

RBWH

TWENTY

20

RESEARCH REPORT

**INTERNAL MEDICINE
SERVICES**

Metro North
Health



Queensland
Government

Contents

Internal Medicine Services	1
Department of Cardiology	2
Department of Clinical Immunology and Allergy	13
Department of Clinical Pharmacology	14
Department of Endocrinology and Diabetes	18
Department of Gastroenterology and Hepatology	21
Department of Infectious Diseases	27
Internal Medicine Research and Aged Care	35
Kidney Health Service	39
Department of Neurology	48
Department of Nuclear Medicine	57
Palliative and Supportive Care	60
Pharmacy	61
Department of Rheumatology	68
Sexual Health and HIV Service	70
Department of Thoracic Medicine	73

Published by the State of Queensland (Metro North Hospital and Health Service), May 2021

This document is licensed under a Creative Commons Attribution 3.0 Australia licence.
To view a copy of this licence, visit creativecommons.org/licenses/by/3.0/au

© State of Queensland (Metro North Hospital and Health Service) 2021

You are free to copy, communicate and adapt the work, as long as you attribute the State of Queensland (Metro North Hospital and Health Service).

For more information, contact:

RBWH Research Services, Metro North Hospital and Health Service, Building 34, Level 2, South Wing, Herston QLD 4006, email rbwh_research_eso@health.qld.gov.au, phone 07 3647 1008 for RBWH Research Services.

An electronic version of this document is available at <https://metronorth.health.qld.gov.au/research/research-reports>

Disclaimer:

The content presented in this publication is distributed by the Queensland Government as an information source only. The State of Queensland makes no statements, representations or warranties about the accuracy, completeness or reliability of any information contained in this publication. The State of Queensland disclaims all responsibility and all liability (including without limitation for liability in negligence) for all expenses, losses, damages and costs you might incur as a result of the information being inaccurate or incomplete in any way, and for any reason reliance was placed on such information.

Internal Medicine Services



Prof. Keshwar Baboolal
Executive Director
Internal Medicine Services, RBWH

Internal Medicine Services (IMS) has a long history of advancing healthcare through research. This can be attributed to the tireless efforts of our highly dedicated staff across all disciplines and all departments.

This year, our staff not only adapted to the challenges of the COVID-19 environment but were also able to pivot and modify ongoing research to minimise the COVID -19 impact while still continuing to collaborate and deliver research of the highest quality. This reflects a true testament to their resilience and commitment to research.

In 2020, our continued collaborations with our university and industry partners, as well as other healthcare providers both within QLD and across Australia, ensured that our contributions not only benefit our MNHHS patients but also patients across Australia and the world.

We believe strongly that fostering an active research culture within IMS adds to the diverse knowledge within healthcare but also allows our patients to access the latest therapies, diagnostics, and medicines.

The IMS research teams received many grants and awards to support their research endeavours through a number of pathways including RBWH Foundation Research Awards, special grants, and funding from sources such as NHMRC.

The teams actively participated and shared their research outcomes via different mediums and formats through the year within COVID-19 impacted symposiums, national and international conferences, publications, and health forums.

The comprehensive list of research submitted by each department highlights the research achievements of those staff. However, it does not accurately reflect the individual and collective efforts and sacrifices that are involved in each and every piece of research that is undertaken within this campus.

On behalf of the IMS Executive team I would like to acknowledge and thank IMS staff for their commitment and continued contributions to research.

Department of Cardiology

The cardiology department has a broad investigator-driven research programme that has grown from clinicians improving models of care with interdisciplinary collaboration including health service research and evaluating new technologies.

The **Practical Implementation Of advaNcEd Echocardiography (PIONEER) Research Group** are evaluating how novel echocardiographic technologies can value-add on top of standard echocardiography in various conditions including hypertrophic cardiomyopathy, myocardial infarction and screening for left ventricular dysfunction. The PIONEER Research group was the Winner of the Clinical Research Award at the 2020 Metro North Research Excellence Awards for studies evaluating patients following myocardial infarction (PhD awarded 2020: A/Prof Sandhir Prasad). This research had global impact including a study that validated international guidelines and was recommended for CME status by the American Society of Echocardiography.

The initial findings of the **Cardiovascular Telemedicine Program** were published this year as a research letter (Scott A et al. N Engl J Med 2020;383:883-4). This programme was the Winner of both the “Excellence in Performance and Leadership” category and the “Overall Superior Quality Achiever” Perpetual Trophy at the 2020 RBWH QuARRIES Awards and was a Health Services and Implementation Research Award finalist at the 2020 Metro North Research Excellence Awards. This programme has reduced waiting times, increased access (especially Indigenous patients), decreased inequity and improved service quality for regional centres.

We have unique cardiac obstetric (collaboration with IMAC/ Obstetric Medicine) and cardiac genetic (collaboration with GHQ) services receiving statewide referrals. Other research interests include chest pain evaluation (collaboration with ETC/ IMAC) and using salivary biomarkers to manage heart failure. The **Accelerated Chest pain Risk Evaluation (ACRE)** programme is being actively translated into clinical practice throughout Queensland. We contribute to the Queensland Cardiac Outcomes Registry (QCOR), which evaluates the quality of healthcare in patients receiving interventional, electrophysiology, pacing, heart failure, and cardiac rehabilitation services.

(<https://clinicalexcellence.qld.gov.au/sites/default/files/docs/priority-area/clinical-engagement/networks/cardiac/qcor-annual-report-2019.pdf>).

Editorial and other key positions held:

- Professor and Clinical Director, Australian Centre for Health Service Innovation, QUT
- Associate Editor, Heart Lung Circulation (3 staff members)
- Associate Cardiac Editor, Australasian Journal of Ultrasound in Medicine
- Editorial boards for Cardiac Failure Review, Medicine Today and Cardiology Today
- European Cardiac Obstetric Registry (only Australian representative)
- Australian Government Medical Services Advisory Committee (MSAC)
- National Cardiac Registry (NCR) Board
- Royal Australasian College of Physicians Specialist Advisory Committee- QLD representative
- National Heart Foundation Research Committee
- Cardiac Society of Australia and New Zealand (CSANZ) Board
- Chair, CSANZ Guideline and Quality Standards Committee
- CSANZ Education Trust Board of Trustees
- CSANZ Scientific Committee
- CSANZ Queensland Regional President
- European Society of Cardiology Congress Abstract Review Committee
- Australian Genomics Health Alliance- Cardiovascular Genetic Disorders Flagship
- Australia and New Zealand Alliance for Cardiovascular Trials Scientific Advisory Committee
- Co-Chair of the State-wide Cardiac Clinical Network
- Brisbane Diamantina Health Partners Evidence and Innovation in Clinical Care Theme Leadership Group
- QCOR- Heart failure Data Custodian
- Queensland Cardiovascular Research Network Steering Committee
- President ANZ Cardiac Magnetic Resonance (ANZCMR)
- Society of Cardiovascular Computed Tomography Education Committee

Research Awards and Achievement

Recipient	Award	Event
Practical Implementation Of advaNcEd EchocardiogRaphy (PIONEER) Research Group: JJ Atherton, SB Prasad, KB Guppy-Coles	2020 Winner: Clinical Research Award	Metro North Research Excellence Awards 2020
A Scott, T Roberts, A McDonald, J Atherton , Tele-Cardiac Investigations team members	2020 Winner: "Excellence in Performance and Leadership" category	RBWH Quality Awards Recognising Remarkable Initiative and Excellence in Service (QuARRIES Awards) 2020
A Scott, T Roberts, A McDonald, J Atherton , Tele-Cardiac Investigations team members	2020 Overall Winner: "Overall Superior Quality Achiever" Perpetual Trophy	RBWH Quality Awards Recognising Remarkable Initiative and Excellence in Service (QuARRIES Awards) 2020
A Scott, T Roberts, A McDonald, J Atherton , Tele-Cardiac Investigations team members	2020 Finalist: Heath Services and Implementation Research Award	Metro North Research Excellence Awards 2020
A Dahiya, C Chao, J Younger, C Hammett	2020 Winner: International SCMR Case of the week competition (cardiac MRI)	SCMR 2020 Annual Scientific Meeting in Orlando, Florida, USA
K Guppy-Coles	Recipient: Advance Queensland Industry Research Fellowship 2020-R3-COVID19	Advance Queensland

Research Grants Awarded in 2020

Investigator Names	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
J Greenslade, L Cullen, W Parsonage , D Chew, S McPhail, G Figtree, D Brain.	Emergency Medicine and Cardiology	The Limit of Detection in the Emergency Department Trial: A stepped-wedge cluster randomised trial for rapid assessment of patients with suspected acute coronary syndrome in the Emergency Department	NHMRC Partnership (APP1193269)	\$532,120 from NHMRC \$541,000 from partners	2020-2023
S McPhail, R Justo, W Parsonage , B Auld, A Barnett, S Kularatna, K Eagleson, N White, B Abell, S Bora	Cardiology	CHD LIFE+ family-centered care models supporting long-term neurodevelopment	Medical Research Future Fund Cardiovascular Mission	\$2,997,258	2020-2024
KB Guppy-Coles, J Atherton, K Hajkowicz , J Robson, E Kiriakous, C Punyadeera, D Fielding, P Harris	Cardiology, Thoracic Medicine, Infectious Diseases	Development and validation of a rapid, portable SERS platform for the detection of SARS-CoV-2 antigen	RBWH & RBWH Foundation Project Grant Special Round COVID-19	\$49,500	2020-2021
J Adsett, A Mudge, J Atherton, D Fielding, A Hickey	Internal Medicine and Aged Care and Cardiology	Yesterday, Today and Tomorrow. Using the Heart Failure and Pulmonary Rehabilitation COVID-19 experience to inform models of care at RBWH	RBWH & RBWH Foundation Project Grant Special Round COVID-19	\$45,152	2020-2021
Julie Adsett , Rachel Bowe, Rebecca Kelly, Rita Hwang, Menaka Louis, Norm Morris	Physiotherapy	Feasibility, reliability and validity of sit to stand tests in patients with heart failure	DOPSQ	\$6,371	2020-2021

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2020	Total number of Patients Recruited
Adam Scott	Alice McDonald, Tiffany Roberts, John Atherton , Paul Scuffham (Griffith)	Tele-Cardiac Investigations to support rural/regional hospitals		
Kristyan Guppy-Coles	John Atherton, Sandhir Prasad, Ada Lo, Kym Smith, Po-Ling Inglis, Patrick Beard, James Armstrong, Terena Truloff, Arun Dahiya	Novel automated technologies to assess left ventricular function in routine clinical practice and screening		
Ada Lo	John Atherton, Kristyan Guppy-Coles , Arnold Ng (PAH), William Wang (PAH), Sandhir Prasad	Evaluation of novel echocardiographic parameters in hypertrophic cardiomyopathy		
Sandhir Prasad	John Atherton, John Younger, Kristyan Guppy-Coles Liza Thomas (Westmead), Tony Stanton (SCUH), James Anderson, Ada Lo, Joanne Sippel, Kym Smith	Left ventricular diastolic dysfunction following myocardial infarction: prevalence, predictors and prognosis		
Louise Cullen, William Parsonage	Jaimi Greenslade, Louise McCormack	The impact of ImpACT: A protocol to improve emergency chest pain assessment		
Louise Cullen, William Parsonage	Briffa T, Chew D, Knuiman M, Fatovich D, Hickman P, Nedkoff L, Sanfilippo F, Hillis G, Mitra B, Wilkes G, Schneider H, Rankin J, Karnon J, Scanlan S, Stapleton S, Mather V	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?		
Daniel Lancini	Paul Martin, Sandhir Prasad, Rob Boots, John Atherton	New onset atrial fibrillation in the critically ill		
Daniel Lancini	Paul Martin, Sandhir Prasad, Louise Cullen, Jaimi Greenslade	Atrial fibrillation in the emergency chest pain presentation		
John Atherton, Chamindie Punyadeera (QUT)	Benjamin Schulz (QUT), Goce Dimeski (QUT), Karam Kostner (Mater), Wandy Chan (TPCH), Kristyan Guppy-Coles	Salivary biomarkers in heart failure		
Amelia Lewis	Adam Scott, Kristyan Guppy-Coles, Emma Toms	Feasibility and diagnostic accuracy of signal processed, machine learning electrocardiogram to identify diastolic dysfunction: Comparison to echocardiography		
William Parsonage	Abell B, McPhail S, McCreanor V, Kularatna S	Driving transformative improvements in cardiac rehabilitation services in order to enhance outcomes following cardiac events		
Annalisse Leikvold	Daniel Lancini, Kristyan Guppy-Coles, Paul Martin	Feasibility and accuracy of a low cost, portable ECG device for measuring QTc interval in adults		

Lead Investigator Name	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2020	Total number of Patients Recruited
Kristyan Guppy-Coles	John Atherton, Krispin Hajkowicz, David Fielding, Patrick Harris, Jenny Robson, Emad Kiriakous, Chamindie Punyadeera, Carl Kennedy, Daman Langguth, Sarah Cherian, Peter Hobson, Shane Byrne	Development and validation of a rapid, portable platform for SARS-CoV-2 antigen detection from nasopharyngeal and throat mucus		

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2020	Total number of Patients Recruited
Joseph Selvanayagam (SAHMRI) John Atherton (Site PI; International Steering Committee Member)	Sanjay Prasad, Andrew McGavigan, Graham Hillis, Werner Jung, Laurent Billot, Suchi Grover, John Atherton, John Younger, Paul Martin	Cardiovascular Magnetic Resonance GUIDEd management of mild-moderate left ventricular systolic Heart Failure (CMR GUIDE HF)	5	34
Tom Marwick (Baker) John Atherton (Site-PI)	Liza Thomas, Andrew Taylor, Andrew Spencer, Andre La Gerche, Con Tam, Sherene Loi, Peter Mollee, John Atherton, Paul Harnett, Sandhir Prasad	Benefit of 2D-strain surveillance in improving cardiovascular outcomes in cancer patients undergoing cardiotoxic chemotherapy	6	6
William Parsonage	Elizabeth Sullivan, Rachael Cordina, Dominica Zentner, Michael Peek, Lisa Simmons, Lawrence Lam, David Celermajer, Wendy Pollock, Karin Lust, Jon Hyett, Zhuoyang Li	Australasian Maternity Outcomes Surveillance System (AMOSS) longitudinal study of first-time NSW/ACT mothers with heart disease and their babies		
Sanjeewa Kularatna (AusHSI/ QUT)	William Parsonage, Nicholas Graves	Feasibility of using Smartphone app to collect patient reported outcome measurement on patients with cardiovascular disease		
Sanjeewa Kularatna	Paul Scuffham, William Parsonage, Joshua Byrnes, Gang Chen, John Atherton	Development of cardiovascular disease specific multi attribute utility instrument to assist utility measurement in cardiovascular conditions; a case for economic evaluations		
William Parsonage	Victoria McCreanor, Alexandra Nowbar, Christopher Rajkumar, Adrian Barnett, Darrel P Francis, Nicholas Graves, William Boden, William Weintraub, Rasha Al-Lamee	Cost-effectiveness analysis of percutaneous coronary intervention for single vessel coronary artery disease: An economic evaluation of the ORBITA trial		
John Atherton (Site-PI)	Multi-centre clinical trial	A multi-centre, randomized, double-blind, active-controlled, parallel-group Phase 3 study to evaluate the efficacy and safety of LCZ696 compared to ramipril on morbidity and mortality in high risk patients following an acute myocardial infarction (PARADISE-MI)	Follow up phase	5

Lead Investigator Name	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2020	Total number of Patients Recruited
John Atherton (Site-PI)	Multi-centre clinical trial	A Double-blind, Randomized, Placebo-controlled, Multicentre Study to Assess the Efficacy and Safety of Omecamtiv Mecarbil on Mortality and Morbidity in Subjects With Chronic Heart Failure With Reduced Ejection Fraction (GALACTIC-HF)	Follow up phase	17
John Atherton (Site-PI)	Multi-centre clinical trial	1VIT15043: A Randomized, Double-Blind, Placebo-Controlled Study to Investigate the Efficacy and Safety of Injectafer® (Ferric Carboxymaltose) as Treatment for Heart Failure with Iron Deficiency (HEART-FID)	10	14
John Atherton (Site-PI)	Multi-centre clinical trial	The long-term effects of dietary sodium restriction on clinical outcomes in patients with heart failure (SODIUM-HF)	3	13
Christopher Hammett (Site-PI)	Multi-centre clinical trial	A Phase 3, Multicentre, Double-blind, Randomized, Placebo-controlled, Parallel-group Study to Investigate the Efficacy and Safety of CSL112 in Subjects with Acute Coronary Syndrome (AEGIS-II)	7	30
Christopher Hammett (Site-PI)	Multi-centre clinical trial	Onyx ONE Study; A Randomized Controlled Trial with Resolute Onyx in One Month DAPT for High-Bleeding Risk Patients (ONYX-ONE)	Follow up phase	22
Christopher Hammett (Site-PI)	Multi-centre clinical trial	A randomised controlled trial of Rivaroxaban for the prevention of major cardiovascular events in patients with coronary or peripheral artery disease (COMPASS)	Follow up phase	40
Christopher Hammett (Site-PI)	Multi-centre clinical trial	A phase III, double-blind, randomized placebo-controlled study to evaluate the effects of dalcetrapib on cardiovascular (CV) risk in a genetically defined population with a recent Acute Coronary Syndrome (DAL-GENE)	Follow up phase	10
Paul Martin (Site-PI)	Multi-centre clinical trial	Clinical Investigation of the ENO/TEO/OTO Pacing System under MRI environment (CAPRI)	10	11
Peter Stewart (Site-PI)	Multi-centre clinical trial	Clinical Evaluation of the Absorb™ BVS, the Everolimus Eluting Bioresorbable Vascular Scaffold in the Treatment of Participants with de novo Native Coronary Artery Lesions (ABSORB)	Follow up phase	25

Research Publications

Journal Articles

1. **Scott AC, McDonald A, Roberts T, Martin C, Manns T, Webster M**, Walker D, Sandford A, Scuffham P, **Atherton JJ**. Cardiovascular telemedicine program in rural Australia. *N Engl J Med* 2020;383:883-4
2. **Atherton JJ**, Punyadeera C. Should patients with heart failure listen to their gut? *Med J Aust* 2020;213 (8): doi: 10.5694/mja2.50797
3. **Prasad SB, Guppy-Coles KB**, Holland DJ, Whalley G, Thomas L, **Atherton JJ**. Hemodynamic and Prognostic Validation of Novel Combined Algorithm to Assess Diastolic Function and Filling Pressures. *JACC Cardiovasc Imaging* 2020;13:2275-6
4. Lal S, Hayward C, De Pasquale C, Kaye D, Javorsky G, Bergin P, **Atherton J**, Ilton M, Weintraub R, Nair P, Rudas M, Dembo L, Doughty R, Kumarasinghe G, Juergens C, Bannon P, Bart N, Chow C, Lattimore J-D, Kritharides L, Totaro R, Macdonald P. Position statement on COVID-19 and acute heart failure: screening the critically ill. *Heart Lung Circ* 2020;29:e94-e98
5. **Guppy-Coles KB, Prasad SB, Smith KC, Lo A, Beard P**, Ng A, **Atherton JJ**. Accuracy of cardiac nurse acquired and measured three-dimensional echocardiographic left ventricular ejection fraction: comparison to echosonographer. *Heart Lung Circ* 2020;29:703-9
6. Gray B, Semsarian C, Fatkin D, Ingles J, **Atherton J**, Davis A, Sanders, P, Pachter N, Skinner J, Stiles M on behalf of the CSANZ Cardiovascular Genetic Diseases Council Writing Committee. Consensus statement for patients with genetic heart disease and COVID-19. *Heart Lung Circ* 2020;29:e85-e87
7. **Prasad SB, Lin A, Kwan C, Sippel J, Younger J, Hammett C**, Thomas L, **Atherton JJ**. Determinants of diastolic dysfunction following myocardial infarction: Evidence for causation beyond infarct size. *Heart Lung Circ* 2020;29:1815-22
8. Hagen CM, Elson JL, Hedley PL, Aidt FH, Havndrup O, Jensen MK, Kanters JK, **Atherton JJ, McGaughran J**, Bundgaard H, Christiansen M. Evolutionary dissection of mtDNA hgH - a susceptibility factor for hypertrophic cardiomyopathy. *Mitochondrial DNA Part A (IMDN)* 2020: 1-7
9. **Prasad SB, Camuglia A, Lo A, Holland DJ, Guppy-Coles K, Whalley G, Thomas L, Atherton JJ**. Hemodynamic validation of the E/e' ratio as a measure of left ventricular filling pressure in patients with non-ST elevation myocardial infarction. *Am J Cardiol* 2020;125:507-12
10. **Tee SL, Sindone A, Roger S, Atherton J, Amerena J, D'Emden M, Erlich J, De Pasquale C**. Hyponatremia in Heart Failure. *Int Med J* 2020;50:659-66
11. **Skinner JR, Atherton JJ, Semsarian C**. Genetic cardiovascular conditions – It's all about family. *Heart Lung Circ* 2020;29:495-7
12. **Younger JF, Lo A, McCormack L, McGaughran J, Prasad S, Atherton JJ**. Hypertrophic cardiomyopathy-challenging the status-quo? *Heart Lung Circ* 2020;29:556-65
13. Bart NK, Thomas L, Korczyk D, **Atherton JJ**, Stewart GJ, Fatkin D. Amyloid cardiomyopathy. *Heart Lung Circ* 2020;29:575-83
14. Chen S-M, Lin H-S, **Atherton JJ**, Maclsaac R, Wu C-J. Effect of a mindfulness program for long-term care residents with type 2 diabetes: A cluster randomized controlled trial measuring outcomes of glycemic control, relocation stress and depression. *Int J Older People Nurs* 2020:e12312
15. Hamilton-Craig C, McGavigan A, Semsarian C, Martin A, **Atherton J**, Stanton T, LaGerche A, Taylor AJ, Haqqani H. The Cardiac Society of Australia and New Zealand position statement on the diagnosis and management of arrhythmogenic right ventricular cardiomyopathy (2019 update). *Heart Lung Circ* 2020;29:40-8
16. Hopper I, Connell C, Briffa T, De Pasquale CG, Driscoll A, Kistler PM, Macdonald PS, Sindone A, Thomas L, **Atherton JJ**. Nutraceuticals in heart failure: A systematic review. *J Cardiac Fail* 2020;26:166-79
17. Zhang X, Karunathilaka N, Senanayake S, Subramaniam N, Chan W, Kostner K, Fraser J, **Atherton JJ**, Punyadeera C. The potential prognostic utility of salivary galectin-3 concentrations in heart failure. *Clin Res Cardiol* 2020;109:685-92

-
18. Teerlink JR, Diaz R, Felker GM, McMurray JJV, Metra M, Solomon SD, Adams KF, Anand I, Arias-Mendoza A, Biering-Sørensen T, Böhm M, Bonderman D, Cleland JGF, Corbalan R, Crespo-Leiro MG, Dahlström U, Echeverria LE, Fang JC, Filippatos G, Fonseca C, Goncalvesova E, Goudev AR, Howlett JG, Lanfear DE, Li J, Lund M, Macdonald P, Mareev V, Momomura S-I, O'Meara E, Parkhomenko A, Ponikowski P, Ramires FJA, Serpytis P, Sliwa K, Spinar J, Suter TM, Tomcsanyi J, Vandekerckhove H, Vinereanu D, Voors AA, Yilmaz MB, Zannad F, Sharpsten L, Legg JC, Varin C, Honarpour N, Abbasi SA, Malik FI, Kurtz CE, **GALACTIC-HF Investigators**. Cardiac Myosin Activation with Omecamtiv Mecarbil in Systolic Heart Failure. *N Engl J Med* 2020 Nov 13. doi: 10.1056/NEJMoa2025797. Online ahead of print
-
19. Teerlink JR, Diaz R, Felker GM, McMurray JJV, Metra M, Solomon SD, Adams KF, Anand I, Arias-Mendoza A, Biering-Sørensen T, Böhm M, Bonderman D, Cleland JGF, Corbalan R, Crespo-Leiro MG, Dahlström U, Diaz R, Echeverria Correa LE, Fang JC, Filippatos G, Fonseca C, Goncalvesova E, Goudev AR, Howlett JG, Lanfear DE, Lund M, Macdonald P, Mareev V, Momomura SI, O'Meara E, Parkhomenko A, Ponikowski P, Ramires FJA, Serpytis P, Sliwa K, Spinar J, Suter TM, Tomcsanyi J, Vandekerckhove H, Vinereanu D, Voors AA, Yilmaz MB, Zannad F, Sharpsten L, Legg JC, Abbasi SA, Varin C, Malik FI, Kurtz CE; **GALACTIC-HF Investigators**. Omecamtiv Mecarbil in Chronic Heart Failure with Reduced Ejection Fraction, GALACTIC-HF: Baseline characteristics and comparison with contemporary clinical trials. *Eur J Heart Fail* 2020;22:2160-71
-
20. Shaw J, Andrikolopoulos S, **Atherton J**, Audehm R, Nanayakkarra S, Roache H, Sharma A, Zoungas S. Whitepaper: Practicalities of using SGLT2 inhibitors in comorbid diabetes and heart disease. Baker Heart and Diabetes Institute 2020. See: <https://www.baker.edu.au/impact/advocacy/sgl2-inhibitors>
-
21. Arasaratnam K, **Tomlinson S, Dahiya A, Lo A, Jalali H, Prasad SB**. Surgical Repair of a Unileaflet Mitral Valve: A Rare Congenital Abnormality and a Novel Surgical Approach. *CASE (Phila)*. 2020 Jun 3;4(5):420-428
-
22. Cuscaden C, **Ramsay SC, Prasad S**, Goodwin B, Smith J. Estimation of prevalence of transthyretin (ATTR) cardiac amyloidosis in an Australian subpopulation using bone scans with echocardiography and clinical correlation. *J Nucl Cardiol*. 2020 May 8. doi: 10.1007/s12350-020-02152-x. Online ahead of print
-
23. Koay YC, **Stanton K**, Kienzle V, Li M, Yang J, Celermajer DS, O'Sullivan JF. Effect of chronic exercise in healthy young male adults: a metabolomic analysis. *Cardiovascular Research*, Volume 117, Issue 2, 1 February 2021, Pages 613–622, <https://doi.org/10.1093/cvr/cvaa051>
-
24. Nayak KR, Trieu NB, O'Dell J, Kendall S, **Stanton K**, Han NHT, Krause D, Wessman D, Lopez J, Phi-Lee T, Adams D, Parrish JS, LanHieu N. Serial Echocardiographic Follow-up of Structural Heart Interventions Performed During Pacific Partnership Interventional Cardiology Subject Matter Exchanges From 2015 to 2017 in Da Nang, Vietnam, *Military Medicine*, Volume 186, Issue Supplement_1, January-February 2021, Pages 833–838, <https://doi.org/10.1093/milmed/usaa499>
-
25. Windecker S, Latib A, Kedhi AJ, Kirtane, DE, Kandzari DE, Mehran R, Price MJ, Abizaid A, Simon DI, Worthley SG, Zaman A, Hudec M, Poliacikova P, Abdul Gharar AK, Selvaraj K, Petrov I, Mylotte D, Pinar E, Moreno R, Fabbicocchi F, Pasupati S, Kim H-S, Aminian A, Tie C, Wlodarczak A, Hur S-H, Marx SO, Jankovic S, Brar S, Bosquette L, Liu M, Stone GW and **ONYX ONE Investigators**. Polymer-based or Polymer-free stents in Patients at High Bleeding Risk. *N Engl J Med* 2020; 382:1208-18
-
26. Kozor R, Walker S, Parkinson B, **Younger J**, Hamilton-Craig C, Selvanayagam JB, Greenwood JP, Taylor AJ. Cost-Effectiveness of Cardiovascular Magnetic Resonance in Diagnosing Coronary Artery Disease in the Australian Health Care System. *Heart Lung Circ*. 2020 Aug 27: Epub ahead of print. PMID: 32863111
-
27. **Boyle S, Sung-Him Mew T, Lust K**, McKenzie S, Javorsky G, **Parsonage W**. Pregnancy Following Heart Transplantation: A Single Centre Case Series and Review of the Literature. *Heart Lung Circ*. 2021 Jan;30(1):144-153
-
28. **Parsonage WA**, Zentner D, **Lust K**, Kane SC, Sullivan EA. Heart Disease and Pregnancy: The Need for a Twenty-First Century Approach to Care... *Heart Lung Circ*. 2021 Jan;30(1):45-51
-
29. Baris L, Hakeem A, Moe T, Cornette J, Taha N, Farook F, Gaisin I, Bonanomi C, **Parsonage W**, Johnson M, Hall R, Roos-Hesselink JW; ROPAC Investigators Group. Acute Coronary Syndrome and Ischemic Heart Disease in Pregnancy: Data From the EURObservational Research Programme-European Society of Cardiology Registry of Pregnancy and Cardiac Disease. *J Am Heart Assoc*. 2020 Aug 4;9(15):e015490
-
30. **Parsonage WA, Cullen L**, Brieger D, Hillis GS, Nasis A, Dwyer N, Wahi S, Lo S, Than M, Kerr A, Devlin G, Chew DK. CSANZ Position Statement on the Evaluation of Patients Presenting With Suspected Acute Coronary Syndromes During the COVID-19 Pandemic. *Heart Lung Circ*. 2020 May 21:S1443-9506(20)30144-X
-
31. **Greenslade JH, Parsonage W, Foran L, McCormack L, Ashover S, Milburn T**, Berndt S, Than M, Brain D, **Cullen L**. Widespread Introduction of a High-Sensitivity Troponin Assay: Assessing the Impact on Patients and Health Services. *J Clin Med*. 2020 Jun 16;9(6):E1883
-

32. **Greenslade JH, Ho A, Hawkins T, Parsonage W, Crilly J, Cullen L.** Examining the translational success of an initiative to accelerate the assessment of chest pain for patients in an Australian emergency department: a pre-post study. *BMC Health Serv Res.* 2020 May 13;20(1):419
33. Kularatna S, Senanayake S, Chen G, **Parsonage W.** Mapping the Minnesota living with heart failure questionnaire (MLHFQ) to EQ-5D-5L in patients with heart failure. *Health Qual Life Outcomes.* 2020 Apr 29;18(1):115
34. **Greenslade JH,** Sieben N, **Parsonage WA,** Knowlman T, **Ruane L,** Than M, Pickering JW, **Hawkins T, Cullen L.** Factors influencing physician risk estimates for acute cardiac events in emergency patients with suspected acute coronary syndrome. *Emerg Med J.* 2020 Jan;37(1):2-7
35. Tavenier AH, Hermanides RS, Fabris E, Lapostolle F, Silvain J, Ten Berg JM, Lassen JF, Bolognese L, Cantor WJ, Cequier A, Chettibi M, Goodman SG, **Hammett CJ,** Huber K, Janzon M, Merkely B, Storey RF, Zeymer U, Ecollan P, Collet JP, Willems FF, Diallo A, Vicaut E, Hamm CW, Montalescot G, van 't Hof AWJ. Efficacy and Safety of Glycoprotein IIb/IIIa Inhibitors on Top of Ticagrelor in STEMI: A Subanalysis of the ATLANTIC Trial. *Thrombosis and Haemostasis* 2020;120 (1):65-74
36. Davidson N, Evans J, Giammichele D, Powell H, Hobson P, Teis B, Glover H, **Guppy-Coles KB,** Robson J. Comparative analysis of three laboratory based serological assays for SARS-CoV-2 in an Australian cohort. *Pathology,* 2020 Dec;52(7):764-9

Books

1. **Semsarian C,** Atherton JJ, **Skinner JR (Guest editors).** Genetic heart diseases- State of the heart (Special issue). *Heart Lung Circ* 2020;29:495-652

Book Chapters / Letters

1. Kistler PM, **Atherton JJ,** Jennings G. Clarification of the National Heart Foundation and CSANZ 2018 guideline recommendation for primary prevention defibrillator implantation in non-ischemic cardiomyopathy. *Med J Aust* 2020;212:509-10.e1
2. Briffa T, **Atherton JJ,** Connell C. Response to "Paradise Lost? New National Foundation of Australia Guidelines on Heart Failure fail to recognise the intensity of exercise evidence". *Heart Lung Circ* 2020;29:e9

2020 Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

John Atherton

1. 68th Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand, December 2020 (Virtual meeting). Topic: Treatment algorithm in HFrEF- what should come first?
2. Royal Australasian College of Physicians- College Learning Series, December 2020 (pre-recorded RACP national learning series). Topic: Heart failure- Definitions, diagnosis and medical management
3. American Heart Association 2020 Congress Round Up, December 2020 (Virtual Webinar). Topic: Heart failure update- SGLT2 (\pm 1) Inhibitors
4. The CV Connection- Managing cardiovascular disease in the current landscape (National webinar), November 2020. Topic: Management of the failing heart
5. AstraZeneca Heart Failure Advisory Board (virtual), September 2020. Topic: Understanding where dapagliflozin and SGLT2i's could fit in the HF guidelines and treatment pathway

6. Post-European Society of Cardiology Evidence to Practice Clinical Trial Forum (virtual), September 2020. Topic: ESC Hotline 2020 Update: PARALLAX, EXPLORER-HCM. (supported by MonashHeart, MonashHealth and South Australian Health and Medical Research Institute)
7. BI-Lilly Alliance Heart Failure Advisory Board (virtual), August 2020. Topic: Diagnosis of Heart failure
8. Trilateral International Consensus Conference: Universal Definition of Heart Failure Workshop (virtual), August 2020 (organised by the Heart Failure Society of America, Heart Failure Association of the ESC and Japanese Heart Failure Society): Discussant for “What can we learn from other disease definitions?”
9. Practicalities of using SGLT2 Inhibitors in comorbid diabetes and heart disease. Baker Institute Webinar, August 2020 (discussant)
10. 1st Global e-Conference on Heart Failure – eSPACE-HF (virtual), July 2020. Panel discussion: Global challenges and opportunities for heart failure diagnosis, treatment and research. New York time zone. (supported by University of Lisbon, Portugal and Charite University Medicine Berlin, Germany in collaboration with the World Heart Federation)
11. 1st Global e-Conference on Heart Failure – eSPACE-HF (virtual), July 2020. Session 5- Comorbidities in HF part 1. Topic: Atrial fibrillation in heart failure. And participate in 2 discussion panels in Athens time zone and Beijing time zone
12. The Experts’ Forum, Novartis Medical Affairs Clinical Experience Sharing and virtual roundtable discussion (virtual), May 2020. Topic: The link between COVID-19 and ACEi/ARB medications
13. American College of Cardiology and World Congress of Cardiology, Chicago, USA, March 2020. Session: Heart failure around the globe (648 Scientific Session). Topic: Preventing heart failure in our contemporary times: Australian perspective? (face-to-face cancelled due to COVID-19)
14. Australian Cardiovascular Alliance (ACvA) Industry Roundtable (virtual), March 2020. Topic: “MSAC and the clinical cardiology perspective

Christopher Hammett:

15. SAHMRI Post ESC Evidence to Practice Clinical trial Forum (virtual meeting) 2 September 2020. Ticagrelor Monotherapy – The Twilight Study
16. Thrombosis Action Conference (Virtual meeting), Malaysia 21 June 2020. Updates in Thrombocardiology: Unmet needs of CAD and PAD patients
17. Anticoagulants Expert Summit, Manila Philippines 22 February 2020. The New Era of Vascular Protection – Improving Outcomes in CAD and PAD with Vascular Dose Rivaroxaban

Ada Lo:

18. Australasian Society of Ultrasound in Medicine (ASUM) Surf, Sand and Soundwaves Conference, Kingscliff, NSW. Practical Guide for Sonographers for Pulmonary Haemodynamics March 2020. (Invited Lecture)
19. Australasian Society of Ultrasound in Medicine (ASUM) Surf, Sand and Soundwaves Conference, Kingscliff, NSW. Guidelines based Assessment of Aortic Stenosis. March 2020. (Invited Lecture)
20. Australasian Society of Ultrasound in Medicine (ASUM) Surf, Sand and Soundwaves Conference, Kingscliff, NSW. Guidelines based Assessment of Infective Endocarditis. March 2020. (Invited Lecture)
21. Invited speaker by Australasian Sonographers Association in Cardiac Day Adelaide on Most update Assessment of aortic stenosis and Stress Echo for Non-ischaemic Cardiac Disease. Feb 2020

William Parsonage:

22. Clinical Oncology Society of Australia, November 2020 “Anthracycline Cardiomyopathy and Pregnancy’
23. BOOM Days Conference, Materno-Fetal Medicine and Obstetric Medicine Conference, March 2020 ‘Cardiac Disease and Pregnancy’

Sandhir Prasad:

-
24. Australasian Society of Ultrasound in Medicine (ASUM) Webinar. Assessment of Diastolic Function – A Guidelines Based Approach
-
25. Australasian Society of Ultrasound in Medicine (ASUM) Surf, Sand and Soundwaves Conference, Kingscliff, NSW. Guidelines based Assessment of Diastolic Function (Invited Lecture)
-
26. Australasian Society of Ultrasound in Medicine (ASUM) Surf, Sand and Soundwaves Conference, Kingscliff, NSW. Diastolic Function Assessment Cases – Interpret with the Experts (Invited Lecture)

Adam Scott:

27. 68th Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand (CSANZ), December 2020 (Virtual meeting). (CSANZ/ European Society of Cardiology Joint Session), December 2020. Topic: Tele-Cardiac Investigations in Rural Australia
-
28. ABC radio interview August 2020. Topic: Cardiovascular Telemedicine program in Rural Australia
-
29. Sky News interview with Alan Jones and Richo, May 2020. Topic: White Cloud Foundation, Tele-Mental Health and Tele-Cardiac Investigations solutions

John Younger:

30. Clinical Oncology Society of Australia (COSA) Annual Scientific Meeting, Brisbane, QLD. Detection and Monitoring of Herceptin Cardiomyopathy
-
31. Philips Medical Systems Educational Webinar. Comprehensive Cardiac Analysis

Poster Presentations

-
1. **Celermajer Y, Guppy-Coles K, Holland D, Whalley G, Thomas L, Atherton J, Prasad S.** Novel combined algorithm to assess left ventricular diastolic function and filling pressures: correlation with filling pressures and outcomes. Heart Lung Circ 2020;29 (Suppl 2):S209
-
2. **Binnie A, Guppy-Coles K, Prasad S, Johnstone M, Smith K, Lo A, Truloff T, Armstrong J, Beard P, Atherton J.** Comparison of echocardiographic B-mode guided colour Doppler overlay M-mode mitral annular systolic excursion to echocardiographic three-dimensional left ventricular ejection fraction both using contemporary technology. Heart Lung Circ 2020;29 (Suppl 2):S171
-
3. O'Neil A, Davis J, Mohebbi M, Voutilainen A, Virtanen J, Tuomainen T, **Atherton J**, Amerena J, Driscoll A, Hare D, Wittert G. Urinary sodium concentration predicts time-to-event outcomes in men with heart failure over a 33-year period. Heart Lung Circ 2020;29 (Suppl 2):S120-S121
-
4. Do J, Yeates L, Butters A, Sarina T, Nowak N, Burns C, Connell V, **Hunt L**, Berkman J, Ingrey A, Kevin L, Thompson T, Macciocca I, Kawa J, McTaggart D, Zentner D, Pflaumer A, Ogden K, Smith J, Turner C, Ronan A, Davis A, Weintraub R, Vohra J, Winship I, **McGaughran J, Atherton J**, Semsarian C, Ingles J. The Australian genetic heart disease registry: 13 years on. Heart Lung Circ 2020;29 (Suppl 2):S303-S304
-
5. **Binnie A, Guppy-Coles K, Prasad S, Johnstone M, Smith K, Lo A, Truloff T, Armstrong J, Beard P, Atherton J.** Comparison of echocardiographic B-mode guided colour Doppler overlay M-mode mitral annular systolic excursion to echocardiographic three-dimensional left ventricular ejection fraction both using contemporary technology. Heart Lung Circ 2020;29 (Suppl 2):S171
-
6. **Guppy-Coles K, Johnstone M, Prasad S, Smith K, Lo A, Truloff T, Armstrong J, Atherton J.** Feasibility and accuracy of assessing left ventricular systolic function by measuring left ventricular ejection fraction using a hand-held echocardiography device with an automated algorithm. Heart Lung Circ 2020;29 (Suppl 2):S187
-
7. **Arasaratnam K, Camuglia A, Lo A, Holland D, Guppy-Coles K, Whalley G, Thomas L, Atherton J, Prasad S.** Accuracy of the E/e' ratio as a measure of left ventricular filling pressures in patients with non ST-elevation myocardial infarction. Heart Lung Circ 2020;29 (Suppl 2):S159

-
8. **Dwivedi J, Lo A, Guppy-Coles K, Challa P, Younger J, Atherton J, Dahiya A.** Impact of using maximal left ventricular wall thickness measured by cardiac magnetic resonance imaging on risk of sudden cardiac death at 5 years using ESC HCM-SCD risk calculator in patients with hypertrophic cardiomyopathy. *Heart Lung Circ* 2020;29 (Suppl 2):S192

 9. **Celermajer Y, Guppy-Coles K, Armstrong J, Whalley G, Atherton J, Thomas L, Prasad S.** Minimal left atrial volume better predicts outcome after acute MI, compared with traditional measures of LV diastolic function. *Heart Lung Circ* 2020;29 (Suppl 2):S98

 10. **Krishnan A, Prasad SB, Guppy-Coles KB, Hammett C, Whalley G, Holland D, Thomas L, Atherton J.** A composite echocardiographic score to predict long-term survival following myocardial infarction. *J Am Coll Cardiol* 2020;75(11-Suppl 1):A1668

 11. **Naumann S, Lindemann J, Guppy-Coles KB, Martin P.** Propagation mapping in atrioventricular nodal reentry tachycardia in adults to identify wave collision and its proximity to successful site of ablation. *Heart Lung Circ* 2020;29 (Suppl 2):S144

 12. **Stanton K, Kienzle V, Dinnes D, Jessup W, Kritharides L, Rye K, Celermajer D.** Moderate and High Intensity Exercise Improve Cholesterol Efflux Capacity, Lipoprotein Profile and Increase HDL Particle Size in Healthy Young Men. *Heart Lung Circ* 2020;29 (Suppl 2):S368-369. DOI:<https://doi.org/10.1016/j.hlc.2020.09.746>
-

Department of Clinical Immunology and Allergy

Research project on patients with Idiopathic Anaphylaxis by Drs Gardner, Prentice, Tan, Gillis and Scott

Current RBWH [Department / Research Group Led](#) Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Logan Gardner	Drs Roger Prentice, Zihao Tan, David Gillis, James Scott	Determination of added benefit of a comprehensive assessment of alternative aetiology in patients classified as Idiopathic Anaphylaxis (IA) and assessment of the psychological impact of the condition	6	34

Department of Clinical Pharmacology

The Department of Clinical Pharmacology has a number of research focuses, across multiple professional disciplines, reflecting the multidisciplinary makeup of the department. Research staff work collaboratively with the Department of Pharmacy, in areas related to medication safety, the quality use of medicines. Clinical Pharmacology continues to work collaboratively with other hospitals within Metro North Hospital and Health Service (Prince Charles Hospital, Caboolture Hospital, Metro North IT) and Brisbane (Princess Alexandra Hospital) and QIMR Berghofer. In addition, the department continues to focus on the role of individualised feedback, of both nursing and medical staff, related to the safety of prescribing and administration of medicines. Karen Davies, Clinical Nurse Consultant for Medication Safety successfully completed her PhD studies related to observation and feedback of nursing administration of medications.

In addition, we have nearly completed a large study, in collaboration, assessing the benefits of implementing an electronic prescribing system at Caboolture Hospital. Research is also expanding into the safety and appropriate use of opioids not only within RBWH, but Metro North and Queensland. Collaborative research within the Emergency and Trauma Centre determining the prevalence and characteristics of medication-related presentations to the emergency department. A National collaboration with multiple universities (University of Queensland, University of New South Wales, Murdoch Children's Research Institute and Curtin University of Technology) investigating medication re-purposing to reduce risk of ovarian cancer and extend survival. Lastly, Dr Donovan, Director of Clinical Pharmacology, continues to expand his research interests in the cost-effectiveness of health care and continues to work collaboratively with researchers from within and external to RBWH, including a successful NHMRC project grant in collaboration with, amongst others, QIMR Berghofer.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Karen Whitfield	Research Support Award	2020 Metro North Research Excellence Awards

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Karen Davies	Clinical Pharmacology	Medication Administration Evaluation and Feedback Tool: A Pilot Stepped Wedge Cluster Randomised Trial	Metro North QIMR Collaborative Grant	\$50,000.00	8 months
Dr Susan Jordan (Queensland Institute of Medical Research Berghofer), Prof Sallie-Anne Pearson (University of New South Wales), Dr Nirmala Pandeya (University of Queensland), Assoc Prof Michael Coory (Murdoch Children's Research Institute), Dr Katrina Spilsbury (Curtin University of Technology), Dr Peter Donovan	Clinical Pharmacology, Internal Medicine and Aged Care	IMPROVE - Investigating Medication Re-Purposing to Reduce risk of Ovarian cancer and Extend survival	National Health and Medical Research Council	\$438,313	2017-2021

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Karen Davies	PhD, UQ (2016-2020)	Medication administration evaluation and feedback tool		
Peter Donovan	Nicola Harper, Dr Danielle Stowasser, Margie Butnoris (Metro North IT), Ian Coombes, (Pharmacy), Charles Denaro (Internal Medicine), Timothy Dunn (Caboolture Hospital Pharmacy), Anita Pelecanos (QIMR Berghofer)	Evaluation of the Implementation of Electronic Prescribing using Interrupted Time-Series Analysis at Two Hospitals in Queensland		
Peter Donovan	Tahlia Gentle, Donald McLeod , Assoc. Prof Susan Jordan, (University of Queensland), Champika Pattullo, Mark Daghli , Assoc. Prof Anthony Bell, Wesley Hospital, Brisbane	Opioid Prescribing and Associated Harm in Queensland: A whole of population linkage study		
Peter Donovan	Alexis Dermedgoglou (Cairns Hospital), Nicola Hinton (Cairns Hospital), Gaurav Puri (Cairns Hospital), Carolyn Allen (Sunshine Coast University Hospital), Clare Cutmore, Heike Krausse , Hua Bing Yong (Princess Alexandra Hospital), Jacqueline Cotungo (Princess Alexandra Hospital), Jade Eccles-Smith, Jay Leckie (Clinical Excellence Queensland), Jennifer Abel (Logan Hospital), Kay Dean (West Morteon HHS), Kerry Porter (Princess Alexandra Hospital), Roisine Warwick (Redland Hospital), Lee Allam (Princess Alexandra Hospital)	Queensland Inpatient Diabetes Survey		
Champika Pattullo	Benita Suckling, Peter Donovan , Lisa Hall (Queensland University of Technology)	Development, implementation and outcomes of an adaptable OXYCODONE Quality Improvement STRATEGY: Steps towards opioid stewardship		
Karen Davies	CIB - Dr Karen Hay CIC – Assoc. Professor Karen Whitfield CID – Mrs Karen Chippindall AIA – Dr Peter Donovan AIB – Assoc. Professor Ian Coombes AIC – Professor Samantha Keogh AID – Mrs Katherine Losinski AIE – Mr Paul Jarrett AIF – Assoc. Professor Catriona Booker	Medication Administration Evaluation and Feedback Tool: A Pilot Stepped Wedge Cluster Randomised Trial		

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Susan Jordan (University of Queensland)	Prof Sallie-Anne Pearson (University of New South Wales), Dr Nirmala Pandeya (University of Queensland), Assoc Prof Michael Coory (Murdoch Children's Research Institute), Dr Katrina Spilsbury (Curtin University of Technology), Peter Donovan	IMPROVE - Investigating Medication Re-Purposing to Reduce risk of Ovarian cancer and Extend survival		

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Louise Cullen (Emergency and Trauma Centre)	Nathan Brown, Peter Donovan, Ian Coombes, Jaimi Greenslade, David Hughes, Elizabeth Doran	Prevalence and characteristics of medication-related presentations to the emergency department. Emergency & Trauma Centre, Royal Brisbane and Women's Hospital		
Benita Suckling	Champika Pattullo, Peter Donovan, Shirley Hu (University of Queensland), Bill Loveday (Medications and Regulations, Queensland Health)	Rates of Opioid Dispensing and Opioid-related Harms 2010-2018 – The Queensland Experience		
Ian Coombes	Peter Donovan, Charles Mitchel (UQ), Brooke Myers, Christy Noble, (Gold Coast University Hospital, Griffith University)	Improving Intern Medical Officer Prescribing through an Intervention of Self-Assessment and Feedback		
Midori Nagakai	Karen Whitfield, Glen Kennedy, A Clavarino, Nicole Gavin	Oral mucositis prevention in patients undergoing haematopoietic stem cell transplantation (HSCT)		
Nicolas Anning	Karen Whitfield G Hopkins, A Clavarino, Peter Donovan	Pre and post-operative medication management in bariatric patients		
Paul Firman	Karen Whitfield Ken-Soon Tan, Alexandra Clavarino	Therapeutic Drug Monitoring optimisation		
Abby Yu	Karen Whitfield, Michael D'Emden, Andrew Hale	Diabetic patient, medication optimisation prior to surgery		
Elizabeth Doran	Karen Whitfield, Louise Cullen, Ian Coombes	Risk assessment tool of poisoned patients by non-expert clinicians in Emergency Department		
Phillip Robinson	Peter Donovan, Nicola Dalbeth (University of Auckland, Auckland Hospital)	A Health Economic Analysis Colchicine Therapy for Gout Prophylaxis		

2020 Research Publications

Journal Articles

1. **Madan A, Risetto T, Trenerry H, & Donovan P.** The Perils of Antiepileptic Toxicity. Australian Prescriber, April 2020 (In Press)
2. Samantha Keogh, Caroline Shelverton, Julie Flynn, Gabor Mihala, Saira Mathew, **Karen M Davies, Nicole Marsh,** Claire M Rickard. Implementation and evaluation of short peripheral intravenous catheter flushing guidelines: A stepped wedge cluster randomised trial. BMC Med 18, 252 (2020). <https://doi.org/10.1186/s12916-020-01728-1>
3. **Davies, K. M., Coombes, I. D.,** Keogh, S., Hay, K., & **Whitfield, K. M.** (2020) Medication Administration Evaluation and Feedback Tool: Inter-rater Reliability in the Clinical Setting. Collegian, In Press
4. **North AM, Lust KM, Barrett H, Whitfield KM.** (2020) Therapeutic anticoagulation during the postnatal peripartum period: a survey of clinical practice. JPPR Vol 50 (2) <https://doi.org/10.1002/jppr.1617>
5. **Davies K, Coombes I, Keogh S, Hay K, Whitfield K.** Medication Administration Evaluation and Feedback Tool: Inter-rater Reliability in the Clinical Setting. Collegian, In Press [doi:10.1016/j.colegn.2020.10.001](https://doi.org/10.1016/j.colegn.2020.10.001)

-
6. Tanvir EM, **Whitfield KM**, Ng JC, Shaw PN (2020) Development and validation of an ICP-MS method and its application to determine multiple trace elements in small volumes of whole blood and plasma. *J of Analytical Toxicology* Mar 30

 7. **Whitfield K**, Dresser J, Magoffin R, Wilby K. Maintaining and maximising motivation to progress scholarly work during challenging times – Reflections from the pandemic. *Currents in Pharmacy Teaching and Learning*. <https://doi.org/10.1016/j.cptl.2020.10.017>

 8. **Finn S**, D'arcy E, **Donovan P**, **Kanagarajah S**, Barras M. A randomised trial of pharmacist-led discharge prescribing in an Australian geriatric evaluation and management service. *Int J Clin Pharm*. 2020 Nov 2. doi: 10.1007/s11096-020-01184-0. Epub ahead of print. PMID: 33136253

 9. **Philip C. Robinson**, Nicola Dalbeth and **Peter Donovan**. Colchicine Prophylaxis of Gout Flares When Commencing Allopurinol is Very Cost Effective. *Arthritis Care and Research*. June 2020. DOI: 10.1002/acr.24357

 10. Bullock, B.; **Donovan, P.J.**; Mitchell, C.; Whitty, J.A.; **Coombes, I.** The impact of a Post-Take Ward Round Pharmacist on the Risk Score and Enactment of Medication-Related Recommendations. *Pharmacy* 2020, 8, 23
-

2020 Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

-
1. **Davies, K. M., Coombes, I. D., Keogh, S., Hay, K., & Whitfield, K. M.** (2020) Health RoundTable Beyond 2020 - Health Executive Innovations Forum - Medication Administration Evaluation and Feedback Tool (MAEFT) November 2020

 2. **Davies, K. M.** RBWH Symposium - Medication Administration Evaluation and Feedback Tool (MAEFT) – what, how, where to?
-

Oral Presentations

-
1. **Davies, K. M., Coombes, I. D., Keogh, S., Hay, K., & Whitfield, K. M.** Author Davies, K. M. Medication Administration Evaluation and Feedback Tool (MAEFT) - Health RoundTable Beyond 2020 November - Health Executive Innovations Forum. Australia and New Zealand

 2. **Davies, K. M., Coombes, I. D., Keogh, S., Hay, K., & Whitfield, K. M.** Author Davies, K. M. Medication Administration Evaluation and Feedback Tool (MAEFT) – what, how, where to? RBWH Symposium 2020 December

 3. **Pallett S, Barkeij C, Aladhami N, Fassbind I, Hoy S, Whitfield K.** Maternity Outpatient Pharmacist - Evaluation of Impact. 2020 SHPA Virtual Congress
-

Department of Endocrinology and Diabetes

The Department of Endocrinology and Diabetes is staffed by 13 medical, two administrative, four allied health professionals, two research nurses, four diabetes nurse educators, one podiatrist, one dietitian and three scientists.

Clinical research activities include an active clinical trials unit. Chronic disease funding is underwriting projects in management of Diabetes in Pregnancy and Type 2 Diabetes. The Conjoint Endocrine Laboratories, a joint venture of Internal Medicine Services and Pathology Queensland undertakes studies at a basic science level of placental iodide and thyroid hormone handling as well as assessing testosterone transport and action.

Research is a major focus of the Department. There are now 3 doctoral students. The department has developed strong links with several research departments and has started major clinical studies in several areas including:

HIV disease and bone

- Pheochromocytoma and bone disease
- Genetics of Pheochromocytoma
- Genetics of Thyroid Cancer
- Genetics of Skeletal Dysplasia
- Genetics of Osteogenesis imperfecta
- Genome wide association studies of osteoporosis.

The Department is actively investigating the epidemiology of Thyroid Cancer and Graves' disease.

Its on-going role in the Conjoined internal medicine laboratory is exploring the placental handling of thyroid hormone and iodine. A recent focus is using this model to analyse the effect of common environmental chemicals on disordered placental function and its implications for maternal and fetal health pendent tissues.

The Department has an active Clinical Trials Unit undertaking important trials in: -

- Diabetes and cardiovascular disease
- GLP/GIP combination therapy
- Novel growth hormone antagonist therapies
- Thyroid cancer

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Assoc. Prof. Don McLeod	QIMR Berghofer RBWH Endocrinology & Diabetes	Queensland Advancing Clinical Research Fellowship. Optimising thyroid hormone treatment for Queenslanders	Queensland Government	\$300,000	2019-2022
Assoc. Prof. Don McLeod	QIMR Berghofer RBWH Endocrinology & Diabetes	Metro North Clinician Research Fellowship. The causes, prognosis, and treatment of thyroid disease	Metro North HHS	40% FTE for 3 yrs, 20% FTE for 1 yr	2019-2022
Assoc. Prof. Don McLeod	RBWH Endocrinology & Diabetes	Does stress cause Graves' disease? (APP1128295)	NHMRC Project Grant	\$565,000	
Assoc. Prof. Don McLeod	QIMR Berghofer RBWH Endocrinology & Diabetes	The D-Health Trial: a large- scale population-based trial of vitamin D supplementation for improving the health of older adults (APP1120682)	NHMRC Project Grant	\$2,591,860	

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Don McLeod	Ladenson P, Cooper D, Caturegli P, Veitor N, Whiteman D, Jordan S	Does stress cause Graves' disease?		
Don McLeod	Ladenson P, Cooper D, Caturegli P, Bedno S, Whiteman D, Jordan S	The Queensland Thyroid Cancer Study		

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Rachel Neale (QIMR Berghofer)	Waterhouse M, English DR, Armstrong BK, Baxter C, Duarte Romero B, Ebeling P, Hartel G, Kimlin MG, McLeod DSA , O'Connell RL, Van Der Pols JC, Venn AJ, Webb PM, Whiteman DC	The D-Health trial		
Susan Jordan (UQ)	Rahman ST, McLeod DSA , Pandeya N, Neale RE, Bain CJ, Baade P, Youl PH, Jordan	The Queensland Thyroid Cancer Study		

Research Publications

Journal Articles

- Farquhar H E and Lamprecht A.** Thromboangiitis obliterans in pregnancy – Case report and literature review. *Obstetric Medicine*. 2021 Jan 4 (online) <https://doi.org/10.1177%2F1753495X20980251>
- Farquhar H E,** Wong M, Puri G, Sinha A. A series of two patients with cardiac paragangliomas. *AACE Clinical Case Rep*. 2020 July-Aug;6(No. 4):e174-178
- Shih P, Nickel B, Degeling C, Thomas R, Brito JP, **McLeod DSA**; McCaffery K, Carter S. Terminology change for small low-risk papillary thyroid cancer as a response to overtreatment: Results from three Australian community juries. *Thyroid*. ePublished 2021 Jan 5. doi: 10.1089/thy.2020.0694 (PMID 33238815)
- Pham H, Waterhouse M, Baxter C, Duarte Romero B, **McLeod DSA**, Armstrong BK, Ebeling PR, English DR, Hartel G, Kimlin MG, Martineau AR, O'Connell R, van der Pols JC, Venn AJ, Webb PM, Whiteman DC, Neale RE. The effect of vitamin D supplementation on acute respiratory tract infection in older Australian adults: an analysis of data from the D-Health Trial. *Lancet Diabetes and Endocrinology* 2021; 9: 69–81 (PMID: 33444565)
- d'Emden MC, McLeod DSA,** Ungerer J, Appleton C, Kanowski D. Development of a fasting blood glucose-based strategy to diagnose women with gestational diabetes mellitus at increased risk of adverse outcomes in a COVID-19 environment. *PLOS ONE*. 2020; 15: e0243192. doi: 10.1371/journal.pone.0243192. (PMID: 33270719)
- Waterhouse M, Baxter C, Duarte Romero B, **McLeod DSA**, English DR, Armstrong BK, Clarke MW, Ebeling PR, Hartel G, Kimlin MG, O'Connell RL, Pham H, Rodney Harris RM, van der Pols JC, Venn AJ, Webb PM, Whiteman DC, Neale RE. Predicting deseasonalised serum 25 hydroxy vitamin D concentrations in the D-Health Trial: an analysis using boosted regression trees. *medRxiv*. 2020. doi: 10.1101/2020.08.23.20180422
- Rahman ST, Pandeya N, Neale RE, **McLeod DSA**, Bain CJ, Baade PD, Youl PH, Allison R, Leonard S, Jordan SJ. Obesity is associated with *BRAF V600E*-mutated thyroid cancer. *Thyroid*. 2020; 30: 1518–27 (PMID 32228152)
- McLeod DSA.** Progress towards improving initial risk stratification for papillary thyroid cancer. *Clinical Endocrinology*. 2020; 92: 282–83 (PMID 32012327)

-
9. **McLeod DSA.** Staging and prognosis of differentiated thyroid cancer. Chapter 56. In: Braverman LE, Cooper DS, Kopp P (eds). *Werner and Ingbar's The Thyroid: A Fundamental and Clinical Text, 11th Edition*. Wolters Kluwer, Philadelphia. 2020: 733–50
 10. Brooks, E, Bachmeier, C, Vorster, J, et al. Copeptin is increased by nausea and vomiting during hypertonic saline infusion in healthy individuals. *Clin Endocrinol (Oxf)*. 2021; 00: 1– 7. <https://doi.org/10.1111/cen.14417>
-

2020 Conference Presentations – Invited Speaker, Oral and Poster

Invited Speakers

1. **Downs E, Keating A, Butler J, Kennedy G.** A Collaborative Approach in the Management of Late Onset Grade IV skin GVHD of an Adolescent Male Post Allogenic Bone Marrow Transplant. Haematology Association of Australia Annual Scientific Meeting, 2020
-

Department of Gastroenterology and Hepatology

The Endoscopy Research Group has a large group of interventional endoscopists. The focus for the year was increasing the clinical research support, starting several trials and setting up clinical databases in preparation for the expanded diagnostic and therapeutic endoscopy coming with the opening of STARs. Interventional research projects for 2020 have included the establishment of the RBWH as the Queensland centre for a National study to screen for pancreatic cancer in high-risk individuals, a clinical trial in novel bariatric endoscopic treatments, exploring the quality of life in Barrett's oesophagus patients with dysplasia and early oesophageal cancer and an audit of the outcomes of patients presenting to the emergency department with upper gastrointestinal bleeding.

The Gut Health Research group (QIMR Berghofer MRI) is an independently funded team of clinicians, scientists, and students working in close collaboration with the Department of Gastroenterology at RBWH, and with local (QIMR Berghofer, Mater Adult Hospital), national (the member units of the ANZ IBD consortium) and international (International IBD Genetics Consortium) colleagues. The group continues to focus on the development and implementation of novel diagnostic and management tools into the GI space. This includes our risk prediction tool for high-risk small bowel Crohn's disease, now published, an assay for detecting key mutations in the gene NUDT15 which are associated with thiopurine-induced myelosuppression, and a decision aid for triaging of colonoscopy referrals.

The Hepatology Unit remains involved in several local and national collaborative research projects. Dr Richard Skoien has ongoing research predominantly focussed on better outcomes for patients with cirrhosis and hepatocellular carcinoma (HCC), as well as identifying non-invasive biomarkers in decompensated cirrhosis and HCC. Dr Marnie Wood has completed an internal audit of HCC presentations and outcomes at RBWH.

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Whitehall V, Leggett B , Bettington M	Gastroenterology and Hepatology	High Risk Sessile Serrated Adenomas of the Colorectum	Cancer Council Queensland	\$200,000	2019-2020
Devereaux B , Appleyard M , Grimpen F	Gastroenterology and Hepatology	Screening for pancreatic cancer in high-risk individuals	Pancare Foundation	\$20,000 per year	2020-2025
Appleyard M	Gastroenterology and Hepatology	Research Coordinator Grant	Metro North Research Grant		2020-2021

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Mehul Lamba	Barbara Leggett, Katherine Hannigan, Kimberley Ryan, Ian Brown , Mark Bettington (Envoi), Mark Appleyard, Florian Grimpen, Chun Gan	Clinicopathological features of sessile serrated lesions with dysplasia	Not applicable	Historical data
Rajit Gilhotra	Florian Grimpen, Kimberley Ryan, Lisa Song, Matthew Remedios	Endoscopic correlation of incidental PET avidity in the gastrointestinal tract	353	353
Patrick Walsh	Mehul Lamba , Abdunnasser Lafta, Mark Appleyard, George Hopkins	Assessing the safety of a novel endoscopic resection and plication (RAP) technique in post laparoscopic sleeve gastrectomy patients with severe reflux: A pilot clinical trial	None	None

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Florian Grimpen	Matthew Remedios, Kimberley Ryan, Mark Appleyard, Joshua Satchwell	Barrett's Oesophagus and its progression to oesophageal adenocarcinoma – Impact of enhanced imaging techniques and endoscopic therapies on clinical outcomes & quality of life	75	76
Kimberley Ryan	Florian Grimpen , Eva Malacova (QIMR), Lisa Song, Mark Appleyard , Anthony FT Brown (RBWH, Emergency & Trauma Centre)	Clinical utility of the Glasgow Blatchford score in patients presenting to the emergency department with upper gastrointestinal bleeding: A retrospective cohort study	Not applicable	219
Florian Grimpen	Mehul Lamba , Abdunnasser Lafta (Alfred Health), Matthew Remedios, Kimberley Ryan, Mark Appleyard , Jessica Kinneally (RBWH, Nutrition & Dietetics)	Two food group elimination diet versus swallowed fluticasone for the management of adult eosinophilic esophagitis, a single-centred randomised prospective study	3	10
Mehul Lamba	Florian Grimpen, Barbara Leggett, Mark Appleyard, Kimberley Ryan	Risk of post-colonoscopy colorectal cancer: Single centre study	Not applicable	Historical data
Mehul Lamba	Florian Grimpen, Mark Appleyard, Kimberley Ryan	Risk of upper gastrointestinal cancer after a negative gastroscopy: retrospective single centre study	Not applicable	Historical data
Florian Grimpen	Rajit Gilhotra, Matthew Remedios, Kimberley Ryan, Naeman Goetz	Long term clinical outcomes after endoscopic therapy for dysplastic Barrett's oesophagus – a cohort study	25	25
Marnie Wood	Melita Andelkovic, Anthony Deacon, Giselle Bennett, Yuming Ding, Olivia Cullen, Richard Skoien	An audit of hepatocellular carcinoma management at RBWH: 2011-2017	233	233
Richard Skoien	Grant Ramm (QIMR-B MRI)	Using microRNAs as non-invasive biomarkers in chronic liver disease and hepatocellular carcinoma	20	300
Abigail Marsh	PhD UQ, Graham Radford-Smith , Veronique Chachay Merrilyn Banks	The effects of an anti-inflammatory diet on disease activity, symptom severity and microbiota profile in patients with inflammatory bowel disease.	17	20
Anthony Croft	MPhil UQ/QIMRB (2017-2019, awarded), Graham Radford-Smith , Anton Lord	Risk assessment in acute ulcerative colitis	Not applicable	Historical data
Caitlin Hall	PhD UQ/QIMRB, Lucca Cochi Graham Radford-Smith , Anton Lord	Understanding the relationship between the gut microbiome and the brain.	Nil required	100
Yoon-Kyo An	Mphil UQ/TRI/QIMRB Jake Begun, Graham Radford-Smith , ANZ IBD Consortium	AURORA (Australian Ustekinumab Real-World Observational Research)	70	112
Rina Kumar	PhD UQ/QIMRB, Graham Radford-Smith , Severine Navarro, Anton Lord, Martha Zakrzewski	Analysis of the mucosa-associated gut microbiome in health and disease	Nil required	120

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Graham Radford-Smith	Mark Appleyard (Dept of Gastroenterology, RBWH), Anton Lord (Gut Health, QIMRB), Louisa Gordon and Patricia Valery (Population Health, QIMRB), Tony Rahman (Dept of Gastroenterology, TPCH), Nick Tutticci, Dept of Gastroenterology, QEII)	Development of a risk assessment tool to improve clinical triage accuracy for colonoscopic investigations for earlier detection of colorectal cancer and precancerous lesions	110	750

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Florian Grimpén	Kimberley Ryan, Enoka Gonsalkorala (RBWH/CABH), Mark Appleyard , Anthony FT Brown (Emergency & Trauma Centre), Catriona Slater (CABH), Andrew Teo (CABH)	How does the implementation of an upper gastrointestinal bleeding pathway impact on patient clinical outcomes and hospital processes: A multicentre study		
Benedict Devereaux	Zaki Hamarneh, Mark Appleyard, Florian Grimpén , Alina Stoita (St. Vincent's hospital, Sydney)	Pancreatic cancer screening in high-risk individuals (National screening study)	13	13
Mangira, D (Western Hospital, Footscray)	Mark Appleyard, Florian Grimpén, Chun Gan	Cold snare polypectomy for non-pedunculated colonic polyps sized 10-19mm: A prospective observational study (CSP study)	15	17
Mark Appleyard	Florian Grimpén, Jason Hwang, Kimberley Ryan, Mehul Lamba Nam Q Nguyen (Royal Adelaide Hospital), Gregor Brown (Alfred Health), Alan Moss (Western Health), Gary Lim (Christchurch Hospital)	Does bowel preparation improve diagnostic yield in capsule endoscopy?	None	237
John O'Sullivan	Graham Radford-Smith	Double-blind, placebo-controlled, cross-over trial of Livaux™ for the treatment of constipation and for microbiome restoration in Parkinson's disease	None	None

2020 Research Publications

Journal Articles

- Kane A, Fennell L, Borowsky J, Liu C, McKeone D, Bond C, Kazakoff S, Patch A-M, Pearson J, Waddell N, **Leggett B**, Whitehall V. Alterations in signalling pathways that accompany spontaneous transition to malignancy in a mouse model of BRAF mutant microsatellite stable colorectal cancer. *Neoplasia* 2020; 22:120-128
- Miller GC, Liu C, Bettington ML, **Leggett B**, Whitehall VLJ, Rosty C. Traditional serrated adenoma-like lesions in patients with inflammatory bowel disease. *Human Pathology* 2020; 97:19-28
- Fennell L, Kane A, Liu C, McKeone D, Fernando W, Su C, Bond C, Jamieson S, Dumenil T, Patch A-M, Kazakoff S, Pearson J, Waddell N, **Leggett B**, Whitehall V. APC mutation marks an aggressive subtype of BRAF mutant colorectal cancers. *Cancers* 2020; 12:1171-1193

-
4. Feletto E, Lew J-B, Worthington J, He E, Caruana M, Butler K, Hui H, Taylor N, Banks E, Barclay K, Broun K, Butt A, Carter R, Cuff J, Dessaux A, Ee H, Enery J, Frayling IM, Grogan P, Holden C, Horn C, Jenkins MA, Kench JG, Laaksonen MA, **Leggett B**, Mitchell G, Morris S, Parkinson B, St John DJ, Taoube L, Tucker K, Wakefield M, Ward RL, Win AK, Worthley D, Armstrong BK, Macrae FA, Canfell K. Pathways to a cancer-free future: a protocol for modelled evaluations to minimise the future burden of colorectal cancer in Australia. *BMJ Open* 2020;10:e036475. Doi: 10.1136/bmjopen-2019-036475

 5. **Lamba M**, Hieng Ngu J, Stedman CAM. Trends in Incidence of Autoimmune Liver Diseases and increasing incidence of Autoimmune Hepatitis. *Clin Gastroenterol Hepatol* 2020; doi: 10.1016/j.cgh.2020.05.061

 6. **Lamba M**, Wakeman C, Ebel R, et al. Associations between mutations in MSH^A and PMS2 and risk of surveillance-detected colorectal cancer. *Clin Gastroenterol Hepatol* 2020; doi:10.1016/j.cgh.2020.03.048

 7. Lee SW, Davidson CJ, Kia Y, **Devereaux B**, Godinho S, **Appleyard M**, O'Rourke N, Chandrasegaram MD. Recurrent pancreatitis in the setting of gallbladder agenesis, nsa pancreatica, Santorinicoele and eventual intraductal papillary mucinous neoplasia (IPMN), *Ann Hepatobiliary Pancrea Surg* 2020;31(4), 381-387

 8. **Hartnell F**, Eposito I, Swadling L, et al. Characterizing Hepatitis c Virus-Specific CD4+ T cells following viral-vectored vaccination, directly acting antivirals, and spontaneous viral cure, *Hepatology* 2020: 72 (5), 1541-1555

 9. Croese J, Miller G, Marquart L, Llewellyn S, **Gupta R**, Becker L, Clouston, AD, Welch C, Sidorenko J, Wallace L, Visscher PM, **Remedios ML**, McCarthy JS, O'Rourke P, **Radford-Smith G**, Loukas A, Norrie M, Masson JW, Geary RB, Rahman T, Giacomini PR. Randomized, placebo controlled trial of experimental hookworm infection for improving gluten tolerance in celiac disease, *Clinical and Translational Gastroenterology* 2020: 11(12), e00274, doi.org/10.14309/ctg.0000000000000274

 10. Valery PC, Bernardes, CM, Stuart KA, Hartel GF, McPhail SM, **Skoien R**, Rahman T, Clark PJ, Horsfall LU, Hayward KL, **Gupta R**, Powell EE. Development and Evaluation of the Supportive Needs Assessment Tool for Cirrhosis (SNAC), *Patient preference and adherence* 2020: 14, 599-611

 11. McPhail SM, Amarasena S, Stuart KA, Hayward K, **Gupta R**, Brain D, Hartel G, Rahman T, Clark PJ, Bernardes CM, **Skoien R**, Mckillen B, Lee A, Pillay L, Lin L, Khaing MM, Horsfall L, Powell EE, Valery PC. Assessment of health-related quality of life and health utilities in Australian patients with cirrhosis. *JGH Open*. 2020 Dec 10;5(1):133-142

 12. Valery PC, McPhail S, Stuart KA, Hartel G, Clark PJ, O'Beirne J, **Skoien R**, Rahman T, Moser C, Powell EE. Changing prevalence of aetiological factors and comorbidities among Australians hospitalised for cirrhosis. *Intern Med J*. 2020: Feb 25

 13. Almadi MA; Itoi T; Moon JH; Goenka MK; Seo DW; Rerknimitr R; Lau JY; Maydeo AP; Lee JK; Nguyen NQ; Niaz SK; Sud R; Ang TL; Aljebreen A; **Devereaux BM**; Kochhar R; Reichenberger J; Yasuda I; Kaffes AJ; Kitano M; Peetermans J; Goswamy PG; Rousseau MJ; Reddy DN; Lakhtakia S; Lee YN; Rai VK; Kamada K; Tanaka R; Tonzuka R; Tsuchida A; Song TJ; Ramchandani MK; SpyGlass AMEA Registry Group. Using single-operator cholangioscopy for endoscopic evaluation of indeterminate biliary strictures: results from a large multinational registry. *Endoscopy* 2020: 52(7), 574-582

 14. Nakai Y, Isayama H, Wang HP,.....**Devereaux B**. International consensus statements for endoscopic management of distal biliary stricture. *J Gastroenterol and Hepatol* 2020:35, 967-979

 15. Gururatsakul M, Lee R, Ponnuswamy SK, **Gilhotra R**, McGowan C, Whittaker D, Ombiga J, Boyd P. Prospective audit of the safety of endoscopist-directed nurse-administered propofol sedation in an Australian referral hospital. *Journal of Gastroenterology and Hepatology* 2020, <https://doi.org/10.1111/jgh.15204>

 16. Krishnaprasad K, Walsh A, Begun J, Bell S, Carter D, Grafton R, Sechi A, Sewell K, McMahon A, Connor S, **Radford-Smith G**, Andrews JM. Crohn's Colitis Care (CCCare): bespoke cloud-based clinical management software for inflammatory bowel disease. *Scand J Gastroenterol* 2020: 55(12):1419-1426, doi:10.1080/00365521.2020.1839960

 17. Turpin W, Bedrani L, Espin-Garcia O, Xu W, Silverberg MS, Smith MI, Garay JAR, Lee SH, Guttman DS, Griffiths A, Moayyedi P, Panaccione R, Huynh H, Steinhart HA, Aumais G, Dieleman LA, Turner D; **CCC IBD GEM Project research team**, Paterson AD, Croitoru K. Associations of NOD2 polymorphisms with Erysipelotrichaceae in stool of in healthy first degree relatives of Crohn's disease subjects. *BMC Med Genet* 2020, 15;21(1):204

 18. Lim MH, Lord AR, Simms LA, **Hanigan K**, Edmundson A, Rickard MJ, Stitz R, Clark DA, **Radford-Smith GL**. Ileal pouch-anal anastomosis for ulcerative colitis: an Australian institution's experience. *Ann Coloproctol*. 2020, Sep 18. Doi: 10.3393/ac.2020.08.26. Online ahead of print
-

19. Marsh A, **Radford-Smith G**. Editorial: obesity management and IBD-weight loss reduces IBD risk. *Aliment Pharmacol Ther*. 2020, 52(4):731-732. Doi: 10.1111/apt.15827
20. Pulusu SSR, Srinivasan A, Krishnaprasad K, Cheng D, Begun J, Keung C, Van Langenberg D, Thin L, Mogilevski T, De Cruz P, **Radford-Smith G**...et al. Vedolizumab for ulcerative colitis: Real world outcomes from a multicenter observational cohort of Australia and Oxford. *World J Gastroenterol*. 2020;26(30):4428-4441. Doi: 10.3748/wjg.v26.i30.4428
21. Lim MH, McMahon A, **Radford-Smith GL**. Telehealth in inflammatory bowel disease. *Intern Med J* 2020: Sep 25:10.1111/imj.15068. doi: 10.1111/imj.15068. Online ahead of print
22. Craig JE, Han X, Qassim A, Hassall M, Cooke Bailey JN, Kinzy TG, Khawaja AP, An J, Marshall H, Gharahkhani P, Igo RP Jr, Graham SL, Healey PR, Ong JS, Zhou T, Siggs O, Law MH, Souzeau E, Ridge B, Hysi PG, Burdon KP, Mills RA, Landers J, Ruddle JB, Agar A, Galanopoulos A, White AJR, Willoughby CE, Andrew NH, Best S, Vincent AL, Goldberg I, **Radford-Smith G**...et al. Multitrait analysis of glaucoma identifies new risk loci and enables polygenic prediction of disease susceptibility and progression. *Nat Genet* 2020: 52(2):160-166. Doi: 10.1038/s41588-019-0556-y
23. Landi MT, Bishop DT, MacGregor S, Machiela MJ, Stratigos AJ, Ghorzo P, Brossard M, Calista D, Choi J, Fagnoli MC, Zhang T, Rodolfo M, Trower AJ, Menin C, Martinez J, Hadjisavvas A, Song L, Stefanaki I, Scolyer R, Yang R, Goldstein AM, Potrony M, Kypreou KP, Pastorino L, Queirolo P, Pellegrini C, Cattaneo L, Zawistowski M, Gimenez-Xavier P, Rodriguez A, Elefanti L, Manoukian S, Rivoltini L, Smith BH, Loizidou MA, Del Regno L, Massi D, Mandala M, Khosrotehrani K, Akslen LA, Amos CI, Andresen PA, Avril MF, Azizi E, Soyer HP, Bataille V, Dalmaso B, Bowdler LM, Burdon KP, Chen WV, Codd V, Craig JE, Dębniak T, Falchi M, Fang S, Friedman E, Simi S, Galan P, Garcia-Casado Z, Gillanders EM, Gordon S, Green A, Gruis NA, Hansson J, Harland M, Harris J, Helsing P, Henders A, Hočevar M, Höiom V, Hunter D, Ingvar C, Kumar R, Lang J, Lathrop GM, Lee JE, Li X, Lubiński J, Mackie RM, Malt M, Malvey J, McAloney K, Mohamdi H, Molven A, Moses EK, Neale RE, Novaković S, Nyholt DR, Olsson H, Orr N, Fritsche LG, Puig-Butille JA, Qureshi AA, **Radford-Smith GL**...et al. Genome-wide association meta-analyses combining multiple risk phenotypes provide insights into the genetic architecture of cutaneous melanoma susceptibility. *Nat Genet*. 2020 May;52(5):494-504. Doi: 10.1038/s41588-020-0611-8
24. Turpin W, Lee SH, Raygoza Garay JA, Madsen KL, Meddings JB, Bedrani L, Power N, Espin-Garcia O, Xu W, Smith MI, Griffiths AM, Moayyedi P, Turner D, Seidman EG, Steinhart AH, Marshall JK, Jacobson K, Mack D, Huynh H, Bernstein CN, Paterson AD; Crohn's and Colitis Canada Genetic Environmental Microbial Project Research Consortium...et al. Increased Intestinal Permeability Is Associated With Later Development of Crohn's Disease. *Gastroenterology* 2020;159(6):2092-2100.e5. doi: 10.1053/j.gastro.2020.08.005
25. **Hamarneh Z**, Symonds EL, Kholmurodova F, Cock C. Older age, symptoms, or anemia: Which factors increase colorectal cancer risk with a positive fecal immunochemical test?. *Journal of Gastroenterology & Hepatology* 2020: 35(6), 1002-1008, doi:10.1111/jgh.14888
26. **Hamarneh Z**, Robinson K, Andrews J, Hunt R, Fraser R. Transfusion strategies in upper gastrointestinal bleeding management: a review of South Australian hospital practice. *Internal Medicine Journal* 2020: 50 (5), 582-589, doi:10.1111/imj.14440

Books

1. **Devereaux B (Ed.)** Handbook of Clinical Pancreatology, 2nd Edition (international launch 2021)
2. **Devereaux B (Ed.)** Infection control in endoscopy guidelines, 4th Edition

Book Chapters

1. Raphael K, **Walsh P**, Benias P. Innovations in Endoscopic Therapy for Gastroesophageal Reflux Disease, (book chapter) in *Gastrointestinal Endoscopy Clinics of North America* 2020: 30(2)

2020 Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

1. **Devereaux, B.** Screening for pancreas cancer in high-risk individuals. Brisbane Cancer Conference 2020
 2. **Devereaux, B.** Infection control in endoscopy: 2020 and Beyond. Australian Gastroenterology Week (virtual) 2020
 3. **Devereaux, B.** Endoscope reprocessing and prevention of microorganism transmission. ANZ Medical Advisory Board Meeting: Boston Scientific Exalt Model Dexalt (virtual) 2020
-

Oral Presentation

1. Armin A., Anwar S., Barnes N., **Grimpen F.**, Anderson S., Salvado O. OfGAN: Realistic Rendition of Synthetic Colonoscopy Videos. International Conference of Medical Image Computing & computer assisted Intervention (MICCAI) 2020. Lima, Peru
-

Poster Presentations

1. **Hoey P., Hamarneh Z., Ryan. K., Grimpen F., Appleyard M., Devereaux B., Hwang J.** Determining the diagnostic yields of different modalities in the investigation of biliary strictures. Australia Gastroenterology Week 2020. (Melbourne, virtual)
 2. Valery PC, Bernardes CM, Stuart KA., Hartel GF, McPhail SM, **Skoiien R.**, Rahman T, Clark PJ, Horsfall LU, Hayward KL, **Gupta R.**, Powell EE. Development and Evaluation of the Supportive Needs Assessment Tool for Cirrhosis (SNAC). *EASL: The Digital International Liver Congress 2020*: 73, S821–S821, doi:10.1016/S0168-8278(20)32084-5 (virtual)
 3. **Kashani I, Kaushik V, Appleyard M, Lamba M.** Intestinal intussusception caused by a large ileal hamartoma in an asymptomatic young adult with iron deficiency anemia: A case report. Australia Gastroenterology Week 2020. (Melbourne, virtual)
-

Department of Infectious Diseases

In the first year of the global COVID-19 pandemic, The Infectious Diseases Unit had a prominent role in COVID-19 research. The Australasian COVID-19 Trial (ASCOT) is an adaptive clinical trial of several different therapeutics for COVID-19 and was run at RBWH by Chief Investigator, Professor David Paterson and Associate Investigator Adam Stewart. The Infectious Diseases Unit also participated in a clinical-implementation study of remdesivir for COVID-19 (Dr Krispin Hajkovicz); a pharmacokinetics study of COVID-19 therapeutics led by Professor Jason Roberts and a study validating new specimen site collection for COVID-19 diagnostics (Dr Krispin Hajkovicz, Chief Investigator). The ID unit also enjoyed grant success from the RBWH COVID Research Project Grants for develop a novel low-cost point-of-care test for COVID-19.

Beyond COVID, the ID unit now has seven clinical trials of antimicrobials available for recruitment at RBWH, and members of the unit published over 100 journal articles, book chapters and presented at several international conferences.

Professor David Paterson received the Metro-North 2020 Researcher of the Year Award. His award citation noted that he “is among the most outstanding translation-oriented researchers in the country and is Australia’s most cited Infectious Diseases Physician.”

The Herston Infectious Diseases Unit (HeIDI) was funded by the Metro-North Hospital and Health Service and the RBWH Foundation and commenced interim operations in August 2021. As multi-disciplinary clinically oriented research institute, it will transform infectious diseases research and clinical practice at RBWH and the Herston Campus for years to come.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Professor David Paterson	2020 Metro North Researcher of the Year	2020 Metro-North Research Awards

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Bridget Barber (CIA)	Infectious Diseases Unit	Tocilizumab for the treatment of COVID-19 in intensive care patients	NHMRC Medical Research Future Fund	\$279,000	2020-2021
Bridget Barber (Principal Investigator)	Infectious Diseases Unit	Tocilizumab for the treatment of COVID-19 in intensive care patients	QIMR Berghofer Coronavirus Research Grant	\$199,384	2020-2021
Bridget Barber (Co-Investigator)	Infectious Diseases Unit	Evaluating zoonotic malaria transmission and agricultural land use in Indonesia	Australian Centre for International Agricultural Research: ZOOMAL	\$2,830,470	2020-2022
Bridget Barber (CID)	Infectious Diseases Unit	Age-dependent diversity of innate immune responses in malaria	Australian Centre for Research Excellence in Malaria Elimination (ACREME)	\$17,400	2020
Bridget Barber (CIF)	Infectious Diseases Unit	Use of proteomics as a platform for evaluating new biomarkers for improving diagnosing Plasmodium falciparum, P. vivax, and P. knowlesi malaria	Australian Centre for Research Excellence in Malaria Elimination (ACREME)	\$15,400	2020-2021

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Sumudu Britton	ID/QIMR CTM	Proteomics for the discovery of malaria diagnostic biomarkers	ACREME Seed fund	\$15,000	2020-2021
Kristyan Guppy-Coles, Krispin Hajkowicz	ID Unit, Cardiology	A novel assay technology to allow rapid, low-cost, point-of-care antigen testing for SARS-CoV-2 via standard swab collection	RBWH Foundation	\$49,500	2020-2021

Clinical Trials For 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Clinical Trial Title	Granting Body	Total Awarded	Year/s
Bridget Barber (Principal Investigator)	Infectious Diseases Unit	A phase 1b study to evaluate the blood stage antimalarial activity of a single oral dose of tafenoquine in healthy subjects experimentally infected with <i>Plasmodium falciparum</i> (ACTRN12617000102370)	Bill and Melinda Gates Foundation	\$2.1million	
Bridget Barber (Principal Investigator)	Infectious Diseases Unit	A three-part first-in-human study to evaluate the safety, tolerability, pharmacokinetics, and antimalarial activity against <i>Plasmodium falciparum</i> blood stage infection of ZY-19489 in healthy adult subjects, ACTRN12619001215112	Zydus Cadilla		2019-Current
Bridget Barber (Principal Investigator)	Infectious Diseases Unit	A pilot study to characterise the in vivo safety and infectivity of a <i>Plasmodium falciparum</i> 3D7-GL isolate in healthy subjects, ACTRN12619001085167	Medicines for Malaria Venture		2019-2020
Bridget Barber (Principal Investigator)	Infectious Diseases Unit	A pilot study to characterise the in vivo safety and infectivity of an in vitro expanded <i>P. falciparum</i> 3D7-MBE008 master cell bank in healthy subjects, ACTRN12619001079134	Medicines for Malaria Venture		2019-2020

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Sumudu Britton	Harsha Gowda, Louise Marquart, Nicholas Anstey, Matthew Grigg, Bridget Barber, James McCarthy	Proteomics as a platform for malaria biomarker discovery		
Sumudu Britton	Louise Marquart, James McCarthy , Lachlan Webb, Gonzalo Domingo, Ihn Kyung Jang	Describing the dynamics of the plasmodium lactate dehydrogenase (pLDH) in induced blood stage malaria infections with <i>Plasmodium falciparum</i> and <i>Plasmodium vivax</i>		

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Mandy Wu	Clare Nourse, Sumudu Britton , Mandy Seel, Judith Dean, Di Rowlinson, Mattea Lazarou	Study of management of syphilis in women and their newborns in Queensland- identifying gaps for improving care		
Pengxing Cao	Steven Kho, Sumudu Britton , Nicholas Anstey, Julie Simpson, James McCarthy , James McCaw, Louise Marquart	Plasmodium vivax lactate dehydrogenase (PvLDH) as a biomarker for estimating biomass using mathematical modelling framework		
Steven Kho	Matthew Grigg, Nicholas Anstey, Sumudu Britton , Bridget Barber	Performance of Quansys ELISA in detecting non-falciparum malaria in Sabah, Malaysia		
Prof David Paterson	Trisha Peel, Sarah Astbury, Allen C Cheng, David Paterson, Kirsty Busing, Tim Spelman, An Tran-Duy, Richard S de Steiger	ASAP trial (Australian Surgical Antibiotic Prophylaxis) Monash University and Alfred Health		
Prof David Paterson	Adam Stewart, Krispin Hajkowicz	Evaluate F901318 Treatment of Invasive Fungal Infections in Patients Lacking Treatment Options (FORMULA-OLS) Antifungal (F2G)	2	
Hugh Wright	David Paterson	Cefiderocol vs BAT for Treatment of Gram Negative BSI (GAMECHANGER)		
Anna Hume		Optimising clinical diagnostics for SARS-CoV-2		
Anna Hume		AMEND Study: Long Term Outcomes of Invasive Meningococcal Disease in Young People		
David Paterson	Adam Stewart, Anna Hume	ASCOT Trial: The Australasian COVID-19 Trial		

Research Publications

Journal Articles

- Cooper DJ, Rajahram GS, William T, Jelip J, Alaza DA, Malacova E, Yeo TW, Grigg MJ, Anstey NM, **Barber BE**. Plasmodium knowlesi malaria in Sabah, Malaysia, 2015 – 2017: ongoing increase in incidence despite near-elimination of the human-only Plasmodium species. Clin Infect Dis 2020; 70(3):361
- Woodford J, Yeo TS, Piera KA, Weinberg JB, McCarthy JS, Anstey NM, **Barber BE**. Endothelial activation proceeds glycocalyx degradation and microvascular dysfunction in early Plasmodium falciparum and P. vivax infection. Infection and Immunity 2020; 88(5):e00895-19
- Odedra A, Webb L, Marquart L, Britton LJ, Chalon S, Moehrle JJ, Anstey NM, William T, Grigg MJ, Laloo DG, **Barber BE**, McCarthy JS. Liver function test abnormalities in experimental and clinical Plasmodium vivax infection. Am J Trop Med Hyg 2020; 103 (5): 1910-1917
- Nuin NA, Tan AF, Lew YL, Piera KA, William T, Rajahram GS, Jelip J, Mohammad R, Cooper DJ, **Barber BE**, Anstey NM, Chua TH, Grigg MJ. Comparative evaluation of two commercial real-time PCR kits (Quantifast and Abtes) for the detection of Plasmodium knowlesi and other Plasmodium species in Sabah, Malaysia. Malaria J 2020; 19:306

5. Mousa A, Al-Taiar A, Anstey NM, Badaut C, **Barber BE**, Bassat Q, Challenger JD, Cunnington AJ, Datta D, Drakely C, Ghani AC, Gordeuk VR, Grigg MJ, Hugo P, John CC, Mayor A, Migot-Nabias F, Opoka RO, Pasvol G, Rees C, Reyburn H, Riley EM, Shah BN, Siteo A, Sutherland CL, Thuma PE, Unger S, Viwami F, Walther M, Whitty CJM, William T, Okell LC. The impact of delayed treatment of uncomplicated Plasmodium falciparum malaria on progression to severe malaria: a systematic review and a pooled multicentre individual-patient meta-analysis. *Plos Med* 2020; 17(10):e1003359
6. Grigg MJ, William T, Clemens EG, Patel K, Chandna A, Wilkes CS, **Barber BE**, Anstey NM, Dumler JS, Yeo TW, Reller ME. Rickettsioses as major etiologies of unrecognized acute febrile illness in Sabah, East Malaysia: a prospective cohort study. *Emerg Infect Dis* 2020; 26(7):1409 – 1419
7. Apte S, Minigo G, Groves PL, Spargo JC, Plebanski M, Grigg MJ, Kenangalem E, Burel JG, Loughland JR, Flanagan KL, Piera KA, William T, Price RN, Woodberry T, **Barber BE**, Anstey NM, Doolan DL. A population of CD4hiCD38hi T cells correlates with disease severity in patients with acute malaria. *Clin Trans Immunol* 2020; 9(11):e1209
8. Han ET, Han JH, Cho JS, Ong JY, Park JH, Nyunt MH, Sutanto E, Trimarsanto H, Petros B, Aseffa A, Getachew S, Sriprawat K, Anstey NM, Grigg MJ, **Barber BE**, William T, Qi G, Liu Y, Pearson R, Auburn S, Price RN, Nosten F, Laurent R, Russell B. Genetic diversity and neutral selection in Plasmodium vivax erythrocyte binding protein correlates with patient antigenicity. *Plos Neg Trop Dis* 2020; 14(7):e0008202
9. Foster AL, Cutbush K, Ezure Y, Schuetz MA, Crawford R, **Paterson DL**. Cutibacterium (Propionibacterium) acnes in Shoulder Surgery: a Scoping Review of Strategies for Prevention, Diagnosis and Treatment. *J Shoulder Elbow Surg.* 2020 Dec 26:S1058-2746(20)30957-5. doi: 10.1016/j.jse.2020.11.011. Online ahead of print.PMID: 33373684 Review
10. **Stewart AG**, Satlin MJ, Schlebusch S, **Isler B**, Forde BM, **Paterson DL**, Harris PNA. Completing the Picture - Capturing the Resistome in Antibiotic Clinical Trials. *Clin Infect Dis.* 2020 Dec 23:ciaa1877. doi: 10.1093/cid/ciaa1877. Online ahead of print.PMID: 33354717
11. **Isler B**, Harris P, **Stewart AG**, **Paterson DL**. An update on cefepime and its future role in combination with novel β -lactamase inhibitors for MDR Enterobacteriales and Pseudomonas aeruginosa. *J Antimicrob Chemother.* 2020 Dec 17:dkaa511. doi: 10.1093/jac/dkaa511. Online ahead of print.PMID: 33332545
12. De Oliveira DMP, Bohlmann L, Conroy T, Jen FE, Everest-Dass A, Hansford KA, Bolisetti R, El-Deeb IM, Forde BM, Phan MD, Lacey JA, Tan A, Rivera-Hernandez T, Brouwer S, Keller N, Kidd TJ, Cork AJ, Bauer MJ, Cook GM, Davies MR, Beatson SA, **Paterson DL**, McEwan AG, Li J, Schembri MA, Blaskovich MAT, Jennings MP, McDevitt CA, von Itzstein M, Walker MJ. Repurposing a neurodegenerative disease drug to treat Gram-negative antibiotic-resistant bacterial sepsis. *Sci Transl Med.* 2020 Nov 18;12(570):eabb3791. doi: 10.1126/scitranslmed.abb3791.PMID: 33208501
13. Burnard D, Robertson G, Henderson A, Falconer C, Bauer MJ, Cottrell K, Gassiep I, Norton R, **Paterson DL**, Harris PNA. Burkholderia pseudomallei Clinical Isolates Are Highly Susceptible In Vitro to Cefiderocol, a Siderophore Cephalosporin. *Antimicrob Agents Chemother.* 2021 Jan 20;65(2):e00685-20. doi: 10.1128/AAC.00685-20. Print 2021 Jan 20. PMID: 33168603
14. Stewart AG, Harris PNA, Henderson A, Schembri MA, **Paterson DL**. Erratum to: Oral cephalosporin and β -lactamase inhibitor combinations for ESBL-producing Enterobacteriaceae urinary tract infections. *J Antimicrob Chemother.* 2021 Jan 1;76(1):281. doi: 10.1093/jac/dkaa424.PMID: 33111952 No abstract available.
15. Henderson A, **Paterson DL**, Chatfield MD, Tambyah PA, Lye DC, De PP, Lin RTP, Chew KL, Yin M, Lee TH, Yilmaz M, Cakmak R, Alenazi TH, Arabi YM, Falcone M, Bassetti M, Righi E, Ba R, Kanj SS, Bhally H, Iredell J, Mendelson M, Boyles TH, Looke DFM, Runnegar NJ, Miyakis S, Walls G, Ai Khamis M, Zikri A, Crowe A, Ingram PR, Daneman NN, Griffin P, Athan E, Roberts L, Beatson SA, Peleg AY, Cottrell KK, Bauer MJ, Tan E, Chaw K, Nimmo GR, Harris-Brown T, Harris PNA; Association between minimum inhibitory concentration, beta-lactamase genes and mortality for patients treated with piperacillin/tazobactam or meropenem from the MERINO study. MERINO Trial Investigators and the Australasian Society for Infectious Disease Clinical Research Network (ASID-CRN). *Clin Infect Dis.* 2020 Oct 27:ciaa1479. doi: 10.1093/cid/ciaa1479. Online ahead of print.PMID: 33106863
16. Fang FC, Benson CA, Del Rio C, Edwards KM, Fowler VG Jr, Fredricks DN, Limaye AP, Murray BE, Naggie S, Pappas PG, Patel R, Paterson DL, Pegues DA, Petri WA, Schooley RT. COVID-19 - Lessons Learned and Questions Remaining. *Clin Infect Dis.* 2020 Oct 26:ciaa1654. doi: 10.1093/cid/ciaa1654. Online ahead of print.PMID: 33104186 Free PMC article
17. **Isler B**, Kidd TJ, **Stewart AG**, Harris P, **Paterson DL**. Achromobacter Infections and Treatment Options. *Antimicrob Agents Chemother.* 2020 Oct 20;64(11):e01025-20. doi: 10.1128/AAC.01025-20. Print 2020 Oct 20.PMID: 32816734 Review

18. Hancock SJ, Phan MD, Luo Z, Lo AW, Peters KM, Nhu NTK, Forde BM, Whitfield J, Yang J, Strugnelli RA, **Paterson DL**, Walsh TR, Kobe B, Beatson SA, Schembri MA. Comprehensive analysis of IncC plasmid conjugation identifies a crucial role for the transcriptional regulator AcaB. *Nat Microbiol.* 2020 Nov;5(11):1340-1348. doi: 10.1038/s41564-020-0775-0. Epub 2020 Aug 17. PMID: 32807890
19. McNamara JF, Harris PNA, Chatfield MD, **Paterson DL**. Acute Myocardial Infarction and Community-Acquired Staphylococcus aureus Bloodstream Infection: an observational cohort study. *Clin Infect Dis.* 2020 Aug 14:ciaa1197. doi: 10.1093/cid/ciaa1197. Online ahead of print. PMID: 32797225
20. Forde BM, Henderson A, Playford EG, Looke D, Henderson BC, Watson C, Steen JA, Sidjabat HE, Laurie G, Muttaiyah S, Nimmo GR, Lampe G, Smith H, Jennison AV, McCall B, Carroll H, Cooper MA, Paterson DL, Beatson SA. Fatal respiratory diphtheria caused by β -lactam-resistant *Corynebacterium diphtheriae*. *Clin Infect Dis.* 2020 Aug 9:ciaa1147. doi: 10.1093/cid/ciaa1147. Online ahead of print. PMID: 32772111
21. Zeitlinger M, Koch BCP, Bruggemann R, De Cock P, Felton T, Hites M, Le J, Luque S, MacGowan AP, Marriott DJE, Muller AE, Nadrah K, **Paterson DL**, Standing JF, Telles JP, Wöfl-Duchek M, Thy M, Roberts JA; Pharmacokinetics/Pharmacodynamics of Antiviral Agents Used to Treat SARS-CoV-2 and Their Potential Interaction with Drugs and Other Supportive Measures: A Comprehensive Review by the PK/PD of Anti-Infectives Study Group of the European Society of Antimicrobial Agents. PK/PD of Anti-Infectives Study Group (EPASG) of the European Society of Clinical Microbiology, Infectious Diseases (ESCMID). *Clin Pharmacokinet.* 2020 Oct;59(10):1195-1216. doi: 10.1007/s40262-020-00924-9. PMID: 32725382 Free PMC article
22. Bassetti M, Echols R, Matsunaga Y, Ariyasu M, Doi Y, Ferrer R, Lodise TP, Naas T, Niki Y, **Paterson DL**, Portsmouth S, Torre-Cisneros J, Toyozumi K, Wunderink RG, Nagata TD. Efficacy and safety of cefiderocol or best available therapy for the treatment of serious infections caused by carbapenem-resistant Gram-negative bacteria (CREDIBLE-CR): a randomised, open-label, multicentre, pathogen-focused, descriptive, phase 3 trial. *Lancet Infect Dis.* 2021 Feb;21(2):226-240. doi: 10.1016/S1473-3099(20)30796-9. Epub 2020 Oct 12. PMID: 33058795
23. **Isler B**, Ezure Y, Romero JLG, Harris P, **Stewart AG**, **Paterson DL**. Is Ceftazidime/Avibactam an option for serious infections due to Extended-Spectrum- β -Lactamase- and AmpC Producing Enterobacterales?: a systematic review and meta-analysis. *antimicrob agents chemother.* 2020 Dec 16;65(1):e01052-20. doi: 10.1128/AAC.01052-20. Print 2020 Dec 16. PMID: 33046493
24. van Duin D, **Paterson DL**. Multidrug-Resistant Bacteria in the Community: An Update. *Infect Dis Clin North Am.* 2020 Dec;34(4):709-722. doi: 10.1016/j.idc.2020.08.002. Epub 2020 Sep 30. PMID: 33011046 Review
25. McNamara JF, Harris PNA, Chatfield MD, **Paterson DL**. Reply to Reza Hosseini and Nielsen. *Clin Infect Dis.* 2020 Sep 24:ciaa1449. doi: 10.1093/cid/ciaa1449. Online ahead of print. PMID: 32970797 No abstract available
26. Lee XJ, Elliott TM, Harris PNA, Douglas J, Henderson B, Watson C, **Paterson DL**, Schofield DS, Graves N, Gordon LG. Clinical and Economic Outcomes of Genome Sequencing Availability on Containing a Hospital Outbreak of Resistant *Escherichia coli* in Australia. *Value Health.* 2020 Aug;23(8):994-1002. doi: 10.1016/j.jval.2020.03.006. Epub 2020 Jul 13. PMID: 32828227
27. Burnard D, Gore L, Henderson A, Ranasinghe A, Bergh H, Cottrell K, Sarovich DS, Price EP, **Paterson DL**, Harris PNA. Comparative Genomics and Antimicrobial Resistance Profiling of Elizabethkingia Isolates Reveal Nosocomial Transmission and In Vitro Susceptibility to Fluoroquinolones, Tetracyclines, and Trimethoprim-Sulfamethoxazole. *J Clin Microbiol.* 2020 Aug 24;58(9):e00730-20. doi: 10.1128/JCM.00730-20. Print 2020 Aug 24. PMID: 32580952
28. Abdul Rahim N, Cheah SE, Johnson MD, Zhu Y, Yu HH, Sidjabat HE, Butler MS, Cooper MA, Fu J, **Paterson DL**, Nation RL, Boyce JD, Bergen PJ, Velkov T, Li J. Transcriptomic responses of a New Delhi metallo- β -lactamase-producing *Klebsiella pneumoniae* isolate to the combination of polymyxin B and chloramphenicol. *Int J Antimicrob Agents.* 2020 Aug;56(2):106061. doi: 10.1016/j.ijantimicag.2020.106061. Epub 2020 Jun 20. PMID: 32574791
29. **Stewart AG**, Harris PNA, Henderson A, Schembri MA, **Paterson DL**. Oral cephalosporin and β -lactamase inhibitor combinations for ESBL-producing Enterobacteriaceae urinary tract infections. *J Antimicrob Chemother.* 2020 Sep 1;75(9):2384-2393. doi: 10.1093/jac/dkaa183. PMID: 32443141
30. De Oliveira DMP, Forde BM, Kidd TJ, Harris PNA, Schembri MA, Beatson SA, **Paterson DL**, Walker MJ. Antimicrobial Resistance in ESKAPE Pathogens. *Clin Microbiol Rev.* 2020 May 13;33(3):e00181-19. doi: 10.1128/CMR.00181-19. Print 2020 Jun 17. PMID: 32404435 Review

31. **Paterson DL**, Flanagan JU, Shepherd PR, Harris PWR, Brimble MA. Variable-Length Ester-Based Staples for α -Helical Peptides by Using A Double Thiol-ene Reaction. *Chemistry*. 2020 Aug 21;26(47):10826-10833. doi: 10.1002/chem.202001478. Epub 2020 Jul 23. PMID: 32232881
32. Butler MS, Paterson DL. Antibiotics in the clinical pipeline in October 2019. *J Antibiot (Tokyo)*. 2020 Jun;73(6):329-364. doi: 10.1038/s41429-020-0291-8. Epub 2020 Mar 10. PMID: 32152527 Free PMC article. Review
33. van Duin D, Arias CA, Komarow L, Chen L, Hanson BM, Weston G, Cober E, Garner OB, Jacob JT, Satlin MJ, Fries BC, Garcia-Diaz J, Doi Y, Dhar S, Kaye KS, Earley M, Hujer AM, Hujer KM, Domitrovic TN, Shropshire WC, Dinh A, Manca C, Luterbach CL, Wang M, Paterson DL, Banerjee R, Patel R, Evans S, Hill C, Arias R, Chambers HF, Fowler VG Jr, Kreiswirth BN, Bonomo RA; Molecular and clinical epidemiology of carbapenem-resistant Enterobacterales in the USA (CRACKLE-2): a prospective cohort study. Multi-Drug Resistant Organism Network Investigators. *Lancet Infect Dis*. 2020 Jun;20(6):731-741. doi: 10.1016/S1473-3099(19)30755-8. Epub 2020 Mar 6. PMID: 32151332
34. **Chapman P**, Forde BM, Roberts LW, Bergh H, Vesey D, Jennison AV, Moss S, **Paterson DL**, Beatson SA, Harris PNA. Genomic Investigation Reveals Contaminated Detergent as the Source of an Extended-Spectrum- β -Lactamase-Producing *Klebsiella michiganensis* Outbreak in a Neonatal Unit. *J Clin Microbiol*. 2020 Apr 23;58(5):e01980-19. doi: 10.1128/JCM.01980-19. Print 2020 Apr 23. PMID: 32102855
35. **Paterson DL**, **Isler B**, **Stewart A**. New treatment options for multiresistant gram negatives. *Curr Opin Infect Dis*. 2020 Apr;33(2):214-223. doi: 10.1097/QCO.0000000000000627. PMID: 32068644
36. Foster AL, Moriarty TF, Trampuz A, Jaiprakash A, Burch MA, Crawford R, **Paterson DL**, Metsemakers WJ, Schuetz M, Richards RG. Fracture-related infection: current methods for prevention and treatment. *Expert Rev Anti Infect Ther*. 2020 Apr;18(4):307-321. doi: 10.1080/14787210.2020.1729740. Epub 2020 Feb 19. PMID: 32049563
37. Tong SYC, Lye DC, Yahav D, Sud A, Robinson JO, Nelson J, Archuleta S, Roberts MA, Cass A, **Paterson DL**, Foo H, Paul M, Guy SD, Tramontana AR, Walls GB, McBride S, Bak N, Ghosh N, Rogers BA, Ralph AP, Davies J, Ferguson PE, Dotel R, McKew GL, Gray TJ, Holmes NE, Smith S, Warner MS, Kalimuddin S, Young BE, Runnegar N, Andresen DN, Anagnostou NA, Johnson SA, Chatfield MD, Cheng AC, Fowler VG Jr, Howden BP, Meagher N, Price DJ, van Hal SJ, O'Sullivan MVN, Davis JS. Effect of vancomycin or daptomycin with vs without an antistaphylococcal β -Lactam on mortality, bacteremia, relapse, or treatment failure in patients with MRSA bacteremia: a randomized clinical trial. Australasian Society for Infectious Diseases Clinical Research Network. *JAMA*. 2020 Feb 11;323(6):527-537. doi: 10.1001/jama.2020.0103. PMID: 32044943
38. McNamara JF, Avent M, Stewart A, Kwan C, **Paterson DL**. Evaluation of quick sequential organ failure assessment and systemic inflammatory response syndrome in patients with gram negative bloodstream infection. *Infect Dis Health*. 2020 Aug;25(3):151-157. doi: 10.1016/j.idh.2020.01.003. Epub 2020 Jan 28. PMID: 32005586
39. Roberts LW, Harris PNA, Forde BM, Ben Zakour NL, Catchpoole E, Stanton-Cook M, Phan MD, Sidjabat HE, Bergh H, Heney C, Gawthorne JA, Lipman J, Allworth A, Chan KG, Chong TM, Yin WF, Schembri MA, **Paterson DL**, Beatson SA. Integrating multiple genomic technologies to investigate an outbreak of carbapenemase-producing *Enterobacter hormaechei*. *Nat Commun*. 2020 Jan 24;11(1):466. doi: 10.1038/s41467-019-14139-5. PMID: 31980604
40. Roberts LW, Catchpoole E, Jennison AV, Bergh H, Hume A, Heney C, George N, **Paterson DL**, Schembri MA, Beatson SA, Harris PNA. Genomic analysis of carbapenemase-producing Enterobacteriaceae in Queensland reveals widespread transmission of bla IMP-4 on an IncHI2 plasmid. *Microb Genom*. 2020 Jan;6(1):e000321. doi: 10.1099/mgen.0.000321. Epub 2019 Dec 19. PMID: 31860437
41. **Paterson DL**, Henderson A, Harris PNA. Current evidence for therapy of ceftriaxone-resistant Gram-negative bacteremia. *Curr Opin Infect Dis*. 2020 Feb;33(1):78-85. doi: 10.1097/QCO.0000000000000623. PMID: 31834029
42. Babich T, Naucle P, Valik JK, Giske CG, Benito N, Cardona R, Rivera A, Pulcini C, Fattah MA, Haquin J, MacGowan A, Grier S, Chazan B, Yanovskaya A, Ami RB, Landes M, Neshler L, Zaidman-Shimshovitz A, McCarthy K, **Paterson DL**, Tacconelli E, Buhl M, Maurer S, Rodriguez-Bano J, Morales I, Oliver A, de Gopegui ER, Cano A, Machuca I, Gozal-Marguello M, Martinez-Martinez L, Gonzalez-Barbera EM, Alfaro IG, Salavert M, Beovic B, Saje A, Mueller-Premru M, Pagani L, Vitrat V, Kofleridis D, Zacharioudaki M, Maraki S, Weissman Y, Paul M, Dickstein Y, Leibovici L, Yahav D. Risk factors for mortality among patients with *Pseudomonas aeruginosa* bacteraemia: a retrospective multicentre study. *Int J Antimicrob Agents*. 2020 Feb;55(2):105847. doi: 10.1016/j.ijantimicag.2019.11.004. Epub 2019 Nov 23. PMID: 31770625

43. **Stewart AG**, Harris PNA, Chatfield M, Evans SR, van Duin D, **Paterson DL**. Modern Clinician-initiated Clinical Trials to Determine Optimal Therapy for Multidrug-resistant Gram-negative Infections. *Clin Infect Dis*. 2020 Jul 11;71(2):433-439. doi: 10.1093/cid/ciz1132.PMID: 31738398
44. McNamara JF, Harris PNA, Chatfield MD, Lorenc P, **Paterson DL**. Measuring patient-centred long-term outcome following a bloodstream infection: a pilot study. *Clin Microbiol Infect*. 2020 Feb;26(2):257.e1-257.e4. doi: 10.1016/j.cmi.2019.10.011. Epub 2019 Oct 23.PMID: 3165479
45. Legg A, Halford M, **McCarthy K**. Legg A, et al. Plasma concentrations resulting from continuous infusion of meropenem in a community-based outpatient program: A case series. *Am J Health Syst Pharm*. 2020 Dec 4;77(24):2074-2080. doi: 10.1093/ajhp/zxaa319. PMID: 33274740
46. Eustace MB, Jennison AV, **McCarthy KL**, et al. Septic arthritis post anterior cruciate ligament reconstruction due to *Clostridioides difficile*. *Anaerobe*. 2020 Dec;66:102293. doi: 10.1016/j.anaerobe.2020.102293. PMID: 33181347
47. Babich T, Naucler P, Valik JK, Giske CG, Benito N, Cardona R, Rivera A, Pulcini C, Fattah MA, Haquin J, MacGowan A, Grier S, Chazan B, Yanovskay A, Ami RB, Landes M, Neshler L, Zaidman-Shimshovitz A, **McCarthy K** et al. Risk factors for mortality among patients with *Pseudomonas aeruginosa* bacteraemia: a retrospective multicentre study. *Int J Antimicrob Agents*. 2020 Feb;55(2):105847
48. **McCarthy K**, Avent M. Oral or intravenous antibiotics? *Aust Prescr*. 2020 Apr;43(2):45-48
49. Parsonson F, Legg A, Halford M, **McCarthy K**. Contemporaneous management of ampicillin infusions in the outpatient setting through the use of therapeutic drug monitoring. *Int J Antimicrob Agents*. 2020 Jun;55(6):105975
50. Babich T, Naucler P, Valik JK, Giske CG, Benito N, Cardona R, Rivera A, Pulcini C, Abdel Fattah M, Haquin J, Macgowan A, Grier S, Gibbs J, Chazan B, Yanovskay A, Ben Ami R, Landes M, Neshler L, Zaidman-Shimshovitz A, **McCarthy K** et al. Ceftazidime, Carbapenems, or Piperacillin-tazobactam as Single Definitive Therapy for *Pseudomonas aeruginosa* Bloodstream Infection: A Multisite Retrospective Study. *Clin Infect Dis*. 2020 May 23;70(11):2270-2280
51. Dean JA, Bell SFE, Coffey L, Debattista J, Badman SG, **Redmond AM**, Whiley DA, Lemoire J, Williams, OD, Howard D, Gilks CF. Improved sensitivity from pooled urine, pharyngeal and rectal specimens when using a molecular assay for the detection of chlamydia and gonorrhoea near point-of-care. *Sexually Transmitted Infections* 2020 (research letter)
52. Coombes I, Markwell A, Kubler P, **Redmond AM**, McGurk G, Roberts JA. Principles of ethical prescribing for self and others: hydroxychloroquine in the COVID-19 pandemic. *Aust Prescr* 2020;43(3):76-77
53. Badman SG, Bell SFE, Dean JA, Lemoire J, Coffey L, Debattista J, **Redmond AM**, Williams OD, Gilks CF, Whiley DM. Reduced sensitivity from pooled urine, pharyngeal and rectal specimens when using a molecular assay for the detection of chlamydia and gonorrhoea near the point of care. *Sexual Health* 2020;17(1):15-21 (research paper)
54. Bell SFE, Coffey L, Debattista J, Badman SG, **Redmond AM**, Whiley DM, Jime Lemoire, Williams OD, Howard C, Charles F. Gilks CF, Dean JA. Peer delivered point-of-care testing for *Chlamydia trachomatis* and *Neisseria gonorrhoea* within an urban community setting: a cross sectional analysis. *Sexual Health* 2020;17(4):359-367 (research paper)
55. Haifer C, Kelly CR, Paramsothy S, Andresen D, Papanicolas L, McKew G, Borody T, Kamm M, Costello S, Andrews J, Begun J, Chan HT, Connor S, Ghaly S, Johnson P, Lemberg D, Paramsothy R, **Redmond A**, Sheorey H, Van der Poorten D, Leong R. Australian Consensus Statements for the Regulation, Production and Use of Faecal Microbiota Transplantation in Clinical Practice. *Gut* 2020;69(5):801-810 (consensus statement)
56. Keighley CL, Pope A, Marriott DJE, Chapman B, Bak N, Daveson K, **Hajkowicz K**, Halliday C, Kennedy K, Kidd S, Sorrell TC, Underwood N, van Hal S, Slavin MA, Chen SC. Risk factors for candidaemia: A prospective multi-centre case-control study. *Mycoses*. 2020 Nov 13. doi: 10.1111/myc.13211. Online ahead of print. PMID: 33185290
57. Elliott TM, Hare N, **Hajkowicz K**, Hurst T, Doidge M, Harris PN, Gordon LG. Evaluating the economic effects of genomic sequencing of pathogens to prioritise hospital patients competing for isolation beds. *Aust Health Rev*. 2020 Oct 14. doi: 10.1071/AH20071. Online ahead of print. PMID: 33049199

58. **Sinclair HA, Chapman P.** Faecal microbiota transplantation: a review. *Microbiology Australia* 2020 May 21;41(2):65-69. doi: 10.1071/MA20019
59. **McCarthy JS, Donini C, Chalon S, Woodford J, Marquart L, Collins KA, Rozenberg FD, Fidock DA, Cherkaoui-Rbati MH, Gobeau N, Möhrle JJ.** A phase 1, placebo controlled, randomised, single ascending dose study and a volunteer infection study to characterize the safety, pharmacokinetics and antimalarial activity of the *Plasmodium* phosphatidylinositol 4-kinase inhibitor MMV390048. *Clin Infect Dis.* 2020 Apr 2;71(10):e657-64. doi: 10.1093/cid/ciaa368. Online ahead of print.PMID: 32239164
60. Woodford J, Yeo TW, Piera KA, Butler K, Weinberg JB, **McCarthy JS**, Anstey NM, Barber BE. Early endothelial activation precedes glycocalyx degradation and microvascular dysfunction in experimentally induced plasmodium falciparum and plasmodium vivax Infection. *Infect Immun.* 2020 Apr 20;88(5):e00895-19. doi: 10.1128/IAI.00895-19. Print 2020 Apr 20. PMID: 32122938
61. Commons RJ, **McCarthy JS**, Price RN. Tafenoquine for the radical cure and prevention of malaria: the importance of testing for G6PD deficiency. *Med J Aust.* 2020 Mar;212(4):152-153.e1. doi: 10.5694/mja2.50474. Epub 2020 Feb 9.PMID: 32036613
62. Sinxadi P, Donini C, Johnstone H, Langdon G, Wiesner L, Allen E, Duparc S, Chalon S, **McCarthy JS**, Lorch U, Chibale K, Möhrle J, Barnes KI. Safety, tolerability, pharmacokinetics, and antimalarial activity of the Novel *Plasmodium* phosphatidylinositol 4-kinase inhibitor MMV390048 in healthy volunteers. *Antimicrob Agents Chemother.* 2020 Mar 24;64(4):e01896-19. doi: 10.1128/AAC.01896-19. Print 2020 Mar 24.PMID: 31932368
63. Wockner LF, Hoffmann I, Webb L, Mordmüller B, Murphy SC, Kublin JG, O'Rourke P, **McCarthy JS**, Marquart L. Growth rate of plasmodium falciparum: analysis of parasite growth data From malaria volunteer infection studies.*J Infect Dis.* 2020 Mar 2;221(6):963-972. doi: 10.1093/infdis/jiz557.PMID: 31679015
64. Koehler AV, Robson J, Spratt DM, Hann J, Beveridge I, Walsh M, McDougall R, Bromley M, **Hume A**, Sheorey and Gasser RB. Ocular filariasis in human caused by *Breinlia (Johnstonema) Annulipapillata* Nematode, Australia. *Emerg Infect Dis.* 2021;27(1):297-300. doi:10.3201/eid2701.203585
65. **Hume A**, Heney C. Epidemiology of culture-positive mucormycosis in Queensland: 2013–2018. *Pathology.* 2020 Feb 1;52(1):123-124. doi: 10.1016/j.pathol.2020.01.421
66. **Hume A**, Nimmo G, Ranasinghe A, Jennison A, Graham R. Characterisation of *Staphylococcus capitis* bloodstream isolates from south-east Queensland neonatal units. *Pathology.* 2020 Feb 1;52(1): S58. doi: 10.1016/j.pathol.2020.01.188

2020 Conference Presentations – Invited Speaker, Oral and Poster

Invited Speakers

1. **Barber, B.** Immunology Networking Symposium, Clinical Trials in the time of COVID-19. Brisbane, 2020
2. **Barber, B.** Invited Panellist, COVID-19 clinical management, Australasian Society of Infectious Diseases Clinical Research Network Meeting 2020
3. **Barber, B.** Molecular Approaches to Malaria. Microvascular pathogenesis of severe malaria. Lorne, 2020
4. **Hume, A.** EUCAST Workshop, Introduction of the New 'I' Category Antimicrobials Society of Australasia, Melbourne 2020
5. **Hume, A.** Characterisation of *Staphylococcus capitis* Bloodstream isolates from south-east Queensland neonatal units. Royal College of Pathologists of Australasia Microbiology Workshop, 2020

Oral Presentations

1. **McCarthy, K.** CRE reduce HITH Masterclass: OPAT and Prosthetic joint Infections 2020
2. **McCarthy, K** CRE reduce TD Symposium: TDM in the community, 2020

Internal Medicine Research and Aged Care

The Internal Medicine Research Unit supports clinician led, collaborative research and knowledge translation to improve the quality, experience and outcomes of hospital and post-hospital care. We have a particular interest in improving care of older, frail and/or complex patients. We build clinician and health student capacity in research and knowledge translation, to help answer questions that matter to clinicians and patients, and support implementation of evidence into practice.

In 2020, we have continued to support and evaluate the implementation of our successful “Eat Walk Engage” program across Queensland, with 40 Wards in 18 hospitals supported to implement this evidence-based delirium prevention program as part of the Queensland Health Frail Older Persons’ Collaborative. We have also tested the program principles in collaborative studies in new settings, including a MRFF-funded rapid translation grant in rehabilitation at Redcliffe hospital, a Flinders University collaboration in Adelaide, and an Irish Health Research Board funded frailty grant in Cork, Ireland.

We have involved consumers in a co-design project to improve hospital mealtimes which informed a successful SEED application by Dr Adrienne Young. We have mentored Honours research students and novice clinician researchers in scholarly activities including observational studies, systematic literature reviews and quality improvement projects.

We have led capacity building in knowledge translation through our expert contributions to the QUT/Metro North graduate certificate, the AH-TRIP expert implementation panel, the RBWH Implementation Network, and a new program for the Health Improvement Fellowship.

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Dr Susan Jordan, Prof Sallie-Anne Pearson, Dr Nirmala Pandeya, Assoc Prof Michael Coory, Dr Katrina Spillsbury, Dr Peter Donovan	Clinical Pharmacology, Internal Medicine and Aged Care	IMPROVE - Investigating Medication Re-Purposing to Reduce risk of Ovarian cancer and Extend survival	National Health and Medical Research Council	\$438,313	2017-2021

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Alison Mudge	Prue McRae , Elizabeth Beattie, Sandra Jeavons, Ruth Hubbard, Len Gray, Catherine Yelland, Amanda Fox	Improving delirium care	20 (at Redcliffe)	20
Alison Mudge	Simone Costa, Arlet Ovieda Herrera	Systematic review of risk factors for postoperative delirium	N/A: systematic review	
Jill Campbell	Alison Mudge, Fiona Coyer , Joan Ostaszkiwicz, Theresa Green, Ruth Hubbard	A prospective observational study of hospital-associated and persistent hospital-associated incontinence in older hospital inpatients: secondary analysis of the CHERISH study	N/A: secondary analysis	
Julie Adsett	Alison Mudge , Anita Pelecanos	Frailty and exercise in heart failure	N/A: Secondary analysis	

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Julie Adsett	Alison Mudge, John Atherton, David Fielding , Annabel Hickey	Yesterday, today and tomorrow. Using the Heart Failure and Pulmonary Rehabilitation COVID-19 experience to inform models of care at RBWH	20	20
Adrienne Young	Angela Byrnes , Evonne Miller, Alison Mudge , Gary Power, Merrilyn Banks , Mark Brough, Amanda Dines , Prue McRae (IMRU), Chiara Santomauro (CSDS), Tara McCurdie (QIPPS)	Co-designing a positive meal environment for older people in hospital: a multi-phase experience-based co-design study	0	15
Peter Donovan	Nicola Harper, Dr Danielle Stowasser, Margie Butnoris (Metro North IT), Ian Coombes, (Pharmacy), Charles Denaro (Internal Medicine), Timothy Dunn (Caboolture Hospital Pharmacy), Anita Pelecanos (QIMR Berghofer)	Evaluation of the Implementation of Electronic Prescribing using Interrupted Time-Series Analysis at Two Hospitals in Queensland	NA	
Peter Donovan	Alexis Dermedoglou (Cairns Hospital), Nicola Hinton (Cairns Hospital), Gaurav Puri (Cairns Hospital), Carolyn Allen (Sunshine Coast University Hospital), Clare Cutmore , Heike Krausse , Hua Bing Yong (Princess Alexandra Hospital), Jacqueline Cotungo (Princess Alexandra Hospital), Jade Eccles-Smith, Jay Leckie (Clinical Excellence Queensland), Jennifer Abel (Logan Hospital), Kay Dean (West Morteon HHS), Kerry Porter (Princess Alexandra Hospital), Roisine Warwick (Redland Hospital), Lee Allam (Princess Alexandra Hospital)	Queensland Inpatient Diabetes Survey		
Peter Donovan	Tahlia Gentle , Donald McLeod , Assoc. Prof Susan Jordan, (University of Queensland), Champika Pattullo , Mark Daghish , Assoc. Prof Anthony Bell, Wesley Hospital, Brisbane	Opioid Prescribing and Associated Harm in Queensland: A whole of population linkage study	NA	

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Alison Kitson	Alison Mudge , Prue McRae , Sarah Hunter, Tiffany Conroy, Jo Nolan, Rebecca Feo	REDUCE: reducing delirium with Eat Walk Engage	11 (in South Australia)	11
Corina Naughton	Bridie Sullivan, Alison Mudge	Implementation of Frailty Care Bundle (FCB) for older people in acute care settings	Recruitment in Cork, Ireland	
Gillian Wright/Hannah Reynolds	Alison Mudge , Carl Lisec , Susan Petrie , Sandra Concha Blamey , Kerstin Wyssusek	ASPECT Acute Surgery Perioperative Collaboration Team	0	300
Nicolas Anning	Karen Whitfield G Hopkins , A Clavarino, Peter Donovan	Pre and post-operative medication management in bariatric patients		

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Champika Pattullo (Clinical Pharmacology)	Benita Suckling, Peter Donovan , Lisa Hall (Queensland University of Technology)	Development, implementation and outcomes of an adaptable OXYCODONE Quality Improvement STRATEGY: Steps towards opioid stewardship		
Dr Susan Jordan	Dr Peter Donovan Prof Sallie-Anne Pearson, Dr Nirmala Pandeya, Assoc Prof Michael Coory, Dr Katrina Spilsbury,	IMPROVE - Investigating Medication Re-Purposing to Reduce risk of Ovarian cancer and Extend survival		
Benita Suckling	Champika Pattullo, Peter Donovan , Shirley Hu (University of Queensland), Bill Loveday (Medications and Regulations, Queensland Health)	Rates of Opioid Dispensing and Opioid-related Harms 2010-2018 – The Queensland Experience		
Ian Coombes	Peter Donovan , Charles Mitchell, Brooke Myers, Christy Noble	Improving Intern Medical Officer Prescribing through an Intervention of Self-Assessment and Feedback		
Louise Cullen (Emergency and Trauma Centre)	Nathan Brown, Peter Donovan, Ian Coombes, Jaimi Greenslade, David Hughes, Elizabeth Doran	Prevalence and characteristics of medication-related presentations to the emergency department. Emergency & Trauma Centre, Royal Brisbane and Women's Hospital.		

Research Publications

Journal Articles

1. Thillainadesan J, **Mudge AM**, Aitken SJ, Hilmer SN, Cullan JS, Yumol MF, Close JCT, Norris CM, Kerdic R, Naganathan V. The prognostic performance of frailty for delirium and functional decline in vascular surgery patients. J Am Geriatr Soc accepted October 8 2020
2. Flint K, **Matthews K, Flaws D, Mudge AM, Young A**. Mealtime care and dietary intake in older psychiatric hospital inpatient: a multiple case study. J Adv Nurs accepted Nov 23 2020
3. **Olenski S, Treleaven E, Hewitt M, Young A, McRae P**, Walsh Z, **Mudge A**. Patient-reported experiences of mealtime care and food access in acute and sub-acute hospital settings: a cross sectional survey. J Human Nutr Diet accepted Dec 2020
4. **Roberts N, Mudge A**, Stover A, Alexander K, **Wyld D**, Janda M. The utility of the implementation science framework "Integrated Promoting Action on Research Implementation in Health Services" (i-PARIHS) and the facilitator role for introducing patient reported outcome measures (PROMs) in a medical oncology outpatient department. Quality of Life Research 2020 <https://doi.org/10.1007/s11136-020-02669>
5. Fleury A, McGown B, Burstow M, **Mudge AM**. Sharing the helm: Medical co-management for the older surgical patient. ANZ J Surg online early 30 September 2020 <http://dx.doi.org/10.1111/ans.16347>
6. Hunter SC, Kim B, **Mudge A**, Hall L, **Young A, McRae P**, Kitson AL. Experience of using the i-PARIHS framework: a co-designed case study of four multi-site implementation projects. BMC Health Services Research 2020; 20:573
7. **Shaw M**, Pelecanos A, **Mudge AM**. Evaluation of internal medicine physician or multidisciplinary team comanagement of surgical patients and clinical outcomes: A systematic review and meta-analysis. JAMA Network Open; 2020:3(5); e204088

-
8. **Lee-Steere K**, Liddle J, **Mudge A**, Bennett S, **McRae P**, Barrimore S. "You've got to keep moving, keep going": Understanding older patients' experiences and perceptions of delirium and non-pharmacological delirium prevention strategies in the acute hospital setting. *J Clin Nurs online* early 27 March 2020

 9. **McRae P**, Bew P, Smith S, **Mudge A**. An observational study of physical, cognitive and social activities in rehabilitation inpatients. *Aust J Ageing* 2020; 39 (3):217-224

 10. **Kozica-Olenski S**, **McRae P**, Bew P, **Mudge A**. "I will walk out of here": qualitative analysis of older rehabilitation patients' perceptions of mobility. *Aust J Ageing* 2020; 39 (3): 209-216

 11. **Mudge AM**, Bew P, Smith S, **McRae P**. Staff knowledge, attitudes and behaviours related to mobilisation in a rehabilitation setting: short report of a multidisciplinary survey. *Aust J Ageing* 2020; 39 (3):225-229

 12. **Mallett A**, Kearey P, Cameron A, **Healy H**, **Denaro C**, Thomas M, Lee V, Stark S, Fuller M, Hoy W. The Ckd. Qld fabRy Epidemiology (aCQuiRE) study protocol: identifying the prevalence of Fabry disease amongst patients with kidney disease in Queensland, Australia. *BMC Nephrology* 2020; 21:58.

 13. Zada M, Lo Q, Boyd AC, Bradley S, Devine K, **Denaro CP**, Sadick N, Richards DAB, Tchan MC, Thomas L. Basal segmental longitudinal strain: a marker of subclinical myocardial involvement in Anderson-Fabry disease. *JASE* 2020: doi.org/10.1016/j.echo.2020.11.009

 14. **Madan A**, **Risetto T**, **Trenerry H**, & **Donovan P**. The Perils of Antiepileptic Toxicity. *Australian Prescriber*, April 2020. (In Press)

 15. **Finn S**, D'arcy E, **Donovan P**, **Kanagarajah S**, Barras M. A randomised trial of pharmacist-led discharge prescribing in an Australian geriatric evaluation and management service. *Int J Clin Pharm*. 2020 Nov 2. doi: 10.1007/s11096-020-01184-0. Epub ahead of print. PMID: 33136253

 16. **Philip C. Robinson**, Nicola Dalbeth and **Peter Donovan**. Colchicine Prophylaxis of Gout Flares When Commencing Allopurinol is Very Cost Effective. *Arthritis Care and Research*. June 2020. DOI: 10.1002/acr.24357

 17. Bullock, B.; **Donovan, P.J.**; Mitchell, C.; Whitty, J.A.; **Coombes, I**. The impact of a Post-Take Ward Round Pharmacist on the Risk Score and Enactment of Medication-Related Recommendations. *Pharmacy* 2020, 8, 23
-

Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

-
1. **Mudge A, McRae P**. Lost in Translation: Improving Patient Mobility. Queensland Cardiorespiratory Physiotherapy Network Conference 2020

 2. **Mudge AM, McRae P**. Getting Moving in Hospital: Preventing Immobility-Associated Harm. Royal Australasian College of Physicians/Australia New Zealand Society of Geriatric Medicine Webinar Series 2020

 3. **Denaro C**. Home infusion programs for ERT and Patient Support Programs in Australia for Fabry disease. "Grasp the Optimal Approach to LSD" Symposium 2020. South Korea (online)
-

Poster Presentations

-
1. **Robinson C, Mudge A**, Heron A, Gluer R. Outcomes of Exercise Stress Testing and Yield of Further Testing: A Retrospective Cohort Study, Cardiac Society of Australia and New Zealand Annual Scientific Meeting 2020
-

Kidney Health Service

COVID-19 changed the research eco-system in 2020. Changes in workflows in the hospital in response to the threat of COVID-19 limited our researchers access to patients who are at the centre of all our research. Clinical trial participants were channelled away from our larger facilities and less procedures were performed resulting in less bio-samples for our wet bench researchers. We sent our scientists home to isolate and our research nurses were re-deployed to clinical duties. Some grant rounds were delayed/not progressed and scientific meetings, cancelled early in the year, became virtual events by mid-year, with presentations shifting to more orals. In the face of these changes we continued to expand our research capacity with new researchers from the diverse backgrounds of science, allied health, nursing and medicine initiating new work and/or collaborating with established groups.

We found opportunities in these changes. Our researchers focused on collaborations that became mostly virtual, expanding our scientific relationships in the Indian Subcontinent, including building new early collaborations with the Christian Medical College in the areas of chronic allograft nephropathy and primary focal segmental sclerosis. We advanced new collaborations in chronic kidney disease with Dr Rajitha Abeysekera, Director Centre for Education Research and Training in Kidney Disease (CERTKiD), University of Peradeniya, Sri Lanka, lupus nephritis with Ass. Professor Seokchan Hong, University of Ulsan College of Medicine, Seoul and models of care with Professor Ann Bonner following her appointment to Head of School of Nursing and Midwifery Griffith University.

We started up research in two exciting new areas of machine learning and -omics based precision medicine. Two PhD candidates are using ML to test the value proposition of remaining on dialysis vs accepting even poor -quality kidneys and in risk prediction profiling respectively. The Conjoint Kidney Research Group are forming collaborations with basic scientists in molecular and cellular pathobiology, computational analytics and imaging to generate powerful platforms of precision information for clinicians to use in the management of people with complex medical problems. In 2020 we published work in bile and myoglobin driven cases of acute kidney injury using these tools.

The outputs of our researchers are changing clinical practice. Dr George John collaborated with the Khanna Laboratories, QIMR, Brisbane to, for the first time in Australia, clear treatment resistant BK virus in a kidney using adoptive immunotherapy. And Ms Carla Scuderi is creating an infrastructure to support personalised drug dose profiling using venous micro-sampling to enable tolerably frequent venous draws.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Arti Raghubar	Australian Government Research Training Program (RTP) Scholarship	PhD studies
Kurt Giuliani	Australian Government Research Training Program (RTP) Scholarship	PhD studies
Sameera Senanayake	Best Abstract Award – Remaining waitlisted for a superior quality kidney: an economic evaluation of contemporary transplant practice	Asia Pacific Congress of Nephrology 2-4 Oct 2020 Hong Kong
Sameera Senanayake	HRAANZ Best Health Services and Policy Research Paper	Health Services Researchers: partners for COVID-19 response and recovery. Health Research Association 3 Dec 2020 Virtual

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Andrew Kassianos, Helen Healy, Kenneth Beagley	Conjoint Kidney Research Group, Kidney Health Service	Developing therapeutic approaches targeting human unconventional T lymphocytes for the treatment of chronic kidney disease	National Health and Medical Research Council	\$557,127	2019-2022
Leo Francis, Katharine Hegerty, Andrew Kassianos, Dwarakanathan Ranganathan		Thrombospondin Type-1 Domain-Containing 7A and Membranous Nephropathy – A retrospective analysis of podocyte antigen prevalence and prognosis in an Australian cohort	SERC Funding	20,000.00	2019-2020
Andrew Mallett on behalf of the KIDGEN Team including Healy H	KIDGEN	Kid Gen Clinics, Education, Data and Research - KIDGEN – CEDAR	Department of Health Australian Government Action Plan for Kidney Disease	\$700,000	2020-2022
Andrew Mallett, Quan Nguyen, Helen Healy, Andrew Kassianos, Arti Raghobar, Monica Ng, Leo Francis	Conjoint Kidney Research Group, Kidney Health Service	Applying Spatial Transcriptomics to Discover Kidney Disease Pathways and Optimize Clinical Kidney Biopsy Assessment	RBWH and RBWH Foundation Research Project Grant	\$40,000	2020
Joanne Reid, Helen Noble, Clare McKeaveney, Claire Carswell, William Johnston, Ian Walsh, Illaria de Barbieri, Victoria Strini, John O’Riordan, Ann Bonner, Peter Maxwell.	Kidney Health Service	Exploration of the Experiences of Renal Healthcare Practitioners Globally during the COVID-19 Pandemic	Northern Ireland Kidney Research Fund	\$81,000	2020-2021
Carla Scuderi	Kidney Health Service	Improving patient centred outcomes in kidney transplant recipients	RBWH Scholarship	\$39,000 pa	2019-2021
David McIntyre, Ann Bonner	Kidney Health Service	Testing the validity and feasibility of the McIntyre audit tool (MAT 26)	HIRO Nursing and Midwifery Research Fellowship	\$14,513	2020-2021
David Gill, Daniel Schuster, Dwarakanathan Ranganathan	Kidney Health Service	Multi-centre prospective observational cohort study investigating association between ANCA results and relapse of ANCA associated vasculitis	SERC Funding	\$20,000.00	2019-2020
Helen MacLaughlin, K Morgan, B Mason, J Brodrick, Andrew Mallett	Nutrition and Dietetics-Kidney Health Service	Mediterranean diet as adjunctive therapy to reduce resistant proteinuria in chronic kidney disease – a proof of concept study	RBWH and RBWH Foundation Research Project Grant	\$39,970	2020
Monica Ng	Conjoint Kidney Research Group, Kidney Health Service	A multifaceted screen for personalized precision medicine targets for glomerulonephritides – from genotype to international big data analyses	RBWH and RBWH Postdoctoral Research Fellowship	\$100,000	2020-2021

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Ann Bonner/Helen Healy	Gary Chang, Louise Purtell, Judith Burrows, Pedro Franca Gois	Keeping Kidneys in the Community	58	300
Ann Bonner/Helen Healy	Carol Douglas, Ilse Berquier, Louise Purtell, Laura Austin, Katrina Kramer	An evaluation of the Kidney Supportive Care program	250	730
Dwarakanathan Ranganathan	George John , Wendy Hoy, Andrew Mallett , Zaw Thet, Sridevi Govindarajulu, Jeremy Frazer, Murthy Divi, Krishan Madhan, Valli Manickam, Clyson Mutatiri, Roy Cherian, Sree Krishna	Queensland Renal Biopsy Registry	20	30
Dwarakanathan Ranganathan	Kara Summers, Pauline Nicholas	Randomised Controlled trial to compare initiation of peritoneal dialysis at one or two weeks post radiological catheter insertion (Rad Cath Study)	4	6
Dwarakanathan Ranganathan	David Gill, Daniel Schuster, Zaw Thet, Clyson Mutatiri, Roy Cherian	Multi-centre prospective observational cohort study investigating association between ANCA results and relapse of ANCA associated vasculitis	0	1
Helen Healy	Andrew Kassianos, George John, Andrew Mallett, Pedro Franca-Gois, Purba Nag, Anca Grivei, Monica Ng , Seokchan Hong (Asan Medical Centre), Xiangju Wang (Path Qld), Arti Raghobar , Muhammad Ali Khan (UQ), Kurt Giuliani	Identifying biologically relevant control and switch points driving progression of kidney disease	80	900
Helen Healy	Andrew Kassianos, George John , Ross Francis (PAH)	Characterising immune cell populations in kidney transplant rejection	10	70
Louise Purtell	Ann Bonner, Helen Healy , Kerri Gillespie, Carol Douglas, Laura Austin, Ilse Berquier, Katrina Kramer	A Randomised Evaluation of the Provision Of a Sleep intervention in End-stage kidney disease (REPOSE)	12	12
Pedro Franca Gois	Dwarakanathan Ranganathan, Helen Healy, Carla Scuderi, David McIntyre Sharad Ratanjee, Chungun Lee Janoschka, Kara Summers	Heparin-free dialysis in patients with high risk of bleeding (HepFree Trial)	40	40
Pedro Franca Gois	Marina Wainstein , Rebecca Saunderson, Helen Healy, Ann Bonner , Vera Miao	Improving the patient experience of renal biopsy: A RCT evaluating video-assisted consent versus standard consent for percutaneous ultrasound-guided kidney biopsy	0	

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Pedro Franca Gois	Eva Malacova, Katharine Hegerty, Kirsten Hepburn, Helen Healy, Dwarakanathan Ranganathan, Andrew Mallett	Percutaneous kidney biopsy: Can we predict which patients are at risk of bleeding complications?	NA	285

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Alberta Hoi	Dwarakanathan Ranganathan, Paul Kubler	Systemic Lupus Erythematosus Prospective Observational Cohort Study (SPOCS)	Recruitment stopped in December 2019	6
Alberta Hoi	Dwarakanathan Ranganathan, Paul Kubler	Australian Lupus Registry & Biobank for Patients with Systemic Lupus Erythematosus (SLE)	6	15
Carel Pretorius (Pathology Queensland)	Jacobus Ungerer (Pathology Queensland), Helen Healy, Andrew Kassianos , Xiangju Wang	Precision diagnostics for cardiac troponin in acute myocardial infarction and end-stage kidney disease patients	N/A	N/A
John Frederick Knight	Benjamin Talbot, Matthew Sypek, Stephen McDonald, Pedro Franca Gois , Katherine Barraclough	Environmental Survey of Dialysis Practice in Australia and New Zealand	NA	NA
Mark Thomas	Pedro Franca Gois , Belinda Butcher B, Michelle Ta, Gregory Van Wyk	Treatment Persistence to Tolvaptan in Patients with Autosomal Dominant Polycystic Kidney Disease		455
Nikky Isbel	Dwarakanathan Ranganathan	An observational, non-interventional, multi-centre, multi-national study of patients with Atypical Haemolytic-Uraemic Syndrome (aHUS Registry)	Nil from RBWH	2
Santosh Varughese (Christian Medical College, Vellore, India)	Helen Healy, George John, Andrew Kassianos	Molecular profiling in renal allograft recipients with acute rejection and chronic allograft dysfunction	15	72
SeokChan Hong (Asan Medical Center, Korea)	Helen Healy, Andrew Kassianos	Kidney cell-immune cell interactions leading to renal fibrosis in lupus nephritis	n/a	n/a
Sharad Ratanjee	Sradha Kotwal, Sarah Coggan, Stephen McDonald, Girish Talaulikar, Alan Cass, Stephen Jan, Kevan R. Polkinghorne, Nicholas A. Gray, Martin Gallagher	REDUCCTION Partnership Project. Reducing the burden of dialysis Catheter Complications: a National approach (REDUCCTION) – design and baseline results.	n/a	n/a
Suceena Alexander (Christian Medical College, Vellore, India)	Helen Healy, George John, Andrew Kassianos	Pathogenic molecular/cellular biology in Focal Sclerosing GlomeruloSclerosis (FSGS) in Indians	5	36

Research Publications

Journal Articles

1. **Bonner A**, Havas K, Stone C, Abel J, Barnes M, Mills K, Tam V, **Douglas C**. An integrated chronic comorbid disease clinic: Outcomes of nurse practitioner lead service model. *Collegian*. 2020;27(4): 430-436
2. **Burke JP**, Aljishi M, Francis L, Hoy W, Divi D, Cherian R, Frazier J, Gobe G, **Gois P**, Huynh S, Jesudason S, **John G**, Madhan K, **Mallett A**, Manickam V, Mutatiri C, Ng S, Thet Z, Trnka P, Venuthurupalli SK, **Ranganathan D**. Protocol and Establishment of a Queensland Renal Biopsy Registry in Australia. *BMC Nephrol*. 2020;21(1):320
3. Chan S, Marshall MR, Ellis RJ, **Ranganathan D**, Hawley CM, Johnson DW, **Wolley MJ**. Haemodialysis withdrawal in Australia and New Zealand: a binational registry study. *Nephrol Dial Transplant*. 2020 Apr 1;35(4):669-676. doi: 10.1093/ndt/gfz160. PMID: 31397483
4. Cousins M, Bradshaw J, **Bonner A**. Professional relationships between nephrology clinicians and patients: A systematic review. *J Ren Care*. 202;46(4):206-215
5. Geia L, Baird K, Bail K, et al. A unified call to action from Australian Nursing and Midwifery leaders: Ensuring that black lives matter. *Contemporary Nurs*. Forthcoming 2020
6. **Giuliani K, Kassianos A, Kildey K, Grivei A**, Wang X, Ungerer J, Francis L, **Healy H, Gois P**. (2020). Role of inflammation and inflammasome activation in human bile cast nephropathy. *Nephrology*. 25(6): 502-506
7. Giuliani KTK, **Kassianos AJ**, Kildey K, Grivei A, Wang X, Ungerer J, Francis L, **Healy H, Gois PHF**. The Role of Inflammation and Inflammasome Activation in Human Bile Cast Nephropathy. *Nephrology (Carlton)*. 2020;25(6):502-506
8. Giulliani KTK, Kassianos AJ, Kildey K, Grivei A, Wang XX, Ungerer J, Francis L, Healy H, Gois PFH. Role of Inflammation and inflammasome activation in human bile cast nephropathy. *Nephrology* 2020;epub
9. **Gois PHF**, Souza ERM. Pharmacotherapy for hyperuricemia in hypertensive patients. *Cochrane Database Syst Rev*. 2020; 9:CD008652
10. **Grivei A**, Giuliani K, Wang X, Ungerer J, Francis L, **Hepburn K, John G, Gois P, Healy H, Kassianos A**. Oxidative stress and inflammasome activation in human rhabdomyolysis-induced acute kidney injury. *Free Radical Biology and Medicine*. *Free Radical Biology and Medicine*. 2020; 160: 690-695
11. **Grivei A, Giuliani K**, Wang X, Ungerer J, Francis L, **Hepburn K, John G, Franca-Gois P, Kassianos A*, Healy H***. (2020). Oxidative stress and inflammasome activation in human rhabdomyolysis-induced acute kidney injury. *Free Radical Biology and Medicine*. 160: 690-695. *authors contributed equally
12. Guo Z, Poglitsch M, McWhinney BC, Ungerer JPJ, Ahmed AH, Gordon RD, **Wolley M**, Stowasser M. Measurement of Equilibrium Angiotensin II in the Diagnosis of Primary Aldosteronism. *Clin Chem*. 2020 Mar 1;66(3):483-492. doi: 10.1093/clinchem/hvaa001. PMID: 32068832
13. Guo Z, Poglitsch M, Cowley D, Domenig O, McWhinney BC, Ungerer JPJ, **Wolley M**, Stowasser M. Effects of Ramipril on the Aldosterone/Renin Ratio and the Aldosterone/Angiotensin II Ratio in Patients with Primary Aldosteronism. *Hypertension*. 2020 Aug;76(2):488-496. doi: 10.1161/HYPERTENSIONAHA.120.14871.Epub 2020 Jun 8. PMID: 32507039
14. Gurgenci T, Geraghty S, **Wolley M**, Yang J. Screening for primary aldosteronism: How to adjust existing antihypertensive medications to avoid diagnostic errors. *Aust J Gen Pract*. 2020 Mar;49(3):127-131. doi: 10.31128/AJGP-07-19-4995. PMID: 32113202
15. **Hong S, Healy H*, Kassianos A***. The emerging role of renal tubular epithelial cells in the immunological pathophysiology of lupus nephritis. *Frontiers in Physiology Renal and Epithelial Physiology*. 2020;11: 578952. *authors contributed equally
16. Im SJ, Xu Y, Watson J, **Bonner A, Healy H**, Hoy W. Hospital readmission prediction using discriminative patterns. *IEEE Symposium Series on Computational Intelligence*.2020

-
17. Jones SA, Hegerty K, **Scuderi C, Eglington J**, Green B, Mallett A. Clinical and Healthcare Utilization Outcomes of Parathyroidectomy in CKD and Dialysis Patients. *Kidney International Reports*. 2020;5(7):1086-1089
-
18. **Jahan S, Scuderi C**, Francis L, Neller MA, Rehan S, Crooks P, Ambalathingal GR, Smith C, Khanna R, **John GT**. T-cell adoptive immunotherapy for BK nephropathy in renal transplantation. *Transpl Infect Dis*. 2020;22(6):e13399. <https://doi.org/10.1111/tid.13399>
-
19. **Jefferis J**, McGowan T, **John GT**. An En-tresting case of acute kidney injury. *Internal Medicine Journal* 2020; 50: 640-641
-
20. Khan MA, Wang X, **Giuliani K, Nag P, Grivei A**, Ungerer J, Hoy W, **Healy H**, Gobe G*, **Kassianos A***. Underlying histopathology determines response to oxidative stress in cultured human primary proximal tubular epithelial cells. *International Journal of Molecular Sciences*. 2020;21(2): E560. doi:10.3390/ijms21020560 *authors contributed equally
-
21. Lim CC, Tan HZ, Tan CS, **Healy H**, Choo J, **Gois PHF**. Desmopressin acetate (DDAVP) to prevent bleeding in percutaneous kidney biopsy: a systematic review. *Intern Med J*. 2020 Feb 10
-
22. Luetsch K, **Scuderi C**. Experiences of medical dominance in pharmacist-doctor interactions - An elephant in the room? *Research in Social and Administrative Pharmacy*. 2020;16(9):1177-1182
-
23. **Mallett A**, Kearey P, Cameron A, **Healy H**, Denaro C, Thomas M, Lee VW, Stark S, Fuller M, Hoy W. The Ckd.Qld fadRY Epidemiology (aCQuiRE) Study Protocol: Identifying the prevalence of Fabry Disease amongst patients with kidney disease in Queensland, Australia. *BMC Nephrology* 2020;21:58
-
24. McIntyre D, **Coyer F, Bonner A**. Identifying nurse sensitive indicators specific to haemodialysis nursing: A Delphi approach. *Collegian*. 2020;27(1):75-81
-
25. **McIntyre D**, Havas K, **Bonner A**. Monitoring for intradialytic hypotension: An audit of nursing practice. *J Ren Care*. Forthcoming 2020
-
26. Owens E, Tan K-S, Ellis R, Del Vecchio S, Humphries T, Lennan E, Vesey D, **Healy H**, Gobe G. Development of a biomarker panel to distinguish risk of progressive chronic kidney disease. *Biomedicines* 2020;8:606 doi:10.3390/biomedicines8120606
-
27. Rheault H, **Coyer F, Bonner A**. Time to listen: Chronic disease yarning with Aboriginal and Torres Strait Islander peoples living in remote Australia. *Collegian*. Forthcoming 2020
-
28. **Scuderi C**, Nalder M, Castelino R, Cervell, M, Ironside D, Jones C, Lloyd J, Mirkov S, Munro, C. Standard of practice in nephrology for pharmacy services. *J Pharm Pract Res* 2020;50:263-275. <https://doi.org/10.1002/jppr.1649>
-
29. **Scuderi C**, Parker SL, **Jacks M, John G**, McWhinney B, Ungerer J, **Mallett A**, Roberts J, **Healy H**, Staatz CE. Patient's feel finger-prick samples have MERIT. Patient's perceptions on innovative blood sampling in long-term treatment for kidney transplant recipients. *Bioanalysis* 2020 July 6;doi/10.4155/bio-2020-0057
-
30. **Scuderi C, Tunbridge M**. Protein supplements and CKD should we be worried? *Retail Pharmacy* 2020; 7:78-81
-
31. Sennayake S, Barnett A, Graves N, **Healy H, Baboolal K**, Kularatna S. Using machine learning techniques to develop risk prediction models to predict graft failure following kidney transplantation; protocol for a retrospective cohort study F1000Research 2020;8:1810
-
32. Senanayake S, Graves N, **Healy H, Baboolal K**, Kularatna S. Cost-utility analysis in chronic kidney disease patients undergoing kidney transplant; what pays? A systematic review. *Cost Effectiveness and Resource Allocation* 2020;18(1):18 doi:org/10.1186/s12962-020-00213-z
-
33. Sharma S, **Green T**, Alexander K, **Bonner A**. Educational or behavioural interventions for symptoms and health-related quality of life in adults receiving haemodialysis: A systematic review. *J Ren Care*. 2020;233-249
-
34. Sowa PM, **Purtell L**, Hoy WE, **Healy H**, Bonner A, Connelly LB. Utilisation and costs of health care in a kidney supportive care program. *Journal of Palliative Care* 2020;35(3);176-184 <https://doi.org/10.1177/0825859719868174>
-

-
35. Thuzar M, Young K, Ahmed AH, Ward G, **Wolley M**, Guo Z, Gordon RD, McWhinney BC, Ungerer JP, Stowasser M. Diagnosis of Primary Aldosteronism by Seated Saline Suppression Test-Variability Between Immunoassay and HPLC-MS/MS. *J Clin Endocrinol Metab.* 2020 Mar 1;105(3):dgz150. doi: 10.1210/clinem/dgz150. PMID:31676899

 36. **Tunbridge M, Gois PHF.** Vitamin D and NLRP3 Inflammasome. *Appl. Sci.* 2020, 10(23), 8462

 37. Yapa H, Chambers S, **Purtell L, Bonner, A.** The relationship between chronic kidney disease, symptoms and health-related quality of life: A systematic review. *J Ren Care.* 2020;46(2):74-84

 38. **Wembenyui C, Douglas C, Bonner A.** Validation of the Australian version of chronic kidney disease self-management instrument. *Int J Nurs Pract.* Forthcoming 2020

 39. **Wolley M**, Thuzar M, Stowasser M. Controversies and advances in adrenal venous sampling in the diagnostic workup of primary aldosteronism. *Best Pract Res Clin Endocrinol Metab.* 2020 May;34(3):101400. doi: 10.1016/j.beem.2020.101400. Epub 2020 Feb 22. PMID: 32115358

 40. Wu A, **Wolley MJ**, Wu Q, Gordon RD, Fenton RA, Stowasser M. The Cl/HCO₃ exchanger pendrin is downregulated during oral co-administration of exogenous mineralocorticoid and KCl in patients with primary aldosteronism. *J Hum Hypertens.* 2020 Nov 10. doi: 10.1038/s41371-020-00439-7. Epub ahead of print. PMID: 33173144
-

Book Chapters / Letters

-
1. Renal Diseases in the Tropics in: *Manson's Tropical Diseases 24th Edn 2020.* (Eds) Jeremy Farrar, Peter Hotez, Thomas Junghanss, Gagandeep Kang, David Laloo, Nicholas J White, Patricia Garcia. Elsevier 125 London Wall, London EC2Y 5 AS (under publication)

 2. Kilday K, Francis RS, Hultin S, Harfield M, Giuliani K, Law BMP, Wang X, See EJ, John G, Ungerer J, Wilkinson R, **Kassianos A, Healy H.** Specialized role of human natural killer cell subsets in kidney transplant recipients in *Kidney Transplantation and Innate Immunity.* Eds. Paola Pontrelli, Giuseppe Grandaliano & Cess Ban Kooten, *Frontiers in Immunology* doi:103389/fimmu.2020.603982

 3. **Gois PHF, Healy H, Ranganathan D, Mallett A,** Webster AG, Kanellis J, Barraclough K, Wainstein M, Johnson DW, Kerr PG. In: Moura-Neto JA, Divino-Filho JC, Ronco C, editors. *Nephrology Worldwide.* Basel: Springer Nature Switzerland AG; 1st edition; p. 701-721
-

2020 Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

-
1. **Bonner A.** Health literacy in renal care: Overcoming non-adherence. Home Dialysis Conference, Canberra, Australia, 2020

 2. **Bonner A.** Symptom recognition in home dialysis. Home Dialysis Conference, Canberra, Australia, 2020

 3. **John G.** Infective Complications after Renal Transplantation in The Tropics at Sri Lanka Society of Nephrology Annual Conference 3-4 Dec 2020

 4. **Ranganathan D,** Acute Kidney Injury – Toddlers to Adults – 18 February 2020, Mehta Hospitals, Chennai, India (ISN endorsed program)

 5. **Ranganathan D** Clinical Trials in Glomerulonephritis – Pune Society of Nephrology – 21 February 2020. Pune India (ISN endorsed program)
-

Oral Presentations

1. Anpalahan A, Malacova E, Hegerty K, Hepburn K, Healy H, Ranganathan D, Mallett A, Gois PF. Percutaneous kidney biopsy: can we predict which patients are at risk of bleeding complications? In: *Nephrology* 2020;25(Suppl 3);36. Oral presented at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia
2. **Chang G, Gois P, Purtell L, Bonner A, Healy H.** Keeping kidneys in the community; Delivering integrated kidney healthcare closer to home. Statewide Renal Clinical Network, Brisbane, Australia, 2020
3. Diwan V, Niogret S, Jhang J, Wang Z, **Healy H**, Mitchell G, Hoy W, CKD.Qld Collaborative. Burden of cardiovascular disease and impact on hospital admissions, costs and death among preterminal chronic kidney disease patients. In: *Nephrology* 2020;25(Suppl 3);20. Oral presented at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia
4. **Giuliani K, Grivei A, Nag P**, Wang X, **Kassianos AJ, Healy H.** Cool Beans! Learning to Extinguish the Inflammatory Fire in Chronic Kidney Disease. EMBL Australian Postgraduate Symposium, 2020. Virtual meeting
5. Im SJ, Xu Y, Watson J, **Bonner A, Healy H**, Hoy W. Hospital readmission prediction using discriminative patterns. In: Proceedings and Oral presentation at 2020 IEEE Symposium Series on Computational Intelligence (SSCI 2020) 2020 1-4 December; Canberra virtual, Australia
6. **McDowall L, Kirby J, Rice M, Berquier I, Weir N, Purtell L, Healy H, Bonner A.** Team work: Kidney supportive care from referral to death. Palliative Care Nurses Association, Brisbane, Australia, 2020
7. **Ng MS, Mon SY, O'Rourke R, Mott N, Taheri T, Morris K, Gois PH.** Erdheim-Chester Disease: A Rare Cause of Bilateral Renal Artery Stenosis and AKI. In: *Journal of the American Society of Nephrology Abstract Supplement* 2020;675. poster presented at Kidney Week American Society of Nephrology; 2020 Nov x-x; virtual US. PO221)
8. Owens E, Hoy W, Tan K, Lennan E, Cameron A, Humphries T, Ellis R, **Healy H**, Gobe G. Biomarkers that predict progression of chronic kidney disease more accurately than established clinical parameters. In: *Nephrology* 2020;25(Suppl 3);28. Oral presented at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia
9. **Raghubar A**, Pham D, Yoon S, Tan X, Grice L, Crawford J, Lam P, Andersen S, **Ng M**, Holland S, Stewart A, Francis L, Combes A, **Kassianos AJ, Healy H**, Nguyen Q, **Mallett A.** Spatial Transcriptomics (ST): Linking molecular profiles with morphology in kidney tissue. In: *Nephrology* 2020;25(Suppl 3);15. oral at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia
10. **Senanayake S.** Remaining waitlisted for a superior quality kidney: an economic evaluation of contemporary transplant practice. Oral at: Asia Pacific Congress of Nephrology; 2020 Oct 2-4; Hong Kong – best abstract
11. Wang Z, Diwan V, Venuthurupalli K, **Healy H**, CKD.Qld Consortium. An overview of patient characteristics and outcomes in the CKD.Qld registry, Australia, 2011 to 2018. In: *Nephrology* 2020;25(Suppl 3);24. Oral presented at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia

Poster Presentations

1. **Chandler S, Purtell L, Berquier I, Bonner A, Healy H.** Kidney supportive care (KSC): Evaluating need in a time of crisis. In: *Nephrology* 2020;25(Suppl 3);52. poster at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia
2. **Jefferies J, Berquier I, Rice M, Douglas C, Bonner A, Purtell L, Healy H, Hepburn K.** Symptom management in people with chronic kidney disease attending kidney supportive care clinics In: *Nephrology* 2020;25(Suppl 3);57. poster at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia
3. Kearny P, **Mallett A**, Cameron A, **Healy H**, Denaro C, Thomas M, Lee V, Fuller M, Hoy W. CKD.QLD Fabry epidemiology (ACQUIRE) study: implementation of a pragmatic Fabry screening study for CKD patients. In: *Nephrology* 2020;25(Suppl 3);40. poster presented at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia

-
4. Khan MA, **Nag P**, **Giuliani K**, Wang X, **Grivei A**, Hoy W, **Healy H**, Diwan V, Gobe G, **Kassianos AJ**. Induction of ferroptotic death in human primary proximal epithelial cells (PTEC) during adenine-induced chronic kidney disease. In: *Nephrology* 2020;25(Suppl 3);40. poster at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia

 5. **Mallett A**, Kearey P, Cameron A, **Healy H**, Denaro C, Thomas M, Lee V, Stark S, Fuller M, Hoy WE. Ckd.Qld fabRy Epidemiology (aCQuiRE) study: Fabry prevalence among patients with chronic kidney disease. In: *Nephrology* 2020;25(Suppl 3);65. Poster presented at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia

 6. Raghuram A, Lam PY, Crawford J, Yoon S, Andersen S, Pham D, Tan X, Grice L, Holland S, Steward A, Francis L, Combes A, **Healy H**, **Kassianos A**, **Mallett A**, Nguyen Q. Spatial transcriptomics (ST): linking molecular profiles with morphology in kidney tissue. In: *Journal of the American Society of Nephrology Abstract Supplement* 2020;12. oral presented at Kidney Week American Society of Nephrology; 2020 Oct 19-25 virtual US. TH-OR42

 7. Thomas M, **Gois PHF**, Butcher BE, TA M, van Wyk G. All-cause discontinuation of tolvaptan in patients with autosomal dominant polycystic kidney disease (ADPKD): A secondary use of data analysis of patients in the IMADJIN dataset. In: *Nephrology* 2020;25(Suppl 3);63. poster at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia

 8. Zhang J, Diwan V, Wang Z, Venuthurupalli S, **Healy HG**, Hoy WE. The impact of anaemia on outcomes and costs in patients with chronic kidney disease in two public nephrology practices in Queensland: a CKD.Qld Registry study. In: *Nephrology* 2020;25(Suppl 3);54. Poster presented at 55th Annual Scientific Meeting Australian and New Zealand Society of Nephrology, 2020 28 Nov-2 Dec, virtual, Australia
-

Department of Neurology

The Department of Neurology hosts active clinician scientists in four major theme areas: Motor Neurone Disease and neurodegeneration; stroke and brain injury; epilepsy; and movement disorders and dementia. The Department hosts 3 full professors, 5 associate professors and 16 other academic title holders. Research projects active in the Department involve collaborations with UQ Centre for Advanced Imaging, UQ Institute for Molecular Bioscience, the Queensland Brain Institute, Herston Imaging Research Facility, Queensland University of Technology, Queensland Ambulance Service and UQ Centre for Clinical Research

Motor Neurone Disease

The RBWH MND research team comprises three neurologists, Associate Professor Robert Henderson, Professor Pamela McCombe and Dr Matthew Katz, 3 research nurses Susan Heggie, Kathryn Thorpe and Robyn Tuffley and a research Fellow, in 2020 Dr Viral Upadhyay. There are strong linkages, within UQ Institutes, national and internationally through the collaborative projects detailed below.

National and International **Clinical Trials** for MND have significantly expanded in 2020 with current involvement in at least 6 major clinical trials. There is a desperate need for useful biomarkers of disease progression and the RBWH team has led with neurophysiological, imaging, blood and biomarker studies. A practical pinch test was identified as a successful biomarker in a study in 2020. From an expert international panel that met in Sept 2019, new diagnostic criteria “the Gold Coast criteria” will now be used to try facilitate earlier diagnosis. Recently the MNDA awarded RBWH/UQ \$100K to investigate a novel PET biomarker.

The **metabolic** basis for MND is an exciting and novel project led by Dr Shyuan Ngo and Dr Derik Steyn. Based at the UQ Centre for Clinical Research, the work expands the spectrum of MND to metabolic factors and their team has explored muscle and skin biopsies, cultured motor neurones and shown the important effect of metabolism on survival. This team has expanded, with a strong track record of PhD students and has close collaborations with leading international MND researchers. This project also contributed to the development of imaging studies at HIRF, with a focus on loss of appetite as a cause for weight loss in patients with MND, and the development of biomarker studies that consider the use of point of care technology for improved monitoring of loss of muscle mass in patients with MND.

The **genetic** basis to MND is now recognised as a cause of MND beyond the relatively uncommon Mendelian inheritance, along with the area of epigenetics – Professor Naomi Wray’s team at the UQ IMB have made hugely important discoveries recognised in major international publications, and Anjali Henders has led a national database called SALSA that links the major Australian MND clinics, and is now producing clinically important results.

The presence of **cognitive** factors (in particular fronto-temporal dementia) in MND patients has been recognised. The RBWH MND team works closely with neuropsychologists Professor Gail Robinson and Dr Amelia Ceslis. This enables us to provide careful assessment of cognition for the other projects outlined here. In 2020, we hope to develop a closer collaboration with Professor Peter Nestor who is an expert in neurodegenerative diseases.

The RBWH MND research has been a successful collaboration with the RBWH Foundation with more than \$3 million dollars raised through fund-raising events, both Foundation-led and external, donations, clinical trials and research grants. More than 60 publications (20+ and counting in 2020 alone) and 15 national or international presentations that have occurred in the last 5 years. We have been very grateful for the many generous donors who have supported RBWH MND research.

The clinical expertise and experience of the RBWH MND team has expanded to other neuromuscular diseases such as Pompe Disease, inflammatory, autonomic and drug-induced neuropathy and myopathy with a strong collaborative linkage with other centres within Australia.

Epilepsy Team

The Epilepsy team have successfully received a Metro North Hospital and Health Service Clinician Research Fellowship application- **Developing a Queensland neuro-genomics service to underpin the era of precision-based medicine**

RBWH Stroke Group

The RBWH Stroke group continued to publish and represent RBWH in a range of written, face-to-face and virtual fora in 2020. Unfortunately, there has been a hiatus in contributing to collaborative multicentre trials work, but planning is underway for how to revitalise this component of stroke research. Research in depression and cognitive impairment after stroke continued to grow through 2020.

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
F Nasrallah, D Reutens , S Chandra, J Walsham, T Russell, S Bhuta, J Ross, C Winter, J Bellapart-Rubio, S Senthiran	Neurology	PREDICT-TBI - PREDiction and Diagnosis using Imaging and Clinical biomarkers Trial in Traumatic Brain Injury: the value of Magnetic Resonance Imaging	Medical Research Future Fund	\$1,765,000	2020-2023
DC Reutens , F Nasrallah, B Ziegelaar, M Appleby, M Chen	Neurology	Danger signalling, traumatic brain injury and epileptogenesis	United States Department of Defence Congressionally Directed Medical Research Programs	USD\$734,856	2021-2024
DC Reutens and 34 other Chief Investigators	Neurology	ACRF Facility for Targeted Radiometals in Cancer	Australian Cancer Research Foundation	\$1,500,000	2020-2025
DC Reutens , M Barth, KJ Thurecht, R Bhalla, I Frazer, G McLachlan, A Jenkins, V Vegh, I Blakey, KH Chuang, S Birch, M Cloos	Neurology	ARC Training Centre for Innovation in Biomedical Imaging Technology	Australian Research Council (ARC) Industrial Transformation Training Centres	\$4,743,710	2017-2023
M Bromwich, A Ward, C Bishop, D Reutens , V Vegh, M Angliss	Neurology	Portable Bedside Low Field Magnetic Resonance Imaging	BiomedTech Horizons	\$1,000,000	2020-2022
DC Reutens and 16 other CIs	Neurology	ACRF Facility for Molecular Imaging Agents in Cancer	Australian Cancer Research Foundation	\$2,500,000	2015-2022

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
DC Reutens	Dr C Lander, Dr A Sullivan, Dr S Walsh, Dr. X Chen, Dr S Byrne	A Randomised Double-Blind, Placebo-Controlled, Parallel Group, Multicentre Trial of CVL-865 as Adjunctive Therapy in Adults with Drug-Resistant Focal Onset Seizures (Realize Trial)	Nil project has opened to recruitment Jan 2021	N/A
DC Reutens	Dr C Lander, Dr A Sullivan, Dr S Walsh, Dr X Chen, Dr S Byrne	E2007-G000-338 A Multicenter, Double-Blind, Randomized, Placebo-Controlled Trial With an Open-Label Extension Phase of Perampanel as Adjunctive Treatment in Subjects at Least 2 Years of Age With Inadequately Controlled Seizures Associated With Lennox Gastaut Syndrome	Nil all patients recruited in 2019	3
DC Reutens	Dr C Lander, Dr A Sullivan, Dr S Walsh, Dr X Chen, Dr S Byrne	OPTALERT Seizure detection from eyelid movement using a wearable device in epilepsy	36	42

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
DC Reutens	Dr C Lander, Dr A Sullivan, Dr S Walsh, Dr X Chen, Dr S Byrne	YKP3089C021 An Open Label, Multicentre, Safety and Pharmacokinetic Study of YKP3089 as Adjunctive Therapy in Subjects with Partial Onset Seizures	Nil all patients recruited in 2017/18	9
Lata Vadlamudi	Ernst Wolvetang	A functional genomics approach to personalise refractory epilepsy management	12	12
Lata Vadlamudi	Cecilie Lander, David Reutnes, Alice-Ann Sullivan, James Pelekanos, Xiaohua Chen, Stephen Walsh, Kate Riney, Kate Sinclair, Stephen Malone, Sophie Calvert, Geoff Wallace, Adrienne Sinclair, Ubaid Shah, Deepa Srinivasan, Ian Wilson, Ernst Wolvetang, Hannah Leeson, Mohammed Shaker, Zoe Huneter, Chiyau Lau, Julie McGaughran, Louisa Gordon, Nic Waddell	Improving patient outcomes in neurological disorders: Piloting a neurogenetics service for refractory epilepsy patients	80	80
Robert Henderson	Collaborative Medicinal Development Pty Ltd	A Multi-centre Randomised, Double-Blind, Placebo-Controlled Phase 2 Study of Cu(II)ATSM in Patients with Amyotrophic Lateral Sclerosis/Motor Neurone Disease	15	29
Robert Henderson	Orion Pharma / PRA Health Sciences	Effects of oral Levosimendan (ODM-109) on respiratory function in patients in ALS: open-label extension for patients completing study 3119002	3	3
Robert Henderson	Collaborative Medicinal Development Pty Ltd	A Treatment Continuation Study for Patients with Amyotrophic Lateral Sclerosis/ Motor Neurone Disease Who Have Successfully Completed Study CMD-2019-001	12	12
Robert Henderson	Amicus Therapeutics	A Phase 3 Open-label Extension Study to Assess the Long-term Safety and Efficacy of Intravenous ATB200Co administered with Oral AT2221 in Adult Subjects with Late onset Pompe Disease	3	4
Robert Henderson	Theravance Biopharma Ireland Ltd	A Phase 3, 4-week, Multicentre, Randomised, Double-Blind, Placebo-controlled, Parallel-group Study of TD-9855 in Treating Symptomatic neurogenic Orthostatic Hypotension in Subject with Primary Autonomic Failure	0	0
Robert Henderson	Theravance Biopharma Ireland Ltd	A Phase 3, 22-week, Multi-centre, randomised withdrawal study of TD-9855 in Treating Symptomatic Neurogenic Orthostatic Hypotension in Subjects with Primary Autonomic Failure	0	0
Michael O'Sullivan	Lena Oestreich, Paul Wright (KCL, UK)	STRATEGIC: Memory dysfunction and recovery after stroke (analysis phase)	0	179

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Amelia Ceslis	Gail Robinson, Rosemary Argall, Robert Henderson, Pamela McCombe, Kathryn Thorpe, Susan Heggie , Anjali Henders, Naomi Wray	Cognition and Behaviour in MND	6	110
Fleur Garton	Robert Henderson, Pamela McCombe, Kathryn Thorpe, Susan Heggie , Anjali Henders, Naomi Wray, Shyuan Ngo, Frederik Steyn	1. Understanding Rare Disease Mechanisms 2. Clinical Presentation and Prediction	11	76
Naomi Wray	Robert Henderson, Pamela McCombe, Kathryn Thorpe, Susan Heggie , Anjali Henders, Naomi Wray, Shyuan Ngo, Frederik Steyn, Fleur Garton et al. (only QLD investigators listed)	SALSA-SCG: Sporadic ALS - Systems Genomics Consortium	47	331
David Wyld	Viral Upadhyay, Susan Heggie, Kathryn Thorpe/ Robert Henderson	The use of duloxetine for the treatment of chemotherapy-induced peripheral neuropathy	1	1
Shyuan Ngo, Frederik Steyn	Robert Henderson, Pamela McCombe, Kathryn Thorpe, Susan Heggie , Fleur Garton, Anjali Henders, Naomi Wray	1. Energy metabolism and lipid storage in Motor Neurone Disease, also known as Amyotrophic Lateral Sclerosis (ALS); Exploring Appetite Targets and Therapies for Motor Neurone Disease (number in brackets) 2. Correlation Of Motor Unit Number Estimation (MUNE) With Clinical And Laboratory Features Of Motor Neurone Disease (MND); Targeting metabolic flexibility in ALS (MetFlex); safety and tolerability of trimetazidine for the treatment of amyotrophic lateral sclerosis (ALS)	11 (5)	126 (36)
Bernard Yan	Andrew Wong, Claire Muller	DIRECT-SAFE; administering or not administering thrombolysis before stroke ECR	0	0
Mark Parsons	Andrew Wong, Claire Muller	TASTE; Tenecteplase versus Alteplase for Stroke Thrombolysis Evaluation trial	0	5
Perminder Sachdev	Michael O'Sullivan	STROKOG Consortium	0	18000

Research Publications

Journal Articles

1. Alruwaili AR, Pannek K, **Henderson RD**, Gray M, Kurniawan ND, **McCombe PA**. Serial MRI studies over 12 months using manual and atlas-based region of interest in patients with amyotrophic lateral sclerosis. BMC Med Imaging. 2020 Aug 3;20(1):90. doi: 10.1186/s12880-020-00489-w
2. Ceslis, A., **Argall, R., Henderson, R. D., McCombe, P. A.**, & Robinson, G. A. (2020). The spectrum of language impairments in amyotrophic lateral sclerosis. Cortex, 132, 349–360. <https://doi.org/10.1016/j.cortex.2020.09.003>

3. **Henderson RD**, Eisen A. ALS Split Phenotypes - To what extent do they exist?. Clin Neurophysiol. 2020;131(4):847-849. doi:10.1016/j.clinph.2019.12.417
4. Iacoangeli A, Lin T, Al Khleifat A, Jones AR, Opie-Martin S, Coleman JRI, Shatunov A, Sproviero W, Williams KL, Garton F, Restuadi R, Henders AK, Mather KA, Needham M, Mathers S, Nicholson GA, Rowe DB, **Henderson R**, **McCombe PA**, Pamphlett R, Blair IP, Schultz D, Sachdev PS, Newhouse SJ, Proitsi P, Fogh I, **Ngo ST**, Dobson RJB, Wray NR, **Steyn FJ**, Al-Chalabi A. Genome-wide Meta-analysis Finds the ACSL5-ZDHHC6 Locus Is Associated with ALS and Links Weight Loss to the Disease Genetics. Cell Reports. 2020;33(4):108323
5. Joustra SD, Roelfsema F, van Trotsenburg A, Schneider HJ, Kosilek RP, Kroon HM, Logan JG, Butterfield NC, Zhou X, Toufaily C, Bak B, Turgeon MO, Brûlé E, **Steyn FJ**, Gurnell M, Koulouri O, Le Tissier P, Fontanaud P, Duncan Bassett J, Williams GR, Oostdijk W, Wit JM, Pereira AM, Biermasz NR, Bernard DJ & Schoenmakers N. IGSF1 Deficiency Results in Human and Murine Somatotrope Neurosecretory Hyperfunction. The Journal of Clinical Endocrinology & Metabolism. 2020. Volume 105, Issue 3, March 2020, Pages e70–e84, <https://doi.org/10.1210/clinem/dgz093>
6. **Katz M et al.** Mutations in heat shock protein beta-1 (HSPB1) are associated with a range of clinical phenotypes related to different patterns of motor neuron dysfunction: A case series. Neuromuscular Disorders (accepted Aug 2020)
7. Lucia D, **McCombe PA**, **Henderson RD** et al. Disorders of sleep and wakefulness in amyotrophic lateral sclerosis (ALS): a systematic review. Amyotroph Lateral Scler Frontotemporal Degener. 2020 Nov 16:1-9. doi: 10.1080/21678421.2020.1844755
8. Lee J, Heshmat S, **McCombe PA**, **Henderson RD**. Clinical and electrophysiological examination of pinch strength in patients with amyotrophic lateral sclerosis Muscle Nerve 2020 Oct 29. doi: 10.1002/mus.27111
9. Lee A, Arachnige BJ, **Henderson RD** et al, **McCombe PA**. Plasma from some patients with amyotrophic lateral sclerosis exhibits elevated formaldehyde levels. J Neurol Sci 2020: 409 116589
10. McGill RB, **Steyn FJ**, **Ngo ST**, **Thorpe KA**, **Heggie S**, Ruitenber MJ, **Henderson RD**, **McCombe PA**, Woodruff TM. Monocytes and neutrophils are associated with clinical features in amyotrophic lateral sclerosis. 2020. Brain Communications, <https://doi.org/10.1093/braincomms/fcaa013>
11. **McCombe PA**, Garton FC, **Katz M**, Wray NR, **Henderson RD**. What do we know about the variability in survival of patients with amyotrophic lateral sclerosis? Expert Rev Neurother. 2020 Aug 7:1-21. doi: 10.1080/14737175.2020.1785873
12. **McCombe PA**, et al. The Peripheral Immune System and Amyotrophic Lateral Sclerosis. Front Neurol. 2020; 11: 279. Published online 2020 Apr 21. doi: 10.3389/fneur.2020
13. Mohanty L, **Henderson RD**, **McCombe PA** et al. Levels of clusterin, CD5L, ficolin-3, and gelsolin in ALS patients and controls. Amyotroph Lateral Scler Frontotemporal Degener. 2020 Jun 19:1-4. doi: 10.1080/21678421.2020.1779303
14. Nabais MF, Lin T, Benyamin B, Williams KL, Garton FC, Vinkhuyzen AAE, Zhang F, Vallerga CL, Restuadi R, Freydenzon A, Zwamborn RAJ, Hop PJ, Robinson MR, Gratten J, Visscher PM, Hannon E, Mill J, Brown MA, Laing NG, Mather KA, Sachdev PS, **Ngo ST**, **Steyn FJ**, Wallace L, Henders AK, Needham M, Veldink JH, Mathers S, Nicholson G, Rowe DB, **Henderson RD**, **McCombe PA**, Pamphlett R, Yang J, Blair IP, McRae AF, Wray NR. Significant out-of-sample classification from methylation profile scoring for amyotrophic lateral sclerosis. NPJ genomic medicine. 2020;5:10
15. **Ngo ST***, Restuadi R*, McRae AF, van Eijk RPA, Garton F, **Henderson RD**, Wray NR, **McCombe PA**, **Steyn FJ#**. Progression and survival of patients with motor neuron disease relative to their faecal microbiota. Amyotrophic Lateral Scler Frontotemporal Degener,
16. Raquel B McGill, **Frederik J Steyn**, **Shyuan T Ngo**, **Kathryn A Thorpe**, **Susan Heggie**, Marc J Ruitenber, **Robert D Henderson**, **Pamela A McCombe**, Trent M Woodruff. Monocytes and neutrophils are associated with clinical features in amyotrophic lateral sclerosis. Brain Commun. 2020; 2(1): fcaa013. Published online 2020 Feb 14. doi:10.1093/braincomms/fcaa013

17. Shefner JM, Al Chalabi A, Baker M, **Henderson R** et al. A proposal for new diagnostic criteria for ALS. *Clin Neurophysiol.* 2020 Aug;131(8):1975-1978. doi: 10.1016/j.clinph.2020.04.005
18. Shefner JM et al including **Henderson RD**. A phase 2, double-blind, randomized, dose-ranging trial of reldesemtiv in patients with ALS. *Amyotroph Lateral Scler Frontotemporal Degener.* 2020 10.1080/21678421.2020.1822410
19. Sidhom, S, Schneider A., Fang Y., McFadden S, Darcy D, Sathiaseelan R, Palmer AK, **Steyn FJ**, Grillari J, Kopchick JJ, Bartke A, Siddiqi S, Masternak MM, Stout MB. 17 α -estradiol modulates IGF1 and hepatic gene expression in a sex-specific manner. *GeroScience. Published 28 august, 2020; The Journals of Gerontology: Series A, glaa215, <https://doi.org/10.1093/gerona/glaa215>*
20. Scaricamazza S, Salvatori I, Giacobozzo G, Loeffler JP, Renè F, Rosina M, Quessada C, Proietti D, Heil C, Rossi S, Battistini S, Giannini F, Volpi N, **Steyn FJ**, **Ngo ST**, Ferraro E, Madaro L, Coccurello R, Valle C & Ferri A. Skeletal-Muscle Metabolic Reprogramming in ALS-SOD1G93A Mice Predates Disease Onset and Is A Promising Therapeutic Target. *iScience, 23(5) 22 May 2020, 101087. <https://dx.doi.org/10.1016%2Fj.isci.2020.101087>*
21. **Steyn FJ# & Ngo ST**. Prognostic value of weight loss in patients with amyotrophic lateral sclerosis. *J Neurol Neurosurg Psychiatry.* 2020. Editorial commentary. <http://dx.doi.org/10.1136/jnnp-2020-323440>
22. **Steyn FJ**, Li R, Kirk SE, Tefera TW, Xie TY, Tracey TJ, Kelk D, Wimberger E, Garton FC, Roberts L, Chapman SE, Coombes JS, Leevy WM, Ferri A, Valle C, René F, Loeffler J-P, **McCombe PA**, **Henderson RD**, Ngo ST. Altered skeletal muscle glucose–fatty acid flux in amyotrophic lateral sclerosis. *Brain Communications.* 2020;2(2)
23. Tracey, T.J., Kirk, S.E., **Steyn, F.J., & Ngo, S.T.** The role of lipids in the central nervous system and their pathological implications in amyotrophic lateral sclerosis. 2020. *Seminars in Cell and Developmental Biology.* <https://doi.org/10.1016/j.semcdb.2020.08.012>
24. Tchan M,... **Henderson R.D** et al. Is it Pompe Disease? Australian diagnostic considerations. *Neuromuscul Disord.* 2020 May;30(5):389-399. doi: 10.1016/j.nmd.2020.03.007
25. Trabjerg BB, Garton F, et al including **Henderson RD**. ALS in Danish Registries: Heritability and links to psychiatric and cardiovascular disorders. *Neurol Genet.* 2020 Feb 20;6(2):e398
26. Upadhyay V, **Henderson RD** et al. Review of the revised amyotrophic lateral sclerosis diagnostic criteria. *Clin Neurophysiol.* 2020 Aug;131(8):1767-1768. doi: 10.1016/j.clinph.2020.05.008
27. Steve Vucic, Ryder J, Mekhael I, **Henderson RD** et al, TEALS study group. Phase 2 Randomized Placebo Controlled Double Blind Study to Assess the Efficacy and Safety of Tecfidera in Patients With Amyotrophic Lateral Sclerosis (TEALS Study). *Medicine* 2020; 99(6): e18904 PMID: **32028398**
28. Abdulla SU, **Reutens D**, Bollmann S, et al. MRI phase offset correction method impacts quantitative susceptibility mapping. *Magn Reson Imaging* 2020;74:139-51
29. Chen M, Edwards SR, **Reutens DC**. Complement in the Development of Post-Traumatic Epilepsy: Prospects for Drug Repurposing. *J Neurotrauma* 2020;37(5):692-705
30. Chen M, Zhao QY, **Reutens DC** Edson J, et al. Genome-wide microRNA profiling in brain and blood samples in a mouse model of epileptogenesis. *Epilepsy Res* 2020;166:106400
31. Choupan J, **Reutens DC** Douglas PK, Gal Y, et al. Temporal embedding and spatiotemporal feature selection boost multi-voxel pattern analysis decoding accuracy. *J Neurosci Methods* 2020;345:108836
32. Du J, Vegh V, **Reutens DC**. Persistent sodium current blockers can suppress seizures caused by loss of low-threshold D-type potassium currents: Predictions from an in silico study of Kv1 channel disorders. *Epilepsia Open* 2020;5(1):86-96
33. Lawrence S, Malacova E, **Reutens D**, et al. Increased maternal body mass index is associated with prolonged anaesthetic and surgical times for caesarean delivery but is partially offset by clinician seniority and established epidural analgesia. *Aust N Z J Obstet Gynaecol* 2020
34. Lawrence S, Sturgess D, **Reutens D**. The Lumbar Ligamentum Flavum Does Not Have Two Layers and Is Confluent with the Interspinous Ligament. *Clin Anat* 2020;33(7):978-79

35. Marstaller L, Fynes-Clinton S, **Reutens DC** Burianova H, et al. Salience and default-mode network connectivity during threat and safety processing in older adults. *Hum Brain Mapp* 2021;42(1):14-23
36. Pellicer-Guridi R, Vogel MW, **Reutens DC** Vegh V, et al. A numerical study of pre-polarisation switching in ultra-low field magnetic resonance imaging using dynamic permanent magnet arrays. *Sci Rep* 2020;10(1):18141
37. Qiao Z, Mardon K, **Reutens DC** Stimson DHR, et al. Synthesis and evaluation of 6-[18F]fluoro-3-(pyridin-3-yl)-1H-indole as potential PET tracer for targeting tryptophane 2, 3-dioxygenase (TDO). *Nucl Med Biol* 2020;84-85:1-10
38. Shi XY, Wang G, **Reutens DC** Li T, et al. Identification of susceptibility variants to benign childhood epilepsy with centro-temporal spikes (BECTS) in Chinese Han population. *EBioMedicine* 2020;57:102840
39. Sood S, **Reutens DC**, Kadamangudi S, et al. Field strength influences on gradient recalled echo MRI signal compartment frequency shifts. *Magn Reson Imaging* 2020;70:98-107
40. Urriola J, Bollmann S, **Tremayne F**, et al. Functional connectivity of the irritative zone identified by electrical source imaging, and EEG-correlated fMRI analyses. *Neuroimage Clin* 2020;28:102440
41. Ziaei M, Bonyadi MR, **Reutens DC**. Age-related differences in structural and functional prefrontal networks during a logical reasoning task. *Brain Imaging Behav* 2020
42. Ziaei M, Bonyadi MR, **Reutens DC**. Role of the Hippocampus During Logical Reasoning and Belief Bias in Aging. *Front Aging Neurosci* 2020;12:111
43. Vajda FJE, O'Brien TJ, Graham JE, Hitchcock AA, Perucca P, **Lander CM**, Eadie MJ. Twin Pregnancy in Women with Epilepsy *Epilepsia*. 2020 Dec;61(12):2748-2753. doi: 10.1111/epi.16727. Epub 2020 Nov 2. PMID: 33140408
44. Vajda FJE, O'Brien TJ, Graham JE, Hitchcock AA, **Lander CM**, Eadie MJ. Folic acid dose, valproate withdrawal and fetal malformations and seizure control *Epilepsia*. 2020 May;61(5):944-950. doi: 10.1111/epi.16505. Epub 2020 Apr 21. PMID: 32314363
45. Vajda FJE, O'Brien TJ, Graham JE, Hitchcock AA, **Lander CM**, Eadie MJ. Seizures in infancy in the offspring of women with epilepsy. *Acta Neurol Scand*. 2020 Jan;141(1):33-37. doi: 10.1111/ane.13170. Epub 2019 Oct 22. PMID: 31532859
46. Vajda FJE, O'Brien TJ, Graham JE, Hitchcock AA, Mitchell J, Horgan D, **Lander CM**, Eadie MJ. Anti epileptic drugs and depression during pregnancy in women with epilepsy *Acta Neurol Scand*. 2020 Oct;142(4):350-355. doi: 10.1111/ane.13315. Epub 2020 Jul 29. PMID: 33378080
47. Vajda FJE, O'Brien TJ, Graham JE, Hitchcock AA, **Lander CM**, Eadie MJ. The outcome of altering antiepileptic drug therapy before pregnancy *Epilepsy Behav*. 2020 Oct;111:107263. doi: 10.1016/j.yebeh.2020.107263. Epub 2020 Jul 22. PMID: 32759062
48. Vajda FJE, O'Brien TJ, Graham JE, Hitchcock AA, **Lander CM**, Eadie MJ. Pre existing illness, fetal malformation, and seizure control rates in pregnant women with epilepsy *Epilepsy Behav*. 2020 Feb;103(Pt A):106481. doi: 10.1016/j.yebeh.2019.106481. Epub 2019 Nov 9. PMID: 31711866
49. Amarenco P, Denison H, Evans SR, ... **Wong A**, et al. Ticagrelor Added to Aspirin in Acute Ischemic Stroke or Transient Ischemic Attack in Prevention of Disabling Stroke: A Randomized Clinical Trial. *JAMA neurology*. 2020
50. Campbell BCV, Mitchell PJ, Churilov L, ... **Wong A**, et al. Effect of intravenous tenecteplase dose on cerebral reperfusion before thrombectomy in patients with large vessel occlusion ischemic stroke: the EXTEND-IA TNK Part 2 Randomized Clinical Trial. *Jama*. 2020;323(13):1257-65.
51. Finnigan S, **Wong A**. Towards pre-hospital identification of acute ischemic stroke: The value of QEEG from a single frontal channel. *Clinical neurophysiology: official journal of the International Federation of Clinical Neurophysiology*. 2020;131(8):1726-7
52. Lim WL, de Looze J, Mudge A, **Wong A**. Clinical audit of patients with Transient Ischaemic Attack (TIA) presenting to RBWH in 2018—a quality improvement study. 2020
53. Rohde A, Doi SA, Worrall L, Godecke E, Farrell A... **Wong A**. Development and diagnostic validation of the Brisbane Evidence-Based Language Test. *Disability and rehabilitation*. 2020:1-12

54. Tay E, Paul B, Sharp J, Wang D, Chui ASF, Hazra PK...**Wong A.** Left atrial appendage occlusion for ischemic stroke prevention in patients with non-valvular atrial fibrillation: clinical expert opinion and consensus statement for the Asian-Pacific region. *Journal of Interventional Cardiac Electrophysiology*. 2020:1-13
55. Thomalla G, Boutitie F, Ma H, Koga M, ...**Muller C**, ... **Wong A**, et al. Intravenous alteplase for stroke with unknown time of onset guided by advanced imaging: systematic review and meta-analysis of individual patient data. *The Lancet*. 2020
56. Oestreich LKL, Wright P, **O'Sullivan MJ**. Microstructural changes in the reward system are associated with post-stroke depression. *NeuroImage: Clinical* 2020 (in press)
57. Mazibuko N, O'Gorman Tuura R , Sztrihla L, O'Daly O, Barker GJ, Williams SCR, **O'Sullivan MJ**, Kalra L. Subacute changes in N- Acetylaspartate (NAA) following ischemic stroke: A serial MR spectroscopy study. *Diagnostics* 2020 (in press)
58. McFall A, Hietamies TM, Bernard A, Aimable M, Allan SM, Bath PM, Brezzo G, Carare RO, Carswell HV, Clarkson AN, Currie G, Farr TD, Fowler JH, Good M, Hainsworth AH, Hall C, Horsburgh K, Kalaria R, Kehoe P, Lawrence C, Macleod M, McColl BW, McNeilly A, Miller AA, Miners S, Mok V, **O'Sullivan MJ**, Platt B, Sena ES, Sharp M, Strangward P, Szymkowiak S, Touyz RM, Trueman RC, White C, McCabe C, Work LM, Quinn TJ. UK consensus on pre-clinical vascular cognitive impairment functional outcomes assessment: Questionnaire and workshop proceedings. *J Cereb Blood Flow Metab*. 2020 Jul;40(7):1402-1414

Book Chapters / Letters

1. Holdom, C., Steyn, F.J., **Henderson, R.D.**, **McCombe, P.A.**, Rogers, M-L, and **Ngo, S.T.** Fluid biomarkers of amyotrophic lateral sclerosis. In "Towards translating biomarker research of neurodegenerative diseases into clinical practice", ed. P Peplow, B Martinez, and T Gennarelli. 2020. Springer Nature. 01/10/2020

Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

1. **Vadlamudi, L.** Epilepsy Society of Australia Webinar Epilepsy and Pregnancy 2020
2. **Wong,A**, Selection of Imaging Modalities for Recanalization Treatment, Asia Pacific Stroke Conference, Seoul, Korea (virtual), December 2020
3. **Wong,A**, Stroke Secondary Prevention trials update, Stroke Society of Australasia virtual ASM, September 2020.
4. **Wong,A**. Emgality: From Clinical Trial to Clinical Practice, 1st Hong Kong Migraine Summit, Hong Kong (virtual), September 2020
5. **Wong,A**. Lipid control: evidence and therapies, Australasian Stroke Academy annual meeting, Brisbane, Oct/Nov 2020
6. **Muller,C**. Secondary Prevention, Australasian Stroke Academy annual meeting, Brisbane, Oct/Nov 2020
7. **O'Sullivan,M**. Late complications of stroke, Australasian Stroke Academy annual meeting, Brisbane, Oct/Nov 2020

Poster Presentations

1. **Bennett C.**, **Hewson K.**, **Tom M.**, Bennett C., **Vadlamudi L.** A Change Management approach to the integration of genomics into epilepsy care. ESA ASM and Herston precinct symposium
2. **Tom M.**, **Bennett C.**, Lundi, B., **Vadlamudi, L.** Development of a multi-disciplinary team approach to genomic testing- We're all in this together
3. Garton F., Restuadi, R., **Steyn, FJ.**, Kabashi, E., **Ngo, ST.**, Cheng, F., Nabais, MF., Thompson, MJ., Qi, T., Henders, AK., Wallace, L., Bye, CR. Turner, BJ., Ziser, L., Mathers, S., **McCombe, P.**, Needham, M., Schultz, D., Kiernan, MC., van Rheenen, W., van den Berg, L., Veldink, JH., Ophoff, R., Gusev, A., Zaitlen, N., McRae, AF., **Henderson, RD.**, Wray, NR., Giacomotto, J., Garton, FC., Functional Characterisation of a GWAS Risk Locus Identifies GPX3 as a Lead Candidate Gene in ALS. 31st International Symposium on ALS/MND, Virtual/UK

-
4. Ziser LE., Upadhyay V., **Heggie S., Thorpe KA.**, Henders AK., Wray NW., Kiernan MC., Mathers S., Needham M., Schultz D., **McCombe, PA., Henderson RD.** Testing the new ALS 'Gold Coast' diagnostic criteria and mapping ALSFRS-R progression in SALSA. 31st International Symposium on ALS/MND, Virtual/UK

 5. McGrath I., Chen W., Lin T., **Steyn F.**, Ziser L., Zheng Z., Wainschtein P., Wani S., Wallace L., Henders A., **McCombe P., Henderson R.**, Visscher P., Wray N., Garton FC., The use of Expansion Hunter and Expansion hunter denovo in an Australian ALS cohort detects known and novel repeat expansions, 31st International Symposium on ALS/MND, Virtual/UK

 6. Chang J., Shaw T., **Henderson RD., Ngo ST., Steyn FJ.** Quadratic association between hypothalamic volume and BMI in non-neurodegenerative control participants and patients with MND. 31st International Symposium on ALS/MND, Virtual/UK

 7. Holdom CJ., **Ngo ST., McCombe P., Henderson RD, Steyn FJ.** Plasma hyaluronan: a biomarker for change in functional capacity in patients with MND. 31st International Symposium on ALS/MND, Virtual/UK

 8. Power D., Chang J., **McCombe PA., Henderson RD., Steyn FJ., Ngo ST.** Single-nuclei RNA sequencing of primary human myotubes derived from control individuals and MND patients identifies tissue heterogeneity. 31st International Symposium on ALS/MND, Virtual/UK
-

Department of Nuclear Medicine

The Department of Nuclear Medicine at the Royal Brisbane and Women's Hospital (RBWH) is one of the largest in Australia. It provides a referral, diagnostic and therapeutic nuclear medicine service with four SPECT/CT gamma cameras, one solid state cardiac camera, BMD dual energy X-ray absorptiometry (DEXA) and a pQCT scanner. Research interests in nuclear medicine include image reconstruction methodologies, application of gating and bone mineral densitometry in various disease states.

The department hosts the state-wide Specialised PET Services Queensland, which operates two state-of-the-art PET/CT scanners and Q-TRaCE, a TGA accredited radiopharmaceutical laboratory operating a cyclotron. It offers research facilities to a wide variety of investigators. In addition to conventional tracers such as fluorodeoxyglucose (¹⁸F)FDG), the Service also conducts research using [¹⁸F]DOPA, [¹⁸F]MISO, [¹⁸F]PSMA-1007, [¹⁸F]GE180 and [⁶⁸Ga]Ga-DOTA TATE, [⁶⁸Ga]Ga-PSMA-11 and [⁶⁸Ga]Ga-Pentixafor. There is also ongoing research interest in image reconstruction algorithms, respiratory gating and image analysis techniques.

The department also provides a radionuclide therapy service for patients with inoperable neuroendocrine tumours as well as sites in multi-centre trials for the treatment of metastatic prostate cancer. Whilst predominantly focussed upon clinical service delivery, retrospective analysis of patients previously treated in our statewide NET service aims to more effectively tailor our treatment to patients most likely to benefit and minimise the risk of side effects.

- TheraP Lu-PSMA multicentre RCT: recruited ahead of schedule, RBWH was 3rd highest recruitment of 11 national sites. Results were presented at American Society of Clinical Oncology meeting in 2020.
- CONTROL-NETS LuTate multicentre RCT: recruitment completed, RBWH provided 3rd highest recruitment, abstract presented at ASCO GI Cancer Symposium 2020.
- Brenda Tai won GMS Poster Award at the ANZSNM Annual Scientific Meeting (virtual 2020).
- Ongoing support for Herston Imaging Research Facility projects including joint appointment of a NIF Radiochemistry Fellow (UQ/HIRF) who will work in the Q-TRaCE laboratories.
- In collaboration with Cancer Care Services, RBWH nuclear medicine is participating in 3 multicentre radionuclide therapy trials:
 - UpFront PSMA study (prostate cancer)
 - ENZA-p study (prostate cancer)
 - GoTHAM study (Merkel cell carcinoma)

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Brenda Tai	2020 GMS Poster Award	2020 ANZSNM ASM

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Sandhu S, Scolyer R, Atkinson V, Poulsen M, Emmett L, Tothill R, Neeson P, Pattison DA , Guminski A	Dept of Nuclear Med Specialised PET Services, RBWH	TarGeted THERapy and Avelumab in Merkel Cell Carcinoma (GoTHAM) Trial	MRFF – Low Survival Cancers & Diseases	\$1,800,000	2018-2022
Azad A, Hofman M, Murphy D, Vela I, Risbridger G, Taylor R, Trapani J, Sandhu S, Williams S, Violet J, Lawrentschuk N, Pattison DA , Francis R.	Dept of Nuclear Med Specialised PET Services, RBWH	“Up-Front PSMA” Alliance: Using Theranostics Early to Eradicate Prostate Cancer and Developing Novel Strategies for PSMA-negative disease	Prostate Cancer Research Alliance Grant (Movember / Cancer Australia)	\$4,000,000	2019-2022
Lead CI Ruetens DC (UQ) with 30 co-investigators including Latter MJ	Dept of Nuclear Med Specialised PET Services, RBWH	ACRF Facility for Targeted Radiometals in Cancer	Australian Cancer Research Foundation (ACRF)	\$1 200 000	2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Thomas P , Hooper J, Munro T, Wyld D , Perrin L, Lourie R, Rose S, Puttick S	Department of Nuclear Medicine, Medical Oncology	A new radio-imaging agent to guide targeted therapy for epithelial ovarian cancer	2020 Medical research future fund	\$1.9 Million	2020-2023

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Prof Louise Emmett (UNSW)	Matthew Roberts, John Yaxley, Paul Thomas, David Pattison	PRIMARY Trial: Additive diagnostic value of PSMA to mpMRI in the diagnostic setting: Ability to reduce unnecessary prostate biopsies in men being investigated for prostate cancer	21	21

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Stuart Ramsay		Multicentre registry of individuals undertaking bone scans to assess for suspected transthyretin (ATTR) cardiac amyloidosis		

2020 Research Publications

Journal Articles

- Dhanani JA, **Goodman S**, Ahern B, Cohen J, Fraser JF, Barnett A, Diab S, **Bhatt M**, Roberts JA. Comparative lung distribution of radiolabelled tobramycin between nebulized and intravenous administration in a mechanically ventilated ovine model, an observational study, International Journal of Antimicrobial Agents (2020), doi: <https://doi.org/10.1016/j.ijantimicag.2020.106232>
- Cuda TJ**, Riddell AD, Liu C, Whitehall VL, Borowsky J, **Wyld DK**, **Burge ME**, **Ahern E**, Griffin A, Lyons NJR, Rose SE, **Clark DA**, **Stevenson ARL**, Hooper JD, Puttick S, and **Thomas PA**. PET Imaging Quantifying 68Ga-PSMA-11 Uptake in Metastatic Colorectal Cancer. J Nucl Med 2020; 61:1576–1579
- Hofman MS, Lawrentschuk N, Francis RJ, Tang C, Vela I, **Thomas P**, Rutherford N, Martin JM, Frydenberg M, Shakher R, Wong LM, Taubman K, Lee ST, Hsiao E, Roach P, Nottage M, Kirkwood I, Hayne D, Link E, Marusic P, Matera A, Herschtal A, Iravani A, Hicks RJ, Williams S, Murphy DG, Prostate-specific membrane antigen PET-CT in patients with high-risk prostate cancer before curative-intent surgery or radiotherapy (proPSMA): a prospective, randomised, multi-centre study. for the proPSMA Study Group Collaborators* Lancet. 2020;395:1208-1216
- Kryza T, Khan T, Puttick S, Li C, Sokolowski K. A., Tse, BW., **Cuda T**, Lyons N, Goug, M, Yin J, Parkin A, Deryugina EI, Quigley JP, Law RH P, Whisstock JC, Riddell AD, Barbour AP, **Wyld DK**, **Thomas PA**, Hooper JD. Effective targeting of intact and proteolysed CDCP1 for imaging and treatment of pancreatic ductal adenocarcinoma. (2020). Theranostics, 10(9), 4116–4133. <https://doi.org/10.7150/thno.43589>
- Cuscaden C, **Ramsay SC**, Prasad S, Goodwin B, **Smith J**. Estimation of prevalence of transthyretin (ATTR) cardiac amyloidosis in an Australian subpopulation using bone scans with echocardiography and clinical correlation J Nucl Cardiol. 2020 May 8. doi: 10.1007/s12350-020-02152-x. Online ahead of print
- Kalff V, Iravani A, Ackhurst T, **Pattison DA**, Eu P, Hofman MS, Hicks RJ. Utility of 68 Ga-DOTA-Exendin-4 PET/CT imaging in distinguishing between insulinoma and nesidioblastosis in patients with confirmed endogenous hyperinsulinaemic hypoglycaemia. Intern Med J, 2020 Dec 14. doi: 10.1111/imj.15141. Online ahead of print

-
7. **Ryder SJ, Love AJ, Duncan EL, Pattison DA.** PET detectives: Molecular imaging for pheochromocytomas and paragangliomas in the genomics era. *Clin Endocrinol (Oxf)*. 2020 Dec 9. doi: 10.1111/cen.14375. Online ahead of print
 8. The utility of pharmacological and radiological interventions to optimize diagnostic information from PET/CT. Dudoignon D, **Pattison DA**, Legallois D, Hicks RJ, Aide N. *Cancer Imaging*. 2020 Sep 22;20(1):68. doi: 10.1186/s40644-020-00344-9
 9. Violet J, Sandhu S, Iravani A, Ferdinandus J, Thang SP, Kong G, Kumar AR, Akhurst T, **Pattison DA**, Beaulieu A, Mooi J, Tran B, Guo C, Kalf V, Murphy DG, Jackson P, Eu P, Scalzo M, Williams S, Hicks RJ, Hofman MS. Long-Term Follow-up and Outcomes of Retreatment in an Expanded 50-Patient Single-Center Phase II Prospective Trial of 177Lu-PSMA-617 Theranostics in Metastatic Castration-Resistant Prostate Cancer. *J Nucl Med*. 2020; 61(6):857-865. doi: 10.2967/jnumed.119.236414
 10. **Dhanani J, Pattison DA, Burge M, Williams J**, Riedel B, Hicks RJ, Reade MC Octreotide for resuscitation of cardiac arrest due to carcinoid crisis precipitated by novel peptide receptor radionuclide therapy (PRRT): A case report. *J Crit Care*. 2020; 60:319-322. doi: 10.1016/j.jcrc.2020.08.011
-

2020 Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

-
1. **Ramsay S.** Imaging in Cardiac Amyloidosis. ANZSNM annual scientific meeting 2020
 2. **Pattison DA.** PSMA-targeted imaging and therapy update. Brisbane Cancer Conference 2020
 3. **Pattison DA.** Molecular imaging update for medullary thyroid cancer. 17th Congress of Asian Association of Endocrine Surgeons 2020
 4. **Pattison DA.** PSMA-targeted imaging and therapy update. Herston Health Precinct Symposium 2020
 5. **Pattison DA.** Radioactive Iodine & Subsequent Malignant Neoplasms. Thyroid, Head and Neck Cancer (THANC) Foundation, New York 2020
-

Oral Presentations

-
1. Hofman MS, Emmett L, Sandhu S, Iravani A, Joshua AM, **Goh JC, Pattison DA**, et al. A randomized phase II trial of 177Lu-PSMA-617 (Lu-PSMA) theranostic versus cabazitaxel in metastatic castration resistant prostate cancer (mCRPC) progressing after docetaxel: initial results (ANZUP protocol 1603). *American Society of Clinical Oncology Annual Meeting 2020*
-

Poster Presentations

-
1. **Tai C-H, Tapper S, Thurecht K, Latter MJ.** Validation of automated manufacture of [⁶⁸Ga]Ga-DOTATATE for clinical use with high activity input. ANZSNM ASM 2020. Virtual
 2. Pavlakis N, Ransom DT, **Wyld D**, Sjoquist KM, **Pattison DA**, et al. Australasian Gastrointestinal Trials Group (AGITG) CONTROL NET Study. Phase II study evaluating the activity of Lu-Octreotate peptide receptor radionuclide therapy (LuTate PRRT) and capecitabine, temozolomide (CAPTEM): First results for pancreas and updated midgut neuroendocrine tumours (pNETS, mNETS). *American Society of Clinical Oncology Annual Meeting 2020*
-

Palliative and Supportive Care

2020 was a quiet year for research in palliative medicine at RBWH mainly secondary to the COVID pandemic. Nevertheless, we have continued to contribute to multi-site palliative studies in the form of RAPID pharmacovigilance and Medicinal Cannabis Study. The CODE study has now completed and is in the process of being published.

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Assoc. Prof Carol Douglas		The Care of the Dying Evaluation (CODE) Project:A survey of bereaved persons in an Australian acute care setting	55	55
Prof Janet Hardy	Dr Alison Kearney	Oral Medicinal Cannabinoids to Relieve Symptom Burden in the palliative care of patients with advanced cancer; a double blinded, placebo controlled RCT of efficacy and safety	9	9

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Prof David Currow, Palliative Care Clinical Studies Collaborative	Alison Kearney, Carol Douglas	Rapid Pharmacovigilance in Palliative Care	6	25

Pharmacy

Practice based, translational research is now a core component of the outputs of the pharmacy department and we have continued to undertake high quality research throughout 2020. We continue our strong links with academia including The University of Queensland, School of Pharmacy and Faculty of Medicine, Queensland University of Technology School of Pharmacy.

Five oral and 16 poster presentations and 34 journal articles were associated with 11 HDR pharmacy staff undertaking HDRs and 26 other medical, pharmacy and nursing students supervised by and collaborating with RBWH senior researchers.

We continue to attract HDR students enrolled in PhDs and MPhils collaborating across nursing, medicine and allied health.

Pharmacy staff continue to present their research locally, nationally and internationally at pharmacy, nursing, medical and multi-professional meetings.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Karen Whitfield	Research Support Award	2020 Metro North Research Excellence Awards

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Carla Scuderi	Kidney Health Service	Improving patient centred outcomes in kidney transplant recipients	RBWH Scholarship	\$117,000	2019-2021
Wainwright C, Bell SC, Wason J, Thomson R, Roberts JA , Coin L, Byrnes J, Tiddens H, Grimwood K, Ahern S		A platform clinical trial approach to the management of Mycobacterium abscessus complex	Medical Research Futures Fund Lifting Clinical Trials and Registries Capacity (LCTRC) grant	\$418,236	2018-2022
Roberts JA, Lipman J , Paterson DL, Harris P, Kruger P, Dorofaeff T, Schlapbach L, Beatson S, Schembri M.		Reducing time to appropriate antibiotics and optimal doses to treat sepsis using rapid whole genome sequencing combined with dosing software.	MRFF Rapid Applied Research Translation Program Grant	\$125,415	2019-2020
Roberts JA, Lipman J , De Waele J, Koulenti D		Novel dosing regimens to maximise antibiotic effectiveness for treatment of pneumonia in the intensive care unit	NHMRC Project Grant (APP1162281)	\$203,850	2019-2022
Roberts JA, Lipman J , Cotta MO, Kruger P, Schlapbach L, Irwin A, Shekar K, Comans T, Paterson DL, Harris P, Ungerer J, McWhinney B		Personalising Antibiotic Therapy to Improve Outcomes in Patients with Severe Infections	MRFF Rapid Applied Research Translation Program Grant	\$332,868	2019-2020

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Abby Yu	Karen Whitfield, Michael D'Emden, Andrew Hale	Diabetic patient, medication optimisation prior to surgery	0	0
Adrienne Kostellar	Neil Cottrell, Andrew Hale , Michael Barras, Ian Coombes	Evaluation of High-Risk Discharge Pharmacist role	0	0
Charicia Paradissis	Ian Coombes , Michael Barras, Neil Cottrell	Medication harm in patients after acute myocardial infarction (AMI)		
Elizabeth Doran	Karen Whitfield, Louise Cullen, Ian Coombes	Risk assessment tool of poisoned patients by non-expert clinicians in Emergency Department	0	0
Karen Whitfield	I. Coombes, A.Hale, N. Anning, H.Knowles, S Kirsas, S. Wood, C. Minns, K. Mueller, C. Haines, S Parker, E. Hamernik, E. Ballard	To investigate Pharmacy Workforce Resilience during COVID 19 – Multisite study	170	170
Karen Whitfield		Teaching on the run for Technicians	23	23
Kim Ta	Lisa Nissen, Andrew Hale , Esther Lau	Evaluation of Pharmacist administered Influenza Vaccination in high-risk Hospital Outpatients		
Kylie Mueller	Karen Whitfield, Ian Coombes	Early patient follow-up after discharge by pharmacy (cardiology)	0	0
Midori Nagakai	Karen Whitfield, Glen Kennedy, A Clavarino, Nicole Gavin	Oral mucositis prevention in patients undergoing haematopoietic stem cell transplantation (HSCT)	0	0
Nicolas Anning	Karen Whitfield G Hopkins, A Clavarino, Peter Donovan	Pre and post-operative medication management in bariatric patients	0	0
Paul Firman	Karen Whitfield Ken-Soon Tan, Alexandra Clavarino	Therapeutic Drug Monitoring optimisation	0	0

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
E Tanvir	Karen Whitfield Nick Shaw, Mark Davies, P Koorts, D Bostock	Investigate trace element levels in blood in the neonatal population	12	12
Syafiqah Nadiyah Binti Halimi	Karen Whitfield (Associate Supervisor)	To investigate the factors that affect the resilience of undergraduate pharmacy students	0	0
Jason Waddell	Andrew Hale	An investigation into the personality characteristics of Australian Pharmacists		
Monika Ogilvie	Lisa Nissen, Greg Kyle, Andrew Hale	Pharmacist prescribing in the Emergency Department		94
Penelope Richards	Lisa Nissen, Greg Kyle, Andrew Hale	An Assessment of Pharmacist prescribing in an Elective Surgery Pre-Admission Clinic		

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Yasakalum Bagyawantha	Ian Coombes , Mohamed Fahim, I Garamana	Evaluation of the role of clinical pharmacy in quality use of medicines for the acute coronary syndrome		
Dr Alexis Tabah	Jason Roberts (Co-supervisor)	The value of antibiotic de-escalation strategies in critically ill patients		
Dr Andrew Burke	Jason Roberts (Primary supervisor)	Optimising dosing of antibiotics for treatment of mycobacterial infections		
Dr Angela Tognolini	Jason Roberts (Primary supervisor)	Optimising dosing of lignocaine in obese and non-obese patients		
Bryan Gregory	Jason Roberts (Co-supervisor)	Optimised dosing of immunosuppressant drugs in critically ill patients receiving renal replacement therapy		
Aaron Heffernan	Jason Roberts (Co-supervisor)	Characterisation of the effect of nebulised amikacin versus intravenous dosing for treatment of ventilator associated pneumonia		
Aun Raza	Jason Roberts (Co-supervisor)	Nanoformulation to improve bioavailability of key drugs		
Caleb Economou	Jason Roberts (Primary supervisor)	Antibiotic dosing during renal replacement therapy in critically ill patients		
Chandra Sumi	Jason Roberts (Primary supervisor)	Quantifying differences between continuous versus extended versus intermittent infusion of beta-lactam antibiotics versus Klebsiella pneumoniae and Escherichia coli		
Dr Chris Anstey	Jason Roberts (Associate supervisor)	The kinetics of citrate during continuous renal replacement therapy in critically ill patients		
Eko Setiawin	Jason Roberts (Primary supervisor)	Optimising antibiotic dosing for hospitalised patients in Indonesia		
Dr Helmi Sulaiman	Jason Roberts (Associate supervisor)	Optimising antibiotic dosing for treatment of severe lung infections		
Kamrul Islam	Jason Roberts (Primary supervisor)	Optimising antibiotic treatment for infections caused by extended spectrum beta-lactamase producing Escherichia coli		
Paul Jarrett	Jason Roberts (External Supervisor)	Optimising nursing practices for administration of antibiotics to critically ill patients		
Paul Williams	Jason Roberts (Primary supervisor)	Establishing an evidence-base for practical dosing of antibiotics in critically ill patients		
Dr Rochelle Ryan	Jason Roberts (Primary supervisor)	Developing optimised dosing of antibiotics to be used for peri-operative prophylaxis of infection		

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Saiyuri Naicker	Jason Roberts (Co-supervisor)	The effects of antibiotic de-escalation of emergence on antibiotic resistance		
Dr Sazlyna Lim	Jason Roberts (Primary supervisor)	Optimising antibiotic treatment for infections caused by multi-drug resistant <i>Acinetobacter baumannii</i>		
Dr Tavey Dorofaeff	Jason Roberts (Co-supervisor)	Optimisation of antibiotic dosing in critically ill infants and children		
Vesa Cheng	Jason Roberts (Primary supervisor)	Developing optimised antibiotic dosing for critically ill patients receiving extracorporeal membrane oxygenation		
Yarmarly Guerra Valero	Jason Roberts (Co-supervisor)	Development of novel sampling and bioanalysis methods for study pharmacokinetics in infants and children		

2020 Research Publications

Journal Articles

- North AM, Lust KM, Barrett H, Whitfield KM.** (2020) Therapeutic anticoagulation during the postnatal peripartum period: a survey of clinical practice. *JPPR Vol 50 (2)* <https://doi.org/10.1002/jppr.1617>
- Hernández-Mitre MP, Medellín-Garibay SE^a, Rodríguez-Leyva I, Rodríguez-Pinal CJ, Zarazúa S, Jung-Cook HH, **Roberts JA**, Romano-Moreno S, Milán-Segovia RC. (2020) Population pharmacokinetics and dosing recommendations of levetiracetam in adult and elderly patients with epilepsy. *Journal of Pharmaceutical Sciences*; in press (date accepted 19th February 2020; 20-053.R2)
- Liu JJ, Neely M, Lipman J, Sime F, **Roberts JA**, Kiel PJ, Avedissian SN, Rhodes NJ, Scheetz MH. (2020) Development of population and Bayesian models for applied use in patients receiving cefepime. *Clinical Pharmacokinetics* 2020; in press (Date accepted 12th February 2020; CPKA-D-19-00216R2)
- Eley VA**, Christensen R, Ryan R, Jackson D, Paker SL, Smith M, Van Zundert AA, Wallis SC, Lipman J, **Roberts JA**. (2020) Prophylactic cefazolin dosing in women with body mass index >35 kg.m-2 undergoing cesarean section: a pharmacokinetic study of plasma and interstitial fluid. *Anesthesia Analgesia*; in press (date accepted 11th February 2020; AA-D-19-01190R3)
- Chang T, Cheng V, Rawlins M, Thyagarajan, Dyer J, McWhinney BC, Ungerer JPJ, **Roberts JA**. (2020) Pharmacokinetics of ceftriaxone during prolonged intermittent renal replacement therapy in a patient with Child Pugh B cirrhosis and ascites. *Eur Med J* 2020; in press (date accepted 30th January 2020; E-M-J-D-19-00211R1)
- Cusumano J, Klinker KP, Luther MK, **Roberts JA**, LaPlante KL. Towards precision medicine: TDM-guided dosing of vancomycin and beta-lactam antibiotics to maximize effectiveness and minimize toxicity. *American Journal of Health System Pharmacy*: (date accepted 2nd February 2020; 2019AJHP0721R)
- Davies K, Coombes I, Keogh S, Hay K, Whitfield K.** Medication Administration Evaluation and Feedback Tool: Inter-rater Reliability in the Clinical Setting. *Collegian*, In Press [doi:10.1016/j.colegn.2020.10.001](https://doi.org/10.1016/j.colegn.2020.10.001)
- Abdul-Aziz MH, Aiffenaar JW, Bassetti M, Bracht H, Dimopoulos G, **Roberts JA** et al. Antimicrobial Therapeutic Drug Monitoring in Critically Ill Adult Patients – a Position Paper from the Working Groups of European Society of Intensive Care Medicine (ESICM), European Society of Clinical Microbiology and Infectious Diseases (ESCMID), International Association of Therapeutic Drug Monitoring and Clinical Toxicology (IATDMCT) and International Society of Antimicrobial Chemotherapy (ISAC). *Intensive Care Med* 2020; in press (date accepted 10th April 2020; ICME-D-20-00141R1)

-
9. Ates HC, **Roberts JA**, Lipman J, Cass AEG, Urban GA, Dincer C. On-site therapeutic drug monitoring. *Trends Biotech* 2020; in press <https://doi.org/10.1016/j.tibtech.2020.03.0011>
-
10. Märtson AG, Sturkenboom M, Stojanova J, Cattaneo D Hope W, Marriott D, Patanwala A, Peloquin C, Wicha S, van der Werf TS, Tängdén T, **Roberts JA**, Neely M, Alffenaar JW. How to design a study to evaluate therapeutic drug monitoring in infectious diseases? *Clin Microbiol Infect* 2020; in press (date accepted 10th March 2020; CLM-19-16554.R2)
-
11. Dhanani J, Ahern B, Lupinsky L, Jackson K, Wallis SC, Abdul-Aziz MH, Lipman J, **Roberts JA**. Comparative plasma pharmacokinetics of ceftriaxone and ertapenem between normoalbuminemia, hypoalbuminemia and with albumin replacement in a sheep model. *Antimicrob Agents Chemother* 2020; in press (date accepted 24th April 2020; AAC02584-19R1)
-
12. Bröker A, Vossen MG, Thalhammer F, Wallis SC, Lipman J, **Roberts JA**, Wicha SG. An integrated dialysis pharmacometric (IDP) model to evaluate the pharmacokinetics in patients undergoing renal replacement therapy. *Pharm Res* 2020; in press (date accepted 23rd April 2020; PHAM-D-20-00117R1)
-
13. Sumi C, Heffernan A, Naicker S, Islam K, Cottrell K, Wallis SC, Lipman J, Harris P, Sime FB, **Roberts JA**. Pharmacodynamic evaluation of intermittent versus extended and continuous infusions of piperacillin/tazobactam in a hollow-fiber infection model against *Klebsiella pneumoniae*. *J Antimicrob Chemother* 2020; in press (date accepted 21st April 2020; JAC-2020-0068.R1)
-
14. Bilal H, Bergen P, Tait J, Wallis SC, Peleg A, **Roberts J**, Oliver A, Nation R, Landersdorfer CB. Clinically relevant epithelial lining fluid concentrations of meropenem with ciprofloxacin provide synergistic killing and resistance suppression of hypermutable *Pseudomonas aeruginosa* in a dynamic biofilm model. *Antimicrob Agents Chemother* 2020; in press (Date accepted 21st April 2020; AAC00469-20R1)
-
15. Tanvir EM, **Whitfield KM**, Ng JC, Shaw PN (2020) Development and validation of an ICP-MS method and its application to determine multiple trace elements in small volumes of whole blood and plasma. *J of Analytical Toxicology* Mar 30
-
16. **Jones SA, Hegerty K, Scuderi C, Eglington J, Green B, Mallett A**. Clinical and Healthcare Utilisation Outcomes of Parathyroidectomy in CDK and Dialysis Patients. *Kidney International Reports* <https://doi.org/10.1016/j.ekir.2020.04.026>
-
17. Jahan S, **Scuderi C**, Francis L, Neller M, Rehan S, Crooks P, Ambalathingal G, Smith C, Khanna R, John G. T-cell adoptive immunotherapy for BK nephropathy in renal transplantation. *Transplant Infectious Disease* July 2020; <https://doi.org/10.1111/tid.13399>
-
18. **Scuderi C**, Nalder M, Castolino R, Cervelli M, **Ironside D**, Jones C, Lloyd J, Mirkov S, Munro C. Standard of practice in nephrology for pharmacy services. *Journal of Pharmacy Practice and Research*; <https://doi.org/10.1002/jppr.1649>
-
19. **Coombes I**, Dooley M, **Townsend S, Carmichael S**, Poole S, **Karamujic N, Richards B**, Ziegenfuss M, Ankravs M, Uren H, **Roberts J, Holley A**. Physician drug prescribing preferences and availability for ventilation of patients with COVID-19. *Critical Care and Resuscitation* 2020
-
20. **Bethany S, Tuche M, King M, Hope D, La Caze A**. Hospital pharmacists' ethical exposure and decision-making. *clinical practice. Research in Social and Administrative Pharmacy (RSAP)* <https://doi.org/10.1016/j.sapharm.2020.03.011>
-
21. **Doran L**. The View from the Emergency Department: An Emergency Medicine Pharmacist's Perspective. *The Senior Care Pharmacist* June 2020 [Doi:10.4140/TCP.n.2020.240](https://doi.org/10.4140/TCP.n.2020.240)
-
22. Snoswell C, **Flor M**, Tessier C, **Ratanjee S, Hale A**, Matthews A, Nissen L, Coombes I Accuracy checking of dispensed medications by a pharmacy technician: a hospital case study. *Australia Health Review* 2020; 44,410-414 <https://doi.org/10.1071/AH18267>
-
23. **Coombes I, Markwell A, Kubler P, Redmond A**, McGurk G, **Roberts JA**. Principles of ethical prescribing for self and others: hydroxychloroquine in the COVID-19 pandemic. *Australian Prescriber*. Vol 43 (3) June 2020
-
24. Jager N, van Hest R, Xie J, Wong G, Ulldemolins M, Bruggemann R, **Lipman J, Roberts JA**. Optimization of flucloxacillin dosing regimens in critically ill patients using population pharmacokinetic modelling of total and unbound concentrations. *J Antimicrob Chemother* 2020; in press (Date accepted 16th April 2020; JAC-2020-0267.R1)
-

-
25. **Dhanani J, Lipman J, Pincus J, Townsend S**, Livermore A, Wallis SC, Abdul-Aziz MH, **Roberts JA**. Pharmacokinetics of sulfamethoxazole and trimethoprim during veno-venous extracorporeal membrane oxygenation: A case report. *Pharmacother* 2020; in press (Date accepted 10th April 2020; ID 02-20-0067.R1)
-
26. Xie J, **Roberts JA, Lipman J**, Cai Y, Wang H, Zhao N, Xu X, Yang S, Li Y, Zhang K. Pharmacokinetic/pharmacodynamic adequacy of polymyxin B against extensively drug-resistant gram-negative bacteria in critically ill, general ward and cystic fibrosis patient populations. *Int J Antimicrob Agents* 2020; in press (date accepted March 14th 2020; PMID: 32184115)
-
27. Abbott I, van Gorp E, van der Meijden A, Wijma R, Meletiadis J, **Roberts JA**, Mouton J, Peleg A. Oral Fosfomycin Treatment for Enterococcal Urinary Tract Infections in a Dynamic *In Vitro* Model. *Antimicrob Agents Chemother* 2020; in press (date accepted March 27th 2020; AAC00342-20R1)
-
28. Cogen J, Kahl BC, Maples H, McColley SA, **Roberts JA**, Winthrop KL, Morris AM, Holmes A, Flume PA, VanDevanter DR, Waters V, Muhlebach MS, Elborn JS, Saiman L, Bell SC. (2020) Finding the relevance of antimicrobial stewardship for cystic fibrosis. *Journal of Cystic Fibrosis*; in press (date accepted 18th February 2020; JCF-D-20-00001R1)
-
29. **Whitfield K**, Dresser J, Magoffin R, Wilby K. Maintaining and maximising motivation to progress scholarly work during challenging times – Reflections from the pandemic. *Currents in Pharmacy Teaching and Learning*.
<https://doi.org/10.1016/j.cptl.2020.10.017>
-
30. **Finn S**, D'arcy E, **Donovan P, Kanagarajah S**, Barras M. A randomised trial of pharmacist led discharge prescribing in an Australian geriatric evaluation and management service. *International Journal of Clinical Pharmacy*.
<https://doi.org/10.1007/s11096-020-01184-0>
-
31. Luetsch K, **Scuderi C**. Experiences of medical dominance in pharmacist-doctor interactions - An elephant in the room? *Research in Social and Administrative Pharmacy*. 2020;16(9):1177-1182
-
32. Olenski S, **Scuderi C**, Choo A, **John G**. et al. Urinary tract infections in renal transplant recipients at a quaternary care centre in Australia. *BMC Nephrology*. 2019;20(1):479
-
33. **Scuderi C**, Parker SL, Jacks M, et al. Kidney transplant recipient's perceptions of blood testing through microsampling and venepuncture. *Bioanalysis*. 2020; doi/10.4155/bio-2020-0057
-
34. **Roberts J**, Joynt G, Lee A, Choi G, et al The effect of renal replacement therapy and antibiotic dose on antibiotic concentrations in critically ill patients: Data from the multinational SMARRT Study. *Clinical Infectious Diseases*; in press (Date accepted 26th February 2020; CID-96474R1)
-

2020 Conference Presentations – Invited Speaker, Oral and Poster

Oral Presentations

-
1. **Pallett S, Barkeij C, Aladhami N, Fassbind I, Hoy S, Whitfield K**. Maternity Outpatient Pharmacist - Evaluation of Impact. 2020 SHPA Virtual Congress
-
2. **Ta K, Hale A, Nissen L, Lau E, Coombes I, Hajkowicz K**, McBride L. Evaluation of Pharmacist administered Immunisation in High Risk Outpatients. Health Roundtable 2020
-
3. **Paradissis C, Coombes I**, Cottrell WN, Scott I, Wang W, Barras M. Harm from cardiovascular medications: the omitted 'C': The Herston Health Precinct Symposium, Brisbane, 7-11th December 2020
-
4. **Paradissis C, Coombes I**, Van Ooseterom N, Austin J, Cottrell WN, Sullivan C, Barras M. Navigating ethics and governance approval for digital health research; a case series: 2020 SHPA Virtual Congress, Online, 21-22nd November 2020
-
5. **Scuderi C**, Parker S, **John G**, McWhinney B, Ungerer J, Mallett A, **Roberts J, Healy H**, Staatz C. The burden of venepuncture for kidney transplant patients and interest in possible solutions. RBWH Symposium 2020
-

Poster Presentations

1. **Leggett J, Yim S, Carrington C, Ryan M.** Could your workflow be costing you reimbursement? A re-audit post-intervention of missed dispensing for ten high cost parenteral cancer medicines. 2020 SHPA Virtual Congress
2. **Dyer C, Ta K.** Evaluation of a Clinical Pharmacy Service to a COVID-19 Virtual Ward. 2020 SHPA Virtual Congress
3. **Day V, Firman P.** The impact of first dose oral antineoplastic dispensing in a medically integrated specialised outpatient pharmacy. 2020 SHPA Virtual Congress
4. **Jensen M, Nakagaki M.** Drug Interactions, Haematopoietic Stem Cell Transplantation, Mycobacterium Tuberculosis – Pharmaceutical Challenges. 2020 SHPA Virtual Congress
5. **Nakagaki M, Hayes T, Fichera R, Stewart C, Naumann L, Brennan J, Perry N, Foley E, Crofton E, Brown C, Gavin N.** Evolving model of care post haematopoietic stem cell transplantation: optimising multidisciplinary care. 2020 SHPA Virtual Congress
6. **Nakagaki M, Hayes T, Fichera R, Stewart C, Naumann L, Brennan J, Perry N, Foley E, Crofton E, Brown C, Gavin N.** Implementation and Evaluation of a Nurse-Allied Health Clinic for Patients after Allogeneic Haematopoietic Stem Cell Transplantation (The PostMAN Clinic). 2020 Heston Symposium
7. **Ta K, Hale A, Nissen L, Lau E, McBride L, Hajkowicz K, Coombes I.** Evaluation of Pharmacist administered Influenza Vaccination in high-risk Hospital Outpatients (EPIVHO Study). 2020 Heston Symposium
8. **De Alwis S, Keegan L, North A.** Patient perceptions of laxative therapy in the Geriatric Evaluation and Management Service (GEMS) RBWH - "A moving issue". 2020 Heston Symposium
9. **Leung H, Jensen M, Silvestro D, Ahmed B.** The Impact of a Pharmacist on SIBR within Cancer Care Services. 2020 Heston Symposium
10. **Leggett J, Yim S, Carrington C, Ryan M.** Could your workflow be costing you reimbursement? A re-audit post-intervention of missed dispensing for ten high cost parenteral cancer medicines. 2020 SHPA Virtual Congress and COSA 2020
11. **Pallett S, Barkeij C, Aladhami N, Fassbind I, Hoy S, Whitfield K.** Maternity Outpatient Pharmacist - Evaluation of Impact. 2020 Heston Symposium
12. **O'Halloran G, Powell H, North A.** DAAs in a Pandemic: Disrupting the Discharge Process. 2020 Heston Symposium
13. **Paradissis C, Coombes I, Cottrell WN, Scott I, Wang W, Barras M.** Harm from cardiovascular medications: the omitted 'C': ASCEPT-APSA Joint Virtual Scientific Meeting 2020, Online, 24-26th November 2020.
14. **Hendy A, Burrows J, Rice M, Scuderi C, Chang G, Gois P, Purtell L, Bonner A, Healy H.** An Evaluation of the Renal Pharmacy Service at the Keeping Kidneys Clinic. RBWH Symposium 2020
15. Chang G, Purtell L, Burrows J, **Scuderi C, Hendy A, Rice M, Bonner A, Healy H.** Keeping Kidneys in the Community: Delivering Integrated Kidney Healthcare Closer to Home. 2020 Heston Symposium
16. **Scuderi C, Parker S, John G, McWhinney B, Ungerer J, Mallett A, Roberts J, Healy H, Staatz C.** The burden of venepuncture for kidney transplant patients and interest in possible solutions. RBWH Symposium 2020

Department of Rheumatology

Assoc Prof Robinson played a lead role in the function of the COVID-19 global rheumatology alliance with many ensuing publications. He was also involved with many collaborators in publishing on the topic of gout.

2020 Research Publications

Journal Articles

1. **Philip C. Robinson**, Kinoos Yazdany, Pedro M. Machado. Global research collaboration in a pandemic - challenges and opportunities: The COVID-19 Global Rheumatology Alliance. *Current Opinion in Rheumatology* 2020 e-published
2. Kylan Pathmanathan, **Philip C. Robinson**, Catherine Hill, Helen Keen. The Prevalence of Gout and Hyperuricaemia in Australia: An Updated Systematic Review. *Seminars in Arthritis and Rheumatism* 2020 e-published
3. **Philip C. Robinson**, David F.L. Liew, Jean W. Liew, Claudia Monaco, Duncan Richards, Senthuran Shivakumar, Helen L. Tanner, Marc Feldmann. The potential for repurposing anti-TNF as a therapy for the treatment of COVID-19. *Med* 2020 e-published
4. Timothy McEwan and **Philip C Robinson**. A systematic review of the infectious complications of colchicine and the use of colchicine to treat infections. *Seminars in Arthritis and Rheumatism* 2020 e-published
5. Isabelle Amigues, Alexander H Pearlman, Aarat Patel, Pankti Reid, **Philip C. Robinson**, Rashmi Sinha, Alfred HJ Kim, Taryn Youngstein, Arundathi Jayatilleke, Maximilian F Konig. Coronavirus disease 2019: investigational therapies in the prevention and treatment of hyperinflammation. *Expert Review in Clinical Immunology* 2020 e-published
6. Milena Gianfrancesco...**Robinson, Philip**, Jinoos Yazdany. Race/ethnicity association with COVID-19 outcomes in rheumatic disease: Data from the COVID-19 Global Rheumatology Alliance Physician Registry. *Arthritis & Rheumatology* 2020 e-published
7. Rebecca Grainger, Pedro Machado, **Philip Robinson**. Novel coronavirus disease-2019 (COVID-19) in people with rheumatic disease: epidemiology & outcomes. *Best Practice & Research Clinical Rheumatology* 2020 e-published
8. Sarah L. Mackie, Elisabeth Brouwer, Richard Conway, Kornelis S. M. van der Geest, Puja Mehta, Susan P. Mollan, Lorna Neill, Michael Putman, **Philip C. Robinson**, Sebastian E. Sattui. Giant cell arteritis clinical pathways during the COVID-19 pandemic: an international perspective. *The Lancet Rheumatology* 2020 e-published
9. Puja Mehta, Sebastian E. Sattui, Kornelis van der Geest, Elisabeth Brouwer, Richard Conway, Michael S. Putman, **Philip C. Robinson**, Sarah L. Mackie. Giant cell arteritis and COVID-19: similarities and discriminators, a systematic literature review. *Journal of Rheumatology* 2020 e-published
10. **Philip C Robinson**, Sjeff van der Linden, Muhammad Khan, William J Taylor. Axial Spondyloarthritis: Concept, construct, classification and implications for therapy. *Nature Reviews Rheumatology* 2020; e-published
11. **Philip C Robinson**, Duncan Richards, Helen Tanner, Mark Feldmann. Accumulating evidence suggests anti-tumour necrosis factor therapy needs to be given trial priority in COVID-19 treatment. *The Lancet Rheumatology* 2020;2:e653-655
12. **Philip C Robinson** and Evan C Bursle. The management of autoimmune disease during the COVID-19 pandemic. *Australian Prescriber* 2020;43:146-7
13. Jonathan Hausmann... **Philip C Robinson**... Emily Sirotych. Conducting research in a pandemic: The power of social media. *European Journal of Rheumatology* 2020; 7(Suppl 2): S85-S88
14. Kevin Winthrop... **Philip C Robinson**... Jeffrey Curtis. SARS CoV-2 Infection among Patients using Immunomodulatory Therapies. *Ann Rheum Dis* 2020; <http://dx.doi.org/10.1136/annrheumdis-2020-218580>
15. Jean Liew... **Philip C Robinson**... Rebecca Grainger. The COVID-19 Global Rheumatology Alliance: Evaluating the rapid design and implementation of an international registry against best practice. *Rheumatology (Oxford)* 2020; 13th August 2020. <https://doi.org/10.1093/rheumatology/keaa483>
16. Sebastian Sattui, Jean Liew... **Philip C Robinson**... Alfred Kim. Swinging the Pendulum: Lessons Learned from Public Discourse Concerning Hydroxychloroquine and COVID-19. *Expert Review in Clinical Immunology* 2020;16(7):659-666
17. Marc Scheetz, Max Konig, **Philip Robinson**, Jeff Sparks and Al Kim. A pharmacokinetic-informed approach to navigating hydroxychloroquine shortages in patients with rheumatic disease during the COVID-19 pandemic. *ACR Open Rheumatology* 2020; 29th July. <https://doi.org/10.1002/acr2.11164>

-
18. **Philip C Robinson**. Gout models of care: the next step is to facilitate implementation. *Intl Journal of Rheumatic Diseases* 2020;23(9):1115-6
-
19. Milena Gianfrancesco, Jinoos Yazdany and **Philip C Robinson**. Epidemiology and outcomes of COVID-19 in patients with immune mediated inflammatory diseases. *Current Opinion in Rheumatology* 2020;32(5):434-440
-
20. **Philip C. Robinson**, Nicola Dalbeth and Peter Donovan. Colchicine Prophylaxis of Gout Flares When Commencing Allopurinol is Very Cost Effective. *Arthritis Care & Research* 2020 e-pub 17th June 2020
-
21. Michael S Putman, Paul Sufka, Samuel Whittle and **Philip C Robinson**. European consensus statements for interstitial lung disease in systemic sclerosis. *Lancet Rheumatology* 2020;2(6):E317-8
-
22. Maximilian F Konig, Milena A Gianfrancesco, Jinoos Yazdany, **Philip C Robinson**. Patients with systemic lupus erythematosus using hydroxychloroquine or chloroquine develop severe COVID-19 at similar frequency as patients not on antimalarials: need to explore antithrombotic benefits for COVID-19 coagulopathy. *Ann Rheum Dis* 2020; doi: 10.1136/annrheumdis-2020-217990
-
23. Milena Gianfrancesco, Kimme L Hyrich, ..**Philip Robinson**. Characteristics associated with hospitalization for COVID-19 in people with rheumatic disease: Data from the COVID-19 Global Rheumatology Alliance Physician-Reported Registry. *Ann Rheum Dis* 2020;79:859-66
-
24. Xiu-Feng Huang...**Philip C Robinson**...Matthew Brown. Genome-Wide Association Study of Acute Anterior Uveitis Identifies New Susceptibility Loci. *Investigative Ophthalmology and Vision Science* 2020;61(6):3
-
25. Max Konig... **Philip C. Robinson**. Baseline use of hydroxychloroquine in systemic lupus erythematosus does not preclude SARS-CoV-2 infection and severe COVID-19. *Ann Rheum Dis* 2020;79:1386-1388
-
26. **Philip C. Robinson**. Adherence to allopurinol in patients with gout: further insights generate further questions. *The Lancet Rheumatology* 2020;2(5):E249-250
-
27. Zachary Wallace... **Philip Robinson**... Rebecca Grainger. The Rheumatology Community Responds to the COVID-19 Pandemic: The Establishment of the COVID-19 Global Rheumatology Alliance. *Rheumatology (Oxford)* 2020;59(6):1204-1206
-
28. Milena Gianfrancesco, Kimme L Hyrich, ..**Philip Robinson**, Pedro M Machado, Jinoos Yazdany. Clinical characteristics and outcomes of individuals with rheumatic disease diagnosed with COVID-19: initial data from the COVID-19 Global Rheumatology Alliance provider registries. *The Lancet Rheumatology* 2020;2(5):e250–e253
-
29. Elizabeth Graef ... **Philip Robinson** ... Jeffrey Sparks. COVID-19 Global Rheumatology Alliance. Festina lente: Hydroxychloroquine, COVID-19, and the role of the rheumatologist. *Ann Rheum Dis* 2020;79:734-736.
-
30. **Philip C Robinson** and Jinoos Yazdany. The COVID-19 Global Rheumatology Alliance: Generating Timely Data During a Pandemic. *Nature Review Rheumatology* 2020;16:293–294
-
31. **David Peitch, Paul Kubler, Philip Robinson**. The effect of reducing systemic inflammation on serum urate. *Rheumatology (Oxford)* 2020;59(10):3108-9
-
32. Helen Keen, Nicola Dalbeth, **Philip Robinson**, Catherine Hill. Time to change the narrative around gout. *Medical Journal of Australia* 2020 e-published April 6th 2020 (IF 5.3)
-
33. Ric Day, Matthew Coleshill, Sophie. Stocker, Amy. Nguyen, **Philip Robinson** and Eindra Aung. Predictors of Success in Gout Treatment. *Journal of Rheumatology* 2020;47:313-15
-
34. Sarah Stewart, Kevin Yang, Nicola Dalbeth, **Robinson, Philip**. Adverse events during oral colchicine use: a systematic review and meta-analysis of randomised controlled trials. *Arthritis Research & Therapy* 22, 28 (2020) (IF 4.1)
-
35. **Robinson, Philip**. Axial Spondyloarthritis What is it and how is it diagnosed and managed? *Medicine Today* 2020;21(2):45-7
-
36. **Philip Robinson** & Diana Conrad. Biologic therapy for uveitis: address access issues is paramount. *Internal Medicine Journal* 2020;50:508-9
-
37. Drew Yates, Saw Yu Mon, Yumi Oh, Satomi Okano, Valli Manickam, Muriel Soden, **Paul Kubler and Dwarakanathan Ranganathan** Multicentre retrospective cohort study assessing the incidence of serious infections in patients with lupus nephritis compared with non-renal systemic lupus erythematosus. *Lupus Science & Medicine* 2020;0:e000390. doi:10.1136/lupus-2020-000390
-

Sexual Health and HIV Service

A RBWH study sites at Sexual Health and HIV Services (SHHS) (Biala) and Infectious Diseases Department (RBWH).

Merck Sharp & Dohme Corp – Global Clinical HIV Drug Trials

Royal Brisbane and Women's Hospital Human Research Ethics Committee (HREC)

MK8591A-018 study

A Phase 3, Randomized, Active-Controlled, Double-Blind Clinical Study to Evaluate a Switch to Doravirine/Islatravir (DOR/ISL) Once-Daily in Participants With HIV- 1 Virologically Suppressed on Bicittegravir/Emtricitabine/Tenofovir Alafenamide (BIC/FTC/TAF)

Phase 3 & MK8591A-017

A Phase 3 Randomized, Active-Controlled, Open-Label Clinical Study to Evaluate a Switch to Doravirine/Islatravir (DOR/ISL) Once-Daily in Participants With HIV-1 Virologically Suppressed on Antiretroviral Therapy

Successful study recruitment that exceeded the initial allocations for the site for both studies during the ongoing challenges and uncertainties of the COVID 19 pandemic throughout the entire recruitment period for this study.

MK 8591 018 & 017 has provided funding for a Research Nurse Position for FTE 0.5

Spit Study – Head and Neck Cancer detection is a spitting distance away. Saliva Screening test study. Collaboration SHHS and Associate Professor Chamindie Punyadeera PhD, GAICD Head, Saliva and Liquid Biopsy Translational Laboratory Queensland University of Technology.

This study looking at High Grade Human Papilloma Virus (HPV) strains in the oro-pharynx as a screening tool for risk of HPV oro-pharyngeal cancer. Initial study recruitment from RBWH head and Neck Surgery and control Cohort from SHHS.

Ongoing recruitment – Continued recruitment during COVID 19 with amended sample procedure to reduce risk of COVID 19 transmission.

NHMRC clinical cohort grant application 2020

Completed Link funding Project in June 2020– Testing to Treatment – Closing the Circle

Nurse led Treatment Clinic for Sexually Transmitted Infections (STIs) at RAPID clinic (Queensland Positive People) Non-government organisation who provide a HIV and STI screening service.

Objectives Reduce time from STI testing to treatment to under 5 days, study reduced this time to 3 days.

Following completion of the study, this study has now funded the clinical room to ensure this service continues in financial year 2020/2021.

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Emily Bryan, Luke Coffey, Julian Langton-Lockton	Sexual Health and HIV Service	Sexually transmitted infections in men: are current diagnostics only detecting the tip of the iceberg?	QUT research Grant	\$30,000	2020/2021
Emma Sweeney, Jake Tickner, Andrew Redmond , Kenneth Beagley, Logan Trim	QUT Funded and PI				
Alison Carey, David Whiley	UQ, RAPID -QPP				

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Julian Langton-Lockton	Emma Knowland, Simon Holz, Elen Witness, Arron Sparkes, Theo Van Lieshout, Andrew Redmond, Krispin Hajkowicz, Graham Neilsen	MSD Clinical Trial MK8591A-018 study	5	5
Julian Langton-Lockton	Emma Knowland, Simon Holz, Elen Witness, Arron Sparkes, Theo Van Lieshout, Andrew Redmond, Graham Neilsen, Graham Neilsen, Krispin Hajkowicz	MSD Clinical Trial MK8591A-017 study	5	5

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Julian Langton-Lockton	Emma Knowland, Simon Holz, Elen Witness, Arron Sparkes, Theo Van Lieshout, Andrew Redmond, Graham Neilsen	MK8591A-018 study A Phase 3, Randomized, Active-Controlled, Double-Blind Clinical Study to Evaluate a Switch to Doravirine/Islatravir (DOR/ISL) Once-Daily in Participants With HIV-1 Virologically Suppressed on Bicitgravir / Emtricitabine /Tenofovir Alafenamide (BIC/FTC/TAF)	5	5
Julian Langton-Lockton	Emma Knowland, Simon Holz, Elen Witness, Arron Sparkes, Theo Van Lieshout, Andrew Redmond, Graham Neilsen	MK8591A-017 A Phase 3 Randomized, Active-Controlled, Open-Label Clinical Study to Evaluate a Switch to Doravirine/Islatravir (DOR/ISL) Once-Daily in Participants With HIV-1 Virologically Suppressed on Antiretroviral Therapy	5	5
Julian Langton-Lockton	Emma Knowland, Elen Witness	SPIT- Study Head and neck cancer detection is a spitting distance away. Saliva screening test study.	50	75
Julian Langton-Lockton, Wade McClelland	Luke Coffey, Joseph Debattista, Andrew Redmond	Link Funding Testing to Treatment-Closing the Circle	n/a	n/a
Diane Rowling	Emma Knowland, Elen Witness, Julian Langton-Lockton	AHOD Australian HIV Observational Database	0	73
Diane Rowling	Emma Knowland	CEASE-D Control and Elimination within Australia of Hepatitis C from people living with HIV	0	11
Diane Rowling	Emma Knowland	START Strategic Timing and initiation of early Anti-Retroviral Treatment	0	8

2020 Research Publications

Journal Articles

1. Int J STD AIDS. 2020 Apr;31(5):426-431. doi: 10.1177/0956462420911579. Epub 2020 Mar 19. Post-exposure prophylaxis in the era of pre-exposure prophylaxis: a study of post-exposure prophylaxis use in South-East Queensland since the Pharmaceutical Benefits Scheme listing of pre-exposure prophylaxis, Karen Biggs 1, Maree O'Sullivan 1, Cheryn Palmer 2, **Jacqualine McLellan 3**, Fiona Marple-Clark 1, **Adam Spinks 3**, **Julian Langton-Lockton 3**, Caroline Thng 1
-

2020 Conference Presentations – Invited Speaker, Oral and Poster

Poster Presentations

1. Australasian HIV & AIDS Conference (Virtual) 16 – 20 November 2020. Title Sexual health service adaptations to the COVID-19 pandemic in Australia: a nationwide online survey
 2. Tiffany R Phillips 1,2, Christopher K Fairley 1,2, Basil Donovan 3,4, Jason J Ong 1,2, Anna McNulty4, Lewis Marshall5, David J Templeton3,6, Louise Owen7, Alison Ward8, Manoji Gunathilake9, Darren Russell10, **Julian Langton-Lockton11**, Christopher Bourne12, Sarah Martin13, Eric PF Chow 1,2,14
-

Department of Thoracic Medicine

New Research Funding

RBWH Foundation Smart Grants \$30,000. EBUS TBNA diff quik samples for large panel sequencing - D Fielding.

Research Publications

Journal Articles

1. Samaranyake C, Wright C, Erigadoo S, Azzopardi M, Putt M, Bint M. A randomised controlled trial on optimal sampling sequence in radial guide sheath endobronchial ultrasound Lung biopsy. *J Bronchol Interv Pulmol* 2020;27: 205-211
2. **Holt MR**, Kasperbauer SH and Daley CL. Serial sputum induction in nontuberculous mycobacterial lung disease. *Eur Respir J* 2020; 55:1902196
3. Kurz SG, Zha BS, Herman DD, **Holt MR**, Daley CL, Ruminjo JK and Thomson CC. Summary for Clinicians: 2020 Clinical Practice Guideline Summary for the Treatment of Nontuberculous Mycobacterial Pulmonary Disease. *Ann Am Thorac Soc* 2020;17(9):1033-9
4. **Boots R**, Mead G, Rawashdeh O, Bellapart J, Townsend S, Paratz J, Garner N, Clement P, Oddy D. Circadian Hygiene in the ICU Environment (CHIE) study *Crit Care Resusc* 2020; 22 (4): 361-369
5. Holley AD, Dulhunty J, Udy A, Midwinter M, Lukin B, Stuart J, **Boots R**, Lassig-Smith M, Holley RB, Paratz J, Lipman J. Early Sequential Microcirculation Assessment in Shocked Patients as a Predictor of Outcome: A Prospective Observational Cohort Study. *Shock*. 2020 Aug 20. doi: 10.1097/SHK.0000000000001578. Epub ahead of print. PMID: 32826808
6. Effect of Exogenous Melatonin Administration in Critically Ill Patients on Delirium and Sleep: A Randomized Controlled Trial. Bellapart J, Appadurai V, Lassig-Smith M, Stuart J, Zappala C, **Boots R**. *Crit Care Research Practice* 2020; 2020:1-9. doi.org/10.1155/2020/3951828
7. Graph augmented triplet architecture for fine-grained patient similarity. Wang Y, Chen W, Pi D, **Boots R**. *World Wide Web* 2020; 23: 2739–2752
8. Kapp C, Akulian J, Vachani A, Yu, D, Yarmus L, **Fielding D**, Wahidi M, Molena D, Maldonado F, Lee HJ. Cognitive load in electromagnetic navigational and Robotic Bronchoscopy for pulmonary nodules. *ATS Scholar*. Manuscript ID 2020-00330C.R1. In press
9. **Fielding D**, Hartel G, Pass D, Davis M, Brown M, Dent A, Agnew J, Dickie G, Ware RS, Hodge R. Volatile organic compound breath testing detects in-situ squamous cell carcinoma of bronchial and laryngeal regions and shows distinct profiles of each tumour *Journal of Breath Research* 2020-10-06 DOI: 10.1088/1752-7163/abb18a
10. **Fielding D**. Twenty-five years of Respiriology: Advances in interventional pulmonology. *Respirology* 2020;25:23-25
11. **Fielding D**, Oki T. Technologies for targeting the pulmonary nodule (including robotics). *Respirology* 2020. In Press
12. Langton D; Ing A; **Fielding D**; Hersch N; Sha J; Plummer V; Thien F, Safety and Effectiveness of Bronchial Thermoplasty When FEV₁ Is Less Than 50. *Chest* 2020; 157:1931-3543, 2020

Books

1. Endobronchial Ultrasonography 2nd Edition. Kurimoto N, **Fielding D**, Musani A. Wiley Publishing 2020

Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

1. **David Fielding:** Clinical Oncologic Society Australia November 2020: Advances in the bronchoscopic diagnosis of lung cancer
 2. **David Fielding:** World Association of Bronchology and Interventional Pulmonology November 2020, Bronchoscopic diagnosis of lung nodules with robotic bronchoscopy
 3. **David Fielding:** First in human results Robotic Bronchoscopy, Session Chair- Molecular analysis of EBUS TBNA specimens
 4. **David Fielding:** Asia Pacific Interventional Pulmonology Society Inaugural meeting Delhi India Nov 2020, Improving EBUS TBNA specimens for molecular analysis
 5. **David Fielding:** Brisbane Cancer Conference November 2020, Improving lung cancer molecular biology specimens
 6. **David Fielding:** Volatile organic compounds for diagnosis of in-situ bronchial and laryngeal carcinoma
-

Oral Presentations

1. **Holt MR,** Inder WJ, Miles JJ and Thomson RT. The Distinctive Body Composition and Endocrine Profile of Women with Nontuberculous Mycobacterial Pulmonary Disease. ATS Conference Abstract 2020
 2. **David Fielding:** Chest world Congress October 2020- Plenary session Debate- Robotic bronchoscopy for peripheral nodules- the future is now
-