Welcome from the Executive Director of Research

On behalf of the Research Week organising committee, I am delighted to welcome you to Melbourne Health Research Week 2017. Our program this year is rich and varied commencing with an opening address by the Dean MDHS, The University of Melbourne, Professor Shitij Kapur. Our keynote speaker is Professor Stephen M Davis AM, Director of the Melbourne Brain Centre and Neurology at The Royal Melbourne and Professor of Translational Neuroscience, The University of Melbourne. Research has confirmed that “Time is brain” and Stephen will describe how time impacts on the outcomes for people who have had strokes.

Parkville Precinct staff are encouraged to attend any (or all) of the 10 symposium sessions throughout the week – with a record 75 platform presentations. During the Poster Viewing session on Friday, also expect to see around 140 posters on display. This year’s program is crammed with seminars, talks, and workshops – the highest number of events in years and I anticipate there will be something here for everyone.

The success of Research Week depends on the organisers behind the scenes and so I would like to thank the Research Week Committee, led by Angela Magira, members of the Office for Research, and all the poster and abstract reviewers who help shape the program – Thank you!

Enjoy the program

Professor Ingrid Winship
Executive Director Research

Research Week Committee 2017

Professor Ingrid Winship (Chair)
Ms Angela Bragato
Ms Desiree Cashman
Professor Kim Foster
Ms Alex Gorelik
Dr Catherine Granger

Ms Angela Magira
Dr Emma O’Brien
Professor Terence O’Brien
Mr Richard Verrelli
Dr Angela Watt

Thursday 22 June 2017

Opening plenary

1.00 – 1.45 pm, Charles La Trobe Lecture Theatre, Function Centre, RMH
(Lunch at 12.30 pm)

MC: Professor Ingrid Winship, Executive Director Research, Melbourne Health

Opening Address: Professor Shitij Kapur, Dean Faculty of MDHS, Vice-Chancellor Health, The University of Melbourne

Keynote Speaker: Professor Stephen Davis AM, Director of the Melbourne Brain Centre and Neurology, The Royal Melbourne Hospital; Professor of Translational Neuroscience, The University of Melbourne

“Saving brain and improving outcomes after stroke”

Stroke is a massive global health challenge, with 17 million new strokes each year, 6 million deaths and is a leading cause of chronic disability. Effective acute stroke therapies are based on modification of the evolving pathophysiology in the stroke process. Following arterial occlusion, most patients have a mismatch between the region of hypoperfusion and the ischemic core, termed the ischemic penumbra and the target of acute stroke therapy. Reperfusion strategies that attenuate infarct growth include IV tPA and now endovascular thrombectomy for large artery occlusion. Our pathophysiological research has confirmed the principle that “time is brain”. The ischemic penumbra can be identified in real time using advanced imaging techniques and used to select treatment responders to reperfusion therapies at delayed time windows.
Big Ideas Symposium
2.00 – 5.00 pm, Seminar Room 1, Function Centre, RMH

Facilitators:  
A/Professor Louise Ward, Deputy Head of School of Nursing and Midwifery  
Ms Sinead Barry, Lecturer in Nursing

Opening Address:  
A/Professor Denise Heinjus, Executive Director Nursing Services and Allied Health, The Royal Melbourne Hospital  
Professor Rob Pike, Pro Vice Chancellor of the College of Science, Health and Engineering, La Trobe University

In partnership with La Trobe University, the Big Ideas symposium provides a platform for nursing and allied health clinicians and students to present a concept or theory to improve the care of patients. Twenty-six innovative thinkers will present their Big Ideas in five-minute talks.

Registration:  

University of Melbourne (RMH) MD4 Symposium
2.00 – 5.00 pm, Charles La Trobe Lecture Theatre, Function Centre, RMH

Chair:  
Professor Terence O’Brien, James Stewart Professor of Medicine, Department of Medicine, The University of Melbourne

MD1 Morgan Hepburn-Brown, Respiratory and Sleep Medicine  
Early decision making in acute pulmonary embolism: a retrospective clinical audit

MD2 Qi Yang Damien Qi, Diabetes and Endocrinology  
The RMH Pro-Diab Perioperative Study: a structured perioperative diabetes management plan improves medication usage and glycaemia

MD3 Tal Koren, Neurology  
Patients with epilepsy exhibit changes in expression of cardiac ion channels

MD4 Ken Teng, Neurosurgery  
Longitudinal post-operative quality of life and cognition in acoustic neuroma, meningioma and low-grade glioma

MD5 Adam Fambiatos, Neurology  
Risk of secondary progressive multiple sclerosis: a longitudinal study

AFTERNOON TEA: 3.30 – 3.55 PM

MD6 Olivia Galante, Neurology  
Cerebral Microbleeds and Intracerebral Haemorrhage

MD7 Tran Binh (Andrew) Giang, Clinical Immunology and Allergy  
Functional analysis of monogenic candidates in families with CVID

MD8 Fathima Nazha Nazeem, Anaesthesia and Pain Management  
High flow humidified nasal oxygen to prevent desaturation during endobronchial ultrasound – a randomised controlled trial

MD9 Benjamin Johnstone, Neurology and Psychiatry  
Determinants of psychiatric comorbidities and quality of life in patients with drug-resistant epilepsy or psychogenic non-epileptic seizures

The Royal Melbourne Hospital
Friday 23 June 2017

Research Symposium

**CONCURRENT SESSIONS: 9.15 – 10.15 AM**

**Basic Sciences Research**

Chair: **Professor Elizabeth Vincan**

Charles La Trobe Lecture Theatre

1. **Holly Anderton**, PhD Student, WEHI
   Inhibitor of APoptosis proteins (IAPs) limit inflammation in the skin

2. **Ka Yee FUNG**, Postdoc fellow, Walter and Eliza Hall Institute of Medical Research
   Immunoregulatory role of IL-11 in autoimmune inflammation

3. **Pablo Casillas-Espinosa**, Research Fellow, Royal Melbourne Hospital, The University of Melbourne
   Anti-epileptogenic effects of a selective T-type Ca2+ channel antagonist, Z944, in the post-status epilepticus model of temporal lobe epilepsy

4. **Paul Nguyen**, PhD student, Walter and Eliza Hall Institute of Medical Research
   IL-18 is associated with the onset and progression of gastric cancer

5. **Peter Revill**, Senior Scientist, Melbourne Health
   Splice Variants of hepatitis B virus are strongly associated with liver cancer.

**Health Services Research**

Chair: **Miss Kate Fetterplace**

Seminar Room 1

6. **Wendy Bower**, Senior Clinician Physiotherapist / Researcher, Royal Melbourne Hospital
   Patient reported outcome measures for nocturia

7. **Catherine Granger**, Physiotherapy Research Lead, Royal Melbourne Hospital
   Preoperative exercise training for patients with non-small cell lung cancer: A Cochrane Systematic Review

8. **Lisa Hebel**, Snr SW Adviser/SW Research Coordinator, NWMH
   Adult Mental Health: Implications for their dependent children

9. **Margaret Pozzebon**, Speech Pathologist, Senior Clinician, Royal Melbourne Hospital
   Spousal recollections of early signs of primary progressive aphasia

10. **Lauren Ross**, General Medical Advanced Trainee, Royal Melbourne Hospital
    Palliation and the use of diagnostic tests in patients dying in hospital from COPD

**Cardiorespiratory Research**

Chair: **Associate Professor Leeanne Grigg**

Seminar Room 2

11. **Thomas Moran**, Medical Student, Melbourne University
    Patient and carer perceptions regarding the advanced lung disease service – a new model of integrated respiratory and palliative care

12. **Vara Perikala**, Resp/Acute Medicine Clinical Nurse Consultant, Royal Melbourne Hospital
    Case study: Obstructive Sleep Apnoea, Obesity hypoventilation, Trisomy 21 and intellectual disability in a 19 year old female

13. **John Politis**, Basic Physician Trainee, Melbourne Health
    General Practitioners' beliefs and experiences when caring for patients with severe COPD and refractory breathlessness

14. **Sandeep Prabhu**, Electrophysiology Fellow and PhD Student, Royal Melbourne Hospital, University of Melbourne, Alfred Health, Baker Heart and Diabetes Institute
    Ventricular fibrosis regresses following AF ablation in patients with persistent AF and heart failure – A multi-centre prospective study

15. **Dominica Zentner**, Cardiologist, Royal Melbourne Hospital
    A rapid scoring tool to assess mutation probability in patients with inherited cardiac disorders
Friday 23 June 2017

Research Symposium

CONCURRENT SESSIONS: 10.30 – 11.30 AM

Public Health Research

Charles La Trobe Lecture Theatre

16. Justin Denholm, Medical Director, Victorian Tuberculosis Program
   SIRCLE – a randomised controlled cost comparison of self-administered Short-course Isoniazid and Rifapentine for Cost-effective Latent tuberculosis Eradication

   Postcards from the digital health frontier; using telehealth for Hepatitis C care

18. Philippe Lachapelle, Asthma Fellow, Allergy and Immunology Department
   The Royal Melbourne Hospital thunderstorm asthma cohort

19. Ebenezer Owusu Adjah, Statistician, Melbourne Epicentre, Royal Melbourne Hospital
   Association of adiposity level at diagnosis of type 2 diabetes with cardiovascular and mortality risk: Ethnicity-specific real world study

20. Marie Parsons, PhD Candidate, Walter and Eliza Hall Institute of Medical Research
   Identification of clinically relevant colon cancer genes predictive of improved relapse free survival

Cancer Research

Chair: Professor Ingrid Winship

Seminar Room 1

21. Suad Abdirahman, PhD student, The Walter and Eliza Hall Institute of Medical Research
   Establishing human colorectal cancer patient derived xenografts for pre-clinical drug trials

22. Dan Buchanan, Senior Research Fellow, University of Melbourne
   Somatic causes of tumour mismatch repair-deficiency in Lynch-like colorectal and endometrial cancers

23. Karen Doggett, Post-doctoral Research Fellow, Walter and Eliza Hall Institute of Medical Research
   Minor class splicing represents a novel target for cancer treatment

24. Paul James, Clinical Geneticist, Melbourne Health
   The contribution of rare variants, polygenic risk, and novel candidate genes to the hereditary risk of breast cancer in a large cohort of Breast Cancer families.

25. Eric Joo, Research Fellow, University of Melbourne
   Tumour DNA methylation signature defines colorectal cancers from biallelic MUTYH mutation carriers

Continuing Care Research

Seminar Room 2

26. Frances Batchelor, Director, Health Promotion, National Ageing Research Institute
   Do people think they will fall when they are in hospital?

27. Mervyn Kyi, Endocrinologist & General Physician, Royal Melbourne Hospital
   A Randomised trial of a Proactive Inpatient Diabetes Service (RAPIDS) demonstrates decreased adverse glycaemia and hospital-acquired infections

28. Katie Marley, Manager Diabetes Education, Diabetes Clinical Nurse Consultant, Royal Melbourne Hospital
   HbA1c reduction and engagement in an ambulatory insulin stabilisation program

29. Zoe Milner, Senior Hand Therapist, Royal Melbourne Hospital
   Complex regional pain syndrome: a new model of care improving patient outcomes

30. Joanne Young, Quality Use of Medicines Pharmacist, Melbourne Health
   Pharmacist-facilitated e-learning module versus standard pharmacist-delivered education for warfarin naive patients: a randomised controlled study
Poster Viewing
11.45 am – 12.45 pm, Function Centre, RMH (Lunch at 12.30 pm)

The Great Debate 2017
1.00 – 2.00 pm, Charles La Trobe Lecture Theatre, Function Centre, RMH (Lunch at 12.30 pm)
Saturday 24 June 2017

Research Symposium

Surgical Research Forum

8.30 – 9.30 am, Ewing Lecture Theatre, Level 5, Clinical Sciences Building

Chair:  Professor Alistair Royse

31. Clarissa Whitehead, PhD student, Department of Surgery (RMH), The University of Melbourne
Targeting invadopodia to treat glioblastoma invasion

32. Nigel Da Silva, Colorectal Research Fellow, Melbourne Health
Accuracy of administrative coding data to determine lymph node & metastasis status in colorectal cancer

33. Ruth Mitchell, Registrar, Melbourne Health
The structure, function and inhibition of Epidermal Growth Factor Receptor in Glioblastoma

34. Joshua Wong, HMO, Royal Melbourne Hospital
Factors influencing re-excision following breast conserving surgery

35. Ryan Stuchbery, Honorary, Department of Surgery, The University of Melbourne
A transcriptional field effect in fat can be used to predict tumour grade in localized prostate cancer

Monday 26 June 2017

Study designs and basic epidemiological and statistical concepts

9.00 am – 12.00 pm, Seminar Room 1, Function Centre, RMH

Presenter:  Ms Alex Gorelik, Senior Statistician, Melbourne EpiCentre, Melbourne Health

This half day workshop will provide an overview of different study designs, confounders, randomisation process, and different options for sample size calculations/power analysis. Participants will also gain some theoretical knowledge regarding data collection and data management in research, available data sources, basic statistical concepts and the main statistical tests used in clinical research.


Research Symposium

12.00 – 1.00 pm, Charles La Trobe Lecture Theatre, Function Centre, RMH

Neurosciences and Mental Health Research

Chair:  Professor Helmut Butzkueven

36. Bruce Campbell, Neurologist, Melbourne Health
Prognostic and treatment impact of CT perfusion imaging in pooled analysis of randomized trials of endovascular thrombectomy

37. Tomas Kalincik, Neurologist, Melbourne Health
Fingolimod, dimethyl fumarate and teriflunomide for relapsing-remitting multiple sclerosis

38. Bernd Merkel, Postdoctoral Research Fellow, The University of Melbourne & The Royal Melb. Hospital
Timing of high-efficacy disease modifying therapies for relapsing-remitting multiple sclerosis

39. Maria Di Biase, Melbourne Neuropsychiatry Centre
PET imaging of putative microglial activation in individuals at ultra-high risk for psychosis, recently diagnosed and chronically ill with schizophrenia

40. Mastura Monif, Neurology Fellow, Royal Melbourne Hospital
Interleukin-1β has trophic effects in microglia and its release is mediated by P2X7R pore. Implications in multiple sclerosis and other neuroinflammatory conditions
Ethics: Tips for submitting and securing approval for your project
1.00 – 2.00 pm, Seminar Room 1, Function Centre, RMH

Facilitators:  Melissa Cadwell, Angela Bragato, Desiree Cashman, Alex Gorelik

Targeted to future and current researchers and research coordinators (new and experienced), this session will provide an overview of the ethics submission process for new research and quality assurance applications, outline best practices and provide some handy hints to navigate the ethics submission process.

Registration:  https://www.thermh.org.au/events/ethics-tips-submitting-and-securing-approval-your-project

Tuesday 27 June 2017

Data management & analysis using Microsoft Excel
9.00 am – 12.00 pm, Computer Lab, The RMH Library

Presenter:  Ms Alex Gorelik, Senior Statistician, Melbourne EpiCentre, Melbourne Health

This practical workshop will be dedicated to data management and analysis using Excel. Participants will learn how to manage data, how to use Excel formulas to create new variables and calculate basic statistics. They also will learn how to perform sample size calculations and basic statistical tests in Excel. Participants will be given some useful tips and tricks.

Registration: This session is fully booked

Take this App, and call me in the morning: Future of digital health prescribing
12.00 – 1.30 pm, Seminar Room 1, Function Centre, RMH

Speakers:  Christopher Kommatas, Innovation Manager & Accelerator Program Director, MH
Tim Blake, Managing Director, Semantic Consulting
Grace Lethlean, ANDHealth

Digital Health has become a growing phenomenon within the healthcare industry. Society is increasingly dealing with an ageing population, an increase of ill health related to work stress, and constraints on healthcare budgets. Add to this the golden age of entrepreneurship and we are seeing the way we identify, track, monitor, store and learn to manage chronic conditions or how we use medication is changing but how quickly? In this session, we will explore the future of prescribing of digital health apps, wearables and devices. The benefits, challenges and impact on the current healthcare system.

MH Staff:  Free with discount code MelbHealth
External:   $15 Early Bird / $25 Full Registration

Quality and integrity in research
2.00 – 3.00 pm, Seminar Room 1, Function Centre, RMH

Facilitators:  Dr Angela Watt, Dr Sarah Rickard

The best possible healthcare is only achievable through the best practice research. Through excellent research, each of us can enjoy and expect the best of health. However, research that does not have integrity and is not of the highest quality is not ethical. Find out about the latest updates and new processes to be implemented by the Office for Research to help you maintain and strengthen research quality and integrity. The session will provide a host of practical tips, process and tools, including the launch of the NEW ‘Research Toolkit’ that will make your life easier, the quality of your research higher and the healthcare outcomes for our patients better.

Registration:  https://www.thermh.org.au/events/quality-and-integrity-research
**Wednesday 28 June 2017**

**Translational Meeting: Applying precision medicine in epilepsy**

9.00 am, Ian Potter Auditorium, Kenneth Myer Building, 30 Royal Parade, The University of Melbourne

**Case: Targeted therapy for glioma associated epilepsy**
- Clinical case discussion: Dr Joshua Laing
- Scientific discussion: Dr Andrew Neal

**Case: Pharmacological potential in drug resistant epilepsy**
- Clinical case discussion: Dr Emma Foster
- Scientific discussion: Dr Chris French

**Dynamic consent: Bringing research into the 21st century**

10.30 – 11.30 am, Charles La Trobe Lecture Theatre, RMH

Speaker: **Dr Matilda Haas**, Program Coordinator, Australian Genomics Health Alliance

The research environment is rapidly changing, with biospecimen and big data sharing becoming more common through international collaboration, especially in genomics. This session explores dynamic consent, where online or app based personalised platforms allow study participants provide more specific, future proof consent and to engage more fully in research.


**Pathways to research for allied health and nursing clinicians**

12.00 – 1.00 pm, Lovell Lecture Theatre, Clinical School, Ground Floor (enter via the Function Centre)

Presenters:
- **Mr Sean Hosking**, Epilepsy Research Coordinator, RMH; President, Victorian Association of Research Nurses
- **Ms Rebecca Bullock**, Creating Safety Nurse, NorthWestern Mental Health
- **Dr Catherine Granger**, Physiotherapy Research Lead, The Royal Melbourne Hospital

Putting together submissions to Trusts and Foundations is often a very different process, than applying to purely research related organisations such as the NHMRC. In this session the Royal Melbourne Hospital Foundation will go through the different ways to approach these organisations, with some tips, tricks and a look at different funding opportunities and how the RMH Foundation can assist with this process. This session will also look at how the Foundation works to seek support from Corporate and Community donors to also assist with research related activity.


Registration: This session is fully booked
Systematic Review Boot Camp: A practical workshop on how to conduct a systematic review

9.00 am – 12.00 pm, Seminar Room 1, Function Centre, RMH

Facilitators:

Dr Catherine Granger, Physiotherapy Research Lead
Ms Marlena Klaic, Occupational Therapy Research Lead

This session aims to equip participants with basic skills and knowledge regarding how to conduct a systematic review. The workshop will cover how to design a systematic review, according to the international guidelines (PRISMA) and will cover:

- setting a question
- developing a search strategy
- conducting the search
- extracting data
- assessing the risk of bias of studies and basic analysis of results; and
- how to register the review protocol and steps to take to publish it in a peer review journal

The workshop is interactive and designed to allow participants to design on their own systematic review protocol during the session. The workshop is appropriate for clinicians who have read a systematic review but have not undertaken one, or not lead one as a first author. Participants are asked to bring along a basic potential clinical question that they are interested in answering through the completion of a systematic review, such as, What is the effectiveness of … (treatment)… for patients with…..?

Closing plenary

1.00 – 2.00 pm, Charles La Trobe Lecture Theatre, Function Centre, RMH (Lunch at 12.30 pm)

Chair: Professor Ingrid Winship, Executive Director Research

Plenary: Dr Irene Ruderman, Nephrology Research Fellow

Changes in Bone and Mineral Markers after cessation of Cinacalcet in dialysis patients with secondary hyperparathyroidism

Final presentation for Research Week followed by the annual awarding of the Research Week prizes handed out by the Executive Officer of Melbourne Health, Associate Professor Christine Kilpatrick. Prizes will be awarded for best oral and poster presentations as well as the winner of this Cleveland Young Investigator Award 2017.
Poster Display Map

Function Centre, Ground Floor, The Royal Melbourne Hospital, City Campus

Clinical School Foyer

Renal: 64-69
Aged Care: 70-76

Endocrinology: 77-80
Neurosciences: 81-100

Innovation Lab

Meeting Room 1

Meeting Room 2

Meeting Room 3

Meeting Room 4

Office

Bar

Bar Area

Seminar Room 1

Seminar Room 2

Lecture Theatre

Gastrointestinal: 41-42
Allied Health: 43-55
Health Service Evaluation: 56-63

Osteoporosis: 101-102
MD4 Student Posters: 103-140

Genetics: 141-146
Infectious Diseases: 147-150
Cardiorespiratory: 151-154
Cancer: 155-167

Quality of Care: 168-173
Mental Health: 174-183

Exit
Oral Presentations

Keynote address

Professor Stephen Davis AM

Saving brain and improving outcomes after stroke

Stroke is a massive global health challenge, with 17 million new strokes each year, 6 million deaths and is a leading cause of chronic disability. Effective acute stroke therapies are based on modification of the evolving pathophysiology in the stroke process. Following arterial occlusion, most patients have a mismatch between the region of hypoperfusion and the ischemic core, termed the ischemic penumbra and the target of acute stroke therapy. Reperfusion strategies that attenuate infarct growth include IV tPA and now endovascular thrombectomy for large artery occlusion. Our pathophysiological research has confirmed the principle that ‘time is brain’. The ischemic penumbra can be identified in real time using advanced imaging techniques and used to select treatment responders to reperfusion therapies at delayed time windows.

Closing Plenary

Irene Ruderman

Changes in Bone and Mineral Markers after cessation of Cinacalcet in dialysis patients with secondary hyperparathyroidism

RUDERMAN I (1,2), Hewitson T (1,2), Smith E (1,2), Toussaint T (1,2), Holt S (1,2)

1- Department of Nephrology, The Royal Melbourne Hospital, 2- Department of Medicine, The University of Melbourne

Aim: Removal of PBS funding for cinacalcet in Australian has provided a unique opportunity to assess changes to biochemical and clinical outcomes in dialysis patients following the cessation of this medication.

Background: Secondary hyperparathyroidism (SHPT) is a common complication of chronic kidney disease (CKD) and is associated with significant abnormalities in bone metabolism. Management of SHPT is challenging and involves correction of mineral abnormalities or more direct interventions with either the calcimimetic cinacalcet or parathyroidectomy.

Methods: Dialysis patients at The Royal Melbourne Hospital whom had cinacalcet withdrawn between August 2015 and March 2016 were included in a prospective observational study. Blood tests were taken at time of cessation and at 1, 3, 6 and 12 months thereafter.

Results: Of 128 patients on cinacalcet, 62 patients consented for this study. Mean age was 67 ± 13 years (mean ± SD) with 55 patients on haemodialysis and 7 on peritoneal dialysis.

Biochemical changes over the 12-month follow-up included increases in serum parathyroid hormone from 51.5 (IQR 33.8-92.8) pmol/L at baseline to 114 (IQR 71-155) pmol/L at 12 months (p<0.0005), serum calcium from 2.30±0.2mmol/L to 2.50±0.1mmol/L (p<0.0005), and alkaline phosphatase 131(IQR 103-173)/U/L to 146(IQR111-209)/U/L (p=0.049). Serum albumin decreased from 35±4.5 g/L to 33±4.5 g/L (p=0.033). Over 12 months there were two fractures, five cardiac events, one episode of calciphylaxis, and two parathyroidectomies in this cohort. The mortality rate was 19%(n=12). Five patients recommenced cinacalcet, meeting criteria under a special access scheme.

Conclusion: Biochemical changes in our cohort represent worsening SHPT following withdrawal of cinacalcet. Longer term follow-up will allow us to identify if this translate to increased rates of parathyroidectomies and cardiovascular mortality and morbidity.

Basic Science Research

1 Holly Anderton

Inhibitor of APoptosis proteins (IAPs) limit inflamation in the skin

ANDERTON H(1,2), Rickard J(1,2), Varigos G(3), Lalaoui N(1,2), Silke J(1,2)

(1) Cell Signalling and Cell Death Division, The Walter and Eliza Hall Institute for Medical Research; (2) Department of Medical Biology, University of Melbourne; (3) Department Dermatology, Royal Melbourne Hospital

Aims: To explore the role of Inhibitor of APoptosis (IAPs) proteins in skin development and homeostasis, furthering our molecular understanding of inflammatory signalling in the skin.

Background: IAPs are critical regulators of cell death and survival pathways. Mice lacking cellular IAP (cIAP) and either cIAP2 or X-linked IAP (XIAP) die in utero, and myeloid lineage-specific deletion of all IAPs causes sterile inflammation; however their role in the skin is unknown.

Methods: To investigate the role of IAPs in skin development we generated epidermal-specific IAP-deficient mice and analysed the emerging phenotypes biochemically and histologically. To investigate their role in skin homeostasis we injected a highly specific IAP antagonist compound (Smac-mimetic) subcutaneously into adult wild-type mice and a panel of genetic knock-outs. To explore the contribution of bacteria to the Smac-mimetic inflammatory response we injected wild-type mice born and raised in an abiotic (germ-free) environment, and wild-type mice after treatment with antibiotics.

Results: We found that combined genetic deletion of cIAP1 in keratinocytes and ubiquitous cIAP2 deletion (clap1EKO/EKO.cIap2-/-) caused profound skin inflammation and keratinocyte cell death, that was lethal by post-partum day 10. Injection of Smac-mimetic induced a Toxic Epidermal Necrolysis (TEN) like local inflammation characterised by keratinocyte cell death, immune cell infiltration, and production of pro-inflammatory cytokines. The severity of the skin reaction was reduced in Tnfr1-/- and Ifng-/- mice and almost absent in Tnfr1-/-Ifng-/- double knock-out mice, Tnfr1-/-, and FasnLgld/gld mutant mice. Mice deficient in Myd88, which is required for an inflammatory response to bacterial products, also had a reduced reaction to Smac-mimetic injection. This prompted us to inject germ-free mice which we found had no response to Smac-mimetic. Germ-free mice became sensitive to the injections within...
days of transfer into a Specified Pathogen Free (SPF) facility. Administration of antibiotics to SPF mice also reduced the inflammatory response induced by Smac-mimetic injection.

Conclusions: Both the genetic and pharmacological models of IAP loss demonstrate a vital role for the IAPs in maintaining epidermal homeostasis and host-microbe symbiosis. TNF, IFNγ and FasL cytokines have all been proposed to play a causal role in TEN and our results suggest Smac-mimetic injection as a model to investigate this poorly understood condition. Our results also suggest that, contrary to the current dogma, normal skin flora can contribute to skin inflammation and might play a role in TEN. This work may ultimately lead to identification of new therapeutic targets for skin diseases such as TEN.

2 Ka Yee FUNG

Immunoregulatory role of IL-11 in autoimmune inflammation

Fung KY (1), Burstroem L (1), Preaudet A (1), Leung PS (1), Zhang X(2), Markovic-Plese S (2), Putoczki TL (1)

(1) Walter and Eliza Hall Institute of Medical Research, Inflammation Division, Melbourne, VIC (2) Department of Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599

AIMS: To investigate the immunoregulatory role of Interleukin (IL)-11 in autoimmune inflammation.

BACKGROUND: IL-11 is a member of the IL-6 family of cytokines that signals through transmembrane glycoprotein-130 (Gp130) beta-subunits resulting in activation of the transcription factor, STAT3. While IL-6 has been the subject of intense investigation, there has been very little research into the function of IL-11. Since both STAT3 and IL-6 play an important role in polarising cytokines that signals through transmembrane STAT3, and IL-6 but plays a role in TEN. This work may ultimately lead to identification of new therapeutic targets for skin diseases such as TEN.

CONCLUSION: Taken together, these results suggested that IL-11 contributes to drive Th17 cells differentiation both in vivo and in vitro. Most importantly, targeting IL-11 signalling could be a possible therapeutic strategy for treating MS patients.

3 Pablo Casillas-Espinosa

Anti-epileptogenic effects of a selective T-type Ca2+ channel antagonist, Z944, in the post-status epilepticus model of temporal lobe epilepsy

CASILLAS-ESPINOZA PM(1), Braine EL(1), Shultz SR(1), Jones NC(1), Snutch TP(2), O’Brien TJ(1), Powell KL(1).

(1) The Department of Medicine, The University of Melbourne, Royal Parade, Parkville, VIC, 3052, VIC, Australia. (2)Michael Smith Laboratories, University of British Columbia, Vancouver, BC, Canada

Aim and background: Current pharmacotherapy for TLE is symptomatic, suppressing seizures, but has no disease modifying effect on epileptogenesis. T-type Ca2+ channels have been strongly implicated in the pathogenesis of TLE. Therefore, in this study we set out To evaluate the effects of Z944, a potent and selective T-type Ca2+ antagonist, on epileptogenesis and epilepsy-related behavioural comorbidities in the post-status epilepticus (post-SE) model of TLE.

Methods: Rats underwent implantation of EEG recording electrodes and kainic acid induced SE for 4 hours. SE was terminated with diazepam and animals were assigned to one of five treatment groups: post-SE + Z944 (60mg/kg/day, n=8); post-SE + levetiracetam (200mg/kg/day, n=9); post-SE + vehicle (n=8); sham + vehicle (n=6) or sham + Z944 (60mg/kg/day, n=6). Treatments were delivered by continuous subcutaneous infusion for four weeks. Four weeks after completion of treatment, the animals had two weeks of continuous video-EEG monitoring to evaluate the effects of the different treatments on epileptogenesis. Behavioural tests were performed to evaluate anxiety, depression, learning and memory, and brain tissue was collected for molecular analysis.

Results: Following drug washout, post-SE + vehicle animals had the highest average number of seizures per day (0.77±0.09), followed by post-SE + Z944 (60mg/kg/day, n=8); post-SE + levetiracetam (200mg/kg/day, n=9); post-SE + vehicle (n=8); sham + vehicle (n=6) or sham + Z944 (60mg/kg/day, n=6). Only two of the eight post-SE + Z944 animals had seizures recorded (one seizure each during the two weeks of recordings), whereas all the animals in the other post-SE groups had several seizures. Depressive-like behaviour was assessed using the sucrose preference test. The post-SE + vehicle rats had reduced sucrose preference (and indicative of anhedonia) when compared to shams (p < 0.05). For the FST, post-SE + vehicle rats spent significantly more time immobile (p < 0.05) that shams, which is indicative of despair. In contrast, treatment with Z944 after SE normalised the pathological behaviour on both tests.

Conclusion: Treatment with Z944 has a powerful anti-epileptogenic effect in the post-SE model of TLE and reduces comorbid depressive-like behaviour associated with this disorder. This indicates that pharmacologically targeting T-type Ca2+ channels may be an effective
disease-modifying treatment for TLE. Z944 has been found to have a favourable safety profile in early phase clinical trials for pain facilitating the translation of the results of this preclinical study into a clinical anti-epileptogenesis trial.

4  

Paul Nguyen

IL-18 is associated with the onset and progression of gastric cancer

NGUYEN P(1), Busuttill R(2), Mielke L(1), Belz G(1), Boussiosut A(2), Ernst M(3), Putoczki T(1).

(1) Walter and Eliza Hall Institute of Medical Research, (2) Peter MacCallum Cancer Centre, (3) Olivia Newton-John Cancer Research Institute

Introduction: Gastric cancer (GC) is the fourth most prevalent, and the third most common cause of cancer-related death worldwide. The disease is generally asymptomatic, and consequently is often diagnosed at an advanced stage when metastasis is present, and limited treatment options are available. Chronic inflammation is recognised as an integral component in the development and progression of GC, and is associated with increased infiltration of immune cells into the tumour microenvironment. The production of pro-inflammatory cytokines by these cells may contribute to tumour progression through activation of pathways promoting tumour cell survival and proliferation. Previous work from our lab has shown that therapeutic inhibition of the inflammatory cytokine interleukin (IL)-11 is effective in ameliorating disease progression in gastrointestinal cancer, however, it is unclear what role other pro-inflammatory cytokines, such as IL-18, might have in disease progression.

Methods: To characterise the role of different pro-inflammatory cytokines in GC, we first analysed microarray and qRT-PCR data of from human GC specimens and adjacent non-tumour tissue. Following the generation of a candidate list of cytokines deregulated in human GC, the role of individual cytokines in disease progression was examined using a validated mouse model of intestinal-type GC, referred to as Gp130Y757F, by crossing into cytokine knock-out strains and monitoring tumour burden and the expression of genes and proteins classically associated with tumorigenesis.

Results: We found that the expression pro-inflammatory cytokines including IL-1β and IL-18 were significantly elevated in the tumours of human GC patients compared to non-tumour tissue. In Gp130Y757F mice, genetic ablation of IL-18, but not of IL-1β significantly reduced gastric tumour burden, which was associated with a reduction in the number of intratumoral macrophages, but not lymphocytes. This observation correlated with decreased expression of pro-inflammatory (Ifng, Tgfβ1), antimicrobial (Reg3b, Reg3g), and tissue remodelling (Mmp9) genes in these mice.

Conclusion: Our results demonstrate that IL-18 has an important role in GC disease progression, and may serve as a potential therapeutic target.

5  

Peter Revill

Splice Variants of hepatitis B virus are strongly associated with liver cancer.

6  

Thomas Moran

Patient and carer perceptions regarding the advanced lung disease service – a new model of integrated respiratory and palliative care

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Background: The Advanced Lung Disease Service (ALDS) is a unique, new model of integrated respiratory and palliative care that aims to address the unmet needs of patients with advanced, non-malignant, lung disease. Aim: To explore patients’ and carers’ experiences and satisfaction with the ALDS.

Methods: All current ALDS patients and their carers were invited to complete an anonymous, confidential questionnaire with a researcher who was independent of the ALDS team.

Results: Eighty-eight responses were received, from 24 carers and 64 (80.0%) of 80 eligible patients. Respondent patients’ median age was 75 years, 34 (53.1%) were male and 25 (39.1%) lived alone. 58 patients (90.6%) had a primary diagnosis of severe Chronic Obstructive Pulmonary Disease. The median number of ALDS clinic visits was 9, and 52 (81.3%) patients saw both respiratory and palliative care staff in the clinic. 66 (75.0%) respondents rated the ALDS as excellent, 18 (20.5%) as very good and 85 (96.6%) would recommend the ALDS to others. 89 (100%) respondents found the ALDS helpful, with 87 (98.9%) feeling more confident self-managing their symptoms, and 87 (98.9%) reporting the ALDS team listened to them carefully. Aspects of the ALDS which were important to respondents included: continuity of care from the same doctors and nurses - 82 (93.2%), long term care - 77 (87.5%), access to urgent clinic reviews - 63 (71.6%), and respiratory nurse home visits - 53 (60.2%).

Commonly reported themes were staff warmth, kindness and friendliness, optimal disease management, patient self-management education, and opportunities to discuss all aspects of care, including future care wishes.

Conclusion: ALDS patients and their carers express high levels of satisfaction with this new model of integrated respiratory and palliative care, with the empathic, caring nature of staff and long term care being highly valued.

7 Vara Perikala

Case study: Obstructive Sleep Apnoea, Obesity hypoventilation, Trisomy 21 and intellectual disability in a 19 year old female

PERIKALA V(1,2)
Respiratory Medicine, RMH(1) Medicine and Community, RMH(2)

Introduction: Obesity Hypoventilation Syndrome (OHS) is estimated to occur between 10-20% of patients with Obstructive Sleep Apnoea (OSA) (Mokhlesi B, et al; 2008). The most common signs and symptoms are excessive daytime sleepiness, loud snoring, choking during sleep, fatigue, hypsomolence, impaired concentration and memory, a small oropharynx, and a thick neck (Nowbar S, et al; 2004). Non-invasive ventilation (NIV) is an effective form of treatment in patients with OHS and OSA (Salord N, et al,2013). Case study: A 19 year female Ms G with a BMI of >60 was presented to the hospital with 5 days of cough, rhinorrhoea tachypnoea, nil fevers or sweats, increasing breathlessness at home. She was brought to emergency. Flu swab was negative, chest x-ray showed fluid over load and was treated with frusemide. Routinely the patient sleeps while in a sitting position where Sao2 is 92% an room air. During the night, the patient was de saturating to 70% on room air. No baseline data was available, only VBG : PH: 7.37, Paco2: 52, Hco3: 29, PaO2: 42, Sao2: 75.

Aim of the case study: Review of Implementing NIV in difficult patient population

Method: Patient admitted from ED to the ICU for CPAP implementation, but was not tolerating CPAP. ENT referral was made to exclude abnormalities and foreign bodies in the neck, but nothing was found. Later the patient was discharged to the Respiratory Care Unit for further management. On arrival to the patient did not use NIV and pulled out her face mask. The next day, with the help of her sister around bed side, Resp CNC implemented NIV via Nasal pillows and stayed with patient for 10 minutes. Low pressures were started such as peep 5 cmH2o and slowly increased to 15 cm h2o. The patient tolerated it well and slept on her back for first time in 15 years. No de saturations were noted. Overnight she had an oximetry study and auto CPAP, most of the time she used 8 -11 cmh2o pressures.

Results: Set pressures were given, 11 cm h2o CPAP and discharged back home.

Conclusion: Not only is identifying the correct NIV masks crucial the for success of NIV therapy, but starting lower pressures and staying with the patient are important in the success of this case.

Discussion: Identifying these patients in ED and ICU, early referral to respiratory specialists and early implementation of NIV, not only will reduce the length of hospital stay but also the cost.

8 John Politis

General Practitioners’ beliefs and experiences when caring for patients with severe COPD and refractory breathlessness

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Introduction/Aim: Refractory breathlessness is common and undertreated in patients with advanced Chronic Obstructive Pulmonary Disease (COPD). Breathlessness management is complex and may include opioids, however there is a perceived reluctance to prescribe opioids. This study aims to understand the approaches to symptom management and palliative care undertaken by General Practitioners (GP) when caring for patients with severe COPD.

Methods: GPs were invited by email and at educational events to complete a case-vignette based survey.

Results: One hundred and forty-eight GPs completed the survey. In the described case of a stable, optimally managed COPD patient with severe refractory breathlessness, 90 (66%) GPs recommended adding a new medication to treat dyspnoea. Of whom 38 (42.3%) recommended using an opioid. While 75 (55%) GPs thought opioids had a role in treating breathlessness in...
patients with severe COPD (but not in the terminal phase of their illness), in practice only 66 (49%) GPs had previously initiated or continued an opioid prescription started by another doctor for the treatment of refractory breathlessness. Only 67 (55%) GPs felt comfortable providing general palliative care themselves to their COPD patients, with these GPs being more likely to initiate opioids themselves or continue an opioid prescription to treat refractory breathlessness (p = 0.001). One hundred and twenty (88%) GPs wanted more training or ongoing education regarding managing patients with severe COPD and refractory breathlessness.

Conclusion: Most GPs recognise and are willing to add specific treatments for refractory breathlessness. However, many GPs recommend treatments for which there is no evidence or which are not included in current guidelines. Experience prescribing opioids for refractory breathlessness is low and half of GPs feel uncomfortable providing general palliative care to patients with COPD. These findings highlight current gaps in knowledge and training, which GPs themselves recognise and would like to address.

9 Sandeep Prabhu

Ventricular fibrosis regresses following AF ablation in patients with persistent AF and heart failure – A multicentre prospective study

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Aim: To determine the reversibility of diffuse ventricular fibrosis associated with idiopathic dilated cardiomyopathy (IDCM) and persistent AF following the restoration of sinus rhythm and the improvement in ejection fraction.

Introduction: AF ablation improves symptoms and systolic function in patients with comorbid persistent AF and IDCM. However, whether diffuse ventricular fibrosis associated with cardiomyopathy, as measured by cardiac MRI, improves in concert with LVEF following catheter ablation is unknown.

Methods: Patients with IDCM (LVEF≤45%) and persistent AF with previously failed medical rhythm control, and no contraindication to cardiac MRI (CMR) were prospectively enrolled and underwent AF ablation and implanted with loop recorders, for AF monitoring. All patients underwent CMR with native ventricular T1 mapping, a histologically validated index of diffuse ventricular fibrosis, and BNP, prior to and at 6 months post ablation.

Results: 18 patients were enrolled across 3 centres (Melbourne Health, Alfred Health and MonashHeart): (age 59±13, 92% male, mean continuous AF duration 12±5.4 months, NYHA class 2.5±0.5, mean 24 hour heart rate 81±12bpm and LA size: 34±4.0cm2) All patients underwent catheter ablation (PVI and posterior LA isolation) and were in SR at 6 month follow up (AF burden <5% in 94% patients). Compared to baseline, there was a significant increase in left ventricular ejection fraction (baseline vs 6 months: 33±8.0% vs 47±11%, p<0.001), reduction in indexed left ventricular end systolic volume (80±34ml/m2 vs 63±34ml/m2, p=0.001), reduction in BNP (-351±213ng/L vs 109±100ng/L, p<0.001) and NYHA functional class (2.5±0.5 vs 1.3±0.6, p<0.001) at 6 months. This was associated with reduction in native T1 time from baseline to 6 months (1260±120ms vs 1192±77ms, average ΔT1 mapping time =62±123ms, p=0.002).

Conclusion: Recovery of LVEF in patients with PeAF and IDCM undergoing AF ablation is associated with a shortening of native T1 times consistent with regression of diffuse ventricular fibrosis. Ventricular structural remodelling associated with a presumed arrhythmia mediated cardiomyopathy, may be reversible by the restoration of sinus rhythm.

10 Dominica Zentner

A rapid scoring tool to assess mutation probability in patients with inherited cardiac disorders

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Aim: To ascertain whether clinical and family history variables can assist decision making about genetic testing in the population of patients presenting to a cardiac genetic clinic (CGC).

Background: The development of massive parallel sequencing (MPS) in genetics remains an expensive test and has variable yield across the spectrum of inherited cardiac diseases. Genetic testing in this area remains unfunded. The CGC determined to explore whether clinical and family history variables might predictively assist with calculation of pre test probability of positive mutation detection outcome. This would improve the process of patient counselling and assist the clinic in offering access to testing in an equitable manner. The population attending CGC represent the broad spectrum of inherited cardiac disease, and the decision was made to explore a non disease specific tool.

Methods: Utilising CGC transition from single gene/small number of candidate gene testing to MPS, consecutive MPS cases were identified (Sept 2014 - Dec 2015, n = 126). Cases were scored for the presence of pre-determined clinical and family history variables, blinded to MPS results. Subsequent unblinding allowed ascertainment of the odds ratio (OR) between each variable and positive mutation detection. A clinical tool was developed and variables with higher OR association given a higher weighting. The revised tool was subsequently validated in a cohort of 40 patients.

Results: Mean tool score in the derivation cohort was 3.94, mutation positive subgroup: 4.74 and mutation negative subgroup: 3.49 (t test, p < 0.0001). As the clinical tool score increased, there was a strong linear correlation with an increasing probability of detecting a mutation (r2 = 0.88). The maximal enrichment for individuals carrying a mutation occurred with a threshold clinical tool score of 3 (OR 5.63, CI 1.59 - 19.92, p =
Aim: The aims of this study were to i) investigate predictors of nocturia bother and episode frequency and ii) identify variables that can be individualized as outcome measures of treatment efficacy.

Background: Change in voiding frequency is the current marker of treatment efficacy for nocturia. However, nocturia can change from night to night in response to clinically relevant comorbidities. As such nocturia frequency may be an insufficient outcome measure.

Methods: Prospective data from 113 patients ≥18 years of age with nocturia ≥1/night attending the Continence Clinic at Royal Melbourne Hospital was merged with data collected from the 91 similar participants presenting to Ghent University Urology Clinic, Belgium. Exclusion criteria were end-stage renal failure, bladder cancer, pelvic radiotherapy, terminal malignancies, and urinary catheterisation.

Items in the datasets were derived from the Pittsburgh Sleep Quality Index, ICIQ-Overactive Bladder, ICIQ-Female Lower Urinary Tract Symptoms Long Form, ICIQ-Male Lower Urinary Tract Symptoms Long Form and Nocturia Quality of Life patient-completed metrics.

Results: Variables predictive of nocturia ≥2 per night: high bother (OR 7.34); daily urgency (OR 5.29); short time to first waking (OR 0.26); low sleep efficiency (OR 2.37); breathing dysfunction (OR 5.94) and poor sleep quality (OR 2.37). Independent predictors that explained 44-61% of the variance of high frequency nocturia were short time to first waking to void, bother and daily urgency.

Predictors of high nocturia-related bother were: poor sleep quality (OR 4.13), short time to first waking (OR 0.60), daily urgency (OR 2.78), high nocturia frequency (OR 1.70) and weekly use of sleep medication (OR 2.24). High bother related to a single episode of nocturia was associated with impaired quality and total hours of sleep, use of sleep medication and daytime fatigue.

Older age, male gender and urgency were protective against high bother despite multiple episodes of nocturia.

Eight individualised outcome measures addressing the 3 domains of: sleep (efficacy, quality, need for medication), lower urinary tract (urgency, time to first waking) and wellbeing (nocturia-related bother, daytime sleepiness and loss of enthusiasm) were developed.

Conclusions: This is the first study to report items to measure change in variables of importance to patients with nocturia. These measures sit alongside self-report of nocturia frequency.

11 Wendy Bower
Patient reported outcome measures for nocturia

12 Catherine Granger
Preoperative exercise training for patients with non-small cell lung cancer: A Cochrane Systematic Review

Health Services Research
intervention group needed intercostal catheters was lower (MD -3.33 days; 95% CI -5.35 to -1.30 days) (pooled data from two studies), and postoperative length of hospital stay was also lower in the intervention group (MD -4.24 days; 95% CI -5.43 to -3.06 days) (pooled data from four studies).

Conclusion: Preoperative exercise training appears to reduce the risk of developing a postoperative pulmonary complication, the duration of intercostal catheter and postoperative length of hospital stay in people undergoing lung resection for NSCLC. The findings of this review should be interpreted with caution due to disparities between the studies, methodological limitations, risk of bias and small sample sizes. This systematic review emphasises the need for larger RCTs.

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13 Lisa Hebel

Adult Mental Health: Implications for their dependent children

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Aim: To investigate the formal and informal social networks of parent clients of adult mental health services and to determine the identification, assessment and interventions of the needs of the dependent children in order to explore options for improving work between the various systems that can offer support and help to these children parents and families.

Background: In Australia there has been 15 years of COPMI (Children of Parents with a Mental Illness) and FaPMI (Families where a Parent has a Mental Illness) initiatives plus 10 years of focus on Victoria’s Vulnerable Children post the enactment of the Children’s Youth and Family Act. There are recent examples of concern, including a 10 year old child not attending school for over a year, a child witnessing their mother cutting her own throat with no documented follow up for this child and a 3 year old child’s whereabouts not being known overnight when mother admitted to hospital. Early trauma is a risk factor for later mental health problems and prevention and early intervention are the most effective ways to reduce the impact of trauma. Having a mental illness does not make someone a bad parent however these children can be at risk.

Methodology: In 2015 a clinical data mining (CDM) project was carried out with 25 files of clients who were parents, randomly selected from 4 adult mental health services (100 in total).

A 26 question quantitative CDM tool focused on demographics, psychosocial needs as well as the formal and informal supports of parent clients. Of those 25 files from each service, 10 were randomly selected (40 in total) for a more in-depth review, answering 10 specifically designed qualitative questions investigating the documented identification, assessment and interventions of the needs of the dependent children of registered clients.

Results: Themes of social isolation, limited formal and informal social supports, poverty, violence and trauma were found. The impact on the clients’ ability to parent and have potential to cause direct or indirect harm to the children will be described.

Conclusions: There is still more to do to recognise the children are there and to support the parents who have heightened isolation and cumulative social distress. The service system does not make it easy for the clinicians involved with these parents, to access the most appropriate help for these children in a timely manner.

14 Margaret Pozzebon

Spousal recollections of early signs of primary progressive aphasia

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Background: Although primary progressive aphasia (PPA) is known to be characterised by progressive loss of language abilities, knowledge about the earliest symptoms is limited.

Aim: This study sought to explore spousal recollections regarding the earliest manifestations of PPA and to compare the nature of the earliest perceived symptoms across the three PPA variants.

Method: In-depth interviews focusing on earliest symptoms of illness onset were conducted with 13 spouses whose partners were diagnosed with PPA. The data was collated, analysed and key themes identified and compared across the PPA variants.

Results: Spousal retrospective accounts indicated the 3 PPA variants (non-fluent, logopenic and semantic) had a signature profile announcing illness onset. The findings suggest the possibility that PPA initially presents as subtle changes in interpersonal-relational contexts for svPPA and nfvPPA rather than overt receptive and expressive language impairments. The initial symptoms for partners with svPPA were speech production and fluency issues. The nuances revealed through personal narratives illustrate the challenges associated with early identification, particularly as very early manifestations of PPA are unlikely to be easily captured in standardised clinical assessments, scales and questionnaires.

Conclusion: Understanding the nature of symptoms perceived in the earliest stages of PPA has potential to inform earlier and accurate diagnosis and interventions to assist those living with the illness.

15 Lauren Ross

Palliation and the use of diagnostic tests in patients dying in hospital from COPD

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Background: COPD is an incurable, progressive illness, with associated significant morbidity and mortality. Accurately determining prognosis in severe COPD is
well-recognised to be challenging, as is diagnosing “active dying”.

**Aim:** To audit the use of diagnostic tests in both recognising active dying and after establishing the “Goal of Care” (GOC) was palliation in COPD patients dying in hospital.

**Method:** A retrospective audit of 475 consecutive patients who died from COPD at an Australian teaching hospital between 2004-2016.

**Results:** Of 221 patients included: 136 (60%) male, median age 80 years; median respiratory function: FEV1 0.8L (41%), FVC 2.0L (73%) and DLco 9 (41%); and 109 (49%) used home oxygen. 63 (29%) patients had palliative care involvement prior to the final admission. During the terminal admission patients received on average 7 episodes of venepuncture, 9 Arterial Blood Gas tests and 3 chest radiographs. Receiving increased diagnostic tests was associated with age <70 years, admission under respiratory medicine team, ICU admission, and radiological evidence of pneumonia on admission.

For 187 (85%) patients, the GOC was documented as palliation during the final admission, a median of 1.8 days prior to death. 131 (70%) patients had diagnostic tests performed on the day palliation was initiated, and despite the change in GOC 22 (12%) patients had further tests following palliation. 70 (32%) had tests on the day they died.

**Conclusion:** Excessive, unnecessary diagnostic tests were performed in one third of inpatients dying from COPD, including those following a clear decision to palliate. Failure to clinically diagnose active dying imposes an unnecessary burden of diagnostic tests on those in their final hours.

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### Public Health Research

16 **Justin Denholm**

**SIRCLE – a randomised controlled cost comparison of self-administered Short-course Isoniazid and Rifapentine for Cost-effective Latent tuberculosis Eradication**

JUSTIN T DENHOLM (1-3), Emma S McBryde (4), Damon Eisen (5), Alan Street (2), Elizabeth Matchett (2), Caroline Chen (6), Thomas Shultz (2), Beverly Biggs (2), Karin Leder (2,7)

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**Aim:** To evaluate the comparative cost-effectiveness of standard and short-course therapy for LTBI in an Australian context

**Background:** Currently, treatment of latent tuberculosis infection (LTBI) in Australia consists most commonly of a 9-month course of isoniazid (9H). A three-month course of weekly isoniazid and rifapentine (3HR) has been shown to be as effective as nine months of daily isoniazid, and associated with less hepatotoxicity however, rifapentine is not currently available in Australia. Introduction of this regimen would have apparent advantages for people with LTBI in Victoria by safely shortening duration of LTBI therapy. However, the cost effectiveness of this new therapeutic approach is uncertain.

**Methods:** Single centre randomised controlled trial, conducted between December 2013- March 2016. Participants underwent 1:1 randomisation to either a 9 month course of daily isoniazid or 12 week course of weekly isoniazid and rifapentine. Primary outcome measure was total healthcare system costs (AUD) per completed course of LTBI therapy. Secondary analyses were performed to consider cost-effectiveness under varying assumptions regarding commercial cost of rifapentine.

**Results:** Overall, 34 of 40 participants in the 9H group (85%) and 36/40 in the 3HR group (90%) completed therapy. One patient in the 3HR group was hospitalised for a febrile illness; no hospitalisations were recorded in the 9H group. The cost per completed course of 9H was 601 AUD, while that of 3HR was significantly lower at 511 AUD (p<0.01).

**Conclusions:** This study provides evidence that short-course INH/RPT is a well-tolerated and cost-effective tool for the treatment of LTBI in an Australian context.

17 **Kudzai Kanhu**

**Postcards from the digital health frontier; using telehealth for Hepatitis C care**

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**Aim/Background:** The Victorian Infectious Diseases Service based at the Royal Melbourne Hospital currently provides telehealth care for rural and regional patients with hepatitis C. Telehealth is defined as the ‘use of telecommunication techniques for the purpose of providing telemedicine, medical education, and health education over a distance’.1 There is evidence to suggest that patients from rural and regional sites are subject to worse outcomes from chronic hepatitis C when compared with their urban counterparts. The progressive roll out of the national broadband network and increasing availability of web based videoconferencing platforms and mobile devices have provided unprecedented capacity to manage patients remotely. The primary outcome of this study is to demonstrate that telehealth delivered hepatitis C management achieves comparable virological outcomes to standard face to face care.

**Methods:** The study is part of a quality audit of the hepatitis service. Key outcome and process measures include: Proportion of patients achieving a sustained virological response (SV); Failure to attend rate (FTA); Frequency of technical difficulties; Consult duration tie.

**Results:** In the 12 months since March 1st 2016, over 50 patients have been managed via telehealth. Of those who have so far completed therapy an SVR rate of 94% of has been achieved. Expected SVR genotype 1 (>95%); genotype 3 (>85%). Technical difficulties occurred in less than 10% of consultations with FTA of 17%. Consult duration was on average 15 minutes or less.

**Conclusion:** Our completed patient cohort results suggest comparable outcomes for telehealth managed
patients as compared to traditional modalities even when adjusted for age, gender, hepatic fibrosis status and co-existent co-morbidities.

In the context of increasing state and federal government prioritisation of telehealth as a means of delivering patient centred care; we discuss the challenges and benefits of outpatient telehealth services as we enter the era of accelerating digitally enabled healthcare.

18 Philippe Lachapelle
The Royal Melbourne Hospital thunderstorm asthma cohort

LACHAPELLE P, Harun NS, Irving L, Douglass JA
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Aim and Background: The 21st of November 2016, an asthma epidemic occurred in Melbourne which lead to unprecedented numbers of asthma presentations to emergency department (ED), hospitalisations and deaths. While similar thunderstorm asthma episodes have been reported previously, it is still unclear why some patients developed life-threatening asthma exacerbations.

Methods: We prospectively followed patients who had a thunderstorm asthma exacerbation on the 21st-22nd of November 2016 and who agreed to be seen at the RMH asthma clinic. All patients who presented to RMH ED with asthma symptoms between 15:30 and noon the next day were contacted. Subjects were offered to attend for a complete asthma evaluation with lung function, SNOT-22 and asthma control questionnaire (ACQ), fraction exhaled nitric oxide (FeNo), blood eosinophils, total IgE and specific IgE to allergens (RAST) measurement. Characteristics between the more severe hospitalised patients and the non-hospitalised subjects were compared using person Chi-Square analysis.

Results: Of the 241 patients (49% female, mean ±SD age=36±13) who presented at RMH ED, 49 declined the appointment, 45 had no or incorrect contact details and 89 are as yet uncontactable. To date, a total of 58 subjects (50% female, mean age=35±10) were evaluated at the asthma clinic. Subjects were majority non-Caucasian (60%), Australian-born (62%), non-smokers (71%) and had allergic rhinitis (95%). Subjects were of mean ACQ score=1.36 ±1, SNOT-22 score=31±19, blood eosinophils=0.37±0.3, FeNo=58±42ppb and FEV1=92±17L. Only 10 subjects (17%) had no prior asthma diagnosis and had never reported asthma symptoms after a careful history was taken. A total of 20 patients (34%) were hospitalised and 38 (66%) were discharged from ED. In the hospitalised group, 75% had known asthma and 63% had current asthma symptoms compared to 63% and 47% in the non hospitalized subjects (p=0.4, p=0.2 respectively). Thirteen hospitalised patients (65%) left the ED with an inhaled corticosteroids (ICS) prescription compared to 6 subjects (16%) in those not hospitalised (p<0.01). Of the 39 patients (67%) who left hospital without ICS prescription, only 8 were subsequently put on ICS by their family doctor. All subjects had specific RAST testing to ryegrass. Hospitalised group had greater proportion of “extremely” high RAST to ryegrass, defined as IgE ≥ 100 kUA/L, compared to the non hospitalised (64 vs 42%, p=0.2).

Conclusion: RMH's patients who suffer from a thunderstorm asthma exacerbation were all sensitized to ryegrass. Specific ryegrass IgE titer were higher in those severely affected.

19 Ebenezer Owusu Adjah
Association of adiposity level at diagnosis of type 2 diabetes with cardiovascular and mortality risk: Ethnicity-specific real world study

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Aim: To compare the association of body mass index (BMI) at the time of diagnosis of type 2 diabetes mellitus (T2DM), with the risk of cardiovascular disease (CVD) and all-cause mortality (ACM) in White Europeans (WE), African-Caribbeans (AC), and South Asians (SA).

Background: While the risk of developing diabetes is known to vary over the adiposity levels among different ethnic groups, the ethnicity-specific long-term CVD and ACM risks at different levels of BMI in patients with T2DM have not yet been studied.

Methods: From a nationally representative UK primary care database, 56443 WE, 4370 AC, and 8844 SA patients who were diagnosed of T2DM (after 1999), aged 18 – 70 years, and without history of CVD, kidney disease, and cancer were identified. CVD was defined as first occurrence of heart failure, stroke or ischemic heart diseases. The adjusted CVD and ACM risk in different BMI categories, compared to grade 1 obesity (30-35 kg/m^2), were estimated for the three ethnic groups.

Results: The mean age / BMI at diagnosis in WE, AC, and SA were 54 years / 33.0 kg/m^2, 49 years / 31.4 kg/m^2 and 48 years / 29.9 kg/m^2 respectively. The proportions of obese patients were 69%, 60%, and 48% respectively. African-Caribbean patients had the highest HbA1c and LDL-cholesterol levels at diagnosis compared to WE, and SA patients. The median follow-up time was similar (7 years) across the ethnic groups. Among WEs, compared to patients with grade 1 obesity at diagnosis (mean time to CVD 4.4 years), normal weight patients developed CVD significantly earlier by 0.5 years (95% CI: 0.2, 0.9 years).

With a mean time to death of 7.1 and 7.5 years among grade 1 obese WEs and SAs respectively, those with normal body weight at diagnosis were significantly more likely to die earlier by 0.8 years (95% CI: 0.3, 1.4 years) in the WE group and by 2.0 years (95% CI: 0.4, 3.6 years) in the SA group.

Conclusion: This study in newly diagnosed patients with T2DM, without history of CVD, renal complications and malignancies at diagnosis, suggests significantly different patterns of association of adiposity levels with cardiovascular and mortality risks in different ethnic groups. Normal weight WEs and SAs appears to have significantly higher mortality risk compared to those with grade 1 obesity at the time of diabetes diagnosis. However, this paradoxical association of lower adiposity
level and higher mortality risk was not observed among the AC people.

20 Marie Parsons
Identification of clinically relevant colon cancer genes predictive of improved relapse free survival

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Colorectal cancer (CRC) is the third most common cancer worldwide, affecting over 15,000 individuals in Australia each year. While CRC is often detected at an early stage where resection of the primary tumour is possible, approximately 50% will relapse and die from metastatic disease. Prognostication is mainly determined by tumour depth (T), lymph node stage (N) and the extent of cancer spread (M). However, clinical outcomes of patients with the same TNM stage can be heterogeneous. Therefore, there is a need to identify markers to better predict prognosis and stratify patients for treatment regimes.

A panel of 113 candidate CRC genes were identified as significantly mutated in whole genome and whole exome sequencing studies from 361 MSS colon cancers and 63 CRC cell lines. Custom amplicon panels for target enrichment were designed for use with the HaloPlexTM target enrichment system. Sample libraries were prepared for 274 patients with stage II/III CRC using the automated Bravo liquid handling platform followed by next-generation sequencing (NGS). Functional analysis was then performed using a high-throughput siRNA screen for migration and proliferation.

Analysis of the 113 candidate genes identified 31 genes recurrently mutated above 10 percent in our discovery cohort. We identified 4 genes previously reported as colon cancer genes (APC 68%, TP53 60%, KRAS 30% and PIK3CA 20%), confirming APC, TP53 and KRAS as the most frequently mutated genes in CRC. To identify novel and clinically relevant genes, the 31 genes in our discovery cohort were tested for association with clinical features. In the discovery cohort, 24/31 genes were significantly associated with right sided CRC, 10/31 with mucinous CRC, 9/31 with stage II CRC and 7/31 with improved relapse free survival (RFS). Of these significantly associated genes, 10/24 genes were validated as significantly associated with right sided CRC, 3/9 with stage II and 3/10 with mucinous CRC in the validation cohort. Five of these genes were selected for further investigation as they were significantly associated with improved RFS, together with one or more clinical feature.

In a primary screen 4 transfected cell lines were assessed for cell viability and migration. A total of 10/31 of the top mutated genes showed decreased proliferation and 4/31 genes showed increased proliferation. For migration, 10/31 genes showed increased migration while 5 genes showed decreased migration.

Identification of novel recurrently mutated genes is key to a better understanding of the molecular mechanisms of CRC and development of novel therapeutics.

Cancer Research

21 Suad Abdirahman
Establishing human colorectal cancer patient derived xenografts for pre-clinical drug trials

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The Walter and Eliza Hall Institute of Medical Research

Background: Colorectal cancer (CRC) is the third most common cancer worldwide and affects approximately 15,000 Australians every year. When the cancer is detected early, it is often resectable; however, approximately 50% of the patients will experience a relapse and succumb to metastatic disease. Despite many advances in cytotoxic and targeted therapies in recent years, the development of resistance remains a challenge. Standard cell line xenograft models used to study it do not accurately recapitulate heterogeneous nature of the human disease, and as a result many pre-clinical drug targets fail in clinical trials. In addition, using cell lines in cell culture to determine the efficacy of new drug targets has revealed inconsistent results when compared to patient treatment response. As a result, the lack of appropriate animal models to accurately predict the response of anticancer drug targets limits most research opportunities.

Aim: Our aim was to establish and characterise a series of CRC patient derived xenografts (PDXs) for use in anticancer drug studies.

Methods: PDXs were created when fresh human tumour samples were engrafted into immunocompromised mice directly after patient surgery. The tumour engraftment and growth rates of the PDXs were then monitored over time. Haematoxylin and Eosin staining, immunohistochemical staining and western blotting were used to compare the stability of the mouse tumours relative to the original patient tumours after serial transplantation.

Results: We have successfully generated 21 PDXs representing different stages of CRC samples. Our tumour engraftment rate is 70% following subcutaneous implantation and our preliminary histopathological analysis shows that the features of the original patient tumour are retained in the mouse xenografts after serial transplantation.

Conclusion: PDXs are physiologically relevant pre-clinical models where the patient tumour heterogeneity, genetic profile, and gene expression patterns are retained. Our established PDXs will serve as a platform to study the effects of novel targeted therapies.

22 Dan Buchanan
Somatic causes of tumour mismatch repair-deficiency in Lynch-like colorectal and endometrial cancers

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Aim: The aims of this study were to investigate somatic causes of tumour MMR-deficiency and to study survival in individuals with LLS.

Background: A high proportion of individuals affected with colorectal cancers (CRCs) or endometrial cancers (ECs) that demonstrate tumour mismatch repair (MMR) deficiency are categorized as having “Lynch-like syndrome” (LLS), due to the absence of tumour MLH1 methylation or germline MMR gene mutations after standard screening approaches.

Methods: Study participants with incident MMR-deficient CRC (n=193; ACCFR and MCCS) or EC (n=197; ANECs and MCCS) were categorized as either Lynch Syndrome (LS) (germline MMR gene mutation), or having MLH1 methylation or LLS. Lynch-like tumours were tested for somatic MMR gene mutations using AmpliSeq-Ion Proton custom capture sequencing and for MSH2 or MSH6 gene promoter methylation. Overall survival for LLS CRCs were compared to LS related CRCs using Cox regression models to estimate hazard ratios (HR) and 95% confidence intervals (CIs) adjusting for age at diagnosis, sex, stage and grade.

Results: Across all the MMR-deficient CRCs and ECs, LLS tumours comprised 32% (63/193) and 23% (45/197), respectively, compared with 27% and 15% for the LS group and 41% and 62% for MLH1 methylated tumours. Of the LLS CRCs and ECs tested, two somatic mutations were identified in 37% (18/49) and 48% (11/23), respectively. MSH2-deficient CRCs and ECs had the highest frequency of double somatic mutations across the different patterns of MMR IHC loss (40% and 64%, respectively). The mean age at diagnosis for the LLS CRCs with double somatic mutations was 49.7 ± 15.8 years, not significantly different from LS CRCs (n=52; 45.4 ± 11.3 years; p=0.2) but was significantly different to the MLH1 methylated CRCs (n=83; 70 ± 8.9 years; p=0.0001). No evidence of tumour MSH2 or MSH6 gene promoter methylation was identified in either MSH2-deficient or MSH6-deficient LLS CRCs or ECs tested (n=34 and n=12, respectively). LLS CRCs with double somatic mutations showed an overall poorer survival compared with LS CRCs but did not reach statistical significance (HR=2.58, 95% CI, 0.77-8.67; p=0.1).

Conclusions: Double somatic mutations in the MMR genes represent a significant proportion of the unexplained LLS MMR-deficient subtype of CRC and EC in the population. Clinical triaging strategies used to identify Lynch syndrome for both CRC and EC should include tumour testing for somatic mutations in the MMR genes.

23 Karen Doggett

Minor class splicing represents a novel target for cancer treatment

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Aim: To identify a novel therapeutic target to a broad spectrum of cancers.

Background: A small sub-set of genes in the human genome (~700) harbour distinctive introns that require recognition by the minor class spliceosome for their correct expression. These genes include prominent human cancer genes, such as key components of the MAPK and PI3K mitogenic pathways, and other ‘information processing genes’ essential for the growth and division of rapidly proliferating cells. Therefore, we hypothesized that efficient minor class splicing will also be crucial for cancer cells and minor class splicing may represent a novel, clinically relevant, target for cancer treatment.

Methods: To test this we generated zebrafish and mouse genetic models of RnpC3 deficiency, a unique protein component of the minor class spliceosome. We found that zebrafish and mice carrying two constitutive loss-of-function alleles die during development however heterozygous animals develop normally with no obvious phenotype. We then examined the impact of loss of one allele of mpc3 in a variety of tumour-prone animal models.

Results: Remarkably, we found that mpc3 heterozygosity can decrease gastric tumour burden in mice and also Pten heterozygous mice which spontaneously develop large lymphomas. Moreover, homozygous deletion of conditional RnpC3 alleles significantly prolonged the survival of AML carrying mice and decreased the growth of lung adenocarcinomas caused by the conditional expression of oncogenic K-RAS (K-RASG12D). We also obtained similar results with a zebrafish model of hepatocellular carcinoma (HCC) driven by krasG12V.

Conclusion: Our results indicate that minor class splicing represents an attractive clinically relevant target for a broad spectrum of cancer types with a therapeutic window that could be exploited clinically to restrict the growth of cancer cells without affecting normal tissues. We believe inhibiting the process will be particularly highly effective against tumours carrying activating mutations in RAS genes which have until now remained difficult to treat.

24 Paul James

The contribution of rare variants, polygenic risk, and novel candidate genes to the hereditary risk of breast cancer in a large cohort of Breast Cancer families.

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Identifying the missing hereditary factors underlying the familial risk of breast cancer could have a major and immediate impact on managing the breast cancer risk for these families.

Methods: We identified candidate breast cancer predisposition genes through whole exome sequencing of BRCAx families, and sequenced, up to 1325 genes, along with 76 common variants associated with breast cancer.
Differentially Methylated Probes (DMPs) were assessed was processed using the minfi Bioconductor package. For further moderate risk variants (in CHEK2, ATM, BRCA2) we observed significant risk modification based on the polygenic risk score (PRS - calculated from the common variant data), with the risk restricted to the co-occurrence of the rare variant and high PRS. Novel candidate genes were identified based on LoF mutations, including NTHL1 (38 cases versus 15 controls, OR 2.5 p=0.002): a member of the base excision repair (BER) pathway. We analysed data from additional genes in the BER pathway, along with somatic sequencing, tumour mutation profiling and familial segregation to examine this association.

Conclusion: Our data shows that the effect of rare variation in established and novel breast cancer genes, along with consideration of the background polygenic risk together explains a substantial component of the heritable risk of breast cancer in our cohort.

25 Eric Joo

Tumour DNA methylation signature defines colorectal cancers from biallelic MUTYH mutation carriers


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Aim: We aimed to identify a methylation signature within colorectal cancers (CRCs) that could discriminate CRCs from MUTYH biallelic mutation carriers.

Background: Carriers of germline biallelic mutations in the base excision repair gene, MUTYH, have an increased risk of developing CRC by up to 100-fold. Given the well-understood role of DNA methylation in colorectal tumourigenesis, we hypothesised that there are DNA methylation signatures associated with colorectal tumours of MUTYH germline biallelic mutation carriers that can discriminate them from other sporadic CRCs.

Method: Using the Illumina Infinium HumanMethylation450K (HM450K), we measured genome-wide methylation on a test set of 192 formalin-fixed paraffin embedded tumour and matched normal samples from 96 CRC-affected patients. Nine of those 96 CRC-affected individuals were biallelic carriers of a germline mutation at the MUTYH locus, recruited from the Colon Cancer Family Registry Cohort (Colon-CFR). Sixty-nine individuals were late-onset “sporadic” cases, recruited through the Melbourne Collaborative Cohort Study (MCCS). The remaining 12 cases were either MLH1 epimutation carriers or carried germline mutations in the DNA mismatch repair genes (Lynch syndrome). The replication group comprised 13 CRCs from biallelic MUTYH mutation carriers (Colon-CFR) and 552 unselected CRCs from the MCCS. The HM450K data was processed using the minfi Bioconductor package. Differentially Methylated Probes (DMPs) were assessed by performing a regression analysis using the limma Bioconductor package.

Results: We successfully measured methylation at >450,000 CpG probes from all 192 tumour and matched normal samples. We observed extensive DNA methylation differences between all tumour and matched normal samples with a set of >250,000 statistically significant DMPs (FDR adjusted p-value < 0.01). Further analysis identified 15 differentially methylated probes specific to the CRCs from MUTYH biallelic mutation carriers (i.e. not present or much weaker in sporadic CRCs). These probes overlapped the MRSB3, TNFRSF4, GIMAP5, RNASE9, ZC3H3, PTBP2, HAUS5, PGCP, CD109, C7orf58, FAM184A, and UNC50 genes, where tumours were consistently more methylated than normal tissues. We further tested methylation at these CpG probes in a replication group of 13 MUTYH biallelic CRCs and 552 sporadic CRCs. We found significant methylation differences between the two groups for 4 of these 15 CpG probes (c7orf58, PTBP2, MSRB3, PGCP).

Conclusion: We identified a DNA methylation signature in CRCs from biallelic MUTYH mutation carriers that can differentiate this clinically important subgroup of patients from those with sporadic tumours or from other inherited CRC syndromes and, if validated, has the potential to be used to identify MUTYH carriers.

Continuing Care Research

26 Frances Batchelor

Do people think they will fall when they are in hospital?

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Aim: To investigate the falls prevention knowledge and attitudes towards falls of hospital inpatients.

Background: Translation of falls prevention evidence in hospitals has focussed on interventions and strategies shown to decrease the rate of falls. Although person-centred practice is part of hospital care, patients’ knowledge and attitudes about falls have not driven this translation. Preliminary data of one unit (AMU) showed that 77% of hospital inpatients do not think they are at risk of falling. The main reason for this was that patients felt that the staff would ensure their safety. These findings led the project team to ask if this high response of not being at risk of falling was a hospital wide perception or specific to one unit. This sub-study, part of a larger falls prevention project, investigates knowledge and attitudes towards falls in hospital inpatients.

Method: All patients (greater than 500) at a Royal Melbourne Hospital (2 campuses) were surveyed once. Patients were asked about their perception of falls risk while in hospital and whether they could identify falls prevention strategies relevant to their hospital stay. Descriptive analysis was undertaken, and responses grouped according to emerging themes.

Results: Five-hundred and seventy-one (571) beds were surveyed across 22 units. Consent was obtained from
49% of patients. Sixty-six percent of all hospital patients surveyed did not think they were at risk of falling. There was a statistically significant difference between acute and subacute wards (p=0.001). Two patients (29%) could identify more than one falls prevention strategy. Of the strategies identified, the majority were generic, such as the nurses always being there to help.

Conclusion: Falls prevention interventions need to include patient perceptions and focus more on the knowledge and attitudes of patients. For strategies to be effective, the combined involvement of both staff and patients in being responsible for falls prevention needs to occur.

27 Mervyn Kyi

A Randomised trial of a Proactive Inpatient Diabetes Service (RAPIDS) demonstrates decreased adverse glycaemia and hospital-acquired infections

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Background: In hospitalised patients, both hypoglycaemia and significant hyperglycaemia are associated with adverse outcomes. We hypothesised a proactive inpatient diabetes service (IDS), which electronically identifies inpatients with diabetes and provides immediate management, will decrease the incidence of adverse glycaemia & hospital complications.

Methods: RAPIDS (ACTRN12616000265471) was a cluster-randomised trial on 8 wards of a Royal Melbourne Hospital. Consecutive inpatients with diabetes or new-onset hyperglycaemia (random blood glucose [BG] ≥11.1 mmol/L without known diabetes) were recruited. Networked glucose meters were used to record capillary BG measures from admission until discharge, or day 14 for long-stayers.

There was a 10-week baseline observational phase followed by a 12-week active phase during which the wards were cluster-randomised into 4 intervention and 4 control wards. Intervention wards received proactive IDS (endocrinologist or nurse practitioner who aimed to see patients within 24h of admission), while control wards continued usual care (a referral-based consultation service). Primary outcome (incidence of adverse glycaemic days [AGD]: patient-day with any BG ≥4.0 or >15.0 mmol/L) and secondary outcomes (patient-day mean glucose, hospital-acquired infections and length of stay) were compared between baseline and active phases within each group and subjected to multivariable analysis, adjusting for patient clinical features.

Results: We investigated 1002 patients (87% type 2 diabetes; 29% insulin-treated; HbA1c: 7.5±1.7%) totalling 5447 patient-days & 19062 BG measures. Incidence of AGD decreased significantly in the intervention wards (243 vs. 186 per 1000 patient-days [23% decrease], p < 0.001), but there was no significant change in the control wards (291 vs. 261 per 1000 patient-days, p=0.08). On multivariable analysis, proactive IDS was independently associated with 24% decrease in the incidence of AGD (p=0.005).

Proactive IDS also decreased the patient-day mean glucose (mean [SD]: 9.0 [2.7] vs. 9.5 [3.2] mmol/L, p=0.001), and the incidence of hospital-acquired infections (crude incidence: 8% vs. 3%, p=0.02; adjusted odds ratio: 0.28, 95% CI: 0.11-0.74, p=0.01). There was no difference in hospital length of stay.

Conclusion: This large randomised trial of a proactive inpatient diabetes service decreased the incidence of adverse glycaemia and hospital-acquired infections. This proactive treatment paradigm may change the approach to inpatient diabetes care.

28 Katie Marley

HbA1c reduction and engagement in an ambulatory insulin stabilisation program


Background and Aim: The Royal Melbourne Hospital Diabetes Education Service implemented a number of improvement measures for its ambulatory insulin stabilisation program over the last 2 years. We aimed to establish whether a link exists between engagement in our program and improvement in diabetes control.

Methods: A retrospective audit was performed on all referred patients on the program (n=355) throughout 2015 looking at referral reason, discharge reason, engagement and HbA1c before and after participation. The closest available HbA1c within 6 months prior to referral and 6 months after discharge was included.

Engagement was defined as ≥1 contact with a Diabetes Educator involving addressing insulin dose management.

Results: The most frequent documented referral reason was hyperglycaemia n=64 (35%), new commencement of insulin n=35 (19%) and change of insulin/ treatment regimen n=33 (18%). Of the 355 patients, before and after HbA1c were available in 166 patients. In this group there was a statistically significant reduction in HbA1c from 9.6% pre- to 8.5% post-intervention (p < 0.001).

There was a trend to a greater HbA1c reduction in those who remained engaged (19%) reached completion.

Conclusion: Patient referral to our program (predominantly for hyperglycaemia) reduced HbA1c and there was a trend indicating a greater HbA1c reduction in those who remain engaged. While there is a high drop-out rate, we conclude that a small number of contacts can return desirable results and improvement measures should be targeted at establishing initial engagement.
Complex regional pain syndrome: a new model of care improving patient outcomes

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1 Hand therapy RMH, 2 Head of pain services Melbourne Health, 3 Pain Fellow Melbourne Health

Aim: To implement a new innovative model of care to facilitate early access to care for patients presenting with signs and symptoms of complex regional pain syndrome (CRPS). By providing care in a co-ordinated approach, variation in care and healthcare utilisation will be reduced, whilst improving patient outcomes.

Background: Current literature indicates early recognition of CRPS can improve patient outcomes, yet ‘early’ recognition is yet to be well defined. Furthermore, less than 50% of patients diagnosed with CRPS return to the workforce, in part due to delayed diagnosis and management.

Patients presenting with CRPS within Royal Melbourne Hospital (RMH) were frequently not identified, resulting in multiple presentations to the emergency department and high healthcare utilisation. These patients received variable care in silos lacking co-ordination. Many patients that presented with CRPS suffered persistent pain and poor hand function.

Methods: With the support of a Department of Health & Human Services Allied Health Workforce Advanced Grant, a new management pathway was developed and implemented at RMH. Developed and implemented clinician resources; established an early and direct referral pathway to assist clinicians in key hospital areas to identify patients and implement management.

Results: Data analysis for the 65 patients referred to the program between July 2015 and June 2016, indicates positive outcomes. 33 of the referred patients met the Budapest diagnostic criteria (clinical) at their initial assessment. Comparisons have been made with a pre-pathway cohort with CRPS. Statistical significant changes were apparent in: reducing healthcare utilisation including ED presentations and IP admissions for pain, Surgical consults, Pain consults and allied health consults; 88% of patients returned to work; patient rated pain scores and functional outcomes also showed statistically significant improvements.

Conclusion: Hand therapy in collaboration with pain management services, developed and implemented an innovative clinical approach to the management of patients with CRPS at RMH. This pathway provides a single point of contact for this complex patient cohort and enables early access to specialised care. This pathway has demonstrated its effectiveness by reducing healthcare utilisation, improving patient access to care, whilst also improving patients’ pain and functional outcomes.

Early identification of signs and/or symptoms of CRPS in an acute hospital, together with early access to skilled clinicians and pain management, can result in improved clinical outcomes. Furthermore, this pathway has demonstrated that early co-ordinated care reduces the healthcare service demands from this complex cohort.

Pharmacist-facilitated e-learning module versus standard pharmacist-delivered education for warfarin naive patients: a randomised controlled study

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1 Melbourne Health 2) Monash University 3) Austin Health

Background: Interactive e-learning is a relatively new electronic-based education delivery mode that has not been evaluated for its effectiveness in imparting warfarin knowledge to patients.

Aims: To compare the effectiveness of a pharmacist-facilitated interactive warfarin e-learning module with standard pharmacist-delivered warfarin education on patients’ or their carers' knowledge of warfarin. Secondary aims were to compare participants’ satisfaction with the warfarin education provided; to compare the time spent by pharmacists delivering warfarin education; and to assess pharmacists’ satisfaction with the warfarin education delivery modes.

Methods: Adult English-speaking hospital inpatients commenced on warfarin for any indication (or their carers) were eligible to participate in this study. Participants were randomised to receive either face to face verbal warfarin education by a pharmacist (control) or warfarin education via an interactive e-learning module (intervention). All participants were provided with a written warfarin booklet and given the opportunity to ask a pharmacist questions. Participant knowledge was measured at least two weeks after education using the Oral Anticoagulation Knowledge (OAK) test. Time spent providing warfarin education was self-measured by pharmacists. Participant and pharmacist satisfaction was measured via surveys.

Results: A total of 54 participants completed the study (27 control and 27 intervention). There was no statistically significant difference in participant warfarin knowledge between the two groups (median correct OAK test scores, 80% [control] vs. 85% [intervention], p=0.14). Both warfarin education delivery modes were generally well-received by participants, with the majority in both groups satisfied with how the information was presented, that the information was clear and easy to understand, and that they had the opportunity to ask questions. Warfarin education delivered via e-learning took slightly less time compared to standard education (25.5 minutes vs. 33 minutes, respectively) but this reduction in time did not reach statistical significance (p=0.05). The e-learning module was well-received by pharmacists (n=12), however their overall preference for warfarin education delivery mode was variable. Pharmacists stated that individual patient factors, such as familiarity with computers or iPads and age, were important to consider when selecting education delivery mode.

Conclusion: Warfarin education delivered via a pharmacist-facilitated e-learning module was non-inferior, in terms of patient or carer warfarin knowledge, compared to standard pharmacist-delivered education. The e-learning module did not significantly impact participant satisfaction with warfarin education or time to deliver education, and may be considered a useful alternative education mode.
Aim: We screened a number of FDA approved drugs to examine their therapeutic efficacy and ability to reduce the invasiveness of glioma cell lines by targeting invadopodia activity.

Background: Primary brain tumours are responsible for about 2% of all deaths from cancer, with glioblastoma multiforme (GBM) being the most prevalent form of adult glioma. Patients with this type of cancer face a poor prognosis. Even after the mass of the tumour is surgically removed, the invasive nature of GBM means that microscopic disease is still present, making surgical cure impossible. Standard treatment for GBM patients involves surgical resection, followed by post-operative radiotherapy (RT) and Temozolomide (TMZ). This approach provides a modest increase in survival producing a median survival of only 15 months and a 5 year survival rate of only 10%. Therefore, there is an urgent need for an evolution in the treatment of patients to improve their survival outcome.

The invasive potential of glioma cells has been shown to be facilitated by structures on the cell membrane known as invadopodia. We have shown that invadopodia proteolytically degrade the extracellular matrix via the activities of numerous proteases, facilitating GBM cell invasion.

Methods: We utilized a cell viability assay to examine the therapeutic efficacy of the FDA approved drugs on GBM cells. An invadopodia assay was then used to determine the ability of the drugs to reduce invadopodia formation / activity. Drugs which showed promising results with these two assays were then tested alongside TMZ and RT to establish their effect when used in conjunction with RT and TMZ. Finally, we also used western blot analysis (invadopodia protein expression) and zymograms (protease secretion/activity) of the treated GBM cells to further explore the overall effect of the FDA approved drugs.

Results: We determined that our GBM cell lines secreted MMP-2 as the primary protease. Also, we observed that a single RT and TMZ treatment resulted in an increase in invadopodia activity and invasion in a 3D matrix assay. We identified a number of FDA approved agents that had both a cytotoxic effect on GBM cells and were also able to significantly reduce RT and TMZ induced invadopodia activity.

Conclusion: Repurposed FDA approved drugs, not initially intended for the treatment of GBM, can have the potential to display both a cytotoxic and an anti-invasive (anti-invadopodia) effect on GBM cells. Further research will allow us to potentially discover new agents for the treatment of glioma patients.

Targeting invadopodia to treat glioblastoma invasion

Clarissa Whitehead

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1) Department of Surgery, University of Melbourne, Royal Melbourne Hospital, Parkville, VIC, Australia 2) Department of Neurosurgery, Royal Melbourne Hospital, Parkville, VIC, Australia.

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Accuracy of administrative coding data to determine lymph node & metastasis status in colorectal cancer

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Aim: This study aims to determine the accuracy of administrative data coding of lymph node and metastasis status and ASA PS grades of patients, after a colorectal cancer resection when compared to the clinical sources.

Background: Research into colorectal cancer requires the maintenance of cancer databases with complex datasets. Administrative data is routinely captured for each patient admission and may serve as an alternative source to a database.

Methods: A retrospective study of all colorectal cancer resections between 1st of January 2008 to 31st of December 2013 was conducted at Melbourne Health. Clinical data for all patients (Lymph node involvement & metastasis status), was derived from the hospital utilised web-based results viewing system, Clinical Information System (CIS). Local administrative data, coded as per ICD-10 AM and ACHI, pertaining to lymph node and metastasis status was then compared with this clinical information for accuracy.

Results: A total of 437 patients were identified. 296 out of 437 patients had a specific ASA PS grade noted. Administrative data matched in 268/296 cases (90.54%) with regards to Lymph node status. This resulted in an accuracy of 93.33. 249 (84.12%) patients out of the cohort had an accurate record of their metastatic status.

Conclusion: Administrative data can provide information on staging of colorectal cancer with an accuracy comparable to that of clinical notes. It demonstrates the utility of administrative data to populate a cancer database.

The structure, function and inhibition of Epidermal Growth Factor Receptor in Glioblastoma

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Aim and Background: Glioblastoma is the most common malignant brain cancer in adults, with a dismal prognosis. Current therapies for glioblastoma, which have been in use for a decade, are unsatisfactory. The epidermal growth factor receptor (EGFR) is heavily implicated in glioblastoma, and is frequently amplified (40% of cases), mutated (45%) and/or over-expressed (50%). These alterations lead to cancer cell proliferation, survival and drug resistance. Many of the available anti-EGFR therapeutic agents (used in other cancers) have been investigated clinically in glioblastoma but to date none have been found to have adequate benefit. The purpose of this project is to shed new light on the structure and function of the EGFR to improve therapeutic targeting in glioblastoma.
Methods: The present project has been designed to assess the structure and function of EGFR by purifying full-length EGFR and placing it in phospholipid bilayer constructs named nanodiscs. The nanodisc-bound receptor can then be characterised both structurally, by means of cryo-electron microscopy, and functionally by means of assays of kinase activity and binding. Importantly the nanodisc-receptor complex provides a biologically relevant platform where true-to-life receptor structure and function are assessed in the presence of novel therapeutic agents.

Results: The function of EGFR will be demonstrated, both in free solution and in nanodiscs. The impact of selected agents, both novel (polyIC-conjugated affibodies) and established monoclonal antibodies and tyrosine kinase inhibitors on the function of the receptor will be detailed. The action of EGFR targeting agents (eg. PolyIC-anti-EGFR affibodies) will be described. Progress towards the structure of nanodisc-bound full-length EGFR will also be shown also.

Conclusion: Novel structural and functional insights into the EGFR enable improved targeting of this receptor in glioblastoma.

34 Joshua Wong
Factors influencing re-excision following breast conserving surgery

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Intro: Re-excision rates following breast conserving surgery (BCS) vary between 10-46%. The rate at our institution was 19.5%. Prior to 2014, our policy was to re-excite when cancer/in situ carcinoma was within 2mm of the surgical margin. After the 2014 SSO/ASTRO guidelines we adopted “no ink on tumor” as adequate margin for invasive cancer. In January 2015 we introduced routine intraoperative specimen X-ray (Faxitron) at one site.

Aim: We aim to identify the influence of these events on re-excision rate at our centre. Method: All 562 patients who underwent BCS for core-biopsy proven in situ or invasive breast cancer at the Royal Melbourne Hospital from 2013-2015 and Royal Women’s Hospital from 2013-2014 were included in our study. Medical records, radiology, pathology and our electronic database were retrospectively reviewed to identify patients who underwent reexcision (re-excision or total mastectomy) within 100 days of their primary procedure.

Results: There was a trend in reduction of re-excision rate from 25% to 17% (p=0.05) with the introduction of SSO/ASTRO guidelines and 17% to 16% (p=0.73) with the introduction of Faxitron. On multivariate analysis the factors which significantly increased re-excision rate were presence of multifocality on mammogram (p<0.01), smaller volume of surgical resection (p<0.01), and larger lesion size (p<0.01).

Conclusion: As expected, there has been a trend in reduction of re-excision rates since 2014 SSO/ASTRO guidelines and our introduction of Faxitron, but neither were significant. Other influential factors are the presence of multifocality on mammogram, volume of surgical resection and lesion size.

35 Ryan Stuchbery
A transcriptional field effect in fat can be used to predict tumour grade in localized prostate cancer

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The decision to treat clinically localised prostate cancer is critically dependent upon an accurate estimation of the risk of progression within a patient’s lifetime. Due to sampling error, prostate biopsy may miss completely a clinically important tumour, or significantly underestimate its potential aggressiveness. Over the last decade, accumulating evidence suggests that altered adipose tissue homeostasis may be an important contributor to the development and/or progression of prostate cancer. Given the potential role of the local fat depot in prostate cancer progression, as well as the ongoing need for new strategies to improve risk stratification at the time of diagnosis, we investigated the possibility that alterations in peri-prostatic adipose may be associated with disease risk as well as response to treatment. We performed RNA sequencing on peri-prostatic adipose tissue obtained at the time of prostatectomy from patients with low and high risk disease, to determine if there existed a transcriptional signature that would allow differentiation between groups of patients at high- or low-risk of progression. We found significant alterations in expression affecting 677 genes, although the majority were not abundantly expressed and the dynamic range was low. However despite this a distinct signature was present which we could confirm by qPCR in an expanded cohort, and potentially translate into a clinically usable test. Analysis of the genes involved suggest that differential expression is due to immune based reactive changes within the tissue rather than local adipose tissue acting as a distinct driver of tumour progression.

36 Bruce Campbell
Prognostic and treatment impact of CT perfusion imaging in pooled analysis of randomized trials of endovascular thrombectomy

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Aim: To investigate the association of CT perfusion (CTP) with treatment effect and functional outcome after endovascular stent-thrombectomy

Background: The role of CTP in patient selection for endovascular thrombectomy remains uncertain.

Neurosciences and Mental Health Research
Methods: Patient-level imaging data from the MR CLEAN, ESCAPE, EXTEND-IA, SWIFT PRIME, REVASCAT, PISTE and THRACE trials were pooled (HERMES Collaboration). CTP data were reprocessed using RAPID (research version, IschemaView) as used in the EXTEND-IA and SWIFT PRIME trials. Irreversibly injured ischemic core was estimated using a relative cerebral blood flow threshold <30% of normal brain. The association between pre-treatment core volumes and the 90-day modified Rankin scale (mRS) was examined by treatment status and reperfusion status. The number needed to treat (NNT) to achieve independence (mRS 0-2) or at least 1 unit improvement in mRS with endovascular treatment versus control was calculated for a range of ischemic core volumes, based on model-derived treatment effects adjusted for age, sex, baseline stroke severity, time from symptom onset to randomization, baseline CT ischemic changes, baseline site of arterial occlusion, whether a patient received intravenous thrombolysis and a random effects term for trial of origin.

Results: There were 591/1764 (34%) patients in the pooled trials who had CTP, 289 treated with endovascular thrombectomy and 302 controls. Baseline characteristics were well matched between treatment groups and representative of the overall trial characteristics. Increasing core volume was independently associated with reduced independent functional outcome in both endovascular treatment (OR 0.79, 95%CI 0.69-0.90 per 10mL core) and standard care groups (OR 0.71, 95%CI 0.56-0.90 per 10mL core), after adjustment for baseline prognostic variables. However, the interaction between core volume and treatment was not significant (p=0.26). This translated to a NNT to achieve independence <10 for core volumes <125mL. For at least 1 point improvement in mRS, NNT remained <5 for core <125mL. In multivariate analysis in the subgroup of patients who had successful endovascular reperfusion (n=186), core volume (OR 0.82, 95%CI 0.73-0.92 per 10mL, p=0.001), age (OR 0.83, 95%CI 0.72-0.94 per 5 years) and time from imaging to reperfusion (OR 0.79, 95%CI 0.66-0.95 per 30min, p=0.01) were independently associated with outcome. Onset to imaging time and NIHSS were not independently associated with outcome.

Conclusions: CT perfusion core volume was strongly prognostic but potentially meaningful treatment benefit may persist even at large core volumes. Integration of core volume with age and expected time to reperfusion improves prognostic specificity which has direct relevance to patient selection for therapy.

37 Tomas Kalincik
Fingolimod, dimethyl fumarate and teriflunomide for relapsing-remitting multiple sclerosis
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Aim: To compare the efficacy of the oral immunotherapies for multiple sclerosis. Relapse and disability outcomes have not been directly compared between these therapies.

Methods: We identified all patients with relapsing-remitting multiple sclerosis treated with teriflunomide, dimethyl fumarate or fingolimod in the global MSBase cohort study with the minimum 6-month treatment persistence and disability follow-up. Patients were matched using propensity scores and pairwise censoring. Three pairwise analyses compared annualised relapse rates and hazards of disability accumulation, disability improvement and treatment discontinuation (analysed with negative binomial models and weighted conditional survival models) over a 2-year follow-up. Sensitivity analyses were completed.

Results: The eligible cohorts consisted of 450 (teriflunomide), 599 (dimethyl fumarate) or 1936 (fingolimod) patients. Annualised relapse rates were higher on teriflunomide compared with dimethyl fumarate (0.26 vs. 0.17; p=0.005) and fingolimod (0.18 vs. 0.24; p=0.009) and similar on fingolimod and dimethyl fumarate (0.21 vs. 0.24; p=0.1). No differences between the effect of the therapies on disability accumulation or improvement were found (p=0.1).

Patients were less likely to discontinue fingolimod vs. teriflunomide or dimethyl fumarate (p<0.001). Discontinuation rates on teriflunomide and dimethyl fumarate were similar (p=0.9). Sensitivity analyses, including secondary progressive disease, different matching strategies, different prior disease activity and matching on MRI, largely confirmed the outcomes of the primary analyses.

Conclusion: Fingolimod and dimethyl fumarate are associated with a similar effect on reducing relapse activity, which is superior to that of teriflunomide. The effect of the three oral therapies on disability outcomes is similar during the initial two years.

38 Bernd Merkel
Timing of high-efficacy disease modifying therapies for relapsing-remitting multiple sclerosis
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Aim: The study evaluated the effect of early treatment with high-efficacy disease modifying therapies (DMTs) on disease outcomes in relapsing-remitting multiple sclerosis (MS).

Background: It has been shown that treatment with high-efficacy immunomodulatory agents prevents accumulation of permanent disability in MS. However, the most common treatment strategy is to commence first-line therapies, followed by treatment escalation in patients who continue to experience on-treatment disease activity. The evidence in support of the hypothesis, that early initiation of high-efficacy DMTs may result in improved long-term disease outcomes compared to their later commencement and/or prior initiation of first line DMTs, is still needed.

Methods: We have used the global MSBase cohort study to compare relapse and disability outcomes in patients who have commenced (i) high-efficacy DMTs...
Background: Schizophrenia is associated with progressive grey and white matter loss, especially in frontal and temporal regions. Brain change may reflect axonal degeneration or neuronal loss, which we hypothesised to be accompanied by microglial activation - an inflammatory response in the central nervous system (CNS). In vivo positron emission tomography (PET) imaging can quantify microglial activity and potentially elucidate the neurobiology underlying brain changes observed across the course of schizophrenia.

Aim: We examined putative microglial activation as a function of illness course in schizophrenia.

Methods: Microglial activity was quantified using \[^{11}C\](R)-1-[2-chlorophenyl]-N-methyl-N-[1-methylpropyl]-3-isooquinoline carboxamide (11C-(R)-PK11195) PET imaging in: i) 10 individuals at ultra-high risk (UHR) of psychosis; ii) 18 patients recently diagnosed with a schizophrenia-spectrum disorder; iii) 15 patients chronically ill with schizophrenia; and, iv) 27 age-matched healthy comparison subjects. Regional binding potential (BPND) was calculated using the simplified reference tissue model (SRTM) with four alternative reference inputs: cerebellar grey matter, white matter, grey matter with lowest standardized uptake and reference voxels delineated with supervised clustering. The UHR, recent-onset and chronic patient groups were compared to age-matched healthy control groups to test for between-group BPND differences in 6 regions: dorsal frontal, orbital frontal, anterior cingulate, medial temporal, thalamus and insula. Correlation analysis was performed to test for BPND associations with grey matter volume, peripheral cytokines and clinical variables.

Results: The null hypothesis of equality in BPND between patients (UHR, recent-onset and chronic) and respective healthy control groups (younger and older) was not rejected for any group comparison for any of the 6 regions. Across all subjects, BPND was positively correlated to age in the thalamus ($r=0.43$, $p=.008$, false discovery rate).

Conclusion: We found no evidence of microglial activation in groups of individuals at high risk, recently diagnosed or chronically ill with schizophrenia. However, we cannot exclude the possibility of patient subgroups, characterized by increased microglial activation.

40 Mastura Monif

Interleukin-1β has trophic effects in microglia and its release is mediated by P2X7R pore. Implications in multiple sclerosis and other neuroinflammatory conditions

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Aim: Our overarching aim is to investigate the role of a purinergic P2X7 receptor (P2X7R) in microglial activation, and the ensuing downstream neuroinflammatory cascades. The ultimate hope is to find therapeutic targets that can be used in...
neuroinflammatory conditions such as multiple sclerosis (MS) and autoimmune epilepsy.

Background: In the neuroinflammatory foci of a number of neurological conditions such as MS and autoimmune epilepsy, there is enhanced expression of P2X7R where increased microglial activation is a co-existing feature. P2X7Rs can function either as a cation channel, or upon continued stimulation, a large pore. P2X7R-overexpression alone is sufficient to drive microglial activation and proliferation in a process that is P2X7R pore-dependent, although the biological signalling pathway through which this occurs remains unclear. Once activated microglia are known to release a number of bio-active substances that include the proinflammatory cytokine interleukin 1β (IL-1β). Previous studies have linked P2X7R stimulation to the processing and release of IL-1β, but whether the channel or pore state of P2X7R is predominant in driving IL-1β release is unknown and is a major aim of this study. In addition we will determine whether IL-1β has trophic effects on surrounding microglia?

Methods: Electron microscopy and immunohistochemistry was used to delineate the subcellular localization of P2X7R and IL-1β in primary hippocampal rat cultures. FM1-43 fluorescent dye and confocal microscopy were used to quantify vesicular exocytosis from microglia expressing the pore forming P2X7R versus a non-pore forming point mutant, P2X7RG345Y. IL-1β in culture was quantified with an enzyme linked immunosorbent assay (ELISA). IL-1β intracellular processing was blocked with inhibition of caspase 1 (with a synthetic peptide antagonist) and its extracellular form neutralized with an IL-1β neutralizing antibody. Microglial activation and proliferation was quantified immunohistochemically with confocal microscopy.

Results: P2X7R and IL-1β were co-localized in lysosomes. Vesicular exocytosis was higher in microglia expressing the pore forming P2X7R compared to those expressing the non-pore forming mutant. There was increased IL-1β in cultures expressing the pore forming P2X7R and this proinflammatory cytokine was found to mediate the trophic effects of P2X7R pore in microglia. Inhibition of IL-1β production and function resulted in a significant decrease in P2X7R-mediated microglial activation and proliferation.

Conclusion: IL-1β is a mediator of microglial activation and proliferation and its release/production is P2X7R pore dependent. Blockade of P2X7R pore could serve as a therapeutic target in alleviating the degree of inflammation seen in conditions such as MS and autoimmune epilepsy.

University of Melbourne RMH Symposium

MD1 Morgan Hepburn-Brown

Early decision making in acute pulmonary embolism: a retrospective clinical audit

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Aim: To provide real world data on the risk profile of patients assessed from 2012 to 2016 for discharge and admission decisions, management and follow-up.

Background: The evolution of the Direct Oral Anticoagulants has allowed a paradigm shift in the management of patients with acute Pulmonary Embolism deemed “low risk”, allowing early discharge from hospital. Early discharge results in lower costs to the healthcare system, decreased demand on inpatient beds and increases patient autonomy.

Methods: 665 patients with the discharge diagnosis “Pulmonary Embolism with or without right heart strain” were evaluated. 438 were excluded due to inappropriate coding, 8 due to a co-morbidity requiring admission and 17 due to unavailable patient files. Remaining files were assessed for criteria determining risk, mainly the simplified Pulmonary Embolism Severity Index (sPESI), management decisions and the investigations performed.

Results: A total of 202 patients were assessed as per the 2014 European society of Cardiology Guidelines for low risk Pulmonary Emboli, i.e sPESI<1 and high risk i.e. sPESI≥1, and for evidence of right ventricular dysfunction. 70 patients were classified as low risk: Of these, 6 were admitted (8.57%) and 64 were discharged (91.43%). 132 patients were classified as high risk: Of these, 105 were admitted (79.55%) and 27 were discharged (20.45%). Overall, 97 patients were discharged on Rivaroxaban and 83 on Warfarin, with 173 patients receiving at least one therapeutic dose of Enoxaparin during admission. Investigations for right heart strain included 192 ECG, 132 Troponin, 28 Transthoracic echocardiography and 0 Brain natriuretic peptide. After discharge, 190 patients were referred to General Practice, 127 to Respiratory clinics and 37 to Haematology clinics.

Conclusion: Patients diagnosed with acute pulmonary embolism are being appropriately risk stratified by the sPESI and evidence of right ventricular strain. However, 20.45% of high-risk patients were discharged inappropriately. With evidence showing substantial mortality in high-risk patients who are discharged early, this presents an area for further focus.

MD2 Qi Yang Damien Qi

The RMH Pro-Diab Perioperative Study: a structured perioperative diabetes management plan improves medication usage and glycaemia

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Background: The perioperative management of inpatients with diabetes is complex. Suboptimal glycaemia in the perioperative period is common, and associated with increased morbidity and mortality.

Aim: To determine the effect of a structured perioperative diabetes management plan (PDMP) on the appropriate recommendation, prescription, and administration of diabetes medications in the perioperative setting.

Methods: A multidisciplinary team developed a novel structured PDMP endorsed by the Departments of
Diabetes & Endocrinology and Pain & Anaesthesia. This observational study consisted of pre- and post-intervention periods, where pre-intervention care for perioperative diabetes management (non-structured) was audited for 4 months (Feb-May 2016) and then re-audited for 4 months (Feb-May 2017) post-intervention (structured plan). The primary outcome measure was documentation of appropriate recommendation, prescription and administration of diabetes medications in the perioperative setting according to the PDMP. Secondary outcome measures included glucose monitoring practice and glycaemic measures.

Results: The pre- and post-intervention groups comprised 138 and 84 patients respectively, all of whom were seen in preadmissions clinic and the majority admitted on the procedure day. The two groups were not significantly different in their clinical characteristics. In the intervention group, the PDMP was completed correctly in 71% of patients. The appropriate recommendation, prescription, and administration of diabetes medications occurred in 63% of cases in the post-intervention group compared to 30% in the pre-intervention group (p<0.001). In the post-intervention group, appropriate glucose monitoring increased significantly in both the preoperative (p<0.001) and postoperative (p=0.002) periods. The post-intervention group also had significant improvements in glycaemia in the preoperative (p=0.005) and postoperative (p=0.003) periods. These improvements were even greater in the subset of patients who had the PDMP completed correctly.

Conclusion: This novel structured perioperative diabetes management plan used in elective surgery significantly improved the appropriate recommendation, prescription and administration of diabetes medications, glucose monitoring, and glycaemia.

MD3 Tal Koren

Patients with epilepsy exhibit changes in expression of cardiac ion channels

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Background: A growing amount of evidence suggests a link between epilepsy and cardiac disease, which may help explain some cases of Sudden Unexpected Death in Epilepsy (SUDEP), an important but poorly understood cause of death in patients with epilepsy. Animal models with both genetic and acquired epilepsy exhibit cardiac dysfunction and changes in the expression of the ion channels HCN2, Cav3.2, and Kv4.2, which are known to increase the susceptibility for cardiac arrhythmias. Similarly, patients with genetic mutations in potassium channels, such as Kv7.1 and Kv11.1 and in sodium channels Nav1.1 and Na++, often co-exhibit epilepsy and cardiac arrhythmias.

Aim: This study aimed to determine whether HCN2 and Cav3.2 mRNA expression changes in patients with epilepsy (previously published by our lab) correspond with changes in protein expression. Additionally, cardiomyocyte mRNA expression of the ion channels Nav1.1, Nav1.5, Kv4.2, Kv7.1, and the Na++/Ca2+ exchanger in patients with epilepsy were investigated, and whether these changes correlate with changes in cardiac function.

Methods: Heart tissue from patients with epilepsy undergoing open-heart surgery and from matched controls was collected over a three-year period. Changes in mRNA expression of the genes SCN1A, SCN5A, KCNQ1, KCND2, KCNH2 and SLC8A1 corresponding to ion channels listed above were analysed using quantitative PCR. Cardiac protein expression changes in Cav3.2 and HCN2 were analysed using western Blotting. ECG and Echocardiography reports were analysed for corresponding changes in cardiac function and rhythm.

Results: mRNA expression of SCN5A and KCNQ1, corresponding to Nav1.5 and Kv7.1 respectively, was significantly reduced in patients with epilepsy (n=8) compared to controls (n=16). (p=0.0268 and p<0.0001 respectively). HCN2 protein expression was significantly reduced (p=0.0392) in epilepsy patients (n=7) compared to controls (n=14). However, ECG and echocardiogram reports did not reveal any significant difference in cardiac function or rhythm.

Conclusion: These results show that cardiac mRNA expression of Nav1.5 and Kv7.1 is reduced in patients with epilepsy. Additionally, there was concordance between changes in protein expression of HCN2 channels and previously published reduction in mRNA expression. Larger sample sizes are required to ascertain whether these changes correlate with clinically significant difference in cardiac function. Nevertheless, changes in these important ion channels may contribute to cardiac dysfunction seen in patients with epilepsy and may be important to further understanding SUDEP pathogenesis.

MD4 Ken Teng

Longitudinal post-operative quality of life and cognition in acoustic neuroma, meningioma and low-grade glioma

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Aim: To assess HRQoL, how it changes over time, and the relationship between perceived and objective cognition in patients with acoustic neuroma (AN), meningioma (M) or low-grade glioma (LGG).

Background: AN, M and LGG are slow growing brain tumours amenable to management via surgical resection. Advances in surgical technique and technology have led to extended survival after treatment. The quality of that survival is at least equally as important as the duration. Therefore, it is important to assess the health-related quality of life (HRQoL) in this population. HRQoL is a patient-reported measure that encompasses physical, psychological, and social wellbeing. Brain tumour patients often report poor cognition and it is widely accepted that cognition is intimately related to HRQoL.

Methods: 501 unselected post-operative outpatients with histologically-confirmed brain tumour (AN: 131, M: 241, LGG: 129) have been recruited from the Royal Melbourne Hospital as part of an ongoing study. HRQoL was assessed using the EORTC QLQ-C30 and QLQ–
BN20 questionnaires. A thoroughly validated computerised test battery from Cogstate was used to assess cognition.

Results: We found considerable HRQoL deficit in the different tumour types across all domains (p<0.05) with the exceptions of emotional domain for AN patients and physical domain for LGG patients. HRQoL scores remained stable over time when comparing participants as a group but were variable when analysing participants individually. Cogstate testing on 81 patients showed statistically significant impairment for processing speed tasks but the scores lie within one standard deviation of the reference population mean. Interestingly, comparison of objective and perceived cognitive scores revealed 51 patients with low perceived cognitive score but high objective cognitive score. Emotional functioning, future uncertainty, communication deficit, pain and fatigue were moderately correlated with perceived cognition.

Conclusion: Our results demonstrate significant HRQoL impairment for AN, M and LGG patients and complex change in HRQoL over time. Patients attained lower scores for processing speed on Cogstate but the clinical significance of this remains unclear. Nearly two-thirds of these patients reported poor perceived cognition but performed well on cognitive testing. We found a number of factors related to perception of cognition with emotional functioning showing the strongest correlation. Further investigation of such factors is warranted to resolve this discord and adopt appropriate interventions to optimise HRQoL in this population.

MD5  Adam Fambiatos

Risk of secondary progressive multiple sclerosis: a longitudinal study

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Aim: To determine the demographic, clinical and paraclinical features that influence the risk of conversion to SPMS.

Background: The ability to estimate individual risk of conversion to secondary progressive multiple sclerosis (SPMS) represents an area of unmet need. We have examined factors associated with SPMS conversion using a time-sensitive survival model, objective definition of SPMS and the multinational MSBase cohort.

Methods: Patients with adult-onset relapsing-remitting multiple sclerosis, at least three visits (with ≥6 months between the first and second visit and ≥3 months between the second and final visit), a minimum dataset and sufficient magnetic resonance imaging (MRI) data were selected from MSBase. The risk of objectively defined SPMS conversion was re-evaluated at multiple timepoints per patient using multivariable marginal Cox regression models. Sensitivity analyses with additional prognostic markers, minimum follow up requirements and stringent data quality standards were performed.

Results: We found considerable HRQoL deficit in the different tumour types across all domains (p<0.05) with the exceptions of emotional domain for AN patients and physical domain for LGG patients. HRQoL scores remained stable over time when comparing participants as a group but were variable when analysing participants individually. Cogstate testing on 81 patients showed statistically significant impairment for processing speed tasks but the scores lie within one standard deviation of the reference population mean. Interestingly, comparison of objective and perceived cognitive scores revealed 51 patients with low perceived cognitive score but high objective cognitive score. Emotional functioning, future uncertainty, communication deficit, pain and fatigue were moderately correlated with perceived cognition.

Conclusion: Our results demonstrate significant HRQoL impairment for AN, M and LGG patients and complex change in HRQoL over time. Patients attained lower scores for processing speed on Cogstate but the clinical significance of this remains unclear. Nearly two-thirds of these patients reported poor perceived cognition but performed well on cognitive testing. We found a number of factors related to perception of cognition with emotional functioning showing the strongest correlation. Further investigation of such factors is warranted to resolve this discord and adopt appropriate interventions to optimise HRQoL in this population.

MD6  Olivia Galante

Cerebral Microbleeds and Intracerebral Haemorrhage

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Background: Cerebral microbleeds (CMB) are associated with intracerebral haemorrhage (ICH). However, the relationship between CMB burden and ICH characteristics is unclear.

Aim: To characterise the association between CMB burden and ICH characteristics.

Methods: 78 ICH patients presenting to the Royal Melbourne Hospital between January 2011 and August 2016 underwent 3T-MRI and CT. Aetiology was defined according to SMASH-U criteria. ICH and CMB location were classified as lobar, deep or infratentorial. CMBs were assessed on susceptibility weighted imaging. ICH volumes were calculated using semi-automated planimetry on baseline CT.

Results: Seventy-eight patients (mean age 62 years, 43.6% female) were included. The most common ICH aetiologies were cerebral amyloid angiopathy (CAA) (33.2%) and hypertension (30.8%). ICHs were lobar in 46.2%, deep in 32.1% and infratentorial in 21.8%. CMB prevalence was 61.5% (median 1, IQR 0-4.25). When present, CMBs were noted in multiple locations in 54.2% of cases. Age was associated with number of CMBs in all locations (p<0.05). Hypertensive and medication-induced ICH exhibited more deep CMBs (p=0.025), as did patients with infratentorial ICH (p=0.02).

Median ICH volume was 6.8mL (IQR 2.5mL-13.1mL). There was no correlation between CMB number and ICH volume (p>0.05) overall. However, in patients with
probable CAA, there was a significant correlation between ICH volume and number of lobar CMBs (p=0.048).

Conclusion: CMBs are common in patients with ICH. In CAA patients, volume of ICH was associated with number of lobar CMBs. CMB burden may reflect severity of underlying vasculopathy which could have treatment implications for patients with ICH.

**MD7  Tran Binh (Andrew) Giang**

Functional analysis of monogenic candidates in families with CVID

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Aim: To demonstrate functional immune deficits of candidate mutations identified in patients with CVID.

Background: Common Variable Immunodeficiency (CVID) is a primary immune deficiency characterised by defective antibody production resulting in hypogammaglobulinaemia and impaired vaccination responses. It remains among the most clinically relevant and prevalent primary immune deficiencies, affecting between 1 in 10,000-50,000 individuals. Paradoxically, despite its relatively high prevalence in comparison to other rarer forms of primary immunodeficiency (such as X-linked agammaglobulinaemia or Severe Combined Immunodeficiency), our understanding of the underlying genetic aetiologies and pathophysiology is poorly defined, leading to a delay in diagnosis and access to appropriate therapies. We, and others, recently identified genetic defects in the NF-κB pathway as the underlying cause of disease in a significant proportion of CVID patients. Here, we investigated a cohort of Victorian patients with CVID, in whom candidate mutations in NF-κB genes were identified by whole-exome sequencing (WES). To better understand how these mutations result in clinical disease, we tested the functional consequences of these novel variants using in vitro techniques and examined their impact on upstream and down-stream signalling events/molecules in the NF-κB pathway.

Methods: Mutations in NFKB1 or NFKB2 were identified, via whole-exome sequencing, in 8 CVID patients from 5 families. Peripheral blood mononuclear cells (PBMCs) were isolated in each individual from whole blood samples taken. The pathogenicity of novel variants was assessed via analysis of protein expression in patient cells and in vitro analysis of mutant protein function via immunoprecipitation, assessing key molecules involved in the NF-κB signalling pathway.

Results: We confirm reduced protein expression and phosphorylation of NF-κB1-related proteins, in NF-κB1 deficient patients, as previously published, and also demonstrated a defect in NF-κB2 signalling in these patients. For patients carrying novel variants in NFKB2, we demonstrated reductions in both protein expression and phosphorylation of NF-κB2 proteins, with subtle changes in NF-κB1 protein levels, suggesting the cross-talk between these two pathways is largely unidirectional.

Conclusions: We demonstrated altered expression and phosphorylation of key NF-κB pathway signalling molecules in patients with mutations affecting NF-κB1 or NF-κB2, thus identifying 4 new disease-causing mutations in 4 CVID families. We also showed biological evidence of immune cell dysfunction resulting from these novel genetic defects, providing important insights into the potential pathogenic mechanisms of disease in these patients, paving the way for improved patient management and targeted therapies.

**MD8  Fathima Nazha Nazeem**

High flow humidified nasal oxygen to prevent desaturation during endobronchial ultrasound – a randomised controlled trial.

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Background and Aims: Endobronchial ultrasound (EBUS), commonly performed under sedation, is a largely safe procedure indicated for the diagnosis of lung pathology. However, complications such as desaturation can occur due to underlying respiratory disease and hypoventilation from sedative agents. Anaesthetic management can be modified to mitigate this risk. In particular, optimizing oxygenation during EBUS may reduce the occurrence and severity of desaturation.

Methods: 60 patients presenting for EBUS under sedation were randomized to receive standard oxygenation via bile block (n = 30, oxygen flow of 10 - 15L/min) or high flow oxygenation via THRIVE (n = 30, oxygen flow of 30 – 70 L/min) during the procedure. Anaesthetic depth was targeted to “Modified Observer’s Assessment of Alertness/Sedation Scale”, OAA/S = 4.

Results: Baseline characteristics were similar between groups. More patients in the control group experienced desaturation during the procedure than in the THRIVE group (10 vs 4 patients), although not statistically significant. SpO2 after pre-oxygenation, lowest oxygen saturation, number of hypoxic episodes, duration of hypoxia, satisfaction scores, total procedural time, anaesthetic agents used and procedural complications. Data was analysed as per protocol.

Conclusions: We demonstrated reduced expression and phosphorylation of NF-κB1-related proteins, in NF-κB1 deficient patients, as previously published, and also demonstrated a defect in NF-κB2 signalling in these patients. For patients carrying novel variants in NFKB2, we demonstrated reductions in both protein expression and phosphorylation of NF-κB2 proteins, with subtle changes in NF-κB1 protein levels, suggesting the cross-talk between these two pathways is largely unidirectional.

Conclusions: We demonstrated altered expression and phosphorylation of key NF-κB pathway signalling molecules in patients with mutations affecting NF-κB1 or NF-κB2, thus identifying 4 new disease-causing mutations in 4 CVID families. We also showed biological evidence of immune cell dysfunction resulting from these novel genetic defects, providing important insights into the potential pathogenic mechanisms of disease in these patients, paving the way for improved patient management and targeted therapies.
0.01). There were no statistically significant differences in other secondary outcomes.

Conclusions: Although our primary outcome was not statistically significant, 33% of patients experienced desaturation on standard oxygenation compared to only 13% on THRIVE. In addition, THRIVE was associated with a higher SpO2 after pre-oxygenation and lowest SpO2 value, showing a stable maintenance of oxygenation during EBUS. These promising results establish a pre-requisite for larger studies to confirm that THRIVE may aid the safety of EBUS via prevention of desaturation.

MD9 Benjamin Johnstone
Determinants of psychiatric comorbidity and quality of life in patients with drug-resistant epilepsy or psychogenic non-epileptic seizures
JOHNSTONE B (1), Velakoulis D (1,2), Malpas C (1,2), O'brien TJ (1,2)
The University of Melbourne, The Royal Melbourne Hospital

Aim: This study aimed to examine the nature and prevalence of psychiatric comorbidity within specific epileptic syndromes, and to investigate the relationship between psychiatric comorbidity, drug-resistant epilepsy, psychogenic non-epileptic seizures (PNES) and quality of life in a video-electroencephalogram monitoring (VEM) unit.

Background: The prevalence of psychopathology in patients with drug-resistant epilepsy and PNES has been reported to be significantly higher than the general population.

Methods: Four hundred fifty-one patients were recruited from the Royal Melbourne Hospital VEM unit between February 2009 and November 2016. The diagnostic breakdown of this group was: temporal lobe epilepsy (TLE) (107), extra-temporal focal epilepsy (64), generalised epilepsy (33), PNES (118), both epilepsy and PNES (29), and uncertain diagnosis (100). The lifetime history of Axis I psychiatric disorders was determined by formal neuropsychiatric assessment. All patients completed questionnaires assessing psychiatric symptomatology (SCL-90-R), Anxiety and Depression (HADS), quality of life (QOLIE-89) and cognition (NUCOG). Pearson's Chi-Square test was used to compare prevalence of psychiatric comorbidity between VEM diagnostic groups. Comparison of questionnaire data between diagnostic groups was determined using One-Way ANOVA analysis. Statistical significance was defined as p<0.05 for all analyses performed.

Results: The prevalence of psychiatric comorbidity was significantly higher in patients with PNES (70.3%) or both PNES and epilepsy (62.1%) compared to patients with epilepsy alone (41.2%) (p=0.001). There were no significant differences in prevalence of psychiatric disorders between patients with TLE, extra-temporal focal epilepsy and generalised epilepsy. Patients with PNES had significantly worse quality of life, and scored higher on measures of psychiatric symptomatology, compared to patients with epilepsy alone (all comparisons p < .001). A general linear model was computed to identify predictors of quality of life. VEM diagnosis (p=.002), HADS depression score (p<.001), SCL-90-R positive symptoms total (p<.001), and NUCOG total score (p<.001) were significant predictors, together explaining 65% of variance in quality of life.

Conclusion: This study supports emerging evidence that patients with TLE do not possess higher prevalence of psychopathology than patients with other types of epilepsy. Patients with PNES with or without comorbid epilepsy had significantly higher prevalence of psychiatric comorbidity and poorer quality of life than patients with epilepsy alone. This may be due to a common mechanism that predisposes individuals to development of both PNES and psychiatric disorders. Psychometric questionnaire data was found to correlate significantly with quality of life, suggesting routine clinical use within epilepsy and PNES populations may serve as an effective component of management.

Big Ideas Symposium

BI-1 Kate Storer
Colouring away mental illness
STORER K
As 1/4 people within Australia suffer from a mental illness at some point in their life, I believe anything that is able to help those who are suffering from a mental health issue as well as physical issue within a hospital setting is needed. After talking to my grandfather, who has spent some time in hospitals over his years, he suggested something as simple as colouring in. I listened, but at that time it went in one ear, and out the other. That was until today, and after completing the mental health placement. The impact colouring in has in reducing anxiety and allowing people to have time to sit and just concentrate on colouring in within the lines was proven to have such a great impact on those within the facility so why couldn’t it work within an acute hospital setting. That is why I believe an introduction of colouring in books, or simple print outs would be useful, in not only keeping the patient preoccupied for a while but also giving them time to tune out, and forget about where they are. Pictures such as animals, scenery’s such as beaches, and things such as mandalas could be incorporated within the book to try and appeal to a wide audience.

BI-2 Janelle Bond and Mike Chmiel
The Royal Rocket Food Truck
BOND J, CHMIEL M

Aim: To supply a variety of food that is fresh, hot, tasty and in line with patient’s lives outside of hospital. Starting 2 days a week on Tuesday’s and Thursday’s for breakfast, lunch and dinner on those days.

What it will achieve: Normalisation during their stay whilst empowering and providing clients with an option to have non hospital food as they would at home. Hospital food can be bland, visually unappealing whilst also contributing to decreasing client’s appetites. The Royal Rocket allows the clients to have a greater choice of healthy but visually appealing and tasty food options aligned to their individual intake requirements. Improvement in patient satisfaction, as one of the biggest complaints is the food is awful or cold. Increased revenue as patients will pay this service.
Background of the issue: Patient’s admitted for at least 3 days or more in a hospital setting generally complain about the quality of food. Anecdotally patients regularly report they have a decreased appetite which further complicates accurate assessment of their medical condition.

The Royal Rocket food truck Big Idea provides an option that is hot and allows the patient to enjoy the experience of “going out for lunch” whilst still in hospital.

Method of achieving and measuring goal: Patient survey to be conducted about current hospital food and what food options would be preferred out of a range of food truck possibilities. This survey should include impacts on health and medical condition from a diet and environment perspective. From this a plan of food choices agreed upon utilising the dietician team expertise. Inform patients of option for set days. The Royal Rocket food service staff would track exact numbers of participants and food tally to confirm successful trial.

Where to from here: Complete survey; Find local supplier (possibly a local café may want to take on new business venture) or new part time position in RMH; Fulfil Tuesday and Thursday commitments; Review with Survey; Increase days if popular.

**BI-3 Homairah Jasat**

Long-term regular paracetamol (Acetaminophen) administration.

JASAT H, Mosley I

La Trobe University

Aim - The aim of this proposal is to explore the prescribing decisions for the safe use of paracetamol in a rehabilitation environment. Furthermore, we seek to identify the incidence of prescribing regular long-term paracetamol administration (QID) in the absence of a pain assessment.

Background - Paracetamol (acetaminophen) is used to treat mild to moderate pain and reduce fever. Due to its minimal adverse effects, paracetamol is frequently prescribed. Other medication for hypertension, cardiac conditions, for example, are reviewed to ensure the appropriate therapeutic dose for the patient’s specific health condition. However, routinely prescribed regular administration of paracetamol may continue in the absence of a regular pain assessment. Paracetamol is not only used to treat mild to moderate pain but also has an antipyretic effect. The long-term use of paracetamol may interfere with body’s natural defence response to infection, particularly in older adults. Moreover, literature also shows that long-term use of paracetamol can cause hypertension, false glucose reading, gastrointestinal issues and an increase in tolerance to the drug.

Methods - A retrospective analysis of medical records will be undertaken to identify the incidence of regular paracetamol administration in the absence of a pain assessment (QID administration and not PRN), length of time prescribed, diagnosis and if the patient was discharged with regular administration will be recorded. Hospital and pharmacy protocols for pain relief will be investigated and documented. Semi structured interviews will be conducted with Medical prescribing staff, hospital pharmacy staff and nursing staff in the rehabilitation ward. These interviews will seek to understand the prescribing patterns and rational for prescribing regular paracetamol administration. At interview, other factors associated with prescribing regular paracetamol in the absence of a pain assessment will be discussed along with knowledge of long-term paracetamol use, adverse effects and that pain assessments will be undertaken appropriately.

Where to from here? - The outcomes of this study will provide a snapshot of incidence, prescribing patterns and rational for prescribing long-term routine paracetamol in a rehabilitation environment. The results will inform the development of recommendations for the safe, effective and timely prescribing of long-term paracetamol. In turn, reducing side effects, adverse effects and providing appropriate pain relief for patients.

**BI-4 Wendy Bower**

Is there a Central Driver for Nocturia and Common Comorbidities?

BOWER WF(1), Ervin C(1), Rose G(1), Goldin J(2), Whishaw M(1)

1. Continence Service, Dept of Medicine and Community Care 2. Dept of Respiratory and Sleep Medicine

Aim: Nocturia comorbidities share central neural control. Areas such as the pontine micturition centre, the reticular activating system (specifically the locus coeruleus), the spinothalamic tracts, and the vasomotor centre are implicated in autonomic regulation of variables co-existing with nocturia. We hypothesize that a generalised hypofunction of the brainstem may underlie co-existing symptoms seen in patients with non-monosymptomatic nocturia and that improvement or resolution of one symptom may reduce the severity of comorbid dysfunctions.

Background: Individuals with nocturia have up to a threefold increase in utilisation of health care services, making the personal and health cost of this symptom considerable. There are significant interactions between voiding at night and metabolic, cardiovascular, hormonal, mental health, sleep and inflammatory changes. We have noted a high prevalence of co-existing pain, hypertension, postural hypotension, urinary urgency, depression, insomnia and sleep disordered breathing in patients with nocturia > once per night.

Our team has studied the direct and indirect pathways to nocturia and question whether it shares a common central control area with co-existing comorbidities, possibly in the brainstem. One way to investigate any clinically relevant interaction is to capture change in comorbid systems after successful treatment of single disorders on the causal pathway of nocturia.

Methods: We will consider the two conditions of sleep disordered breathing (SDB) and urinary urgency or urgency incontinence (UUI) that sit directly on the causal pathway of nocturia. Gold standard treatment of either SDB or UUI will be offered to symptomatic patients who also have nocturia. Efficacy of the index treatment, nocturia frequency and brainstem- controlled
comorbidities will be evaluated pre and post treatment. The primary outcome will be number of episodes of nocturia per night over a one-week period. Secondary outcomes will measure change in: Overnight urine production, severity of UUI, quality of life, time to first nocturia episode, hypersomnia, sleep latency, sleep quality, anxiety, depression, self-reported health status, systolic blood pressure and postural hypotension. For SDB or UU will also be evaluated. Where to from here?: Findings from the current study will clarify whether co-existing symptoms in patients with nocturia are centrally controlled and interconnected. We will understand whether improvement in one comorbid variable may regulate other dysfunctions toward a more normal status. Clinically this will indicate whether nocturia treatment should be multi-modal or can be specifically targeted to a specific symptom. This may optimise clinical care of patients with nocturia.

BI-5 Emma Biggar
Assessment of the barriers to accessing appropriate treatment and support for families experiencing breastfeeding difficulties relating to infant tongue and lip tie
BIGGAR E, Mosley I
La Trobe University

Aim: To improve health service delivery to support the mother-baby dyad experiencing breastfeeding complications resulting from infant tongue and lip ties and improve overall breastfeeding outcomes.

Background: Breastfeeding is accepted as the normal biological way of feeding an infant child. It provides more than just a valuable source of nutrition and immunological benefit to the infant. Appropriate education and support enables almost all mothers and babies to overcome any breastfeeding challenges that may arise. One such challenge is that of infant tongue and lip ties. There is controversy surrounding the discussion of tongue and lip ties in relation to their impact on breastfeeding. Disagreements are found in many areas including definition of what constitutes a tie, the criteria determining the presence, severity and impact of the tie, the assessment tools used, the treatment options and the long term outcomes and consequences. There remains much debate as to whether a tie is purely a normal variation or an anomaly that must be treated. With all this it is easy to understand why parents may find difficulties in accessing appropriate support and treatment for their infant with suspected tie related breastfeeding difficulties. We may speculate on what those barriers might be, however, a search of the current literature indicates no clear and consistent evidence on managing tie related breastfeeding difficulties. In order to improve services and ultimately improve breastfeeding outcomes we need to determine the specific barriers experienced by families in accessing support and treatment of tongue and lip ties in the breastfeeding infant. Additionally, it is important to determine the extent these barriers pose on families.

Methods: I propose a mixed methods approach. The first part of this research will be a qualitative study using semi structured interviews of mothers who have achieved breastfeeding improvements following appropriate treatment of infant tongue tie. Participants will continue to be recruited and interviewed until saturation of the data is achieved. Once this is completed and common themes have been identified a quantitative survey will be composed. Participants for the survey will be recruited through services that provide tongue and lip tie treatment and support. Where to from here: Once barriers have been identified, service improvements can be developed and implemented in order to improve ease of access to treatment and support for consumers. This will lead to improved service delivery, decreased time-wastage and ultimately achieve greater positive outcomes in breastfeeding.

BI-6 Nompilo Moyo
Tuberculosis screening in an aged care residential facility in a low-incidence setting
Moyo N(1), Trauer J(2), Trevan P(1), Baker A(1), Musemburi J(1), McGrath K(1), Nolan A(1), McIntyre E(1), Hulls J(1), Denholm JT(1,3)
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Aim: Reviewing a contact tracing exercise in an aged care residential facility following exposure to tuberculosis, to assist in refining practical and optimal approaches to contact tracing in such environments.

Background: Residents in long-term aged care residential facilities (ACRF) have long been recognised as having higher incidence of tuberculosis than the general community in many settings. However, despite this, they are a difficult group to screen and the best approach is not known.

Methods: This is a retrospective cohort study of tuberculosis contact tracing and screening in an elderly residential facility in Victoria. In the absence of specific guidelines regarding an optimal test for this population, 18 residents were tested with both tuberculin skin test (TST) and interferon-gamma release assay (IGRA), and all underwent symptom assessment and chest x-ray (CXR).

Results: A total of 19 residents with epidemiological contact were identified for contact tracing, with 18 consenting to evaluation. Residents with a positive IGRA were more likely also to be positive on TST (5/18 versus 2/18; 11%; Pearson χ2=5.85, p=0.016). No resident with negative IGRA was found to have a positive TST. CXR identified abnormalities in 4/18 (22%), with all of these individuals also having positive IGRA s (Pearson χ2=13.87, p<0.001). Both TST positives had abnormal CXRs. Screening with CXR was problematic in this group, particularly due to many co-morbidities and incidental findings on CXR (especially malignancy).

Qualitative feedback from clinical nurse consultants was collected and reviewed. Consistent themes were that: 1. TST administration was difficult due to fragile skin and loss of skin elasticity. 2. It was noted that some residents were not able to cooperate with the procedure, most frequently due to behavioural issues secondary to dementia. 3. Similarly, IGRA collection was also considered problematic due to requirement for phlebotomy. 4. Nursing staff reported a range of
additional issues, including challenges with identifying appropriate persons responsible for healthcare decision-making for those residents not able to independently provide consent to testing.

Where to from here: This study identified challenges of tuberculosis screening inherent in ACRF, and has informed local policy and practice. Tests for LTBI appeared to have little impact on management in this cohort, and in future surveillance for active disease rather than LTBI testing will be prioritised. The challenges illustrated in this report encourage alternative approaches to reducing the incidence and impact of TB in ACRF.

**BI-7 Angela Rogers**

*Easy access to guided meditation for all inpatients.*

**ROGERS A**

**Aim:** Easy access to guided meditation for all inpatients.

**Background:** Music therapy can assist with stress management and can promote harmony between the mind and body (Jane Collingwood, 2016). Music can effectively relax a person and decrease stress levels. It can lower blood pressure and improve pulse and heart rates (Jane Collingwood, 2016). Electroencephalography (EEG) and magnetic resonance imaging (MRI) have indicated that meditation can alter the brain’s activity (Department of Health & Human Services, 2016). From lived experience, I know that listening to a guided meditation cd allows a clearing of the mind. A sense of calmness is enhanced and one becomes focused in the now. There are different types of guided meditation that are available such as: concentrating on one’s breath, grounding and mindfulness, emptying your mind, looking at an object, movement, or using a mantra (Department of Health & Human Services, 2016).

**Method:** My Big Idea would be to make it possible for all inpatients to have easy access to an array of guided meditation audio from their hospital bed. This could be easily accessed from the patient’s TV/Radio system. Ideally, it would be fabulous if patients received a set of disposable headphones with their admission into hospital. However, this would be an expensive consumable for the hospital to maintain. However, patients could bring their own headphones into hospital. The Royal Melbourne Hospital could possibly set up two “Meditation” rooms somewhere in the hospital that is not busy and disruptive. This would cater for patients, who wish to meditate away from the surrounds of their hospital bed. These “Meditation” rooms would be equipped with possibly six to eight recliners so that patients could take advantage of either sitting or reclining in comfort. In these rooms a compact disk player would be used to play the guided meditation. These meditation sessions would run on a diary/timetable basis, so as to maintain order and ensure that patients can book a meditation session with ease.

**Where to from here?** The priority is to approach the hospital’s audio visual technicians regarding this idea of including some meditation material to the current hospital system. Would it be possible and feasible for patients to access this content from their bed?

**BI-8 Louise Guerin**

*Implementation of group-based education to improve patient quality of care, satisfaction and health outcomes*

**GUERIN L**

**Aim:** To offer group-based education to patients and their families in the hospital setting on various clinical topics. Benefits for patients include social learning, self-efficacy, and improved quality of care, satisfaction and health outcomes. Benefits for Melbourne Health staff include enhanced collaboration between staff and providing opportunities for professional development for nurses.

**Background:** Patient education is currently provided to patients individually by their nurse. While this type of education has benefits such as the ability to tailor learning to the individual patient, there are also disadvantages such as the time it takes to educate patients individually and inconsistencies in the quality of the education. Group-based education can improve social learning as it allows the patient and their family to share their own experiences and learn from the experiences of others. It also builds self-efficacy in the patient to enable them to better self-manage. Further, it provides a structured and consistent quality of education. Equipped with solid foundational knowledge, the patient should be able to better engage in planning their care, and ultimately improve their health outcomes. Both patient and family satisfaction with the level of care provided by Melbourne Health would be enhanced. There would also be benefits for Melbourne Health. This includes enhanced collaboration between senior and junior staff and providing opportunities for professional development for nurses who aspire to roles in leadership, health promotion, or clinical education.

**Method:** This initiative could be implemented at Melbourne Health in the function centre. Topics should be determined based on patient interest and educator expertise such as living with type 2 diabetes, how to manage chronic pain, and living with dementia for example. A different topic could be selected each month and offered at several different times to allow family member participation (e.g. day and evening). Group-based learning requires strong communication and facilitation skills. A Clinical Nurse Specialist (CNE) could facilitate the group-based education with a junior staff member. For patients with mobility issues, family members could accompany them to the session or the education component could be recorded and made available as a podcast.

**Where to from here?** A pilot with a single topic and group of eligible patients is recommended initially. Baseline measures should be taken from participants before the pilot including both clinical measures (e.g. vital signs, HbA1c glycated haemoglobin test, lipid profile, medication adherence, current diet etc.) and measures of patient and family member satisfaction with hospital care. Following the pilot, these measures could be reassessed at different time intervals.
BI-9 Sarah Kleemann
Process of Care for Spinal Cord Injury Patients
KLEEMANN S, Mosley I
La Trobe University

Aim: We seek to identify the process of care for patients presenting with SCI. Specifically, map the pathways of care, timelines, activities, investigations and procedures.

Background: Spinal Cord Injury (SCI) is a most devastating event. It is typically associated with healthy young men, resulting in paralysis. Authors of recent studies recommend a reduction in time from spinal cord injury to surgical decompression in order to reduce secondary spinal injury and improve patient outcomes.

Methods: A retrospective review of trauma records was undertaken for all patients who presented to the Alfred Major Trauma Service with a diagnosis of SCI over three years. SCI was identified using Abbreviated Injury Scale (AIS) injury and severity codes.

Results: 119 patients were identified with an AIS spinal severity code >3 (complete n=54, incomplete n=65). Patients presenting via a referral hospital 29% (n=34). Average age 52 years with 84% Male. Median Injury Severity Score (ISS) 25, IQ(17-36). Median injuries per patient 4, IQ(2-8). 678 procedures were undertaken at an average of 6.7 per patient. 234 surgical operations performed at an average of 3.2 per patient. Median “Injury to Alfred Surgical Operation” time 17.5 hours IQ(9.2 – 42.5). Median “Door to Alfred Surgical Operation” time 12.9 hours IQ(5.3 – 25.3).

Where to from here?: Early surgical decompression combined with innovations like therapeutic hypothermia could potentially improve outcomes for patients with traumatic SCI. The results reported here quantify the operational and logistical events that occur after SCI. This study contributes to our knowledge by outlining priorities, timelines, procedures and potential opportunities for time reductions. We found that the vast majority of patients experienced co-existing injuries. A diverse and complex mix of procedures were undertaken from point of injury to the operating room including in the ambulance, the referral hospital and the trauma unit. Median injury to operation time was found to be below previously reported times of 24 hours. Further research is required to test interventions aimed at reducing time to surgical operations and in turn improving patient outcomes.

BI-10 Elizabeth Barson
The feasibility and acceptability of embedding mental health screening into referrals to a general hospital Clinical Psychology service
BARSON E, FISHER C

Aim: To establish best practice mental health screening in the Clinical Psychology service

Background: The complex and bidirectional relationship between mental health and physical illness is well documented. Poor mental health is associated with an increased risk of physical illness. Physically-ill patients with comorbid mental health conditions have: reduced treatment adherence, increased symptom burden, poorer prognosis, increased mortality, reduced quality of life and higher utilisation of services. Integrated mental health and physical healthcare can improve outcomes and reduce service use and healthcare costs. However, mental health problems frequently go undetected in busy physical healthcare settings. This has been attributed to stigma around mental illness, lack of time and accessible resources, and concerns about how any mental health problems discovered would be addressed. Therefore, despite strong empirical and policy support for embedding of mental health screening into routine practice, implementation has continued to lag behind the evidence.

The Clinical Psychology service at Royal Melbourne Hospital is a small service that has evolved in response to requests and funding opportunities to provide assessment and intervention to specific wards and departments. The process of referral has developed in a similarly organic manner via collegiate networks and does not currently include any structured mental health screening tools. Demand for Clinical Psychology services within the hospital is currently exceeding capacity and growing. Therefore, there is a strong imperative to ensure the effective and efficient allocation of resources.

A clearer understanding of the mental health concerns of our referred clients will allow us to enhance our existing referral pathways, prioritise service delivery, target service development and capacity building initiatives, and build a robust framework for service evaluation.

Method: The first stage is a systematic review of mental health screening tools used in general hospital settings. The second stage is a qualitative review of the barriers and enablers of mental health screening within the Clinical Psychology Service and referring departments and wards. The third stage is a time-limited trial implementing the selected screening tool and protocol to evaluate the acceptability (via number of administrations and clinician and client feedback), feasibility (via changes to referral patterns and clinician feedback) and usefulness (via information provided by the tool regarding symptom type and severity and clinician feedback).

Where to from here?: The next step is conducting the systematic review of the literature and developing the qualitative interview for clinicians and referrers regarding the protocol.

BI-11 Michael Chmiel
Implementation of a student nurse volunteer pool to enhance patient-centred care and increase clinical exposure for students.
CHMIEL M(1,2), Guerin, L(1,2).

1) La Trobe University; 2) Melbourne Health

Aim: To recruit a student nurse volunteer pool which would both enhance the experience of Melbourne Health patients and provide valuable exposure to the clinical environment for La Trobe undergraduate students.

Background: In 2016, Melbourne Health piloted a program involving La Trobe Bachelor of Nursing undergraduates employed as Health Assistants in Nursing (HANs). This program supported the nursing
The aim of this idea is to help the patient feel more included within their care during their time at the hospital. During placements, and hearing stories from family members, one of the biggest issues while in hospital is the general lack of communication and not knowing what is happening. It is hard sometimes to be able to inform the patients of every single thing, especially as times of appointments and varies other things constantly change. That is why I believe an introduction of digital screens within the patients room would be useful. These screens will have a schedule on it when doctors are coming in, when medication, observations, scans and other appointments are due. Therefore the patient is aware of what has been planned for that day. As things change the system can be updated, which will change the screen, so the patient is always kept up to date in relation to what is happening. This will also allow patients to plan their day, including organizing when visitors are coming in. Things can also be added as needed depending on what ward, for example on oncology, the latest blood readings can be seen by the patient as soon as they are in. I believe this will improve the patients experience within the hospital setting as they will feel more included within their care, and feel less anxious as they know what is happening for the day.

**BI-13 Claire Ervin**

**Does leg elevation reduce nocturia in patients with co-existing cardiovascular disease and lower leg oedema?**

ERVIN C(2), Whishaw M(1), Ong TJ(1) Rose, G(1), Bower W(1)
(1) The Royal Melbourne Hospital; (2) La Trobe University

**Aim:** The aim is to identify if community dwelling participants ≥60 years of age with lower leg oedema and nocturia can increase the redistribution of peripheral oedema fluid by resting supine for 90 minutes before bed at night. Reduction of fluid redistribution overnight may alter nocturnal urine volume, reduce nocturia episodes and improve self-reported health-related quality of life

**Background:** Nocturia, the act of waking from sleep to pass urine and returning to sleep more than once per night, affects up to half the population over 50 and increases in severity as people age. The burden of nocturia also increases similarly, with nocturia identified as a significant problem that can impact negatively on people’s life. In older patient populations, chronic heart failure can result in night-time evacuation of 3rd space fluid, making peripheral oedema one of the most common causes of nocturnal polyuria in the older population.

The continence literature on conservative lifestyle management of nocturia, widely recommends rest with legs elevated, but there is little consensus around the recommendations. Noninvasive and well tolerated treatments require further investigation, as nocturia negatively impacts quality of life in an aging population.

**Methods:** We aim to identify if leg elevation reduces nocturia by recruiting 19 eligible participants to record baseline measures of lower leg circumferences and a 3 day bladder diary, and then again after resting in a supine position for ninety minutes prior to bed. An actigraphy body worn device will also be employed to track sleep patterns. This will be a pretest post-test design using each participant as their own control. The primary outcome of episodes of nocturia will compared to evaluate the effectiveness of a commonly recommended strategy to reduce nocturia.

Secondary outcomes of nocturnal urine volume, first uninterrupted sleep time (FUST); and nocturia-related quality of life, will also be compared.

Where to from here?: Lifestyle strategy education can increase an individual’s involvement in their shared healthcare plan and positively impact on reported outcomes. Improved outcomes may be achieved if robust research has informed specific instructions. People may succeed with lifestyle strategies if they...
know how long and at what time they should elevate their legs to see improvement in nocturia. Benefits of this non-invasive intervention may include; increased fluid redistribution prior to bed, lower nocturnal urine volume, less nocturia episodes and improved quality of life.

**BI-14 Tara Dehm**

Nurses’ perceptions of changes to emergency stroke care procedures with the implementation of dedicated stroke ambulances in a metropolitan tertiary hospital

**DEHM T**

La Trobe University

**Aim:** The aim of this proposed study is to explore how nurses’ believe their role in emergency stroke care will change with the implementation of mobile stroke units. What barriers and enablers are identified that may hinder or assist changes in clinical practice to support the Mobile Stroke Unit. The information gleaned from this study will inform researchers and policymakers in developing strategies to optimise acute stroke pathways of care between the mobile stroke unit, and the tertiary metropolitan hospital.

**Background:** Following the trials of mobile stroke units implemented in Germany and American, the Royal Melbourne Hospital is introducing Australia’s first mobile stroke unit in the North-Western region of Melbourne, in order to reduce the time involved in the diagnosis and treatment for patients suffering from strokes.

The implementation of mobile stroke units could allow for expedited access to the necessary CT scans and thrombolysis, thus decreasing time from stroke onset to both treatment and presentation to hospital, and improving patient outcomes (Hacke et al., 2008; Bray, Mosley, Bailey, Barger & Bladin, 2011). Walter, Kostopoulos, Haass, Keller and Lesmeister (2012) reported the benefits of a mobile stroke unit. However, one important limitation of mobile stroke management studies was how the implementation of stroke ambulances influenced the nursing care provided once they were transported to the hospital. Mocco et al., (2015), identified in their comparative study of neurothrombectomy devices, that patients should be treated in facilities with efficient, team-based and organised facilities that engage in continuous quality improvement processes.

**Method:** The research proposed would be conducted using semi-structured interviews with registered nurses in the emergency department and perioperative department of the hospital – (those nurses most involved with emergency stroke care). Study participants will be provided with an outline of the current proposed plans for mobile stroke unit implementation in Victoria. The semi-structured interview will involve exploring the participants’ current role in emergency stroke care, the positives, negatives and gaps they can identify within the outline, and their beliefs about how their role in stroke care may be affected.

Where to from here?: Identification of Key Staff; Identification of proposed procedures for MSU?; Identify variances from current practice and planned implementation of new practice for the MSU study; Pilot test questionnaire.

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**BI-15 Kate Storer**

Digital touch screen – map of where to go

**STORER K**

Late in Melbourne Hospital and being lost myself, while also having patients ask me how to get to a certain area, I can see that the addition of a few of these screens would make a huge impact on everyone getting to where they need to go a lot quicker and calmer. The screens would have a list of the different areas eg. Cardiac, orthopaedic, palliative, oncology etc. as well as a search bar. The patient and their family will be able to search for the area they are looking for and a map will be bought up showing them the way to get there. I believe a short survey of how people find travelling around the hospital will be sufficient in gaining data as to whether the implementation of these digital screens would make an impact. I would suggest installing one at the entrance and trailing how it goes, and installing more thereafter once the success of these screens are shown.

**BI-16 Kayla Arkinstall**

Pre-operative education

**ARKINSTALL K**

Late in Melbourne Hospital and being lost myself, while also having patients ask me how to get to a certain area, I can see that the addition of a few of these screens would make a huge impact on everyone getting to where they need to go a lot quicker and calmer. The screens would have a list of the different areas eg. Cardiac, orthopaedic, palliative, oncology etc. as well as a search bar. The patient and their family will be able to search for the area they are looking for and a map will be bought up showing them the way to get there. I believe a short survey of how people find travelling around the hospital will be sufficient in gaining data as to whether the implementation of these digital screens would make an impact. I would suggest installing one at the entrance and trailing how it goes, and installing more thereafter once the success of these screens are shown.

**Background:** Pre-operative surgery is a time of high anxiety for patients, as fear of the unknown and ‘going under the knife’ is a stressful experience. Thus patient anxiety can become problematic, particularly during pre-operative appointments, as it can make it difficult for the patient to understand and remember the information that’s provided. Studies have also noted that anxiety can make pain associated with the procedure harder to cope with and potentially worse than it might have been if patient anxiety levels had been addressed and adequately dealt with in the initial stages.

**Aim:** In order to address this problem my aim would be to provide a central location for health information relevant to the patient’s procedure, which would be delivered in the form of a hospital app. The purpose of this app would be to provide educational resources to patients about their specific procedure that they may access after pre-operative appointments. This app’s ultimate goal would be to provide more information and educate patients electing to undergo surgery in an attempt to alleviate anxiety and concerns associated with the process.

**Methods:** The app would achieve these aims by educating the patient during the pre-operative period on their procedure through platforms like approved videos detailing what will occur, the potential complications, relevant anaesthesia information and what to expect post-procedure. This platform could also be used to provide links to information brochures/leaflets/posters...
that will aid in reducing patient anxiety. It will also provide information on what is needed to be done prior to the procedure including a checklist that highlights all necessary documentation, information on additional requirements like fasting times, and documents that will need to be brought on the day of the procedure. Post-operatively the app can detail information about what to expect and what serious symptoms to look out for and when to contact their doctor in regards to same. This app will also provide information in regards to any required follow-up appointments, what to bring, the appointment date and time and associated reminders. The app would provide a feedback questionnaire on its effectiveness at reducing anxiety and providing information about the procedure in order to determine its overall effectiveness and to suggest improvements for future users.

Where to from here?: Development and trial of a prototype app that will determine whether the app has merit in terms of alleviating anxiety and providing information.

**BI-17 Danielle Hitch**

Is it time to move on from Evidence Based Practice?

Hitch D
North Western Mental Health, Deakin University

Evidence based practice has been a key concept in health care for the past 20 years, and yet the research / practice gap remains as wide as ever. While attitudes towards using evidence to guide health care are very positive amongst a range of health professionals, good intentions are clearly not enough to make significant changes. Clinicians are exhorted to up skill their ability to find relevant sources from the hundreds of articles being published every day, conduct literature reviews, critique the research they find, become statistically literate, and devise strategies for adapting and modifying the evidence to their particular setting. Oh, and by the way, they also need to carry full caseloads and ensure they provide top quality care to as many people as possible. Understandably, many prioritise practice over evidence. And so the status quo remains.

The aim of this presentation is to critically consider the concept of evidence based practice, and present an alternative framework which seeks to improving patient care by meeting clinicians on their turf. Evidence based practice cannot exist independently of clinical reasoning, and the Integrating Theory, Evidence and Action (ITEA) framework provides a method for bringing the multiple ways of knowing used by clinicians together. Since its development, this framework has supported clinicians and academics to embed their practice in theory, and understand the implicit barriers and challenges around getting evidence into practice. A recent update (including the Person) has strengthened its ability to meaningfully include the practice knowledge of clinicians and personal knowledge of patients into the process. The directions in which this framework may develop into the future will be identified, and the potential for inter-disciplinary collaboration highlighted.

**BI-18 Emma Peacock**

Barriers to implementation of Nurse-Initiated Point of Care Testing and Oseltamirv regimes for Influenza

Peacock, E(4)
La Trobe University Nursing Student

Aim: This project aims to explore the feasibility of a nurse-initiated point-of-care testing (POCT) protocol for influenza in the setting of long-term care. By identifying barriers to implementation of nurse-initiated POCT, strategies to improve nurse and facility engagement with the protocol might be established.

Background: Outbreaks of viral infections, particularly influenza, pose significant dangers to the well-being of residents in long-term care facilities. Nurse-initiated point of care testing for influenza has the potential to facilitate earlier isolation and intervention for residents who have tested positive. By isolating confirmed cases of influenza earlier, outbreaks and further spread might be prevented. Early intervention with the antiviral drug Oseltamirv may lessen viral shedding, severity of symptoms and duration of illness for infected residents. However, cost issues, nurse education, scope of practice concerns, and identifying deteriorating residents who should be swabbed may present potential barriers to effective implementation. By identifying and addressing these barriers, nurse-initiated point of care testing protocols and early intervention with Oseltamirv may be made more viable in long-term care facilities.

Methods: Pilot versions of the nurse-initiated POCT protocols have been launched in some of the Royal Melbourne Hospital long-term care facilities. To explore the feasibility of the POCT protocols and barriers to implementation, a mixed-methods approach might be most appropriate. Analysing existing and incoming data surrounding current uptake and efficiency of the protocol will demonstrate if, how and when the protocol is currently being employed and with what effect. Structured interviews may determine nurse perception of the program, identifying barriers to effective implementation and highlighting avenues for improvement of the protocol.

Where to from here? By identifying barriers to implementation of the nurse-initiated POCT protocol and Oseltamirv regime, the program may be more successfully implemented in a greater range of facilities, and early detection, isolation and intervention into influenza in long-term care facilities might be achieved. A literature review exploring the strengths and weaknesses of existing nurse-initiated POCT protocols, the use of Oseltamirv in ageing residential populations, the human cost of late or inappropriate intervention into influenza in aged care, and the burden of influenza on long-term care facilities will further highlight the need for this research.

**BI-19 Nicole & Gordana Clare & Boskovic**

Our BIG idea

CLARE N(1) BOSKOVIC G(1)
La Trobe University

The majority of our placements have been in sub-acute hospital environments with elderly patients. With the time we have spent on the ward and observations we
have made we noticed that the elderly people had limited social interaction and a lack of mind stimulating activities. The limited socialization and decreased mind stimulation seemed to be due to two main reasons. The first reason being that family and friends are not able to visit their loved ones due to numerous reasons. The second reason being because the patients were in single rooms or had curtains dividing the rooms. To our observations this developed feelings such as boredom and isolation. To our knowledge, isolation and boredom can increase the chance of mental illnesses such as depression and can decrease the drive to get back to good health. The aim of our BIG idea is to ensure a more enjoyable and pleasurable stay to enhance mental health which will assist the patient back to good health.

Therefore, with the above in mind our BIG idea is to firstly have an allocated space where the patients from the ward can go and meet, socialize and enjoy their meal times together. This will be something that will be notified to the patient on admission to ensure that the patient feels welcome to join the meal time dining area. For patients that are unable to mobilize to the dining area, with permission from the other patients, the curtains will be opened for meal times so the patients can socialize.

The second component to our BIG idea is the establishment of daily activities whilst patients are in hospital. The activities will be targeted at the patient’s current situation, discharge plan, medical conditions and abilities. This can be achieved by the nurse investigating on admission the patient’s most suitable activities and what activities would be most appropriate for the patient. Having a common area or scheduling the activities could also assist in the achievement of this idea.

This idea is measured by monitoring interaction of the patient via a daily interaction sheet and then reviewing how effective the activities and meal times are on the patient’s mood and general wellbeing.

**BI-20 Angela Rogers**

**Personal hygiene/toiletry packs for inpatients:**

ROGERS A(1)

**Aim:** Provide personal hygiene/toiletry packs for inpatients containing plastic toothbrush/toothpaste; plastic combs/elastic; soap; deodorant wipes/sachet; sanitary hygiene products. Admission to hospital is never a joyous occasion. From lived experience the feelings of an upcoming planned admission is filled with anxiety and worry and helplessness. These feelings are heightened when admissions are not planned and unexpected. In such instances patients can be unprepared for a stay in hospital. This can cause further stress because often there is a need to rely on the help of loved ones. Sadly, some patients do not have anyone they can call upon. Hence, the idea of providing basic hygiene packs.

**Background:** In the United Kingdom ‘patient packs’ have been distributed in many community hospitals (Virgin Care, 2012). However, the packs that are offered by Virgin Care include not only basic hygiene essentials, they include a handbook which informs patients and their visitors about important details such as: available services in hospital, hospital policies, visiting hours, and important staff members (Virgin Care, 2012). Included in these patient packs are puzzles and a 3-in-1 magnifying glass to help keep patients mentally active whilst in hospital. These packs come in a plastic bag, which becomes a laundry bag to transport the patient’s washing home and a waterproof pocket inside to keep the toiletries (Virgin Care, 2012).

Virgin Care reported that the purpose of the personal packs was to make patients feel welcomed and cared for without having to be reliant on others (Virgin Care, 2012). The feedback regarding these packs has been promising. 80% patients stated it was a good idea and 67% replied that they would continue to reuse the pack upon leaving hospital (Virgin Care, 2012).

**Methods:** Obviously such packs would be costly to introduce and maintain. Large establishments such as airports, airlines, cruising ships, hotels and motels have always stocked consumables within a large scale. Virgin Care is run by Richard Branson.

Where to from here: The Royal Melbourne Hospital could possibly approach the procurement branch of an Australian Company such as Qantas Airlines (Qantas) to assist with logistics of introducing such a product. I feel that providing basic toiletry packs would assist patients and enhance their dignity.

**BI-21 Kate Storer**

**Beauty - a useful therapy**

STORER K

On coming into hospital there is quite a bit of uncertainty, and one of those uncertainty is how long the admission is going to last for. Some people may be admitted for a day, others months. During that time the patients general appearance seems to get pushed a side, as more important things are dealt with. That is why I believe an introduction of a beauty service would be beneficial to the patients as well as the hospital, as the overall happiness of the patient will improve through a bit of self loving. By becoming affiliated with beauty training facilities around the area, free or reduced cost services will be available for the patients, while the students at the school will receive extra hands on training. Some of the possible services may be manicure, painting nails, facials, and small massages of hands, head and feet. I believe that if people feel good about themselves, their overall health improves, leading to a possible reduction in length of stay.

**BI-22 Ian Mosley**

**Does this patient need to be in the ED?**

MOSLEY I (1), Brown M (2).

LaTrobe University Staff (1), LaTrobe University Student (2).

**Aim:** We seek to identify the incidence of non-urgent Emergency Department (ED) presentations among adults presenting to a major public hospital ED. Furthermore we seek to explore the reasons for attending the ED among people who are assessed at triage as being non urgent. (triage category 5)

**Background:** ED presentations overall are increasing at a rate of 5% per year with over 1.5 million presentations in Victoria in 2014. Of these 10% were categorised as non-urgent with expected waiting times in excess of 2
hours. There is however much difficulty in determining what is an inappropriate, or unnecessary, or non-urgent ED visit. Furthermore, over many years a diverse range of strategies to “De-Market” ED visits have been largely unsuccessful. With patients stating the ED was a “one stop shop”. Patients reported presenting to the ED because they believed their condition was serious enough to require ED attendance or because of the time of the day.

Methods: Part A: A retrospective analysis of ED records will be undertaken to identify the incidence and presentation patterns of category 5 patients who are discharged home from the ED with a minor or superficial diagnosis and were documented as not requiring investigation, procedures or referral.

Part B: Patients identified in the ED as category 5 and have been directed to the waiting room will be interviewed with a semi-structured questionnaire to determine the reason for attendance. GP confidence, diagnostic services access, cost, waiting times, medical history, frequency of attendance, perceived severity and patient demographics among others issues will be discussed at interview. A follow up review of ED records will be undertaken to confirm final discharge diagnosis, length of stay and treatment for included participants.

Where to from here: The outcomes of this study may inform strategies to reduce non-urgent presentations among specific patient cohorts. Presentation patterns of non-urgent cases may inform resource allocations and development of alternate care pathways to reduce the impact of non-urgent cases on the ED when they do present.

**BI-23 Jodie Swan**

Using Touchscreen Technology Within Residential Care to Promote Meaningful Activity: Evidence and Implementation

SWAN, J, HITCH, D

Melbourne Health

Touchscreen table technology (TTT) is a low cost and accessible form of technology, which may provide opportunities for people in residential care to engage in meaningful activity that align with a persons interests and life experience. However, evidence around their use in practice has been sparse to date and the factors that might impact on the implementation of this innovation have not been explored. A comprehensive scoping review of the use of TTT in these settings will be presented, including efforts to evaluate its impact on the health and wellbeing of people in residential care. The Consolidated Framework for Implementation Research (CFIR) will then be used as a framework for discussing past, present and planned research at North Western Mental Health on this topic and how this technology has been implemented into practice. By taking an implementation science approach, the team has been able to successfully implement evidence into practice.

**BI-24 Nethmi Subasinghe**

Encouraging Nutrition Through Volunteers

SUBASINGHE N(1)

1. La Trobe University

Aim: To introduce a volunteering program of assisting patients with meals, whether it be feeding, setting up meals, socialising with them, encouraging them to eat and drink adequately or filling in their menu. Too often the nursing staff do not have the time to patiently continue feeding, assisting all their patients with their meals or encouraging them to eat adequate amounts. The aim of this program is to encourage and help with patients having an adequate dietary intake during hospital stay, so patients do not become undernourished and have significant weight losses. Nutrition impacts their hospital stay, wound healing and mental state.

Background: Malnutrition and weight loss is an increasing issue across health facilities and is not highlighted enough to nursing staff, doctors and allied health members as a major concern during the care and treatment of medical and surgical patients. Essentially, this affects patients’ health, becoming undernourished, losing weight, not healing as quickly, creating more health issues and in turn, resulting with a longer hospital stay. Also, some patients have language barriers, difficulty reading menus and, cognitive and physical impairments.

Methods: This program should be available for volunteers to partake in, where they feel like and are directly involved in the patients’ care and wellbeing. Volunteers want to know that they are making a difference at the hospital, and this program will definitely do so. Nurses and dieticians should initiate which patients in each ward needs extra assistance with meals, whether it be any of the options mentioned earlier. During meal times volunteers should be allowed to come into their specified ward and go to the patients requested by the staff, ask consent from the patients for their assistance, encourage meal intake and socialise with them. Their dietary intakes (diet and fluids) can be recorded by the volunteers, if need be, so nurses, dieticians and other members can monitor their intakes. This program will significantly drop the amount of patients who lose weight during hospital stay.

Where to from here: This program should be brought to the Volunteer Board, discussed about with nurses, doctors, dieticians, speech pathologists and volunteers. This program will positively impact the patients’ health, not worry families, relieve stress from nurses, decrease the number of those undernourished or malnourished, make volunteers be actively involved in patients’ care and feel helpful, lessen dietician consultants and improve quality of care.

**BI-25 Dani Moore**

Shift Planning – Can we optimise the approach for students?

MOORE, D (1)

1. LA TROBE UNIVERSITY

Aim: Good time management skills are a requirement for most job applicants. Nursing is certainly no exception and in fact, as students, time management is an aspect of training which we are required to focus on in every placement opportunity. I feel with a little bit of administrative intervention, shift planning could be
adjusted slightly for students, to allow them to optimise their daily plan. Ultimately, our ability to effectively plan our shifts will increase our confidence in performing our tasks. This will lead to optimal relationships with our buddy nurses and CNE’s and flow through to excellent patient care.

Background: I initially identified this opportunity in my first placement (second year) at RMH. Buddied with a nurse who was sharing a patient load of 8 with another RN, I was a little overwhelmed by time planners and patient loads whilst trying to get my head around handovers, nursing abbreviations and the general running of the ward. Upon reflection, I felt time planning for students could be adjusted slightly to allow for these aforementioned overwhelming elements. I set about creating a newly designed time planner for students. With more placement exposure I noticed that whilst time planning itself remained relatively unchanged from ward to ward and hospital to hospital, adjusting to life on different wards, with different health focuses was an area in which students were likely to fall behind.

I created a template which can be used in each different ward for students. Essentially, it contains more detail for students to remind them and refocus them throughout their days. On the back, it contains a snap shot of information relevant to the specific ward, such as common abbreviations and medications. In my recent placement on 4 south, I included a picture of the brain, to remind me of the lobes and their functions.

Methods: Implementation of ward specific time planners can be simple, effective and easily measured. A rollout across wards would require a short presentation to nurse educators, who can choose to insert their "headline information" on the back for students. Assessing the user friendliness and benefit of the planners could be done via CNE feedback on student proficiency and student feedback on user friendliness. Both sets of feedback could be gained via a survey monkey.

Where to now: I would appreciate the opportunity to present my idea and further explain the benefits of student focused time planners.

BI-26 Kate Storer
Trolley full of distraction
STORER K

During ones stay in hospital, time can tick by quite slowly, especially without visitors. That is why I think an introduction of a book trolley would be handy in filling in the time between appointments. A volunteer could be used to push around a trolley to suitable wards, handing out donated books and magazines to those who may want to read to pass some time. The aim of this idea would be to reduce patients boredom, while keeping their mind active with reading. This in turn will hopefully improve the patients stay as they feel they have spent their time doing something rather than nothing.
Gastrointestinal Research

41 Sarah Eaton
High rates of caustic ingestion in migrant populations
EATON S, Buckle A, Metz A, Hebbard G, Sood S
Melbourne Health, Department of Gastroenterology

42 Emma Halmos
Compliance of gluten free food provided in Melbourne food outlets
HALMOS EP(1), Di Bella C(2) Webster R(3) Tye-Din JA(1,4,5)
1) Department of Gastroenterology, RMH 2) Coeliac Victoria and Tasmania 3) Health and Wellbeing Branch, City of Melbourne 4) Immunology Division, The Walter and Eliza Hall Institute 5) Department of Medical Biology, UoM

Allied Health Research

43 Nick Ternes
A new model of care – the implementation and evaluation of the Allied Health Interdisciplinary Professional Practitioner (AHIPP) in General Medicine
TERNES N, Edwards S, Marr L, Phan U, Plumb S
Royal Melbourne Hospital

44 Arleen Watt
The prevalence of disordered eating behaviour in adults with type 1 diabetes mellitus attending the Melbourne Health Diabetes Service
WATT A(1), Bramley A(1,2), Sandison A(1)
1) Melbourne Health; 2) La Trobe University

45 Lauren Grundy
Poor recognition of malnutrition at Melbourne Health
Clinical Nutrition Department, Melbourne Health

46 Zoe Milner
Sensory-motor retraining program: part of a clinical pathway for management of complex regional pain syndrome
MILNER Z1, Hogg M2, O’Sullivan H1, White B3
1. Hand Therapy RMH; 2 Head of Pain Services RMH; 3 Pain RMH

47 Angela Carnovale
Using an iPad in an inpatient palliative care setting to maintain roles and occupations; a mixed-methods study
CARNOVALE A, Marston C
Monash University

48 Nicola Bacon
Enhancing stroke rehabilitation occupational therapists’ use of functional electrical stimulation: An action research study
BACON N(1,2), Kliaic M(1), Barr C(2)
1: Occupational Therapy, RMH ; 2:School of Health Sciences, Flinders University

49 Shaza Abo
Functional decline following allogeneic stem cell transplantation may be improved with structured exercise
ABO S(1), Ritchie D(2,4), Denehy L(2), Panek-Hudson Y(2,4), Irving L(5), Granger C(1,2)
1 Department of Physiotherapy, Royal Melbourne Hospital; 2 Department of Clinical Haematology and Bone Marrow Transplant, Royal Melbourne Hospital; 3 Department of Physiotherapy, The University of Melbourne; 4Haematology Service, Peter MacCallum Cancer Centre; 5 Respiratory and Sleep Medicine, Royal Melbourne Hospital

50 Patricia Maggs
Physiotherapists’ knowledge about dementia
MAGGS P(1), Kay J(1) and Ovaskainen, T(1)
1. Physiotherapy Department, Melbourne Health

51 Olivia Jenvey
Need for an extended hours physiotherapy service in the intensive care unit at a major trauma hospital: an observational study
JENVEY O, Sheehan J, Granger K, Beach L

52 Aruska D’Souza
Characteristics of general medical patients referred to Physiotherapy at the Royal Melbourne Hospital
D’SOUZA A (1,2), Granger C (1,2), Kay J (1), Said C (2)
1) Royal Melbourne Hospital (2) University of Melbourne

53 Hannah Davies
Profiling the general medicine physiotherapy service delivery models across major acute metropolitan hospitals within Australia
DAVIES H(1), Granger C(1)
Melbourne Health

54 Thao Nguyen
Best practice management of the hemiplegic upper limb: Utilising telehealth to provide education to allied health clinicians in regional Victoria
Quiney J, NGUYEN T, Plumb S
Physiotherapy Department, Royal Melbourne Hospital

55 Claire Corbett
Cognition and health beliefs in patients with diabetes related foot wounds
CORBETT C(1), Barson E(1), Jolley J(2), Fisher C(1)
1 - Psychology Department, Allied Health, Royal Melbourne Hospital; 2 - Podiatry Department, Allied Health, Royal Melbourne Hospital

Health Services Evaluation Research

56 Emma Foster
Acute seizure management in a private hospital
FOSTER E(1,2), Holper S(1), Kwan P(1,2,3).
1 - The Royal Melbourne Hospital. 2 - Cabrini Health. 3 - Department of Medicine (RMH), The University of Melbourne

57 Sarah Holper
Making a long story short: an analysis of abbreviation use in general medical discharge summaries
HOLPER S(1), Colman B(1), Barmanray R(1), Smallwood D(1).
The Royal Melbourne Hospital
58 Brent Doolan
ARANZ Silhouette Camera: 3D laser use for clinical management of wounds
DOOLAN B(1), Kern JS(1), Rebbechi A(2), Martyres R(1), Varigos GA(1)
(1) - Department of Dermatology, The Royal Melbourne Hospital; (2) - Department of Medical Illustration, The Royal Melbourne Hospital

59 Louise Hobbs
A point prevalence survey of hospital acquired pneumonia (HAP)
Boreham H1, Phoa P1, Li B1, Ong H1, Edgar S1, Hobbs L2, Richards M2, Ramsay V2, Wynne R3
(1) Department of Nursing, University of Melbourne (2) Department of Infection Prevention and Surveillance Service, Melbourne Health (3) Department of Cardiothoracic Surgery, Royal Melbourne Hospital

60 Louise Hobbs
A point prevalence survey of nurse sensitive indicators associated with hospital acquired urinary tract infection (HAUTI)
Fenner V1, Treml E1, Chirakkaramattathil M1, Gu X1, Ridley S1, Hobbs L2, Demarco C2, Wynne R3
(1) Department of Nursing, University of Melbourne (2) Department of Infection Prevention and Surveillance Service, Melbourne Health (3) Department of Cardiothoracic Surgery, Royal Melbourne Hospital

61 Kaylene Bastin
Compliance with the hospital blood transfusion guidelines: An observational audit and patient survey
Aleksandrov D1, Bundy C1, Tovey O1, Cahill L1, Phillips C2, Bastin K2, Wynne R3
(1) Department of Nursing, University of Melbourne (2) Department of Transformation and Quality Service, Melbourne Health (3) School of Nursing & Midwifery, Deakin University

62 Kaylene Bastin
Appropriateness of blood transfusions: An observational audit at Royal Melbourne Hospital
Jones E1, Al Obaidi G1, Hester M1, Main L1, Sansolis J1, Thompson E1, Bastin K2, Wynne R3
(1) Department of Nursing, University of Melbourne (2) Department of Transformation and Quality Service, Melbourne Health (3) School of Nursing & Midwifery, Deakin University

63 Shu Su
Skin-liver distance and interquartile-median ratio as determinants of inter-operator concordance in Acoustic Radiation Force Impulse (ARFI) imaging
SU S(1), Wang W(1), Nadebaum D(2), Nicoll A(2), Sood S(2), Gorelick A(3), Lai J(1), Gibson R(1)
(1) Radiology (2) Gastroenterology (3) Melbourne Epicentre, MH

Aged Care Research

70 Joanne Tropea
Analgesia use among hip fracture repair patients with dementia compared to patients who are cognitively intact
Fatima M (1), LoGiudice D (2,3), TROPEA J (2,3)

Renal Research

64 Andrew Talbot
Retinal and renal deposits in membranoproliferative glomerulonephritis - Type II
TALBOT A(1), Symons A(2,4,5), Finlay M(3,4), Nicholls K(1,4)
(1) Department of Nephrology Royal Melbourne Hospital (2) Department of Ophthalmology Royal Melbourne Hospital (3) Department of Anatomical Pathology Royal Melbourne Hospital (4) Department of Medicine, University of Melbourne (5) Department of Surgery, University of Melbourne

65 Andrew Talbot
Impact of enzyme replacement therapy on cardiac and renal tissues: A post mortem case series
TALBOT A(1), Finlay M(2), Nicholls K(1,3)
(1) Department of Nephrology Royal Melbourne Hospital (2) Department of Anatomical Pathology Royal Melbourne Hospital (3) Department of Medicine, University of Melbourne

66 Tim Hewitson
Histone modifications to H3K9 during renal myofibroblast recruitment
HEWITSON TD(1,2), Holt SG(1,2), Wigg B(1), Samuel CS(3), Smith ER(1,2)
(1) Department of Nephrology, Royal Melbourne Hospital; (2) Department of Medicine, RMH, University of Melbourne; (3) Department of Pharmacology, Monash University

67 Michael Cai
Calciprotein particle formation in peritoneal dialysis effluent is dependent on dialysate calcium concentration
CAI M(1,2), Kent A(3), Smith E(1), Huang L(3,4), Hewitson T(1,2), McMahon L(3,4), Holt S(1,2).
1. Department of Nephrology, The Royal Melbourne Hospital, Australia. 2. Department of Medicine (Royal Melbourne Hospital), University of Melbourne, Australia. 3. Eastern Health Integrated Renal Services, Eastern Health, Melbourne Australia. 4. Eastern Health Clinical School, Monash University, Australia

68 Michael Cai
Changes in circulating calciprotein particles after renal transplantation
CAI M(1,2), Smith E(1), Toussaint N(1,2), Hewitson T(1,2), Holt S(1,2).
1 Department of Nephrology, The Royal Melbourne Hospital, Australia. 2 Department of Medicine (Royal Melbourne Hospital), University of Melbourne, Australia

69 Edward Smith
Calciprotein particle ripening induces mitochondrial damage and activates the NLRP3 inflammasome
SMITH ER(1), Hewitson TD(1), Holt SG(1)
(1) Department of Nephrology, The Royal Melbourne Hospital; (2) Department of Medicine-RMH, University of Melbourne

71 Peter Lange
Melatonin for the Treatment of Delirium: Results from a Feasibility Study
LANGE PW(1,2), Clayton-Chubb D(1,3), Watson R(1), Maier AB(1,2,4)
1Department of Medicine and Aged Care, The Royal Melbourne Hospital; 2Faculty of Medicine Dentistry and Health Sciences, University of Melbourne, 3 Department of Medicine, Eastern Health, 4 Department of Human Movement Sciences, MOVE Research Institute Amsterdam, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands.
72 Camilla Tuttle
Markers of cellular senescence and chronological age in various human tissues: a systemic review of the literature
Waaier MEC(1), TUTTLE C(2,3), Stee-Valentijn MS(1), Westendorp RGJ(1), Maier AB(1,2,3)
1. VU University Medical Center Amsterdam, 2. University of Melbourne, 3. Melbourne Health

73 Wendy Bower
TANGO, a novel screening tool to identify co-existing causes of Nocturia
BOWER WF(1), Goldin J(2), ROSE G(1,2), Ervin CF(1), Whishaw DM(1), Khan F(3)
1. Dept of Medicine & Community Care, RMH 2. Dept of Respiratory and Sleep Medicine, RMH, 3. Dept of Rehabilitation, RMH

74 Emily You
What do you see as essential qualities of a community aged care case manager? YOU E(1), Doyle C (2), Ellis K (1), Currain E (1), Dunt D (3)
1. Academic Unit for Psychiatry of Old Age (AUPOA), Department of Psychiatry, The University of Melbourne; 2. School of Nursing, Midwifery and Paramedicine, Australian Catholic University; 3. Centre for Health Policy, Melbourne School of Population and Global Health, The University of Melbourne

75 Noleen Bennett
The Australian aged care national antimicrobial prescribing survey: An update BENNETT N1,2,3, Chen C1,2, Koning S1,2, James R1,4, Bull A3, Worth L3, Buisin K1,2,4, Thursky K1,2,4
1) National Centre for Antimicrobial Stewardship, Doherty Institute, 2) Guidance Group, The Royal Melbourne Hospital, 3) Victorian Healthcare Associated Infection Surveillance System Coordinating Centre 4) The University of Melbourne

76 Frances Batchelor
Context-specific falls prevention roadmap using local data F BATCHELOR(1), S Williams(1), R Lewin(2), K Mackenzie(2), L Harvey(2), V Lui(2), P Lange(2), C Said(3,4)*
(1) National Ageing Research Institute (2) Royal Melbourne Hospital, (3) Austin Health, (4) University of Melbourne

Endocrine Research

77 Mervyn Kyi
Identifying hospitalised patients at risk of adverse glycaemia: a risk stratification model Kyi M(1,2,3), Reid J(1), Gorelik A(4), Kumar S(1), Galligan A(1), Rowan LM(1), Nankervis AJ(1), Marley KA(1), Russell DM(2), Waight PR(1), Colman PG(1), Fourlanos S(1,2)
1. Diabetes and Endocrinology, RMH. 2. Department of General Medicine, RMH. 3. University of Melbourne, Department of Medicine - RMH. 4. Melbourne EpiCentre, RMH

78 Mervyn Kyi
Adverse glycemic days in the RAPIDS study: assessing the performance & safety of an inpatient glycemic management program Kyi M(1,2,3), Reid J(1), Galligan A(1), Kumar S(1), Rowan LM(1), Nankervis AJ(1), Gorelik A(4), Marly KA(1), Russell DM(2), Waight P(1), Colman PG(1), Fourlanos S(1,2)
1. Diabetes & Endocrinology, RMH. 2. Department of General Medicine, RMH. 3. University of Melbourne, Department of Medicine, RMH. 4. Melbourne EpiCentre, RMH

79 John Wentworth
Beta-cell function inferred from fasting plasma C-peptide and glucose is a clinically useful measure of disease progression and response to immune therapy in children and young adults with type 1 diabetes WENTWORTH J(1,2,3), Bediaga NG(1,2), Ehlers M(4), Gileltman S(5), Geyer S(6), Evans-Molina C(7), Harrison LC(1,2) on behalf of the Type 1 Diabetes TrialNet and Immune Tolerance Network Study Groups 1. The Walter and Eliza Hall Institute of Medical Research, 2. Department of Medical Biology, University of Melbourne, 3. Department of Medicine, Royal Melbourne Hospital, University of Melbourne, 4. Clinical Trials Group, Immune Tolerance Network, USA, 5. University of California at San Francisco, USA 6. University of South Florida, USA , 7. Indiana University School of Medicine, USA

Neurosciences Research

80 John Wentworth
Cost-effectiveness of gastric band surgery for overweight but not obese adults with type 2 diabetes in the U.S WENTWORTH J(1,2,3), Dalziel KM(4), O’Brien PE(1), Burton P(1), Shaba F(4), Clarke PM(4), Laiteerapong N(5), Brown WA(1)
1. Centre for Obesity Research and Education, Monash University, 2. Walter and Eliza Hall Institute 3. Royal Melbourne Hospital Department of Medicine 4. School of Population and Global Health, University of Melbourne 5. Department of Medicine, University of Chicago, USA

81 Lucy Vivash
Optimal injection time for ictal SPECT for the localisation of the epileptogenic zone using subtraction ictal SPECT coregistered to MRI (SISCOM) in patients with focal epilepsy with and without secondary generalisation Hlauschek G(1), Kwan P (1), O’Brien TJ(1), Lichtenstein M(2), Westcott J(2), VIVASH L(1)
(1) Melbourne Brain Centre, Departments of Medicine and Neurology, The Royal Melbourne Hospital, The University of Melbourne, (2) Nuclear Medicine, Dept of Medical Imaging, Royal Melbourne Hospital

82 Withdrawn

83 Varduhi Cahill
FGD-PET as an independent predictor of seizure outcomes in epilepsy surgery patients: more than meets the eye Cahill VM(1), Sinclair B(1), Malpas CB(1), McIntosh AM(1,2), Chen Z(1), O'Shea MF(2), Wilson SJ(1), Berlangieri SU(2), Hicks RJ(1,3), Rowe CC(2), Morokoff AP(1), King JA(1), Fabinyi JC(2), Kaye AH(1), Kwan P(1), Berkovic SF(2,0, Brier TJ(1)
1. Departments of Medicine, Neurology and Neurosurgery, The Royal Melbourne Hospital, The University of Melbourne; 2. Epilepsy Research Centre and Department of Medicine, Austin Health, The University of Melbourne; 3. Peter MacCallum Cancer Centre

84 Neha Kaul
Triheptanoin - a novel dietary therapy for drug-resistant epilepsy KAUL N(1,2), Borges K(3), Germaine J(4), Kwan P(2,4), O’Brien TJ (2,4)
1 Department of Clinical Nutrition, Royal Melbourne Hospital; 2 Department of Medicine, RMH, University of Melbourne; 3 School of Biomedical Sciences, The University of Queensland; 4 Department of Neurology

85 Dana Jazayeri
Antiepileptic drug use for non epilepsy indications. Report from the Australian Pregnancy Register JAZAYERI(1), J Graham(2), A Hitchcock(2), TJ O’Brien(2), FJE Vajda(2)
1. The University of Melbourne 2. Royal Melbourne Hospital
86 Frank Vajda
Antiepileptic drugs, foetal malformations and spontaneous abortion
FRANK VAJDA (1), O'Brien T (1), Graham J (1), Hitchcock A (1), Lander C (2), Edieh M (3)
Royal Melbourne Hospital (1), Royal Brisbane Hospital (2), University of Queensland (3)

87 Nanya Hao
The influence of ethnic background on participation and pregnancy outcomes in the Australian Pregnancy Register
Nanya Hao(1,2), Janet Graham(1), Alison Hitchcock(1), Terence O'Brien(1,2), Frank Vajda(1,2)
1. Royal Melbourne Hospital, Department of Medicine; 2 University of Melbourne, Department of Medicine

88 Dana Jazayeri
Seizure suppression in a model of genetic absence epilepsy by dietary valproate
D JAZAYERI(1), E Braine(2), T J O'Brien(3), N Jones(2)
1. The University of Melbourne 2. Florey Institute of Neuroscience and Mental Health 3. Royal Melbourne Hospital

89 Roxane Dilcher
Cognitive differences in patients with epileptic and non-epileptic seizures using a brief cognitive assessment tool
Dilcher R(1), Malpas C.B(1,5) Walterfang M(3,4), O'Brien T.J(1,2), Velakoulis D(2,3), VIVASH L(1)
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90 Mastura Monif
Chronic kidney disease and electroencephalogram (EEG) abnormalities: what factors lead to poor patient prognosis?
MASTURA MONIF (1,2,3), Udaya Seneviratne (3)
1.Royal Melbourne Hospital 2.The University of Melbourne 3.Department of Neurosciences, Monash Medical Center

91 Shobi Sivathamboo
Prolonged cardiorespiratory dysfunction following convulsive seizures
SIVATHAMBOO, S(1,2), Perucca, P(1,2), Jones, NC(1), Constantino, TN(3), Chen, Z(1), White, EJ(2), Hollis, C(2), Velakoulis, D(4), Goldin, J(5), Sparks, PB(6), Kwan, P(1,2) and O'Brien, TJ(1,2)
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92 Lily Vu
Prognosis of patients with newly treated epilepsy treated by antiepileptic drugs
LILY CHI VU (1); Zhbin Chen (1); Alison Anderson (1); Slave Petrovski (1); Patrick Kwan (1); Samuel F.Berkovic (2); Mark R. Newton (2); Terence J. O'Brien (1)
Melbourne Health (1), Austin Health (2)

93 Shobi Sivathamboo
Increased sleep-disordered breathing among epilepsy patients admitted for VEEG monitoring
SIVATHAMBOO, S(1,2), Kwan, P(1,2) Perucca, P(1,2), Chen, Z(1), White, EJ(2), Hollis, C(2), Velakoulis, D(3), Jones, NC(1), O'Brien, TJ(1,2) and Goldin, J(4)
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94 Vilija Jokubaitis
Identification of genotype-phenotype correlations in relapsing-remitting multiple sclerosis
JOKUBAITSIS VG (1,2), Kleinvova P (3), Izquierdo G (4), Mateansz F (5), Kalinick T (1,2), Kilpatrick TJ (2,6), Lechner-Scott J (7,8), Snee M (9), Manouchehrinia A (10), Patsopoulos N (11), Taylor B (12), Hillert J (10), Horakova D (3), Havrdova E (3), Butzkueven H(1,2,13)

95 Daniel Merlo
The feasibility of computerized cognitive monitoring in the clinic and community in people with MS: initial results of the MSReactor study
MERLO D (1,2), Van der Walt A(1), Haartsen J(2), Butzkueven H(1,2,3), Darby D(2)
(1)Melbourne Health, (2)Eastern Health, (3)University of Melbourne

96 Emma Foster
Assessing the risk of cervical dysplasia in immunosuppressed women using a Victoria-wide data linkage approach
FOSTER E(1), Malloy M(2), Jokubaitis V(3), Wrede D(4), Brotherton (2,5), van der Walt A(1,3,5)
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97 Henry Zhao
Paramedic validation of an Australian large vessel occlusion triage algorithm for stroke: The ACT-FAST algorithm
ZHAO H(1), Pesavento L(1), Cooder S(1), Churilov L(2), Smith K(3), Bernard S(3), Yassi N(1), Davis SM(1), Campbell BCV(1)
(1)Melbourne Health, Dept of Neurology (2)The Florey Institute of Neuroscience and Mental Health (3)Ambulance Victoria

98 Nawaf Yassi
Cortical cerebral microinfarcts on 3T MRI in Alzheimer's Disease and mild cognitive impairment
YASSI N (1,2), Hilal S (3), Lim YY (2), Salinas S (1), Kuijf H (4), Xia Y (5), Chen C (3), Salvado O (5), Rowe CC (6,7), Desmond P (1), Masters CL (1,2,7)
(1) RMH, University of Melbourne 2. Florey Institute of Neuroscience and Mental Health 3. National University of Singapore 4. University Medical Centre Utrecht 5. Commonwealth Scientific and Industrial Research Organisation 6 Austin Health 7 AIBL Research Group
100 Stefanie Bird
Activation of the PERK pathway of the unfolded protein response following TBI in mice
BIRD S(1), Liu S(1), O'BRIEN T(1), Shultz S(1)
Department of Medicine, The Royal Melbourne Hospital, The University of Melbourne

Osteoporosis Research

101 Mary Etty-Leal
Osteoporosis therapy initiation post minimal trauma fracture at the Royal Melbourne Hospital
ETTY-LEAL M(1), Nguyen V(1), Chan V(2), Kusmanoff L(2), Pearce D(2), Politis A(2), Reynolds L(2), Sepe D(2)
Pharmacy Department, Royal Melbourne Hospital (1), School of Health and Biomedical Sciences, RMIT University(2)

102 Adrian Achuthan
Role of GM-CSF-induced CCL17 in inflammation
ACHUTHAN A, Lee MC, Saleh R, Fleetwood A, Cook Aand Hamilton J
Dept of Medicine, Royal Melbourne Hospital, The University of Melbourne

MD4 Student Posters

103 Gopika Krishnamurthy
Inappropriate medication prescribing in oldest old patients admitted to hospital
KRISHNAMURTHY G(1), Manias E(1), Gorelik A(1)
The Royal Melbourne Hospital

104 Edward Carson
Disparity of age-specific Indigenous mortality in Australia by residential remoteness
CARSON E(1), Sharmin S(2), Robertson Y(2), Maier AB(1,3), Meij HJ(2)
1. University of Melbourne, Royal Melbourne Hospital. 2. Melbourne Academic Centre of Health. 3. Department of Human Movement Sciences, Vrije Universiteit Amsterdam, Amsterdam Movement Sciences, The Netherlands

105 Richard Toh
An audit of ketamine use for acute postoperative pain in adult surgical patients at the Royal Melbourne Hospital in 2016
TOH R, Leslie K.
Royal Melbourne Hospital

106 Amelia Steel
The role of focused echocardiography in beachchair surgery
STEEL A(1), Soeding P(1,2), Hoy G (3), Wong J (2)
(1) The University of Melbourne, (2) The Royal Melbourne Hospital, (3) The Avenue Hospital

107 Chun-Yiu Tseng
The use of Transnasal Humidified Rapid-Insufflation Ventilatory Exchange for pre-oxygenation in neurosurgical patients: a randomised controlled trial
TSENG C

108 Kelsey Turner & Samuel Thorburn
Community opioids following acute surgical care at The Royal Melbourne Hospital
TURNER K (1), THORBURN S (1)
The University of Melbourne (1)

109 Joel Loth
Frailty and Health Assets in Elderly Emergency Surgical Patients
LOTHERJ(1,2), Darvall J(1,2), Green Tree K(1,2), Bose T(1,2)
(1) The Royal Melbourne Hospital, (2) University of Melbourne

110 Alexandra La Hood
Associations between Type 1 diabetes mellitus, musculoskeletal health and body composition in young women
LA HOOD A(1), Nankervis A(2), Price S(2), Subasinghe A(3), Garland SM(4), Callegari ET(1), Gorelik A(5), Clifford V(6), Wark JD(7)
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111 Yeung-Ae Park
Associations between serum sodium concentration and indices of bone health in individuals who use antiepileptic drugs
PARK YA(1), Subasinghe A(2,3), Chiang C(4), Gorelik A(5), Garland SM(2,3,6), Clifford V(7), Wark JD(1,8)
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112 Nally leong
Association between chronic back pain and depression in young women aged between 16-25 years old
ILEONG N(1), Subasinghe A(2), Garland S(2), Gorelik A(3), Clifford V(4), Slater H(5), Briggs A(5), Wark J(3)
University of Melbourne (1) Royal Women's Hospital (2) Royal Melbourne Hospital (3) Royal Children's Hospital (4) Curtin University (5)

113 Steven Megaloudis
Immunophenotyping as Subclassification Strategy of Primary Immunodeficiencies
MEGALOUDIS S(1,2), Tempany J(2,3), Slade C(2,3,4), Douglass J(4,5), Bryant V(2,3,4) (1)University of Melbourne, Australia (2)Immunogenetics Research Team, Immunology Division, Walter and Eliza Hall Institute of Medical Research (3)Department of Medical Biology, University of Melbourne (4)Department of Immunology and Allergy, The Royal Melbourne Hospital (5)Department of Medicine, University of Melbourne
114 Julian Daniell
Peutz-Jeghers Syndrome and STK11: Analysis of the association between variants and malignancy
DANIELL JM(1,2), JP Plazzer (2), A Perera (1), Macrae FA(1,2),
1 - The University of Melbourne; 2 - Royal Melbourne Hospital

115 Nicholas Lord
Impact of TNF-alpha Antagonists on Cervical Dysplasia Incidence: An Inflammatory Bowel Disease Cohort
Lord N(1), Macrae F(2), Turner M(3), Brotherton J(4), Viney B(2), Gorelik A(2)
(1) University of Melbourne, (2) The Royal Melbourne Hospital, (3) BioGrid, (4) Victorian Cervical Cytology Registry

116 George Yang
Retrospective analysis of the impact of human herpes viruses on pemphigus vulgaris patients at the Royal Melbourne Hospital.
YANG G(1), Yap T(1), Scardamaglia L(1), Braue A(1), Martyres R(1), Varigos G(1)
1. Department of Dermatology, Royal Melbourne Hospital

117 Melanie Eden
Combined modality endoscopic treatment of dysplasia and early oesophageal adenocarcinoma in Barrett's oesophagus
EDEN M, Macrae F, Metz A
Royal Melbourne Hospital

118 Logan Denny
Medical emergency calls in the Intensive Care Unit
DENNY L(1), Deane A(2), Morley P(1,2)
1. The University of Melbourne; 2. The Royal Melbourne Hospital

119 Kate Greentree
Effect of frailty and health assets on critically ill patient outcomes: feasibility study
Darvall JN(1,2), GREENTREE K(1), Loth J(1), Bose T(1)
(1) University of Melbourne, (2) Melbourne Health

120 Rachel Cheong
Cardiopulmonary resuscitation (CPR) in a quaternary teaching hospital: Performance component quality and impact on patient outcomes. An observational study.
CHEONG R(1), Burke J(2), Deane A(2), Morley P(2)

121 Apayandth Balachandra
Postoperative Delirium: Exploring the risk factors through a retrospective case-control study
BALACHANDRA A, Tropea J, Logiudice D
The Royal Melbourne Hospital, Melbourne Health

122 Alvin Shae
Survey assessing environmental exposure in multiple sclerosis
SHAE A(1), Kalinick T(1,2), Butzkueven(1,2,3), Jokubaitis V(1,2)
1) Department of Medicine, University of Melbourne; 2) Department of Neurology, Royal Melbourne Hospital; 3) Department of Neurology, Box Hill Hospital, Monash University

123 Jake Jun
Disease Modifying Therapy Affects the Phenotype, Severity and Recovery of Multiple Sclerosis Relapses
JUN J(1,2)
(1) Melbourne Brain Centre, RMH (2) University of Melbourne

124 Niveshan Sivathamboo
The effect of antidepressants on the incidence of congenital malformations and occurrence of seizures in pregnant women with epilepsy.
SIVATHAMBOO N(1,2), Hitchcock A (1,2), Graham J (1,2), Chen Z (1), O’Brien TJ (1,2), Vajda FJE (1,2)
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125 Jordana Hughes
Contribution of inflammation to disability accrual in primary progressive multiple sclerosis
HUGHES J (1), Jokubaitis V (2,3), Spelman T (2,3), Van der Walt A (2,3), Butzkueven H (2, 3, 4), Kalinick T (1,3); on behalf of the MSBase Study Group
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126 Laura Tu
Antiepileptic drug-related cognitive symptoms in newly treated epilepsy patients: a prospective cohort study
TU L(2), Chen Z(1,2), Perucca P(1), O’Brien TJ (1,2), Kwan P(1,2)
1) Department of Neurology, The Royal Melbourne Hospital; 2) The University of Melbourne

127 Simon Li
Identification of occult anterograde flow using dynamic CT angiography derived from CT perfusion
LI SJ, Rodrigues E, Sharma G, Campbell B
Department of Neurology, Royal Melbourne Hospital

128 Laura Tu
Baseline cognitive symptoms predicts seizure outcome in newly treated epilepsy patients: a prospective cohort study
TU L (2), Chen Z (1, 2), Perucca P (1), O’Brien TJ (1, 2), Kwan P (1, 2)
1) Department of Neurology, The Royal Melbourne Hospital ; 2) The University of Melbourne

129 Jack Watson
Using Voltage Sensitive Dyes to Investigate Neuronal Firing Properties and Neuronal Network Activity
WATSON J(1), French C(2)
University of Melbourne, Royal Melbourne Hospital, Melbourne Brain Centre
130 Hannah Meiklejohn
Peripheral expression of UBE2K as a marker of treatment-resistant schizophrenia

131 Haiying Chen
Optical coherence tomography analysis of patients with untreated diabetic macular edema
Chen H(1,3), Symons RCA(2,3)
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132 Callum Umstad
The Rate of Progression of Diabetic Retinopathy in Psoriasis Patients on TNFa, IL-17 and IL-12/23 Inhibitors: A Protocol Development
UMSTAD C(1, 2), Vu M(2), Martyres R(2), Phemister A(2), Braue A(2), Guest D(3), Foley P(4), Symons RCA, Varigos, G(2)

133 David See
Comparing symptom burden between patients with malignant and non-malignant disease
SEE D (1, 2), Le B (2, 3), Eastman P (2, 4), Gorelik A (1, 2)

134 James May
Managing expectations of donor-site morbidity in free flap surgery
MAY JS(1,2), Linklater N(2), Barton RJ(2), Ramakrishnan A(2)
(1) University of Melbourne, (2) The Royal Melbourne Hospital

135 Jason K. Hsu
The effectiveness of a sleep clinical pathway in an inpatient rehabilitation setting: a randomised controlled trial
HSU J(1,2), Ng L(1,2)
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136 Zachary Smith
Patient preferences for management of solitary pulmonary nodules with intermediate probability of malignancy
SMITH Z, Gorelik A, Manser R
The Royal Melbourne Hospital

137 Bridget King
The accuracy of Lung cancer risk self-perception amongst patients who are current/previous smokers
KING B(1), Steinfort D(1), See K(1)
Respiratory Medicine, Royal Melbourne Hospital

138 Starling Sim
Viral respiratory tract infections in allogeneic haematopoietic stem cell transplant recipients
SIM SA(1,4), Leung V(1), Ritchie D(2) Teh BW(3) Sullivan S(1,4)
(1) WHO Collaborating Centre for Reference and Research on Influenza, Victoria, Australia (2) Department of Haematology, Melbourne Health, (3) National Centre for Infections in Cancer, Victoria, Australia (4) University of Melbourne

139 Robert McCubbin
Implementation and evaluation of a new whole of hospital sepsis pathway at the Royal Melbourne Hospital
MCCUBBIN R(1), Gasparini D(1), Sykes K(2), Vasquez T(2), Smallwood D(2), Thursky K(3,4), together with the RMH sepsis working party
1. University of Melbourne, 2. Royal Melbourne Hospital, 3. Doherty Institute, 4. Peter MacCallum Cancer Centre

140 Dominic Gasparini
Implementation and evaluation of an clinical pathway for sepsis
GASPARINI D(1), McCubbin R(1), Sykes K(1), Smallwood D(1), Vasquez T(1), Thursky K(1,2)
(1) Melbourne Health, (2) Peter MacCallum Cancer Centre

Genetic Research

141 Tim Shaw
Gene Control to Major TOM: “Your circuit’s dead, something’s wrong: the CAT’s is out and ROS turned on.”
SHAW T(1,3), Peel A (2,3)
Victorian Infectious Diseases Reference Laboratory (1); Scram Software(2); NucleopharmGT(3)

142 Tim Shaw
The innate natural gen(e)ius of the acytota: An obverse C-Value paradox
SHAW T(1,3), Peel A (2,3)
Victorian Infectious Diseases Reference Laboratory (1); Scram Software(2); NucleopharmGT(3)

143 Blake Smith
Development of mouse models for Dominant Dystrophic Epidermolysis Bullosa
Smith, BRC(1), Kem JS(2), Varigos GA(2), Pang KC (1)
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144 Catherine Beard
Neurofibromatosis Type 1: The nexus between general and cancer genetic counselling
BEARD C(1), Winship I(1,2)
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145 Charlotte Slade
Primary antibody deficiencies in Victorian adults: Past experience, current Insights and a vision for the future
Slade CA(1,2,3*), Bosco JJ(4*), Binh Giang T(1,2), Kruse E(2,3), Stirling RG(4), Hore-Lacy F(4), Cameron PU(5), Sutherland MF(6), Barnes SL(7), Holdsworth SR(7), Unglik GA(1), De Luca J(1), Patel M(1), Spring K(1), Tran Y(1), Au Yeung P(1), (1, 2), Hodgkin PD(2,3), Douglass JA(1,8), Van Zelm MC(9*), Bryant VL(2,3)
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146 Mi Vu
Brooke-Spiegler Syndrome: the impact of rare disease
VU M(1), Duong B(2), Walsh M(2), Winship I(2,3)
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Infectious Diseases

147 Gita Soraya
An impedance sensor for sensitive and label-free detection of PfHRP2 in saliva: implications for point-of-care use in malaria elimination
SORAYA, GV(1,5), Abyerathne CD(2,3), Buffet C(1,4), Hyunh DH(2,3), Chan J(1), Skafidas E(2,3), Kwan P(1,3), Rogerson S(1,4)
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148 Vivian Leung
Antibody response and influenza-like illness among healthcare workers after influenza vaccination
LEUNG V(1), Aban A(1), Carolan L(1), Laurie K(1), Druce J(2), Slavin M(3), Marshall C(3,4), Sullivan S(1,5,6)
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149 Michael Richards
Improving uptake of national guidelines for antibiotic prophylaxis in Australia: impact of performance feedback on surgical site infection rates
Bull A1, Worth L1,2, Spelman T1, RICHARDS R1
1 Victorian Healthcare Associated Infection Surveillance Coordinating Centre, Doherty Institute 2 Department of Medicine, University of Melbourne

150 Matthew Richards
Resolution of a vanA VRE outbreak with no change in vanB VRE
RICHARDS M(1), Williams K(1), Hobbs L(1), Marshall C(1)
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Cardiorespiratory Research

151 Mary Qian
Utility of individualised patient breathlessness plans for refractory dyspnoea due to advanced chronic obstructive pulmonary disease – qualitative review of patients’ perceptions
QIAN MYY(1), Politis J(1), Thompson M(1), Le B(2), Irving L(1), Smallwood N(1)
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152 Sandeep Prabhu
A comparison of the electrophysiologic and electroanatomic characteristics between the right and left atrium in persistent atrial fibrillation: Is the right atrium a window into the left?
PRABHU S(1,2,3,4), Voskobobkin A(1,2,3,4), McLellan AJA(2,3), Peck KY(2) Pathik B(1,4), Nalliah CJ(1,4), Wong GR(1,4), Azzopardi SM(2,3), Lee G(1), Mariani JA(2,3), Ling LH(2,4), Taylor AJU(2,3), Kalman JM(1,4), and Kistler PM(1,2,4)

153 Sandeep Prabhu
Systolic heart failure is associated with more advanced bi-atrial substrate and electrical remodelling independent of AF duration in persistent AF
PRABHU S(1,2,3,4), Voskobobkin A(1,2,3,4), McLellan AJA(2,3), Peck KY(2) Pathik B(1,4), Nalliah CJ(1,4), Wong GR(1,4), Azzopardi SM(2,3), Lee G(1), Mariani JA(2,3), Ling LH(2,4), Taylor AJU(2,3), Kalman JM(1,4), and Kistler PM(1,2,4)

Cancer Research

155 William Cranwell
The effect of immunosuppression with mammalian target of rapamycin inhibitors on nonmelanoma skin cancers in renal transplant recipients
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156 Ahmad Azri Zulkifli
Overcoming tumor resistance to epidermal growth factor receptor targeted therapy
ZULKIFLI AA(1), Tan FH(1), Styli SS(1,2), Luwor RB(1)
(1) Department of Surgery, University of Melbourne, Royal Melbourne Hospital; (2) Department of Neurosurgery, Royal Melbourne Hospital

157 Zammam Areeb
Overcoming treatment resistance in Glioblastoma using microRNA expression analysis and autophagy inhibition

158 Gita Soraya
Label-free, quantitative fecal hemoglobin detection platform for colorectal cancer screening
SORAYA GV(1,5), Nguyen TC(2,3), Abyerathne CD(2,3), Hyunh DH(2,3), Chan J(1), Phuong DN(2,3), Nair B(2,3), Chana G(2,4), Skafidas E(2,3), Kwan P(1,3)
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159 Alice West
Evaluation of the role of a panel of FDA approved agents on recurrent glioblastoma
WEST AJ(1), Styli SS(1,2), Paradiso L(1), Morokoff AP(1,2), Luwor RB(1)
(1) Dept of Surgery, The University of Melbourne, The Royal Melbourne Hospital; (2) Dept of Neurosurgery, The Royal Melbourne Hospital

160 Fiona Tan
Ponatinib Inhibits Interleukin-11 mediated STAT3 signalling in colon cancer and reduces tumour growth
TAN F(1), Pucotzci T(1,2,3), Styli S(1,4), Luwor R(1)
(1) Department of Surgery, The University of Melbourne, RMH; (2) Inflammation Division, Walter and Eliza Hall Institute; (3) Department of Medical Biology, The University of Melbourne; (4) Department of Neurosurgery, RMH

161 Rachel Cooke
Progression from newly diagnosed multiple myeloma to relapsed refractory multiple myeloma is associated with significant alterations in the CD4+ Treg population phenotype
COOKE RE (1,3), Quach H(2,3), Harrison S(2,3), Prince M(2,3), Koldej R(1,3), Ritchie D(1,2,3)
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162 Abby Douglas
A novel assay to assess immune compromise and risk of infection post haematopoietic stem cell transplantation
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163 Chia Sharpe
Comparison of innate immunity changes following novel therapies for the treatment of relapsed Chronic Lymphocytic Leukaemia patients
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164 Mervyn Kyi
The management of unstable diabetes in a cancer population – a retrospective audit
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165 Katie Marley
Diabetes management in cancer patients: Changes in nursing practice
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166 Renate Schwab
Wnt is necessary for mesenchymal to epithelial transition in colorectal cancer cells
SCHWAB RHM 1, Flanagan DJ 1, Amin N 1, Phesse TJ 1,2, Vincan E 1,3.
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167 Elizabeth VINCAN
Mini-liver organoids, an innovative tool to understand oncogenic Wnt signalling and HBV infection
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Quality of Care Research

168 Virginia Pilcher
The development of vitiligo while receiving ustekinumab therapy for psoriasis - a case series of two and review of the literature
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169 Lucy Sharrock
A pristine interaction: Raising awareness of the potential significance of pristinamycin CYP3A4 inhibition
SHARROCK L, Hill L, Nalder M
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170 Adrienne Sexton
Australian male breast cancer survivors: A needs assessment
Hoskins, C(1,2), SEXTON A(1,3), Steel E(1), Keogh L(1), TRAINER A(3,4)
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171 Melinda Pattanasri
Uptake of adjuvant breast cancer treatments recommended by multi-disciplinary meetings
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172 David Glenister
Capturing religious identity during hospital admission: a valid practice in our increasingly secular society?
GLENISTER D

173 Jacqueline Kay
Identifying and addressing barriers to safe and effective care of bariatric patients in a tertiary trauma hospital
KAY J(1), Becker F (2), Begg F (2), Finnigan K (2), Cosgroff C(2)
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174 Anita Goh
Predictors of workplace disability in premanifest Huntington’s disease
GOH AMY(1,2,5), You E(1), Perin S(1), Clay FJ(3), Loi S(1,2), Ellis K(1), Chong T(1), Ames D(1,4), Lautenschlager N(1,5)
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175 Katherine Bray
Default mode network resting-state functional connectivity and depressive symptoms in middle/late childhood
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176 Samantha Loi
Investigating socially assistive robots in people under 65 and the staff who work with them
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177 Meghan Bowtell
Clinical and demographic predictors of continuing remission or relapse following discontinuation of antipsychotic medication after a first episode of psychosis. A systematic review
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178 Md Shaki Mostaid
Elevated peripheral expression of neuregulin-1 (NRG1) mRNA isoforms in clozapine-treated schizophrenia patients
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179 Suriati Mohamed Saini
Meta-analysis supports GWAS implicated link between GRM3 and schizophrenia risk
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180 Eleni Ganella
Risk and resilience brain networks in treatment-resistant schizophrenia
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181 Cassandra Wannan
Structural connectivity predicts location of regional cortical thinning in treatment-resistant schizophrenia
WANNAN C(1,2,3,4,5), Bartholomeusz C(1,2,3), Cropley V(1,6), Bousman C(1,4,7,10,11), Ganella E(1,2,3,4,5), Di Biase M(1), Phassouliotis C(1), Everall I(4,5,7,8,9), Pantelis C(1,4,5,7,8,9), Zalesky A(1,9)
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182 Oneil Bhalala
Identification of expression quantitative trait loci associated with schizophrenia and affective disorders in normal brain tissue
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183 Carolina Barbosa
The role of parenting and adrenarcheal timing on affective brain function and mental health – a cross-sectional study during late childhood
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