



# Research and Teaching Reports

## A message from the Research Committee

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The new Research Development and Engagement Committee (known as the ReDE Committee) was established in 2018 and includes Dr Jennette Sakoff (Chair), Dr Lisa Lincz, Dr Anoop Enjeti, Catherine Johnson, April Macneill, Dr Aoife McGarvey, Dr Tim Walker, Dr Peter Greer and Helen Ellis.

The committee thanks Dr Walker who stepped down in 2019 to focus on his commitments on the Calvary Mater Newcastle Translational Research Advisory Council. The ReDE Committee has since welcomed Dr Shyam Gangadharan to the membership.

In keeping with the purpose of the committee, a number of events were held throughout the year to foster and support research at Calvary Mater Newcastle. Of note was the showcase of research held during November. This included:

- A public lecture covering a variety of research areas including clinical trials in medical oncology (Dr Hiren Mandaliya), radiation oncology (Sarah Gallagher), the hospital's connection to research into Acute Myeloid Leukemia (Dr Anoop Enjeti), and a rapid fire session involving Dr Jennette Sakoff, Assoc Prof Lisa Lincz, Dr Peter Greer, Casey Hutchinson, and Dr Aoife McGarvey
- A forum to discuss the current ethical challenges in clinical research (Dr MaryAnn Ferreux)
- A workshop to upskill nurses on how to get involved in research (Aoife McGarvey, April Macneill, Casey Hutchinson and Gillian Blanchard)
- Upskills workshops on legal issues in research and on translational research
- An inaugural research speed networking event to encourage discussion between researchers across Calvary Mater Newcastle and researchers throughout the wider Hunter and Newcastle community.



# Research Grants awarded

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Managing Calvary Mater Newcastle research grants is an important function of the ReDE Committee.

We are delighted to announce that the Hope4Cure Foundation has established the Hope4cure research grant at Calvary Mater Newcastle. This fund was established in 2018 to support research into ovarian and gynaecological cancer. The Hope4Cure Foundation was established by Sarah and Andrew Frith to support women and their families experiencing ovarian and gynaecological cancer in the Hunter Region.

Applications were also called for funding from the Margaret Mitchell Grant Scheme, Jane Reid Harle Grant, Coalfields Cancer Support Groups Equipment grant, and Hunter Cancer Research Alliance (HCRA) Clinical Cancer Research Infrastructure Grant. For the first time, the recipients of the Margaret Mitchell and Jane Reid Harle schemes funded three projects through the NSW Regional Health Partners RICH Outcomes Workshop held in May. An additional project was funded directly by Hunter New England Health. The RICH Outcomes workshop is designed to research important clinical questions to improve health outcomes.

The funding recipients in 2018 were:

## **Margaret Mitchell Grant**

- Julia Drake, Noelle Gallant, Melissa Walker and Emma Sturgess – Social Work. Caring for the Caring Professionals within a Cancer Hospital: Research into Compassion Fatigue, Burnout and Distress in the Workplace. RICH Outcomes Workshop, \$10,000.
- Sim Galimam – Pharmacy. Evidence Based Pharmacotherapy – What evidence is being used to support clinical oncology practices at Calvary Mater Newcastle and is it of sufficient quality? RICH Outcomes Workshop, \$10,000

## **Jane Reid Harle Grant**

- Cheryl Cooley, Chris Aartsen, Lara Riley – Surgical Services. Reducing Clinical Variation in Post-operative Breast Cancer Surgery. Rich Outcomes Workshop, \$10,000.

## **Coalfields Cancer Support Group Equipment Funding**

- Kim Adler – Medical Oncology. Medical Oncology Clinical Trials Heraeus Megafuge 16R Refrigerated Centrifuge, \$12,500.
- Dr Jayne Gilbert and Madhu Garg – Medical Oncology. Essential equipment including biohazard safety hood for cancer research in medical oncology, \$17,416.

## **RICH Program Hunter New England Health**

- Rebecca Robertson and Jo Berry – Clinical Nurse Unit Manager. Domestic violence screening for high risk toxicology patients. \$10,000. Hunter New England Health RICH Outcomes Program.

## **HCRA Clinical Cancer Research Infrastructure**

- Dr Lisa Lincz. Preventative maintenance contract for BD FACSCanto II and replacement part. Service contract for Calvary Mater Newcastle Flow Cytometer BD FACS Canto, \$2853.
- Dr Anoop Enjeti. Translational genomics in haematological malignancies. Laptop and associated statistical software and GPS temperature monitors, \$10,600.

## **Hope4cure Grant**

- Dr Jennette Sakoff, Prof Janice Aldrich-Wright, Dr Jayne Gilbert, and Dr Hiren Mandaliya. New platinum agents for the treatment of ovarian cancer, \$39,252.

The Research Committee would like to acknowledge and thank the assessors for their time and commitment to providing expert scientific reviews and invaluable advice for funding distribution.

## Department Research

### DEPARTMENT OF CONSULTATION-LIAISON PSYCHIATRY

Members of the department were active in a number of research areas with a healthy record of publications in peer-reviewed journals, conference presentations and grant successes.

The topic areas reflect the clinical areas of interest for the department with an emphasis on various aspects of suicide prevention, psychological distress and psycho-oncology.

#### DEPARTMENT MEMBERS INVOLVED IN RESEARCH

- Associate Professor Kerrie Clover (Research Manager Psycho-Oncology, Psycho-oncology Service CMN; Conjoint Associate Professor, Faculty of Health and Medicine, University of Newcastle)
- Dr Katherine McGill (Research Manager Suicide Prevention, Burdekin Suicide Prevention HNE Mental Health Service)
- Jennifer Bryant (Clinical Nurse Consultant, CMN)
- Elisa Gabrysiak (RN and Database Manager)
- Sophia Wooldridge (Clinical Psychologist, Psycho-oncology Service CMN)
- Karen Matthews (Clinical Psychologist, Youth Cancer Service, HNE LHD)
- Erin Forbes (Research Assistant)
- Professor Gregory Carter (Psychiatrist, CMN, Conjoint Professor, Faculty of Health and Medicine, University of Newcastle)

#### PSYCHO-ONCOLOGY RESEARCH

- The Psycho-Oncology Service continued to be highly active in research. PhD student Erin Forbes successfully completed her PhD confirmation this year. The baseline study into the prevalence of procedure-related anxiety among head and neck cancer patients during radiation therapy was completed, with 101 patients recruited. Interim results indicate a sizeable subset (up to 9%) of patients experience intense mask-related procedural anxiety during radiotherapy for these cancers. A qualitative study interviewing patients to help design effective interventions is underway. The research was presented in a symposium at an international conference in Hong Kong.
- The Haem-Fit trial of a hospital exercise and wellness program for haematology in-patients was completed. This pilot study demonstrated that an exercise program that could be performed by patients in the ward could be successfully implemented, and was well received by patients.
- We have extended our work in the area of validating psychological measures in the oncology setting by using a gold-standard clinical interview to validate anxiety measures. Anxiety disorders are

more common and equally debilitating as depressive disorders within oncology but receive far less research attention. The department's work with the hospital's specialist cancer nurse consultants has been updated and an analysis of a new screening dataset for 765 patients is underway.

- Kerrie Clover has continued as the Convenor of the Australian Psychological Society's Psychologists in Oncology Interest Group.

#### SUICIDE PREVENTION RESEARCH

The primary focus of this year's suicide prevention research has been on extending the suicide prevention evidence base and leading translation activities.

- Calvary Mater Newcastle is leading the evaluation of the Hunter Way Back Support Service, a non-clinical care coordination aftercare service for people who have attempted suicide. The Commonwealth Government committed \$37.6 million to spread the service, developed by Beyond Blue, across the country. It was established in 2016 and has been tested in Newcastle in partnership with Hunter Primary Care and with support from Calvary Mater Newcastle, Hunter New England Local Health District, Everymind and Relationships Australia.

The Hunter trial of this service was designed to investigate the feasibility of the scaling and integration of the service with the existing health service system and to investigate the effectiveness of the service in reducing repetition of self-harm (specifically, readmissions for deliberate self-poisoning) and psychiatric inpatient admissions. The trial findings will inform the national dissemination of the service and the final report is being prepared.

- The department has also led other translation activities focused on promoting best practice for those who have engaged in deliberate self-harm or for people who are suicidal. The psychiatric component of the HATS database of self-poisoning is being updated by the department's new Clinical Register Manager Elisa Gabrysiak. This work has been funded by a series of grants from the Hunter Primary Care Network.
- For the 2018 National Suicide Prevention Conference, Dr Katherine McGill convened a symposium on "Support after a suicide attempt: Aftercare evidence, models and learning to date". In April, 2019, Dr McGill contributed to a rapid review for the NSW Ministry of Health, brokered by Sax Institute, regarding the effectiveness of aftercare services for people admitted to hospital after self-harm in reducing suicidal behaviours. Dr McGill also recently had a study published in Patient Education and Counselling regarding the information needs of people who have attempted suicide and their family members and friends. Both Professor Greg Carter and Dr McGill have

presented in local GP education forums about assessing and supporting people who are suicidal.

#### OTHER RESEARCH AND SERVICE EVALUATION STUDIES UNDERWAY INCLUDE:

- Evaluation of the Accredited Persons Program, for which data analysis and manuscript preparation is being finalised. In 2003, the Clinical Nurse Consultant with Department of Consultation-Liaison Psychiatry was among the first group of people in NSW to become an 'Accredited Person' with the capacity to require a person to present for an assessment at a psychiatric facility in the same way Medical Officers can. Using a 10-year cohort extracted from the HATS database, investigators are looking at the predictors of discharge to the psychiatric hospital for an involuntary assessment and whether the Accredited Person's disposition decisions differ in any way to those of the Medical Officers.
- Data analysis has been completed and consultation with Aboriginal stakeholders is underway for a study investigating the risk profile for repetition for Aboriginal people presenting to hospital after self-poisoning. This project represents a collaboration with the local Aboriginal people, with statistical support being provided by Professor Andrew Page from Western Sydney University.

The unit also continues to support a number of university and/or college-required research projects and theses.

- Dr Ingrid Berling was awarded her PhD – investigating whether psychotropic medication use may be contributing to some cardiac deaths
- Amir Salem and Karren Robertson were awarded their Clinical Masters of Psychology degree, including successful completion and passing of the research thesis component overseen by the unit. Their topics, respectively, were: predictors of discharge to psychiatric hospital for Aboriginal and non-Aboriginal patients; and effectiveness of the dissemination of YAM, a school-based suicide prevention program.

Current research project supervision includes: Dr Lindsay Gale (Scholarly Project – investigating delirium in self-poisoning patients; Mr Todd Heard (Clinical Psychology Masters thesis – a qualitative investigation on the perceptions and needs of the Aboriginal communities in relation to discussing suicide; and Dr Lisa Sawyer (Clinical Psychology Masters thesis – evaluating a non-clinical assertive aftercare suicide prevention service).

Calvary Mater Newcastle has also continued to be an active partner in the LifeSpan Newcastle pilot. LifeSpan is an integrated approach to suicide prevention that is based on ensuring evidence informs practice. Professor Carter is a member of the Leadership, Research and Advisory Committee for Black Dog Institute, which is rolling out the trial in four sites across NSW. Newcastle was the

first of the four sites to trial the model and the formal trial period has finished at the end of July 2019. It is anticipated that Calvary Mater Newcastle will continue to be an active partner in the dynamic simulation modelling activities and development of an integrated regional suicide prevention plan, being led by the Primary Health Network, which aim to consolidate and progress local collaborative suicide prevention aims and objectives.

Other key achievements for the past 12 months include:

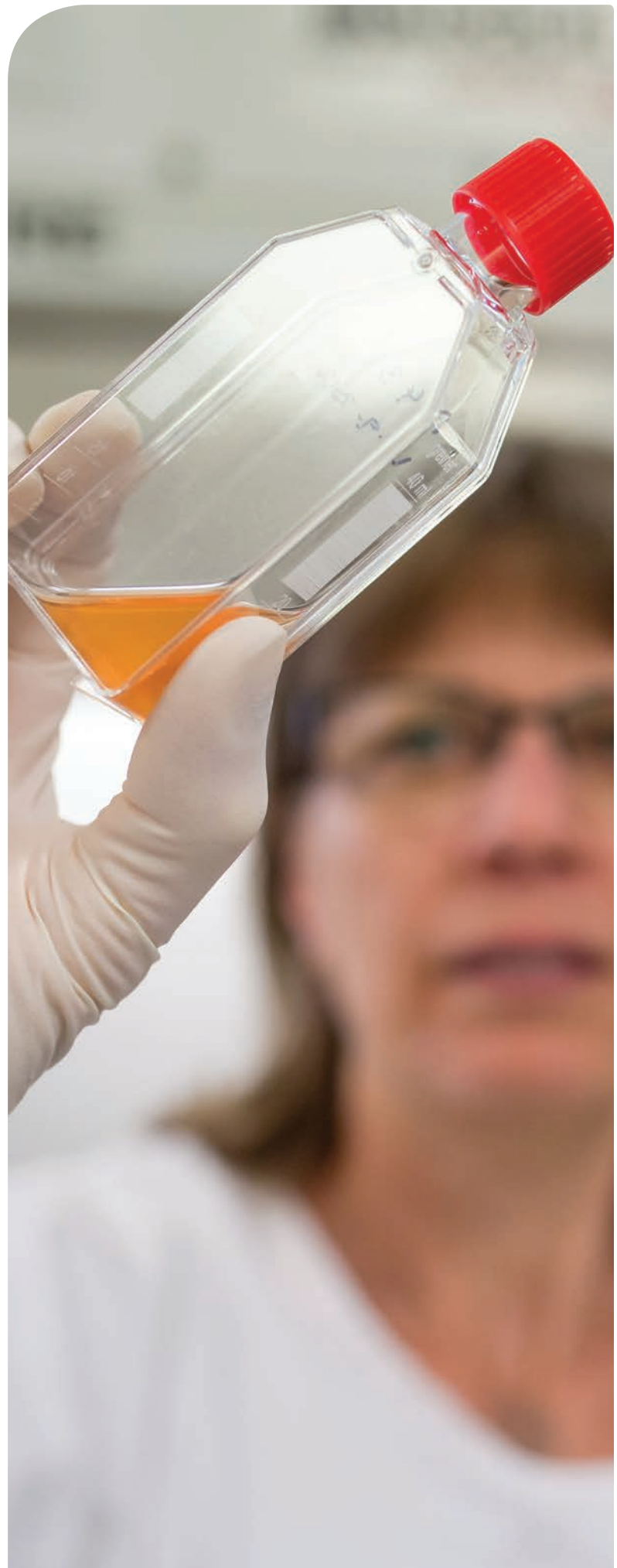
- Deliberate self-poisoning clinical registry: Database updated and data entry completed for 2018. Snapshot of presentations for 2018 to be presented to the Primary Health Network (the funder) in October 2019.
- 3 minute thesis competition at the 2018 National Suicide Prevention Conference: Dr McGill was the runner up in the competition and presented immediately prior to one of the key note speakers for the conference (Mr David Covington, Zero Suicides in Health Care)
- PhD scholarship: Dr McGill was awarded one of the inaugural Suicide Prevention Scholarships to demonstrate how sentinel unit and self-harm surveillance data can be used to inform local suicide prevention planning, policy and practice. Dr McGill is the recipient of the scholarship being supported by Suicide Prevention Australia and Regional Australia Bank.

### **SOMATIC SYMPTOM DISORDER RESEARCH**

Dr Melissa Stieler is a Hunter New England Local Health District surgical registrar undertaking a Master of Philosophy (Surgical Science) postgraduate Research Higher Degree (RHD) at the University of Newcastle. Her project title is Somatic Symptom Disorder and Undifferentiated Abdominal Pain; Prevalence, Diagnostic Accuracy and Comorbidity. She is supervised by Dr Peter Pockney (University of Newcastle) and Professor Gregory Carter. This project will initially be undertaken at the John Hunter Hospital with potential expansion to surgical departments in other general hospitals in the district in the future.

### **PEER REVIEWED JOURNAL PUBLICATIONS**

1. Katie McGill, Suzanne Hackney, & Jaelea Skehan (2019). Information needs of people after a suicide attempt: A thematic analysis. *Patient Education and Counselling*. 102 (6). 1119-1124. <https://doi.org/10.1016/j.pec.2019.01.003>
2. Katrina Witt; Allison Milner; Matthew J Spittal; Sarah Hetrick; Jo Robinson; Jane Pirkis; Gregory L Carter  
Population attributable risk of factors associated with the repetition of suicidal behaviour in young people presenting to clinical services following self-harm: A systematic review and meta-analysis. (*European Child & Adolescent Psychiatry*. Eur Child Adolesc Psychiatry (2019) 28: 5. DOI: 10.1007/s00787-018-1111-6).
3. Carter G, Spittal MJ.  
Suicide Risk Assessment: Risk Stratification Is Not Accurate Enough to Be Clinically Useful and Alternative Approaches Are Needed (*Crisis* 2018, 39(4), 229–234 <https://doi.org/10.1027/0227-5910/a000558>)
4. Miyabi Ishihara, Daphna Harel, Brooke Levis, Alexander W. Levis, Kira E. Riehm, Nazanin Saadat, Marleine Azar, Danielle B. Rice, Tatiana A. Sanchez, Matthew J. Chiovitti, Pim Cuijpers, Simon Gilbody, John P.A. Ioannidis, Lorie A. Kloda, Dean McMillan, Scott B. Patten, Ian Shrier, Bruce Arroll, Charles H. Bombardier, Peter Butterworth, Gregory Carter, Kerrie Clover, Yeates Conwell, Felicity Goodyear-Smith, Catherine G. Greeno, John Hambridge, Patricia A. Harrison, Marie Hudson, Nathalie Jetté, Kim M. Kiely, Anthony McGuire, Brian W. Pence, Alasdair G. Rooney, Abbey Sidebottom, Adam Simning, Alyna Turner, Jennifer White, Mary A. Whooley, , Kirsty Winkley, Andrea Benedetti, Brett D. Thombs.



- Shortening Self-report Mental Health Symptom Measures through Optimal Test Assembly Methods: Development and Validation of the Patient Health Questionnaire-Depression-4. (accepted Depression and Anxiety, September 2018)
5. Ben Britton, Amanda L. Baker, Luke Wolfenden, Chris Wratten, Judith Bauer, Alison K. Beck, Kristen McCarter, Jane Harrowfield, Elizabeth Isenring, Colin Tang, Chris Oldmeadow, Gregory Carter. Eating As Treatment (EAT): a stepped-wedge, randomised controlled trial of a health behaviour change intervention provided by dietitians to improve nutrition in patients with head and neck cancer undergoing radiotherapy. (accepted Journal of Clinical Oncology, September 2018).
  6. Katie McGill, Sarah Hiles, Tonelle Handley, Andrew Page, Terry Lewin, Ian Whyte & Greg Carter (2018). Is the reported increase in young female hospital-treated intentional self-harm real or artefactual? Australian and New Zealand Journal of Psychiatry. 53 (7). 663-372. <https://doi.org/10.1177/0004867418815977>
  7. Brooke Levis, Andrea Benedetti, Brett D. Thombs and the DEPREssion Screening Data (DEPRESSD) Collaboration The Accuracy of the Patient Health Questionnaire-9 (PHQ-9) for Screening to Detect Major Depression: an Individual Participant Data Meta-analysis. (accepted BMJ March 2019).
  8. Yin Wu, Brooke Levis, Kira E Riehm, Nazanin Saadat, Alexander W Levis, Marleine Azar, Danielle B Rice, Jill Boruff, Pim Cuijpers, Simon Gilbody, John P.A. Ioannidis, Lorie A Kloda, Dean McMillan, Scott B Patten, Ian Shrier, Roy C Ziegelstein, Dickens H Akena, Bruce Arroll, Liat Ayalon, Hamid R Baradaran, Murray Baron, Charles H Bombardier, Peter Butterworth, Gregory Carter, Marcos H Chagas, Juliana C. N. Chan, Rushina Cholera, Yeates Conwell, Janneke M de Man-van Ginkel, Jesse R Fann, Felix H Fischer, Daniel Fung, Bizu Gelaye, Felicity Goodyear-Smith, Catherine G Greeno, Brian J Hall, Patricia A Harrison, Martin Harter, Ulrich Hegerl, Leanne Hides, Stevan E Hobfoll, Marie Hudson, Thomas Hyphantis, MD, Masatoshi Inagaki, Nathalie Jetté, Mohammad E Khamseh, Kim M Kiely, Yunxin Kwan, Femke Lamers, Shen-Ing Liu, Manote Lotrakul, Sonia R Loureiro, Bernd Löwe, Anthony McGuire, Sherina Mohd-Sidik, Tiago N Munhoz, Kumiko Muramatsu, Flávia L Osório, Vikram Patel, Brian W Pence, Philippe Persoons, Angelo Picardi, Katrin Reuter, Alasdair G Rooney, Juwita Shaaban, Abbey Sidebottom, Lesley Stafford, Sharon C Sung, Pei Lin Lynnette Tan, Alyna Turner, Henk C van Weert, Jennifer White, Mary A Whooley, Kirsty Winkley, Mitsuhiro Yamada, Andrea Benedetti, Brett Thombs. Evaluation of the Equivalency of the PHQ-8 and PHQ-9: A systematic review and individual participant data meta-analysis. (accepted The Lancet Psychiatry March 2019).
  9. Garry J. Stevens, Trent E. Hammond, Suzanne Brownhill, Manish Anand, Anabel de la Riva, Jean Hawkins, Tristan Chapman, Richard Baldacchino, Jo-Anne Micallef, Jagadeesh Andepalli, Anita Kotak, Naren Gunja, Andrew Page, Grahame Gould, Christopher J. Ryan, Ian M. Whyte, Gregory L. Carter, Alison Jones. SMS SOS: a randomized controlled trial to reduce self-harm and suicide attempts using SMS text messaging (Protocol) (BMC Psychiatry accepted April 2019, 19:117. <https://doi.org/10.1186/s12888-019-2104-9>)
  10. Elizabeth A. Fradgley, Emma Byrnes, Kristen McCarter, Nicole Rankin, Ben Britton, Kerrie Clover, Gregory Carter, Douglas Bellamy, Chris L. Paul. A cross-sectional audit of current practices and areas for improvement of distress screening and management in Australian cancer services: is there a will and a way to improve? (Supportive Care in Cancer accepted April 2019. <https://doi.org/10.1007/s00520-019-04801-5>)
  11. Wu Y, Levis B, Riehm KE, Saadat N, Levis AW, Azar M, Rice DB, Boruff J, Cuijpers P, Gilbody S, Ioannidis JPA, Kloda LA, McMillan D, Patten SB, Shrier I, Ziegelstein RC, Akena DH, Arroll B, Ayalon L, Baradaran HR, Baron M, Bombardier CH, Butterworth P, Carter G, Chagas MH, Chan JCN, Cholera R, Conwell Y, de Man-van Ginkel JM, Fann JR, Fischer FH, Fung D, Gelaye B, Goodyear-Smith F, Greeno CG, Hall BJ, Harrison PA, Härter M, Hegerl U, Hides L, Hobfoll SE, Hudson M, Hyphantis T, Inagaki M, Jetté N, Khamseh ME, Kiely KM, Kwan Y, Lamers F, Liu S-I, Lotrakul M, Loureiro SR, Löwe B, McGuire A, Mohd-Sidik S, Munhoz TN, Muramatsu K, Osório FL, Patel V, Pence BW, Persoons P, Picardi A, Reuter K, Rooney AG, Santos IS, Shaaban J, Sidebottom A, Simning A, Stafford L, Sung S, Tan PLL, Turner A, van Weert HC, White J, Whooley MA, Winkley K, Yamada M, Benedetti A, Thombs BD. Equivalency of the diagnostic accuracy of the PHQ-8 and PHQ-9: a systematic review and individual participant data meta-analysis. (Psychological Medicine accepted May 2019)
  12. Rebecca McKetin, Olivia M. Dean, Alyna Turner, Peter J. Kelly, Brendan Quinn, Dan I. Lubman, Paul Dietze, Gregory Carter, Peter Higgs, Amanda L. Baker, Barbara Sinclair, David Reid, Victoria Manning Nina te Pas, Wenbin Liang, Tamsin Thomas, Ramez Bathish, Margaret Kent, Dayle Raftery, Shalini Arunogiri, Frank Cordaro, Harry Hill, Michael Berk. A study protocol for the N-ICE trial: A randomised double-blind placebo-controlled study of the safety and efficacy of N-acetylcysteine (NAC) as a pharmacotherapy for methamphetamine ("ice") dependence. (Trials June 2019, 20:325 <https://doi.org/10.1186/s13063-019-3450-0>)
  13. Ben Britton, Amanda L. Baker, Luke Wolfenden, Chris Wratten, Judith Bauer, Alison K. Beck, Kristen McCarter, Jane Harrowfield, Elizabeth Isenring, Colin Tang, Christopher Oldmeadow, Gregory Carter. Comment In Reply to Lee and Douthit, and Champ and Klement. (International Journal of Radiation Oncology Volume 103, Issue 5, 1 April 2019, Pages 1283-1284 <https://doi.org/10.1016/j.ijrobp.2018.12.017>)
  14. Alison Kate Beck, Erin Forbes, Amanda L. Baker, Ben Britton, Chris Oldmeadow, Gregory Carter. Treatment Fidelity in Real World Evaluations of Behaviour Change Counselling: Protocol for a Systematic Review and Meta-Analysis (Accepted BMJ Open July 2019)
- ### CONFERENCE PRESENTATIONS
- #### Published abstracts
1. Forbes, E., Clover, K., Carter, G., Wratten, C., Britton, B., Tieu, M., . . . McCarter, K. (2018). Rates of Procedural Anxiety During Radiotherapy Using A Mask in Patients with Head and Neck Cancer: Interim Data. Psycho-oncology Vol. 27 (pp. 132).
  2. Clover, K., Forbes, E., Carter, G., Wratten, C., Britton, B., Tieu, M., . . . McCarter, K. (2018). Procedural anxiety during radiotherapy using a mask in patients with head and neck cancer: Interim data. Psycho-oncology Vol. 27 (pp. 17-18).
  3. Fradgley, E., Byrnes, E., Rankin, N., McCarter, K., Britton, B., Carter, G., . . . Paul, C. (2018). Exploring the evidence-practice gap in distress management: Are Australian cancer services aware of and benefiting from evidence-based guidelines? Psycho-oncology Vol. 27 (pp. 32).
  4. Fradgley, E. A., Byrnes, E., Mccarter, K., Britton, B., Rankin, N., Carter, G., . . . Paul, C. (2018). A report card on Australian cancer services' distress screening and management practices: A pass mark or time to go back to school? Psycho-oncology Vol. 27 (pp. 16).
- ### PRESENTATIONS
1. McCarter, K., Britton, B., Baker, A., Beck, A., Wolfenden, L., Wratten, C., Bauer, J., Carter, G. Eating As Treatment (EAT): A health behaviour change intervention for head and neck cancer patients. 32nd Annual Conference of the European

Health Psychology Society, Galway, Ireland. 21-25 August 2018.

2. Fradgley, E., Byrnes, E., Rankin, N., McCarter, K., Britton, B., Carter, G., . . . Paul, C. (2018).

Exploring the evidence-practice gap in distress management: Are Australian cancer services aware of and benefiting from evidence-based guidelines? *Psycho-oncology* Vol. 27 (pp. 32).

3. Fradgley, E. A., Byrnes, E., McCarter, K., Britton, B., Rankin, N., Carter, G., . . . Paul, C. (2018).

A report card on Australian cancer services' distress screening and management practices: A pass mark or time to go back to school? *Psycho-oncology* Vol. 27 (pp. 16).

4. International Psycho-Oncology Society (IPOS) Congress 2018, Hong Kong. Symposium presentation – Clover, K., Forbes, E., Carter, G., Wratten, C., Britton, B., Tieu, M., Kumar, M., Oultram, S., Baker, A. L., McCarter, K. Procedural anxiety during radiotherapy using a mask in patients with head and neck cancer: interim data

5. Erin Forbes, Kerrie Clover, Greg Carter, Chris Wratten, Ben Britton, Mimi Tieu, Mahesh Kumar, Sharon Oultram, Amanda Baker, Kristen McCarter

Rates Of Procedural Anxiety During Radiotherapy Using A Mask In Patients With Head And Neck Cancer: Interim Data

20th World Congress IPOS Poster Hong Kong, China, 29 October – 02 November 2018

6. Casey Hutchinson, Louisa Brown, Lisa Lincz, Alix Hall, Jackie Wykes, Judy Holland, Kerrie Clover, Benjamin Britton, Philip Rowlings . 'Designing Haem-Fit – an exercise and wellness program in the CMN Haematology Department'. HEaPS Evening Seminar 'Embedding research into routine cancer care' Newcastle. April 4, 2018.

7. Casey Hutchinson, Louisa Brown, Lisa Lincz, Alix Hall, Jackie Wykes, Judy Holland, Kerrie Clover, Benjamin Britton, Philip Rowlings 'Haem-Fit: A pilot implementation trial of a hospital exercise and wellness program for haematology in-patients'. *Blood* 2018, Brisbane Convention & Exhibition Centre, 21–24 October – Awarded BEST Oral abstract Nurses stream HSANZ.

8. McGill, K., Hazell, T., Schniering, C., KayLambkin, F. National dissemination of a program for people who care for a person with depression-predictors of program delivery. Society for Mental Health Research Conference. Noosa. 28-30 November 2018.

9. McGill, K. 3 minute thesis competition. Runner up award. National Suicide Prevention Conference. Adelaide. 23-27 July 2018.

10. McGill K, Shand F, Burns B, McRae A, Traynor M, Larsen M, Darwin L. Support After A Suicide Attempt: Aftercare evidence,

models & learnings to date. National Suicide Prevention Conference. Adelaide. 23-27 July 2018.

#### POSTERS

1. Casey Hutchinson, Louisa Brown, Jackie Wykes, Judy Holland, Kerrie Clover, Alix Hall, Benjamin Britton, Philip Rowlings, Lisa F Lincz.. 'Wellness and Exercise of Haematology Cancer In-patients. Baseline measurements to guide future interventions'. Cancer Nurses Society of Australia, 21st Annual Congress. Brisbane Convention and Exhibition Centre, Brisbane, 21- 23 June 2018- Awarded BEST poster
2. Casey Hutchinson, Louisa Brown, Jackie Wykes, Judy Holland, Kerrie Clover, Alix Hall, Benjamin Britton, Philip Rowlings, Lisa F Lincz. 'Haem-Fit: A pilot implementation trial of a hospital exercise and wellness program for haematology in-patients'. 2018 Hunter Cancer Research Symposium & Panel Discussion Networking Event. Nov 1st, 2018, HMRI. Awarded BEST implementation study poster

#### RESEARCH GRANTS

1. 2018 University of Sydney and UNSW. Seed Funding Scheme: Mental Health, Drug and Alcohol Comorbidity. Using big data to understand the predictors of repeated self-harm in people with mental health and drug and alcohol comorbidity  
Kate Chitty, Rachel Cvejic, Julian Trollor, Kirsten Morley, Preeyaporn Srasuebku, Andrew Dawson, Gregory Carter. \$19,794.87 over one year
2. 2018 NHMRC APP1152952 Centre Of Research Excellence In Suicide Prevention: CRESPII  
CIs: Christensen H, Venkatesh S, Boydell K, Shand F, Harvey S, Batterham P, Calear A, Carter G, Larsen M, Robinson J. 2,499,557.28 over three years
3. 2018 National Health and Medical Research Council- APP1157757 Prescribed medicine use and healthcare contacts before suicide: Detecting opportunities for prevention using population-based linkage of routinely collected data  
CIs: Kate Chitty, Jennifer Pilgrim, Andrea Schaffer, Rose Cairns  
Als: Nicholas Buckley, Sallie-Anne Pearson, Gregory Carter, Andrew Page, Jacques Raubenheimer, Claire Wylie. \$354,526 over three years
4. 2018 Australian Rotary Health Optimising caring contact: Using text messages to support people after a suicide attempt  
CIs: Mark Larsen, Fiona Shand, Kirsten Morley, Philip Batterham, Sofian Berrouguet, Paul Haber, Greg Carter, Helen Christensen (Als Justin Chia, Richard Henshaw, Dean Martin)

\$133,793 over 2 years (1 Jan 2019- 31 Dec 2020)

5. 2018 Suicide Prevention Australia (NHMRC Gap Funding)  
Preventing repeated self-poisoning: A brief therapy text message intervention  
Investigators: Larsen, Shand, Morley, Carter, Kapur  
Amount: \$523,614 Duration: 3 years (Jan 2019 – Dec 2020)

#### PHD STUDENT GRANTS

Katie McGill: 2018 PhD Scholarship- Suicide Prevention Australia & Regional Australia Bank. \$105 000 over three years (2019-2021).

Erin Forbes: 2018 \$10,000 Hunter Cancer Research Alliance Radiation Oncology and Cancer Imaging Technology (ROCIT) Flagship Research Higher Degree (HDR) Student Top-Up Award; 2018 \$500 Hunter Cancer Research Alliance Radiation Travel Grant

#### RHD STUDENT GRANTS

Dr Melissa Stieler: 2019 Master of Philosophy (Surgical Science), University of Newcastle. \$12,040 and \$16,080 per annum (2 years) Research Training Program (RTP) Scholarship

#### HAEMATOLOGY

##### OVERVIEW

The Haematology Unit engages in both clinical and laboratory based research. Clinicians and nurses are actively involved in research directed at improving patient care, while the department also supports dedicated laboratory and clinical trials teams. The Staff Specialists are committed to providing quality training to haematology registrars. Many of the staff hold conjoint appointments with the University of Newcastle and engage in teaching undergraduate medical students and supervising biomedical student projects. There are also numerous research higher degree students associated with the lab, one successful PhD completion in 2018-19 and another PhD thesis submitted. The unit is fortunate to have strong community support and is grateful for all the generous donations received in 2018-19.

##### HAEMATOLOGY CLINICAL TRIALS

**Clinical Trial Coordinators: Michele Gambrell, Tara Novak, Marguerite Hughes, Nick Stankovich, Cheryl Cairney, Klara Jakimovski and Leanne DeGroot.**

**Data Managers: Katie Oleksyn and Samantha Johnson**

**Administrative/Finance Officers: Patricia Rozanski and Karen Kincaid**

**Laboratory Technical Officer: Carolina Mariga Green**

Over the past year the Haematology Clinical Trials Office has:

- Activated 8 new clinical trials across a range of haematology malignancies along with 1 new disease registry

- Pre-screened 112 new potential participants for those newly activated and ongoing clinical trials,
- Formally screened 60 of those potential participants and
- Enrolled 52 of those screened participants onto a clinical trial.
- Currently 154 patients are being cared for by trials staff (either on treatment or in active follow up).
- Opened a new disease registry for Multiple Myeloma (Myeloma & Related Disease Registry)

The Trials Office Manager has also developed and fully implemented electronic site files for studies which have now been accepted by all sponsors. The filing system has been presented at National Cooperative group meetings with other sites showing interest in the system. The new electronic filing system has reduced the storage required for bulky hard copy folders and greatly reduces the paper used and archived by the trials office.

Of all the open trials/registries (including those open to recruitment and those closed to recruitment but with participants either on treatment or in follow up) being managed, all are either administered by the Australasian Leukaemia and Lymphoma Group (ALLG), the Australasian Myeloma Research Consortium (AMaRC), sponsored by pharmaceutical companies/industry partners and/or investigator initiated.

The increasing complexity of investigator initiated and pharmaceutical sponsored trials

and the administration required to successfully manage them has warranted additional staff to the Haematology Trials Office this year. The office welcomed Katie Oleksyn, Leanne DeGroot, Carolina Mariga Green and Samantha Johnson to the Haematology team. With additional trials in the pipeline for activation this year, planning for recruitment of a new Clinical Trial Coordinator is underway.

#### **BONE MARROW STEM CELL TRANSPLANT RESEARCH**

**Philip Rowlings, Louisa Brown, Hong Zhang, Linda Welschinger, Geordie Zaunders**

Patient transplant data are reported to the Australian Bone Marrow Transplant Recipients Registry (ABMTRR) as part of Australian BMT research and development. These data are also part of the Asia Pacific Bone Marrow Transplant (APBMT) research group. The CMN Unit is the lead site on the ethics application for data collection of the NSW BMT Network, a subgroup of the Agency for Clinical Innovation (ACI) of the Ministry of Health. Professor Rowlings is a member of the Scientific Advisory Committee of Asia Pacific BMT Group (APBMT), and is a member of the board of Worldwide Blood and Marrow Transplant network (WBMT).

#### **VENOUS THROMBOEMBOLISM AND TRANSFUSION RESEARCH**

**Dr Bryony Ross, Dr Ritam Prasad, Dr Kate Melville and Dr Anoop Enjeti**

Practise changing audits and interventions have been important contributions in these areas with Dr Bryony Ross as chair of area transfusion (PBM)

committee and Dr Enjeti as chair of the area venous thromboembolism (VTE) committee. Dr Ross and Dr deMalmarche are also involved in the Haematology in Women Group.

#### **LABORATORY RESEARCH - THE HUNTER HAEMATOLOGY RESEARCH GROUP**

**Lisa Lincz, Fiona Scorgie, Elizabeth Pearsall, Nadine Berry, Anoop Enjeti, Ritam Prasad and Philip Rowlings**

The Haematology Research Laboratory conducts studies into haematological cancers and disorders of coagulation, with a primary interest in circulating microvesicles. The laboratory is linked to the University of Newcastle and offers tuition and scholarships to encourage students to enter this area of research.

The group maintains strong collaborations with researchers internationally through the International Society on Thrombosis and Haemostasis; BFM Paediatric ALL group; Kingston University and OICR Ontario, Canada (Dr A Enjeti, travelling fellowship); nationally with researchers at the Universities of Tasmania and Melbourne, as well as the Royal Hobart Hospital and Austin Health; CCI, Children's Hospital, Randwick; and locally with the departments of Neurology (JHH), Molecular Medicine (NSW Health Pathology–North), Clinical Toxicology and Pharmacology (CMN), Medical Oncology (CMN), Radiation Oncology (CMN), Hunter Medical Research Institute, and the School of Biomedical Sciences and Pharmacy (University of Newcastle).

A strong translational research group is emerging in the area of Myelodysplasia Acute Lymphoblastic and Acute Myeloid Leukemia with



Dr Enjeti (clinical translational/Genomics/ drug development), Dr Jon Sillar (Trainee and PhD student), Dr Asma Asharf (Clinical Epidemiology), Dr Nikki Verrills (Molecular Biology), Dr Kathryn Skelding (Molecular Biology), Dr Matt Dun (Proteomics), Dr Lisa Lincz (Molecular Biology), Dr Heather Lee (Epigenetics) and Prof R Scott (Genomics). Dr A Enjeti has led the development of a Next Generation Sequencing (NGS) panel-based testing for Acute Myeloid Leukaemia/ Myelodysplastic Syndrome (AML/MDS) with the Hunter as a lead site for testing in NSW.

#### ACHIEVEMENTS/AWARDS

- Successful implementation of myeloid MPS panel for a state-wide service
- Anoop Enjeti nominated Lead for MDS clinical trials (ALLG) 2019
- Best paper award HCRA 2018 for industry engagement, Anoop Enjeti
- HNE Health Excellence award 2019 for 'Patient safety first' for leading HNE LHD VTE prevention program, Anoop Enjeti, Mary Bond, Melissa O'Brien.
- 'Open' day lectures for community 2018 and 2019 HMRI, Anoop Enjeti
- Anoop Enjeti edited the patient information booklet on Acute Leukemia (Cancer Council NSW)
- Community science and research showcase both on ABC Newcastle and ABC national- more than 7000 hits for this radio interview, Anoop Enjeti

#### RESEARCH FUNDING

1. 2017-20. Pathology North/HNELHD/CMN Clinical Research Fellowship. Locoregional differences, biomarkers and novel therapy in Acute Myeloid Leukaemia. Anoop Enjeti. \$360,000
2. 2015-19 NHMRC project grant APP1085550. Helping stroke physicians choose who to thrombolys - the "Targeting Optimal Thrombolysis Outcomes" (TOTO) study. CIA: Elizabeth Holliday, ClG: L Lincz \$1,031,671
3. 2019 HMRI Myeloma Project Grant. Predicting tOxicity for Myeloma Therapy (PrOMT) W Janowski, Anoop Enjeti \$50,000
4. HCRA seminar series in Haematology (Leukemia/MDS). Anoop Enjeti \$1500
5. HCRA Clinical Cancer research funds. Anoop Enjeti \$10,000
6. Faculty of Health Visiting fellow funds. Anoop Enjeti \$6000
7. Faculty of Health and Medicine research funds. Anoop Enjeti \$10,000
8. HMRI Array of Hope for ALL research grant. Anoop Enjeti \$25000

#### CONFERENCE AND MEETING PROCEEDINGS

**Australasian Leukaemia & Lymphoma Group Scientific Meeting, May 2019, Anoop Enjeti** (Invited Speaker). 'Update on MDS and AML' & 'MYDAAS-T Trial concept for MDS'

#### American Society of Haematology 60th meeting, San Diego, CA, 1-4 Dec, 2018

Yeung, D.T., A.P. Grigg, N. Shanmuganathan, I. Cunningham, J. Shortt, **P. Rowling**, J. Reynolds, R. Cushion, R.A. Harrup, D.M. Ross, D. Kipp, A.K. Mills, C.K. Arthur, A.P. Schwarzer, K. Jackson, N. Viiala, R. Weinkove, A.S.M. Yong, D.L. White, S. Branford, T.P. Hughes, and O.B.o.t. ALLG, Combination of Nilotinib and Pegylated Interferon Alfa-2b Results in High Molecular Response Rates in Chronic Phase CML: Interim Results of the ALLG CML 11 Pinnacle Study. Blood, 2018. 132(Suppl 1): p. 459.

#### 24th Congress of the European Haematology Association, Amsterdam, The Netherlands June 13-16, 2019

Schjesvold, F.; Goldschmidt, H.; Maisnar, V.; Spicka, I.; Abildgaard, N.; **Rowlings, P.**; Odum, D.; Gnanasakthy, A.; Suryanarayan, K.; Cain, L.; Romanus, D.; Rajkumar, S. V.; Dimopoulos, M. A. Less. Health-Related Quality Of Life (Hrql) Outcomes of Oral Ixazomib Maintenance Therapy Post Autologous Stem Cell Transplant (ASCT) in Newly Diagnosed Multiple Myeloma (NDMM) from Tourmaline-MM3 (PF626), HemaSphere. 3:266-267, June 2019.

**Cancer Genomic Consortium 9th Annual Meeting August 6-8, 2018, Nashville, TN, Berry N, Scott R, Sutton R, Trahair T, Rowlings P, Enjeti A.** Australian AIEOP-BFM 2009 acute lymphoblastic leukaemia high-risk findings – Enrichment of IKZF1 deletions and other curious findings. Cancer Genetics October 2018; vol 226-227, p42.

#### Blood 2018, Brisbane Convention & Exhibition Centre, 21–24 October.

#### POSTER PRESENTATIONS:

- Fiona E Scorgie, Jayne Gilbert, Madhu Garg, Jennette Sakoff, Lisa F Lincz. What is the Best Way to Measure Blood Cell Mean Telomere Length?
- Debbie Carr, A Enjeti. J De Malmanche, Jock Simpson. Nurse led discharge of patients post blood transfusion in an outpatient setting.
- Linda Welschinger, Jan Virtue, Geordie Zaunders, Philip Rowlings: Snapshot of CMN autologous haematopoietic cell transplant unit 2011-2018.
- Cathie Milton, Melissa Walker & Philip Rowlings. Successful Identification of Patients Requiring Psychosocial Intervention when Undergoing HPC & ASCT.
- Bryony Ross, Cindy J Flores, Anil Lakkundi, Jo McIntosh, Peter Freeman, Mark Amey, Justine Parsons, Sarah Milton, Tracey Spigiel, Ben Saxton, Amanda Thomson. Transfusion For The Tiny: Neonatal Transfusion – A Focus On Partnering With Parents And Ensuring Excellence In Practice.
- Katherine Rankin, Dr Ritam Prasad, Dr Janis Chamberlain, Dr Aisling Carville, Mr Kent Chapman. First presentation of congenital factor V deficiency in a young adult. Awarded BEST poster award THANZ

workshop

- Ritam Prasad, Greg Irwin, Mary-Anne Hardy, Dr Anoop Enjeti. Evaluation of a Cloud-Based Differential and Abnormal White Cell Morphology Tool.
- Tiong IS, Bajel A, Johnston A, **Walsh M**, D'Rozario J, Yeung D, Marlton P, Fong CY, Cull G, Larsen SO, Kennedy G, Kipp D, Schwarzer A, Verner E, Ramanathan S, Tiley C, Taper J, Moore J, Morris E, Murphy N, Hahn U, Purtil D, Warburton P, Stevenson W, Shortt J, Kalro A, Filshie R, Beligaswatte A, Lenton D, Musando H, Hertzberg M, Crowther H, Wall M, Fleming S, Ritchie D, Roberts A, Wei A, on behalf of Australasian Leukaemia & Lymphoma Group. The Australasian Leukaemia and Lymphoma Group (ALLG) National Blood Cancer Registry (NBCR): report of the first 1,000 patients with acute myeloid leukaemia (AML).

#### ORAL PRESENTATIONS:

**Cathie Milton:** Is There Balance? CD34 Cell Prediction vs Actual CD34 Cell yield.

**Kate Melville:** The use of an electronic tablet to enhance and improve the consent process for a blood transfusion.

**Casey Hutchinson:** Haem-Fit: A pilot implementation trial of a hospital exercise and wellness program for haematology in-patients – awarded BEST Oral abstract Nurses stream HSANZ.

#### 2018 Hunter Cancer Research Symposium & Panel Discussion Networking Event. Nov 1st, 2018, HMRI

#### POSTER PRESENTATIONS:

**Casey Hutchinson, Louisa Brown, Jackie Wykes,** Judy Holland, Kerrie Clover, Alix Hall, Benjamin Britton, **Philip Rowlings, Lisa F Lincz.** Haem-Fit: A pilot implementation trial of a hospital exercise and wellness program for haematology in-patients. Awarded BEST implementation study poster

**Fiona E Scorgie,** Jayne Gilbert, Madhu Garg, Jennette Sakoff, **Lisa F Lincz.** What is the Best Way to Measure Blood Cell Mean Telomere Length?

**Cottrell Tamessar,** Madhu Garg, Jennette Sakoff, **Lisa Lincz,** Alexandre Xavier, Bente A. Talseth-Palmer, Stephen Ackland. Using genomics and pharmacokinetics to predict 5FU toxicity.

**Elizabeth A Pearsall, Lisa F Lincz,** Kathryn A Skelding. Heterogeneous nuclear nucleoprotein A3 (hnRNPA3) is a novel binding partner for Brain and acute leukemia, cytoplasmic (BAALC).

#### Hunter Cancer Research Symposium, HMRI, November 1, 2018

**Anoop K Enjeti,** Tears, Sweat and blood (invited speaker)

**Fiona E Scorgie,** Jayne Gilbert, Madhu Garg, Jennette Sakoff, **Lisa F Lincz** What is the Best Way to Measure Blood Cell Mean Telomere Length? (poster presentation)



**CMN Nursing Grand Rounds (International Nurses Day, May 10, 2019) Casey Hutchinson, Louisa Brown, Jackie Wykes,** Judy Holland, Kerrie Clover, Alix Hall, Benjamin Britton, **Philip Rowlings, Lisa F Lincz.** Haem-Fit: A pilot implementation trial of a hospital exercise and wellness program for haematology in-patients.

#### ADVISORY/BOARD MEMBERSHIP

##### Philip Rowlings

- Editorial Board of the Journal Blood Cell Therapy
- Board of Directors, Australia Leukaemia and Lymphoma Group
- Scientific Advisory Board of the Asia Pacific Bone Marrow Transplant Group
- Member, Hunter Cancer Research Alliance, Implementation Science Committee.

##### Sam Yuen

- Executive Committee, NSW BMT Network of the Agency for Clinical Innovation, NSW Health

##### Lisa Lincz

- Organising Committee, Australasian Extracellular Vesicles Conference, 14-16 Nov, 2018, UTS, Sydney
- Member of Council, Thrombosis and Haemostasis Society of Australia and New Zealand (THANZ) Scientific and Education Trust
- Member, CMN Translational Research Advisory Committee
- Member, CMN Research Development and Engagement Committee

##### Anoop Enjeti

- Chair VTE committee HNEAH
- Chair Future Leaders Group (HCRA)
- Chair, Genomics post Fellowship diploma working party RCPA
- Vice-President and Executive council member Thrombosis and Haemostasis Society of Australia and New Zealand (THANZ)
- Associate Chief Examiner Haematology Royal College of Pathologists of Australasia (RCPA)
- Member, Laboratory Science and MDS/AML subcommittee Australian Lymphoma and Leukaemia Group (ALLG)
- Member, CMN Research Development and Engagement committee
- Member, Biomarkers and Targeted Therapy Committee of HCRA
- Member, Vascular Biology subcommittee, International society of Thrombosis and Haemostasis (ISTH)
- Member, Evidence based Guidelines (EviQ) committee, NSW Cancer Institute (NSW CI)
- Member, NSW Haematology Teaching committee

- Member, NSW CEC VTE risk assessment committee
- Reviewer for Thrombosis Research, Medical Journal of Australia and Pathology Journal
- Member, Community Engagement Committee, HCRA 2017-18

##### Ritam Prasad

- Member, Australian Haemophilia Centre Directors organisation Executive Committee
- Member, RCPA QAP Haematology-Coagulation sub-committee

##### Wojt Janowski

- Member, ALLG myeloma subcommittee
- Deputy Chair, CCRN Steering Committee
- Member, HCRA Clinical Trials Strategic Planning Committee
- Member, Australasian Myeloma Research Consortium Steering Committee
- Member, eVIQ Haematology Reference Group

##### Bryony Ross

- Member, Hunter Cancer Research Alliance, Implementation Science Committee.

##### Cathie Milton

- Cancer Council, reviewer for patient information booklet
- BMT network, review for scholarship program.

##### Louisa Brown

- Member, ACI BMT network long term follow up working group

##### Fiona Scorgie

- Member, CMN OH&S Committee
- Member, CMN Mission and Values Committee

#### PUBLICATIONS

1. Ahmed, A.F., C.E. de Bock, E. Sontag, H. Hondermarck, **L.F. Lincz**, and R.F. Thorne, FAT1 cadherin controls neuritogenesis during Ntera2 cell differentiation. *Biochem Biophys Res Commun*, 2019. 514(3): p. 625-31.
2. Bbaqar, S., D. Liu, **L.F. Lincz**, Y.W. Kong, G. Jerums, and E.I. Ekinci, The relationship between habitual dietary sodium intake and RAAS blockade on circulating microparticle levels in type two diabetes. *Clin Sci (Lond)*, 2018. 132(20): p. 2207-20.
3. **Chapman, K., F.E. Scorgie, A. Ariyaratna, E. Stephens, A.K. Enjeti, and L.F. Lincz**, The effects of tetrahydrocurcumin compared to curcuminoids on human platelet aggregation and blood coagulation in vitro. *Thromb Res*, 2019. 179: p. 28-30.
4. Dimopoulos, M.A., F. Gay, F. Schjesvold, M. Beksac, R. Hajek, K.C. Weisel, H. Goldschmidt, V. Maisnar, P. Moreau, C.K. Min, A. Pluta, W.J. Chng, M. Kaiser, S. Zweegman, M.V. Mateos, A. Spencer, S.

Iida, G. Morgan, K. Suryanarayan, Z. Teng, T. Skacel, A. Palumbo, A.B. Dash, N. Gupta, R. Labotka, and S.V. Rajkumar, (**P Rowlings** one of 167 collaborators). Oral ixazomib maintenance following autologous stem cell transplantation (TOURMALINE-MM3): a double-blind, randomised, placebo-controlled phase 3 trial. *Lancet*, 2019. 393(10168): p. 253-64.

5. **Enjeti, A.K., A. Ariyaratna, A. D'Crus, C. Riveros, M. Seldon, and L.F. Lincz**, Circulating microvesicles are less procoagulant and carry different miRNA cargo in myelodysplasia. *Blood Cells Mol Dis*, 2019. 74: p. 37-43.
6. **Enjeti, A.K., L.F. Lincz, M. Seldon**, and G.K. Isbister, Microangiopathy in snake bites -bubble trouble: Response to commentary. *Res Pract Thromb Haemost*, 2019. 3(2): p. 298-9.
7. **Enjeti, A.K., L.F. Lincz, M. Seldon**, and G.K. Isbister, Circulating microvesicles in snakebite patients with microangiopathy. *Res Pract Thromb Haemost*, 2019. 3(1): p. 121-5.
8. Ahmed, A.F., M.S. Fayed, and **L.F. Lincz**, Retrospective study among primary care type 2 diabetes mellitus patients within the city of Zliten, Libya, represented high incidence of early onset of disease diagnosis. *Libyan Journal of Medical Sciences*, 2019.
9. Facon, T., S. Kumar, T. Plesner, R.Z. Orłowski, P. Moreau, N. Bahlis, S. Basu, H. Nahi, C. Hulin, H. Quach, H. Goldschmidt, M. O'Dwyer, A. Perrot, C.P. Venner, K. Weisel, J.R. Mace, N. Raje, M. Attal, M. Tiab, M. Macro, L. Frenzel, X. Leleu, T. Ahmadi, C. Chiu, J. Wang, R. Van Rampelbergh, C.M. Uhlar, R. Kobos, M. Qi, and S.Z. Usmani, (**W Janowski** one of 184 collaborators) Daratumumab plus Lenalidomide and Dexamethasone for Untreated Myeloma. *N Engl J Med*, 2019. 380(22): p. 2104-15.
10. Joseph, J., D. Rabbolini, **A.K. Enjeti**, E. Favaloro, M.C. Kopp, S. McRae, L. Pasalic, C.W. Tan, C.M. Ward, and B.H. Chong, Diagnosis and management of heparin-induced thrombocytopenia: a consensus statement from the Thrombosis and Haemostasis Society of Australia and New Zealand HIT Writing Group. *Med J Aust*, 2019. 210(11): p. 509-16.
11. Liu, D., S. Bbaqar, **L.L. Lincz**, and E.I. Ekinci, Sodium intake, circulating microvesicles and cardiovascular outcomes in type 2 diabetes. *Curr Diabetes Rev*, 2019.
12. **Simpson, J.D.**, A. Hopkins, A. Amil, **B. Ross**, and **A.K. Enjeti**, Transfusion-associated circulatory overload in ambulatory patients. *Vox Sang*, 2019. 114(3): p. 216-22.
13. Staudt, D., H.C. Murray, T. McLachlan, F. Alvaro, **A.K. Enjeti**, N.M. Verrills, and M.D. Dun, Targeting Oncogenic Signaling in Mutant FLT3 Acute Myeloid Leukemia: The

Path to Least Resistance. *Int J Mol Sci*, 2018. 19(10).

- Wei, A.H., S.A. Strickland, Jr., J.Z. Hou, W. Fiedler, T.L. Lin, R.B. Walter, **A. Enjeti**, I.S. Tiong, M. Savona, S. Lee, B. Chyla, R. Popovic, A.H. Salem, S. Agarwal, T. Xu, K.M. Fakouhi, R. Humerickhouse, W.J. Hong, J. Hayslip, and G.J. Roboz, Venetoclax Combined With Low-Dose Cytarabine for Previously Untreated Patients With Acute Myeloid Leukemia: Results From a Phase Ib/II Study. *J Clin Oncol*, 2019. 37(15): p. 1277-84.

## DEPARTMENT OF RADIATION ONCOLOGY

It has been another exciting year in Radiation Oncology research, with ongoing strong growth. Some key achievements:

- The RADAR trial investigating different durations of androgen deprivation in conjunction with radiotherapy was led by Prof Jim Denham, and was published in early 2019 in one of the world's most prestigious Oncology journals, the *Lancet Oncology*.
- The PROMETHEUS clinical trial, co-developed in Newcastle, and exploring non-invasive prostate cancer radiotherapy, was recognized by winning the best proffered paper prize at two Regional meetings in 2018 (Royal Australia and New Zealand College of Radiologist ASM and Australia New Zealand Urogenital Program ASM).
- The NINJA clinical trial was awarded Cancer Australia funding in late 2018 including Co-investigators Prof Peter Greer and Prof Jarad Martin. This trial is been run with the Trans-Tasman Radiation Oncology Group (TROG) as primary sponsor, and centrally coordinated by Ms Jo Smart, one of our Senior Radiation Oncology Clinical Trial Coordinators.
- A memorandum of understanding was signed between Calvary Mater Newcastle, Newcastle University and The Princess Chulabhorn Royal Academy, Thailand to further medical physics research ties between the institutions. The agreement will foster research collaborations and student exchanges in the field of medical physics. Acknowledgement is due to Professor Peter Greer who played a central role in this process and for the continuing development of the relationship.
- In a collaboration with Medical Oncology, outcomes from a phase 1 palliative oesophageal clinical trial were presented by Dr Swetha Sridharan at the Australasian Gastrointestinal Trials Group ASM 2019, where it won the best paper prize.
- The clinical trials unit has expanded to include four full-time trial coordinators and a data manager to oversee more than 30 active clinical trials with 340 participants receiving trial related treatment or continuing in follow up

- The department was selected as one of two sites in Australia and worldwide to conduct a clinical trial for head and neck cancer patients with xerostomia following radiation treatment. This study is ongoing with Dr Chris Wratten as Principal Investigator.

## MEDICAL PHYSICS

This report represents the research output and achievements of the Medical Physics Department within the Department of Radiation Oncology and the Medical Physics Research Group combining Calvary Mater Newcastle clinical medical physicists and engineers and Newcastle University postgraduate and post-doctoral medical physics researchers based at Calvary Mater Newcastle.

## JOURNAL ARTICLES

A significant 12 months of achievement included 22 peer review publications of which 13 were first authored by Medical Physics Group members comprising eight different members. Multiple first authors were Narges Miri, Michael Barnes and Neda Gholizadeh. Of special note were papers published in three prestigious journals; *Radiotherapy and Oncology* (Josh Wolf), the *Journal of Magnetic Resonance Imaging* (Neda Gholizadeh) and *Medical Physics* (Joerg Lehmann). A review of MRI-only treatment planning co-authored by Peter Greer was recognised as a 2018 highlight by another prestigious journal, *Physics in Medicine and Biology*.

## CONFERENCE PRESENTATIONS/POSTERS

Over the course of the year there were a total of 37 conference presentations (oral and posters) at nine conferences, including the annual scientific meetings of the European Society for Radiotherapy and Oncology (6), the International Society of Magnetic Resonance in Medicine (2) and the American Association of Physicists in Medicine (4); acknowledged as internationally pre-eminent meetings for their respective specialisations. Nineteen different members of the Medical Physics group were represented across these works.

## RESEARCH FUNDING/GRANTS

Three grants were awarded to members of the Medical Physics group:

- Danny Lee was awarded a Cancer Institute NSW Early Career Fellowship grant for \$548,377 to investigate 4D MRI in radiation therapy for achieving tumour localisation and effective treatment.
- Jonathan Goodwin received a Mark Hughes Foundation Innovation Grant of \$145,000 to advance MRI glucose fingerprinting for the better identification of brain cancer tumours.
- Joerg Lehmann received a Research Alliance ROCIT Flagship Program of \$50,000 to investigate a sensitivity assessment system to improve quality in Radiation Oncology treatments. In addition to his contributions to two of the above grants, Peter Greer was also included in a Cancer Australia grant awarded to radiation oncologist Associate

Professor Jarad Martin to investigate the integration of new prostate radiation schedules.

## GRADUATIONS

Narges Miri received her PhD from the University of Newcastle in the field of medical physics.

## PUBLICATIONS

- Arabi H, Dowling J, Burgos N, Han X, **Greer P**, Koutsouvelis N, Zaidi H. Comparative study of algorithms for synthetic CT generation from MRI: Consequences for MRI-guided radiation planning in the pelvic region. *Med Phys*. 2018 Nov;45(11):5218-5233
- Arabi, H., Dowling, J. A., Burgos, N., Han, X., **Greer, P. B.**, Koutsouvelis, N., & Zaidi, H. (2018). Comparative study of algorithms for synthetic CT generation from MRI: Consequences for MRI-guided radiation planning in the pelvic region. *Medical Physics*, 45(11), 5218-5233.
- Barnes M, Pomare D**, Menk F, Moraro B, **Greer P**. Evaluation of the truebeam machine performance check (MPC): OBI X-ray tube alignment procedure. *J Appl Clin Med Phys*. 2018 Nov;19(6):68-78
- Barnes M**, Menk F, Lamichhane B, **Greer P**. A proposed method for linear accelerator photon beam steering using EPID. *J Appl Clin Med Phys*. 2018 Sep;19(5):591-597
- Butler D, Beveridge T, **Lehmann J**, Oliver C, Bailey T, Stevenson A, Livingstone J, "Empirical study of the spatial variation of recombination, polarity and polarization effects in ionization chambers" *Nuclear Inst. and Methods in Physics Research*, A 914:15-24, 2019
- Beekma B & Lehmann J**. Excessive applicator radiation leakage for a common therapeutic kilovoltage system. *Br J Radiol*. 2019 Feb;92
- Gholizadeh N, Greer P, Simpson J**, Denham J, Lau P, Dowling J, Hondermarck H, Ramadan S. Characterization of prostate cancer using diffusion tensor imaging: A new perspective. *Eur J Radiol*. 2019 Jan;110:112-120
- Gholizadeh N, Greer P, Simpson J**, Fu C, Al-Iedani O, Lau P, Heerschap A, Ramadan S. Supervised risk predictor of central gland lesions in prostate cancer using 1 H MR spectroscopic imaging with gradient offset-independent adiabaticity pulses. *J Magn Reson Imaging*. 2019 May 27
- Gholizadeh N**, Fuangrod T, **Greer P**, Lau P, Ramadan S, **Simpson, J**. An inter-centre statistical scale standardisation for quantitatively evaluating prostate tissue on T2-weighted MRI. *Australas Phys Eng Sci Med*. 2019 Mar;42(1):137-147
- Greer, P. B.**, . . . Ebert, M. A. (2019). Multi-observer contouring of male pelvic anatomy: Highly variable agreement across conventional and emerging structures of interest. *Journal of Medical Imaging*

- and Radiation Oncology, 63(2), 264-271. doi:10.1111/1754-9485.12844
11. Hiatt J, Mukwada G, **Barnes M**, Riis H, Huynh D, Rowshanfarzad P. MLC positioning verification for small fields: a new investigation into automatic EPID-based verification methods. *Australas Phys Eng Sci Med*. 2018 Dec;41(4):945-955
  12. **Kaur G, Lehmann J, Greer P, Simpson J**. Assessment of the accuracy of truebeam intrafraction motion review (IMR) system for prostate treatment guidance. *Australas Phys Eng Sci Med* 2019 Jun 13;42(2):585-598
  13. Kennedy, A., Dowling, J., **Greer, P. B.**, Holloway, L., Jameson, M. G., Roach, D., . . . Ebert, M. A. (2019). Similarity clustering-based atlas selection for pelvic CT image segmentation. *Medical Physics*, 46(5), 2243-2250. doi:10.1002/mp.13494Roach,
  14. Kennedy A, Dowling J, **Greer P**, Ebert M. Estimation of Hounsfield unit conversion parameters for pelvic CT images. *Australas Phys Eng Sci Med*. 2018 Sep;41(3):739-745
  15. Largent, A., Barateau, A., Nunes, J. C., Lafond, C., **Greer, P. B.**, Dowling, J. A., . . . de Crevoisier, R. (2019). Pseudo-CT Generation for MRI-Only Radiation Therapy Treatment Planning: Comparison Among Patch-Based, Atlas-Based, and Bulk Density Methods. *International Journal of Radiation Oncology Biology Physics*, 103(2), 479-490.
  16. **Lehmann, J.**, Beveridge, T., Oliver, C., Bailey, T.E., Lye, J.E., Livingstone, J., Stevenson, A.W., Butler, D.J. Impact of magnetic fields on dose measurement with small ion chambers illustrated in high-resolution response maps (2019) *Medical Physics*, 46 (7), pp. 3298-3305.
  17. **Miri N**, Vial P, **Greer P**. Remote dosimetric auditing of clinical trials: The need for vendor specific models to convert images to dose. *J Appl Clin Med Phys*. 2019 Jan;20(1):175-183.
  18. **Miri N, Legge K**, Colyvas K, **Lehmann J**, Vial P, Moore A, Harris M, **Greer P**. A remote EPID-based dosimetric TPS-planned audit of centers for clinical trials: outcomes and analysis of contributing factors. *Radiat Oncol*. 2018 Sep 17;13(1):178.
  19. **Miri, N., Legge, K.**, Colyvas, K., **Lehmann, J.**, Vial, P., Moore, A., . . . **Greer, P. B.** (2018). A remote EPID-based dosimetric TPS-planned audit of centers for clinical trials: Outcomes and analysis of contributing factors. *Radiation Oncology*, 13(1). doi:10.1186/s13014-018-1125-8
  20. Ritter, T.A., Schultz, B., **Barnes, M.**, Popple, R., Perez, M., Farrey, K., Kim, G., Moran, J.M. Automated EPID-based measurement of MLC leaf offset as a quality control tool (2018) *Biomedical Physics and Engineering Express*, 4 (2), art. no. 027008,
  21. Slama L, Riis H, Sabet M, **Barnes M**, Ebert M, Chan S, Rowshanfarzad P. Beam focal spot intrafraction motion and gantry angle dependence: A study of Varian linac focal spot alignment. *Physica Medica* 63 (2019) 41–47.
  22. **Wolf J**, Nicholls J, Hunter P, Nguyen D, Keall P, Martin J. Dosimetric impact of intrafraction rotations in stereotactic prostate radiotherapy: A subset analysis of the TROG 15.01 SPARK trial. *Radiother Oncol*. 136; 143-47. 2019
- ### PRESENTATIONS
1. **B Beeksmma, J Lehmann** 'Investigation of applicator leakage radiation for a Womed T-200kV kilovoltage unit' EPSM 2018
  2. Field M, Holloway L, **Lehmann J**, Sykes J, Thwaites D. A non-small lung cancer decision support system model trained using distributed learning over a multicenter cohort. AAPM 2018
  3. Field M, Holloway L, Carolan M, Miller A, Sykes J, Hau E, Vinod S, Dekker A, Bailey M, **Lehmann J**, Thwaites D. Radiomics model of overall survival from non-small lung cancer using a distributed learning platform, 19th ICCR
  4. Fuangrod T, **Greer P, Kong N, Doeblich M, Lehmann J**. Advances in Electronic Portal Imaging Device based real time assessment of internal anatomy to guide breast cancer radiation treatment under deep inspiration breath hold. 2018 HCRA Research Symposium
  5. Fuangrod T, **Greer P, Lehmann J**. Real-Time Patient Breath Hold Assessment for Deep Inspiration Breath Hold (DIBH) Treatments of Breast Cancer Using Portal Imaging Based Monitoring. AAPM 2018
  6. Fuangrod, T., Puyati, W., Khawne, A., **Barnes, M., & Greer, P.** (2019). Development of predictive daily machine quality assurance system to predict forthcoming failures. In *Radiotherapy and Oncology* Vol. 133 (pp. S574-S575). Milan, ITALY
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23. **Lehmann J and Doebrich M.** User interface design for EPID based breath-hold monitoring system. *AAPM* 2018
24. **Lehmann J, Fuangrod T, Doebrich M, Kong N, Greer P.** Live EPID based Inspiration Level Assessment (LEILA) for breast cancer treatments under deep inspiration breath hold (DIBH). *TROG ASM* 2019
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30. **Shaw M, Alves A, Davey C, Geso M, Kadeer F, Lehmann J, Supple J, Lye J.** End-to-end dosimetry audits of Stereotactic Ablative Radiotherapy, *ESTRO* 38
31. **Kate Skehan, Jonathan Goodwin, Matthew Richardson, Vicky Sherwood, Peter Greer, John Simpson.** Evaluation of synthetic CT of the pelvis: Dosimetric comparison with conventional CT. *MR in RT* 2019
32. **Ostwald T, Wolf J, Baddock S, Simpson P.** Clinical Assessment of 3DBolus Software including Electron Modulated Bolus. *EPSM* 2018
33. **Pedersen T, Miri N, R David, Lehmann J, Greer P.** Remote dosimetric auditing for clinical trials using EPID and DVH patient dose analysis, *EPSM* 2018
34. **Simpson J.** Considerations for a dedicated MRI-simulator in a clinical radiation oncology setting. *EPSM* 2018.
35. **Steiner, E., Makhija, K., O'Brien, R., Wolf, J., Ludbrook, J., Greer, P., & Keall, P.** (2019). Randomised trial investigating breathing regularity: Audiovisual biofeedback vs free breathing. In *RADIOTHERAPY AND ONCOLOGY* Vol. 133 (pp. S1081). Milan, ITALY
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37. **Wolf J, Nicholls J, Hunter P, Trang D, Keall.** Dosimetric impact of intrafraction rotations in stereotactic prostate radiotherapy. *ESTRO Asia* 2018.

### MEDICAL ONCOLOGY RESEARCH (MOR) – CLINICAL TRIAL UNIT

The Medical Oncology Department has a very active research unit (MOR) in which they conduct both laboratory and clinical research. MOR is made up of clinicians, scientists, nurses, clinical trial coordinators and data managers dedicated to the improved management of patients with cancer and the advancement of cancer treatment.

With the aim to promote cancer research and the public's understanding of, and access to, clinical trials, MOR research has been actively involved in the development of a Clinical Trials phone and web-based application as well as publicity drives on Clinical Trials Day and Medical Research Week.



## MOR TRIALS

- Clinical Trial Manager: Kim Adler
- Clinical Trial Coordinators: Sue Brew, Kirrilee Askew, Kelly Barker, Kerrie Cornall, Kelly Healey, Naomi Knoblauch, Jennifer McFarlane, Louise Plowman, Amber Poulter, Gail Walker
- Finance: Alison Leonard–England
- Ethics Specialists: Catherine Johnson and Allison Kautto
- Data Management: Jessica Aldcroft, Emily Munn and Anthony Morrison
- Laboratory Technician: Alison Pickup
- Clinical Trial Fellow: Dr Hiren Mandaliya

This has been yet another exciting year for MOR Trials.

Trial Fellow Dr Hiren Mandaliya won the 2019 Conquer Cancer Foundation of ASCO Annual Meeting Merit Award. These distinguished awards support oncology trainees who are first authors on abstracts selected for presentation at the ASCO Annual Meeting.

Recognising the importance of community engagement in maintaining public trust in research, MOR Trials celebrated International Clinical Trials Day with an interactive display in the main thoroughfare of the hospital. This gave visitors, patients and staff a small lesson in randomisation which allowed us to answer the question “Is chocolate alone or chocolate with caramel a more tasty treat?” The display also included posters developed by members of the trials team showing how research over the past 10 years has directly impacted the treatments we see in the clinic today.

Over the past year MOR opened 16 new clinical trials to recruitment across Hunter New England Local Health District, covering melanoma, breast, prostate, colorectal, pancreas, brain, ovarian renal and bladder cancers. As of 1 July 2019, 29 trials were actively recruiting participants and another 17 trials were pending approval to commence. These trials were a mixture of phase 1b, II & III cooperative group, pharmaceutical-sponsored studies and investigator-initiated studies.

Overall, 195 patients were offered the opportunity to participate in a clinical trial. Of these, 103 have been enrolled into a clinical trial.

## MOR EXPERIMENTS

- Director of MOR Laboratory and Chief Hospital Scientist: Dr Jennette Sakoff.
- Hospital Scientists: Dr Jayne Gilbert and Madhu Garg
- Technical Officer: Ms Alesia Ogrodnik

The MOR Laboratory encompasses the Experimental Therapeutics Group which focuses on improving outcomes for cancer patients undergoing chemotherapy. The main areas of research include (i) the development of new small molecules for the treatment of cancer, (ii) identifying ways to reducing clinical toxicity to chemotherapy and (iii) implementing

therapeutic drug monitoring in order to optimize chemotherapy dosing. Our drug development program primarily targets brain, ovarian and breast cancers, while our studies of clinical toxicity and drug monitoring span all tumour types.

## PUBLICATIONS

1. Moore HCF, Unger JM, Phillips KA, Boyle F, Hitre E, Moseley A, Porter DJ, Francis PA, Goldstein LJ, Gomez HL, Vallejos CS, Partridge AH, Dakhil SR, Garcia AA, Gralow JR, **Lombard JM**, Forbes JF, Martino S, Barlow WE, Fabian CJ, Minasian LM, Meyskens FL, Gelber RD, Hortobagyi GN, Albain KS. Final Analysis of the Prevention of Early Menopause Study (POEMS)/SWOG Intergroup S0230. *J Natl Cancer Inst.* 2019 Feb 1;111(2):210-213. doi: 10.1093/jnci/djy185. PMID:30371800
2. Scurry J, van Zyl B, Gulliver D, Otton G, Jaaback K, **Lombard J**, Vilain RE, Bowden NA Nucleotide excision repair protein ERCC1 and tumour-infiltrating lymphocytes are potential biomarkers of neoadjuvant platinum resistance in high grade serous ovarian cancer. *Gynecol Oncol.* 2018 Nov;151(2):306-310. doi: 10.1016/j.ygyno.2018.08.030. Epub 2018 Sep 5. PMID:30194007
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4. Graves M, CelliMarchett G, van Zyl B, Tang D, Vilain RE, **van der Westhuizen A**, Bowden NA. (2019) Monitoring Patient Response to Pembrolizumab With Peripheral Blood Exhaustion Marker Profiles. *Frontiers in Medicine.* 6:113.
5. Budden T, **van der Westhuizen A**, Bowden NA (2018) Sequential decitabine and carboplatin treatment increases the DNA repair protein XPC, increases apoptosis and decreases proliferation in melanoma. *BMC Cancer* 18(1):100
6. Chin-Lenn, **Lombard,J** et al. The impact and indications for Oncotype DX on adjuvant treatment recommendations when third-party funding is unavailable. *Asia Pac J Clin Oncol.*2018 Dec;14(6):410-416. doi: 10.1111/ajco.13075. Epub 2018 Sep 30.
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8. Herrmann A, Hall A, **Zdenkowski N**, Sanson-Fisher R. Heading in a new direction? Recommendations for future research on patient decision aids. *Patient Educ Couns.* 2019 May;102(5):1029-1034. doi: 10.1016/j.pec.2018.12.006. Epub 2018 Dec 4. PMID: 30528874
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10. Herrmann A, Hall A, Sanson-Fisher R, **Zdenkowski N**, Watson R, Turon H. Not asking cancer patients about their preferences does make a difference. A cross-sectional study examining cancer patients' preferred and perceived role in decision-making regarding their last important cancer treatment. *Eur J Cancer Care (Engl).* 2018 Sep;27(5):e12871. doi: 10.1111/ecc.12871. Epub 2018 Jun 14. PMID: 29900611
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  23. Hong Ngoc TP; **Sakoff JA**; Vuong, Q; Bowyer MC; Scarlett CJ. Comparative cytotoxic activity between kaempferol and gallic acid against various cancer cell lines. Data in Brief. 2018. 21: 1033-1036.
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  27. Hong Ngoc TP, **Sakoff JA**, Vuong Q, Bowyer MC, Scarlett C. Phytochemical, antioxidant, antiproliferative and antimicrobial properties of *Catharanthus roseus* root extract, saponin-enriched and aqueous fractions'. Accepted Journal of Molecular Biology Reports, March 2019. 2019-Apr-03 (Epub 2019 Apr 03)
  28. McGhie BS, **Sakoff JA**, **Gilbert J**, Aldrich-Wright J. Synthesis and Characterisation of Platinum(IV) Polypyridyl Complexes with Halide Axial Ligands. Inorganica Chimica Acta. Accepted June 2019.



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33. Rush A, Matzke L, Cooper S, **Gedye C**, Byrne JA, Watson PH. Research Perspective on Utilizing and Valuing Tumor Biobanks. *Biopreserv Biobank*. 2018 Dec 21. doi: 10.1089/bio.2018.0099.
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35. Mersiades AJ, Tognela A, Haber PS, Stockler M, Lintzeris N, Simes J, McGregor I, Oliver I, Allsop DJ, **Gedye C**, Kirby AC, Morton RL, Fox P, Clarke S, Briscoe K, Aghmesheh M, Wong N, Walsh A, Hahn C, Grimison P. Oral cannabinoid-rich THC/CBD cannabis extract for secondary prevention of chemotherapy-induced nausea and vomiting: a study protocol for a pilot and definitive randomised double-blind placebo-controlled trial (CannabisCINV). *BMJ Open*. 2018 Sep 12;8(9):e020745. doi: 10.1136/bmjopen-2017-020745.

#### CONFERENCE POSTERS

1. **Hiren Mandaliya, Sang Kim, Tin Gaik Quah, Sandy Tun Min, James Carlton**, Jack Faulkner, Christopher Oldmeadow, **Craig**

- Gedye, Andre Van Der Westhuizen, Girish Mallesara**. Mortality within 30 days of immunotherapy (checkpoint inhibitors) in cancer patients treated at Australian tertiary cancer centre ASCO 2019 – Chicago – Poster presentation and received 2019 Conquer Cancer Foundation of ASCO Annual Meeting Merit Awards
2. Moth E, **Mandaliya H** et al, ‘Older adults’ preferred and perceived roles in decision-making about palliative chemotherapy - Their decision priorities and information preferences. ASCO 2019 – Chicago
  3. S Kang, **H Mandaliya** et al, Rectal cancer treatment and outcomes in elderly patients treated with curative intent- ASCO GI 2019
  4. K Wilkinson, **H Mandaliya** et al, Patterns of adjuvant therapy use and survival outcomes in patients with rectal cancer not receiving neoadjuvant therapy in an Australian cohort - ASCO GI 2019
  5. **Gillian Blanchard, Janine Lombard** et al . MSCC8-0642: A study comparing nails in patients receiving taxane chemotherapy - a study of nail polish versus no nail polish to reduce nail changes. MASCC 2018, Vienna.
  6. Seock-Ah Im, **Janine Lombard** et al. Efficacy and safety of Palbociclib plus endocrine therapy for ER +/HER2neg advanced breast cancer in the Asia-Pacific Region. MOGA 2018, Adelaide
  7. Ciara Conduit **Janine Lombard** et al. Cardiotoxicity in advanced HER2 positive breast cancer in real world Australian patients receiving HER2-targeted therapy in the first-line setting. COSA 2018, Perth.
  8. Michelle Wong-Brown, Joshua Crowe, **Janine Lombard , Andre van der Westhuizen**, Nikola A. Bowden. Investigation of DNA repair and the epigenome in chemoresistant high grade serous ovarian cancer. ANZGOG 2019, Sydney.
  9. Sally Chan, **Catherine Johnson, Gillian Blanchard, Yolande Cox**, Tony Wang. The Prevention and Control of Non-Communicable Disease: An Australian Survey of Student Nurses and Midwives (StuNPac Study). CNSA Annual Congress 2018, Brisbane.
  10. Graves M, CelliMarchett G, van Zyl B, Tang D, Vilain RE, **van der Westhuizen A**, Bowden NA. The presence of CXCR6 on CD8+ T cells a biomarker for poor treatment outcomes in metastatic melanoma patients on Pembrolizumab? Australian Melanoma Conference 2018, Melbourne,
  11. Graves M, CelliMarchett G, van Zyl B, Tang D, Vilain RE, **van der Westhuizen A**, Bowden NA. The presence of CXCR6 on CD8+ T cells in metastatic melanoma patients on pembrolizumab correlated with poor treatment outcomes. Proceedings of the Society for Melanoma Congress (2018), Manchester, UK.

#### CONFERENCE ORAL PRESENTATIONS

1. **Hiren Mandaliya, Sang Kim, Tin Gaik Quah, Sandy Tun Min, James Carlton**, Jack Faulkner, Christopher Oldmeadow, **Craig Gedye, Andre Van Der Westhuizen, Girish Mallesara**. Mortality within 30 days of immunotherapy (checkpoint inhibitors) in cancer patients treated at Australian tertiary cancer centre. MASCC 2019, San Francisco
2. **Garg MB**, Sakoff JA, Yoo JW, Martin J, **Ackland SP**. Optimising Dose via TDM: Mitotane as a Model for Implementation of Personalised Therapy, Sydney Cancer Conference 2018.
3. Budden T, **van der Westhuizen A**, Graves M, Levy R, Vilain, R, Bowden NA. Repurposing epigenetic and DNA-damaging drugs to prime for immunotherapy. Australian Melanoma Conference, Melbourne, Australia, 2018.
4. **Gilbert J**; Baker J; Paula S; McCluskey A; **Sakoff J**. Targeting the aryl-hydrocarbon receptor (AhR) pathway to selectively kill breast cancer cells. Sydney Cancer Conference 2018.
5. **Garg MB, Sakoff JA**, Yoo JW, Martin J, **Ackland SP**. Optimising Dose via TDM: Mitotane as a Model for Implementation of Personalised Therapy. Sydney Cancer conference Oct 2018.
6. Scorgie F, **Gilbert J, Garg MB, Sakoff JA**, Lincz L. What is the best way to measure blood cell mean telomere length, Hunter Cancer Research Alliance Annual Meeting 2018.
7. Luz Esperanza Ayala de Calvo, Rosario Caballero Tinoco, Marise Dutra Souto, **Catherine L. Johnson**, Myrna E. McLaughlin de Anderson. Challenges and Opportunities: Lessons learned from the ISNCC Cervical and Breast cancer prevention and screening Train the Trainer Program. International Conference on Cancer Nursing (ICCN) 2018
8. **Catherine Johnson**. Nurses as leaders in building non-traditional workforce contributions  
Project lead, International Society of Nurses in Cancer Care (ISNCC) Collaborative program on Breast health and Cervical Cancer Prevention and Screening Train the Trainer Program. World Cancer Congress 2018, Kuala Lumpur
9. **Yolande Cox, Catherine Johnson, Debra Cook**. Development of a Cancer Screening quick reference Guide for Supportive Care. CNSA Annual Congress 2018, Brisbane
10. **Gillian Blanchard, Yolande Cox, Craig Gedye, Catherine Johnson**. CANcierge- An Application (App) for patients to navigate cancer services, improve treatment experiences and enhance capacity for self care. CNSA Annual Congress 2018, Brisbane

## GRANT FUNDING

1. **Mandaliya, H.** HCRA Statistical support grants x 2 (\$4000.00)
2. **Lombard, J & Mandaliya, H.** 2018 HMRI Ovarian Cancer Grant (HMRI- G1801351) \$20,000: Hormonal control of ovarian cancer.
3. **Gilbert J, Garg MB** (2019) Essential equipment including biohazard safety Hood for cancer research in Medical oncology. CMN Coalfields Cancer Support Group Equipment Grant Scheme: \$17,416.00
4. **Ackland SP and Garg MB (2019).** Hospital Scientist Salary in Medical Oncology Research Laboratory at Calvary Mater Newcastle. Hunter Cancer Research Alliance \$20,000.
5. **van der Westhuizen A** and Bowden NA. Avelumab Investigator-Sponsored Study PRIME002. 2019-2022 \$266,000 and drug supply from Merck Serono.
6. Bowden NA, **van der Westhuizen A.** HMRI Specified Melanoma Project Grant for PRIME002 2017-2019 \$49,000
7. Bowden NA, Graves M, **van der Westhuizen A,** Vilain R, Galetti P. HMRI Melanoma Project Grant. Standard doses of anti-PD-1 immunotherapy for metastatic melanoma may not be sufficient for all patients and may influence patient response to therapy. \$20,000
8. **Sakoff JA,** Aldrich-Wright J, **Gilbert J.** (2018). Development of DNA intercalating platinum complexes for the treatment of cancer. CMN Granting Scheme. \$20,000
9. Lincz L, **Sakoff JA.** (2018). Coalfields Cancer Support Group. CMN Granting Scheme. Real time quantitative PCR thermocycler. \$30,000.
10. **Garg M, Ackland S, Sakoff JA** (2018). Essential statistics and pharmacokinetic software with required hardware for oncology clinical research projects data analysis. CMN Granting Scheme. \$8200.
11. **Sakoff JA, Gilbert J,** and Scarlett C. (2019) Priority Research Centre for Chemical Biology and Clinical Pharmacology. Project seed grant. A new class of small molecules targeting pancreatic and other GI tumours. \$10,000.
12. **Sakoff JA,** Aldrich-Wright J, **Gilbert J. and Mandaliya H** (2019). New platinum agents for the treatment of ovarian cancer. Hope4cure Foundation. \$39,252.
13. Paul, C, **Day, F** et al. Improving outcomes for cancer patients who smoke: The Care to Quit stepped wedge randomized trial. NHMRC Grant \$1,408,506
14. **Gedye C,** Chye A, Valkenburghs S, Ramadan S, Lau P, Healey K, James E. 2019 Precision Exercise to Increase Prostate Cancer Tumour Perfusion: A pilot study; in-kind support.

15. **Gedye, Mandaliya, Lynam, Mallesara, Bonaventura;** Livshin, CelliMarchett, 2019 ANZUP Below The Belt Pedalton Fund Clinical Trial Seed Grant; AdapTax: feasibility, acceptability and safety of adaptive dosing of docetaxel in men with metastatic castrate-resistant prostate cancer, \$50,000
16. **Gedye C,** Nowak A, Hovey E, Koh E-S, Harrup R, Parkinson J, Barnes E, Jeffree R, 2019 MRFF Clinical Trials Rare Cancers, Rare Diseases and Unmet Need. MAGMA Multi-Arm GlioblastoMa Australasia; COGNO Trials, \$2,421,993.
17. Pook D, **Gedye C,** Harris C, Davis I, Krieger L, McJannett M. 2018 UNICAB: A phase II trial of single agent cabozantinib in patients with locally advanced or metastatic non-clear cell renal cell carcinoma post immunotherapy or who are unsuitable for immunotherapy (ANZUP 1802), \$1,173,201. sponsor Ipsen Australia.
18. **Gedye, Mandaliya, Lynam, Mallesara, Bonaventura, Abell;** Livshin, CelliMarchett, 2018 ANZUP Below The Belt Pedalton Fund Clinical Trial Seed Grant; EnzAdapt: feasibility, acceptability and safety of adaptive dosing of enzalutamide in men with metastatic castrate-resistant prostate cancer, \$50,000
19. Harris C, De Abreu Lorencio R, **Gedye C** 2019 ANZUP Below The Belt Pedalton Fund Clinical Trial Seed Grant, What, where, when and how long? Using PBS data to understand patterns of care and survival in Australia patients treated for metastatic clear cell kidney cancer., \$50,000
20. **Gedye,C** 2019 Perpetual IMPACT Philanthropy, Virtual Biobank, University of Newcastle, CIA \$50,000.
21. Dhillon H, Roberts N, Harris C, **Gedye C,** 2018 ANZUP Below The Belt Pedalton Fund Clinical Trial Seed Grant, Connecting Patients to Healthcare Providers through Electronic Patient Reported Outcomes in people living with GU cancers, \$50,000.
22. EL James, **C Gedye,** J Martin, **N Zdenkowski,** A McGarvey, R Plotnikoff, B Britton, S Nixon, M Duncan, F Stacey, 2018 USE-IT (Universal Screening of Exercise needs for cancer patients In Treatment): Establishing the feasibility of implementing standardised screening and referral to physical activity support for cancer patients. \$39,874. Funded by Hunter Cancer Research Alliance (HCRA) Implementation Science Flagship Program pilot project

## OTHER

**Dr Nicholas Zdenkowski** - PhD awarded: "Supporting decision-making about neoadjuvant therapy for women with breast cancer" U Syd, Faculty of Medicine

## DEPARTMENT OF GENERAL MEDICINE

### PUBLICATIONS

- Kabakambira JD, Hategeka C, Page C, Ntirenganya C, Dusabejamba V, Ndoli J, Ngabonziza F, Hale D, Bayingana C, **Walker T.** Efficacy of Helicobacter pylori eradication regimens in Rwanda: a randomized controlled trial. BMC Gastroenterology. 2018 Dec;18(1):134.
- Robertson F, Mutabazi Z, Kyamanywa P, Ntakiyiruta G, Musafiri S, **Walker T,** Kayibanda E, Mukabatsinda C, Scott J, Costas-Chavarri A. Laparoscopy in Rwanda: a national assessment of utilization, demands, and perceived challenges. World Journal of Surgery. 2019 Feb 15;43(2):339-45.
- Valtis YK, Rosenberg JD, Wachter K, Kisenge R, Mashili F, Mallya RC, **Walker T,** Kabakambira JD, Egide A, Ntacyabukura B, Weintraub R. Better evidence: prospective cohort study assessing the utility of an evidence-based clinical resource at the University of Rwanda. BMJ Open. 2019 Aug 1;9(8):e026947.
- Sophia E. Schröder, Alisa Pedrana, Nick Scott, David Wilson, Christian Kuschel, Lisa Aufegger, Rifat Atun, Ricardo Baptista-Leite, Maia Butsashvili, Manal El-Sayed, Aneley Getahun, Saeed Hamid, Radi Hammad, Ellen 't Hoen, Sharon J. Hutchinson, Jeffrey V. Lazarus, Olufunmilayo Lesi, Wangsheng Li, Rosmawati Binti Mohamed, Sigurdur Olafsson, Raquel Peck, Annette H. Sohn, Mark Sonderup, Catherine W. Spearman, Tracy Swan, Mark Thurst, **Tim Walker,** Margaret Hellard, Jessica Howell, Innovative strategies for the elimination of viral hepatitis at a national level: a country case series. Liver International. 2019 Aug 21.
- Goodsall TM, **Walker T.** Iron absorption from oral iron supplements given on consecutive versus alternate days in iron-depleted women. BMJ Evidence-based Medicine. 2018 Dec 1;23(6):228-9.
- Acharya S, **Philcox AN,** Parsons M, Suther B, Luu J, Lynch M, Jones M, Attia J. Hunter and New England Diabetes Alliance: innovative and integrated diabetes care delivery in general practice. Australian Journal of Primary Health. 2019 June; 25(3) 219-243.
- **Paul A. Wilson,** BMed and Kathleen Melville, BMed- Disseminated Cryptococcal Infection in a Patient Receiving Acalabrutinib for Chronic Lymphocytic Leukemia, Infectious Diseases in Clinical Practice, Volume 27, Number 3, May 2019
- Yates D, Frankel A, **Miles S,** Johnson A, Hoy R. Complicated Silicosis Results from Occupational Exposure to Engineered Stone Products. MJA Medical Education, Insights. Issue 46, 26 November 2018
- C Garcia-Esperon, F Soderhjelm Dinkelspiel, F Miteff, **S Gangadharan,** T Wellings, B O'Brien, J Evans, T Lillicrap, J Demeestere,





A Bivard, M Parsons, C R Levi, N J Spratt. Implementation of multimodal computed tomography in a telestroke network: Five-year experience. *CNS Neuroscience & Therapeutics*, 2019. DOI:10.1111/cns.13224.

- **Shyam Gangadharan**, Carlos Garcia-Esperon, Ferdinand Miteff, Thomas Wellings, Billy O'Brien, James Evans, Thomas Lillicrap, Andrew Bivard, Pablo Garcia Bermejo, Khaled Alanati, Mark Parsons, Christopher Levi and Neil Spratt. Analysis of transfer metrics for endovascular clot retrieval in a telestroke network of regional Australia. *International Journal of Stroke* 2019, Vol. 14(2S) 3–30.

#### ORAL PRESENTATIONS

- **A Philcox**, ADS 2019, Sydney, abstract submission, Primary and Tertiary clinicians caring together for better outcomes for people with diabetes
- **Shyam Gangadharan**, Stroke Society of Australasia, 2019 (Canberra). Air versus Road retrievals for Endovascular Clot Retrieval? Analysis from a telestroke network in rural Australia.

#### CLINICAL TRIALS

- **Shyam Gangadharan**: Co-Investigator in the following international clinical trials- TASTE, TEMPO 2, MIDAS 2, EXTEND-IA TNK, REMEDY, CHARM.

#### CLINICAL TOXICOLOGY AND PHARMACOLOGY

##### JOURNAL ARTICLES AND PUBLICATIONS

1. Chiew AL, Isbister GK, Page CB, Kirby KA, Chan BSH, Buckley NA. Modified release paracetamol overdose: a prospective observational study (ATOM-3). *Clin Toxicol (Phila)*. 2018 Sep;56(9):810-819
2. Wijewickrama ES, Kurukulasooriya I, Gunatilake M, Priyani AA, Gnanathasan A, Gawarammana I, Isbister GK. Determination of the sub-lethal nephrotoxic dose of Russell's viper (*Daboia russelii*) venom in Wistar rats. *Toxicol*. 2018 Sep 15;152:43-45.
3. Enjeti, AK, Lincz L, Seldon M, Isbister GK. Circulating Microvesicles in Snakebite Patients with Microangiopathy. *Res Pract Thromb Haemost*. 2018 Nov 22;3(1):121-125.
4. Chiew AL, Wright DFB, Dobos NM, McArdle K, Mostafa AA, Newth A, Roberts MS, Isbister GK. "Massive" metformin overdose. *Br J Clin Pharmacol*. 2018 Dec;84(12):2923-2927
5. Page CB, Parker LE, Rashford SJ, Bosley E, Isoardi KZ, Williamson FE, Isbister GK. A Prospective Before and After Study of Droperidol for Prehospital Acute Behavioral disturbance, Prehosp Emerg Care. 2018 Nov-Dec;22(6):713-721.
6. Qing Xi Ooi, Duffull S, Wright D, Isbister G. A factor VII-based method for the prediction of anticoagulant response to warfarin. *Sci Rep*. 2018 Aug 13;8(1):12041
7. Silva A, Cristofori-Armstrong B, Rash LD, Hodgson WC, Isbister GK. Defining the role of post-synaptic  $\alpha$ -neurotoxins in paralysis due to snake envenoming in humans. *Cell Mol Life Sci*. 2018 Dec;75(23):4465-4478
8. Ediriweera DS, Diggle PJ, Kasturiratne A, Pathmeswaran A, Gunawardena NK, Jayamanne SF, Isbister GK, Dawson A, Lalloo DG, de Silva HJ. Evaluating temporal patterns of snakebite in Sri Lanka: the potential for higher snakebite burdens with climate change. *Int J Epidemiol*. 2018 Dec 1;47(6):2049-2058.
9. Page CB, Parker LE, Rashford SJ, Bosley E, Isoardi KZ, Williamson FE, Isbister GK. A Prospective Study of the Safety and Effectiveness of Droperidol in Children for Prehospital Acute Behavioural Disturbance. *Prehosp Emerg Care*. 2018 Oct 31:1-26. doi: 10.1080/10903127.2018.1542473
10. Chan B, Isbister G, Page C, Isoardi K, Chiew A, Kirby KA, Buckley NA. Clinical Outcomes from early use of digoxin

specific antibodies versus observation in chronic digoxin poisoning. (ATOM-4). Clin Toxicol (Phila). 2018 Dec 26;1-6. doi: 10.1080/15563650.2018.1546010.

11. Silva A, Sedgwick EM, Siribaddana S, Isbister GK. Sub-clinical neuromuscular dysfunction after envenoming by Merrem's hump-nosed pit viper (*Hypnale hypnale*). Toxicology Communications. 2019 Feb; 3(1):23-28.
12. Waidyanatha S, Silva A, Siribaddana S, Isbister GK. Long-term Effects of Snake Envenoming. Toxins (Basel). 2019 Mar 31;11(4). pii: E193.
13. Kakumanu R, Kuruppu S, Rash LD, Isbister GK, Hodgson WC, Kemp-Harper BK. D. russelii Venom Mediates Vasodilatation of Resistance Like Arteries via Activation of Kv and KCa Channels. Toxins (Basel). 2019 Apr 1;11(4). pii: E197.
14. Kumara H, Seneviratne N, Jayaratne DS, Siribaddana S, Isbister GK, Silva A. Severe coagulopathy in Merrem's hump-nosed pit viper (*Hypnale hypnale*) envenoming unresponsive to fresh frozen plasma: A case report. Toxicon. 2019 May;163:19-22.
15. van Helden D, Dosen P, O'Leary M, Isbister GK. Two pathways for venom toxin entry consequent to injection of an Australian elapid snake venom. Sci Rep. Jun 13;9(1)
16. Stevens GJ, Hammond TE, Brownhill S, Anand M, de la Riva A, Hawkins J, Chapman T, Baldacchino R, Micallef JA, Andepalli J, Kotak A, Gunja N, Page A, Gould G, Ryan CJ, Whyte IM, Carter GL, Jones A. SMS SOS: a randomized controlled trial to reduce self-harm and suicide attempts using SMS text messaging. BMC Psychiatry. 2019 Apr 18;19(1):117.
17. McGill K, Hiles SA, Handley TE, Page A, Lewin TJ, Whyte I, Carter GL. Is the reported increase in young female hospital-treated intentional self-harm real or artefactual? Aust N Z J Psychiatry. 2019 Jul;53(7):663-672.
18. Kerridge R, Luu J, Whyte I, Prior F, Story DA. Anaesth Intensive Care. 2018 Nov;46(6):628-629
19. Downes MA, Sadler CW, Vidler S, Lovett CJ. Difficult to sedate case of acute behavioural disturbance secondary to baclofen withdrawal. Emerg Med Australas. 2019 Jun;31(3):493-494.

#### CONFERENCE PRESENTATIONS

1. Isbister G. International Association of Therapeutic Drug Monitoring and Clinical Toxicology (IATDMCT) Congress September 2018. Plenary presentation 'Clinical Toxicology – evidence to address the myths'
2. Isbister G. North American Congress on Clinical Toxicology (NACCT) Meeting, Chicago, 2018: APAMT symposium: "Snake venom kinetics"
3. Isbister G. PCPA Advanced Trainee Invited talk Sydney 2019 "Snake Bite: Everything a Haematologist needs to know"

4. Isbister G. International Conference of Emergency Medicine 2019, Korea. Two invited talks: Snakebite and anticoagulant overdose.

#### RESEARCH FUNDING AND GRANTS

1. NHMRC Centre for Research Excellence "Translational Venom and Antivenom Research" Isbister GK, Buckley NA, de Silva J, Hodgson WC, Brown SGA, de Silva A, Laloo D, Dawson A, Garawammanna I, Graudins A (University of Newcastle). 2016-2021
2. NHMRC Senior Research Fellowship (B). "Multicentre studies of interventions in clinical toxicology and envenoming, including antivenoms, antidotes and decontamination" Isbister G. Clinical Trials. 2018-2022

#### PALLIATIVE CARE

The Department of Palliative Care at Calvary Mater Newcastle is working to consistently improve multidisciplinary patient-centred care for people and their loved ones facing life limiting illness. Palliative Care at CMN has strong partnerships enabling research across health settings, including primary care, residential aged care and regional and rural settings.

#### RESEARCH UNIT AND SENIOR RESEARCH FELLOW

The department's vision for establishment of a clinical palliative care research unit moved closer to realisation through the appointment of a senior research fellow. Dr Sarah Moberley is an epidemiologist with a strong track record in successful collaborative research. Sarah's role over the next two years is to build infrastructure and capabilities which will support research within the department and foster collaboration with partners to conduct research that matters to patients, with rapid translation into improved service and patient and carer reported outcomes.

Priority research areas include:

- Optimisation of referral and triage processes to enable timely patient centred care
- Models of multidisciplinary community-based palliative care to enable care in the place of preference
- Home-based enhanced models of palliative care
- Palliative care in residential aged care facilities

#### ENABLING END OF LIFE CARE IN RESIDENTIAL AGED CARE FACILITIES

Jacqui Hewitt, Rachel Hughes, Sarah Moberley, John Attia, Sharon Ryan

The department was granted research funding to undertake a project concentrating on enablement of person centred end of life care in aged care facilities. This project is being undertaken on behalf of the Palliative and End of Life workstream of the Hunter Integrated Alliance and is a collaboration between Calvary Mater Newcastle and six residential aged care facilities. It aims to

identify a locally effective model of palliative care support to enable end of life care in residential aged care facilities through exploration of current models, indicators of quality of end of life care and exploring enablers and barriers to patient centred end of life care. Results will be available June 2020.

#### TESTING A NEW MODEL OF COMMUNITY BASED PALLIATIVE CARE

Jessica Scaife, Rachel Hughes, John Attia, Sarah Moberley, Alisha Chand, Graeme Kershaw, Peter Kozacynski

Funded by the Medical Research Future Fund, this is a randomised trial to assess a new model of community-based palliative care. The intervention consists of care coordination, routine surveillance for changes in needs and the availability of personal care in the home during unstable periods (in addition to standard care). The trial is continuing and will be complete by June 2021.

#### JOURNAL ARTICLES

Nixon, J., Gray, J., Turner, J., Bernard, A., Scaife, J. & Cartmil, B. (2018). Communicating Actively Responding Empathetically (CARE): Comparison of Communication Training Workshops for Health Professionals Working in Cancer Care, Journal of Cancer Education <https://doi.org/10.1007/s13187-018-1439-0>

#### CONFERENCE PRESENTATIONS

Martin J, Patel J. What pharmacology and pharmacokinetics can offer palliative care. Australian and New Zealand Society of Palliative Medicine Conference, September 2018, Sydney, Australia.

Patel J. Laxative use in inpatients in oxycodone/naloxone prolonged release and oxycodone prolonged release for cancer and non-cancer pain. Australian and New Zealand Society of Palliative Medicine Conference, September 2018, Sydney, Australia.

Hughes R, Sneesby L, Culver J, Chand A. A Community of Practice for Residential Aged Care - Partnerships Across Community and Specialist Palliative Care. 16th World Congress of the European Association for Palliative Care, May 2019, Berlin, Germany.

Knight E, Schenker Y, Hughes R. Interpreters' Experience of Working with Healthcare Professionals during End of Life Discussions with Culturally and Linguistically Diverse Patients in Perth, Western Australia. 16th World Congress of the European Association for Palliative Care, May 2019, Berlin, Germany.

#### CURRENT PROJECTS

Testing an enhanced community team model to improve access and quality of palliative and end of life care provided at home.