism. Conclusion: Preliminary results show that pharmacological inhibition of glycolysis results in abnormal behaviour suggesting that the perturbation of this metabolic pathway may play a causal role in the pathophysiology of neuropsychiatric disorders.
patients (15%) were lost to follow-up. Conclusion: Improvements could be made in the documentation of important parts of the history and clinical features that identify those patients diagnosed with PID.

Di-peptidyl peptidase IV Inhibitors: a new horizon in management of atherosclerosis: a review

Tejas P. Singh,1 Venkat N. Vangaveti1 and Usman H. Malabu1,2

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Background/Aims: Dipeptidyl peptidase-IV (DPP-4) inhibitors are a relatively new class of anti-diabetic drugs that have therapeutic potential for management of atherosclerosis. Of the numerous DPP4-inhibitors in clinical practice, no studies have been conducted to compare their anti-atherosclerotic effects despite growing evidence of their usefulness in the high-risk population. The aim of the study is to evaluate and grade the anti-atherothrombotic effects of DPP-4 inhibitors in subjects with atherosclerosis. Methods: A literature search was conducted on MEDLINE and the Cochrane Library using the terms ‘DPP-4 Inhibitors’, ‘atherosclerosis’, ‘GLP’, ‘inflammation’, ‘cytokines’, ‘stroke’, ‘ischaemic heart disease’, ‘hypertension’ and ‘peripheral vascular disease’. A mathematical model devised by us was used to derive and compare the anti-inflammatory effects of the DPP-4 inhibitors using protective score (PS). Data were analysed for alogliptin, linagliptin, saxagliptin, sitagliptin, and vildagliptin. Results: Sixty-two published studies collected in the search were assessed for relevance to this study. Sitagliptin had the highest PS (n=5) while Linagliptin and Saxagliptin yielded the lowest PS (n=1). This comparison and scoring system was limited to the data collected, which did not investigate all athero-thrombogenic factors selected in this study. Conclusion: The findings reflected superiority of sitagliptin over the other DPP-4 inhibitors in the management of atherosclerosis. Further investigations are required to establish specific inflammatory cytokines influenced by the DPP-4 inhibitors and to elucidate their clinical application in atherothrombotic disease.

Dipeptidyl-peptidase IV (DPP4) inhibitors’ cholesterol lowering effect: a systematic review

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Background/Aims: Dipeptidyl peptidase-IV (DPP-4) inhibitors are a relatively new class of anti-diabetic drugs that have therapeutic potential for management of hypercholesterolemia. Of the numerous DPP4-inhibitors in clinical practice, no systematic review has been conducted to compare their anti-hypercholesterolemic effects despite growing evidence of their usefulness in the high-risk population. The aim of this study was to derive and compare the anti-hypercholesterolemic effects of the DPP-4 inhibitors using protective score (PS). Methods: A systematic review was conducted on MEDLINE and the Cochrane Library using the terms ‘DPP-4 Inhibitors’, ‘hypercholesterolemia’, ‘GLP’, ‘inflammation’, ‘cytokines’, ‘stress’, ‘ischaemic heart disease’, ‘hypertension’ and ‘peripheral vascular disease’. A mathematical model devised by us was used to derive and compare the anti-atherothrombotic effects of the DPP-4 inhibitors using protective score (PS). Data were analysed for alogliptin, linagliptin, saxagliptin, sitagliptin, and vildagliptin. Results: Sixty-two published studies collected in the search were assessed for relevance to this study. Sitagliptin had the highest PS (n=5) while Linagliptin and Saxagliptin yielded the lowest PS (n=1). This comparison and scoring system was limited to the data collected, which did not investigate all athero-thrombogenic factors selected in this study. Conclusion: The findings reflected superiority of sitagliptin over the other DPP-4 inhibitors in the management of atherosclerosis. Further investigations are required to establish specific anti-hypercholesterolemic effects of DPP-4 inhibitors and to elucidate their clinical application in addition to its established anti-diabetic effects.

Effects of microalgae-containing diet on the behavioural consequences of chronic psychosocial stress in mice

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Background/Aims: Marine microalgae contain a large variety of bioactive substances that can be harnessed for their therapeutic potentials, including polyunsaturated fatty acids (PUFA), sterols, carotenoids, pigments, proteins and vitamins. A possible implication of these bioactive molecules is to control inflammatory processes. Stress-related mental illnesses, such as depression, have been associated with systemic inflammatory processes. However, the effects of microalgal diet on behaviour have not been investigated. The aim of this study is to examine the effect of microalgal diet on the depression-related behavioural consequences of chronic social defeat (CSD) in mice. Methods: From the age of 21 days for 11 weeks mice were fed with either (1) control normal mouse chow, or (2) mouse chow containing 2% high concentration of saturated fats (high-fat ‘Western diet’, HFD), or (3) microalgal biomass with high concentration of PUFAs (including docosahexaenoic acid, DHA), or (4) de-fatted algal biomass (ALG). Mice were then either subjected to CSD or remained undisturbed. Psychomotor activity, anxiety-like behaviour and cognitive functions were measured using open-field, elevated plus maze, Y-maze and novel object recognition, respectively, taking advantage of a behavioural recognition software, TopScanLite (CleverSystem). Results: CSD induced social avoidance in HFD and DHA mice. ALG feeding prevented psychomotor retardation and cognitive impairments induced by CSD but HFD and DHA resulted in a worsening of the behavioural consequences of CSD. Conclusion: Our preliminary results show that certain bioactive compounds contained in the de-fatted microalgae may have beneficial effects in preventing adverse behavioural consequences of chronic psychosocial stress in mice and high DHA concentrations should be used with caution.

Emergency packs (EP) in ED: improving safety, efficacy and continuity of care by including consumer medication information (CMI)

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Background/Aims: Many emergency departments (EDs) state-wide use emergency pack (EP) systems for discharging patients outside of pharmacy hours. Patients receive the EP without counselling from a pharmacist. Not all medications have consumer medication information (CMI) pre-supplied. The Pharmacy Board of Australia, Pharmaceutical Society of Australia and the Society of Hospital Pharmacists Australia all advocate for the provision of CMI. Their use is well documented to improve safety, compliance and continuity of care. Under these circumstances where a pharmacist is unavailable, a CMI is highly recommended. The aim of this study is to review and improve the current EP processes across the health district to meet standards held by our professional governing bodies. Methods: EP stock holding of four hospitals within our health service district was reviewed to determine the percentage of EPs that contained CMIs. The current procedure was changed so that
when EPs were manufactured, CMIs were manually printed and inserted into each of the medication boxes. As a result of this change, when dispensed from ED, the product would be supplied with a CMI ready for the patient. CMIs were sourced from MIMS® online and Micromedex® and saved for future use. Results: Across four sites, 41 of 202 items (20%) had CMIs, most therefore not meeting professional recommendations. Conclusion: The change in procedure at The Townsville Hospital led to an increase from 19% to 100% now meeting professional recommendations. It is believed that this process could be easily reproduced by other Queensland Health sites to improve safety, compliance and continuity of care.

**Evaluating participation in interprofessional community rehabilitation**

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**Background/Aims:** Active participation of service users and their support people in the rehabilitation process is recognised to contribute to better outcomes at the individual, community and service provision level. Evaluation of participation in rehabilitation services is important to foster such enhanced outcomes and support quality improvement. Community Rehab NQ provides interprofessional community rehabilitation services for people with neurological conditions living in the regional and remote areas of northern Queensland. The person-centred approach to service delivery emphasises high levels of participation. The aim of the project was to provide a sensitive tool with good utility that could evaluate participation in community rehabilitation. **Methods:** Participation was assessed using the Participant Engagement in Rehabilitation Questionnaire (PERQy) adapted from the original Patient Participation in Rehabilitation Questionnaire (PPRQ). The PERQy uses person-centred phrasing and modified wording to meet an appropriate readability level. In total, 70 participants completed the questionnaire. **Results:** Participant responses indicated high levels of perceived engagement across five domains including respect and integrity, planning and decision making, information and knowledge, motivation and encouragement, and involvement of family. **Conclusion:** The PERQy appears to provide a useful tool for assessing participation in community rehabilitation. Future application of this tool in other settings within the Townsville Hospital and Health Service could support increased active participation of service users and enhanced patient outcomes at this broader service provision level. Importantly, service users and their support people are active participants in this quality improvement process.

**Fish allergy: understanding allergen diversity**

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**Background/Aims:** Allergic reactions to bony fish are frequently reported and the major heat-stable allergen, parvalbumin (PV), has been identified and characterized for numerous fish species. PV consists of two distinct lineages, α- and β-forms. The α lineage is predominant in muscle tissue of cartilaginous fish while β-PV is abundant in bony fish. This study aims to understand the molecular differences and low clinical cross-reactivity of PV from these two fish groups. **Methods:** SDS-PAGE gel electrophoresis and immunoblotting of fish protein extracts was conducted using monoclonal and polyclonal antibodies. Phylogenetic analyses were performed to generate a molecular phylogenetic tree of the major fish allergen. Known IgE-antibody binding epitopes of PV from bony fish were compared to PV amino acid sequences of cartilaginous fish using bioinformatics. Homology modelling was used to predict structures of α-PV from the few available cartilaginous fish species. **Results:** Variations in PV expression were visualized by SDS-PAGE and distinct bands of allergenic α-PV were only seen for a few fish by immunoblotting. While the tertiary structures of PV from different fish in both are predicted to be highly conserved, the amino acid sequences of α and β-PV as well as IgE binding epitopes vary considerably. **Conclusion:** Bioinformatics analyses of α- and β-PV amino acid sequences allow us to place the different isoforms on a molecular phylogenetic tree to understand the differences among PV. Epitope alignment of fish PV allows for the comparison of highly antigenic and species-specific allergen regions in β-PV to similar regions in α-PV. The findings of this study will assist in better management of fish allergy and identify hypoallergenic variants of PV.

**Geriatrics Interdisciplinary Student Team (GIST) shaping interdisciplinary team skills in our future health work force**

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**Background/Aims:** The population is ageing, while gerontology principles are often not included in curricula. Interdisciplinary health teamwork is core but team skills are only acquired after graduation. Promising results of a four-day ‘Geriatrics Interdisciplinary Student Team’ (GIST) pilot were reported in 2012. The aim of this study was to implement and evaluate a two-week extended GIST pilot placement compared to usual student placements. **Methods:** The James Cook University Schools of Medicine, Physiotherapy, Occupational Therapy and Social Work contributed one volunteer student each to a GIST to ‘mirror-manage’ four patients between 18 October 2013 and 1 November 2013. Mock-records were kept and team meetings were self-managed. Students had usual ward placements prior to GIST. On the last day, the treating and student teams met to discuss patient management. All outcome measures are published validated scales recorded on the day of usual ward placement start, GIST start and GIST end. **Results:** Logistics were difficult. Mean Team-Skill-Scale-Score increased 27.21% (‘good’ => ‘very good’) with 5.85% attributable to usual placements and 21.36% to GIST while individual scores increased 7.14% (‘excellent’ => ‘excellent’) to 80.0% (‘fair’ => ‘very good’). Mean Attitude-Towards-Health-Care-Team-Score increased 4.1% with 1.07% attributable to usual placements and 3.03% to GIST while individual scores increased 3.57%-15.63% but decreased 13.51% for one. Mean Geriatrics-Attitude-Scale-Scores decreased 8.67% with 6.63% attributable to usual placements and 2.04% to GIST changing a slightly positive to a neutral position. **Conclusion:** GIST markedly improves team-skills and attitudes-towards-health-care-teams through ‘learning by doing’ when compared to usual student placements. A more in-depth evaluation of further GIST placements seems warranted.
High rate of limb amputation in subjects on renal dialysis: is there a difference between haemodialysis and peritoneal dialysis?

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Background/Aims: High rates of end stage renal failure (ESRF) requiring renal dialysis have been reported in North Queensland. Recent reports have identified dialysis as a risk factor for lower-limb amputations but no study has been done which compares the two modalities of dialysis therapy, namely, haemodialysis (HD) and peritoneal dialysis (PD). The aim of this study was to document differences between HD & PD as a risk factor of non-traumatic limb amputation in North Queensland. Methods: All patients currently attending the Townsville dialysis centre were included in this study. Odds ratio and χ² tests were performed to identify variables most strongly associated with amputation. Results: We had a total of 219 patients (160 HD, 59 PD) attending the service. We identified higher prevalence of amputation amongst subjects on HD as compared to PD, 15% vs 10.2% (χ² analysis showed significant association). All subjects in both groups had lower-limb amputations except one in the HD group, who had an upper-limb amputation. Conclusion: We have shown PD might prove to be a safer option compared to HD for subjects with ESRF at risk of limb amputation. Further prospective studies on a larger population are needed to confirm our findings.

Metabolic targeting in a mouse model of schizophrenia

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Background/Aims: Schizophrenia is a severe and disabling disorder affecting 0.7% of the global population (~150,000 Australians). Current treatments are partially or wholly ineffective for many sufferers. Recent studies have raised the possibility that abnormalities of glucose and energy metabolism systemically and in the brain may play a causative role in disease pathophysiology. We hypothesised that intranasal insulin administration may normalise the altered metabolism in the brain may play a causative role in disease pathophysiology. The aim of this study was to examine the effect of intranasal insulin on the behavioural endophenotype in an animal model of schizophrenia induced by chronic administration of ketamine, an antagonist of the NMDA-type glutamate receptors. Methods: In Experiment 1, mice were treated with 30 mg/kg ketamine daily for 10 days followed by a wash-out period, followed by behavioural testing as described above. Results: Chronic ketamine administration results in psychomotor and social behavioural abnormalities. Our intranasal delivery procedure is safe and does not alter behaviour. Conclusion: Metabolic targeting by using intranasal insulin administration may have therapeutic benefits in schizophrenia.

Pattern of hyperprolactinaemia in North Queensland: The Townsville Hospital experience

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Background/Aims: Hyperprolactinaemia is a common endocrine disorder of the hypothalamic-pituitary axis. Its etiology and clinical presentation varies widely, with few studies on this condition reported in Australia, and no available data in North Queensland. The aim of this study is to determine the clinical presentation and management options in patients with hyperprolactinaemia at The Townsville Hospital (THH). Methods: Medical records of patients with diagnosed hyperprolactinaemia attending THH Endocrinology Clinic between 2003 and 2013 were retrospectively audited using outpatient clinic letters. Data analysis evaluated patient demographic data, presenting symptoms, aetiology, imaging studies and treatment regimens. Results: A total of 153 patients was reviewed with a male: female ratio of 1.3. Mean age at diagnosis was 39 ± 14.36 years. Menorrhagia was the commonest presenting symptom amongst females (n=44; 38%), followed by galactorrhoea amongst the entire cohort (n=33; 36%). Pituitary adenoma was the most attributed cause of hyperprolactinaemia (n=52; 60%), 26 being male (28%) and 66 (72%) being female. All patients had magnetic resonant imaging of the pituitary, which revealed adenoma in 98% of cases. Medical therapy with dopamine agonist was most prevalent (n=55; 60%) followed by surgery (n=19; 21%), whilst (n=7; 8%) of patients received both surgical and medical therapies. Conclusion: Prolactinomas constitute a common presentation of hyperprolactinaemia. This audit reflects the prevalence of this condition at THH Endocrine clinics. Interestingly, galactorrhoea was the commonest clinical presenting symptom amongst both sexes. In line with other reports, hyperprolactinaemia was treated with dopamine agonists as preferred primary therapy in majority of the cohort.

Quality of life in prostate cancer patients at the Townsville Cancer Centre

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Background/Aims: To evaluate the quality of life (QOL) of prostate cancer patients treated with image-guided radiation therapy at the Townsville Cancer Centre. Methods: Patient-reported QOL data was collected for 130 prostate cancer patients, along with patient’s BMI and prostate motion during treatment delivery. QOL data was collected using the European Organisation for the Research and Treatment of Cancer validated core questionnaire (EORTC QLQ-C30 V3) with the prostate cancer-specific module (QLQ-PR25) at simulation (baseline), every two weeks throughout treatment and at 3 month, 6 month and 12 month follow up. Descriptive statistics were performed across the 15 functional and symptom domains for each time point. One-way ANOVA was conducted to determine if the change in QOL scores from baseline to 12 month follow up was different across BMI categories. Results: The results are presented and contrasted with published data. Our results are similar to previous studies, with higher scores in functional domains. Symptom scores are similar with some noticeable exceptions such as pain and appetite where our scores are lower, probably due to the published data including all stages of prostate cancer, including metastatic and recurrence. There was no statistical significant difference between any of the changes in QOL scores across BMI categories. This was expected, as there was no significant relationship between prostate motion and BMI, which may cause increased side effects and decreased QOL. Conclusion: As the department introduces new technologies in the treatment of prostate cancer, these results provide important information on the factors that could influence patient quality of life.
Role and efficacy of methadone in pain management in palliative care: a systematic review

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Background/Aims: Methadone is popularly and primarily used as an opioid replacement therapy for people with opioid addiction. It has recently been used in palliative care where one of the most common reasons for admission is symptom control in the form of pain management. However, the efficacy of methadone in pain management in palliative care is largely not known. The aim of this study is to identify the role and efficacy of methadone in pain management in the palliative care setting. Methods: A systematic literature search using the terms ‘methadone’ AND ‘pain’ AND ‘palliative care’ was conducted in PubMed database for full text clinical trials on humans published between June 2010 and June 2014. Results: Only two studies were identified which explored the role of methadone and its efficacy in pain management in palliative care. The first study was based on in-patients and identified that with methadone, palliative patients reported a median pain score of 0 and a peak score of 3 out of 10. Seventy-five percent (75%) of patients did not report pain above a score of 3. The second study, conducted in an outpatient palliative care setting, reported a success rate of 92% with methadone initiation for pain management. The median pain scores reported were 6, 4 and 3 out of 10 at baseline, 13-day and 21-day follow-up respectively (p<0.0001). Conclusion: The limited literature suggests that methadone, with high efficacy, can play an essential role in pain management in the palliative care setting.

Suboptimal management of gout in primary care: a systematic review

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Background/Aims: This systematic review aims to summarise published evidence that assessed the management of gout in regards to prescription of urate lowering therapy (ULT), monitoring of serum urate levels (sUA) and allopurinol dosing in patients with renal impairment. Methods: Studies investigating the management of gout in general practice (GP) were identified by searching PubMed and Scopus databases. The eligibility criteria stated studies had to be focused on GP settings alone. Studies were also excluded if they examined diagnosis without exploring management of gout. Editorials and reviews were excluded. Results: A total of nine studies was identified. Eight studies explored the proportion of gout patients currently on ULT. Six out of the eight studies revealed that ULT was prescribed in less than 50% of gout patients. Four studies looked at monitoring of sUA levels in gout patients. The results were generally similar throughout studies indicating suboptimal management. Only two studies examined the monitoring of sUA levels specifically on patients who were prescribed ULT. These two studies showed 28% and 38% on patients on ULT had their sUA levels monitored. Two studies examined the dosing of allopurinol in renal impaired patients and revealed that 74% - 78% of renal impaired patients had an appropriate allopurinol dose of less than 300 mg. Conclusion: This systematic review suggests that gout is suboptimally managed in general practice. More studies with larger sample size focusing on active patients are required to provide more definitive evidence.

Role of methadone in chronic pain management: what are the guidelines?

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Background/Aims: Methadone’s primarily utilization is under the structured opioid therapy as a replacement therapy. However, pain physicians resort to methadone in certain cases after failing to manage pain with other methods and opioids. The aim of this study was to identify guidelines for the use of methadone in chronic pain management. Methods: A literature search using the terms ‘methadone AND chronic pain’, ‘methadone clinic AND pain management’, ‘methadone AND pain clinic’ was conducted in databases such as PubMed, The Cochrane Review, Therapeutic Guidelines and Psychiatry Online for full text human studies published in English between October 2003 and October 2013. Results: We identified two major guidelines: the American Society of Interventional Pain Physicians Guidelines and the Canadian Guidelines. Particularly for methadone, the guidelines recommended use in cases of intractable pain, cancer and non-cancer pain, neuropathic pain and in cases with opioid induced hyperalgesia. It was recommended to be used at later stages after failure of other modalities and methods with specialist input. A multicentre study through the Centers for Disease Control and Prevention in USA found that 31% of opioid-related deaths were due to methadone. It advised that methadone should not to be used as drug of first choice in chronic non-cancer pain, and to only be used as a regular form of pain relief (not PRN) where benefits outweigh the risks. Conclusion: Guidelines recommend the use of methadone in chronic pain only when other forms of analgesia have failed. It should be used with caution and with the input from a pain specialist.

Success of systemic treatments in the management of recurrent glioblastoma multiforme

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Background/Aims: Glioblastoma multiforme (GBM) is the commonest primary brain tumour in adults, carrying a poor prognosis with a median survival of 12-14 months. Treatment of recurrent or progressive GBM has recently involved chemotherapeutic agents including temozolomide (TMZ); however, recent times have seen the introduction of the monoclonal antibody (mAb), bevacizumab (BV). Whilst the adjuvant treatment regimen of newly-diagnosed GBM is standardised, there are no set guidelines for management of recurrent GBM. The aim of this study is to analyse the benefit of TMZ vs. BV as systemic treatment of recurrent GBM. Methods: A systematic review of the current literature evaluating the efficacy of adjuvant therapy for recurrent GBM was conducted using the PubMed database. Results: Three international clinical trials were included, of which one reviewed the success of TMZ, one the efficacy of BV and one, combination therapy with both. Results suggested that BV as single-agent therapy had a 6-month progression-free survival (6-PFS) of 33.9% (P = 0.017, 90% CI 19.2-48.5). Low-dose TMZ had a 6-PFS of 19% (95% CI 6-32) and had detrimental effect on survival amongst patients who also had previous exposure to BV. Combination therapy with TMZ and BV had highest rates of disease stabilisation (50%) but similar rates of 6-PFS as TMZ (18.8%) (95% CI 7.36-33.7). Conclusion: BV as monotherapy was found to be more efficient than single-agent TMZ and combination-therapy of TMZ and BV for the treatment of recurrent GBM.
The burden of helminth disease in Queensland, 2003-2013

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Background/Aims: It has long been acknowledged that certain regions within Queensland experience a higher rate of infection with helminths than others; however, no attempt has been made within the past fifty years to determine precisely where helminth diseases occur in Queensland, and what organisms are implicated. Such information will have an impact on the empiric treatment of gastrointestinal disease and public health interventions in targeted communities, and further research into parasitic diseases in Queensland.

Methods: We undertook a retrospective review of data contained within Queensland Health’s AUSLAB laboratory information system from 2003 to 2013 inclusive. All occurrences of infection with helminths were recorded, along with demographic data including age, gender, and geographic location.

Results: Communities in Far North Queensland experience the highest burden of helminth infections. A significant outlier is present in one of the communities in Central Queensland. The majority of regions with a high burden of disease have little, to no access, to private pathology services, so it is likely that these results are indicative of the vast majority of parasitological examinations. In addition, these results are not from screening data, therefore asymptomatic infections are likely under-represented. The true burden of disease in areas of high prevalence is likely underestimated.

Conclusion: This study demonstrates that helminth disease remains present in many North Queensland communities. The data can be used to undertake targeted screening of selected communities to determine the actual burden of disease and where public health interventions would be most effective.

The prognostic value of normal myocardial perfusion imaging studies: local experience

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Background/Aims: Myocardial perfusion imaging (MPI) is useful in the risk stratification of patients with suspected coronary artery disease. Method: We examined all the myocardial perfusion studies performed at The Townsville Hospital from April 2011 to April 2012. All hospital admissions within the period of 12 months following the MPI study were then analysed to determine primary (acute myocardial infarction or death as a result of coronary disease) and secondary cardiovascular outcomes (unstable angina or revascularization procedures). Results: A total of 1025 MPI was performed during the specified period. There were 791 normal myocardial perfusion studies. Twenty-two end points were identified in the group of patients who had a normal MPI. Two deaths were directly attributed to an AMI, seven patients had an AMI, eleven had unstable angina and two patients had revascularizations, not related to an acute coronary syndrome. Event rate of primary outcome (death or AMI) was 1.1% with a negative predictive value (NPV) of 98.9%. Event rate of secondary outcome was 1.6% with an NPV of 98.4%. Conclusion: A normal myocardial perfusion imaging has strong negative predictive value for all major cardiovascular events in the cohort of patients studied, within the first 12 months. The overall major cardiovascular event rate in our institution within a 12 month period following a normal MPI study was 2.7% with a negative predictive value of 97.3%. The annualized event rate for primary outcome was 1.1% in our study. This higher annual event rate in our cohort may be explained by inclusion of both pharmacological and exercise myocardial perfusion imaging.

Therapeutic success in the prevention of arterial and venous thromboembolism

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Background/Aims: Atrial fibrillation (AF) is the commonest cardiac arrhythmia and cause of strokes, and it is expected to triple in prevalence in coming decades. Venous thromboembolism (VTE) is recognized as a major cause of preventable in-hospital deaths. Older generation anticoagulants such as warfarin and heparin have excelled in preventing arterial and venous thromboses in the past; however, relatively little is known about corresponding newer oral anticoagulants (OACs) including dabigatran and rivaroxaban. The aim of this study is to review the efficacy of new anticoagulants in the prevention of thromboembolism. Methods: A systematic review on studies analysing the efficacy of these agents was conducted using the PubMed database. Results: Eight published clinical trials were included, five focusing on dabigatran and three on rivaroxaban. Results suggest that dabigatran is most effective in prevention of stroke in non-valvular AF patients and it is non-inferior to heparin in post-operative DVT prevention (36.4% vs. 38.9%; 95% CI −7.3 to 4.6) however it carries a higher risk of myocardial infarction (MI) (RR 1.38; 95% CI 0.98 to 1.87; P = 0.048). Rivaroxaban was found to be non-inferior to warfarin in stroke prevention amongst non-valvular AF patients (1.7% vs. 2.2%; 95% CI, 0.66 to 0.96; P < 0.001) and of DVT in post-operative patients (3.2% vs. 3.5%; 95% CI 0.70 to 1.13; P<0.001). Conclusion: Newer OACs such as rivaroxaban and dabigatran are effective in preventing thromboembolic events, specifically strokes amongst non-valvular AF and DVTs in post-operative patients. However, dabigatran is associated with higher risk of MI and hence must be prescribed with caution.

The role of statin therapy in primary and secondary prevention and in improving functional outcomes amongst stroke patients

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Background/Aims: Stroke is the commonest cause of neurological disability, affecting 53,000 Australians annually and costing $1.3 billion. Whilst 80% of patients survive, one-third (1/3) die within the first year, with survivors facing a 43% chance of recurrence over five years. Lipid-lowering drugs, including statins, are known to reduce cardiovascular disease risk; however, their efficacy in preventing, improving survival and functional outcomes (FOs) in stroke is less clear. The aim of this study is to assess the efficacy of statins in primary and secondary stroke prevention, and in achieving good functional outcomes post-stroke. Methods: A systematic review of the current literature evaluating the efficacy of statins was conducted using PubMed database. Three clinical trials were included in this review. Results: Results suggested that primary prevention statin-use did not reduce stroke incidence or severity, however, it produced good FOs at discharge in 46.3% of patients (95% CI 1.14-2.36; P = 0.008) and at 90 days post-stroke (95% CI 1.29-1.56; P < 0.001). Post-stroke statin-use reduced mortality up to the 90-day mark, was associated with good FOs at 1 year, and reduced stroke recurrence rate by 2.2% in a 5-year period (95% CI, P < 0.001). However, haemorrhagic stroke incidence was increased by 1.67 times amongst this cohort, with no increase in resultant overall fatality. Conclusion: Statins are effective in secondary stroke prevention and improved FOs; however, their role in primary prevention is questionable. Statin use may be associated with increased risk of haemorrhagic strokes amongst those that do experience recurrent events, but further research is required.
Using positive psychology measures in clinical practice: a new way forward

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Background/Aims: Mental health tends to be thought of from a medical perspective, with a focus on the management of psychopathology. However, there is a growing understanding that ‘mental health’ should be considered as a holistic state that includes both mental illness and mental well-being. To encourage clinicians to use a complete state model of mental health, newer positive psychology measures need to have their psychometric properties established and compared with current clinical measures. Methods: A selection of positive psychology measures (MHC-SF, Flourishing Scale, SWLS, LOT-R) along with traditional measures of mental illness (Kessler-10, Basis-24, DASS21) were administered to an Australian sample of community dwelling adults (n=173, M=30.5, SD=11.3). Results: The internal consistency of the positive psychology measures was excellent (>0.9). High reliability coefficients were also found for the three clinical measures. Convergent validity was demonstrated through high significant correlations between the positive psychology measures (r=0.72 to 0.82); and lower significant negative correlations with psychological distress measures (r=-0.51 to -0.65). These consistent correlation patterns indicated robust construct validity as measures of positive mental health separate from traditional measures of psychological distress. Conclusion: The complete state model of mental health provides an evidence-based framework to support the development of novel systems of health care that more fully conceptualize mental health outcomes. Newer positive psychology measures are easy to use, inexpensive and reliable and valid. They send a clear message that assessment and treatment planning have a strengths based approach to recovery and outcome, and their use should be encouraged.

Worldwide prevalence of lower limb amputation in renal dialysis patients: a systematic review

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Background/Aims: Renal dialysis has recently been identified as a risk factor for lower limb amputation (LLA); however, exact rates are not known. Methods: A systematic review of existing literature investigating the prevalence of LLA in subjects that had end-stage renal failure (ESRF) and were on renal dialysis was conducted. A systematic literature search using the MeSH terms ‘diabetes’ AND ‘amputations’ AND ‘renal dialysis’ was conducted in PubMed, MEDLINE, Cochrane reviews and Google Scholar database for full-text articles published in English from July 2003 to July 2013. Results: A total of six full-text published studies conducted worldwide were included in this systematic review, five of which included patients on haemodialysis alone and one on both haemodialysis and peritoneal dialysis. The reported findings on prevalence of amputations in the renal failure cohort varied from 1.72% in Japan to 13.4% in Canada. Five out of the six studies identified presence of diabetes mellitus as the leading risk factor for amputation (p<0.05) in renal dialysis patients. Other risk factors identified were: high HbA1c, high C-reactive protein and low serum albumin. Conclusion: This review demonstrates high prevalences of LLAs in patients with ESRF receiving dialysis therapy. It has also identified the closely-associated risk factors for the adverse outcome of amputation, of which the most important is the presence of diabetes mellitus.

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THRW would not happen without the work of the organising committee. The committee members, from a range of disciplines, come up with great ideas, and then work hard to put them into practice. So we must heartily thank you all. In addition, we thank our major sponsor, Northern Clinical Training Network.

Most of all, we thank all who take an interest in THRW, and who present their work, participate in the workshops, and attend events like the debate. We thank the keynote speakers, Professors Anderson, Edwards, Golledge and Najman, for giving up their time and sharing their hard-won knowledge so generously. We thank everyone who comes and takes part by listening and joining with us in the events. Without all these people, THRW would not be the great success it is.

Townsville Health Research Week Committee Chair, Professor Linda Shields

Linda is the first nurse in Australia to hold a higher doctorate, with a Doctor of Medicine from University of Queensland. She also holds a PhD and Masters degree from the School of Medicine at UQ.

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