

# 2016

# RBWH

Research Report

Critical Care

& Clinical

Support

Services



**Queensland**  
Government



# Critical Care and Clinical Support Services

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**Dr Mark Mattiussi**  
Executive Director  
Critical Care and Clinical Support  
Services

All world class health services have one thing in common - they recognise the vital importance of research as a critical cornerstone of clinical excellence and the RBWH Critical Care and Clinical Support Services teams continue to embody this principle with enthusiasm and pride.

The 2016 Research report showcases the depth and breadth of research integration across the clinical teams. There are senior experienced research programs with national and international partners but similarly there is a strong and visible presence of new and emerging researchers who are responding to their intrinsic curiosity by embarking on smaller scale but equally important research projects. Very importantly we see research involving and spanning the professional disciplines that provide patient care across Critical Care and Clinical Support Services.

One of the greatest challenges we face involves translating outcomes from research into changing the way we deliver care. By embedding research into normal business practice we are able to dramatically improve the implementation and translation of our research outcomes into better and more efficient care that improves patient outcomes.

We must celebrate our research activities across our clinical teams and continue to invest the resource, interest and enthusiasm that ensures RBWH continues to maintain its position as a world class health service. Critical Care and Clinical Support Services has much to be proud of.

## Department of Emergency Medicine

In 2016 the Department of Emergency Medicine engaged in a broad spectrum of research activities across our four theme areas of critical care, cardiac, trauma, and people & practices. Our researchers had an extremely productive year; having authored or co-authored an impressive number of peer-reviewed publications. The work underpinning this achievement was driven by a talented group of senior researchers and clinical leaders, supported by enthusiastic research staff and students. Our unique clinical environment and a focus on high quality research questions also resulted in successful collaborative partnerships extending across RBWH departments, and across hospitals and universities both nationally and internationally.

Our research work was presented throughout the year at conferences and symposia in Brisbane, Melbourne, Adelaide, New Zealand, Fiji, Spain, Italy and USA. Our researchers were recognised with several awards: Dr Dan Bodnar was awarded “*Best Paper*” at the 12<sup>th</sup> Annual Queensland Emergency Medicine Autumn Symposium in Brisbane; Tracey Hawkins and the CREDIT study team were awarded “*Best Poster*” presentation at the 33<sup>rd</sup> Annual Scientific Meeting of the Australasian College of Emergency Medicine in Queenstown, New Zealand; Dr Louise Cullen and co-researchers won the prestigious Ko Awatea International Excellence in Health Improvement Award at the APAC Forum in Sydney for their work on the Accelerated Chest Pain Risk Evaluation (ACRE) project; Dr Cullen also received the Metro North Hospital and Health Service Research Excellence Award, the Clinical Researcher Award from the Australian Society for Medical Research, and was part of the research team that received an “*Honourable Mention*” at the UQ-Ochsner Clinical School Annual Research Day.

As always, we greatly appreciate the financial support of our research funding partners. In 2016 we were very fortunate to be working on projects that were supported by the Emergency Medicine Foundation, The Royal Brisbane and Women’s Hospital Foundation and Queensland Health. New funding was awarded by the Emergency Medicine Foundation, The Royal Brisbane and Women’s Hospital Foundation, The Prince Charles Hospital Foundation and the National Heart Foundation.

### Supervised Post-graduate Research Students

Name (RBWH staff in bold)	Current Studies (e.g. PhD, Masters etc.)University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
<b>Julian Williams</b>	PhD, QUT (2008-2017)	Identifying risk factors for MRSA	<b>Jeffrey Lipman, Anthony Brown</b>
Wahid Allahaibi	PhD, QUT (2016-2018)	A New Approach to Optimise Hospital Emergency and Inpatient Operations	Michael Cholette, Azharul <b>Karim</b> , <b>John Burke</b>
Kazi Ahsan	PhD, QUT (2014-2017)	Lean integrated optimisation model of emergency department for improved patient flow	Azharul Karim, Gerard Fitzgerald, Michael Cholette, <b>John Burke</b> , Doug Morel
Dylan Flaws	PhD, UQ (2012-2017)	Derivation of a diagnostic decision tree for the Acute Coronary Syndrome management pathway	<b>Louise Cullen</b> , Martin Than
Ariel Ho	MPhil, UQ (2016-2017)	Examination of Troponin Testing during Implementation and Post- Implementation of Accelerated Chest Pain Assessment Strategies: a Marker of Translational Research Success	<b>Louise Cullen</b> , Jaimi Greenslade
Daniel Lancini	PhD, UQ (2016-2020)	Atrial fibrillation in hospitalised patients	<b>Louise Cullen</b> , Paul Martin
Kirsten Strudwick	PhD, UQ	Musculoskeletal Quality Indicators	Trevor Russell (UQ), Melinda Martin-Kahn (UQ), <b>Anthony Bell</b>
<b>Kimberley Ryan</b>	MN, Research (2015-2017)	The lived experience of emergency nurses caring for elderly patients dying from traumatic injuries	Leanne Jack (QUT)



## Research Positions: Coordinators, Fellow, Adjunct and Honorary Positions

Name	Type of Fellowship	Research Program	University Affiliation (years)
Anthony Bell	Associate Professor Adjunct Associate Professor	Faculty of Medicine, Southside Clinical School School of Public Health	University of Queensland (2012-current) Queensland University of Technology (2013-current)
Daniel Bodnar	Senior Lecturer	Faculty of Medicine	University of Queensland (2012-current)
Anthony Brown	Professor of Emergency Medicine Adjunct Professor	Faculty of Medicine, Discipline of Anaesthesiology and Critical Care Faculty of Public Health and Social Work	University of Queensland (2009-current) Queensland University of Technology (2009-current)
Nathan Brown	Honorary Senior Lecturer	Faculty of Medicine, Discipline of Anaesthesiology and Critical Care	University of Queensland (2016-current)
John Burke	Adjunct Associate Professor	Faculty of Public Health and Social Work	Queensland University of Technology (2016-current)
Kevin Chu	Adjunct Associate Professor Adjunct Associate Professor	Faculty of Medicine Faculty of Public Health and Social Work	University of Queensland (2011-current) Queensland University of Technology (2009-current)
Louise Cullen	Adjunct Professor Adjunct Associate Professor	Faculty of Health Faculty of Medicine	Queensland University of Technology (2016-current) University of Queensland (2015-current)
Jaimi Greenslade	Adjunct Senior Lecturer Adjunct Associate Professor	Faculty of Medicine Faculty of Public Health and Social Work	University of Queensland (2011-current) Queensland University of Technology (2012-current)
Catherine Hurn	Senior Lecturer	Faculty of Medicine	University of Queensland (2008-current)
Trent Lipp	Senior Lecturer	Faculty of Medicine	University of Queensland (2014-current)
William Lukin	Senior Lecturer	Faculty of Medicine	University of Queensland (2008-current)
Alexandra Markwell	Senior Lecturer	Faculty of Medicine	University of Queensland (2012-current)
Duncan McAuley	Senior Lecturer	Faculty of Medicine	University of Queensland (2012-current)
Philip Richardson	Senior Lecturer	Faculty of Medicine	University of Queensland (2001-current)
David Rosengren	Senior Lecturer	Faculty of Medicine	University of Queensland (2006-current)
Sean Rothwell	Senior Lecturer	Faculty of Medicine	University of Queensland (2006-current)
Frances Williamson	Senior Lecturer	Faculty of Medicine	University of Queensland (2012-current)



## Current Research Group / Department Led Research Activity

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
Louise Cullen	William Parsonage (Cardiology)	Basel Syncope Evaluation Study (Basel IX)
Louise Cullen	Jaimi Greenslade (DEM), William Parsonage (Cardiology), Adam Scott (Cardiology), Jacobus Ungerer (Pathology Queensland), Tracey Hawkins (DEM), Gerben Keijzers (GCUH), Julia Crilly (Griffith University), Nicholas Graves (QUT), Ariel Ho (UQ)	Examining translation of research into improved assessment for heart attack
Louise Cullen	Jaimi Greenslade (DEM), Julian Williams (DEM), Claire Rickard (Griffith University), Matthew Jensen (DEM), Paul Scuffham (Griffith University), Frances Kinnear (TPCH)	The cannulation rates in ED intervention trial (CREDIT)
Louise Cullen	John Fraser, Kiran Shekar, Liam Byrne, Obonyo Nchfatso, Connie Boon, Louise See Ho, Margaret Passmore, Kathryn Maitland	Too much of a good thing; does fluid resuscitation worsen septic shock?
Louise Cullen	Anthony Brown (DEM), Jaimi Greenslade (DEM), Peter O'Rourke (QUT), Kevin Chu (DEM), Xiang-Yu Hou (QUT), William Parsonage (Cardiology), Nicholas Graves (QUT), Martin Than (Christchurch Hospital, NZ)	Rapid assessment of cardiac chest pain: The Australia and New Zealand Assessment of chest Pain Rule (ANZAP rule): A prospective validation study
Gary Mitchell	Louise Cullen (DEM)	Diagnosis of acute coronary occlusion in patients with a ventricular paced rhythm (PERFECT)
Mahender Samtani	Jennifer Paratz (Physiotherapy), Shaun O'Leary (Physiotherapy), Venkat Acholi (DEM), Janelle Heine (DEM)	Comparison of two exercise approaches for the management of low back pain in the emergency department setting
Philip Richardson	Elizabeth Doran (Pharmacy), Kevin Chu (DEM), Jaimi Greenslade (DEM)	Medication & Fluid orders in the Emergency Department: Examining the incidence of error and adverse events
Alexandra Markwell	Tegwen Howell (DEM), Carol Windsor (QUT), Anthony Bell (DEM), Kevin Chu (DEM), Angela O'Malia (Social Work)	Describing the experiences of social workers in a tertiary ED
Kevin Chu	Jeremy Furyk (Townsville Hospital), Gerben Keijzers (GCUH), Carol Windsor (QUT), Rob Eley (PAH), Frances Kinnear (TPCH), Andrew Staib (PAH)	Diagnostic workup for suspected subarachnoid haemorrhage
Kevin Chu	Anthony Nguyen (Australian e-Health Research Centre, CSIRO)	Preventing missed diagnoses through automated reconciliation of ED medical records
Bill Lukin	Xiang-Yu Hou (QUT), Gerald Fitzgerald (QUT), David Green (GCUH), Alan O'Connor (DEM), Nicholas Graves (QUT), Alan Barnard (QUT), Jaimi Greenslade (DEM), Kevin Chu (DEM)	Evaluation of Hospital In Nursing Home Program in Queensland
John Burke	Gerald Fitzgerald (QUT)	Four hour rule project - validation and impact of the four hour rule in the ED: a large data linkage study

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
Julian Williams	David Paterson (Infectious Diseases Unit), Graeme Nimmo (Microbiology), Jaimi Greenslade (DEM), Katherine Doucet, Kevin Chu (DEM), Jeffrey Lipman (ICU), Anthony Brown (DEM)	Identifying risk factors for MRSA
Daniel Bodnar	Emma Bosley (QAS), Stephen Rashford (QAS), Mark Shirran (GCUH), Catherine Hurn (DEM), Matthew Meister, Glenn Ryan (PAH)	Queensland pre-hospital study identifying which trauma patients are at risk of bleeding to death
Anthony Bell	Michelle Romeo (MNHHS), Roger O’Gorman (DEM), Trudy Teasdale (GCUH), and The Australian eHealth Research Centre (CSIRO)	Reviewing equitable access to healthcare outcomes outside of hours (REACH)
Anthony Bell	John Burke (DEM), Gerald Fitzgerald (QUT), Sam Toloo (QUT), Julia Crilly (GCUH), Ged Williams (GCUH)	State-wide models of care in emergency departments (SWAMPED)
Tina Moriarty	Kevin Chu (DEM), Daniel Bodnar (DEM),	Roll overs in field triage (RIFT)
Debra Harcourt (DEM/Patient Flow Unit)	Leonie Cartlidge-Gaan (Internal Medicine), Clancy McDonald (DEM), John Burke (DEM), Anthony Nesbit (Patient Flow Unit), Amanda Dines (Executive Services)	Emergency department frequent presenters response project

## Collaborative Research Activity

Collaborative Lead Researchers (RBWH staff in bold)	Your Research Group / Department Researchers	Research Project Title
Julia Crilly (Griffith University and GCUH)	<b>David Rosengren (DEM), Sean Rothwell (DEM)</b>	Evaluating the impact of alcohol on emergency department presentations (ETOH)
Drew Richardson (The Canberra Hospital)	<b>David Rosengren (DEM)</b>	Australasian College of Emergency Medicine Alcohol Harm in Emergency Departments (AHED) Snapshot
James Winearls (GCUH)	<b>Catherine Hurn (DEM), Anthony Holley (Trauma Services)</b>	Fibrinogen early in severe trauma study (FEISTY)
Andrea Driscoll (Deakin University)	<b>Louise Cullen (DEM)</b>	Redesigning systems of care for heart failure patients to improve outcomes
William Crawford (TPCH)	<b>Louise Cullen (DEM)</b>	Impact of fluid volume resuscitation on nitric oxide-induced oxidative stress and cardiac dysfunction in an ovine septic shock model
Christopher Reid (Curtin University of Technology, WA)	<b>Louise Cullen (DEM)</b>	Centre for Research Excellence in Cardiovascular Outcomes Improvement
Kylie Baker (Ipswich Hospital)	<b>Louise Cullen (DEM)</b>	Breathe easy early study (BEES)
John Fraser (TPCH)	<b>Louise Cullen (DEM)</b>	Cardiovascular haemodynamics in an ovine model of brain stem death
Paul Fulbrook (TPCH)	<b>Fiona Coyer (Nursing Research and Development Unit), Rhys Higgo (DEM)</b>	Pressure injuries in the emergency department
Colin Page (PAH)	<b>Frances Williamson (DEM)</b>	An audit of a change in clinical practice for Queensland Ambulance Service from midazolam to droperidol for prehospital acute behavioural disturbance

Collaborative Lead Researchers (RBWH staff in bold)	Your Research Group / Department Researchers	Research Project Title
Glenn Ryan (PAH)	<b>Frances Williamson (DEM)</b>	Potential of resuscitative balloon occlusion of the aorta (REBOA) for non-compressible torso haemorrhage
Frances Kinnear (TPCH)	<b>Kevin Chu (DEM)</b>	A randomised controlled trial of interventional versus conservative treatment of primary spontaneous pneumothorax
Kylie Baker (Ipswich Hospital)	<b>Kevin Chu (DEM)</b>	Multicentre randomised controlled trial incorporating bedside lung ultrasound into the diagnosis of congestive cardiac failure in breathless older patients
Stephen Rashford (QAS)	<b>Daniel Bodnar (DEM)</b>	A prospective blinded evaluation of the sensitivity and specificity of pre-hospital Focussed Abdominal Sonogram for Trauma (FAST)
Bradley Partridge (Caboolture Hospital)	<b>Anthony Bell (DEM)</b>	Survey of occupational violence in the emergency department
David Mountain (Sir Charles Gairdner Hospital, Perth)	<b>Kevin Chu (DEM)</b>	RESPECT-ED: Rates of pulmonary emboli (PE) and sub-segmental PE with modern computed tomographic pulmonary angiograms in emergency departments: a multi-centre observational study
Simon Brown (Harry Perkins Institute of Medical Research)	<b>Kevin Chu (DEM)</b>	Primary spontaneous pneumothorax (PSP) study
Peter Jones (Auckland District Health)	<b>Anthony Bell (DEM)</b>	Primary spontaneous pneumothorax (PSP) study

## Research Awards and Achievements

Recipient	Award	Event
<b>Dan Bodnar</b>	Best Poster	12th Annual Queensland Emergency Medicine Autumn Symposium in Brisbane, May 2016
<b>Hawkins T, Greenslade J</b> , Van Hise C, Williams J, Berndt S, <b>Dalton E</b> , Cho E, Hills A, Williamson E, Flannery M, Jensen M, Collins R, Wynne P, Rickard C, <b>Cullen L</b> .	Best Poster (for "Cannulation rates in the emergency department intervention trial")	33rd Annual Scientific Meeting of the Australasian College of Emergency Medicine in Queenstown, New Zealand, November 2016
<b>Louise Cullen</b> and co-researchers	Ko Awatea International Excellence in Health Improvement Award (for the Accelerated Chest Pain Risk Evaluation project)	APAC Forum in Sydney, September 2016
<b>Louise Cullen</b>	Research Excellence Award	Metro North Hospital and Health Service
<b>Louise Cullen</b>	Clinical Researcher Award	Australian Society for Medical Research, ASMR Medical Research Week, June 2016
Iliceto A, Berndt SL, <b>Greenslade JH, Parsonage WA, Hammett C</b> , Than M, <b>Hawkins T</b> , Parker K, O'Kane S, <b>Cullen L</b>	Honorable Mention	UQ-Ochsner Clinical School Annual Research Day in New Orleans, May 2016

## Research Grants – Awarded

Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
<b>Crawford W, Cullen L</b>	DEM	Impact of fluid volume resuscitation on nitric oxide-induced oxidative stress and cardiac dysfunction in an ovine septic shock model	The Prince Charles Hospital Foundation	\$9,994.00	<b>\$9,994.00</b> (2016)

Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
Driscoll A, Tonkin A, Hare D, Prior D, <b>Cullen L</b> , Albert N, et al.	DEM	Redesigning systems of care for heart failure patients to improve outcomes	National Heart Foundation	\$0	\$150,000.00 (2016 – 18)
<b>Cullen L</b> , Fraser J, Shekar K, Byrne L, Nchafastso O, Boone C, et al.	DEM	Too much of a good thing; Does fluid resuscitation worsen septic shock?	Emergency Medicine Foundation	\$10,767.00	\$77,233.00 (2016 – 17)
<b>Cullen L</b> , Graves N	DEM	The impact of ImpACT: a protocol to improve emergency chest pain assessment	AusHSI	\$0	\$110,000.00 (2016 – 17)
<b>Mitchell G, Cullen L, Smith S, Dodd K</b>	DEM	Paced Electrocardiogram Requiring Fast Emergent Coronary Therapy (PERFECT) Study	Emergency Medicine Foundation	\$16,866.00	\$16,866.00 (2016)
<b>Savage R</b> , Kline T, <b>Lock C, Pattullo C, Bell AJ.</b>	DEM, Pharmacy	Emergency Department Opioid Prescribing Intervention: Optimising Discharge (ED OPIOID) Study: An evaluation of the prescribing patterns and level of communication for oxycodone on discharge from RBWH ED	Emergency Medicine Foundation	\$0	\$34,955.00 (2017-2018)
Chew D, Briffa T, <b>Cullen L</b> , Quinn S, Karnon J	DEM	Improving rapid decision-making in the face of uncertainty: a randomised trial of a 1-hour troponin protocol in suspected acute coronary syndromes	NHMRC	\$0	\$1,095,320.00, (2017-20)
Briffa T, <b>Cullen L</b> , Chew D, Knuiman MW, Fatovich D, Hickman PE, et al.	DEM	Is highly-sensitive troponin testing advancing clinical practice, improving outcomes and cost-effective in the investigation and management of chest pain in the Emergency Department?	NHMRC	\$0	\$1,193,966.00, (2017-20)
<b>Lancini D, Cullen L, Martin P, Prasad S, Greenslade J</b>	DEM, Cardiology	Atrial fibrillation in the emergency chest pain presentation	RBWH Foundation	\$15,335.88	\$15,335.88 (2017)
Crilly J, <b>Rosengren D</b> , Green D, Furyk J, <b>Rothwell S.</b>	DEM	Evaluating the impact of alcohol on emergency department presentations (ETOH) awarded June 2016 (\$359,758).	Queensland Health	\$168,479	\$359,758 (2016-2017)

## 2016 Research Publications

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal	Aldous S, Richards AM, <b>Cullen L</b> , Pickering JW, Than M. The incremental value of stress testing in patients with acute chest pain beyond serial cardiac troponin testing. Emerg Med J. 2016;33(5):319-24.
Journal	Aroney CN, <b>Cullen L</b> . Appropriate use of serum troponin testing in general practice: a narrative review. Med J Aust. 2016;205(2):91-4.
Journal	<b>Bell A</b> , McDonald F, Hobson T. The Ethical Imperative to Move to a Seven-Day Care Model. J Bioeth Inq. 2016;13(2):251-60.
Journal	Boeddinghaus J, Reichlin T, <b>Cullen L, Greenslade JH, Parsonage WA, Hammett C</b> , et al. Two-Hour Algorithm for Triage toward Rule-Out and Rule-In of Acute Myocardial Infarction by Use of High-Sensitivity Cardiac Troponin I. Clin Chem. 2016;62(3):494-504. Brown AFT, Nandurkar H. Idarucizumab. An intravenous bolus reversal agent for dabigatran. Med Today. 2016;17(11):63-5.



Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal	Carlton E, <b>Greenslade J</b> , <b>Cullen L</b> , Body R, Than M, Pickering JW, Aldous S, Carley S, Hammett C, Kendall, J, Keevil B, Lord S, <b>Parsonage W</b> , Greaves K. Evaluation of High-Sensitivity Cardiac Troponin I Levels in Patients With Suspected Acute Coronary Syndrome. <i>JAMA Cardiol.</i> 2016;1(4):405-12.
Journal	Cheng Q, <b>Greenslade JH</b> , <b>Parsonage WA</b> , Barnett AG, Merollini K, Graves N, et al. Change to costs and lengths of stay in the emergency department and the Brisbane protocol: an observational study. <i>BMJ open.</i> 2016;6(2):e009746.
Journal	Chew DP, Scott IA, <b>Cullen L</b> , French JK, Briffa TG, Tideman PA, et al. National Heart Foundation of Australia & Cardiac Society of Australia and New Zealand: Australian Clinical Guidelines for the Management of Acute Coronary Syndromes 2016. <i>Heart Lung Circ.</i> 2016;25(9):895-951.
Journal	Chew DP, Scott IA, <b>Cullen L</b> , French JK, Briffa TG, Tideman PA, et al. National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand: Australian clinical guidelines for the management of acute coronary syndromes 2016. <i>Med J Aust.</i> 2016;205(3):128-33.
Journal	Chuang A, Hancock DG, Horsfall M, Alhammad NJ, Zhou J, <b>Cullen L</b> , et al. The predictive value of high sensitivity-troponin velocity within the first 6h of presentation for cardiac outcomes regardless of acute coronary syndrome diagnosis. <i>Int J Cardiol.</i> 2016;204:106-11.
Journal	<b>Cullen L</b> , <b>Greenslade JH</b> , Carlton EW, Than M, Pickering JW, Ho A, et al. Sex-specific versus overall cut points for a high sensitivity troponin I assay in predicting 1-year outcomes in emergency patients presenting with chest pain. <i>Heart (British Cardiac Society).</i> 2016;102(2):120-6.
Journal	<b>Cullen L</b> , <b>Greenslade JH</b> , Menzies L, Leong A, Than M, Pemberton C, et al. Time to presentation and 12-month health outcomes in patients presenting to the emergency department with symptoms of possible acute coronary syndrome. <i>Emerg Med J.</i> 2016;33(6):390-95.
Journal	Fan L, Hou XY, Zhao J, Sun J, Dingle K, <b>Purtill R</b> , <b>Tapp S</b> , <b>Lukin B</b> . Hospital in the Nursing Home program reduces emergency department presentations and hospital admissions from residential aged care facilities in Queensland, Australia: a quasi-experimental study. <i>BMC Health Serv Res.</i> 2016;16:46.
Journal	Ferguson I, <b>Bell A</b> , Treston G, New L, Ding M, Holdgate A. Propofol or Ketofol for Procedural Sedation and Analgesia in Emergency Medicine-The POKER Study: A Randomized Double-Blind Clinical Trial. <i>Ann Emerg Med.</i> 2016;68(5):574-82.
Journal	Flaws D, Than M, Scheuermeyer FX, Christenson J, Boychuk B, Greenslade JH, Aldous S, <b>Hammett CJ</b> , <b>Parsonage WA</b> , Deely JM, Pickering JW, Cullen L. External validation of the emergency department assessment of chest pain score accelerated diagnostic pathway (EDACS-ADP). <i>Emerg Med J.</i> 2016;33(9):618-25.
Journal	Furyk JS, <b>Chu K</b> , Banks C, <b>Greenslade J</b> , Keijzers G, Thom O, et al. Distal Ureteric Stones and Tamsulosin: A Double-Blind, Placebo-Controlled, Randomized, Multicenter Trial. <i>Ann Emerg Med.</i> 2016;67(1):86-95.e2.
Journal	<b>Greenslade JH</b> , Beamish D, <b>Parsonage W</b> , <b>Hawkins T</b> , <b>Schluter J</b> , <b>Dalton E</b> , <b>Parker K</b> , Than M, <b>Hammett C</b> , Lamanna A, <b>Cullen L</b> . Relationship Between Physiological Parameters and Acute Coronary Syndrome in Patients Presenting to the Emergency Department With Undifferentiated Chest Pain. <i>J Cardiovasc Nurs.</i> 2016;31(3):267-73.
Journal	<b>Greenslade JH</b> , <b>Parsonage W</b> , Than M, Scott A, Aldous S, Pickering JW, <b>Hammett CJ</b> , <b>Cullen L</b> . A Clinical Decision Rule to Identify Emergency Department Patients at Low Risk for Acute Coronary Syndrome Who Do Not Need Objective Coronary Artery Disease Testing: The No Objective Testing Rule. <i>Ann Emerg Med.</i> 2016;67(4):478-89.e2.
Journal	Hyun KK, Essue BM, Woodward M, Jan S, Brieger D, Chew D, Nallaiah K, Howell T, et al. The household economic burden for acute coronary syndrome survivors in Australia. <i>BMC health services research.</i> 2016;16(1):636.
Journal	Iliceto A, Berndt SL, <b>Greenslade JH</b> , <b>Parsonage WA</b> , Hammett C, Than M, <b>Hawkins T</b> , <b>Parker K</b> , O'Kane S, Cullen L. Agreement Between Patient-reported and Cardiology-adjudicated Medical History in Patients With Possible Ischemic Chest Pain: An Observational Study. <i>Crit Pathw Cardiol.</i> 2016;15(3):121-5.
Journal	Jin H, <b>Greenslade JH</b> , <b>Parsonage WA</b> , <b>Hawkins T</b> , Than M, <b>Cullen L</b> . Does a uric acid level provide additional risk stratification information in emergency patients with symptoms of possible acute coronary syndrome? <i>Crit Pathw Cardiol.</i> 2016;15(4):169-73.
Journal	Johnston A, Abraham L, <b>Greenslade J</b> , Thom O, Carlstrom E, Wallis M, et al. Review article: Staff perception of the emergency department working environment: Integrative review of the literature. <i>Emerg Med Australas.</i> 2016;28(1):7-26.
Journal	<b>Lukin B</b> , Fan LJ, Zhao JZ, Sun JD, Dingle K, <b>Purtill R</b> , <b>Tapp S</b> , Hou X. Emergency department use among patients from residential aged care facilities under a Hospital in the Nursing Home scheme in public hospitals in Queensland Australia. <i>World J Emerg Med.</i> 2016;7(3):183-90.
Journal	Martin SP, <b>Chu KH</b> , <b>Mahmoud I</b> , <b>Greenslade JH</b> , <b>Brown AF</b> . Double-dorsal versus single-volar digital subcutaneous anaesthetic injection for finger injuries in the emergency department: A randomised controlled trial. <i>Emerg Med Australas.</i> 2016;28(2):193-8.
Journal	Martin-Sanchez FJ, Christ M, Miro O, Peacock WF, McMurray JJ, Bueno H, Maisel AS, <b>Cullen L</b> , et al. Practical approach on frail older patients attended for acute heart failure. <i>Int J Cardiol.</i> 2016;222:62-71.
Journal	Meek R, Braitberg G, <b>Cullen L</b> , Than M, Graudins A, Glynn D. Outcome at 30 days for low-risk chest pain patients assessed using an accelerated diagnostic pathway in the emergency department. <i>Emerg Med Australas.</i> 2016;28(3):279-86.

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal	Neumann JT, Sorensen NA, Schwemer T, Ojeda F, Bourry R, Sciacca V, Schaefer, S. Waldeyer C, Sinning C, Renne T, Than, M, <b>Parsonage W</b> , Wildi K, Makarova N, Schnabel RB, Landmesser U, Mueller C, <b>Cullen L</b> , <b>Greenslade J</b> , Zeller T, Blankenberg, S, Karakas M, Westermann D. Diagnosis of Myocardial Infarction Using a High-Sensitivity Troponin I 1-Hour Algorithm. JAMA Cardiol. 2016;1(4):397-404
Journal	<b>Parsonage WA</b> , Mueller C, <b>Greenslade JH</b> , Wildi K, Pickering J, Than M, Aldous S, Boeddinghaus J, <b>Hammett CJ</b> , <b>Hawkins T</b> , Nestelberger T, Reichlin T, Reidt S, Rubin Gimenez M, Tate JR, Twerenbold R, Ungerer JP, <b>Cullen L</b> . Validation of NICE diagnostic guidance for rule out of myocardial infarction using high-sensitivity troponin tests. Heart (British Cardiac Society). 2016;102(16):1279-86.
Journal	Pickering JW, <b>Greenslade JH</b> , <b>Cullen L</b> , <b>Flaws D</b> , <b>Parsonage W</b> , Aldous S, et al. Assessment of the European Society of Cardiology 0 Hour/1 Hour Algorithm to Rule Out and Rule In Acute Myocardial Infarction. Circulation. 2016;134(20):1532-41.
Journal	Pickering JW, <b>Greenslade JH</b> , <b>Cullen L</b> , <b>Flaws D</b> , <b>Parsonage W</b> , George P, et al. Validation of presentation and 3 h high-sensitivity troponin to rule-in and rule-out acute myocardial infarction. Heart (British Cardiac Society). 2016;102(16):1270-8.
Journal	<b>Richardson PG</b> , <b>Greenslade J</b> , Isoardi J, Davey M, Gillett M, Tucker A, et al. End-of-life issues: Withdrawal and withholding of life-sustaining healthcare in the emergency department: A comparison between emergency physicians and emergency registrars: A sub-study. Emerg Med Australas. 2016;28(6):684-90.
Journal	<b>Richardson PG</b> , <b>Widdecombe N</b> , <b>Mahmoud I</b> . End-of-Life-Issues: Withdrawal and/or Withholding of Life Sustaining Health Care: A Comparison between Emergency Physicians and Intensive Care Specialists. J Emerg Med Int Care. 2016;2(2):111.
Journal	<b>Ryan K</b> , <b>Greenslade J</b> , <b>Dalton E</b> , <b>Chu K</b> , <b>Brown AF</b> , <b>Cullen L</b> . Factors associated with triage assignment of emergency department patients ultimately diagnosed with acute myocardial infarction. Aust Crit Care. 2016;29(1):23-6.
Journal	Staib A, Sullivan C, Griffin B, <b>Bell A</b> , Scott I. Report on the 4-h rule and National Emergency Access Target (NEAT) in Australia: time to review. Aust Health Rev. 2016;40(3):319-23.
Journal	Than MP, Pickering JW, Aldous SJ, <b>Cullen L</b> , Frampton CM, Peacock WF, et al. Effectiveness of EDACS Versus ADAPT Accelerated Diagnostic Pathways for Chest Pain: A Pragmatic Randomized Controlled Trial Embedded Within Practice. Ann Emerg Med. 2016;68(1):93-102.e1
Journal	<b>Williams JM</b> , <b>Greenslade JH</b> , <b>Chu K</b> , <b>Brown AF</b> , <b>Lipman J</b> . Severity Scores in Emergency Department Patients With Presumed Infection: A Prospective Validation Study. Crit Care Med. 2016;44(3):539-47.
Journal	Young JM, Pickering JW, George PM, Aldous SJ, Wallace J, Frampton CM, Troughton RW, Richards MA, <b>Greenslade JH</b> , <b>Cullen L</b> , Than MP. Heart Fatty Acid Binding Protein and cardiac troponin: development of an optimal rule-out strategy for acute myocardial infarction. BMC Emerg Med. 2016;16(1):34.
Journal	<b>Skoien W</b> , Page K, <b>Parsonage W</b> , <b>Ashover S</b> , <b>Milburn T</b> , <b>Cullen L</b> . Use of the Theoretical Domains Framework to evaluate factors driving successful implementation of the Accelerated Chest pain Risk Evaluation (ACRE) project. Implementation Science. 2016;11:136.
Journal	Mountain D, Keijzers G, <b>Chu K</b> , Joseph A, Read C, Blecher G, et al. RESPECT-ED: Rates of Pulmonary Emboli (PE) and Sub-Segmental PE with Modern Computed Tomographic Pulmonary Angiograms in Emergency Departments: A Multi-Center Observational Study Finds Significant Yield Variation, Uncorrelated with Use or Small PE Rates. PLoS One. 2016;11(12):e0166483.
Journal	<b>Brown AFT</b> , <b>Zia M</b> , <b>Symons P</b> , <b>Moore N</b> . You two - there must be some mistake! Emerg Med Australas. 2016;28(6):758
Journal	Barnard A, Hou XY, <b>Lukin B</b> . Director of nursing experiences of a hospital in the nursing home program in South East Queensland. Collegian. 2016;23(4):341-8. Douglas C, <b>Lukin B</b> . My Life-My Death. Narrat Inq Bioeth. 2016;6(2):77-8.
Journal	Sullivan C, Staib A, Khanna S, Good NM, Boyle J, Cattell R, Heiniger L, Griffin BR, <b>Bell AJ</b> , et al. The National Emergency Access Target (NEAT) and the 4-hour rule: time to review the target. Med J Aust. 2016;204(9):354.

## 2016 Conference Presentations – Invited Speaker, Oral and Poster

Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Poster	<b>Bodnar D</b> , Bosley E, Rashford S. The introduction of a pre-hospital intranasal fentanyl drug therapy protocol increases the proportion of children receiving opioid analgesia for traumatic injuries. 12th Annual Queensland Emergency Medicine Autumn Symposium; Brisbane, Australia. May, 2016
Poster	<b>Bodnar D</b> , Rashford S, <b>Handy M</b> , Bosley E. Trauma ultrasound in the pre-hospital environment (TUPHEN Study). 12 <sup>th</sup> Annual Queensland Emergency Medicine Autumn Symposium; Brisbane, Australia. May, 2016

Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Poster	<b>Coulthard LG, Hewson A, Symons PE, Hamilton A, Wall D, Lipp T.</b> Identifying Trauma Patients at Risk of Missed Injury in the Emergency Department. Australasian College for Emergency Medicine 33rd Annual Scientific Meeting; Queenstown, New Zealand. 20-24 November, 2016
Poster	<b>Hawkins T, Greenslade J, Van Hise C, Williams J, Berndt SL, Dalton E, Cho E, Hills A, Williamson E, Flannery M., Jensen M, Collins R, Wynne P, Rickard C, Cullen L.</b> Cannulation rates in the emergency department intervention trial (CREDIT). Australasian College for Emergency Medicine 33rd Annual Scientific Meeting; Queenstown, New Zealand. 20-24 November, 2016
Poster	<b>Hewson A, Coulthard LG, Symons PE, Hamilton A, Wall D, Lipp T.</b> Emergency Trauma Clinical Decisions in Imaging Pathways. Australasian College for Emergency Medicine 33rd Annual Scientific Meeting; Queenstown, New Zealand. 20-24 November, 2016
Poster	Iliceto A, Berndt SL, <b>Greenslade JH, Parsonage WA, Hammett C,</b> Than M, <b>Hawkins T, Parker K,</b> O'Kane S, <b>Cullen L.</b> Agreement Between Patient-reported and Cardiology-adjudicated Medical History in Patients With Possible Ischemic Chest Pain: An Observational Study. Ochsner Clinical School 13th Annual Research Day; New Orleans, USA. 17 May, 2016
Poster	<b>Milburn T, Ashover S,</b> Skoien W, <b>Parsonage W, Greenslade J,</b> Bright S, <b>Cullen L.</b> Economic Impact of the Accelerated Chest Pain Risk Evaluation (ACRE) Project - A Large Scale Implementation of the ADAPT Accelerated Diagnostic Protocol into Clinical Practice. Cardiac Society of Australia and New Zealand 64th Annual Scientific Meeting and the International Society for Heart Research Australasian Section Annual Scientific Meeting; Adelaide, Australia. 4-7 August, 2016
Poster	Neumann JT, Sorensen N, Schwemer T, Ojeda F, Keller T, Renne T, Than M, <b>Parsonage W, Schnabel R, Cullen L, Greenslade J,</b> et al. Rapid measurement of a single troponin I combined with negative ECG allow accurate ruleout of NSTEMI in patients with suspected AMI. European Society of Cardiology Congress; Rome, Italy. 27-31 August, 2016
Poster	Skoien W, <b>Ashover S, Milburn T,</b> Page K, <b>Cullen L, Parsonage W.</b> Research Translation: Implementation Evaluation of the Queensland Accelerated Chest Pain Risk Evaluation (ACRE) Project. Cardiac Society of Australia and New Zealand 64th Annual Scientific Meeting and the International Society for Heart Research Australasian Section Annual Scientific Meeting; Adelaide, Australia. 4-7 August, 2016
Poster	<b>Brown AFT.</b> How to get published. Building your medical career through research: doctors in training, AMA Queensland; Brisbane, Australia. March, 2016
Poster	<b>Brown AFT.</b> Unexpected alternate emergency department diagnoses in two patients with HAE with normal C1INH (HAE type III). 2016 Global Forum for Hereditary Angiodema; Warsaw, Poland. November, 2016
Poster	<b>Holley A, Brown AFT.</b> Trauma Scenarios - Small group, all-day workshop. Current Concepts in Critical Care Course; RBWH Brisbane, Australia. December, 2016
Oral	<b>Lancini D, Martin P, Cullen L, Greenslade J, Hammett C, Prasad S,</b> Than M, Parsonage W. Prognostic impact of atrial fibrillation in the emergency chest pain presentation. Cardiac Society of Australia & New Zealand ASM; Adelaide. 4-7 August, 2016
Oral	<b>Milburn T, Ashover S,</b> Skoien W, <b>Cullen L, Greenslade J, Parsonage W.</b> A large scale implementation of the ADAPT Accelerated Diagnostic Protocol into clinical practice in Queensland: Impact on hospital length of stay and admission rates for possible cardiac chest pain. Cardiac Society of Australia and New Zealand 64th Annual Scientific Meeting and the International Society for Heart Research Australasian Section Annual Scientific Meeting; Adelaide, Australia. 4-7 August, 2016
Oral	Neumann JT, Sorensen NA, Ojeda F, Schwemer T, Keller T, Renne T, Landmesser U, Clemmensen P, Schnabel R, Zeller T, Karakas M, Than M, <b>Parsonage W, Greenslade J, Cullen L,</b> Blankenberg S, Westermann D. Immediate Rule-out of Acute Myocardial Infarction Using Electrocardiogram and Baseline High-sensitivity Troponin I. European Society of Cardiology Congress; Rome, Italy. 27-31 August, 2016
Oral	<b>Chu K</b> (presented by <b>Moriarty S</b> ), <b>Howell T,</b> Keijzers G, Furyk J, Eley R, Kinnear F, et al. Characteristics and diagnosis of patients representing to the emergency department with a headache. Australasian College for Emergency Medicine 33rd Annual Scientific Meeting; Queenstown, New Zealand. 20-24 November, 2016
Oral	<b>Cullen L.</b> Are we overdiagnosing myocardial infarction? Preventing Overdiagnosis; Barcelona, Spain. 20-22 September, 2016
Oral	<b>Brown AFT.</b> Anaphylaxis and angioedema: An update. 12th Annual Queensland Emergency Medicine Autumn Symposium; Brisbane, Australia. May, 2016
Oral	<b>Brown AFT,</b> Burkett E, Tilleard J, Friestlich H, Furyk J, Banks C, et al. Evidence and Eminence: Panel Discussion of the latest literature. 12th Annual Queensland Emergency Medicine Autumn Symposium; Brisbane, Australia. May, 2016
Invited	<b>Lukin B.</b> End of life care conversations. Nurses in Management - Aged Care (NIMAC) Conference; Benowa, Queensland. 1-3 June, 2016 (Invited)
Invited	<b>Lukin B.</b> Advance care planning. Advance Care Planning National Forum; Auckland, New Zealand. 28-29 November, 2016 (Invited)
Invited	<b>Lukin B.</b> Aged care to ED: what are we missing? End Of Life Care Improvement Group Workshop The Health Roundtable; Sydney, Australia. 6-7 April, 2016 (Invited)



Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Invited	<b>Lukin B.</b> Communication and palliation in the ED. Integrated Emergency Care for Older Persons Summit; Melbourne, Australia. 26-28 October, 2016 (Invited)
Invited	<b>Lukin B.</b> Palliative Care in the Emergency Department. 12th Annual Queensland Emergency Medicine Autumn Symposium; Brisbane, Australia. May, 2016 (Invited)
Invited	<b>Cullen L.</b> National Heart Foundation of Australia (NHFA) and Cardiac Society of Australia and New Zealand (CSANZ): Australian clinical guidelines for the management of acute coronary syndromes. Australasian College for Emergency Medicine 33 <sup>rd</sup> Annual Scientific Meeting; Queenstown, New Zealand. 20-24 November, 2016 (Invited)
Invited	<b>Cullen L.</b> Troponins and rule out in 2016 (Masterclass). Emergency Medicine Core Knowledge (EMCORE) conference; Fiji. 27-29 September, 2016 (Invited)
Invited	<b>Cullen L.</b> Troponins and rapid rule out. Emergency Medicine Core Knowledge (EMCORE) conference; Melbourne, Australia. 4-5 June, 2016 (Invited)
Invited	<b>Cullen L.</b> One arrhythmia you must know. Emergency Medicine Core Knowledge (EMCORE) conference; Melbourne, Australia. 4-5 June, 2016 (Invited)

## Research Publications / Presentations Summary Table

Research Group / Department	Publications		Presentations National and International	
	Journal Articles	Books and Chapters	Oral	Poster
<b>Radiation Oncology</b>	43	5	17	12

There were an additional 14 papers accepted for publication in 2016 (online ahead of print) that are not reported in this list. These will be reported for 2017, as they become published in print.



## Department of Hyperbaric Medicine Services

The hyperbaric unit at the RBWH is currently involved in four active projects, two in collaboration with QIMR and one in collaboration with eight other facilities across Australia and New Zealand.

The current areas of research include the use of hyperbaric oxygen therapy (HBOT) in patients with xerostomia secondary to radiation therapy (currently being written). The use of hyperbaric oxygen therapy as an adjunct in the treatment of venous leg ulcers (a double blinded RCT, submitted for publication). Transcutaneous oximetry measurements of the leg: comparing different measuring equipment and establishing values in healthy young adults (submitted awaiting publication) and the effect of HBOT on genomics of oral flora in patients with xerostomia (currently being written in collaboration with QIMR and funded by an ANZCA Project Grant).

In addition we have been studying the incidence of central nervous system oxygen toxicity (CNSOT) between units who utilise different treatment tables at 14m to avoid CNSOT (quality assurance study with QIMR, data being analysed at present).

The use of HBOT in idiopathic sudden sensorineural hearing loss (ISSHL) is another important area of research we are leading. At present we are designing a study for a multicentre randomised control trial after completing and publishing a pilot study using retrospective outcome data in 2016. The RBWH treats more patients with ISSHL than any other facility across NZ or Australia due to the referral practices of the ENT surgeons. The variations in practise across Australia and New Zealand reflect the poor evidence base for its use. However there is increasing evidence that HBOT is an effective treatment and both the US and European professional societies have added ISSHL to the indications list for HBOT. Our pilot study, published in Sept 2016 added to this research, however there are presently no prospective RCTs to support its use and we wish to address this inconsistency to approach nationwide based on best evidence.

Hearing loss is a devastating disease which has significant impact on the quality of a patient's life. The therapeutic temporal window is narrow, meaning many patients are referred too late for intervention to be successful. It is currently treated with steroids alone (despite poor evidence for steroids) and HBOT often not considered despite the increase in published literature. HBOT is unfunded as a therapy due to the lack of robust RCTs which impacts on availability to patients. The pilot study we published helps increase the argument for high quality trials in this area.

The results from the double blinded RCT indicate a statistical and clinically significant algorithm for the treatment of chronic (> 3 months) venous leg ulcers which demonstrate periwound hypoxia. The intervention group demonstrated a 95% reduction in wound size compared with 54% reduction in the control group ( $p=0.05$ ). HBO2 can improve refractory healing in venous leg ulcers, however patient selection is important. Prior to use of adjunct treatments such as HBO2, patients with refractory leg ulcers need to establish their response to evidence-based treatment. In this study, HBO2 as an adjunct treatment for patients not responding to evidence-based care returned indolent venous leg ulcers to a healing trajectory.

Transcutaneous oxygen measurement (TCOM) provides a direct measure of the amount of oxygen diffusing through the skin to the probe surface and an indirect measure of the microvasculature beneath the probe. A common definition of normoxia is defined as a TCOM value greater than 40mm Hg. The literature describes variation around this figure and variation between models of equipment. In this study, in healthy young volunteers, lower limb TCOM measurements using different Radiometer TCOM machines are comparable. Normal lower limb TCOM values were greater than 40 mmHg, the current definition of hypoxia, and therefore provide support for the ongoing use of this definition.

## Current Research Group / Department Led Research Activity

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
<b>Susannah Sherlock (Hyperbaric Med)</b>	Alexis Tabah (Redcliffe ICU) Mandy Way (QIMR Berghofer Biostatistics)	Audit of practise of Australian hyperbaric units in prevention of central nervous system oxygen toxicity.

## Collaborative Research Activity

Collaborative Lead Researchers (RBWH staff in bold)	Your Research Group / Department Researchers	Research Project Title
<b>Susannah Sherlock (Hyperbaric Med)</b>	David Reid (QIMR Berghofer)	Effect of Hyperbaric on xerostomia trial (HOTRIX): effect on genomics of oral micro flora.

## 2016 Research Publications

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal Article	Hyperbaric oxygen therapy in the treatment of sudden sensorineural hearing loss: a retrospective analysis of outcomes. <b>Sherlock S, Thistlethwaite K</b> , Khatun M, Perry C, <b>Tabah A</b> . Diving Hyperb Med. 2016 Sep;46(3):160-165.
Journal Article	Inappropriate care in medicine. <b>Sherlock S</b> . Med J Aust. 2016 Feb 1;204(2):70-70e1.

## 2016 Conference Presentations – Invited Speaker, Oral and Poster

Type (Oral / Poster / Invited)	Publication information (RBWH staff in bold)
Invited Speaker	<b>S Sherlock</b> Inappropriate care: Analysis of the Grattan Institute report. Australian Orthopaedic Assoc (QLD branch) ASM Gold Coast April 2016
Oral speaker	<b>S Sherlock</b> Hyperbaric, Ethics and evidence based medicine. ANZCA ASM Auckland NZ May 2016
Oral speaker	<b>S Sherlock</b> Ethics and Research SPUMS ASM Bali May 2016
Oral speaker	<b>S Sherlock</b> Brisbane Idiopathic sudden sensorineural hearing loss outcomes at RBWH. ENT Assoc Journal Club April 2016
Invited Speaker	<b>K Thistlethwaite</b> Chronic non healing wounds, repetitive ischaemic reperfusion injury and hyperbaric oxygen therapy. Mechanistic influences. National HBO conference in China 22nd – 24th Oct 2016.
Invited Speaker	<b>K Thistlethwaite</b> Effectiveness of Hyperbaric Oxygen Therapy for management of Chronic Venous Leg Ulcers – A multi-centred double blinded, randomised, control trial. National HBO conference in China 22nd – 24th Oct 2016.
Invited Speaker	<b>K Thistlethwaite</b> Chronic non healing wounds, repetitive ischaemic reperfusion injury and hyperbaric oxygen therapy. Mechanistic influences. HTNA's 24th Annual Scientific Conference on Diving and Hyperbaric Medicine. Hamilton Island Aug 2016.
Invited Speaker	<b>K Thistlethwaite</b> Effectiveness of Hyperbaric Oxygen Therapy for management of Chronic Venous Leg Ulcers – A multi-centred double blinded, randomised, control trial. HTNA's 24th Annual Scientific Conference on Diving and Hyperbaric Medicine. Hamilton Island Aug 2016.
Poster	<b>K Thistlethwaite</b> Effectiveness of Hyperbaric Oxygen Therapy for management of Chronic Venous Leg Ulcers – A multi-centred double blinded, randomised, control trial. The 5th Congress of the World Union of Wound Healing Societies, September 25-29, 2016 in Florence, Italy.



## Intensive Care Services

In 2016 the Intensive Care Unit research team had 34 studies on the books which included collaborations with local University and other hospital health district services, national and international collaborators. We subsequently reviewed 18 new study proposals presented to the research group for our standard peer review process of proposed research activities.

As a follow on from above, we are continuing to publish a significant number of peer-reviewed papers, over 50 per year now for many years.

2016 also saw the completion of the SMARRT (SaMpling Antibiotics in Renal Replacement Therapy) study, an international study examining renal replacement therapy and antibiotic dosing in 48 ICUs across the world. Final samples were collected and transported to the Burns Trauma Critical Care Research Centre (BTCCRC) for analysis. Data cleaning on over 350 patient data sets was performed by our ICU project team and antibiotic levels are being measured by the BTCCRC lab staff.

A major achievement this year has been the obtaining of a successful NHMRC Grant to conduct a world-wide study on comparing bolus dosing beta-lactam antibiotics vs continuous infusion (BLING). The BLING team of Professors Lipman and Roberts, Dr's Dulhunty and Cotta were successful in winning the Grant to take the BLING body of work to the next phase of an international 7000 participant study, BLING II having been completed and published recently.

Continuing on with our formal collaboration with The University of Queensland, funding from UQ was granted to develop an International Pharmacokinetic Centre with a dedicated project manager. We see this as an exciting opportunity and will use this to facilitate the introduction and management of European studies within Australia. The aim of this new role will be to enhance the current ties and provide a point of communication for leading European studies across Australia, all lead by RBWH.

## Supervised Post-graduate Research Students

Name (RBWH staff in bold)	Current Studies (e.g. PhD, Masters etc.)University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Nilesh Kumta	MBBS UQ	OASES EVD sampling for antibiotics HREC/16/ QRBW/157	Jason Roberts
Joshua Sheehey		TASTE HREC/15/QRBW/372	W Thomas/ <b>J Lipman</b>
Dr Claire Roger	PhD UQ	AMINO III	Jason Roberts

## Research Positions: Coordinators, Fellow, Adjunct and Honorary Positions

Name	Type of Position	Research Program	University (years)
Joel Dulhunty	Fellow		
Therese Starr	Temporary	Nurse Manager – Research	
Melissa Lassig-Smith	Temporary	Senior Research Coordinator	
Janine Stuart	Temporary	Senior Research Coordinator	
Jenie Butler	Permanent	Research Coordinator	
Amelia Livermore	Temporary	Research Coordinator	

## Current Research Group / Department Led Research Activity

Service Line Lead Researchers	Collaborative Researchers	Research Project Title
Jeffrey Lipman	<b>O Cotta/J Roberts (Pharmacy)</b>	Benzylpenicillin HREC/15/QRBW/31
Judith Bellapart		ENDOTHELIN 1 HREC/14/QRBW/4
Os Cotta		LEVITY HREC/16/QRBW/154
Judith Bellapart		Melatonin
Anthony Holley		Microscan HREC/08/QRBW/112
Lisa Wang	<b>J Roberts/Burns unit</b>	LINC B
Kerina Denny	<b>J Lipman</b>	RESIST HREC/15/QRBW/28
Jason Roberts	<b>J Lipman</b>	SMARRT
Jeffrey Lipman	W Thomas/ J Sheehey	TASTE HREC/15/QRBW/372
Judith Bellapart	GCUH ICU	TAPAS (Multicentre Endothelin)
Jeremy Cohen		TBI Study
Jeremy Cohen/ Gladness Nethathe		The free cortisol response to synacthen and other aspects of endocrine physiology in healthy participants

## Research Awards and Achievements

Recipient	Award	Event
<b>Paratz J.</b>	Outstanding Leadership in Allied Health Research, Learning and Innovation – Metro North.	
<b>Read MC</b>	Clasp '2' to the Australian Defence Force Operational Service Medal (Greater Middle East Area of Operations).	

## Research Grants – Awarded

Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
Ryan R, Christensen R, Jackson D, <b>Roberts JA</b>		Does Cefazolin Prophylaxis During Bariatric Surgery Achieve Therapeutic Concentration in Plasma & Interstitial Fluid	ANZCA Project Grant		\$34,059
<b>Lipman J, Roberts JA</b> , Myburgh J, Peake S, <b>Dulhunty J</b> , Paterson D, McGuinness S, Rhodes A, de Waele J, Finfer S		BLING III: A phase III randomised controlled trial of continuous beta-lactam infusion compared with intermittent betalactam dosing in critically ill patients	NHMRC Project Grant		\$3,269,942
<b>Roberts JA</b>		Redefining antibiotic dosing to reduce bacterial resistance	NHMRC Practitioner Fellowship		\$474,512
Parker S, <b>Roberts JA</b>		Using a drop of blood to optimise antibiotic dosing in infants and children	Ian Potter Medical Research Grant		\$39,500
<b>Roberts JA</b>		A prospective observational pharmacokinetic evaluation of the plasma and cerebrospinal fluid concentrations of a single dose ceftolozane/tazobactam in infected critically ill patients with an indwelling external ventricular drain	Merck Sharpe & Dohme		\$110,215

Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
<b>Roberts JA</b>		An observational pharmacokinetic study of ceftolozane-tazobactam in intensive care unit patients with and without continuous renal replacement therapy	Merck Sharpe & Dohme		\$225,000
<b>Roberts JA</b>		Single dose population PKs of intravenous Posaconazole in critically ill patients	Merck Sharpe & Dohme		\$77,752
<b>Lipman J</b>		Building Pharmacokinetic and Clinical Trial Capacity at the Herston Campus	UQ Strategic Funding		\$1,883,719
<b>Roberts JA</b> , Roger C		Screening Anti-Fungal Exposure in Intensive Care Units: the SAFE-ICU study	RBWH & RBWH Foundation Research Grants		\$40,000
<b>Lipman J</b> , Parker S, Dorofaeff T		Implementing microsampling into clinical pharmacokinetic research studies - it only takes a drop of blood!	Implementing microsampling into clinical pharmacokinetic research studies - it only takes a drop of blood!		\$40,000
Christensen R, Eley V, Ryan R, Jackson D, Van Zundert A, <b>Roberts JA</b> , <b>Lipman JA</b>		Does Routine Antibiotic Administration in Overweight Women Having Elective Caesarean Section Achieve Therapeutic Levels?	Does Routine Antibiotic Administration in Overweight Women Having Elective Caesarean Section Achieve Therapeutic Levels?		\$40,000
<b>Nethathe G</b>		Aspects of the neuroendocrine stress response in patients with severe sepsis or multi-trauma	Aspects of the neuroendocrine stress response in patients with severe sepsis or multi-trauma		\$70,000
Shaban R, McCarthy A, <b>Coyer F</b> , Theobald K, Fox R, Henderson A, Thompson B		Enhancing postgraduate professional learning in the infection control speciality.	Enhancing postgraduate professional learning in the infection control speciality.		\$15,000

## 2016 Research Publications

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal Article	Abdul-Aziz MH, Abd Rahman AN, Mat-Nor MB, Sulaiman H, Wallis SC, <b>Lipman J</b> , <b>Roberts JA</b> , Staatz CE. Population Pharmacokinetics of Doripenem in Critically Ill Patients with Sepsis in a Malaysian Intensive Care Unit. Antimicrob Agents Chemother. 2016 Oct 19;60(1):206-14.
Journal Article	Abdul-Aziz MH, <b>Lipman J</b> , Akova M, Bassetti M, De Waele J, Dimopoulos G, <b>Dulhunty J</b> , Kaukonen K-M, Koulenti D, Martin C, Montravers P, Rello J, Rhodes A, <b>Starr T</b> , Wallis S, <b>Roberts JA</b> , on behalf of the DALI study authors. Is prolonged infusion of piperacillin/tazobactam and meropenem in critically ill patients associated with improved patient outcomes? An observation from the Defining Antibiotic Levels in Intensive care unit patients (DALI) cohort. J Antimicrob Chemother. 2016 Jan;71(1):196-207.
Journal Article	Abdul-Aziz MH, Sulaiman H, Mat-Nor MB, Rai V, Wong KK, Hasan MS, Rahman AA, Jamal JA, Wallis SC, <b>Lipman J</b> , Staatz CE, <b>Roberts JA</b> . Beta-Lactam Infusion in Severe Sepsis (BLISS): a prospective, two-centre, open-labelled randomised controlled trial of continuous versus intermittent beta-lactam infusion in critically ill patients with severe sepsis. Intensive Care Med. 2016 Oct;42(10):1535-45.
Journal Article	Adsett J, Morris N, Kuys S, Hwang R, Mullins R, Khatun M, <b>Paratz J</b> , Mudge A. Aquatic Exercise Training is Effective in Maintaining Exercise Performance in Trained Heart Failure Patients: A Randomised Crossover Pilot Trial. Heart Lung Circ. 2016; S1443-9506(16) 31691-2.
Journal Article	Alobaid AS, Brinkmann A, Frey OR, Roehr AC, Luque S, Grau S, Wong G, Abdul-Aziz MH, Roberts MS, <b>Lipman J</b> , <b>Roberts JA</b> . What is the effect of obesity on piperacillin and meropenem trough concentrations in critically ill patients? J Antimicrob Chemother. 2016 Mar;71(3):696-702.



Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal Article	Alobaid AS, Hites M, <b>Lipman J</b> , Taccone FS, <b>Roberts JA</b> . Effect of obesity on the pharmacokinetics of antimicrobials in critically ill patients: A structured review. <i>Int J Antimicrob Agents</i> . 2016 Apr;47(4):259-68.
Journal Article	Alobaid AS, Wallis SC, Jarrett P, Starr T, Stuart J, Lassig-Smith M, Ordóñez Mejia JL, Roberts MS, <b>Lipman J</b> , <b>Roberts JA</b> . Effect of Obesity on the Population Pharmacokinetics of Meropenem in Critically Ill Patients. <i>Antimicrob Agents Chemother</i> . 2016 Jul 22;60(8):4577-84.
Journal Article	Alobaid AS, Wallis SC, <b>Jarrett P</b> , <b>Starr T</b> , <b>Stuart J</b> , <b>Lassig-Smith M</b> , Mejia JL, Roberts MS, Sinnollareddy MG, Roger C, <b>Lipman J</b> , <b>Roberts JA</b> . Effect of Obesity on the Population Pharmacokinetics of Fluconazole in Critically Ill Patients. <i>Antimicrob Agents Chemother</i> . 2016 Oct 21;60(11):6550-6557.
Journal Article	<b>Bandeshe H</b> , <b>Boots R</b> , <b>Dulhunty J</b> , <b>Dunlop R</b> , <b>Holley A</b> , <b>Jarrett P</b> , Gomersall CD, <b>Lipman J</b> , Lo T, <b>O'Donoghue S</b> , <b>Paratz J</b> , Paterson D, <b>Roberts JA</b> , <b>Starr T</b> , Stephens D, <b>Stuart J</b> , Thomas J, Udy A, White H. Is inhaled prophylactic heparin useful for prevention and Management of Pneumonia in ventilated ICU patients?: The IPHIVAP investigators of the Australian and New Zealand Intensive Care Society Clinical Trials Group. <i>J Crit Care</i> . 2016 Aug;34:95-102.
Journal Article	Barbier F, <b>Lipman J</b> , Bonten MJ. In 2035, will all bacteria be multidrug-resistant? No. <i>Intensive Care Med</i> . 2016 Dec;42(12):2017-2020.
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Journal Article	Tsai D, Stewart P, Goud R, Gourley S, Hewagama S, Krishnaswamy S, Wallis SC; <b>Lipman J</b> , <b>Roberts JA</b> . Pharmacokinetics of piperacillin in critically ill Australian Indigenous patients with severe sepsis. <i>Antimicrob Agents Chemother</i> . 2016;60(12):7402-7406.
Journal Article	Tsai D, Stewart P, Goud R, Gourley S, Hewagama S, Krishnaswamy S, Wallis SC, <b>Lipman J</b> , <b>Roberts JA</b> . Optimising meropenem dosing in critically ill Australian Indigenous patients with severe sepsis. <i>Int J Antimicrob Agents</i> . 2016 Nov;48(5):542-546.
Journal Article	Tuttici N, <b>Coyer F</b> , Lewis P, Ryan M. High fidelity simulation: Descriptive analysis of student learning styles. <i>Clin Simul Nurs</i> . 2016;12(11):511-521.
Journal Article	Tuttici N, Lewis P, <b>Coyer F</b> . Measuring third year undergraduate nursing students' reflective thinking skills and critical reflection self-efficacy following high fidelity simulation: A pilot study. <i>Nurse Educ Pract</i> . 2016 May;18:52-9

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal Article	Ullman A, Keogh S, <b>Coyer F</b> , Long D, New K, Rickard C. 'True Blood' The Critical Care Story: An audit of blood sampling practice across adult, paediatric and neonatal intensive care settings. <i>Aust Crit Care</i> . 2016 May;29(2):90-5
Journal Article	Van Zyl N, <b>Milford EM</b> , Diab S, Dunster K, McGiffen P, Rayner SG, <b>Reade MC</b> , Fraser JF, Staib A. Activation of the protein C pathway and endothelial glycocalyx shedding is associated with coagulopathy in an ovine model of trauma and hemorrhage. <i>J Trauma Acute Care Surg</i> . 2016;81(4):674-684.
Journal Article	Veringaa A, Sturkenboom M, Dekkers B, Kostera R, <b>Roberts J</b> , Peloquind C, Touwa D, Alffenaar J. LC-MS/MS for Therapeutic Drug Monitoring of anti-infective drugs. <i>TrAC Trends in Analytical Chemistry</i> . 2016; V84 Part B 34-40.
Journal Article	Vermeir J, <b>Holley A</b> , <b>Lipman J</b> . Not Out of the Woods – A Wife's Perspective: Bedside Communication. <i>Intensive Care Med</i> . 2016 Mar;42(3):446-7.
Journal Article	Williams JM, Greenslade JH, Chu K, Brown AF, <b>Lipman J</b> . Severity Scores in Emergency Department Patients With Presumed Infection: A Prospective Validation Study. <i>Crit Care Med</i> . 2016 Mar;44(3):539-47.
Journal Article	Winearls J, <b>Reade MC</b> , Miles H, Bulmer A, Campbell D, Gorlinger K, Fraser J. Targeted Coagulation Management in Severe Trauma: The Controversies and the Evidence. <i>Anesth and Analg</i> . 2016;123(4):910-924.
Journal Article	Woodruff TM, Wu MC, Morgan M, Bain NT, Jeanes A, <b>Lipman J</b> , Ting MJ, Boyd AW, Taylor SM, Coulthard MG. EPHA4-FC treatment reduces ischemia/reperfusion-induced intestinal injury by inhibiting vascular permeability. <i>Shock</i> . 2016 Feb;45(2):184-91.
Journal Article	Zelenitsky SA, Lawson C, Calic D, Ariano RE, <b>Roberts JA</b> , <b>Lipman J</b> , Zhanel GG. Integrated pharmacokinetic-pharmacodynamic modelling to evaluate antimicrobial prophylaxis in abdominal surgery. <i>J Antimicrob Chemother</i> . 2016 Oct;71(10):2902-8.
Journal Article	Zhang L, <b>Gowardman J</b> , Morrison M, Runnegar N, Rickard CM. Microbial biofilms associated with intravascular catheter-related bloodstream infections in adult intensive care patients. <i>Eur J Clin Microbiol Infect Dis</i> . 2016 Feb;35(2):201-5.
Book Chapter	<b>Cohen J</b> . Adrenal Insufficiency. In <i>Oh's Intensive Care Manual 8th Edition</i> . In Press.
Book Chapter	<b>Cohen J</b> . The Genetic Basis of Sepsis. In <i>Oh's Intensive Care Manual 8th Edition</i> . In Press.
Book Chapter	<b>Boots R</b> , <b>Lipman J</b> (2016). Diagnosis, assessment, and management of tetanus, rabies, and botulism. In Webb A, Angus D, Finfer S, Gattinoni L, Singer M (Eds). Chapter 64 <i>Oxford Textbook of Critical Care 2nd</i> . Oxford University Press, Oxford, UK.
Book Chapter	<b>Cotta MO</b> , <b>Roberts JA</b> (2016). Pharmacokinetic and pharmacodynamic principles of antimicrobials. In Laundry M, Gilchrist M, Whitney L (Eds). <i>Antimicrobial Stewardship – A practical guide to the introduction, maintenance and development of an effective program</i> . Oxford University Press, Oxford, UK.
Book Chapter	<b>Denny KJ</b> , <b>Lipman J</b> , <b>Roberts JA</b> . Cephalothin and cefazolin. In Grayson ML, Crowe SM, McCarthy JS, Mills J, Mouton JW, Norrby SR, Paterson DL, Pfaller MA (Eds). <i>Kucers' The Use of Antibiotics Seventh Edition: A Clinical Review of Antibacterial, Antifungal and Antiviral Drugs</i> , 7th edition. ASM Press, Washington DC, USA. In Press.
Book Chapter	Finn PC, <b>Reade MC</b> . Bleeding Emergencies. In <i>Rapid Response Systems: A Practical Guide</i> . New York, Oxford University Press USA. In Press.
Book Chapter	Geddes AM, Gould IM, <b>Roberts JA</b> , Grayson ML, Cosgrove SE. Ampicillin and Amoxicillin. In Grayson ML, Crowe SM, McCarthy JS, Mills J, Mouton JW, Norrby SR, Paterson DL, Pfaller MA (Eds). <i>Kucers' The Use of Antibiotics Seventh Edition: A Clinical Review of Antibacterial, Antifungal and Antiviral Drugs</i> , 7th edition. ASM Press, Washington DC, USA. In Press.
Book Chapter	Geddes AM, Gould IM, Trubiano JA, <b>Roberts JA</b> , Grayson ML. Benzylpenicillin (Penicillin G). In Grayson ML, Crowe SM, McCarthy JS, Mills J, Mouton JW, Norrby SR, Paterson DL, Pfaller MA (Eds). <i>Kucers' The Use of Antibiotics Seventh Edition: A Clinical Review of Antibacterial, Antifungal and Antiviral Drugs</i> , 7th edition. ASM Press, Washington DC, USA. In Press.
Book Chapter	Geddes AM, Gould IM, <b>Roberts JA</b> . Phenoxypenicillins. In Grayson ML, Crowe SM, McCarthy JS, Mills J, Mouton JW, Norrby SR, Paterson DL, Pfaller MA (Eds). <i>Kucers' The Use of Antibiotics Seventh Edition: A Clinical Review of Antibacterial, Antifungal and Antiviral Drugs</i> , 7th edition. ASM Press, Washington DC, USA. In Press.
Book Chapter	<b>Holley A</b> . Management of the Critically Ill Burns Patient. In S Hutchings (Ed). <i>Trauma &amp; Combat Critical Care in Clinical Practice</i> . In Press.
Book Chapter	Jamal JA, <b>Roberts JA</b> (2016). Aminoglycoside dosing in obesity. In Zaidi STR, Roberts JA (Eds). <i>Drug Dosing in Obesity, Volume 1: Antimicrobials</i> . Springer, Switzerland.
Book Chapter	Jamal JA, <b>Roberts JA</b> (2016). Polyene antifungals. In Zaidi STR, Roberts JA (Eds). <i>Drug Dosing in Obesity, Volume 1: Antimicrobials</i> . Springer, Switzerland.
Book Chapter	<b>Lipman J</b> (2016). Tetanus, rabies, botulism. In Webb AR, Angus D, Finfer S, Gattinoni L (Eds). <i>Oxford Textbook of Critical Care</i> , 2nd Edition. Oxford UK: Oxford University Press.
Book Chapter	<b>Lipman J</b> . Tetanus. Chapter 54. In AD Bertson, N Soni (Eds). <i>Oh's Intensive Care Manual 8th Edition</i> . Eds Butterworth Heinemann Elsevier. In Press.

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Book Chapter	<b>Lipman J.</b> Principles of Antibiotic Use. Chapter 73. In AD Bertson, N Soni (Eds). Oh's Intensive Care Manual 8th Edition. Butterworth Heinemann Elsevier. In Press.
Book Chapter	Mahoney A, <b>Reade MC.</b> Making the best use of simulation training in critical care medicine. In Vincent JL (Ed). Annual Update in Intensive Care and Emergency Medicine 2017. Berlin: Springer-Verlag. In Press.
Book Chapter	<b>Paratz J,</b> Ntoumenopoulos G, Jones A (2016). Management of the Critically Ill Patient. In Denehy L (Ed). Cardiopulmonary Physical Therapy. Churchill Livingstone Elsevier, London.
Book Chapter	Plaza A, <b>Paratz J</b> (2016). Management Acute Burn Patient. In Denehy L (Ed). Cardiopulmonary Physical Therapy, Churchill Livingstone Elsevier, London.
Book Chapter	<b>Reade MC.</b> Chest injury and ventilator strategies following severe traumatic injury. In Hutchings S (Ed). Frontline Critical Care. London, Springer. In Press.
Book Chapter	<b>Reade MC.</b> Kirkman E. Blast lung. In Hutchings S (Ed). Frontline Critical Care. London. Springer. In Press.
Book Chapter	<b>Reade MC.</b> Sedation and Analgesia in the ICU. In Firth J, Conlon C, Cox C (Eds). Oxford Textbook of Medicine. Oxford, Oxford University Press. In Press.
Book Chapter	<b>Reade MC.</b> Advanced cardiovascular support. In Evans C, Creaton A, Kennedy M (Eds). The Oxford Handbook of Retrieval Medicine. Oxford: Oxford University Press. In Press.
Book Chapter	<b>Reade MC</b> (2016). Thoracic Trauma and Management of Ventilation in the Critically Injured Patient. In Hutchings SD (Ed). Trauma and Combat Critical Care in Clinical Practice. London, Springer.
Book Chapter	<b>Reade MC</b> (2016), Kirkman E. Management of Blast Related Injuries. In Hutchings SD (Ed). Trauma and Combat Critical Care in Clinical Practice. London. Springer.
Book Chapter	Sinnollareddy MG, <b>Roberts JA</b> (2016). Pharmacodynamic considerations in critically ill patients. In Rotschafer JC, Andes DR, Rodvold KA (Eds). Antibiotic Pharmacodynamics. Springer, New York.

## 2016 Conference Presentations – Invited Speaker, Oral and Poster

Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Invited Faculty	<b>Cohen J.</b> Wellington Final Fellowship Examination Course. New Zealand, 2016.
Oral	<b>Cohen J.</b> The Genetics of Sepsis. ANZICS ASM. Perth, 2016.
Oral presentation	<b>Coyer F,</b> Clark M, Slattery P, Thomas P, McNamara G, Khatun M, Edwards C, Ingleman J, Stephenson J, Ousey K. Exploring pressure and body positioning: A pilot evaluation among critically ill patients. 5th Congress of World Union of Wound Healing Societies. Florence, Italy, September, 2016.
Invited speaker	<b>Coyer F.</b> Invited speaker. Pressure injuries in the critically ill patients – a never ending story? World Federation of Critical Care Nurses Congress. Brisbane, April, 2016.
Invited speaker	<b>Coyer F.</b> Invited speaker. Implementing skin integrity rounds in the intensive care unit. World Federation of Critical Care Nurses Congress, Brisbane, April 2016.
Invited Expert Speaker	<b>Coyer F.</b> Invited Expert Speaker. Incontinence-Associated Dermatitis. WCET World Council of Enterostomal Therapists. Cape Town, South Africa, March 2016.
	Gardner A, Gardner G, Helms C, Gosby H, <b>Coyer F,</b> Cheng H. Clinical learning, governance and capability. 9th International Council of Nurses (ICN) International Nurse Practitioner/Advanced Practice Nursing Network (INP/APNN) Conference. Hong Kong, September 2016.
Oral	<b>Lipman J.</b> SHPA Critical Care Foundation Level Seminar. Brisbane, May 2016.
Invited Speaker	<b>Lipman J.</b> Invited Speaker. ASM/ICAAC Microbe 2016. Boston, June 2016.
Invited Speaker	<b>Lipman J.</b> Invited Speaker. Southern African Critical Care Society Meeting. Durban, South Africa, August 2016.
Invited Speaker	<b>Lipman J.</b> Invited Speaker. 29th Annual European Society of Intensive Care Medicine Meeting. Milan, October 2016.
Oral	<b>Paratz J</b> Facilitating clinicians to implement evidence into practice. RBWH Healthcare Symposium. September 2016.
Oral	<b>Paratz J.</b> Follow up clinic for sepsis survivors, preliminary results & feasibility. 29 <sup>th</sup> Annual European Society of Intensive Care Medicine Meeting. Milan, October, 2016.

Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Oral	<b>Paratz J.</b> Early exercise and the microcirculation in sepsis. 29th Annual European Society of Intensive Care Medicine Meeting. Milan, October, 2016.
Oral	<b>Reade MC.</b> The new Australian Defence Force Blood Transfusion policy. Australasian Association of Clinical Biochemists / Australian Institute of Medical Scientists Combined Scientific Meeting. Brisbane, 2016.
Oral	<b>Reade MC.</b> Dexmedetomidine in agitated delirium: the DahLIA trial results. Australian and New Zealand Intensive Care Society Annual Scientific Meeting. Perth, 2016.
Oral	<b>Reade MC.</b> Is there still any reason to use colloids in trauma or critical illness? Australian and New Zealand Intensive Care Society. Annual Scientific Meeting. Perth, 2016.
Oral	<b>Holley A, Reade MC,</b> Robertson A, New C, Lumsden J, Sharpe S, Weber D, Rogerson T, Mackie B, Herron R. Military critical care. Australian and New Zealand Intensive Care Society Annual Scientific Meeting. Perth, 2016.
Oral	<b>Reade MC.</b> Recent clinical trials of dexmedetomidine. Asia-Pacific Sedation Conference. Seoul, 2016.
Oral	<b>Reade MC.</b> Blast injury in civilian practice. 5th Annual Best of Brussels Meeting, Indian Society of Intensive Care Medicine. Pune, 2016.
Oral	<b>Reade MC.</b> Are non-arterial blood gases any use? 5th Annual Best of Brussels Meeting, Indian Society of Intensive Care Medicine. Pune, 2016.
Oral	<b>Reade MC.</b> Why I would, and why I would not, use whole blood transfusions in civilian practice. 5th Annual Best of Brussels Meeting, Indian Society of Intensive Care Medicine. Pune, 2016.
Oral	<b>Reade MC.</b> Penetrating thoraco-abdominal trauma in an austere Role 2 hospital. Remote Damage Control Resuscitation Conference. Bergen, 2016.
Oral	<b>Reade MC.</b> Treatment of agitated delirium: new aspects. 36th International Symposium on Intensive Care and Emergency Medicine. Brussels, 2016. (invited conference opening plenary session).
Oral	<b>Reade MC.</b> Can we measure blood gases and lactate from venous or capillary blood? 36th International Symposium on Intensive Care and Emergency Medicine. Brussels, 2016.
Oral	<b>Roberts JA.</b> Under Dosing of Antibiotics in the ICU – A PK/PD Approach. IDWeek, Infectious Diseases Society of America Annual Scientific Meeting. New Orleans USA, October 2016.
Oral	<b>Roberts JA.</b> Antibiotic use in extracorporeal techniques. European Society of Intensive Care Medicine Annual Congress. Milan, Italy, October 2016.
Oral	<b>Roberts JA.</b> Dosing antifungals in the critically ill. European Society of Intensive Care Medicine Annual Congress. Milan. Italy, October 2016.
Oral	<b>Roberts JA.</b> Antibiotic PK/PD for treatment of MDR infections. European Society of Intensive Care Medicine Annual Congress. Milan, Italy, October 2016.
Oral	<b>Roberts JA.</b> Optimized PK/PD: Can It Reduce Resistance? ASM Microbe. Boston, USA, June 2016.
Oral	<b>Roberts JA.</b> Fitting data to models. ESCMID Postgraduate Technical Workshop Population Modelling and Dose Optimization with Pmetrics and BestDose: Antimicrobial Applications. Lyon, France, April 2016.
Oral	<b>Roberts JA.</b> TDM for beta lactams, sharing of centers experience, expert's vision for the future. Singapore Therapeutic Drug Monitoring Workshop. Singapore, April 2016.
Oral	<b>Roberts JA.</b> Approaches to funding the response to antimicrobial resistance. 3rd Queensland Forum on Antimicrobial Resistance. Brisbane, November 2016.
Oral	<b>Roberts JA.</b> Getting Systemic Therapy Right! Orthopaedic Infections – State of the Art. Brisbane, November 2016.
Oral	<b>Roberts JA.</b> Individualised antibiotic dosing and therapeutic drug monitoring. Sydney, September 2016.
Oral	<b>Roberts JA.</b> Drug dosing in obesity. Society of Hospital Pharmacists of Australia Queensland Branch Continuing Education Series. Brisbane, June 2016.
Oral	<b>Roberts JA.</b> Fitting data to models. NHMRC Centre of Research Excellence REDUCE Workshop on Population Modelling and Dose Optimization. Brisbane, October 2016.
Oral	<b>Roberts JA.</b> The importance of antibiotic dosing as part of AMS. 2nd Annual Targeting and Evaluating Antimicrobial Stewardship Forum. Melbourne, June 2016.
Oral	<b>Roberts JA.</b> Renal Replacement Therapy. Critical Care Seminar, Society of Hospital Pharmacists of Australia. Brisbane, May 2016.
Oral	<b>Roberts JA.</b> Is there a role for TDM in infective endocarditis? Australian Society for Antimicrobials – Annual Scientific Meeting. Melbourne, February 2016.
Oral	<b>Roberts JA.</b> Using MIC in Predicting Clinical Outcomes of Antibiotic Treatment. Australian Society for Antimicrobials – Annual Scientific Meeting. Melbourne, February 2016.



Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Oral	Stone L, McCarthy A, <b>Coyer F</b> . Poster Presentation. The CONTRAST Research Program: Aligning Magnet Attributes in Australia and the United States. 2016 ANCC National Magnet Conference. Orlando, Florida, USA, October, 2016.
Oral	Tuttici N. (PhD candidate <b>Coyer F</b> Principal supervisor). Measuring third year undergraduate nursing students' reflective thinking skills and critical reflection self-efficacy following high fidelity simulation. Hawaii International Conference on Education. Honolulu, Hawaii, USA, January 2016.
Presentation	Tuttici N. (PhD candidate <b>Coyer F</b> Principal supervisor). Measuring third year undergraduate nursing students' reflective thinking skills and critical reflection self-efficacy following high fidelity simulation. Hawaii International Conference on Education. Honolulu, Hawaii, USA, January 2016.
Presentation	Alobaid AS, Roberts MS, Wallis SC, Lipman J, <b>Roberts JA</b> . What is the effect of obesity on the population pharmacokinetics of meropenem in critically ill patients? European Conference on Clinical Microbiology and Infectious Diseases. Amsterdam, Denmark, April 2016.
Presentation	Byrne CJ, <b>Roberts JA</b> , McWhinney B, Fennell JP, O'Byrne P, Deasy E, Egan S, Enright H, Ryder SA, D'Arcy DM, McHugh J. The impact of serum albumin concentrations on the pharmacokinetics of unbound teicoplanin in patients with haematological malignancy. European Conference on Clinical Microbiology and Infectious Diseases. Amsterdam, Denmark, April 2016.
Oral and Poster Presentation	<b>Coyer F</b> . A hole lot of trouble: a device-related tracheostomy pressure injury case study. The Inaugural Wounds Australia Conference (AWMA). Melbourne, November. 2016
Presentation	Farkas A, Luque S, Frey OR, Roehr AC, Grau S, <b>Roberts JA</b> . Population pharmacokinetics of linezolid as it applies to therapeutic drug monitoring: a comparison of ten approaches. European Conference on Clinical Microbiology and Infectious Diseases. Amsterdam, Denmark, April 2016.
Presentation	Hann A, Presneill J, <b>Reade MC</b> . Hollow viscus injury following blunt abdominal trauma: A case series. General Surgeons Australia Annual Scientific Meeting. Melbourne, 2016.
Presentation	Lopez M, Grau S, Moreno I, Rubio M, Luque S, <b>Roberts JA</b> . Pharmacokinetics of micafungin in patients receiving ECMO. European Conference on Clinical Microbiology and Infectious Diseases. Amsterdam, Denmark, April 2016.
Presentation	<b>Roberts JA</b> , Roger C, Wallis SC, Muller L, Lipman J, Lefrant JY. Comparative effect of equal dose of continuous veno-venous haemofiltration and continuous veno-venous haemodiafiltration on ciprofloxacin population pharmacokinetics in critically ill patients. European Conference on Clinical Microbiology and Infectious Diseases. Amsterdam, Denmark, April 2016.

## Research Publications / Presentations Summary Table

Research Group / Department	Publications		Presentations National and International	
	Journal Articles	Books and Chapters	Oral	Poster
Intensive Care Services	100	25	52	

## The Professor Tess Cramond Multidisciplinary Pain Centre

### Research Positions: Coordinators, Fellow, Adjunct and Honorary Positions

Name	Type of Fellowship	Research Program	University Affiliation (years)
Nicole Andrews	Honorary Lecturer	School of Health and Rehabilitation Sciences	University of Queensland (2015- 2016)

## Current Research Group / Department Led Research Activity

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
Nicole Andrews	Marlien Varnfield, David Ireland	Towards understanding how much is too much for individuals with chronic pain
Nicole Andrews	<b>Sue Laracy</b>	Evaluation of occupational therapy interventions within the orthopaedic physiotherapy screening clinic

## Collaborative Research Activity

Collaborative Lead Researchers (RBWH staff in bold)	Your Research Group / Department Researchers	Research Project Title
Lynn DeBar (Kaiser Permanente Centre for Health Research, Portland, USA) Meghan Mayhew (Kaiser Permanente Centre for Health Research, Portland, USA)	<b>Nicole Andrews (Occupational Therapy)</b>	PPACT Administrative Supplement for Research on Sleep Disturbances and Impact on Chronic Pain

## Research Awards and Achievements

Recipient	Award	Event
<b>Nicole Andrews</b>	Highly commended award in the chronic disease category	Metro North Hospital and Health Service District 2015 research Excellence Awards, May 2016
<b>Nicole Andrews</b>	Elite reviewer award for Archives of Physical Medicine and Rehabilitation	-

## 2016 Research Publications

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal article	<b>Andrews, N.</b> , Strong, J., Meredith, P., & Fleming J. (2016). The relationship between overactivity and opioid use in chronic pain: A five day observational study. Pain, 157, 466-474. doi: 10.1097/j.pain.0000000000000384
Journal article	<b>Andrews, N.</b> , Deen, M. (2016). Defining activity pacing: Is it time to jump off the merry-go-round? Journal of pain, 17 (12), 1359-1362. doi: 10.1016/j.jpain.2016.05.001

## 2016 Conference Presentations – Invited Speaker, Oral and Poster

Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Invited	<b>Andrews N.</b> Overactivity in chronic pain. 2016 Mind and Pain in Motion Symposium. Bochum, Germany, June, 2016.
Invited	<b>Andrews N.</b> Translation of research into clinical practice within the Professor Tess Cramond Multidisciplinary Pain Centre. 2016 RBWH healthcare symposium. Brisbane, September, 2016.