



Research and Teaching Reports

A message from the Research Committee

Research at Calvary Mater Newcastle has undergone significant changes over the past 12 months. For the past 20 years the Calvary Mater Newcastle Research Committee (CMNRC) has overseen the management and provision of research grants for Calvary Mater Newcastle staff.

As a new era of research slowly develops at the hospital we sadly say goodbye to the Calvary Mater Newcastle Research Committee. A special thank you goes to long standing members both past and present: Dr Lisa Lincz, Professor Ian Whyte, Dr Jennette Sakoff (Chair), Dr Stephen Ackland, Douglas Bellamy, Mary-Clare Hanlon, Judith Thompson, Dr Kerry Clover, Susan Goode, Helen Ellis, Laraine Cross, Craig Cutler, Kylie Murchie, Cathy-Lyn Burnard and Crystal Tindall.

In 2018 a new research committee was convened, known as the Research Development and Engagement Committee, affectionately known as the ReDE Committee. Committee members include: 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 vision of the new committee is for Calvary Mater Newcastle to be recognised as a world class research facility that benefits the individuals and communities it serves.

The mission of the committee is to support a broad spectrum of high quality research, create an environment where research is an integral component of sustainable health care and propel innovative translational research into improving the health of individuals, communities and populations.

The purpose of the committee is to:

- Support and further develop the capacity for research in Calvary Mater Newcastle
- Enhance the profile of current research in Calvary Mater Newcastle
- Strengthen the performance and quality of research in Calvary Mater Newcastle
- Encourage new researchers, including junior staff, to participate in research
- Sustain an organisational commitment to support and develop research roles
- Ensure governance arrangements which promote accountability and responsibility for research conducted according to ethical principles, scientific, regulatory and professional standards, risk management and the mission and values of Calvary

The function of the committee will be to complete the actions from the strategic plan that relate to: media, events, community engagement, professional development, education and training, and donations and bequests.

Research Grants awarded by the CMNRC

The Calvary Mater Newcastle Research Committee (CMNRC) prides itself on overseeing a rigorous peer review process of grant funding. This year was no exception.

The CMNRC received six applications for funding in 2017, requesting \$141,571 from a total of \$140,000 available funding. Three of these were solely for equipment funding from the Coalfields Cancer Support Group Equipment Scheme (requesting \$83,226.98 from \$45,000 available), one was eligible for funding from the James Lawrie Scheme (Head and Neck Cancer; requesting \$28,325 from \$30,000 available), while two were eligible for funding from the Margaret Mitchell and Jane Reid Harle Schemes (requesting \$30,020 from a total sum of \$70,000).

As per terms of reference for grant review, one peer review panel of three members plus an observer was convened to rank the Coalfields Equipment Grant, while another panel of four members, plus an observer was convened to assess all submissions for the James Lawrie Grant, Margaret Mitchell and Jane Reid Harle Grants.

Scores and comments were submitted to Crystal Tindall, Research Administration Assistant, for collation. Of the six applications, five received full or partial funding from Calvary Mater Newcastle, with one not being suitable for funding. All funding outcomes concurred with collated review scores. In addition to these, the Hunter Cancer Research Alliance (HCRA) provided funding for three pieces of infrastructure through the HCRA Clinical Research Fund.

The funding recipients acknowledged at the Celebration of Service in November 2017 were:

Margaret Mitchell Grant

- Jennette Sakoff, Janice Aldrich-Wright, Jayne Gilbert. Medical Oncology Department. Development of DNA intercalating platinum complexes for the treatment of cancer.

Jane Reid Harle Grant

- Catherine Johnson, Brian Draganic, Stephen Smith, Judy Holland, Belinda Allen, Jarad Martin. Medical Oncology Department. A randomised study of pelvic floor muscle exercise to improve bowel function after colostomy reversal following a diagnosis of rectal cancer.

James Lawrie Grant

- Haylea Richardson, Mahesh Kumar, Chris Wratten, Clare Jeans. Radiation Oncology Department. Correlation of dosimetry to swallowing structures on functional outcomes for head and neck cancer patients at the Calvary Mater Newcastle.

Coalfields Cancer Support Group Equipment Funding

- Lisa Lincz, Jennette Sakoff. Haematology upgrade of essential equipment: Real time quantitative PCR thermocycler.
- Madhu Garg, Jennette Sakoff, Stephen Ackland. Medical Oncology. Essential statistics and pharmacokinetic software with required hardware for oncology clinical research projects data analysis.

HCRA Clinical Cancer Research Infrastructure

- Stephen Ackland. Hunter Cancer Biobank Sequential Blood Collection: OpenSpecimen Software upgrade.
- Nick Zdenkowski, Mike Fay. Hunter Cancer Research Centre Biobanking Freezer.
- James Lynam. Clinical Trials Management System "MAISI" (Management Application for Investigator Sites) software for Calvary Mater Newcastle Clinical Trial Units Clinical Trials Management Software.
- Lisa Lincz. Service contract for Calvary Mater Newcastle Flow Cytometer BD FACS Canto.

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

CLINICAL TOXICOLOGY AND PHARMACOLOGY

JOURNAL ARTICLES/PUBLICATIONS

1. Russo M, Santarelli D, Isbister G. Comment on "probable tapentadol-associated serotonin syndrome after overdose". *Hospital Pharmacy*. 2017;52(4):248
2. Isoardi KZ, Armitage MC, Harris K, Page CB. Establishing a dedicated toxicology unit reduces length of stay of poisoned patients and saves hospital bed days. *Emergency Medicine Australasia*. 2017;29(3):310-314
3. Kasturiratne A, Pathmeswaran A, Wickremasinghe AR, Jayamanne SF, Dawson A, Isbister GK, de Silva HJ, Lalloo DG. The socio-economic burden of snakebite in Sri Lanka. *PLoS Neglected Tropical Diseases*. 2017;11 (7) (no pagination). Article Number: e0005647
4. Chitty KM, Isbister GK, Dawson AH, Buckley NA. Authors' reply. *British Journal of Psychiatry*. 2017;211(1):53-54
5. Chitty KM, Kirby K, Osborne NJ, Isbister GK, Buckley NA. Co-ingested alcohol and the timing of deliberate self-poisonings. *Australian and New Zealand Journal of Psychiatry*. 2018; 52(3):271-278
6. Johnston CI, Ryan NM, Page CB, Buckley NA, Brown SG, O'Leary MA, Isbister GK. The Australian Snakebite Project, 2005-2015 (ASP-20). *Medical Journal of Australia*. 2017;207(3):119-125
7. Chiew AL; Isbister GK; Kirby KA; Page CB; Chan BSH; Buckley NA. Massive paracetamol overdose: an observational study of the effect of activated charcoal and increased acetylcysteine dose (ATOM-2). *Clinical Toxicology*. 2017;55(10):1055-1065
8. Young S, O'Driscoll R, Antony M, Whyte I. Massive eucalyptus oil overdose. *Internal Medicine Journal*. 2017;47(9):1085-1086
9. Isbister GK, Brown AL, Gill A, Scott AJ, Calver L, Dunlop AJ. QT interval prolongation in opioid agonist treatment: analysis of continuous 12-lead electrocardiogram recordings. *British Journal of Clinical Pharmacology*. 2017;83(10):2274-2282
10. Shrestha BR, Pandey DP, Acharya KP, Thapa-Magar C, Mohamed F, Isbister GK. Effective, polyvalent, affordable antivenom needed to treat snakebite in Nepal. *Bulletin of the World Health Organization*. 2017;95(10):1718-719
11. Isbister GK. In reply: Treatment Goal for Agitation: Sedation or Calming. *Annals of Emergency Medicine*. 2017;70(5) 752-753
12. Page CB, Ryan NM, Isbister GK. The safety of high-dose insulin euglycaemia therapy in toxin-induced cardiac toxicity. *Clinical Toxicology*. 2018;56(6):389-396
13. Cardon-Dunbar A, Robertson T, Roberts MS, Isbister GK. Pramipexole Overdose Associated with Visual Hallucinations, Agitation and Myoclonus. *Journal of Medical Toxicology*. 2017;13(4):343-346
14. Ooi QX, Wright DFB, Tait RC, Isbister GK, Duffull SB. A Joint Model for Vitamin K-Dependent Clotting Factors and Anticoagulation Proteins. *Clinical Pharmacokinetics*. 2017;56(12):1555-1566
15. Chan BSH, Chiew AL, Grainger S, Page CB, Gault A, Mostafa A, Roberts MS, Buckley NA, Isbister GK. Bromoxynil and 2-methyl-4-chlorophenoxyacetic acid (MCPA) poisoning could be a bad combination. *Clinical Toxicology*. 2018 Jan 30:1-3. doi: 10.1080/15563650.2018.1433299. [Epub ahead of print]
16. Chiew AL, Isbister GK, Page CB, Kirby KA, Chan BSH, Buckley NA. Modified release paracetamol overdose: a prospective observational study (ATOM-3). *Clinical Toxicology*. 2018 Feb 16:1-10. doi: 10.1080/15563650.2018.1439950. [Epub ahead of print]
17. Chiew AL, Wright DFB, Dobos NM, McArdle K, Mostafa AA, Newth A, Roberts MS, Isbister GK. 'Massive' metformin overdose. *British Journal of Clinical Pharmacology*. 2018 Mar 13. doi: 10.1111/bcp.13582. [Epub ahead of print]
18. 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. *Prehospital Emergency Care*. 2018 Mar 20:1-9. doi: 10.1080/10903127.2018.1445329. [Epub ahead of print]
19. Tasoulis T, Isbister GK. A review and database of snake venom proteomes. *Toxins (Basel)*. 2017 Sep 18;9(9). pii: E290. doi: 10.3390/toxins9090290.
20. Berling I, Gupta R, Bjorksten C, Prior F, Whyte IM, Berry S. A review of ECG and QT interval measurement use in a public psychiatric inpatient setting. *Australasian Psychiatry*. 2018;26(1):50-55
21. Sanhajariya S, Duffull SB, Isbister GK. Pharmacokinetics of Snake Venom. *Toxins (Basel)*. 2018 Feb 7;10(2). pii: E73. doi: 10.3390/toxins10020073.
22. Kerridge R, Whyte I, Prior F, Luu J, Story DA. The good, the bad, and the ugly: sodium-glucose cotransporter-2 inhibitors (gliflozins) and perioperative diabetes. *Anaesthesia and Intensive Care*. 2018 Mar;46(2):155-158
23. Pearce R, Whyte I. Electronic medication management: Is it a silver bullet? *Australian Prescriber*. 2018;41(2):32-33
24. Ng DPI, Duffull SB, Faed JM, Isbister GK, Gulati A. An Evaluation of a Factor Xa-Based Clotting Time Test for Enoxaparin: A Proof-of-Concept Study. *Clinical and Applied Thrombosis/Hemostasis*. 2018;24(4):669-676
25. Chiew AL, Page, Clancy D, Mostafa A, Roberts MS, Isbister GK. 2-Methyl-4-chlorophenoxyacetic acid (MCPA) and bromoxynil herbicide ingestion. *Clinical Toxicology*. 2018;56(5):377-380
26. Page CB, Ryan NM, Isbister GK. The safety of high-dose insulin euglycaemia therapy in toxin-induced cardiac toxicity. *Clinical Toxicology*. 2018;56(6):389-396

CONFERENCE PRESENTATIONS

1. Isbister GK. Two invited talks. Australian Association of Clinical Biochemists. Annual Conference. Melbourne. 2017
2. Isbister GK. Antivenom treatment. Society of Hospital Pharmacists. Annual Scientific Meeting. Sydney. 2017
3. Whyte IM. From caveman to Shipman: A history of homicidal poisoning. Society of Hospital Pharmacists. Annual Scientific Meeting. Sydney. 2017
4. Isbister GK. Snakebite associated acute kidney injury and can antivenom prevent it? Congress of the Asia Pacific Association of Medical Toxicology. Sri Lanka. 2017
5. Downes M, Robertson T, Roberts MS, Leatham SH, Chan B, Isbister GK. Orphenadrine ingestion: New birth of an old toxin. *EMA - Emergency Medicine Australasia*. Conference: 34th Australasian College of Emergency Medicine Annual Scientific Meeting. Australia. 30 (Supplement 1) (pp 54), 2018
6. Chiew A, Isbister GK, Page CB, Chan BSH, Buckley NA. Modified release paracetamol overdose: A prospective observational study. *EMA - Emergency Medicine Australasia*. Conference: 34th Australasian College of Emergency Medicine Annual Scientific Meeting. Australia. 30 (Supplement 1) (pp 13-14), 2018
7. Isbister GK. Snake envenoming. *EMA - Emergency Medicine Australasia*. Conference: 34th Australasian College of Emergency Medicine Annual Scientific Meeting. Australia. 30 (Supplement 1), 2018
8. Chan B, Chiew A, Grainger S, Page C, Mostafa A, Roberts M, Buckley N, Isbister G. Bromoxynil poisoning series: A toxic herbicide. *EMA - Emergency Medicine Australasia*. Conference: 34th Australasian College of Emergency Medicine Annual Scientific Meeting. Australia. 30 (Supplement 1) (pp 63-64), 2018
9. McArdle K. Overdose related lactic acidosis. *EMA - Emergency Medicine Australasia*. Conference: 34th Australasian College of Emergency Medicine Annual Scientific Meeting. Australia. 30 (Supplement 1), 2018
10. Johnston C, Buckley N, Brown S, Ryan NM, Page C, Isbister GK. Acute kidney injury in Australian snake envenoming:

Common, multifactorial and somewhat avoidable (ASP-26). *Clinical Toxicology*. Conference: 38th International Congress of the European Association of Poisons Centres and Clinical Toxicologists, EAPCCT 2018. Romania. 2018;56(6) 545-546

11. Berling I, Whyte IM, Semmens A. Thirty years of inpatient toxicology deaths. *Clinical Toxicology*. Conference: 38th International Congress of the European Association of Poisons Centres and Clinical Toxicologists, EAPCCT 2018. Romania. 2018;56(6) 516-517
12. Keegan M, Cooper JM, Isbister GK. Duloxetine overdose. *Clinical Toxicology*. Conference: 38th International Congress of the European Association of Poisons Centres and Clinical Toxicologists, EAPCCT 2018. Romania. 2018;56(6) 536
13. Silva A, Premawardene N, Bandaranayake A, Siribaddana S, Isbister GK. Large inter-batch variation in acute adverse reactions to Indian polyvalent antivenom. *Clinical Toxicology*. Conference: 38th International Congress of the European Association of Poisons Centres and Clinical Toxicologists, EAPCCT 2018. Romania. 2018;56(6) 548
14. Cooper JM, Duffull SB, Isbister GK. Serotonin toxicity: A regression analysis of frequency and outcomes. *Clinical Toxicology*. Conference: 38th International Congress of the European Association of Poisons Centres and Clinical Toxicologists, EAPCCT 2018. Romania. 2018;56(6) 547-548

CONFERENCE POSTERS

1. Ryan N, Isoardi K, Page C, Isbister G. Frequency and burden of delirium in drug overdose patients. Toxicology and Poisons Network Australasia (TAPNA). Scientific Meeting. Brisbane. 2018
2. Prior F, Ng YC. Doing more for medicines information services-expanding the peer review process. Society of Hospital Pharmacists. Annual Scientific Meeting. Sydney. 2017
3. Vasquez P, Prior F. Continuing uncertainties related to non-vitamin K antagonist oral anticoagulants (NOACs). Society of Hospital Pharmacists. Annual Scientific Meeting. Sydney. 2017

RESEARCH FUNDING/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, Lalloo D, Dawson A, Garawamma 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. End 2018
3. NHMRC Program Grant: "An integrated research program in human toxicology to ensure rapid translation of results into practice and regulation." Buckley NA, Isbister GK, Dawson A, Roberts M. 2014-2018
4. HETI Allied Health Workplace Training Grant. "Scientific Writing and Editing workshop for HNE pharmacists". Prior F. 2018

CLINICAL TRIALS

1. Stevens GJ, Hammond TE, Brownhill S, Anand M, de la Riva A, Hawkins J, Chapman T, Baldacchino R, Micallef J-A, Andepalli J, Kotak A, Gunja N, Page A, Gould G, Ryan CJ, Whyte IM, Carter GL, Jones A. SMS SOS: a randomised, controlled trial to reduce self-harm and suicide attempts using SMS text messaging.

OTHER RESEARCH

1. Dr Kylie McArdle has enrolled in a PhD with the University of Newcastle. "Drug overdose-related lactic acidosis and hyperammonaemia".



CONSULTATION-LIAISON PSYCHIATRY

INTRODUCTION

The 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 HNEMHS)
- Jennifer Bryant (Clinical Nurse Consultant, CMN)
- Dr Marianne Jackson (Advanced Trainee in Old Age Psychiatry)
- Dr Benjamin Britton (Clinical and Health Psychologist, Psycho-Oncology Service, CMN)
- Sophia Wooldridge (Clinical Psychologist, Psycho-oncology Service, CMN)
- Karen Matthews (Clinical Psychologist, Youth Cancer Service, HNELHD)
- Professor Gregory Carter (Psychiatrist, CMN, Conjoint Professor, Faculty of Health and Medicine, University of Newcastle)

PSYCHO-ONCOLOGY RESEARCH

- In an exciting development, the department has welcomed PhD student Erin Forbes who will be co-supervised by Kerrie Clover and Ben Britton. Erin's PhD research will expand on existing work into anxiety experienced by head and neck cancer patients during radiation therapy procedures. With co-investigators from the Department of Radiation Oncology the department is currently recruiting into a baseline study and 78 patients have completed the study to date. The department has also obtained Ethics Committee approval for a qualitative study to better understand the procedures from the patient perspective. The next phase of the research will test innovative interventions to reduce patient anxiety. In developing these interventions the department will focus on ease of translation into clinical practice.
- Another new project was Haem-Fit, a pilot implementation trial of a hospital exercise and wellness program for haematology inpatients. The Haem-Fit team was led by the Haematology Department with co-investigators from Physiotherapy and Psycho-Oncology. People admitted for management of haematological malignancy often have long hospital stays and

experience therapies that can reduce their ability and motivation to exercise. Lack of exercise can lead to skeletal muscle atrophy and influence patient outcomes. The team completed a baseline survey and developed a structured exercise program. The baseline study showed that the majority of patients experienced significant loss of muscle mass during their hospital stay. The next stage of this pilot study will implement and evaluate the exercise program.

- The department has continued its work in the area of validating measures of depression and anxiety in the oncology setting. The team were the first to use a gold-standard clinical interview to validate depression measures from the "PROMIS" initiative (a major project originating in the United States using item-response theory to develop Patient Reported Outcome Measures). This research confirmed that the new measures are valid but concluded that they offer no particular advance on existing measures. The team continue to work with hospital specialist cancer nurse consultants to examine the impact of distress screening practices.
- The department has also worked with local, national and international collaborators in a range of areas including: a national survey into the evidence-practice gap in distress management; the experience of general psychological distress and anxiety before and after head and neck cancer treatment; and the validity of the Patient Health Questionnaire as a measure of depression.
- Kerrie Clover has continued as the Convenor of the Australian Psychological Society's Psychologists in Oncology Interest Group and participated in consultations for the Cancer Institute NSW.

SUICIDE PREVENTION RESEARCH

This year's suicide prevention research has had a focus on self-harm within priority populations, has built on existing work including dissemination of findings and strengthening knowledge translation, and has been able to secure funding to update the data held in the deliberate self-poisoning register to include the psychiatric information.

Based on the findings from the systematic reviews led by Calvary Mater Newcastle researchers and published last year, Professor Carter has recently published an editorial in the journal 'Crisis' discussing how risk stratification is not accurate enough to be clinically useful; and both Professor Carter and Dr McGill have presented to different groups of local mental health clinicians on the findings of the systematic reviews and their implications for clinical practice.

A manuscript has recently been submitted that considers whether the reported increase in young females' self-harm in national and state data is real or artefactual, through a comparison of Australian Institute of health and Welfare (AIHW) and Ministry of Health self-harm rates with those

calculated using the Hunter Area Toxicology Service dataset.

Ethics approval has been received and data analysis 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.

Work for two service evaluation projects continues.

The Way Back Support Service (Hunter) trial - This is a *beyondblue* initiative that aims to reduce suicidal behaviour by providing non-clinical support to individuals for up to three months following a suicide attempt. It is being trialled in the Hunter region using an integrated referral pathway model for people who have presented to Calvary Mater Newcastle after deliberate self-poisoning. The aim of this study will be to identify whether rates of repetition of self-poisoning and lengths of stay in either the general or psychiatric hospitals differ for the period the intervention was available compared to historical controls. This study will be part of a multi-layered evaluation framework that has been developed for the project. The 12 month follow-up phase for this study is underway and data analysis is project for the end of 2018.

Evaluation of the Accredited Persons Program - 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'. An Accredited Person has 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, the unit is investigating 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 for this project is complete and preparation of a manuscript is underway.

The unit also continues to support a number of university and/or college required research projects and theses; including Dr Lindsay Gale (Scholarly Project- investigating delirium in self-poisoning patients), Dr Ingrid Berling (PhD- investigating whether psychotropic medication use may be contributing to some cardiac deaths), Mr Amir Salem (Psychology Clinical Masters thesis- predictors of discharge to psychiatric hospital for Aboriginal and non-Aboriginal patients), Ms Karren Robertson (Psychology Clinical Masters thesis- Effectiveness of the dissemination of YAM, a school based suicide prevention program).

Finally, Calvary Mater Newcastle is a LifeSpan Newcastle pilot. LifeSpan is an integrated approach to suicide prevention that is fundamentally based on ensuring evidence informs practice. Professor Carter is a member of the Leadership, Research and Advisory Committee

for Black Dog Institute who is rolling out the trial in four sites in New South Wales. Newcastle is the first of the four sites to trial the model and Calvary Mater Newcastle is an active partner in the hospital-based activities.

PEER REVIEWED JOURNAL PUBLICATIONS

1. Hossein Hassanian-Moghaddam, Fatemeh Ghorbani, Afsaneh Rahimi, Tayyebeh Farmahini Farahani, Parvaneh Sadat Vafaei Sani, Terry J. Lewin, Gregory L. Carter
Federation Internationale de Football Association (FIFA) 2014 World Cup impact on hospital-treated suicide attempt (overdose) in Tehran (Suicide and Life-Threatening Behavior 2018 48:3 367-375 |<https://doi.org/10.1111/sltb.12359>)
2. Woodford R, Spittal MJ, Milner A, McGill K, Kapur N, Pirkis J, Mitchell A, Carter G.
Accuracy of clinician predictions of future self-harm: a systematic review and meta-analysis of predictive studies (Suicide and Life-Threatening Behavior, 03 October 2017 |<https://doi.org/10.1111/sltb.12395>)
3. Witt K, Spittal MJ, Carter G, Pirkis J, Hetrick S, Currier D, Robinson J, Milner A.
Effectiveness of online and mobile telephone applications ('apps') for the self-management of suicidal ideation and self-harm: a systematic review and meta-analysis (BMC Psychiatry 2017, 17:297 DOI 10.1186/s12888-017-1458-0)
4. Large M, Ryan C, Carter G, Kapur N.
Can we usefully stratify patients according to suicide risk? (BMJ 2017;359:j4627 October 2017 doi: 10.1136/bmj.j4627)
5. Borruso LD, Buckley NA, Kirby KA, Carter G, Pilgrim JL, Chitty KM
Acute alcohol co-ingestion and hospital-treated deliberate self-poisoning; is there an effect on subsequent self-harm? (Suicide and Life-Threatening Behavior 02 March 2018 <https://doi.org/10.1111/sltb.12443>)
6. Mark Erik Larsen, Fiona Shand, Kirsten Morley, Philip Batterham, Katherine Petrie, Bill Reda, Sofian Berrouguet Paul Haber, Gregory Carter, Helen Christensen
Development of the RAFT (Reconnecting after a suicide attempt) SMS brief contact intervention (JMIR Mental Health JMIR Ment Health 2017;4(4):e56 DOI: 10.2196/mental.7500 PMID: 29237584 PMCID: 5745353)
7. Kristen McCarter; Amanda Baker; Ben Britton; Alison Kate Beck; Gregory Carter; Judith Bauer; Chris Wratten; Sean A Halpin; Elizabeth Holliday; Christopher Oldmeadow; Luke Wolfenden
Effectiveness of clinical practice change strategies in improving dietitian care for head and neck cancer patients according

to evidence based clinical guidelines: A stepped wedge randomised controlled trial. (Accepted Translational Behavioral Medicine, October 2017)

8. Kerrie Clover, Sylvie D. Lambert, Christopher Oldmeadow, Benjamin Britton, Madeleine T. King, Alex J Mitchell, Gregory Carter
PROMIS depression measures perform similarly to legacy measures relative to a structured diagnostic interview for depression in cancer patients. (Quality of Life Research, (2018) 27: 1357. <https://doi.org/10.1007/s11136-018-1803-x>)
9. Kristen McCarter, Amanda L. Baker, Ben Britton, Sean A. Halpin, Alison Beck, Gregory Carter, Chris Wratten, Judith Bauer, Luke Wolfenden, Katrina Burchell, Erin Forbes
Head and neck cancer patient experience of a new dietitian-delivered health behaviour intervention: "You know you have to eat to survive" (Supportive Care in Cancer, (2018) 26: 2167. <https://doi.org/10.1007/s00520-017-4029-5>)
10. Kristen McCarter, Ben Britton, Amanda Baker, Sean A Halpin, Alison K Beck, Gregory Carter, Chris Wratten, Judy Bauer, Erin Forbes, Debbie Booth, Luke Wolfenden
Interventions To Improve Screening And Appropriate Referral Of Cancer Patients For Distress: Systematic Review (BMJ Open January 2018; 8:e017959. doi: 10.1136/bmjopen-2017-017959)
11. 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 and Adolescent Psychiatry. 2018 DOI: 10.1007/s00787-018-1111-6).
12. Levis, B., Benedetti, A., Riehm, K., Saadat, N., Levis, A., Azar, M., . . . Thombs, B. (2018). Probability of major depression diagnostic classification using semi-structured versus fully structured diagnostic interviews. The British Journal of Psychiatry, 212(6), 377-385. doi:10.1192/bjp.2018.54
13. McCarter K, Wolfenden L, Beck A, Wratten C, Carter G, Britton B, Baker A, Bauer J, Halpin S.
Smoking, drinking and depression: comorbidity in head and neck cancer patients undergoing radiotherapy (Cancer Medicine, Cancer Medicine 2018; 7(6):2382–2390 doi: 10.1002/cam4.1497)
14. 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>)

15. Bourke, J, Plant C, Wooldridge, S
Interpersonal Psychotherapy (IPT) with Expressive Art for Major Depression in a Psycho-Oncology Context (Manuscript accepted, Clinical Case Studies, 2018)

RANZCP SCHOLARLY PROJECT DISSERTATION

1. Jackson M
Hospital-treated Deliberate Self-Poisoning in the older adult: identifying the specific clinical assessment needs (passed May 2018)

CONFERENCE PRESENTATIONS

1. Eating As Treatment (EAT): A Health Behaviour Change Intervention to Improve Treatment Outcomes for Head and Neck Cancer Patients Undergoing Radiotherapy. Baker, A., Britton, B., McCarter, K., Wolfenden, L., Wratten, C., Bauer, J., Carter, G.
British Association for Behavioural and Cognitive Psychotherapies, Manchester. 25-28 July 2017.
2. Eating As Treatment (EAT): Improving Treatment Outcomes for Head and Neck Cancer Patients Undergoing Radiotherapy. Britton, B., Baker, A., Beck, A., McCarter, K., Wolfenden, L., Wratten, C., Bauer, J., Halpin, S., Carter, G.
Cancer Institute 2017 Innovations in Cancer Treatment and Care Conference. 14 September 2017.
3. Procedural Anxiety During Radiotherapy Using A Mask In Patients With Head And Neck Cancer: Interim Data as part of symposium: Patient Experiences Of Anxiety During Radiation Therapy For Head And Neck Cancer.
Clover, K., Forbes, E., Carter, G., Wratten, C., Britton, B., Tieu, M., Kumar, M., Oultram, S., Baker, A. L., McCarter, K.
20th World Congress of Psycho-Oncology and Psychosocial Academy (IPOS 2018)
4. Suicide Risk Assessment: Should We Do It? Why Should We Do It? What Should We Do? Kate Comtois, Dave Jobes, Greg Carter, Pete Gutierrez, Jeff Sung
Symposium Presentation. 2018 AAS Annual Conference, Washington, DC, April 19-21, 2018.
5. Support after a suicide attempt: Aftercare evidence, models and learnings to date. McGill, K., Shand, F., Burns, B., McRae, A., Traynor, M. and Larsen, M. 25-28 July 2018.
6. Eating As Treatment (EAT): A health behaviour change intervention for head and neck cancer patients. McCarter, K., Britton, B., Baker, A., Beck, A., Wolfenden, L., Wratten, C., Bauer, J., Carter, G.
32nd Annual Conference of the European Health Psychology Society, Galway, Ireland. 21-25 August 2018.
7. Preliminary results of psychiatric morbidity for oncology patients. Plant, C., McGill, K., Ang, P.
20th International Conference on

- Psychology, Philosophy and Cognitive Science, Bali. 22-23 October 2018.
8. PROMIS depression measures versus legacy PROMs and structured diagnostic interview for depression in cancer patients.
 Kerrie Clover, Sylvie D. Lambert, Christopher Oldmeadow, Benjamin Britton, Madeleine T. King*, Alex J Mitchell, Gregory Carter
 PROMIS Health Organisation annual conference. Philadelphia, USA. 17 October 2017.
**Presenting author*
 9. Wellness and Exercise Survey of Haematology Cancer In-Patients. Baseline measurements to guide future interventions.
 Casey Hutchinson*, Louisa Brown, Lisa Lincz, Alix Hall, Jackie Wykes, Judy Holland, Kerrie Clover, Benjamin Britton, Jenny Martin, Philip Rowlings
 Cancer Nurses Society of Australia, 21-23 Jun Brisbane
**Presenting author*
- RESEARCH GRANTS**
1. Hunter New England Central Coast Primary Health Network.
 Hunter Deliberate Self-Poisoning Clinical Registry.
 Carter, G, Whyte, I, McGill, K.
 \$145,000 for one year (commenced June 2018).
 2. 2017 Faculty of Health and Medicine Strategic Pilot Grant (University of Newcastle)
 3. 2017 Priority Research Centre for Health Behaviour Funding, University of Newcastle
 Mediation analysis of an effective health behaviour change intervention for head and neck cancer patients: the importance of best practice guidelines
 McCarter K, Britton B, Baker A, Wolfenden, L, Carter G, Bauer J, Wratten C, Beck A, Forbes E, Oldmeadow C, Lee H. \$2,200 over one year
 4. 2017 Priority Research Centre for Health Behaviour Funding, University of Newcastle
 Two year survival of participants of the Eating As Treatment trial. (AIHW data linkage)
 Britton B, Baker A, McCarter K, Wolfenden L, Bauer J, Wratten C, Beck A, Forbes E, Oldmeadow C, Carter G. \$3,000 over one year
 5. 2017 HCRA Implementation Science Program
 Translating Eating as Treatment for Head and Neck Cancer (TREAT)
 Ben Britton, Amanda Baker, Alison Beck, Greg Carter, Chris Wratten, Judith Bauer, Luke Wolfenden, Kristen McCarter. \$30,000 over one year
 6. 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 Srasuebkul, Andrew Dawson, Gregory Carter. \$19,794.87 over one year
 7. 2017 Hunter Cancer Research Alliance, targeted funding round.
 Design and implementation of an exercise and wellness program for haematology cancer patients before, during and after treatment.
 Philip Rowlings, Casey Hutchinson, Louisa Brown, Lisa Lincz, Alix Hall, Jackie Wykes, Judy Holland, Kerrie Clover, Benjamin Britton, Jenny Martin, \$39,944 over one year.

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. The unit is fortunate to have strong



community support and is grateful for all the generous donations received in 2017/18.

HAEMATOLOGY CLINICAL TRIALS

Clinical Trial Coordinators: Michele Gambrell, Tara Novak, Marguerite Hughes, William Whitbread-Brown, Nick Stankovich, Cheryl Cairney and Klara Jakimovski.

Administrative Officers: Patricia Rozanski and Karen Kincaid

Laboratory Technical Officer: Michelle Barnett

Over the past year the Haematology Clinical Trials Office has:

- Activated 13 new clinical trials across a range of haematology malignancies
- Pre-screened 171 new potential participants for those newly activated and ongoing clinical trials,
- Formally screened 51 of those potential participants, and
- Enrolled 39 of those screened participants onto a clinical trial
- Opened a Phase study in Acute Promyelocytic Leukaemia with another Phase 1 study in development

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 in 2017/18, 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 department has also successfully contributed to several Phase I studies in Lymphoma and Acute Myeloid Leukaemia (AML), with one of the latter leading to US Food and Drug Administration accelerated access to the drug that was tested.

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 department welcomed Karen Kincaid, Klara Jakimovski (replacing retiring William Whitbread-Brown) and Michelle Barnett to the Haematology Clinical Trials Office team.

The department is currently also in the process of recruiting a Data Manager to a newly created position.

BONE MARROW STEM CELL TRANSPLANT RESEARCH

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

Patient transplant data is reported to the Australian Bone Marrow Transplant Recipients Registry (ABMTRR) as part of Australian Bone Marrow Transplant research and development. This data is also part of the Asia Pacific Bone Marrow Transplant (APBMT) group 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 A 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. The publication from this group (Ayyalil et al 2017) is a ground breaking intervention for reducing transfusion wastage published in a leading international transfusion journal. Dr Ross and Dr deMalmanche 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 microparticles. The laboratory is linked to the University of Newcastle and offers tuition and scholarships to encourage students to enter this area of research. There are presently four PhD and one Master's students associated with the lab.

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 Leukaemia with Dr Enjeti (clinical translational/Genomics/ drug development), Dr Jon Sillar (Trainee and PhD student), Dr Asma Ashraf (Clinical Epid), Dr Nikki Verrills (Molecular Biology), Dr Kathryn Skelding (Molecular Biology), Dr Matt Dun (Proteomics), Dr Lisa Lincz (Molecular Biology), Dr Heather Lee (Epigenetics) and Professor R Scott (Genomics). Dr A Enjeti has led the development of a NGS panel based testing for 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.

IMPLEMENTATION SCIENCE COMMITTEE OF HUNTER CANCER RESEARCH ALLIANCE

Professor Rowlings and Dr Bryony Ross were members of the Hunter Cancer Research Alliance, Implementation Science Committee.

BIOMARKERS AND TARGETED THERAPY COMMITTEE OF HCRA

Dr Anoop Enjeti and Dr Lisa Lincz are members of this committee. Dr A Enjeti is also the chair of 'future leaders group' (FLG) of the HCRA.

RESEARCH FUNDING

1. 2018. HCRA Children's Cancer Research Project Grant. Re-purposing PARP inhibitors to treat childhood leukaemias K Skelding, N Bowden, L Lincz, A Enjeti, F Alvaro \$25,000
2. 2018. CMN Coalfields Cancer Support Group. Upgrade of essential equipment: real time quantitative PCR thermocycler. Lincz and Sakoff \$30,000
3. 2017-20. Pathology North/HNELHD/CMN Clinical Research Fellowship. Locoregional differences, biomarkers and novel therapy in Acute Myeloid Leukaemia. Anoop Enjeti. \$360,000
4. 2015-19 NHMRC project grant APP1085550. Helping stroke physicians choose who to thrombolys- the "Targeting Optimal Thrombolysis Outcomes" (TOTO) study. CIA:Elizabeth Holliday, CIG: L Lincz \$1,031,671
5. 2017-18 Genome wide approach to risk assess Multiple Myeloma and precursor plasma cell disorders A Enjeti, N Berry, W Janowski, R Scott and P Rowlings \$50,000
6. 2017-18 Research Equipment Grant (UON/HMRI) for a Tape station. R Thorne and R Scott as lead CIs. A Enjeti listed as a CI. \$50,000
7. 2017-18 Beyond the Next generation of DNA Sequencing: Long read Sequencing using Sequel CI R Scott, A Enjeti listed as CI. \$570,000
8. 2017-18 Determining the mechanisms underpinning leukemic transformation for children suffering from Shwachman-Diamond Syndrome (SDS). CI M Dunn, A Enjeti listed as CI. \$25,000
9. 2017 RCPA Rural supplementation for teaching, education and training. A Enjeti \$49,850

CONFERENCE AND MEETING PROCEEDINGS

1. **Australasian Leukaemia and Lymphoma Group Scientific Meeting, 15-18 May, Melbourne, VIC**
Wojt Janowski (Invited Speaker). *"Myeloma Research Update"*
2. **HaemX Symposium Haematology Update Melbourne Aug 2017**
A Enjeti (Invited Speaker). *"Update on Bcl2 inhibitors in AML"*

3. **NSW HSANZ March 2018**
A Enjeti (Invited Speaker). "NGS based testing for Myeloid disorders in NSW"
4. **American Society of Haematology 59th meeting, Atlanta, Georgia, 9-12 Dec, 2017**
- Andrew Wei, Stephen A. Strickland, Gail J. Roboz, Jing-Zhou Hou, Walter Fiedler, Tara L. Lin, Roland B. Walter, **Anoop Enjeti**, Brenda Chyla, Relja Popovic, Kaffa Fakouhi, Pooja Shah, Martin Dunbar, Tu Xu, Mack Mabry and John Hayslip Phase 1/2 Study of Venetoclax with Low-Dose Cytarabine in Treatment-Naive, Elderly Patients with Acute Myeloid Leukemia Unfit for Intensive Chemotherapy: 1-Year Outcomes. Blood 2017 130:890 (oral abstract)
 - Jock Simpson, Adam Hopkins and Anoop Enjeti *Transfusion Associated Circulatory Overload in Ambulatory Transfusions* Blood 2017 130:1124 (poster)
5. **Cancer Cytogenomics Consortium Denver USA July 2017**
HD-SNP Microarray Analysis of the Study 9 High Risk ALL Patients- Increased Yield of Important Prognostic Information **Nadine K Berry**, Rodney Scott, Rosemary Sutton, Philip Rowlings, Anoop K Enjeti Denver USA (oral abstract)
6. **HAA-ASTH 2017, Oct 29 – Nov 1, Sydney, NSW**
- Lisa Lincz** (Invited speaker), Thrombosis and Haemostasis society of Australia and New Zealand, Scientific Workshop 'Curcumin and Fish oil effects on platelet aggregation and coagulation'
 - Fiona E Scorgie**, Ritam Prasad, John Attia, Elizabeth Holliday, Rodney Scott, Lisa F Lincz. *Australian Frequency of Polymorphisms Clinically Relevant for Diagnosis of Type 1 von Willebrand's Disease* (poster)
 - Linda Welschinger**, Lisa Lincz, Richard Makin, Philip Rowlings, Jan Virtue, Patricia Palladinetti, Geordie Zaunders. *Effect of over-night storage, plasma reduction and nucleated cell number on viable CD34+ cell recovery* (poster)
 - Alison Chandler, Lauren Shephard, **Philip Rowlings**. *Development of a Matrix for Appropriate Pathology Ordering in Haematology Inpatients* (poster)
 - A Enjeti** (Session Chair), *HSANZ VTE Clinical Session*
7. **Cancer Nurses Society of Australia 21st Annual Congress, Brisbane 21-23 June 2018**
Casey Hutchinson, Louisa Brown, Lisa Lincz, Alix Hall, Jackie Wykes, Judy Holland, Kerrie Clover, Benjamin Britton, Jenny Martin, Philip Rowlings. *Wellness and Exercise Survey of Haematology Cancer In-Patients. Baseline measurements to guide future interventions.*
8. **HCRA Implementation Science Flagship Program HEAPS Evening Seminar: 'Embedding research into routine cancer care'. April 4, 2018, Newcastle.**
Casey Hutchinson (Invited speaker), 'Designing HAEM-Fit - an exercise and wellness program in the CMN Haematology Department'
9. **Hunter Cancer Research Symposium of HCRA HMRI November 2017**
Elizabeth Pearsall, Mengna Chi, Lisa Lincz, Kathryn Skelding. *Identification of a new mechanism for controlling Acute Myeloid Leukaemia cell survival.* (Awarded best translational science poster by an ECR/ student)
10. **New Directions in Leukemia Research, Brisbane March 2018**
Three translational projects in AML/MDS were presented in this symposium. A key note presentation by a collaborating researcher working with Dr A Enjeti was also presented at this meeting.
- ADVISORY/BOARD MEMBERSHIP**
- Philip Rowlings**
- Editorial Board of the Journal *Blood Cell Therapy*
 - Board of Directors, Australia Leukaemia and Lymphoma Group
 - Executive Committee, NSW BMT Network of the Agency for Clinical Innovation, NSW Health
 - Scientific Advisory Board of the Asia Pacific Bone Marrow Transplant Group (APBMT)
- Lisa Lincz**
- Member of Council, Thrombosis and Haemostasis Society of Australia and New Zealand (THANZ) Scientific and Education Trust
 - Member, CMN Translational Research and Governance 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 Translational Research and Governance Committee
- Member, CMN Research Development and Engagement Committee
 - Member, Vascular Biology Sub-Committee, 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, Symposium Committee HCRA for 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
- 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 OHandS Committee
 - Member, CMN Mission and Values Committee
- PUBLICATIONS [1-12]**
- Alkhatatbeh, M.J., **A.K. Enjeti**, S. Baqar, E.I. Ekinci, D. Liu, R.F. Thorne, and **L.F. Lincz**, *Strategies for enumeration of circulating microvesicles on a conventional flow cytometer: Counting beads and scatter parameters.* Journal of Circulating Biomarkers, 2018. 7: p. 1849454418766966.
 - Ayyalil, F., G. Irwin, B. Ross, M. Manolis, and **A.K. Enjeti**, *Zeroing in on red blood cell unit expiry.* Transfusion, 2017. 57(12): p. 2870-7.
 - Berry, N.K.**, A. Dixon-McIver, R.J. Scott, P. Rowlings, and **A.K. Enjeti**, *Detection of complex genomic signatures associated with risk in plasma cell disorders.* Cancer Genet, 2017. 218-219: p. 1-9.
 - Dyer, G., L. Brice, N. Gilroy, M. Kabir, M. Hertzberg, M. Greenwood, S.R. Larsen, J. Moore, D. Gottlieb, G. Huang, M. Hogg, **L. Brown**, J. Tan, C. Ward, and I. Kerridge, *Changes to work status and household income of long-term allogeneic blood and marrow*

transplant survivors in New South Wales, Australia. Bone Marrow Transplant, 2018.

5. Dyer, G., L. Brice, M. Schifter, N. Gilroy, M. Kabir, M. Hertzberg, M. Greenwood, S.R. Larsen, J. Moore, D. Gottlieb, G. Huang, M. Hogg, **L. Brown**, J. Tan, C. Ward, and I. Kerridge, *Oral health and dental morbidity in long-term allogeneic blood and marrow transplant survivors in Australia*. Aust Dent J, 2018.
6. Pearsal, EA., **Lincz, LF.**, and Skelding, KA. *The Role of DNA Repair Pathways in AML Chemosensitivity*. Current Drug Targets, 2018. 19: p. 1-15.
7. **Enjeti, A.K., A. Ariyarajah, E. Warwick, M. Seldon, and L.F. Lincz**, *Challenges in Analysis of Circulating Extracellular Vesicles in Human Plasma Using Nanotracking and Tunable Resistive Pulse Sensing*. J Nanomed Nanotechnol 2017. 8(5).
8. Lim, M.S., **A. Ariyarajah**, C. Oldmeadow, A. Hall, and **A.K. Enjeti**, *A Systematic Review and Meta-analysis Comparing Anticoagulation versus No Anticoagulation and Shorter versus Longer duration of Anticoagulation for Treatment of Isolated Distal Deep Vein Thrombosis*. Semin Thromb Hemost, 2017. 43(8): p. 836-48.
9. Malik, R., T. Dau, M. Gonik, A. Sivakumar, D.J. Deredge, E.V. Edeleva, J. Gotzfried, S.W. van der Laan, G. Pasterkamp, N. Beaufort, S. Seixas, S. Bevan, **L.F. Lincz**, E.G. Holliday, A.I. Burgess, K. Rannikmae, J. Minnerup, J. Kriebel, M. Waldenberger, M. Muller-Nurasyid, P. Lichtner, D. Saleheen, P.M. Rothwell, C. Levi, J. Attia, C.L. Sudlow, D. Braun, H.S. Markus, P.L. Wintrobe, K. Berger, D.E. Jenne, and M. Dichgans, *Common coding variant in SERPINA1 increases the risk for large artery stroke*. Proc Natl Acad Sci U S A, 2017. 114(14): p. 3613-8.
10. Saglio, G., P. le Coutre, J. Cortes, J. Mayer, **P. Rowlings**, F.X. Mahon, G. Kroog, K. Gooden, M. Subar, and N.P. Shah, *Evaluation of cardiovascular ischemic event rates in dasatinib-treated patients using standardized incidence ratios*. Ann Hematol, 2017. 96(8): p. 1303-13.
11. Scott, A., N. Weber, C. Tiley, K. Taylor, J. Taper, S. Harrison, K.L. Chan, R. Stark, C. Lee, K. Morris, P.J. Ho, A. Dodds, S. Ramanathan, R. Ramakrishna, A.M. Watson, B. Auguston, F. Kwok, H. Quach, P. Warburton, **P. Rowlings**, and P. Mollee, *'Real-world' Australian experience of pomalidomide for relapsed and refractory myeloma*. Leuk Lymphoma, 2018. 59(6): p. 1514-6.
12. van der Pol, E., A. Sturk, T. van Leeuwen, R. Nieuwland, and F. Coumans, (**AK Enjeti; contributor**) *Standardization of extracellular vesicle measurements by flow cytometry through vesicle diameter approximation*. J Thromb Haemost, 2018. 16(6): p. 1236-45.

RADIATION ONCOLOGY AND MEDICAL PHYSICS

GOAL

Improving clinical training, service delivery in cancer care and long-term survival due to research advances in radiation oncology, cancer imaging and technology.

HIGHLIGHTS DURING THE REPORTING PERIOD

- 68 peer-reviewed publications including the highest profile journals in the field such as Journal of Clinical Oncology and Lancet Oncology
- 125 new participants enrolled into clinical trials
- Invited speakers at high profile national and international meetings
- Involvement in >\$1,300,000 of competitive research grant funding
- Establishment of Radiation Oncology and Cancer Imaging Technology (ROCI) Flagship Program

OUR RESEARCH PRIORITY AREAS:

- Both initiation and collaboration on clinical trials
- Radiotherapy with particular focus on image-guided radiation therapy (IGRT) and treatment verification
- Imaging using technologies such as magnetic resonance imaging (MRI), and positron emission tomography (PET)
- Radiation Therapist and Nuclear Medicine research projects

CLINICAL TRIAL ACTIVITY

From July 2017 to June 2018, the department had 44 currently active studies, which were in recruitment or follow-up, and other staff-led studies, which tested feasibility, safety and efficacy, as well as retrospective audits. Three new studies were activated, 125 participants were enrolled and 429 participants were in follow-up. Participation in these trials provides valuable research income for the hospital as well as improved care and outcome opportunities for patients in our community.

The trials the department participates in encompass basic sciences, technical projects and quality assurance activities, as well as qualitative research and multicentre clinical trials with the potential to direct future best practice.

An example of Calvary Mater Newcastle research success in this area is highlighted by Associate Professor Jarad Martin's work in a prostate cancer trial. Jarad was the Australasian principal investigator within the Trans-Tasman Oncology Group for the international prostate cancer radiotherapy randomised trial, which helped establish a four-week course of treatment as a standard option. This trial accrued >200 men ahead of schedule and integrated newer technologies such as Image Guided Radiotherapy (IGRT) and Intensity Modulated Radiotherapy (IMRT) in the clinical setting, and these techniques now represent the widespread standard of care in the profession.

FLAGSHIP PROGRAM

Building from the success of previous years – the establishment of the Radiation Oncology and Cancer Imaging (ROCI) Research Executive, and the Radiation Therapy Research Interest Group (RTRIG), the department has continued to increase the research capacity of the unit.

A Flagship Program, Radiation Oncology and Cancer Imaging Technology (ROCIT), has been established in partnership with the Hunter Cancer Research Alliance. ROCIT incorporates the research portfolios of the Nuclear Medicine and Radiation Therapy teams, along with Radiation Oncology, Cancer Imaging and Medical Physics. This flagship will broaden the breadth and complexity of the research conducted by now involving multiple disciplines and more field leaders. The ROCIT Steering Committee, Chaired by Professor Peter Greer, is working to increase collaboration, attract funding opportunities and encourage novel research initiatives. The Flagship will offer monetary assistance for up to five pilot projects as well as support the travel and publication requirements of members aligned with the program in 2018.

Scope of activities:

- Fostering collaboration and identifying new opportunities
- Testing ideas with cross-disciplinary debate
- Developing a ground-up set of priority research questions which are amenable to implementation and build on the Hunter New England Local Health District's research and clinical strengths
- Developing a project implementation and management strategy for the agreed research questions and projects

GOVERNANCE AND OVERSIGHT

The department holds regular education meetings to disseminate the latest improvements in patient care and for senior leaders to participate in the Hunter New England Local Health District multidisciplinary team meetings. Staff are involved in many oversight and governance roles including:

- CMN Governance Committee
- National and International Conference Organising Committees
- Editorial boards
- Funding body peer-review panels
- Collaborative research groups (e.g. the Trans-Tasman Radiation Oncology Group)
- CMN Research Committee
- Hunter Cancer Research Alliance Executive Committee
- Advisory board members for Pharma including Janssen-Cilag, Ferring Pharmaceuticals and MSAC Expert Panel

RESEARCH OUTCOMES

Several staff are recognised as leaders in their fields and have built strong collaborations with other national and international experts. This is supported by the 68 peer reviewed journal articles published

by members of the department during the reporting period. In addition, 27 staff were invited to conferences and meetings, both nationally and internationally, to present their research either orally or by poster. This research dissemination is a vital part of making findings available and builds further collaborations. Participation at these events also highlights Calvary Mater Newcastle as a world-class research environment. The department has 24 conjoint appointments with the University of Newcastle. It was awarded \$1.37 million in competitive funding and supervised 17 Higher Degree Research students.

JOURNAL ARTICLES

- Barnes, M., and Greer, P.** (2017). Evaluation of the truebeam machine performance check (MPC): mechanical and collimation checks. *Journal of Applied Clinical Medical Physics*, 18(3), 56-66. doi:doi:10.1002/acm2.12072
- Bhandarkar, N., Kumar, S., **Martin, J.**, Brown, L., and Panchal, S. (2018). Attenuation of Metabolic Syndrome by EPA/DHA Ethyl Esters in Testosterone-Deficient Obese Rats *Marine Drugs*, 16(6), 182.
- Butler, D., Beveridge, T., **Lehmann, J.**, Oliver, C., Stevenson, A., and Livingstone, J. (2018). Spatial response of synthetic microDiamond and diode detectors measured with kilovoltage synchrotron radiation. *Medical Physics*, 45(2), 943-952. doi:doi:10.1002/mp.12733
- Catton, C., Lukka, H., Gu, C., **Martin, J.**, Supiot, S., Chung, P. . . Levine, M. (2017). Randomized Trial of a Hypofractionated Radiation Regimen for the Treatment of Localized Prostate Cancer. *Journal of Clinical Oncology*, 35(17), 1884-1890. doi:10.1200/jco.2016.71.7397
- Chojnowski, J., **Barnes, M.**, Sykes, J., and Thwaites, D. (2017). Beam focal spot position: The forgotten linac QA parameter. An EPID-based phantomless method for routine Stereotactic linac QA. *Journal of Applied Clinical Medical Physics*, 18(5), 178-183. doi:doi:10.1002/acm2.12147
- Corry, J., Bressel, M., Fua, T., Herschtal, A., Solomon, B., Porceddu, S., **Wratten, C.** . . . Rischin, D. (2017). Prospective Study of Cetuximab, Carboplatin, and Radiation Therapy for Patients With Locally Advanced Head and Neck Squamous Cell Cancer Unfit for Cisplatin. *International Journal of Radiation Oncology*Biophysics*Physics*, 98(4), 948-954. doi:https://doi.org/10.1016/j.ijrobp.2017.02.088
- Day, F., Sherwood, E., Chen, T., Barbouttis, M., Varlow, M., **Martin, J.** . . . Paul, C. (2018). Oncologist provision of smoking cessation support: A national survey of Australian medical and radiation oncologists. *Asia-Pacific Journal of Clinical Oncology*, 0(0). doi:10.1111/ajco.12876
- Day, F., Sherwood, E., Sitas, F., Weber, M., Varlow, M., **Martin, J.** . . . Paul, C. Current Oncologist practices and preferences in patient smoking cessation support. *Asia Pacific J Clin Onc*.
- Doeblich, M., Downie, J., and **Lehmann, J.** (2018). Continuous breath-hold assessment during breast radiotherapy using portal imaging. *Physics and Imaging in Radiation Oncology*, 5, 64-68. doi:https://doi.org/10.1016/j.phro.2018.02.006
- Fuangrod, T., Greer, P., Zwan, B., Barnes, M., and Lehmann, J.** (2017). A novel and independent method for time-resolved gantry angle quality assurance for VMAT. *Journal of Applied Clinical Medical Physics*, 18(5), 134-142. doi:doi:10.1002/acm2.12129
- Ghose, S., **Greer, P.**, Sun, J., Pichler, P., Rivest-Henault, D., Mitra, J. . . Dowling, J. (2017). Regression and statistical shape model based substitute CT generation for MRI alone external beam radiation therapy from standard clinical MRI sequences. *Physics in Medicine and Biology*, 62(22), 8566.
- Gupta, S., Watson, T., **Denham, J.**, Shakespeare, T., **Rutherford, N.**, McLeod, N., **Martin, J.** (2017). Prostate-Specific Membrane Antigen Positron Emission Tomography-Computed Tomography for Prostate Cancer: Distribution of Disease and Implications for Radiation Therapy Planning. *International Journal of Radiation Oncology*Biophysics*Physics*, 99(3), 701-709. doi:https://doi.org/10.1016/j.ijrobp.2017.06.2448
- Hanlon, M., Ludbrook, J., Jovanovic, K., Greer, P., and Martin, J.** (2018). Fostering a culture of research within a clinical radiation oncology department. *Journal of Medical Imaging and Radiation Oncology*, 62(1), 102-108. doi:doi:10.1111/1754-9485.12662
- Hussein, M., Clementel, E., Eaton, D., **Greer, P.**, Haworth, A., Ishikura, S. . . Clark, C. (2017). A virtual dosimetry audit – Towards transferability of gamma index analysis between clinical trial QA groups. *Radiotherapy and Oncology*, 125(3), 398-404. doi:https://doi.org/10.1016/j.radonc.2017.10.012
- Jones, M., Carroll, S., **Martin, J.**, Hillman, R., Grulich, A., O'Connell, D. . . Poynten, I. (2017). Management of early anal cancer: need for guidelines and standardisation. *International Journal of Colorectal Disease*, 32(12), 1719-1724. doi:10.1007/s00384-017-2913-6
- Jones, M., **Martin, J.**, Foo, K., Estoesta, P., Holloway, L., and Jameson, M. (2018). The impact of contour variation on tumour control probability in anal cancer. *Radiation Oncology*, 13(1), 97. doi:10.1186/s13014-018-1033-y
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BOOK CHAPTERS

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2. Cairn, T., **Lehmann, J.**, Crowe, S., Lye, J., Alvarez, P., Followill, D., and Kron, T. (2017). Postal and clinical trial dosimetry. In I. J. Das (Ed.), *Radiochromic Film: Role and Applications in Radiation Dosimetry*: CRC Press.
3. McCurdy, B., **Greer, P.**, and Bedford, J. (2017). EPID Dosimetry. In D. T. a. B. Mijneheer (Ed.), *Clinical 3D Dosimetry in Modern Radiation Therapy*: CRC Press.
4. Zwan, B., and **Greer, P.** (2018). Time resolved dosimetry and quality assurance using real-time EPID imaging. In M. F. Chan (Ed.), *Recent Advances and Applications in Dosimetry* NOVA Publishing.

CONFERENCE PRESENTATIONS AND POSTERS

1. Butler, D., **Lehmann, J.**, Beveridge, T., Bailey, T., Oliver, C., Crosbie, J. . . . Stevenson, A. (2017). Sub-millimeter spatial response maps of ionization chambers in a magnetic field. Paper presented at the Engineering and Physical Sciences in Medicine Conference (EPSM).
2. Caillet, V., Zwan, B., Hardcastle, N., Brien, R., Poulsen, P., **Greer, P.**, and Keall, P. (2017). Best in Physics (Therapy): MLC tracking for lung SABR reduces the dose to organs at risk and improves geometric targeting of the tumor. Paper presented at the Medical Physics.
3. Field, M., Holloway, L., Stirling, D., Ghose, A., Bailey, M., Carolan, M. . . . Thwaites, D. (2018). Investigation into non-linear radiomic signatures characterizing overall survival from non-small cell lung cancer. Paper presented at the ESTRO, Barcelona, Spain.
4. Field, M., Holloway, L., Stirling, D., Ghose, A., Bailey, M., Carolan, M. . . . Thwaites, D. (2018). Non-small cell lung cancer decision support based on distributed learning over multi-center data. Paper presented at the ESTRO, Barcelona, Spain.
5. **Fuangrod, T.**, **Barnes, M.**, Simpson, J., Zwan, B., and **Greer, P.** (2017). Investigation of long-term linear accelerator performance from comprehensive EPID-based quality assurance tests. Paper presented at the Engineering and Physical Sciences in Medicine, Hobart, Australia.

6. **Fuangrod, T.**, **Greer, P.**, **Zwan, B.**, **Barnes, M.**, and **Lehmann, J.** (2017). Video based gantry angle assessment for VESPA using Double Dot and dose rate meter. Paper presented at the Engineering and Physical Sciences in Medicine Conference (EPSM)
7. **Fuangrod, T.**, McNeilly, A., Pichler, P., Dowling, J., and **Greer, P.** (2017). Verification of accuracy of substitute CT for MRI-only prostate IMRT using transit dosimetry. Paper presented at the Engineering and Physical Sciences in Medicine, Hobart, Australia.
8. **Gholizadeh N, G. P., Simpson J, Lau P, Ramadan S.** (2018). Multiparametric magnetic resonance imaging for the detection and localisation of prostate cancer. Paper presented at the 6th MR in RT, Utrecht, Netherlands.
9. **Gholizadeh, N., Greer, P., Simpson, J., Lau, P., and Ramadaan, S.** (2017). Quantitative features of diffusion tensor imaging (DTI) of prostate cancer patients for Computer Aided Diagnosis (CADx). Paper presented at the Engineering and Physical Sciences in Medicine Hobart, Australia.
10. **Gholizadeh, N., Greer, P., Simpson, J., Lau, P., and Ramadan, S.** (2018). Multi parametric magnetic resonance imaging for the detection of prostate cancer: combination of T2-weighted, diffusion tensor imaging and magnetic resonance spectroscopic imaging. Paper presented at the Annual Meeting ISMRM-ESMRMB, Paris, France.
11. **Greer, P.**, and David, R. (2017). Remote dosimetric IMRT auditing using EPID derived doses in patient CT model and DVH analysis. Paper presented at the Medical Physics.
12. **Greer, P.**, Pichler, P., Richardson, H., Hunter, P., **Wratten, C.**, and Dowling, J. (2017). MRI-only prostate cancer treatment – a prospective clinical study. Paper presented at the Engineering and Physical Sciences in Medicine, Hobart, Australia.
13. Kaur, G., **Lehmann, J.**, **Greer, P.**, and **Simpson, J.** (2017). Accuracy and clinical utility of TrueBeam Intra-fraction Motion Review (IMR). Paper presented at the Engineering and Physical Sciences in Medicine Conference (EPSM).
14. Largen, A., Nunes, J., Saint-Jalmes, H., Simon, A., Perichon, N., Barateau, A. . . . Acosta, O. (2017). Pseudo-CT generation by conditional inference random forest for MRI-based radiotherapy treatment planning. Paper presented at the 25th European Signal Processing Conference (EUSIPCO).
15. **Lehmann, J.** (2018a). Dose to water / dose to medium. Paper presented at the Transtasman Radiation Oncology Group (TROG) Annual Scientific Meeting, Technical Workshop, Hobart, Australia.
16. **Lehmann, J.** (2018b). MOSkin detectors for in vivo measurement of rectal wall dose in

prostate SBRT boosts. Paper presented at the ESTRO, Barcelona, Spain.

17. **Lehmann, J.**, Butler, D., Beveridge, T., Bailey, T., Oliver, C., Lye, J. . . . Stevenson, A. (2018). High-resolution response maps illustrating the impact of magnetic fields on dose measurement with small ion chambers. Paper presented at the 2018 MRinRT conference Sydney, Australia.
18. Lye, J., Shaw, M., Manktelow, S., Keehan, S., Alves, A., **Lehmann, J.** . . . Patel, R. (2017). International benchmarking of the ACDS IMRT audit. Paper presented at the Engineering and Physical Sciences in Medicine Conference (EPSM)
19. Miri, N., Vial, P., Begg, J., and **Greer, P.** (2017). A virtual method for remote auditing of Elekta systems. Paper presented at the Engineering and Physical Sciences in Medicine, Hobart, Australia.
20. Ostwald, T., Artschan, R., Jones, R., and **Greer, P.** (2017). Efficient EPID-based QA for SBRT and SRS treatments. Paper presented at the Medical Physics.
21. Roach, D., Jameson, M., Dowling, J., Ebert, M., **Greer, P.**, and Holloway, L. (2017a). Development and validation of a CT-MR pelvic atlas for clinical trial quality assurance. Paper presented at the Engineering and Physical Sciences in Medicine, Hobart, Australia.
22. Roach, D., Jameson, M., Dowling, J., Ebert, M., **Greer, P.**, and Holloway, L. (2017b). Development of a CT-MR pelvic atlas: clinical target and neighbouring organ painting. Paper presented at the Engineering and Physical Sciences in Medicine, Hobart, Australia.
23. Shaw, M., Lye, J., **Lehmann, J.**, Alves, A., and Geso, M. (2018). Small field and SABR dosimetry audits by the ACDS. Paper presented at the Transtasman Radiation Oncology Group 2018 Annual Scientific Meeting.
24. Shaw, M., Manktelow, S., Keehan, S., Alves, A., Supple, J., **Lehmann, J.**, and Geso, M. (2017). Small field and stereotactic audit development. Paper presented at the Engineering and Physical Sciences in Medicine Conference (EPSM).
25. Silvestre, I., Lye, J., Lee, J., Patel, R., **Lehmann, J.**, **Greer, P.** . . . Clark, C. (2018). A multi-national inter-comparison clinical trial IMRT QA exercise. Paper presented at the ESTRO Barcelona, Spain.
26. Thwaites, D., Holloway, L., Field, M., Barakat, S., Vinod, S., Delaney, G. . . . Dekker, A. (2017). Datamining and Distributed Learning in Radiation Oncology to Help Clinical Decision Support: The Australian Computer Aided Theragnostics Network for Oncology. Paper presented at the AAPM.

27. Young, T., Thwaites, D., Dowling, J., Liney, G., Rai, R., Greer, P., and Holloway, L. (2017). The Effect of MRI Sequence Variations on Substitute CT Generation for MR-Only Planning. Paper presented at the Engineering and Physical Sciences in Medicine, Hobart, Australia.

GRANTS

1. **J. Martin.** (2017). Stereotactic Ablative Radiotherapy (SABR) as a New Precision Treatment Option in Kidney Cancer. In: Cancer Australia
2. Barton, M., Vial, P., Liney, G., Kuncic, Z., Keall, P., Peng, G., Greer, P. ... Blake, S. X-ray detectors for tomorrows radiotherapy. In: Cancer Institute NSW Equipment grant.
3. **Lehmann, J., Greer, P.,** Hegi-Johnson, F., Graham, P., and Thwaites, D. (March 2018). First ever system to continuously and directly measure the internal anatomy to guide breast cancer radiation treatment under deep inspiration breath hold. In: NHMRC.
4. **Martin, J.** (2017a). A randomized study of pre-operative pelvic floor muscle exercises (PFME) compared to standard care to improve bowel function following ileostomy/colostomy reversal after diagnosis of colorectal cancer. In: HCRA Implementation Flagship.
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6. **Martin, J.** (2018). Novel Integration of New Prostate Radiation Schedules with Adjuvant Androgen Deprivation (NINJA) in: multipharma.

GENERAL MEDICINE

DEPARTMENT MEMBERS INVOLVED IN RESEARCH:

JOHN BURSTON

- A role for antimicrobial stewardship in sepsis pathways: a prospective interventional study'. **Burston J,** Adhikari S, Hayen A, Doolan H, Kelly M, Fu K, Jensen T, Konecny P. *Infection Control and Hospital Epidemiology.* 2017; 38(9):1032-1038
- 'Inclusions or bystanders? CMV PCR sensitivity and specificity in tissue samples'. **Burston J,** van Hal S, Dubedat S, Lee A. *Journal of Clinical Virology.* 2017; 90: 38-9. DOI: 10.1016/j.jcv.2017.03.008
- 'Intra-abdominal sepsis following a Papanicolaou test'. **Burston J.** *Internal Medicine Journal.* 2018; 48: 100-101. DOI: 10.1111/imj.13663

TIM WALKER

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SUSAN MILES

Susan is the clinician on the Dust Diseases Board (DDB) and has been invited to join a National Taskforce into Silicosis in the Engineered Stone Industry which is linked to Safework Australia. Susan made a presentation in State Parliament

in 2017 for the first review of the DDB arm of icare for the Thoracic Society of Australia and New Zealand (TSANZ). There is a case report in the pipeline of three cases of scleroderma linked to silicosis which will probably be ready in 2019. Susan has been on the working party to draw up a position paper for occupational asthma for the TSANZ which is nearing completion.

Susan is a coinvestigator in a trial which assesses the use of the antifibrotic Nintedanib in occupational pneumoconioses which is due to begin recruitment in mid 2019. She is a Conjoint Senior Lecturer with the School of Medicine, University of Newcastle.

MEDICAL ONCOLOGY RESEARCH (MOR) - CLINICAL TRIAL UNIT

The Medical Oncology Department has a very active Medical Oncology Research (MOR) unit which conducts 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 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, Melissa Lloyd, Louise Plowman
- Finance and Administration: Alison Leonard–England
- Ethics Specialists: Catherine Johnson and Allison Kautto
- Data Management: Jessica Aldcroft/Emily Munn and Anthony Morrison
- Laboratory Technician: Jennifer McFarlane/ Jessica Aldcroft

This has been yet another exciting and busy year for MOR Trials with new people, new trials, a new home for the unit and an international award for recruitment processes. In February, Dr Hiren Mandaliya started a two year Clinical Trial fellowship to help with an increasing number of clinical trials and trial participants. While in March, the unit relocated from the hospital to more spacious lodgings in Edith Cottage. To top the year off, the MOR team won the inaugural ASIA-Pac Site Recruitment Innovation Award in recognition of the innovative, patient-directed enrolment strategies designed and used by the unit during a recent prostate trial.

Over the past year MOR opened 14 new clinical trials to recruitment across the Hunter New England Local Health District - covering melanoma, breast, colorectal, lung and

genitourinary cancers – and as of July 2018, 27 trials were actively recruiting participants and another eight trials were pending approval to commence. These trials were a mixture of phase 1b, II and III cooperative group, pharmaceutical sponsored studies and investigator initiated studies.

Overall 245 patients were offered the opportunity to participate in a clinical trial. Of these, 114 patients elected to participate and 95 have been enrolled into a clinical trial.

To help the team manage the increasing number of trials and trial participants, MOR Trials, in collaboration with the Haematology and Radiation Oncology trial teams, has spent the last year phasing in a new clinical trial management system known as MAISI. It is hoped that MAISI, by replacing many of our outdated systems and processes, will allow us to better manage our patient and trial workloads, as well as improve other trial related processes.

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 optimise chemotherapy dosing. Its drug development program primarily targets brain and breast cancers, while its studies of clinical toxicity and drug monitoring span all tumour types.

PUBLICATIONS

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 4. **Adler KA**. Thinking Outside the Recruitment Box. 2018 Asia Pac Site Solutions Summit. Melbourne 2018
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 6. **Garg MB**, Schneider J., **Ackland,SP**, Martin, J., Galettis, P.A simple, sensitive and rapid LC-MS/MS method for the simultaneous measurement of anthracyclines, cyclophosphamide and taxanes in breast cancer patients samples. Asia-Pacific Journal of Clinical Oncology, Volume: 13 SI Supplement: 5: 20-20: PP4 Published: Nov 2017.
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 8. **Gedye C**. Convening Committee and MDT MasterClass Convenor. ANZUP 2018 ASM
 9. **Gedye C**. New Indications in GU cancers, 14 Nov 2017. COSA ASM 2017
 10. **Gedye C**. Convening Committee and Panel Chair, Diagnostic vs. clinical utility – same or different. 2017 4th Thomas Ashworth Symposium
 11. **Gedye C**. Catching Up: Opportunities and challenges for kidney cancer biomarkers, 16 July 2017. ANZUP ASM 2017
 12. **Gedye C**. Invited Plenary; How Cancer is Evolving: Challenges and Opportunities of Cancer Heterogeneity, 16 June 2017, Adelaide. 2017 Cancer Nurses Society of Australia Annual Meeting,
 13. **Lynam, J** Pancreatic Solid and Cystic Lesions – Australasian Symposium of Pancreatic Disease 2018, Brisbane QLD 2018
 14. **Lynam, J** Medical Oncology Management of Brain Tumours- Annual Hunter Brain Cancer Forum 2018, Mark Hughes Foundation and Cancer Council NSW, Newcastle NSW
 15. Anneke C. Blackburn, A.C., Theodoratos, A., Hardy, K., **Garg, M.B., Ackland, S.P**, Board, P. Dichloroacetate (DCA) decreases Dihydropyrimidine Dehydrogenase (DPD) activity in cancer patients: Potential for adverse drug interactions between Dichloroacetate and 5-Fluorouracil. ISSX 2017
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20. **Zdenkowski N** Neoadjuvant systemic therapy for breast cancer: Patient, practice and research considerations. Bangladesh Breast Cancer Conference, Dhaka, December 2017

GRANT FUNDING

1. **Ackland SP** and **Garg M.B.** (2017). Hospital Scientist Salary in Medical Oncology Research Laboratory at the Calvary Mater Newcastle Hospital. Hunter Cancer Research Alliance \$40,000
2. **Ackland SP** and **Garg M.B.** (2018). Hospital Scientist Salary in Medical Oncology Research Laboratory at the Calvary Mater Newcastle Hospital. Hunter Cancer Research Alliance \$20,000
3. **Garg MB**, **Sakoff JA** and **Ackland SP.** (2018) Essential statistics and pharmacokinetic software with required hardware for Oncology clinical research projects data analysis. CMN Coalfields Cancer Support Group Equipment Grant Scheme: \$8,227
4. James E, **Gedye C**, **Lynam J**, **Zdenkowski N**, McGarvey E, Plotnikoff R, Britton B, Nixon S, Rees M, Duncan M, Stacey F. 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. Hunter Cancer Research Alliance pilot grant: \$40,000.
5. **Gedye C** (2018) EnzAdapt: feasibility, acceptability and safety of adaptive dosing of enzalutamide in men with metastatic castrate-resistant prostate cancer, Calvary Mater Newcastle: Gedye, Mandaliya, Lynam, Mallesara, Bonaventura, Abell; Manning Base Hospital, Livshin, CelliMarchett, ANZUP Below The Belt Fund, \$50,000
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7. **Gedye C** (2017) ANZUP Cancer Trials Group/BaCT cooperative group study, Chief Principal Investigator; Phase II Sequential Treatment Trial of Single Agent Nivolumab, Then Combination Ipilimumab + Nivolumab In Metastatic or Unresectable Non-Clear Cell Renal Cell Carcinoma (ANZUP1602; CA209-718); UNISON: anzUp Nivolpi+nivo Sequential Non-clear cell; \$1,681,800, sponsor Bristol-Myers Squibb Australia.
8. **Gedye C** (2017) ANZUP Cancer Trials Group/NHMRC CTC cooperative group study, Study Chair; Denosumab and Pembrolizumab in clear cell renal carcinoma: a phase II trial (ANZUP1601); Kidney cancer Pembrolizumab And Denosumab: KeyPAD, \$2,413,500; sponsors Merck Sharpe Dohme and Amgen Australia.
9. Khasraw M, Rosenthal M, McDonald K, Ashley D (2017) NHMRC Project Grant (Associate Investigator) 2:1 Randomised Phase II Study of NivolUmab and Temozolomide vs Temozolomide in Methylated newly diagnosed Elderly Glioblastoma (NUTMEG); \$1,608,845
10. **Gilbert J**, **Garg M**, **Sakoff JA**, (2017). Coalfields Cancer Support Group, CMN Granting Scheme; Luminescence reader. \$23,000
11. **Gilbert J**, **Garg M**, **Sakoff JA.** (2017). Prostate Cancer Support Group- Luminescence reader. \$5,000
12. **Gilbert J**, **Sakoff JA**, McCluskey A. (2017). CMN Granting Scheme. Tumour reducing efficacy of novel breast cancer targeting small molecules. \$20,000

13. **Catherine Johnson**, Dr Stephen Smith, Dr Brian Draganic, Professor Jarad Martin, Judy Holland. A randomised study of pelvic floor muscle exercises compared to standard care to improve bowel function following ileostomy/colostomy reversal following a diagnosis of rectal cancer (PFME in RC). Jane Reid Harle Memorial Research Grant Scheme: \$10,000
14. **Lynam J**, Britton B, Fradgley L, Martin J, Watts G. A cross-sectional study to explore patterns of use and perceptions towards cannabis in the NSW Cancer population. Hunter Cancer Research Alliance Implementation Science Flagship Program: 2018 Demonstration Project (2018): \$30,000.
15. **Lynam J**. Clinical Cancer Research Network Data Manager. Hunter Cancer Research Alliance Infrastructure Funding (2018): \$26,152
16. **Sakoff JA**, Aldrich-Wright J, **Gilbert J**. (2018). Development of DNA intercalating platinum complexes for the treatment of cancer. CMN Granting Scheme. \$20,000
17. **Sakoff JA**, Fay M and Lynam L (2017). EphA2 as a circulating biomarker for GBM progression – a pilot study. Mark Hughes Foundation \$27,000.
18. **Sakoff JA**, **Gilbert J**, Fay M. (2017). James Lawrie Grant, CMN Granting Scheme, A novel radiation and chemotherapy combination strategy for the treatment of head and neck cancer involving the aryl hydrocarbon receptor pathway. \$25,000
19. **Sakoff JA**, **Gilbert J**, and Scarlett C. (2018). 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.
20. Lincz L, **Sakoff JA**. (2018). Coalfields Cancer Support Group. CMN Granting Scheme. Real time quantitative PCR thermocycler. \$30,000.
21. Simone M and **Sakoff JA** (2017). Priority Research Centre for Chemical Biology and Clinical Pharmacology. Project grant. Investigations of the first generation of boronated drugs in Boron Neutron Capture Therapy and synthetic modifications to a second more potent generation of broad-spectrum anticancer agents. \$10,000.
22. Bowden NA, **van der Westhuizen A**. Ramaciotti Foundation Health Investment Grant. 2016-2018 \$110,000
23. Bowden NA, **van der Westhuizen A**. Hunter Medical Research Institute Project Grant 2017-2018 \$45,000
24. **Zdenkowski N**, Fay M, Sproule V. HCRA infrastructure grant – Research sample freezer: \$10,000

PALLIATIVE CARE

RESEARCH STUDIES

1. **Breathlessness, Exertion and Morphine Sulphate Study (BEAMS) dyspnoea study**, PaCCSC
2. **MILD dyspnoea study**, PaCCSC
3. **RAPID pharmacovigilance study**, PaCCSC
4. **Prevalence of cannabis for medicinal purposes in a palliative care population**, Hayes, C, Byfieldt, N, Stabler, J A
5. **Review of Specialist Palliative Care in Residential Aged Care Facilities**, Hayes, C, Byfieldt, N, Stabler, J
6. **Consumer Feedback - Bereavement support group**, Harris, F
7. **Implementing a triage process in SPC**, Wallis J, Maher, J Compton, V, Byfieldt, N
8. **Outreach and inpatient equipment storage and cleaning area re-organisation**, Gleeson, J, Baird, E, Davis, J, Atkinson, J, Collins-Morgan, L, Bagley, B
9. **Seating options for hospice inpatients**, Davis, J, Collins-Morgan, L, Bagley, B, Gleeson, J, Atkinson, N, Baird, E
10. **ADL equipment in hospice**, Bagley, B, Davis, J, Gleeson, J, Collins-Morgan, L
11. **Pressure care equipment guidelines**, Davis, J, Gleeson, J, Atkinson, N, Collins-Morgan, L

PUBLICATIONS

1. **Clark, K., Lam, L., Talley, N.J., Watts, G., Phillips, J.L., Byfieldt, N., Currow, D.** (2018) A pragmatic comparative study of palliative care clinician's reports of the degree of shadowing visible on plain abdominal radiographs *Supportive Care in Cancer* 26 (11): 3749-3754
2. **Glare, P., Watts, G., Louw, S., Martin, P., Clark, K., Agar, M., Fazekas, B., Currow, D.** (2018) Management of anorexia in people with cancer. A randomised double blind, controlled trial of megestrol acetate, dexamethasone or placebo *Journal of Clinical Oncology* 36 (Supplement) Abstract 10020.
3. **Currow, D., Watts, G.J., Johnson, M., McDonald, C.F., Miners, J.O., Somogyi, A.A., Denehy, L., McCaffrey, N., Eckert D.J. and McCloud, P.** 2017 A pragmatic, phase III, multisite, double-blind, placebo-controlled, parallel-arm, dose increment randomised trial of regular, low-dose extended-release morphine for chronic breathlessness: Breathlessness, Exertion And Morphine Sulfate (BEAMS) study protocol *British Medical Journal* 7(7)
4. **Lucas, C. J., Patel, J., and Martin, J. H.** 2017 Predicting drug interactions in addiction treatment *Internal Medicine Journal* 47(8) 872-878
5. **Patel, J., Martin, J. H., and Lucas, C. J.** 2017 Comment on a paper by Dupouin et al. A phase III randomized controlled study on

the efficacy and improved bowel function of prolonged-release (PR) oxycodone-naloxone (up to 160/80 mg daily) versus oxycodone PR *European Journal of Pain* 21(10) 1772-1773

6. **Hourn, M.M., Quinn, R., Waller, A., Boyle, K., Jordan, L.A., Salaris, M., Byfieldt, N., Shaw, L. and Marsden, D.** 2017 Exploring current inpatient practice in transitioning people after stroke from acute to palliative care and in advance care planning: The Plan Assess Understand Survival after Stroke (PAUSe after Stroke) Project *International Journal of Stroke* 12 23
7. **Clark, K., Willis, A. and Byfieldt, N.** 2017 An Observational Study to Explore the Feasibility of Assessing Bereaved Relatives' Experiences Before and After a Quality Improvement Project to Improve Care of Dying Medical Inpatients *American Journal of Hospice and Palliative Medicine* 34(3) 263-268

PRESENTATIONS

1. **Patel, J.** Laxative use in inpatients on oxycodone/naloxone prolonged release and oxycodone prolonged release for cancer and non-cancer pain. ANZSPM Conference 2018. (Authors: Patel, J., Lucas, C., Margalit, M., Martin, J.)

CONFERENCE POSTERS

1. **Watts, G., Byfieldt N., Compton, V., Wallis, J., Maher, J., Hughes, R.** (2018) The Implementation and Evaluation of a multi-professional triaging process for referrals to a community specialist palliative care service. *BMJ International Forum for Quality and Safety in Healthcare*. Melbourne.
2. **Poon, M., Byfieldt, N., Watts, G.** (2018) Use of Prognostic tools in assessing eligibility for palliative home oxygen therapy. ANZSPM Conference, Sydney.
3. **Glare, P., Watts, G., Louw, S., Martin, P., Clark, K., Agar, M., Fazekas, B., Currow, D.** (2018) Treating Anorexia in People with Advanced Cancer. A Randomised, Double Blind, Controlled Trial of Megestrol Acetate, Dexamethasone or Placebo. *ASCO Annual Meeting*. Chicago.
4. **Hayes, C., Stabler, J., Byfieldt, N.** (2018) Exploring the use of cannabis for medicinal purposes in a palliative care population. ANZSPM conference.