



2022

RBWH Research Report

INTERNAL MEDICINE SERVICES

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Internal Medicine Services



Professor Keshwar Baboolal
Executive Director
Internal Medicine Services

Internal Medicine Services (IMS) has a long history of advancing healthcare through research. Over the past 3 years the COVID-19 pandemic has had a significant impact on the healthcare system and the people who work within it. As we now enter a period of recovery, the health service remains under pressure to improve waiting times for outpatients, procedures and interventions as well as inpatient capacity increases. Despite this, our staff have adapted to the challenges posed and have demonstrated resilience in ongoing research and continued collaboration to deliver research of the highest quality.

In 2022, 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. IMS strongly believe that fostering an active research culture adds to the diverse knowledge within healthcare but also allows patients to access the latest therapies, diagnostics and medicines at the forefront of modern healthcare.

To support and enable research, 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 comprehensive list of research submitted by each department highlights the research achievements of those staff and are attributed to the tireless efforts of our highly dedicated staff across all disciplines and all departments. The insights gained and developments achieved through research have been broadly shared through delivery at symposiums, national and international conferences, publications and health forums.

On behalf of the IMS Executive team, I would like to commend and thank IMS staff for their commitment and continued contributions to research that supports healthcare into the future.

Cardiology

Research highlights for the year (1 January – 31 December 2022)

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. Associate Professor Sandhir Prasad has been awarded a Metro North Clinician Research Fellowship (2022-2025) to undertake the Echocardiography Guided Prognosis Following Myocardial Infarction: Redefining Risk Stratification to Improve Patient Outcomes (ECHO Guide Study). This extended body of work will exploit RBWH echocardiography database and utilise data linkage to facilitate risk stratification and redefine normalcy thresholds. Ms Ada Lo has recently submitted her PhD (Use of novel echocardiographic modalities in the diagnosis and assessment of hypertrophic cardiomyopathy), with her studies providing novel insights into the mechanism of dynamic obstruction in hypertrophic cardiomyopathy, and demonstrating the value of multiparametric models to distinguish different causes of left ventricular hypertrophy and distinguish genotype positive and negative hypertrophic cardiomyopathy family members.

Dr Daniel Lancini has identified the predictors of new-onset atrial fibrillation in the setting of critical illness, emergency chest pain presentations and in patients with acute myocardial infarction, which have led to a number of high-quality publications and a PhD thesis in the final stages of submission.

The **Cardiovascular Telemedicine Program** continues to deliver high-quality cardiac investigations to rural and regional sites and continues to expand its reach to other centres throughout Queensland. This programme has reduced waiting times, increased access (especially for Indigenous patients), decreased inequity and improved service quality for regional centres.

We have unique cardiac obstetric (collaboration with Obstetric Medicine/ IMAC) and cardiac genetic (collaboration with GHQ) services receiving statewide referrals and undertaking collaborative research. 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-2021.pdf>).

Successful PhD candidates in 2022

Name	PhD Title	Month Completed	Affiliated University	Summary	Headshot of Candidate Provided? Y/N
Dr Rohan Poulter	Evaluation of the diagnostic performance of quantified dual energy cardiac computed tomography perfusion imaging in stable coronary artery disease	February 2022	University of Queensland	<p>Dual energy computed tomography imaging using material decomposition to derive iodine content and monoenergetic post-processing techniques can be used for cardiac computed tomography studies and can combine the benefits of an anatomical assessment of the coronary arteries with a functional evaluation of ischaemia in the myocardium in a single study. A closed chest animal model of ischaemic coronary artery disease was developed using percutaneous techniques to introduce methacrylate plugs to the coronary arteries. This model demonstrated strong correlation between myocardial flow and myocardial iodine content and could discriminate ischaemic and non-ischaemic myocardial segments stratified using Fractional Flow Reserve. Monoenergetic imaging could also discriminate ischaemia at lower electron voltages and evaluation of the spectral profile could objectively identify artefacts within the datasets.</p> <p>Application of the dual energy CT perfusion protocol to a clinical population also found strong correlation between myocardial iodine content and Fractional Flow Reserve during vasodilator stress acquisition. Myocardial iodine content accurately discriminated normal and ischaemic myocardial segments, and was superior to CT number attenuation-based metrics. Conversely, standard resting protocols for dual energy CT did not provide any metrics useful for evaluating myocardial ischaemia.</p>	

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Sandhir Prasad	Metro North Clinician Research Fellowship (2022-2025)	

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
A Driscoll, A Hutchinson, L Orellana, J Atherton , D Prior, C Reid, C De Pasquale, P Newton, R Audehm, E Zomer.	Cardiology	I-HEART – Implementation of HEART failure guidelines in Regional Australia top up funding	HCF Foundation.	\$319,000	3 yrs, 2022=2025

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
N Palpant, A Mallett, T Yanes, S Shah, A Hill, J McGaughran , D Fatkin, J Ingles, J Atherton , R Bagnall, R Bryson-Richardson, A Combes, R Harvey, Z Stark, M Boden.	Genetic Health QLD, Cardiology	TRIAGE: A disease agnostic computational and modelling platform to accelerate variant classification.	MRFF 2021 Genomics Health Futures Mission (No. MRF2016033).	\$2,997,498.50	3 yrs, 2022-2024
S Shah, T Yanes, J McGaughran , K Wallis, D Bunker, J Atherton , N Wray, H Akbar, A Henders, RM Villani, K Greaves, D Mehta.	Genetic Health QLD, Cardiology	Preparing Australia for use of genomics in prevention of heart disease: Focus on South Asian Australians	MRFF 2021 Genomics Health Futures Mission (No. MRF2015961).	\$928,898.92	2 yrs, 2022-2024
C Afoakwah, S Nghiem, J Atherton , P Scuffham, T Marwick, J Byrnes, G Stewart.	Cardiology	Surviving heart disease for longer: the impact of limited access to evidence-based cardiac care services on the health of Queenslanders in remote areas	Griffith University 2022 Health Group Seed Grant Scheme.	\$16,000	1 yr, 2022-2023
C Chow, G Hillis, D Brieger, A Sverdlov, J Atherton , L Thomas, R Lindley, C Ferguson, PJ Devereaux, D Conen.	Cardiology	Anticoagulation for Stroke Prevention In patients with Recent Episodes of perioperative Atrial Fibrillation after noncardiac surgery - The ASPIRE-AF trial	MRFF 2021 International Clinical Trial Collaborations ICTC 21-1 (No. MRF2015330)	\$1,816,175.10	5 yrs, 2022-2026
D Ford, A Driscoll, A Hutchinson, L Orellana, J Atherton , D Prior, C Reid, C De Pasquale, P Newton, R Audehm, E Zomer.	Cardiology	RURAL-HEART- Implementation of Heart failure guidelines in Rural Australia	Primary care Rural Innovative Multidisciplinary Models (PRIMM) Round 2. (No. GO5102)	\$399,938	5 yrs, 2022-2026
T Briffa, J Redfern, D Chew, J Atherton , G Hillis, S Nicholls, D Brieger, J Rankin, A Maiorana, C Budgeon.	Cardiology	Secondary Prevention for All in Need (SPAN) after Type 1 myocardial infarction: a comparative effectiveness randomised trial	Heart Foundation 2020 Secondary Prevention Strategic Grant (No. 105531)	\$999,034	5yrs, 2021-2024

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
K Guppy-Coles, K Hajkovicz, D Fielding, J Atherton, K Baboolal, P Harris, J Robson, S Cherian, D Langguth, C Kennedy, P Hobson, G Ward.	Cardiology, Infectious Diseases, Thoracic Medicine, Internal Medicine Service line	Investigation of SARS-CoV-2 vaccine seroconversion in an Australian healthcare staff population	Royal Brisbane and Women's Hospital (RBWH) & RBWH Foundation Project Grant	\$49,990	1yr, 2021-2022
A Driscoll, A Hutchinson, L Orellana, J Atherton, D Prior, C Reid, C De Pasquale, P Newton, R Audehm, E Zomer.	Cardiology	I-HEART – Implementation of HEART failure guidelines in Regional Australia	NHMRC 2020 Partnership Projects PRC1 (No. 2005589)	\$1,260,000 from NHMRC \$3,000,000 from partners	5yrs, 2021-2025
S Prasad, K Guppy-Coles, J Atherton, P-L Inglis, A Lo.	Cardiology, Oncology	Validation of hand carried ultrasound for oncology nurse-led semi-automated, point-of-care assessment of left ventricular systolic function via ejection fraction and myocardial strain measurements	Royal Brisbane and Women's Hospital 2021 Project Grant	\$40,063	1yr, 2021-2022
C Punyadeera, K Alexandrov, J Atherton, A Coats, L Cullen, G Dimeski, X Zhang.	Cardiology, Emergency Trauma Centre	Biosensor based clinical-decision support for patients with heart failure	NHMRC 2020 Ideas Grant (No. 2002576)	\$691,933	3yrs, 2021-2023
R Maddison, R Vasa, J Atherton, B Oldenburg, V Kostakos, T Dingler, J Rawstorn, D Kwasnicka.	Cardiology	Harnessing information technology to improve self-management behaviours and health outcome in people with heart failure: A smarhome ecosystem Living Lab Study	NHMRC 2020 Ideas Grant (No. 2004316)	\$1,120,226	4yrs, 2021-2024
J Atherton, C Punyadeera, X Zhang, K Guppy-Coles, N Karunathilake.	Cardiology	An Investigation of the relationship between microbiome and heart failure	Royal Brisbane and Women's Hospital 2021 Project Grant	\$47,813	1yr, 2021-2022
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	5yrs, 2020-2024

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
S Senanayake, S Kularatna, W Parsonage , S McPhail, B Abell, V McCreanor	Cardiology	Value for money in cardiac rehabilitation: economic evaluation of different models of care	NHMRC via University of Sydney (NHMRC Synergy Grant)	\$20,000	1 yr, 2022
J Greenslade, L Cullen, W Parsonage , D Chew, S McPhail, G Figtree, D Brain.	Emergency Trauma Centre, 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	3 yrs, 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 RBWH Patients Recruited in 2022
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.	
Sandhir Prasad	John Atherton, Paul Martin, Kristyan Guppy-Coles	Echocardiography Guided Prognosis Following Myocardial Infarction: Redefining Risk Stratification to Improve Patient Outcomes.	
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, Karmon 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, 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.	

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
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.	
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.	
Daniel Lancini	Paul Martin, Sandhir Prasad, Louise Cullen, Jaimi Greenslade	Atrial fibrillation in the emergency chest pain presentation.	

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 RBWH Patients Recruited in 2022
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).	
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.	2 newly recruited and 7 in follow-up phase
William Parsonage, Karin Lust (Site Co-PIs)	Karin Lust William Parsonage Kylie Burns Helen Tanner Lee Minuzzo	EORP Registry of pregnancy and cardiac disease: ROPAC 3	
John Atherton (Site-PI)	Multi-centre clinical trial	A multicentre, randomised, double-blind, parallel-group, placebo-controlled study to evaluate the efficacy and safety of finerenone on morbidity and mortality in participants with heart failure(NYHAII-IV) and left ventricular fraction >40% (FINEARTS-HF)	1 newly recruited and 11 in follow-up phase
John Atherton (Site-PI)	Multi-centre clinical trial	A Pivotal Phase 3 Randomised, Placebo-controlled Clinical Study to Evaluate the Efficacy and Safety of the sGC Stimulator Vericiguant/MK-1242 in Adults With Chronic Heart Failure With Reduced Ejection Fraction (VICTOR)	16 newly recruited and 14 in follow-up phase

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
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 in follow-up phase
John Atherton (Site-PI)	Database	National Echo Database Australia	
John Atherton (Site-PI)	Multi-centre clinical trial	Cardiac Magnetic Resonance GUIDEd management of mild-moderate Heart Failure (CMR GUIDE HF)	2 newly recruited and 25 in follow-up phase
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).	2 newly recruited and 40 in follow-up phase
Christopher Hammett (Site-PI)	Multi-centre clinical trial	A double-blind, Randomized, Placebo-controlled, Multicentre Study Assessing the impact of Olpasiran on Major Cardiovascular Events in Patients with Atherosclerotic Cardiovascular Disease and Elevated Lipoprotein (a) (OCEAN a)	1
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).	Completed
Christopher Hammett (Site-PI)	Multi-centre clinical trial	EMPACT-MI A streamlined, multicentre, randomised, parallel group, double-blind placebo-controlled superiority trial to evaluate the effect of EMPAgliflozin on hospitalisation for heart failure and mortality in patients with aCuTe Myocardial Infarction	5 newly recruited and 5 in follow-up phase
Christopher Hammett (Site-PI)	Multi-centre clinical trial	A Multicentre, Cross-sectional Study to Characterize the Distribution of Lipoprotein(a) Levels Among Patients With Documented History of Atherosclerotic Cardiovascular Disease (ASCVD)	221 recruited
Paul Martin (Site-PI)	Multi-centre clinical trial	Clinical Investigation of the ENO/TEO/OTO Pacing System under MRI environment (CAPRI).	Follow up phase
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).	Completed

Authors

Investigator	ORCID ID
John Atherton	https://orcid.org/0000-0003-2271-578X
Christopher Hammett	https://orcid.org/0000-0002-0931-9486

Journal Articles (RBWH staff in bold)

- Lancini D, Tan WL, Guppy-Coles K, Boots R, Prasad S, Atherton J, Martin P.** Critical illness associated new onset atrial fibrillation: subsequent atrial fibrillation diagnoses and other adverse outcomes. *EP Europace* 2022, Oct 18:euac174. doi: 10.1093/europace/euac174. Online ahead of print.
- Conradie A*, **Atherton J**, Chowdhury E, Duong M, Schwarz N, Worthley S, Eccleston D. The association of sex with unplanned cardiac readmissions following percutaneous coronary intervention in Australia: Results from a multicentre outcomes registry (GenesisCare Cardiovascular Outcomes Registry). *J Clin Med* 2022;11:6866; <https://doi.org/10.3390/jcm11226866>
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- Lancini D, Greenslade J, Martin P, Prasad S, Atherton J, Parsonage W, Aldous S, Than M, Cullen L.** Chest pain workup in the presence of atrial fibrillation: impacts on troponin testing, myocardial infarction diagnoses and long-term prognosis. *Eur Heart J Acute Cardiovasc Care* 2022;11:772-81. doi: 10.1093/ehjacc/zuac090.
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- Chen S-M, Wu C-J, Devin R, **Atherton JJ.** Effects of reablement programs for older people: A systematic review and meta-analysis. *Collegian* 2022 (online 22/6/22).
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- Williams DL, Rofail S, Atherton JJ.** Sodium-glucose co-transporter 2 inhibitors beyond diabetes. *Aust Prescr* 2022;45:121-4.
- Krishnan A, Prasad SB, Guppy-Coles KB, Holland DJ, Hammett C, Whalley G, Thomas L, Atherton JJ.** Composite echocardiographic score to predict long-term survival following myocardial infarction. *Heart Lung Circ* 2022 (online 1/6/22)
- Conradie A, Delacroix S, Duong M, Schwarz N, Chowdhury E, Worthley S, **Atherton J**, Eccleston D. Sex differences in baseline characteristics do not predict early outcomes after percutaneous coronary intervention: Results from the Australian GenesisCare Cardiovascular Outcomes Registry (GCOR). *J Clin Med* 2022;11:1138. doi: 10.3390/jcm11041138
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- Stephensen L, Greenslade J**, Starmer K, Starmer G, Stone R, Bonnin R, Brazzale A, Drahm-Butler T, Campbell V, Davis T, Mowatt E, Brown N, Proctor K, Ashover S, Milburn T, McCormack L, Graves N, Gatton M, Mahoney R, **Parsonage W, Cullen L**. Clinical characteristics of Aboriginal and Torres Strait Islander emergency department patients with suspected acute coronary syndrome. *Emerg Med Australas*. 2022 Nov 21. doi: 10.1111/1742-6723.14138. Epub ahead of print. PMID: 36410371.
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Journal Articles (RBWH staff in bold)

Kedhi E, Windecker S, Latib A, Kirtane A, Kandzari D, Mehran R, Price MJ, Abizaid A, Simon DI, Zaman A, Fabbicchini F, Tie C, Van 't Hof A, de la Torre Hernandez JM, **Hammett CJ**, McLaurin B, Potluri S, Smith T, Waksman R, Ragosta M, Parke M, Lung TH, Stone GW. Patients with Diabetes at High Bleeding Risk with One-Month DAPT: Onyx ONE Clear Results *J Soc Cardiovasc Angiogr Interv (JSCAI)* 2022; 100441:doi:10.1016/j.jscai.2022.100441.

Keynote or Plenary Lectures given in 2022

Date	Title
Oct 2022	Australian Cardiovascular Alliance (ACvA) Heart Failure Workshop (Virtual presentation). Topic: Management of acute heart failure.
Oct 2022	Connections in Cardiology 2022, Melbourne Convention and Exhibition Centre, Melbourne. Topic: Heart failure with 'preserved' EF: What is a 'preserved' EF and how should I treat these patients?
Oct 2022	Connections in Cardiology 2022, Melbourne Convention and Exhibition Centre, Melbourne. Topic: Practical and safety aspects of SGLT2 inhibitors and ARNI's in patients with HFrEF.
Oct 2022	Connections in Cardiology 2022, Melbourne Convention and Exhibition Centre, Melbourne. Panel discussion topic: The fantastic four of heart failure treatment: Do we know how to use them?
Sep 2022	Cardiac Connection Conference 2022, Oaks Resort and Spa, Hervey Bay. Topic: Updated heart failure guidelines and current implications for general practice.
Sep 2022	Cardiac Connection Conference 2022, Oaks Resort and Spa, Hervey Bay. Topic: Latest SGLT2i clinical data in treating HFrEF.
Aug 2022	European Society of Cardiology (ESC) Congress 2022, Barcelona, Spain. Chair Moderated ePoster session: Chronic heart failure and atrial fibrillation.
Aug 2022	European Society of Cardiology Evidence to Practice Clinical Trial Forum, Barcelona, Spain. Topic: Heart failure trials.
Aug 2022	70 th Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand, Gold Coast Convention and Exhibition Centre. European Heart Journal and Heart Lung Circulation joint session. Topic: National Heart Foundation of Australia/ Cardiac Society of Australia and New Zealand Heart Failure Guidelines.
Aug 2022	70 th Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand. The limbic: Challenges in heart failure management, Gold Coast. Case-based dinner meeting/ webinar.
Aug 2022	70 th Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand, Gold Coast Convention and Exhibition Centre. Topic: Australasian perspective on heart failure guidelines.
Aug 2022	70 th Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand Boehringer Ingelheim and Lilly Alliance Breakfast Symposium, Gold Coast Convention and Exhibition Centre. Topic: Australian and international HFrEF guidelines: Key changes, similarities and differences- Who's right?
Aug 2022	70 th Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand Imaging Symposium, Gold Coast Convention and Exhibition Centre. Topic: Interplay of genetics and cardiac imaging.
Aug 2022	European Society of Cardiology Evidence to Practice Clinical Trial Forum, Barcelona, Spain. Topic: Factor Xla inhibitors: Benefit without Bleeding?
Jun 2022	5th International 4 Corners of Cardiology Meeting Steering Committee, Intercontinental Hotel, Sydney.
Jun 2022	5th International 4 Corners of Cardiology Meeting Heart Failure Session Chair, Intercontinental Hotel, Sydney.
Jun 2022	American Society of Echocardiography, Seattle, USA. Guideline based assessment of diastolic function. Invited lecture.
Jun 2022	Cardiovascular, Renal and Metabolic Metabolic (CVRM) Symposium, Sydney 18-19 June 2022. Oral Anticoagulation in Complex Patients (workshop), and A Lifetime of Atherosclerosis: Controversies in CV Screening, Assessment and Treatment (Interactive Plenary)
May 2022	International Clinical Cardiovascular Genetics Conference Co-convenor, Brisbane Convention and Exhibition Centre.
May 2022	International Clinical Cardiovascular Genetics Conference, Brisbane Convention and Exhibition Centre. Topic: Case presentation (cardiomyopathy) panel member (National Collaborations and Case Presentations session).
May 2022	Hong Kong College of Cardiology Meeting (Virtual Meeting), Dual Pathway anti-thrombotic therapy in CAD: Who are the High Risk Patients?
May 2022	International Clinical Cardiovascular Genetics Conference, Opening and Closing Session Chair, Brisbane Convention and Exhibition Centre.
Apr 2022	South Australian Health and Medical Research Institute (SAHMRI) and Monash Evidence to Practice Heart Symposium, Melbourne, April 2022. Topic: New strategies for treating heart failure.
Apr 2022	The limbic webinar: American College of Cardiology 2022- Australian context and international perspectives. Topic: Heart failure trials.

Mar 2022	Royal Australasian College of Physicians- College Learning Series (pre-recorded RACP national learning series). Topic: Heart failure- Definitions, diagnosis and medical management.
Feb 2022	Novartis Cardiology Congress (Live Virtual). Topic: Wrap up of Day 2 proceedings with meeting close.
Feb 2022	Novartis Cardiology Congress (Live Virtual). Topic: Update of international guidelines and expert consensus statements on the management of HFrEF.
Feb 2022	Cardiac Society of Australia and New Zealand Fellows in Training National Webinar. Introduction to assessment of diastolic function.

Clinical Pharmacology

Research highlights for the year (1 January – 31 December 2022)

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, Metro North IT) and Brisbane (Princess Alexandra Hospital, University of Queensland and QIMR Berghofer) and nationally, including with NHMRC grants (with multiple universities University of New South Wales, Murdoch Children's Research Institute and Curtin University of Technology). Research interests continue to include opioid use in Australia, medication safety, including the impact of digital systems, data linkage and the quality of inpatient diabetes management. In 2022, members of the Department of Clinical Pharmacology were part of the team awarded Professor William Egerton Award for Best Discovery and Innovation Research at the Herston Health Symposium for their work that assessed the impact on medication safety and prescribing when transitioning from paper to digital prescribing.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Elizabeth McCourt , Teyl Engstrom, Martin Canning, Katharine Dekker , Panteha Voussoughi , Oliver Bennett , Angela North , Jason Pole, Peter Donovan , Clair Sullivan	Professor William Egerton Award for Best Discovery and Innovation Research	Herston Health Precinct Symposium 2022

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Assoc Prof Susan Jordan (University of Queensland), Assoc Prof Katrina Spilsbury (Curtin University of Technology), Dr Louise Wilson (University of Queensland), Dr Peter Donovan (RBWH)	Clinical Pharmacology, Internal Medicine and Aged Care	Hysterectomy, Oophorectomy and Long-term chronic Disease - the HOLD study	Australian Government – National Health and Medical Research Council.	\$690,005.60	4yrs 2021-2025

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 RBWH Patients Recruited in 2022
Peter Donovan	Clair Sullivan , Jason Pole (University of Queensland), Benjamin Sly (Metro South HHS), Syndia Lazarus , Teyl Engstrom (University of Queensland)	Comparing Glycaemic Outcomes Of Digital and non-digital hospitals (GOOD)	
Karen Davies	Ian Coombes, Samantha Keogh , Karen Hay, Karen Chippindall, Karen Whitfield.	Medication Administration Evaluation and Feedback Tool: Stepped Wedge Cluster Randomised Trial	0 patients 60 staff

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 RBWH Patients Recruited in 2022
Eg. Alvin Wong	Merrilyn Banks , Judy Bauer	Cost effectiveness of nutrition support services	20
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), Dr Peter Donovan	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	
	Penny Webb (QIMRB), Dr Katrina Spilsbury (Curtin University of Technology), Martha Hickey (University of Melbourne), Dr Peter Donovan	Hysterectomy, Oophorectomy and Long-term chronic Disease	
Benjamin Sly	Clair Sullivan (University of Queensland), Anthony Russell (Princess Alexandra Hospital), Sally Shrapnel (University of Queensland), Peter Donovan	Statewide Inpatient Glycaemic Benchmarking (STING)	
Benjamin Sly	Clair Sullivan (University of Queensland), Anthony Russell (Princess Alexandra Hospital), Sally Shrapnel (University of Queensland), Peter Donovan	Statewide Inpatient Glycaemic Dashboard Implementation (STING-DASH)	

Research Publications

Authors

Investigator	ORCID ID
Peter Donovan	https://orcid.org/0000-0001-7934-601X
Karen M Davies	https://orcid.org/0000-0003-3510-5227
Elizabeth McCourt	https://orcid.org/0000-0002-9090-3515

Publications in 2022

Journal Articles (RBWH staff in bold)

Ali S, Na R, Tuesley K, Spilsbury K, Stewart LM, Coory M, Webb PM, **Donovan P**, Pearson SA, Jordan SJ, Neale RE. The association between diabetes mellitus of different durations and risk of pancreatic cancer: an Australian national data-linkage study in women. *Cancer Epidemiol.* 2022 Oct 11;81:102266. doi: 10.1016/j.canep.2022.102266. Epub ahead of print. PMID: 36240705.

Spilsbury K, Tuesley KM, Pearson SA, Coory MD, **Donovan P**, Steer CB, Stewart LM, Pandeya N, Jordan SJ. Perioperative Beta-Blocker Supply and Survival in Women With Epithelial Ovarian Cancer and a History of Cardiovascular Conditions. *J Clin Oncol.* 2023 Jan 10;41(2):266-275. doi: 10.1200/JCO.22.00097. Epub 2022 Aug 24. PMID: 36001852.

Brown NJ, Doran E, Greenslade JH, Lukin B, Cottrell N, Jaramillo F, Coombes I, Donovan P, Cullen L. Retrospective study of the prevalence and characteristics of adverse drug events in adults who present to an Australian emergency department. *Emerg Med Australas.* 2022 Aug;34(4):547-554. doi: 10.1111/1742-6723.13929. Epub 2022 Jan 1. PMID: 34973155.

McCourt E, Harper N, Butnoris M, Friend R, Dekker K, Ayre J, Tai B, Pelecanos A, Stowasser D, Coombes I, Dunn T, Donovan P. The effect of Computerised Physician Order Entry on prescribing errors: An interrupted time-series study at a secondary referral hospital in Australia. *Int J Med Inform.* 2022 Sep;165:104829. doi: 10.1016/j.ijmedinf.2022.104829. Epub 2022 Jul 5. PMID: 35810657.

Suckling B, **Pattullo C**, Liu S, James P, **Donovan P**, Patanwala A, Penm J. Persistent opioid use after hospital discharge in Australia: a systematic review. *Aust Health Rev.* 2022 Jun;46(3):367-380. doi: 10.1071/AH21353. PMID: 35545810.

Tuesley KM, Webb PM, Protani MM, Spilsbury K, Pearson SA, Coory MD, **Donovan P**, Steer C, Stewart LM, Pandeya N, Jordan SJ. Nitrogen-based Bisphosphonate Use and Ovarian Cancer Risk in Women Aged 50 Years and Older. *J Natl Cancer Inst.* 2022 Jun 13;114(6):878-884. doi: 10.1093/jnci/djac050. Erratum in: *J Natl Cancer Inst.* 2022 Jun 17;: PMID: 35262727; PMCID: PMC9194625.

Donovan P, Eccles-Smith J, Hinton N, Cutmore C, Porter K, Abel J, Allam L, Dermedgoglou A, Puri G. The Queensland Inpatient Diabetes Survey (QuIDS) 2019: the bedside audit of practice. *Med J Aust.* 2021 Aug 2;215(3):119-124. doi: 10.5694/mja2.51048. Epub 2021 May 3. PMID: 33940660.

Davies KM, Coombes IC, Keogh S, Hay K, Whitfield KM. Medication Administration Evaluation and Feedback Tool: Longitudinal Cohort Observational Intervention. *Collegian.* 2022 Dec. accepted for publication.

Tumusiime, W., Hardman, C. & **McCourt, E.** Impact of Policy Interventions on Oxycodone Prescribing in Queensland, Australia: An Uncontrolled Interrupted Time Series Study. *Drug Saf* 45, 941–949 (2022). <https://doi.org/10.1007/s40264-022-01209-9>

Book Chapters (RBWH staff in bold)

Watson K, **McCourt E**, Babigumira P, Ashiru-Oredope D. *Pharmacy Practice and Emergency Preparedness Resilience and Response* in Encyclopedia of Evidence in Pharmaceutical Public Health and Health Services Research in Pharmacy

Keynote or Plenary Lectures given in 2022

Date	Title
2nd December 2022	Dr Elizabeth McCourt: Session chair of lightning talks (L01) at Society of Hospital Pharmacists Australia Medicines Management 2022. Brisbane, Australia
15th June 2022	Dr Elizabeth McCourt: Conference chair (and organiser) of session 'Pharmacy on the Edge: From Watch to Recovery Emergency Response' at American Society of Health-System Pharmacists Summer Meeting and Exhibition. Arizona, USA

Endocrinology & Diabetes

Research highlights for the year (1 January – 31 December 2022)

2022 saw a record year for research output and impact from the Department of Endocrinology & Diabetes, through clinician-led research, clinical trials, and collaboration with the conjoint internal medicine laboratory.

Clinician-led research within the department is performed by medical and allied health members. Research areas studied in 2022 included diabetes, digital health, thyroid disease and thyroid cancer, vitamin D and calcium metabolism, pituitary disease, adrenal disease, and transgender medicine. Department members collaborated widely with other hospitals, universities, and research institutes within Australia and overseas. Clair Sullivan was honoured with several awards during the year. Don McLeod continued to publish in high impact journals including *Journal of Clinical Oncology* and *Lancet Diabetes and Endocrinology*.

The clinical trials unit has traditional strength in diabetes studies, with ongoing work in a large cardiovascular outcomes trial for a novel injectable agent tirzepatide, as well as smaller studies. In addition, the clinical trials unit has expanded into studies for thyroid disease, bone disease, congenital adrenal dysplasia, calcium regulation, and obesity. 2022 saw the continuation of a Clinical Trials fellowship, aiming to deliver clinical trial experience and dedicated research time for recently graduated Endocrinologists. The Clinical Trials unit also assisted Logan Hospital Endocrine and Diabetes Service to establish their own clinical trials unit with a view to establishing research relationships and expanding clinical trials capacity in Queensland.

The conjoint internal medicine laboratory continued investigating mechanisms of placental thyroid hormone metabolism, making important preliminary discoveries into potential links of thyroid hormone metabolism with diseases of pregnancy including preeclampsia.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Clair Sullivan	UQBS Award for Excellence in External Engagement (Metro South Executive Education Team)	UQ Business School Awards
Clair Sullivan	Brilliant Connected Women in Digital Health Award – Telstra Health	Telstra Health Awards
Elizabeth McCourt and Clair Sullivan	Professor William Egerton Award for Best Discovery and Innovation Research at the Herston Health Precinct Symposium for abstract ' <i>The impact of transition from a non-digital to digital prescribing on medication safety</i> '	Herston Health Precinct Symposium
Don McLeod	Editorial Board	<i>Thyroid</i>
Don McLeod	Associate Editor	<i>Clinical Thyroidology</i>
Don McLeod	Editorial Board	<i>AACE Endocrine Practice</i>
Don McLeod	Editorial Board	<i>JCEM Case Reports</i>

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Clair Sullivan	Endocrinology & Diabetes QDHeC	Leading Digital Excellence in Queensland health – Project 0083	Digital Health Cooperative Research Centre	\$1,485,000	3 years 2020-2023
Clair Sullivan	Endocrinology & Diabetes QDHeC	Enhanced data extraction and modelling from electronic medical records	Digital Health Cooperative Research Centre	\$1,400,000	2 years 2020-2022
Clair Sullivan	Endocrinology & Diabetes QDHeC	An evaluation of digital health and continuity of care maturity in Queensland using HIMSS methodology	Digital Health Cooperative Research Centre	\$330,000	4 years 2020-2024
Clair Sullivan	Endocrinology & Diabetes QDHeC	Systematic Maturation of Health Analytics for Health Redesign (SMART)	Vice-Chancellor's Strategic Fund UQ	\$3,000,000	1 year 2021-2022
Clair Sullivan	Endocrinology & Diabetes QDHeC	Australian Research Data Commons Grant for EMR to OMOP Project	University of Melbourne	\$60,000	1 year 2021-2022
Clair Sullivan	Endocrinology & Diabetes QDHeC	Data Driven Clinical Research Innovation Hub	Stryker	\$499,491	3 years 2021-2023
Clair Sullivan	Endocrinology & Diabetes QDHeC	Data Driven Clinical Research Innovation Hub	Stryker	\$499,491	3 years 2021-2023
Clair Sullivan	Endocrinology & Diabetes QDHeC	Digital Hospital: A Cost benefit analysis to inform business cases	QLD Health	\$29,840	3 months 2021
Clair Sullivan	Endocrinology & Diabetes QDHeC	HDR Alliance Program	QLD Health	\$935,817	4 years 2021-2024
Clair Sullivan	Endocrinology & Diabetes QDHeC	Advanced QLD Industry Research Fellowships	Advanced QLD	\$660,000	3 years 2022-2024
Clair Sullivan	Endocrinology & Diabetes QDHeC	Queensland Digital Health Centre	HEalth REsearch Accelerator 2.0	\$15,000,000	7 years 2022-2027
Clair Sullivan	Endocrinology & Diabetes QDHeC	Mapping statewide EMR observation records to OMOP CDM	Northern Australian Digital Health Collaborative Seed Funding Scheme 2022 - NARDHC00007	\$50,000	1 year 2021-2022
Clair Sullivan	Endocrinology & Diabetes QDHeC	DIFFERENCE (First Nations Maternal Health)	MRFF Research Data Infrastructure Grant	\$3,000,000	6 years 2021-2026

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Don McLeod (CIE)	Endocrinology & Diabetes	Sun-D trial - The effect of high SPF sunscreen application on vitamin D. (APP2006773)	NHMRC	\$1,175,124	4yrs, 2021-2024
Don McLeod (CIA)	Endocrinology & Diabetes	Optimising thyroid hormone treatment for Queenslanders	Queensland Advancing Clinical Research Fellowship	\$300,000	3yrs, 2020-2022
Don McLeod (CIA)	Endocrinology & Diabetes	The causes, prognosis, and treatment of thyroid disease	Metro North Clinician Research Fellowship	0.2FTE	4yrs, 2019-2022

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 RBWH Patients Recruited in 2022
Clair Sullivan	Jodie Austin, Jason Pole, Ben Sly, Chien Chen, Amir Rahimi, Guido Zuccon, Magid Fahim, Sally Shrapnel, Tracy Comans, Maree Ruge	STARS-enhanced data extraction and modelling	0
Clair Sullivan	Magid Fahim, Margie Butnoris, Danielle Stowasser, Tracy Comans, Ian Parker, Ben Sly, Jodie Austin, Oliver Canfell, Teyl Engstrom, Jason Pole, Tony Russell, Peter Donovan, Lee Woods, Martin Byrne, Angela North, Laura D'Adamo, Harrison Whiting , Jess Miller	STARS Evaluation Project (STEP)	0
Clair Sullivan	Benjamin Sly, Anthony Russell, Peter Donovan , Amir Kamel, Sally Shrapnel, Brett Sillars, Mitchell Mckean, Guarav Puri, Kana Appadurai	Statewide Inpatient Glucometric Benchmarking (STING)	0
Clair Sullivan	Victoria Campbell, Jason Pole, Teyl Engstrom, Oliver Canfell, Jason Lynch, Tim Saul	Digital Early Warning Tool System Upgrade Review (DEWTUS)	0
Clair Sullivan	Ides Wong, Lee Woods, Rebekah Eden, Tim Kelsey, Rhona Duncan, Keith McNeil, Andrew Pearce, Michael Beckmann, Sophie Macklin, Yun Zou, Lakshmi Jayan	An Evaluation of Digital Health Maturity and Continuity of Care Maturity in Queensland using HIMSS	0
Clair Sullivan	Keith McNeil, Len Gray, Guido Zuccon, Magid Fahim, Jodie Austin, Lee Woods, Oliver Canfell, Sally Shrapnel, Jason Ferris, Dom Gorse, Ben Sly, Han Chang Lim, Jon Fraser, Monica Noselli, Robyn Littlewood, Phil King, Harry Scells, Anton Van der Vegt, Jason Pole, Ides Wong	Towards Systematic Maturation of Analytics and System Redesign to Transform (SMART) Healthcare and Public Health Research	0

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Clair Sullivan	Magid Fahim, Len Gray, Sally Shrapnel, Guido Zuccon, Keith McNeil, Jodie Austin, Jason Pole, Ben Sly, Amir Rahimi, Teyl Engstrom, Monica Noselli, Reji Philip, Chien Chi, Keith McNeil	Enhancing electronic Medical records to improve Patient Outcomes, integrate health Workforce and generate Efficient Research	0
Don McLeod	Peter Donovan, Matthew Balcerek , Neale R, Jordan S	The Thyro-pilot trial	0 (38 total participants)
Don McLeod	Ladenson P, Cooper D, Caturegli P, Veitor N, Whiteman D, Jordan S	Does stress cause Graves' disease?	NA
Don McLeod	Ladenson P, Cooper D, Caturegli P, Bedno S, Matos P, Whiteman D, Jordan S, Neale R, Hutfless S, Ippolito S, Sabini E.	The association between thyroid autoimmunity and thyroid cancer	NA
Kerry Richard	Don McLeod, Michael d'Emden , Melanie Young, Huika Li	The role of transthyretin in placental function and pregnancy disorders	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 RBWH Patients Recruited in 2022
Emily Brooks (PAH)	Christina Jang , Ann McCormack, Ashish Munsif, Carmela Caputo, Warrick Inder, Viral Chikani	A randomised trial of prophylactic fluid restriction In prevention of delayed hyponatraemia following pituitary surgery	5
Olivia Holland	Kerry Richard	Adaptive placental responses to gestational diabetes and role in disease severity	NA
James Cuffe (UQ)	Kerry Richard	Understanding the relationship between thyroid autoimmunity and pregnancy outcomes	NA
Sponsor: Eli Lilly	Michael d'Emden, Don McLeod, Peter Donovan, Emma Whittle, Matthew Balcerek	SURPASS-CVOT: The effect of tirzepatide vs dulaglutide on major adverse cardiovascular events in patients with type 2 diabetes	0 (48 total participants)
Sponsor: Novo Nordisk	Michael d'Emden, Don McLeod, Matthew Balcerek	PIONEER PLUS: Efficacy and safety of once daily oral semaglutide 25mg and 50mg compared with 14mg in subjects with type 2 diabetes	0 (8 total participants)
Sponsor: Novo Nordisk	Don McLeod, Michael d'Emden, Matthew Balcerek	COMBINE-1: Insulin Icodec (once weekly insulin) versus once weekly Icosema (a combination of once weekly insulin with Icosema)	4
Sponsor: Alexion	Syndia Lazarus	An observational, longitudinal, prospective, long term registry of patients with hypophosphatasia (HPP)	0

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Rachel Neale (QIMR Berghofer)	Waterhouse M, Baxter C, Duarte Romero B, Don McLeod , English DR, Armstrong BK, Ebeling P, Hartel G, Kimlin MG, O'Connell RL, Van Der Pols JC, Venn AJ, Webb PM, Whiteman DC	The D-Health Trial	NA
Helen Barrett	Jade Eccles-Smith, Susan de Jersey , Marloes Dekker Nitert, David McIntyre, Josefine Laurie	Assessing hyperglycaemia in women pregnant after bariatric surgery	2
Helen Barrett	Jade Eccles-Smith , Marloes Dekker Nitert, Alison Griffin	Outcomes of pregnancies delivering 2013-2018, after previous bariatric surgery: A data-linkage study	NA
Lauren Burrage (Cairns Base Hospital)	Syndia Lazarus, Carel Pretorius	A retrospective analysis of the prevalence of hypocalcaemia and hypophosphataemia following intravenous ferric carboxymaltose and iron polymaltose in the inpatient setting	NA
Caroline Bachmeier	Jacobus Ungerer, Carel Pretorius, Brett McWhinney , Warrick Inder, Michael D'Emden, Karin Lust, Hayden Homer, Akwasi Amoako, Christina Jang	Androgen levels in female participants with polycystic ovarian syndrome – measured by liquid chromatography tandem mass spectrometry versus immunoenzymatic assay	0
Jessica Schults, Sankalp Khanna	Claire Rickard, Clair Sullivan , Aida Brankovic, Kevin Laupland, Felicity Edwards, Patrick Harris, Kiran Shekar, Alexis Tabah Mahesh Ramanan, Karina Charles, Daner Ball	CSIRO, HeIDI collaborative grant Prediction of catheter associated blood stream infection in critically ill adults	0
Ian Scott	Leila Hanjani, Ahmad Abdel-Hafez, Stephen Canaris, Steven McPhail, Chris Morris, Margaret Shaw, Clair Sullivan , Sven Marxen	The Metro South AI Care Program: Leveraging Machine Learning to Reduce Medication Harm	0

Research Activity With a Specific Focus on First Nations People

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Clair Sullivan	Jason Ferris, Natasha Reid, Sailesh Kumar, Dom Gorse, Steven McPhail, Michael Lawley, Paul Schwenn, James Ward, Guido Zuccon, Lyle Turner, Carmel Nelson, Kristie Watego, Jayne Barclay	DIFFERENCE	0

Research Publications

Authors

Investigator	ORCID ID
Andrea Cawte	
Angela Jin	
Amanda Love	
Caroline Bachmeier	https://orcid.org/0000-0003-0510-7264
Christina Jang	
Clair Sullivan	https://orcid.org/0000-0003-2475-9989
Don McLeod	https://orcid.org/0000-0003-1131-020X
Jade Eccles-Smith	https://orcid.org/0000-0002-2970-2677
Margaret Whillier	
Kerry Richard	http://orcid.org/0000-0002-4241-5250
Matthew Balcerek	https://orcid.org/0000-0001-8451-2385
Matthew Seymour	https://orcid.org/0000-0003-4293-0997
Michael d'Emden	
Penny Wolski	https://Orcid.org/0000-0002-9127-2049
Syndia Lazarus	https://orcid.org/0000-0002-5221-7303
Wenyong Wang	

Publications in 2022

Journal Articles (RBWH staff in bold)

Pham H, Waterhouse M, Rahman S, Baxter C, Duarte Romero B, **Don McLeod**, Armstrong BK, Ebeling PR, English DR, Hartel G, O'Connell R, van der Pols JC, Venn AJ, Webb PM, Whiteman DC, Almeida O, Neale RE. Vitamin D supplementation and cognition – Results from analyses of the D-Health Trial. *Journal of the American Geriatrics Society*. 2022. Accepted manuscript for publication on December 27.

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Rahman ST, Waterhouse M, Baxter C, Duarte Romero B, English DR, Almeida OP, Berk M, Ebeling PR, Armstrong BK, Kimlin MG, **Don McLeod**, Hartel G, O'Connell R, Pham H, Scott JG, van der Pols JC, Venn AJ, Webb PM, Whiteman DC, Neale RE. Effect of vitamin D supplementation on depression in older Australian adults. *International Journal of Geriatric Psychiatry*. 2022; 38: e5847 (PMID 36462182)

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Matthew Balcerek, **Siok Tey**, **Don McLeod**. Adoptive Cell Therapy Using Genetically Engineered T Cells to Target CEA, Calcitonin and RET M918T in Medullary Thyroid Cancer Cells. *Clinical Thyroidology*. 2022. 34: 412–16

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Woods L, Eden R, Duncan R, Kodiyattu Z, Macklin S, **Clair Sullivan**. Which one? A suggested approach for evaluating digital health maturity models. *Frontiers in Digital Health*. 2022; 4 : 1045685 (PMID 36506845)

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Canfell, O. J., Davidson, K., Woods, L., **Clair Sullivan**., Cocoros, N. M., Klompas, M., Zambarano, B., Eakin, E., Littlewood, R., & Burton-Jones, A. (2022). Precision Public Health for Non-communicable Diseases: An Emerging Strategic Roadmap and Multinational Use Cases. *Frontiers in public health*. 2022; 10: 854525 (PMID 35462850)

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Keynote or Plenary Lectures given in 2022

Date	Title
Nov 18, 2022	Don McLeod . Pre-existing Thyroid Autoimmunity and Risk of Papillary Thyroid Cancer: A Nested Case-Control Study of US Active-Duty Personnel. Featured Speaker: International Virtual Thyroid Journal Club. THANC Foundation (USA)

Nov 2022	Clair Sullivan. Gold Coast University Hospital Research Showcase Keynote
Oct 12, 2022	Christina Jang. The Bare Bones of Menopause. RANZCOG ASM. Gold Coast
Sept 1-3, 2022	Christina Jang. Australasian Menopause Society Annual Congress, Local Organising Committee Chair, Member Scientific Organising Committee, Session Chair
Aug 2022	Clair Sullivan. Australasian Diabetes Congress, Keynote speaker
Aug 28, 2022	Don McLeod. Panellist: Thyroid cancer case discussions – patient selection, complications & response assessment. AANMS Theranostics Course, Brisbane
Aug 28, 2022	Don McLeod. Thyroid Cancer – clinical overview & treatment landscape. AANMS Theranostics Course, Brisbane
Jun 2022	Clair Sullivan. AIDH Digital Health Summit Keynote
May 3, 2022	Don McLeod. The expanding landscape of targeted thyroid cancer treatments. RACS Annual Scientific Congress, Brisbane
May 1, 2022	Syndia Lazarus. Chair: Updates in Osteoporosis. ESA Seminar, Launceston
Apr 29, 2022	Don McLeod. Troublesome forms of thyroiditis. ESA Seminar, Launceston

Gastroenterology & Hepatology

Research highlights for the year (1 January – 31 December 2022)

Hepatology

The Hepatology Unit runs a large clinical trial programme giving patients access to new therapies for Hepatitis B, autoimmune liver diseases and non-alcoholic steatohepatitis. It is part of a national network to collect data on the rapidly rising incidence of hepatocellular carcinoma and continues to build a serum bank of patients with chronic liver disease to provide samples for collaborative projects investigating non-invasive markers of disease progression. In 2022 the specialist dietitian clinics to address the sarcopenia and malnutrition which complicate advanced liver disease continued and a data documenting the results of this change in practice continued to accrue. A collaboration with Dr Patricia Valery from QIMR Berghofer, Prof Elizabeth Powell from Princess Alexandra Hospital and Prof James O’Beirne from Sunshine Coast University Hospital has begun to measure the needs of patients with metabolic associated liver disease which is becoming the most common liver disease in the community.

Endoscopy

The Endoscopy Research Group has a large group of interventional endoscopists with varying research interests. Most interventional research for 2022 was Investigator-led and involved studies that included; benchmarking the post-gastroscopy and post-colonoscopy 3-year cancer rate at RBWH, evaluation of the upper gastrointestinal bleeding pathway, endoscopic correlation of positive GI PET findings, an RCT on the use of bowel prep in capsule endoscopy, multi-collaboration with ETC to evaluate the impact of acute management plans of patients presenting with repeated ingestion of foreign bodies, ongoing prospective work exploring the quality of life in patients with neoplastic Barrett’s oesophagus, screening for pancreatic cancer in high-risk individuals, ongoing recruitment for a novel endoscopic procedure in post-bariatric surgery patients to reduce reflux, and assessing the degree of hypothermia during prolonged endoscopy. We have been the lead site for a national registry for a novel endoscopic technique, measuring the portal venous pressure at endoscopic ultrasound. We participated in several multi-centre collaborations, investigating the utility of cold snare polypectomy in medium-sized polyps, and investigating clinical outcomes of endoscopically treated oesophageal cancer. We have been setting up studies evaluating the role of coeliac plexus neurolysis in pancreatic cancer patients, and of capsule endoscopy in patients with Peutz-Jeghers-Syndrome. Additionally, 2022 focussed on the setting up of the Familial Cancer Clinic database.

IBD

The Gastroenterology unit at RBWH together with the faculty of medicine, University of Queensland, were successful in identifying and recruiting a new lead for the Inflammatory Bowel Disease service – Dr Gareth Walker. Dr Walker completed his training including a PhD in the pharmacogenetics of NUDT15 at the Royal Devon and Exeter hospital in the UK and following this was appointed lead for IBD at Torbay hospital. He will also fill the new role of lead for departmental research.

Throughout 2022, the IBD Research team which includes a highly experienced team of medical and nursing staff, continued to participate in many pharmaceutical trials (Phase II–IV), academic, investigator initiated and Australian IBD Consortium collaborative research projects of new and emerging treatments for medically refractory Crohn’s disease (CD) and ulcerative colitis (UC). We currently lead recruitment nationally in a pivotal phase III trial of a p19 inhibitor for Crohn’s disease.

The Gut Health Research group (QIMR Berghofer MRI) spent 2022 further establishing the NUDT15 genetics screening service and providing education on the significance of the gene in specific ethnicities. In addition to this, the team published Australia’s first investigation of NUDT15 variants in an autoinflammatory disorder (IBD). Severe ulcerative colitis was the subject of two major publications, one clinical (which was covered by the Limbic online resource - <https://thelimbic.com/gastroenterology/>) and the other focussing on the genetic heterogeneity of this disorder. These illustrated some key strengths including the size of our research population and the collaborative nature of our work. Our colonoscopy biomarker study reached a major milestone completing recruitment at two sites, the Prince Charles hospital and the QE2 hospital.

Successful PhD candidates in 2022

Name	PhD Title	Month Completed	Affiliated University	Summary
Dr Abigail Marsh	The effects of an anti-inflammatory diet on disease activity, symptom severity and microbiota profile in patients with inflammatory bowel disease.	December 2022	UQ	The aim of this thesis was to investigate the effect of dietary patterns on disease activity in adults with inflammatory bowel disease (IBD). The thesis includes three key studies; a literature review, cross-sectional study and RCT designed to investigate the effects of following an anti-inflammatory diet on disease activity, symptoms, quality of life and gut microbiota composition in individuals with IBD. Overall, thesis findings support the implementation of an anti-inflammatory diet, low in food additives, in individuals with IBD. However, research on diet and IBD is still in its infancy and larger studies are needed to confirm pilot study findings.
Dr Caitlin Hall	Understanding the relationship between the gut microbiome and the brain.	June 2022	UQ	Emerging evidence suggests that the diversity, composition, and function of the gut microbiome plays a key role in altering brain activity and related behaviour. Preclinical studies in mice have suggested a causal link between the absence of, or a perturbation to, the microbiome, with threat and anxiety-like behaviours. However, due to the large variability between the mouse and human microbiome, preclinical observations have not always replicated in humans. The primary aim of this thesis was to examine the relationship between the structure, composition, and function of the human gut microbiota, and brain network dynamics linked to cognitive-interoception appraisal mechanisms. To achieve this, Dr Hall integrated multimodal datasets including microbiome sequencing, task and resting-state neuroimaging, and behavioural and cognitive assessments.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Barbara Leggett	2022 Member (AM) of the Order of Australia (General Division) for significant service to gastroenterology and hepatology, and to medical research	2022 Australia Day Honours
Dr Abigail Marsh	2022 Young Investigator Award winner	2022 Gastroenterology Society of Queensland Annual meeting
Benedict Devereaux	President and Chair of Board of GESA (2021-2023) - National peak body for Gastroenterology & Hepatology	

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Graham Radford-Smith	Gastroenterology (with ANZ IBD Consortium)	Does infliximab dosing to target with therapeutic drug monitoring yield higher rates of healing than standard infliximab dosing in patients with perianal fistulising Crohn's disease? A prospective, randomised, controlled, multi-centre study	MRFF	\$900,000	2022-2025

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Graham Radford-Smith	IBD Research Group	Implementation of the novel management software, CrohnsColitisCare, for patients recruited to clinical trials and those requiring biologic therapy	Janssen Educational grant	\$34,636	2020-2023
Graham Radford-Smith	Gut Health and IBD Research Groups	Provision of a pharmacogenetics testing service using PCR and Sequencing technologies for Queensland patients receiving thiopurine drug therapy.	Queensland Technology Future Fund	\$425,000	2020-2023
Kimberley Ryan	Gastroenterology & Hepatology	The phenomenon of living with pancreatic cancer	RBWH Post-Graduate Scholarship	\$39,000	2022-2023
Benedict Devereaux	Gastroenterology & Hepatology	Screening for pancreatic cancer in high-risk individuals	Pancare Foundation	\$100,000	2020-2025
Mark Appleyard	Gastroenterology & Hepatology	Evaluation of artificial intelligence (AI) on polyp detection rates in colonoscopy	Olympus	\$10,000	2022-2023

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 RBWH Patients Recruited in 2022
Graham Radford-Smith	Mark Appleyard	Optimising the use of colonoscopy in Queensland: the application of clinical and faecal biomarkers to the management of both the symptomatic and screening patient populations	47

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 RBWH Patients Recruited in 2022
Anthony Croft	Joshua Satchwell, Richard Howard	A Phase 3, Multicenter, Randomized, Double-Blind, Placebo- and Active-Controlled, Treat-Through Study to Evaluate the Efficacy and Safety of Mirikizumab in Patients with Moderately to Severely Active Crohn's Disease	6
Anthony Croft	Andrew Lee, Yoon Kyo-Anh	A multicentre prospective cohort study to evaluate intestinal ultrasound as a predictor of treatment response in Acute Severe Ulcerative Colitis (USUC)	Nil
Anthony Croft	Emi Khoo	Study of Tofacitinib for the Treatment of Chronic Pouchitis	Nil
Graham Radford-Smith	Anthony Croft	PREDICT-UC: Optimising Infliximab Induction therapy for Acute Severe Ulcerative Colitis – A Randomised Controlled Trial	Nil (1 active – recruitment closed)

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Graham Radford-Smith	Anthony Croft, Richard Howard	An Open-Label Extension And Safety Monitoring Study Of Moderate To Severe Ulcerative Colitis Patients Previously Enrolled In Etrolizumab Phase III Studies	Nil (2 active – recruitment closed)
Graham Radford-Smith	Anthony Croft, Richard Howard	An open-label extension and safety monitoring study of patients with moderately to severely active crohn's disease previously enrolled in the Etrolizumab phase III protocol GA29144	Nil (5 active – recruitment closed)
Graham Radford-Smith	Soong Ooi, Anthony Croft	A Long-Term Non-Interventional Registry to Assess Safety and Effectiveness of HUMIRA® (Adalimumab) in Patients with Moderately to Severely Active Ulcerative Colitis (UC)	Nil (3 active – recruitment closed)
Graham Radford-Smith	MPhil UQ/TRI/QIMRB Yoon Kyo-An, Jake Begun	AURORA (Australian Ustekinumab Real-World Observational Research)	2 (17 active – recruitment closed)
Abigail Marsh	PhD UQ/QIMRB 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.	Nil (recruitment closed)
Graham Radford-Smith	Sadia Afrin, Rina Kumar	NUDT15 screening in IBD and other autoinflammatory disorders	50
Rina Kumar	PhD UQ/QIMRB Graham Radford-Smith Severine Navarro Anton Lord Martha Zakrzewski	Analysis of the mucosa-associated gut microbiome in metabolic syndrome	Nil (recruitment closed)
Richard Skoien	Vidhya Chandran, Andrew Clouston, Andrew Stacey	The incidence of diffuse sub-sinusoidal fibrosis (DSSF) in liver biopsies at RBWH	34
Vishal Kaushik	Emma Osland (Nutrition & Dietetics), Niwansa Adris	A prospective, multi-centre registry for patients with short bowel syndrome	2 (2 total recruited)
Judy Munday	Jed Duff, Kimberley Ryan, Sarah Johns, Jacque Haslemore, Florian Grimpen, Sameera Senananyake (AusHSI /QUT)	Temperature decline during procedural sedation: an observational study	110
Jason Huang	Bronte Holt, Jacinta Holmes, Alex Thompson, Sarah Romero, Nam Nguyen, Krish Raganath, Frank Weilert	National endoscopic ultrasound portal pressure gradient registry	5
Jason Huang	Barbara Leggett, Richard Skoien, Neha Tiwari	PORTAL: Endoscopic ultrasound-guided portosystemic pressure gradient measurements	3

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Florian Grimpen	Matthew Remedios, Kimberley Ryan, Mark Appleyard, Joshua Satchwell	Barrett's Oesophagus and its progression to oesophageal adenocarcinoma –endoscopic therapies on clinical outcomes & quality of life (Prospective observational)	146
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	5
Paris Hoey	Kaushali Britto, Kimberley Ryan, Florian Grimpen, Clancy McDonald (ETC), Nathan Brown (ETC), Trent Lipp (ETC), Kym Boon (Liaison Psychiatry), Mark Appleyard	Service evaluation of a pragmatic interdisciplinary model of care for the management of repeated intentional foreign body ingestion (RIFBI) in patients with borderline personality disorder (BPD)	9
Benedict Devereaux	Mehul Lamba, Florian Grimpen, Mark Appleyard, Alina Stoita, (St Vincents, Sydney)	Screening for pancreatic cancer in high-risk individuals (National multicentre study)	10
Benedict Devereaux	Rajit Gilhotra, Florian Grimpen, Mark Appleyard, Bronte Holt (St Vincent's – Melbourne)	Multicentre prospective evaluation of the "Hot Spaxus" lumen apposing stent for EUS-guided drainage of pancreatic walled off necrosis	3
Florian Grimpen	Kimberley Ryan, Enoka Gonsalkorala (RBWH/CBH), Mark Appleyard, Anthony FT Brown (ETC), Catriona Slater (CBH, ED), Andrew Teo (CBH, Surgery)	How does the implementation of an upper gastrointestinal bleeding pathway impact on patient clinical outcomes and hospital processes: A multicentre study	
Emma Osland (Nutrition & Dietetics)	Kelsey Pateman, Swate Bhatt, Melanie Nelms, Vishal Kaushik	Oral health and behaviours of adults with chronic intestinal failure requiring Home Parenteral Nutrition	11
Benedict Devereaux	Mark Appleyard, Florian Grimpen, Rajit Gilhotra	Global prospective Case Series using a Single-Use Duodenoscope	25
Barbara Leggett	Richard Skoien, Lucinda Vaux	Phase 3 Multicenter, Randomized, Double-Blind, Study to Assess the Efficacy and Safety of Treatment with Bepirovirsen in HBeAg negative Nucleos(t)ide Analogue-treated Participants with Chronic Hepatitis B Virus (B-Well 2)	1 (1 in screening)
Barbara Leggett	Richard Skoien, Lucinda Vaux	An open label Long-term study to evaluate the safety and tolerability of seladelpar in subjects with PBC (ASSURE)	Nil (3 active)
Barbara Leggett	Richard Skoien	A Placebo-controlled, Randomized, Phase 3 Study to Evaluate the Efficacy and Safety of Seladelpar in Patients with Primary Biliary Cholangitis (PBC) and an Inadequate Response to or an Intolerance to Ursodeoxycholic Acid (UDCA) (RESPONSE)	Nil (1 recruitment closed)

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Richard Skoien	Barbara Leggett, Lucinda Vaux	A randomised, double-blind, placebo-controlled, multicentre, Phase 3 study evaluating long-term efficacy and safety of lanifibranor in adult patients with non-cirrhotic non-alcoholic steatohepatitis (NASH) and fibrosis 2 (F2)/fibrosis 3 (F3) stage of liver fibrosis. Randomized 1:1:1 (NATIV3)	Nil
Richard Skoien	Barbara Leggett, Lucinda Vaux	A Phase 3, Multinational, Double-Blind, Randomized, Placebo-Controlled Study of MGL-3196 (resmetirom) in Patients With Non-Alcoholic Steatohepatitis (NASH) and Fibrosis to Resolve NASH and Reduce Progression to Cirrhosis and/or Hepatic Decompensation. Randomized 1:1:1 (MADRIGAL)	Nil (4 active)
Richard Skoien	Barbara Leggett	A Phase 3, Double-Blind, Randomized, Long-Term, Placebo-Controlled, Multicenter Study Evaluating the Safety and Efficacy of Obeticholic Acid (CVC) in Subjects with Nonalcoholic Steatohepatitis. (REGENERATE)	Nil (6 active recruitment closed)
Marnie Wood	Barbara Leggett, Richard Skoien, Enoka Gonsalkorala, Lucinda Vaux	Socrates HCC study, A Randomised controlled trial of Standard Of Care versus RadioAblation in Early-Stage HepatoCellular Carcinoma	Nil (awaiting site start up)

Research Activity With a Specific Focus on First Nations People

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Alexandra Fullerton	Richard Skoien, Helen Tanner	The incidence of pregnancy-related liver disease in Aboriginal and Torres Strait Islander Patients	1302

Research Publications

Authors

Investigator	ORCID ID
Barbara Leggett	https://orcid.org/0000-0003-2062-7380
Gareth Walker	https://orcid.org/0000-0002-3883-8816
Graham Radford-Smith	https://orcid.org/0000-00002-2047-6239
Richard Skoien	https://orcid.org/0000-0002-3411-9267
Mark Appleyard	https://orcid.org/0000-0003-2714-8657
Florian Grimpen	https://orcid.org/0000-0002-0375-8381
Kimberley Ryan	https://orcid.org/0000-0002-8188-9977
Benedict Devereaux	https://orcid.org/0000-0003-1795-5690

Rajit Gilhotra	https://orcid.org/0000-0001-8055-6524
Anthony Croft	https://orcid.org/0000000202115376

Publications in 2022

Journal Articles (RBWH staff in bold)

Fennell L, Kane A, Liu C, McKeone D, Hartel G, Bond C, Bettington M, **Leggett B**, Whitehall V. *Braf* mutation induces rapid neoplastic transformation in the aged and aberrantly methylated intestinal epithelium. *Gut* 2022; 71:1127-1140

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Fennell LJ, Hartel G, McKeone DM, Bond CE, Kane A, **Leggett BA**, Patch A-M, Whitehall VLJ. Comparative analysis of the Illumina Mouse Methylation BeadChip and Reduced Representation Bisulphite Sequencing for DNA methylation analysis of murine samples. *Cell Reports Methods* 2022; 2:100323

Clark PJ, Valery P, Ward J, Strasser S, Weltman M, Thompson A, Levy M, **Leggett B**, Zekry A, Rong J, Angus P, George J, Bollipo S, McGarity B, Sievert W, Macquillan G, Tse E, Nicoll A, Wade A, Chu G, Harding D, Cheng W, Farrell G, Roberts S. Hepatitis C outcomes for Australian First Nations Peoples: equivalent SVR rate but higher rates of loss to follow-up. *BMC Gastroenterology* 2022; 22:339

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Lamba M, Ryan K, Hwang J, Grimpfen F, Lim G, Cornelius D, Moss A, Lim G, Brown G, Nguyen N, Tippett M, Taylor A, & Appleyard M. Clinical utility of purgative bowel preparation prior to capsule endoscopy: A multicenter, blinded, randomized controlled trial. *Gastrointestinal Endoscopy*, 2022, 96 (5): 822-828.e1

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Pu L, Cox D, Be K, Ng J, Yeaman F, **Gilhotra R**,...Chandran S. Endoscopy training in Australia during COVID-19 Efficacy and knowledge assessment of gastroenterology and general surgery trainees. *JGH Open*, 2022, (12):869-875

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Thompson BS, Philcox S, **Devereaux B**, Metz AJ, Croagh D, Gray A, Hamarneh Z, Windsor JA, Neale RE. Prodromal signs and symptoms of chronic pancreatitis: A Systematic Review. *J Clin Gastroenterol*. 2022, 56 (1): e1- e10.

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Adris A, Watt A, Osland A, **Kaushik V.** An unusual cause of headaches during home parenteral nutrition infusions: A case report and management strategy. *JGH*. 2022, 37: S1:0815-9319

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Turpin W, Dong M, Sasson G, Raygoza Garay JA, Espin-Garcia O, Lee SH, Neustaeter A, Smith MI, Leibovitz H, Guttman DS, Goethel A, Griffiths AM, Huynh HQ, Dieleman LA, Panaccione R, Steinhart AH, Silverberg MS, Aumais G, Jacobson K, Mack D, Murthy SK, Marshall JK, Bernstein CN, Abreu MT, Moayyedi P, Paterson AD; Crohn's and Colitis Canada (CCC) Genetic, Environmental, Microbial (GEM) Project Research Consortium (**Radford-Smith GL**); Xu W, Croitoru K. Mediterranean-Like Dietary Pattern Associations With Gut Microbiome Composition and Subclinical Gastrointestinal Inflammation. *Gastroenterology*. 2022, 163(3):685-698.

Fernandes RG, **Radford-Smith G**. Editorial: is older-onset ulcerative colitis more severe or less aggressively managed? *Aliment Pharmacol Ther*. 2022 May;55(10):1350-1351

Clark DA, Edmundson A, Steffens D, **Radford-Smith G**, Solomon M. Multicenter Study of Drain Fluid Amylase as a Biomarker for the Detection of Anastomotic Leakage After Ileal Pouch Surgery Without a Diverting Ileostomy. *Dis Colon Rectum*. 2022 Nov 1;65(11):1335-1341.

Afrin S, Simms LA, Lord A, **Radford-Smith GL**. Nudix hydrolase 15 (NUDT15) loss-of-function variants in an Australian inflammatory bowel disease population. *Intern Med J*. 2022 Nov;52(11):1971-1977.

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Peyrin-Biroulet L, Hart A, Bossuyt P, Long M, Allez M, Juillerat P, Armuzzi A, Loftus EV Jr, Ostad-Saffari E, Scalori A, Oh YS, Tole S, Chai A, Pulley J, Lacey S, Sandborn WJ; HICKORY Study Group (**Radford-Smith G**). Etrolizumab as induction and maintenance therapy for ulcerative colitis in patients previously treated with tumour necrosis factor inhibitors (HICKORY): a phase 3, randomised, controlled trial. *Lancet Gastroenterol Hepatol*. 2022 Feb;7(2):128-140.

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Maharaj AD, Lubel J, Lam E, Clark PJ, Duncan O, George J, Jeffrey GP, Lipton L, Liu H, McCaughan G, Neo EL, Philip J, Strasser S, Stuart K, Thompson A, Tibballs, Tu T, Wallace MC, Wigg A, **Wood M**, Zekry A, Greenhill, Ionnou LJ, Ahlenstil G, Bowers K, Clarke SJ, Dev A, Fink M, Goodwin M, Karapetis CS, Levy MT, Muller K, O'Beirne J, Pryor D, Seow J, Shackel N, Tallis C, Butler N, Olynyk JK, Reed-Cox K, Zalberg JR & Roberts SK. Monitoring quality of care in hepatocellular carcinoma: A modified Delphi consensus. *Hepatol Commun*. 2022 Nov, 6 (11): 3260-3271

Frankel A, **Kellar T**, Zahir F, Chambers D, Hopkins P & Gotley D. Laparoscopic fundoplication after lung transplantation does not appear to alter lung function trajectory. *J Heart Lung Transplant*. 2022 Dec, S1053-2498(22)02240-9. doi: 10.1016/j.healun.2022.12.001. Online ahead of print

Keynote or Plenary Lectures given in 2022

Date	Title
Appleyard, M	Management of CBD stones after bariatric surgery. Annual College of Surgeons meeting
Goetz, N September	PGUGC-3Y rate at a tertiary referral hospital in Australia: A data linkage analysis
Devereaux, B November	"Endoscopy in Australia" from the beginning to the end of the Earth. NZ Society of Gastroenterology Scientific Meeting (Trans-Tasman lecture), Auckland
Devereaux, B May	Cholangiopancreatography in 2022. Digestive Disease Week, San Diego - USA
Devereaux, B August	Cholangiopancreatography in 2022. Thai Association for Gastrointestinal Endoscopy, Pattaya-Thailand
Devereaux, B March	Endoscopic Hygiene Experts Forum 2022. The Netherlands

Infectious Diseases Unit

Research highlights for the year (1 January – 31 December 2022)

A/Professor Bridget Barber has been leading a team at QIMR Berghofer conducting malaria volunteer infection studies. These studies are used to evaluate new antimalarials, to improve understanding of existing antimalarials to optimise their use, and to better understand early host responses to disease. In 2022, A/Prof Barber and her team completed a study evaluating a new antimalarial ZY-19489 (Barber et al, Lancet Infect Dis 2022; 22:879). The study demonstrated that ZY-19489 was safe and highly effective, and will inform the design of subsequent Phase 2 clinical trials of this important new antimalarial. A/Prof Barber and her team also completed a study evaluating the ability of the newly registered antimalarial drug tafenoquine to block the transmission of malaria from humans to mosquitoes (Webster... Barber. Clin Infect Dis; ciac503). This study demonstrated that even a very low dose of tafenoquine (50mg, low enough to be likely safe in G6PD-deficient individuals) substantially reduced transmission. These data will inform future use of tafenoquine for malaria elimination in endemic regions. In recognition of her work, in 2022 A/Prof Barber was awarded a prestigious NHMRC Emerging Leadership Level 2 Investigator Grant.

Dr Paul Chapman has pioneered a new technique of vaccination with irradiated hookworms in a PhD program that he has carried out in parallel with his stellar work in infectious diseases. He has advanced the field by carrying out a phase 1 trial and published a methods paper, disseminating the knowledge from this work.

Professor David Paterson has continued his world-leading work. He remains on Clarivate's Highly Cited Researcher list, mentors researchers in the field, co-ordinates national and international networks and continues to publish extraordinary numbers of papers in the field.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Bridget Barber	NHMRC Emerging Leadership 2 Investigator Grant	N/A

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Janet Davies, Peter Bourke, David Gillis, Andrew Redmond , Denise Doolan, Tony Kenna, Kirsty Short, Michael Lane et al	Infectious Diseases, Immunology	QoVAX SET	Qld Health Prevention Division	\$6735000	3 years
Jonathon Carapetis, Asha Bowen, Paul Memmott, Nina Lansbury, Anna Ralph, Mark Davies, Andrew Redmond et al	Infectious Diseases	STARFISH	NHMRC	\$5000000	5 years

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Kate McCarthy , Hamed Hassanzadeh, Trish Hurst, Magid Fahim, Hugo Leroux, Teresa Woziniak, Justin Boyle	Infectious Diseases	Infection control real time data analysis and simulation platform	HEIDI/CSIRO	\$200000	1 year
Benjamin Rogers, Page Kate McCarthy , Norsworthy, Brenker	Infectious Diseases	Cooled Antimicrobial Delivery System	MIME SEED Grant	\$50000	1 year
Jason Roberts , Anthony Nguyen, Menino Cotta Kate McCarthy , Robert Horvath, Amy Legg , Derek Island	Infectious Diseases	Development and clinical integration of a novel precision dosing software application to improve dosing in critically ill patients	HEIDI/CSIRO	\$171381	1 year
Bridget Barber , Sean Lynch, Hayley Mitchell, Dennis Shanks, Michael Edstein, Geoff Birrell	Infectious Diseases	Evaluating the malaria transmission blocking activity of a tafenoquine-methylene blue pro-drug	QIMR Berghofer	\$50,000	1 year
Michelle Boyle, Bridget Barber	Infectious Diseases	Host-targeted therapies to boost malaria immunity	NHMRC	\$2,100,000	2 years
Melissa Kapulu, Philip Bejon, Kevin Marsh, Faith Osier, Francis Ndungu, Bridget Barber , James McCarthy	Infectious Diseases	Experimentally induced blood-stage malaria in Kenyan adults: understanding disease mechanisms and protection in the context of background immunity	UK Medical Research Council	\$3,840,234	4 years
Giri Rajahram, Timothy William, Jiloris Dony, Jenarun Jelip, Yvonne Lim, Matthew Grigg, Nicholas Anstey, Bridget Barber , Sarah Auburn, Freya Sheara	Infectious Diseases	Emerging zoonotic malaria in Malaysia: strengthening surveillance and evaluating population genetic structure to improve regional risk prediction tools	NIH	\$860,789	5
Matthew Grigg, Rintis Noviyanti, Inke Lubis, Farah Courtier, Nicholas Anstey, Bridget Barber , Freya Sheara, Jennifer Flegg, Tanya Russell, Tom Burkott, Angela Devine	Infectious Diseases	Evaluating zoonotic malaria transmission and agricultural land use in Indonesia	Australian Centre for International Agricultural Research (DFAT)	\$2,830,470	3

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 RBWH Patients Recruited in 2022
Krispin Hajkowicz	Bianca Graves , Patrick Harris, Sarah Bonanzinga and Kathy Jackson	Hepatitis Delta Virus Infection - Epidemiology and Testing in Oceania	N/A
Hugh Wright		GAME CHANGER	
Anna Peri		DURATION	
Adam Stewart	David Paterson	BALANCE	
David Paterson	Krispin Hajkowicz, Paul Chapman	F2G-FORMULA-OLS	
Krispin Hajkowicz		OASIS	
		E. coli vaccine to prevent invasive E. coli infections	
Bridget Barber	Tej Shukla, Holly Sinclair, Anna Watson	SNAP	22
Anna Hume		AMEND	
David Paterson	Andrea Henden, Anna Peri	Neutropenia	
Sumudu Britton	Louise Marquart, Lachlan Webb, James McCarthy, Gonzalo Domingo	Dynamics of lactate dehydrogenase biomarker in plasmodium vivax and plasmodium falciparum infections	NA
Sumudu Britton	Evangeline Whittle, Petrina Duncan	Sexually transmitted infections in Antenatal care	NA
Sumudu Britton	Harsha Gowda, Louise Marquart, James McCarthy	Pilot study using proteomics to identify new biomarkers to improve the diagnosis of Plasmodium vivax infection	NA
Sumudu Britton	Jill Parkes-Smith, Noor Al Adhami, Stephanie Hoy	Use of antimicrobial agents in maternity services	NA
Bridget Barber		A phase 1b study to pharmacokinetic/pharmacodynamics relationship of pyronaridine in healthy adult participants experimentally infected with <i>Plasmodium falciparum</i>	NA
Bridget Barber	Michelle Boyle, Chis Engwerda	A randomised, double blind, placebo controlled trial to evaluate the safety, tolerability and anti-parasite immunity boosting activity of ruxolitinib when co-administered with artemether-lumefantrine in healthy volunteers with <i>Plasmodium falciparum</i> induced blood stage malaria	NA
Bridget Barber	Jeremy Gower	An experimental human blood stage model for studying Plasmodium knowlesi infection	NA
Bridget Barber	Arya Sheela-Nair	Evaluating the role of osteoprotegerin in malaria	NA
Bridget Barber	Stephen Woolley	Evaluating biomarkers of iron metabolism in malaria	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 RBWH Patients Recruited in 2022
Krispin Hajkowicz	David Paterson, Adam Freeman, Paul Chapman, Simon Holz	Evaluate F901318 Treatment of Invasive Fungal Infections in Patients Lacking Treatment Options (FORMULA-OLS)	ongoing
Clare Nourse	Sumudu Britton , Di Rowling, Mandy Seel, Mandy Wu, Judith Dean, Huda Safa	Evaluation of management of syphilis in pregnancy and newborn in SEQ	NA
Judith Dean	Sumudu Britton , Di Rowling, Mandy Seel, Mandy Wu, Clare Nourse	Barriers to optimal management of syphilis in pregnancy	NA
Pengxing Cao	Sumudu Britton , Nicholas Anstey, Steven Kho, James McCarthy, James McCaw, Julie Simpson	Modelling the biomarker dynamics of lactate dehydrogenase to estimate plasmodium vivax biomass	NA
Steven Kho	Sumudu Britton , Nicholas Anstey, Matthew Grigg, James McCarthy,	Diagnostic performance of lactate dehydrogenase	NA
Louise Marquart	Sumudu Britton , James McCarthy, Gonzalo Domingo, Lachlan Webb	Dynamics of HRP2 in Plasmodium falciparum	NA

Research Activity With a Specific Focus on First Nations People

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Jonathon Carapetis	Asha Bowen, Paul Memmott, Nina Lansbury, Anna Ralph, Mark Davies, Andrew Redmond et al	STARFISH (ST opping A cute Rheumatic F ever Infections to ST rengthen H ealth)	Nil

Research Publications

Authors

Investigator	ORCID ID
Krispin Hajkowicz	https://orcid.org/0000-0001-6990-0486
Andrew Redmond	https://orcid.org/0000-0002-1125-5362
Bridget Barber	https://orcid.org/0000-0003-1066-7960
Sumudu Britton	https://orcid.org/0000-0001-6465-3754
Paul Chapman	
Alex Stewart	https://orcid.org/0000-0002-3266-3250
Kate McCarthy	https://orcid.org/0000-0001-6173-9659
Fiona Parsonson	https://orcid.org/0000-0003-2229-142X

Hugh Wright	
David Paterson	https://orcid.org/0000-0003-2079-4437
Anna Watson	https://orcid.org/0000-0003-0138-5224
Anna Peri	https://orcid.org/0000-0002-7704-4728

Publications in 2022

Journal Articles (RBWH staff in bold)

Christensen J, O'Callaghan K, Sinclair H, Hawke K, Love A, Hajkowicz K, Stewart AG. Risk factors, treatment and outcomes of subacute thyroiditis secondary to COVID-19: a systematic review. *Internal Medicine Journal*. 2022 Apr;52(4):522-9.

Forde BM, Bergh H, Cuddihy T, **Hajkowicz K, Hurst T**, Playford EG, Henderson BC, Runnegar N, Clark J, Jennison AV, Moss S, **Hume A**, Leroux H, Beatson SA, **Paterson DL**, Harris PN. Clinical implementation of routine whole-genome sequencing for hospital infection control of multi-drug resistant pathogens. *Clin Infect Dis*. 2022 Sep;ciac726. doi:10.1093/cid/ciac726. PMID: 36056896.

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Lansbury N, **Redmond AM**, Nona F. Community-Led Health Initiatives for Torres Straits Island Communities in a Changing Climate: Implementing Core Values for Mitigation and Adaptation. *International Journal of Environmental Research and Public Health*. 2022; 19(24):16574. <https://doi.org/10.3390/ijerph192416574>

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, Yanovskaya A, Ami RB, Landes M, Neshet L, Zaidman-Shimshovitz A, **McCarthy K, Paterson DL**, Tacconelli E, Buhl M, Mauer S, Rodríguez-Baño J, de Cueto M, Oliver A, de Gopegui ER, Cano A, Machuca I, Gozalo-Marguello M, Martínez-Martínez L, González-Barbera EM, Alfaro IG, Salavert M, Beovic B, Saje A, Mueller-Premru M, Pagani L, Vitrat V, Kofteridis D, Zacharioudaki M, Maraki S, Weissman Y, Paul M, Dickstein Y, Leibovici L, Yahav D. Duration of Treatment for *Pseudomonas aeruginosa* Bacteremia: a Retrospective Study.

Infect Dis Ther. 2022 Aug;11(4):1505-1519. doi: 10.1007/s40121-022-00657-1. Epub 2022 May 25. PMID: 35612693

Madden DE, **McCarthy KL**, Bell SC, Olagoke O, Baird T, Neill J, Ramsay KA, Kidd TJ, Stewart AG, Subedi S, Choong K, Fraser TA, Sarovich DS, Price EP. Rapid fluoroquinolone resistance detection in *Pseudomonas aeruginosa* using mismatch amplification mutation assay-based real-time PCR. *J Med Microbiol*. 2022 Oct;71(10). doi: 10.1099/jmm.0.001593. PMID: 36301593

McCarthy KL, James DP, Kumar N, Hartel G, Langley M, McAuley D, Bunting J, Rushbrook E, **Bennett C**. Infection control behaviours, intra-household transmission and quarantine duration: a retrospective cohort analysis of COVID-19 cases. *Aust N Z J Public Health*. 2022 Aug 18;10.1111/1753-6405.13282. doi: 10.1111/1753-6405.13282. Online ahead of print.

Madden DE, Baird T, Bell SC, **McCarthy KL**, Price EP, Sarovich DS. Keeping up with the pathogens: Improved antimicrobial resistance detection and prediction and prediction in *Pseudomonas aeruginosa*. PrePrint

Ian Mackay, , Megan France, Duncan McAuley, Sean Wing, Mary Wheeldon, Susan Britton, Catherine Todd, Alexandra Pitris Leah Barrett-Beck, Elizabeth Rushbrook, **Cameron Bennett, Kate McCarthy**. COVID19 (Omicron strain) hospital admissions from a virtual ward: who required further care, Preprint

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Internal Medicine Research Unit

Research highlights for the year (1 January – 31 December 2022)

The Internal Medicine Research Unit supports clinician led, collaborative research and knowledge translation to improve quality, experience and outcomes of hospital and post-hospital care. Our major interests are improving care of older patients; perioperative medicine; and appropriate and safe use of medications. We build clinician capacity in research and knowledge translation to answer questions that matter to clinicians and patients, design robust clinical studies, and support implementation of evidence into practice. Our high-quality research has been recognised in competitive Metro North Clinician Research Fellowships, awarded to Professor Alison Mudge (2019-2022), Assoc Professor Jonathon Fanning (2022-2025) and Dr Julie Adsett (2023-2026) and the Metro North Health Services and Implementation Research Award 2022 awarded to Eat Walk Engage. International recognition includes a Fulbright Scholarship for Assoc Professor Jonathon Fanning for a 6 month Fellowship to Johns Hopkins Medicine (Maryland, USA).

The CHERISH cluster randomised trial of Eat Walk Engage, demonstrating almost 50% reduction in delirium and promising improvements in other outcomes, was published in JAMA Internal Medicine and featured in MJA Insights. The program has been trademarked through Metro North Health and the program implemented and sustained in 18 Queensland hospitals. A Multidisciplinary Mobility improvement Collaborative has commenced across ten Metro North medical wards.

We continue to develop and evaluate our perioperative medicine services and are collaborating with surgeons and anaesthetists in implementing and evaluating co-management models. Clinical perioperative research focuses on risk prediction and minimisation, and management of complications. Projects include investigating biomarkers and monitoring of cerebral perfusion to detect and reduce neurological complications of surgery/anaesthesia (e.g., neurocognitive impairment and stroke) and assessing and managing prothrombotic changes that occur in the perioperative period. IMAC is lead department for a national 2x2 factorial RCT assessing management options for myocardial injury following non-cardiac surgery which is at the feasibility study stage and seeking national funding.

In 2022 we initiated two projects to improve medication management during the transition from hospital to home to reduce medication related harm and readmissions/representations. The Transition of Care Pharmacy Project is funded by Queensland Health to improve medication management on discharge at Royal Brisbane & Women's Hospital, Princess Alexandra Hospital and Townsville General Hospital. Associate Professor Charles Denaro, Dr Peter Donovan and Professor Ian Coombes (Department of Pharmacy) are leading this project at RBWH. Secondly, Associate Professor Denaro and Professor Ian Coombes with the Department of Pharmacy at the University of Sydney secured a \$2.4million Medical Research Future Fund grant to engage with the Metro North Primary Healthcare Network in a stepped-wedge RCT to enhance community-based medication review.

Our team provides expert mentoring in implementation science and practice through a local collaborative network, Clinical Excellence Queensland Healthcare Improvement Fellowship training, the AH-TRP Allied Health Translating Research Into Practice program, individual supervision and mentoring of doctoral and postdoctoral researchers from a range of healthcare disciplines, complex healthcare program evaluation and participation in international studies in knowledge translation, with current collaborations with Swedish and Canadian leaders.

We strive to involve consumers in service improvement and research. We have an established state-wide Consumer Response Team for Eat Walk Engage, and Karen Lee-Steere (PhD candidate) is leading research in patient and carer involvement in delirium prevention strategies. Dr Adrienne Young launched the Metro North Health co-design framework, which we are using in several projects.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Professor Alison Mudge	2022 Metro North Health Services and Implementation Award	2022 Metro North Research Excellence Awards
A/Prof Jonathon Fanning	Fulbright Australia Fellowship	

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Alison Mudge, Adrienne Young, Theresa Green, Aparna Arjunan, Mahendran N	Internal Medicine Research Unit	Stratifying trajectories after rehabilitation (STAR)	RBWH Research Foundation	\$49,346	2 years, 2021-22
Adsett J, Mudge A, McRae P, Cahill M, Treleaven E	Internal Medicine Research unit, Physiotherapy Department	Better get moving: using implementation science to improve hospital mobility	RBWH Research Foundation	\$74,918	2022
Plaza A, Adsett J, McRae P, Mudge A, McKittrick A, Hill A, Mulliss B	Burns Unit, Physiotherapy Department, Internal Medicine Research unit	Enablers and barriers to participation in physical activity programs while hospitalized after burn injury	RBWH Research Foundation	\$32,742	2022
Assoc Prof Susan Jordan (University of Queensland), Assoc Prof Katrina Spilsbury (Curtin University of Technology), Dr Louise Wilson (University of Queensland), Dr Peter Donovan (RBWH)	Clinical Pharmacology, Internal Medicine and Aged Care	Hysterectomy, Oophorectomy and Long-term chronic Disease - the HOLD study	Australian Government – National Health and Medical Research Council.	\$690,005.60	4yrs 2021-2025
Chen T, Schneider C, Gnjidic D, Hilmer S, Bennett A, Patanwala A, Cairns R, Coombes I, Denaro C , Magin P, Robinson F, Lyle D, Saurman E, Laba T, Moullin J, Luetsch K, Fujita K.	Internal Medicine and Aged Care & Department of Pharmacy	2020; Quality, Safety and Effectiveness of Medicine Use and Medicine Intervention by Pharmacists; A systems-approach to enhancing community-based medication review	Medical Research Future Fund	\$2,432,288	4 years: 2020-2024.
Taylor A, Craswell A., Mudge A, Lisec C, Andreson J, Harvey M, Woollett K, Daly N. P	Centre for Clinical Nursing, Internal Medicine Research Unit, Department of Surgery and Perioperative Services	Post-operative functional recovery in older adults who have undergone emergency non-cardiac surgery – a multisite prospective longitudinal cohort study	Metro North Collaborative Grant	\$49,814	2 years 2022-23
Taylor A, Marsh N, Mudge A, Duff J	Centre for Clinical Nursing, Internal Medicine Research Unit, Department of Surgery and Perioperative Services	The incidence of hospital-associated functional decline until 6 months in older adults who have undergone elective non-cardiac surgery – a cohort study	Queensland Health Nursing and Midwifery Fellowship		2022-3

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Craswell A, Coates K, Wallis M, Mudge A, Chapman P, Kaur D, Merollini K.	Internal Medicine Research unit	Improving access to primary care for older adults in rural aged care homes: implementation of a nurse practitioner role	Queensland Health Nursing and Midwifery Fellowship	\$119,552	2022-3
Button E, Virdun C, Mudge A, Yates P	Centre for Clinical Nursing, Internal Medicine Research unit	Improving the quality of hospital care for people with serious illness through the use of audit and feedback of patient experience data and ward-based facilitation: an implementation pilot study	Metro North Collaborative Grant	\$49,346	2022
Mudge A, Denaro C, Atherton J, Yelland C, Bhikoo Z, Hickey A, Adsett J, Lloyd S, Rofail S, Xue G	Internal Medicine Research Unit	Improving acute heart failure management in general medical inpatients: a mixed methods study	Novartis Investigator-Initiated Trials Grant	\$150,000	2022-2023
Yin S, McRae P, Cahill M, Treleven E, McCurdie T, Adsett J, Mudge A	Physiotherapy Department and Internal Medicine Research Unit	“Improving mobility documentation and communication to enhance efficiencies	Physiotherapy Department Internal Grants	\$12,702.55	2021-2022

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 RBWH Patients Recruited in 2022
Alison Mudge	Adrienne Young , Theresa Green, Aparna Arjunan , Mahendran N	Stratifying trajectories after rehabilitation (STAR)	39 patient participants; 6 carers; Recruitment occurred in STARS
Alison Mudge	Charles Denaro , John Atherton , Catherine Yelland, Zaheerodin Bhikoo, Annabel Hickey, Julie Adsett , Sophie Lloyd , Serena Rofail , George Xue	Improving acute heart failure management in general medical inpatients: a mixed methods study	Recruitment to commence 2023
Karen Lee-Steere	Sally Bennett, Jacki Liddle, Alison Mudge	Understanding experiences and perceptions of family carer involvement in preventing delirium in older patients in the acute hospital setting	
Karen Lee-Steere	Sally Bennett, Jacki Liddle, Alison Mudge	Understanding care partner experiences and perceptions of engagement in delirium prevention and care for adult inpatients in the acute hospital setting: a qualitative systematic review and synthesis	Systematic review

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Alison Mudge	Sophie Deeth, Sarah Stevens	Nutrition care for older adults with delirium: a scoping review	Scoping review
Alison Mudge	Enoka Gonsalkorala, Neha Tiwari, Katherine Hanigan, Mark Appleyard	Benefits and burdens of outpatient colonoscopy in older and frailer patients: a descriptive observational study informing service redesign	2126 (RBWH and STARS)
Alison Mudge	Angela Byrnes, Prue McRae	Understanding older patients' perception and experiences of mobility in hospital	Nil at RBWH 200 statewide
Adrienne Young	Angela Byrnes, Alison Mudge , Rhiannon Young, Jessica King, Mary Hannan-Jones	Understanding older patients' perceptions and experiences of nutrition and mealtimes in hospital	Nil at RBWH 200 statewide
Peter Donovan	Clair Sullivan , Jason Pole (University of Queensland), Benjamin Sly (Metro South HHS), Syndia Lazarus , Teyl Engstrom (University of Queensland)	Comparing Glycaemic Outcomes Of Digital and non-digital hospitals (GOOD)	Statewide data
Jonathon Fanning	Derek Chew (Monash) Graham Hillis (UWA) William Parsonage	Platform Adaptive-Factorial Evaluation of Prospective Randomised Myocardial Injury in Non-cardiac Surgery Therapies (PEPPERMINT) Trial	Planning/design

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 RBWH Patients Recruited in 2022
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 0
Sally Yin	Prue McRae, Alison Mudge, Julie Adsett	Improving mobility documentation and communication to enhance efficiencies	Staff not patient participants 0
Anita Plaza	Julie Adsett, Prue McRae, Alison Mudge, Andrea McKittrick	Enablers and barriers to participation in physical activity programs while hospitalized after burn injury	
Ian Graham	Mike Brown, Gillian Harvey, Elizabeth Lynch, Jennifer Moore, Julia Moore, Alison Mudge , Dawn Stacey, Sharon Straus, Peter Wyer, Adrienne Young	Exploring the experiential knowledge of knowledge translation and implementation capacity building initiative facilitators: a mixed methods study	0 International study, staff not patient participants
Ian Coombes	Charles Denaro, Peter Donovan , Michael Barras, Karen Bettenay, Kelvin Robertson	Transition of Care Pharmacy Project.	389 patients recruited from 3 sites.

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022	
Timothy Chen	Schneider C, Gnjjidic D, Hilmer S, Bennett A, Patanwala A, Cairns R, Coombes I, Denaro C , Magin P, Robinson F, Lyle D, Saurman E, Laba T, Moullin J, Luetsch K, Fujita K.	<i>2020; Quality, Safety and Effectiveness of Medicine Use and Medicine Intervention by Pharmacists;</i> A systems-approach to enhancing community-based medication review	Stepped-wedged RCT, Recruitment to commence.	
Veronica Costea	Angela Byrnes, Adrienne Young , Nina Meloncelli, Sally Bennett, Alison Mudge , Sally Barrimore, Anna Bergstrom, Sally Eames	Capacity building in knowledge translation for staff working in health services: a systematic review	N/A – systematic review	
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), Dr Peter Donovan	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		
Dr Susan Jordan (University of Queensland)	Penny Webb (QIMRB), Dr Katrina Spilsbury (Curtin University of Technology), Martha Hickey (University of Melbourne), Dr Peter Donovan	Hysterectomy, Oophorectomy and Long-term chronic Disease		
Benjamin Sly	Clair Sullivan (University of Queensland), Anthony Russell (Princess Alexandra Hospital), Sally Shrapnel (University of Queensland), Peter Donovan	Statewide Inpatient Glycaemic Benchmarking (STING)		
Benjamin Sly	Clair Sullivan (University of Queensland), Anthony Russell (Princess Alexandra Hospital), Sally Shrapnel (University of Queensland), Peter Donovan	Statewide Inpatient Glycaemic Dashboard Implementation (STING-DASH)		
Clair Sullivan	Magid Fahim, Danielle Stowasser, Margie Butnoris, Tracy Comans, Peter Donovan , Martin Canning, Champika Pattullo, Ian Parker , Ben Sly, Jodie Austin, Anthony Russell, Oliver Canfell, Lee Woods, Vikki Goldup, Martin Byrne, Wilkin Chan, Yasaman Meshkat, Zack Kodyattu, Chad Wright, Digby Simposin, Kim-Huong Nguyen, Kristy Rogan, Gloria Wong , Emma Whittle, Richard Friend , Jayden Mifsud, Elizabeth McCourt, Katherine Dekker, Angela North, Panteha Voussoughi	STARS Evaluation Program (STEP)	98	98
Jonathon Fanning	David Highton, Ivan Rapchuk, Simon Finnegan	Individualised intraoperative hemodynamic optimisation informed by the lower limit of cerebral autoregulation to reduce perioperative morbidity and mortality: development of a novel clinical monitoring parameter.	0	0

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022	
Jonathon Fanning	Nigel Pinto , Ivan Rapchuk	Optimising intraoperative coagulation management for vascular surgery	0	0

Research Publications

Authors

Investigator	ORCID ID
Charles Denaro	https://orcid.org/0000-0002-6570-3028
Alison Mudge	https://orcid.org/0000-0002-0242-2165
Peter Donovan	https://orcid.org/0000-0001-7934-601X
Prue McRae	https://orcid.org/0000-0002-1039-3632
Karen Lee-Steere	https://orcid.org/0000-0002-0121-0136
Adrienne Young	https://orcid.org/0000-0002-4498-4342
Margaret Cahill	https://orcid.org/0000-0001-8112-8847
Elise Treleaven	https://orcid.org/0000-0002-6982-2593
Julie Adsett	https://orcid.org/0000-0002-4230-4577
Angela Byrnes	https://orcid.org/0000-0003-4069-4724
Jonathon Fanning	https://orcid.org/0000-0002-1675-0522
Julian de Looze	https://orcid.org/0000-0003-2084-0229

Publications in 2022

Journal Articles (RBWH staff in bold)

Nelles R, Britton S, John G, **Denaro C**. Parkinsonism and prolonged cognitive decline as a manifestation of cryptococcal meningitis in a renal transplant patient. *BMJ Case Reports* 2022; 15 (1) e245788; DOI: 10.1136/bcr-2021-245788.

Mallett A, Kearey PJ, Cameron A, Healy HG, **Denaro C**, Thomas M, Lee VW, Stark SL, Fuller M, Wang Z, Hoy WE. The prevalence of Fabry disease in a statewide chronic kidney disease cohort – Outcomes of the aCQuire (Ckd.Qld.fabRy Epidemiology) study. *BMC Nephrology* 2022; 23:169.

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Cahill M, Neill S, Treleaven E, Lee-Steere K, Carter A, McCormack L, **Mudge A**. Eat Walk Engage: enabling acute care teams to deliver consistent fundamentals of care for older people. *J Adv Nurs* 2022 (epub 21/7/2022)

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Ali S, Na R, Tuesley K, Spilsbury K, Stewart LM, Coory M, Webb PM, **Donovan P,** Pearson SA, Jordan SJ, Neale RE. The association between diabetes mellitus of different durations and risk of pancreatic cancer: an Australian national data-linkage study in women. *Cancer Epidemiol*. 2022 Oct 11;81:102266. doi: 10.1016/j.canep.2022.102266. Epub ahead of print. PMID: 36240705.

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Obonyo NG, Olupot-Oluput P, Mpoya A, Nteziyaremye J, Chebet M, Uyoga S, et al **Fanning JP** et al. A clinical and physiological prospective observational study on the management of pediatric shock in the post-fluid expansion as supportive therapy trial era. *Pediatric Critical Care Medicine*. 2022;23(7):502-513. doi: 10.1097/PCC.0000000000002968

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Fanning JP, Panigada M, Li Bassi G. Nosocomial pneumonia in the mechanically ventilated. *Seminars of Respiratory and Critical Care Medicine*. Published online 17th June 2022. <http://doi.org/10.1055/s-0042-1749448>.

Battaglini D, Premraj L, Huth S, **Fanning J,** Whitman G, Arora R, et al. The use of Non-invasive Multimodal Neuromonitoring in Adult Critically Ill Patients with COVID-19 Infection. *Journal of Neurosurgical Anesthesiology*. 2022. DOI: 10.1097/ANA.0000000000000859.

Book Chapters (RBWH staff in bold)

Fanning J (2022). Part IV: Neurological manifestations of COVID-19. In Battaglini, D & Pelosi, P (Ed.), *COVID-19 Critical and Intensive Care Medicine Essentials*. Springer (Accepted).

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Ramponi F, Hon K, Seco M, **Fanning J,** Bannon P, Kritharides L, Puskas JD, Vallely M. Chapter 44: Brain Injury in Cardiopulmonary Bypass. In Kirali MK, Coselli JS & Kalangos A. *Cardiopulmonary Bypass: Advances in Extracorporeal Life Support*. Elsevier (Accepted).

Chan N, Tan J, Mudge AM. Keep an open mind: assessing unsteadiness in older people In Junckerstorff R, Aung AK, Brady S (Eds). *Beyond Evidence-Based Medicine - Clinical Pearls from Experienced Physicians*. Springer Nature (accepted)

Book Chapters (RBWH staff in bold)

Chan N, Tan J, Mudge AM. Right time and place: cognitive testing in hospital. In Junckerstorff R, Aung AK, Brady S (Eds). Beyond Evidence-Based Medicine - Clinical Pearls from Experienced Physicians. Springer Nature (accepted)

Chan N, Tan J, Mudge AM. First do no harm: beware the prescribing cascade. In Junckerstorff R, Aung AK, Brady S (Eds). Beyond Evidence-Based Medicine - Clinical Pearls from Experienced Physicians. Springer Nature (accepted)

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Chan N, Tan J, Mudge AM. Taboo clues: learning from bodily functions. In Junckerstorff R, Aung AK, Brady S (Eds). Beyond Evidence-Based Medicine - Clinical Pearls from Experienced Physicians. Springer Nature (accepted)

Mudge AM, Chan N, Tan J. The skeleton in the closet: preventing hospital-associated malnutrition. In Junckerstorff R, Aung AK, Brady S (Eds). Beyond Evidence-Based Medicine - Clinical Pearls from Experienced Physicians. Springer Nature (accepted)

Mudge AM, Chan N, Tan J. Agitating for better care: minimise sedatives in delirium. In Junckerstorff R, Aung AK, Brady S (Eds). Beyond Evidence-Based Medicine - Clinical Pearls from Experienced Physicians. Springer Nature (accepted)

Tan J, Chan N, Mudge AM. A good death: respecting goals of care. In Junckerstorff R, Aung AK, Brady S (Eds). Beyond Evidence-Based Medicine - Clinical Pearls from Experienced Physicians. Springer Nature (accepted)

Keynote or Plenary Lectures given in 2022

Date	Title
23 April 2022	Mudge A, McRae P. Eat Walk Engage. Invited speakers and panellists, John Hopkins 5 th Annual Hospital Activity and Mobility Conference, Baltimore, USA
14 June 2022	Mudge A. Fundamentals of care for older inpatients: how do we get it right? Invited keynote speaker, International Learning Collaborative (ILC) International Conference, Oxford, UK
27 June 2022	Young A. ThinkTank: How Can We Generate Evidence-Based Impact from Co-Design and Consumer Engagement? – Dos and Don'ts. Patient Experience Expo, Queensland Healthcare Week
10 September 2022	Mudge A. Leadership in health system improvement. Invited plenary speaker, Internal Medicine Society of Australia and new Zealand 25 th annual conference, Sydney, Australia
14 October 2022	Young A, Christoffersen A. Creating better healthcare together: co-designing a co-design framework for Metro North Health. Health Consumers Queensland Annual Forum
13 July 2022	Fanning JP, Weaver N, Fanning RB, Griffee MJ, Cho S, Panigada M, Obonyo NG, Zaaqoq A, Rando H, Chia YW, Fan BE, Sela D, Chiumello D, Coppola S, Labib A, Whitman G, Arora R, Kim B, Motos A, Torres A, Barbe F, Grasselli G, Zanella A, Etchill E, Usman A, Feth MM, White N, Suen, Li Bassi G, Fraser JF, Peek GJ, Dalton H. Hemorrhagic, Coagulopathic and Thrombotic (HECTOR) Complications Among Critically Ill Patients with COVID-19: An International COVID-19 Critical Care Consortium Study (Late Breaking Abstract). <i>International Society of Thrombosis and Haemostasis Congress 2022</i> . London (2022).

Kidney Health Service

Research highlights for the year (1 January – 31 December 2022)

A key feature of the Kidney Health Service research achievements in 2022 has been the high level of our external interfaces. The eminent researcher Professor Ann Bonner was a member of the 2022 World Kidney Day Joint Steering Committee and co-author of the Committee's special report, published in the top kidney journals around the world and listed in the publications section of this report.



In 2022 we welcomed Associate Professor Chang Seong Kim, an academic nephrologist from Chonnam National University, South Korea for a 2-year residency in the Laboratory Kidney Research Group's Visiting Fellow program.

Two of our senior researchers, Dwarakanathan Ranganathan and Ann Bonner, were invited speakers at international meetings. Other researchers (Pauline Nicholas and Helen Healy) have had their publications among the top cited papers in their respective journals and Andrew Kassianos from the Laboratory Kidney Research Group took out the Basic Science – mid-career award at their peak professional organisation's annual scientific meeting.

The volume of research listed is the legacy of capacity building work in previous years. Building our research capacity continues as evidenced by the research higher degree students either on staff (Carla Scuderi and Dharmenaan Palamuthusingam) or being supervised by staff. Early work has started on supporting our researchers in the immediate postdoctoral period. Collaborations are increasing, apparent in co-authorship of an impressive list of publications, and grants like the Australian Research Council grant in partnership with the Centre for Advanced Imaging at the University of Queensland.

This report is putting a focus on our clinical trials work into the future, with the permanent appointment of triallist from the nursing profession an important part of their research infrastructure. Whilst some of these trials are driven by international triallists, participation grows local skills, advertises our talent and presents a pathway to develop a research career in clinical trials. The leaders in this area, Martin Woolley and Dwarakanathan Ranganathan, are strong role models for this expanding group.

Successful PhD candidates in 2022

Name	PhD Title	Month Completed	Affiliated University	Summary
Muhammad Ali KHAN	Use of plant extracts for the treatment of chronic kidney disease	April 2022	University of Queensland	Advanced kidney disease is projected to be the ninth most common cause of death globally by 2040. This thesis tests the bioactivity of plant extracts to target the molecular pathways of chronic kidney disease in hypoxic primary human tubular epithelial cells and an adenine-induced mouse model of CKD.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Andrew KASSIANOS	Basic Science Award – mid career category	Australian and New Zealand Society of Nephrology Annual Scientific Meeting 2022
Pauline NICHOLAS	a top cited paper	Journal of Renal Care 2021-2022
Helen HEALY	a top cited paper	Internal Medicine Journal 2021-2022
Helen HEALY	a second top cited paper	Internal Medicine Journal 2021-2022a
Monica NG	Early career research program grant	AVANT

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Jed DUFF, Louise PURTELL , Nina MELONCELLI, Champika PATULLO,	Kidney Health Service	Evaluating the Helix4 Implementation Capacity Building Program.	Royal Brisbane and Women's Hospital SERTA	\$73,087	1 year 2022-2023
Pedro Franca GOIS , Marina WEINSTEIN, Helen HEALY , Ann BONNER , Rebecca SAUNDERSON	Kidney Health Service	Improving the patient experience of kidney biopsy: A RCT evaluating video-assisted consent versus standard consent for percutaneous ultrasound-guided kidney biopsy	Royal Brisbane and Women's Hospital Research Project Grant.	\$49,992	2 years 2021-2022
Prianka PURI	Kidney Health Service	An integration of multi-omics and machine learning to stratify patients with lupus nephritis for precision medicine.	NHMRC Post-graduate scholarship	\$132000	6 years 2022-2028
Louise PURTELL , Sameera SENANAYAKE, Sanjeeva KULARATNA, Helen HEALY , Ann BONNER	Kidney Health Service	End stage kidney disease patients' preference for selecting either dialysis or conservative kidney care: A Discrete Choice Experiment to support policy decisions	Metro North / QUT Collaborative Grant	\$49,995	2 years 2022-2023
Dwarakanathan RANGANATHAN QRBR Investigators	Kidney Health Service Vasculitis Group	Multi-centre prospective observational cohort study investigating association between ANCA results and relapse of ANCA associated vasculitis	SERC	\$22,000	2 years 2021-2022
Dwarakanathan RANGANATHAN QRBW Investigators	Kidney Health Service Vasculitis Group	APAXANS Study	Central Queensland Hospitals and Health Service	\$23,000	2 years 2021-2023
Dwarakanathan RANGANATHAN Tan ZHAO	Vasculitis Group, Kidney Health Service	ANCA – VASCULITIS STUDY	Queensland Pathology	\$20,000	5 years 2020 - 2025
David REUTENS , Shekhar Chandra, John BERTRAM, Nyoman KURNIAWAN, Helen HEALY	Kidney Health Service Kidney Research Group	Advancing the visualisation and quantification of nephrons with MRI	Australian Research Council	\$485,575	3 years 2022-2024

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 RBWH Patients Recruited in 2022
Helen HEALY,	Andrew KASSIANOS, Xiangju WANG, Monica NG	MECHANISMS OF PROGRESSION OF CKD	~40
Helen HEALY	Ann BONNER, Wendy HOY Alexandra CATION, Louise PURTELL, Gary CHANG, Carla SCUDERI	Keeping Kidneys in the Community: Care for people with CKD in primary care	Not applicable – PHA waiver
Dwarakanathan RANGANATHAN	Tan ZIHAO	ANCA – VASCULITIS STUDY	25
Dwarakanathan RANGANATHAN	Paul KUBLER Zihao TAN	MULTI-CENTRE PROSPECTIVE OBSERVATIONAL COHORT STUDY INVESTIGATING ASSOCIATION BETWEEN ANCA RESULTS AND RELEASE OF ANCA ASSOCIATED VASCULITIS	25
Dwarakanathan RANGANATHAN	Sharad RATANJEE George JOHN Sunita RATANJEE Carla SCUDERI	APAZANS STUDY	2
Dwarakanathan RANGANATHAN	Martin WOLLEY	PHASE 2, OPEN-LABEL, BASKET STUDY OF ATRASENTIAN IN PATIENTS WITH PROTEINURIC GLOMERULAR DISEASES (THE AFFINITY STUDY) AFFINITY STUDY	2
Dwarakanathan RANGANATHAN	Martin WOLLEY	PHASE 3 RCT PLACEBO CONTROLLED STUDY OF ATRASENTAN IN PATIENTS WITH IGA NEPHROPATHY (THE ALIGN STUDY) STUDY	2
Dwarakanathan RANGANATHAN	Martin WOLLEY Sharad RATANJEE	MULTICENTRE RCT TO ASSESS THE PHARMACOKINETIC AND PHARMACODYNAMIC PROFILE OF BI 764918 ORALLY FOR 12 WEEKS WITH FSGS	0
Martin WOLLEY	Pedro Henrique Franca GOIS	eCONSENT	33

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 RBWH Patients Recruited in 2022
clinical trial	Martin WOLLEY, Kirsten HEPBURN, Dharmenaan PALAMUTHUSINGAM	Eagle 402-C-1803	6
clinical trial	Martin WOLLEY, Kirsten HEPBURN, Dharmenaan PALAMUTHUSINGAM	Falcon 402-C-1808	3
clinical trial	Martin WOLLEY, Dharmenaan PALAMUTHUSINGAM	PHYOX 3 DCR-PHXC-301	2
clinical trail	Martin WOLLEY Prianka PURI	ACHIEVE	10
Andrew MALLETT	Martin WOLLEY	IMPEDE – START UP PHASE	0
clinical trial	Dwarakanathan RANGANATHAN, Martin WOLLEY	ALIGN: CHK01-01	2

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
clinical trial	Dwarakanathan RANGANATHAN, Martin WOLLEY	AFFINITY: CHK01-02	2
clinical trial	Dwarakanathan RANGANATHAN, Martin WOLLEY	ALEXION M11-001	1
clinical trial	Dwarakanathan RANGANATHAN, Martin WOLLEY, Sharad RATANJEE	BI 1434-00004	0
clinical trial	Sharad RATANJEE, Martin WOLLEY	PHOSPHATE STUDY	10
Dharmenaan PALAMUTHUSINGAM	Martin WOLLEY	RENAL LIFE CYCLE TRIAL – START UP PHASE	0
Alberta Hoi	Dwarakanathan RANGANATHAN	AUSLUPUs Registry and Biobank	20
Dwarakanathan RANGANATHAN	George JOHN, Sharad RATANJEE	Queensland Renal Biopsy Registry	30

Research Publications

Authors

Investigator	ORCID ID
Ann BONNER	https://orcid.org/0000-0001-9920-6743
Helen HEALY	https://orcid.org/0000-0003-4342-5300
Andrew KASSIANOS	https://orcid.org/0000-0002-0994-3588
Eion O'SULLIVAN	https://orcid.org/0000-0002-7709-6595
Dharmenaan PALAMUTHUSINGAM	https://orcid.org/0000-0003-1505-3482
Louise PURTELL	https://orcid.org/0000-0001-6785-0817
Martin WOLLEY	https://orcid.org/0000-0002-7870-5073

Publications in 2022

Journal Articles (RBWH staff in bold)

Bonner A, Douglas D, Brown L, Harvie B, Lucas A, Tomlins M, Gillespie K. Understanding the practice patterns of nephrology nurse practitioners in Australia. *Journal of Renal Care*. 2022 Available from: <https://doi:10.1111/jorc.12444>.

Dheda S, Min H, Vesey DA, Hawley C, Johnson DW, Dimeski G, **Healy H**, Fahim M. Pre-dialysis levels of inflammation and endotoxin in people receiving haemodialysis is not associated with blood pressure variability. *Clinical Nephrology* 2022;98:198-204

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Farkas A, Oikonomou K, Ghanbar M, Villasurda P, Varghese J, Lipman J, Sassine J, **Ranganathan D**, Roberts Population Pharmacokinetics of Intraperitoneal Gentamicin and the Impact of Varying Dwell Times on Pharmacodynamic Target Attainment in Patients with Acute Peritonitis Undergoing Peritoneal Dialysis. *JA.Antimicrob Agents Chemother*. 2022 Feb

Journal Articles (RBWH staff in bold)

- Giuliani K, Grivei A, Nag P, Wang X, Rist M, Kildey K, Law B, **Ng M**, Wilkinson R, Ungerer J, Forbes J, **Healy H**, **Kassianos A**. Hypoxic human proximal tubular epithelial cells undergo ferroptosis and elicit an NLRP3 inflammasome response in CD1c+ dendritic cells. *Cell Death and Disease* 2022;13(8):739. Available from: <https://doi.org/10.1038/s41419-022-05191-z> open access
- Grayson PC, Ponte C, Suppiah R, Robson JC, Craven A, Judge A, Khalid S, Hutchings A, Luqmani RA, Watts RA, Merkel PA; DCVAS Study Group (incl **Ranganathan D**). American College of Rheumatology/European Alliance of Associations for Rheumatology Classification Criteria for Eosinophilic Granulomatosis with Polyangiitis. *Arthritis Rheumatol.* 2022 Mar;74(3):386-392. Available from: <https://doi:10.1002/art.41982>. Epub 2022 Feb 2. PMID:35106968
- Grayson PC, Ponte C, Suppiah R, Robson JC, Craven A, Judge A, Khalid S, Hutchings A, Luqmani RA, Watts RA, Merkel PA; DCVAS Study Group (incl **Ranganathan D**). American College of Rheumatology/European Alliance of Associations for Rheumatology Classification Criteria for Eosinophilic Granulomatosis with Polyangiitis. *Ann Rheum Dis.* 2022 Mar;81(3):309-314.
- Grayson PC, Ponte C, Suppiah R, Robson JC, Gribbons KB, Judge A, Craven A, Khalid S, Hutchings A, Danda D, Luqmani RA, Watts RA, Merkel PA; DCVAS Study Group (incl **Ranganathan D**). American College of Rheumatology/EULAR classification criteria for Takayasu arteritis *Ann Rheum Dis.* 2022 Dec;81(12):1654-1660
- Hegerty K, Jaure A, Scholes-Robertson N, Howard K, Ju A, Evangelidis N, **Wolley M**, Baumgart A, Johnson DW, Hawley C, Reidlinger D, Robison L, Welch A, Cho Y, Kerr PG, Roberts MA, Shen JI, Craig J, Krishnasamy R, Viacelli A. Australian Workshops on Patient's Perspectives on Hemodialysis and Incremental Start. *Kidney International Reports.* 2022/12/6
- Henson A, **Holman S**, Kempe J, Latcham P, Crawshaw C. Isolated ultrafiltration (Iso Uf) practices in haemodialysis units across Queensland: A prospective survey of nursing clinical practice. *Renal Society of Australasia Journal [Internet].* 2022 Nov [cited 2023 Feb 7];18(3):76–87. Available from: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens&db=ccm&AN=160878094&site=eds-live>
- Hewitt J, Greulich L, **Bonner A**. Voluntary assisted dying in Australia and New Zealand: Exploring the potential of nurse practitioners to assess eligibility. *Collegian* 2022 Available from: <https://doi:10.1016/j.colegn.2022.05.002>.
- Hoang VL, **Green T**, **Bonner A**. Social support functions, psychology status and health-related quality of life of people having haemodialysis. *Journal of Renal Care* 2022;48(2):102-111. Available from: <https://doi: 10.1111/jorc.12380>.
- Hoy W, Wang Z, Zhang J, Diwan V, Cameron A, Venuthurupalli SK, Fasset R, Chan S, **Healy H**, Tan K-S, Baer R, Mallett A, Gray N, Mantha M, Cherian R, Mutatiri C, Madhan K, Kan G, Mitchell G, Hossain S, Wu D, Han T, Kark A, Titus T, **Ranganathan D**, **Bonner A**, Govindarajulu S. Chronic kidney disease in public renal practices in Queensland, Australia, 2011-2018. *Nephrology* 2022; 27(12):934-944 Available from: <https://doi:10.1111/nep.14111>
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- Yaxley J, **Palamuthusingam D**, Burke M, Mantha M. Interventional nephrology in Australia and New Zealand. *The journal of vascular access*. 2022 Feb 9:11297298221077776.

Book Chapters (RBWH staff in bold)

- Wolley M**, Stowasser M. Diagnosis and Investigation of Hypertension. 3rd Edition. Oxford University Press. 31- C4, P33.

Keynote or Plenary Lectures given in 2022

Date	Title
26 September 2022	C3 Glomerulopathy. International Society Of Nephrology Ranganathan D
26 September 2022	Epidemiology of Glomerular diseases – GlomCon Ranganathan D

September 2022	The future of nephrology nursing. 50th EDTNA/ERCA International Conference, Rotterdam, Netherlands (keynote speaker) Bonner A
September 2022	Health literacy – Shifting the paradigm in nephrology. Danish Kidney Association Nyborg, Denmark (keynote speaker). Bonner A
October 2022	Supporting someone through the voluntary assisted dying process.” Queensland Voluntary Assisted Dying Conference, Brisbane, Australia (invited speaker) Bonner A

Department of Neurology

Research highlights for the year (1 January – 31 December 2022)

MND

The MND and neuromuscular group actively recruited patients in 8 MND clinical trials, 2 inclusion body myopathy trials and one Pompe disease study. We were the lead Australian site for a multi-centre MND trial and for an investigator-driven study. Research into the cause of MND continued with approximately 20 publications generated. Two PhD students were active. Strong linkages with UQ and QUT have continued to grow in 2022.

The group also welcomed a new nurse Simran Sarao and a research administration officer Lisa McCullough.

Movement Disorders

The Neuroscience Clinical Research Suite was launched at to-located UQ Centre for Clinical Research to facilitate clinical trials requiring lumbar punctures, pharmacokinetic analysis and/or intravenous infusion.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Lata Vadlamudi	2022 UQCCR Clinical researcher of the year	

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Sachdev (UNSW), Parsons M, Brodtmann A, Levi C, Samaras K, Kovacic J, Michael O'Sullivan et al.	Neurology	Vascular Contributions to Dementia (VCD-CRE) - a transformative approach to reducing the burden of cognitive disorders	NHMRC Centre for Research Excellence	\$3 000 000	5 years 2021 - 2025
Shultz (Monash), Michael O'Sullivan	Neurology	Brain injury in intimate partner violence: Insight into a silent pandemic	NHMRC	\$899 922	3 years 2022 - 2024
Michael O'Sullivan, Robert Henderson	Neurology	A Novel PET Imaging Market of Astrocytes and Glutamate Reuptake in Brain and Spinal Cord in Amyotrophic Lateral Sclerosis	Motor Neurone Disease Research Australia	\$104 735	3 years 2021 - 2023
Ryan J, Zoungas S, Law M, Anderson C, Chong T, Heritier S, Harding I, Naismith S, Liew D, O'Sullivan M, et al.	Neurology	Clinical trial to determine the effects of statins on cognition: STAREE-Mind	NHMRC	\$1 853 925	5 years 2021 - 2025
J O'Sullivan, R Gordon, R Adam	Neurology	The Queensland Drug Repurposing Initiative	Qld Government Advance Queensland Innovation Partnership	\$2,209,715	6y 2018-2023

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
R Gordon, JD O'Sullivan , A Kanthasamy	Neurology	Validating the functional role of the pathogenic microbiome metabolite Trimethylamine (TMA) at the gut-brain axis in Parkinson's disease	Michael J Fox Foundation	\$142,232	3y 2021-2023
R Coll, JD O'Sullivan , N Jayabalan, R Gordon	Neurology	Validating a novel glycolipid receptor as a disease-modifying therapeutic target for Parkinson's disease	Michael J Fox Foundation	\$232,905	3y 2021-2023
R Gordon TM Woodruff, A Kanthasamy; J O'Sullivan , M Cooper, K Schroeder	Neurology	Pharmacological targeting of inflammasome activation mechanisms in synuclein models of Parkinson's disease	Michael J Fox Foundation	\$99,848	3y 2019-2022
T O'Brien, K Bertram, L Vivash,, A Evans, T Kimber, J O'Sullivan , C Malpas, J Fielding, D Velakoulis, M Law	Neurology	Sodium Selenate as a Disease Modifying Treatment for Progressive Supranuclear Palsy (Sodium Selenate for PSP) (MRFF RCRDUN Neurological Disorders Grant administered by Monash University)	Medical Research Future Funds	\$ 2,639,490	5y 2020-2024
R Gordon, J O'Sullivan	Neurology	CNS-targeted inhibitors of neuroinflammation for disease modification in Parkinson's disease	Michael J Fox Foundation	\$ 689,737	2y 2021-2023
A Kanthasamy, R Gordon, J O'Sullivan	Neurology	Comparative and Cross Validation of alpha-Synuclein Seeding Assays in Peripheral Biomatrices.	Michael J Fox Foundation Synuclein Biomarkers Program	\$ 664,459	3y 2021-2024
J O'Sullivan , R Gordon, R Adam	Neurology	Mining the gut microbiome to develop new treatments and biomarkers for Parkinson's disease	Wesley Medical Research	\$ 110,000	2y 2022-2023
J O'Sullivan , R Adam	Neurology	Validating Magnetic Resonance diagnosis in Parkinson's Disease	UQ Bequest	\$ 117,531	3y 2022-204
N Dissanayaka G Byrne , J O'Sullivan , R Adam , KL McMahon, A Bakker	Neurology	Uncovering a novel therapeutic target to reduce dementia risk in Parkinson's disease (TRIP study)	RBWH Foundation	\$50,000	2y 2021-2022
Frank Vadja Terence O'Brien Piero Perucca Lata Vadlamudi Cecilie Lander UCB team	Epilepsy	A multicenter, open-label, longitudinal, prospective, pharmacokinetic phase 1b study in pregnant women with epilepsy treated with lacosamide	UCB collaborative research grant	\$403,887	2 years Dec 2022- Dec 2024
Hannah Leeson Lata Vadlamudi	Epilepsy	3D brain organoid models of epilepsy patients with cortical dysplasia as personalised medicine platforms	Brain Foundation	\$40,000	1 year 01/2022- 01/2023

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Ernst Wolvetang Patrick Kwan Lata Vadlamudi Terence O'Brien Zongyuan Ge Alison Anderson Mohammed Shaker Ana Antonic-Baker Hannah Leeson	Epilepsy	Transforming the paradigm of epilepsy care with precision medicine - Personalising Epilepsy Regimes with Stem cells and artificial Intelligence models for Superior Treatment outcomes. (PERSIST) Study	MRFF Stem Cell Therapies Mission-Stream 3	\$999,808	3 years 7/2021-6/2024

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 RBWH Patients Recruited in 2022
Michael O'Sullivan	Sandy Shultz, Gary Mitchell , Jacqueline Marks	Brain injury in intimate partner violence: Insight into a silent pandemic	0 (in set up)
Michael O'Sullivan	Robert Henderson	A Novel PET Imaging Market of Astrocytes and Glutamate Reuptake in Brain and Spinal Cord in Amyotrophic Lateral Sclerosis	0 (in set up)
JD O'Sullivan	R Gordon, R Adam , A Lehn, S Heshmat, G Radford-Smith , M Chatfield	Double-blind, placebo-controlled, cross-over trial of Livaux™ for the treatment of functional constipation and restoration of the microbiome in Parkinson's disease.	2

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 RBWH Patients Recruited in 2022
Kate Hayward	Andrew Wong	UPLIFT – a Phase IIa multicentre umbrella trial of integrated Upper limb and Language Impairment and Functional Training (UPLIFT) after stroke	0 (in startup)
Sophia Zoungas	Michael O'Sullivan	STAREE-Mind Trial	250
M Delatycki	N Cranswick,, P Lockhart, J O'Sullivan , E Yiu	A randomised placebo-controlled crossover trial of micronised resveratrol as a treatment for Friedreich ataxia	0
N Dissanayaka	G Byrne , J O'Sullivan , R Adam , K McMahon, A Lehn, M Chatfield, R Littleford, D Copland, A Bakker, G Pontone, Z Mari, P Nestor, A Fazlollahi	Uncovering a Novel Therapeutic Target to Reduce Dementia Risk in Parkinson's disease (TRIP)	4

Research Publications

Authors

Investigator	ORCID ID
Pamela McCombe	0000-0003-2704-8517
Robert Henderson	0000-0002-2820-8183
Andrew Wong	0000-0002-7272-8944
John O'Sullivan	https://orcid.org/0000-0003-0422-8590
Robert Adam	https://orcid.org/0000-0003-0053-7919
Lata Vadlamudi	https://orcid.org/0000-0002-8742-0125
Cecilie M Lander	https://orcid.org/0000-0002-3548-9550

Publications in 2022

Journal Articles (RBWH staff in bold)

Skeletal muscle and blood RNA-seq counts in motor neurone disease cases and controls A Freydenzon, AF McRae, S Ngo, NR Wray, L Wallace, A Henders, **RD Henderson**, **PA McCombe**... The University of Queensland

Impaired signaling for neuromuscular synaptic maintenance is a feature of Motor Neuron Disease Q Ding, K Kesavan, KM Lee, E Wimberger, T Robertson, M Gill, D Power, **RD Henderson**, **PA McCombe** ... Acta neuropathologica communications 10 (1), 1-24

Functional characterisation of the amyotrophic lateral sclerosis risk locus GPX3/TNIP1 R Restuadi, FJ Steyn, E Kabashi, ST Ngo, FF Cheng, MF Nabais, ... Genome medicine 14 (1), 1-22

Lower hypothalamic volume with lower body mass index is associated with shorter survival in patients with amyotrophic lateral sclerosis J Chang, TB Shaw, CJ Holdom, PA McCombe, **RD Henderson**, J Fripp, ... European Journal of Neurology

Clinical and neurophysiological biomarkers of disease progression in amyotrophic lateral sclerosis A Hannaford, K Byth, N Pavey, **RD Henderson**, S Mathers, M Needham, ... Muscle & Nerve

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HLA and amyotrophic lateral sclerosis: a systematic review and meta-analysis RJ Nona, JM Greer, **RD Henderson**, **PA McCombe** Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration, 1-9

Polygenic risk score analysis for amyotrophic lateral sclerosis leveraging cognitive performance, educational attainment and schizophrenia R Restuadi, FC Garton, B Benyamin, T Lin, KL Williams, A Vinkhuyzen, **Henderson RD**... European Journal of Human Genetics 30 (5), 532-539

Novel Variants of ANO5 in Two Patients With Limb Girdle Muscular Dystrophy: Case Report. **M Katz**, FC Garton, M Davis, **RD Henderson**, **PA McCombe** Frontiers in Neurology 13, 868655-868655

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Age of onset and length of survival of Queensland patients with amyotrophic lateral sclerosis: with details of subjects with early onset and subjects with long survival RJ Nona, Z Xu, GA Robinson, **RD Henderson, PA McCombe** Neurodegenerative Diseases

ALS/FTD: Evolution, Aging, and Cellular Metabolic Exhaustion **RD Henderson**, KP Kepp, A Eisen Frontiers in Neurology, 946

Assessing the upper motor neurone: novel UMN biomarkers are needed for clinical trials **RD Henderson**, MS Devine Journal of Neurology, Neurosurgery & Psychiatry 93 (1), 3-3

Biofluid Biomarkers of Amyotrophic Lateral Sclerosis CJ Holdom, FJ Steyn, **RD Henderson, PA McCombe**, ML Rogers, ST Ngo Neurodegenerative Diseases Biomarkers, 263-306

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Cholinergic and hippocampal systems facilitate cross-domain cognitive recovery after stroke **O'Sullivan, Michael J.**, Oestreich, Lena K. L., Wright, Paul, and Clarkson, Andrew N. (2022). Cholinergic and hippocampal systems facilitate cross-domain cognitive recovery after stroke. Brain 145 (5) 1698-1710. <https://doi.org/10.1093/brain/awac070>

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- Vadlamudi L**. Bennett C.M., Tom M., Abdulrasool G., Brion K., Lundie, B., Aung H., Lau C., Rodgers J., Riney K., Gordon L.G. A multi-disciplinary team approach to genomic testing for drug-resistant epilepsy patients- the GENIE study. *Journal of Clinical Medicine* 2022, 11,4238, <http://doi.org.10.3390/jcm11144238>
- Hunter Z., Leeson H. C., Shaker M., Wolvetang E. J., **Vadlamudi L**. Human induced pluripotent stem cells generated from epilepsy patients for use as in vitro models for drug screening. *Stem Cell Research* 2022, <https://doi.org/10.1016/j.scr.2022.102673>.
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Keynote or Plenary Lectures given in 2022

Date	Title
13 August	Taiwan Neurological Society Presentation - Virtual
6 Oct	Brain & Mind Centre Grand Rounds - Sydney
27 November	Conference chair at Epilepsy Society of Australia Annual Scientific Meeting 2022

Nuclear Medicine

Research highlights for the year (1 January – 31 December 2022)

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 and supports research using [¹⁸F]DOPA, [¹⁸F]FDGalactose, [¹⁸F]FEOBV, [NAV-4694, [¹⁸F]MK-6240 and [⁶⁸Ga]Ga-DOTATATE, [⁶⁸Ga]Ga-PSMA-11, [68Ga]Ga-FAPI-46 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 participation in multi-centre trials for the treatment of metastatic prostate, neuroendocrine tumour (NET), merkel cell and thyroid cancer. Whilst predominantly focused 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 and published in *The Lancet* 2021.
- Ongoing support for Herston Imaging Research Facility projects including joint appointment of a NIF Radiochemistry Fellow (UQ/HIRF) working in the Q-TRaCE laboratories.
- In collaboration with Cancer Care Services, RBWH nuclear medicine is participating in 4 multicentre radionuclide therapy trials:
 - UpFront PSMA study (prostate cancer)
 - ENZA-p study (prostate cancer)
 - EVOLUTION study (prostate cancer)
 - GoTHAM study (Merkel cell carcinoma)
- New radiopharmaceuticals implemented and used in clinical research studies in 2022
 - [⁶⁸Ga]-FAPI-46 for pancreatic cancer imaging (imaging at HIRF)
- Research contract with Advancell commenced in 2022 to validate Pb-212 radiolabelling in the Q-TRaCE laboratory (Pb alpha radionuclide therapy clinical trial to start in 2023).

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Melissa Latter	Shimadzu Award 2022	2022 Australia & New Zealand Society of Nuclear Medicine Annual Meeting

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Cavallucci David , Fiona Simpson, William McGahan, John Hooper, Paul Thomas , Nick Butler	Nuclear Medicine, surgery	Can the molecules carried by exosomes help to diagnose pancreatic cancer early?	Pankind	\$100,000	2 years, 2022-2024
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
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 million	2019-2022
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	\$1.8 million	2018 - 2022
Thurecht K, Codd R, Munro T, Rolfe B, Reutens D, Birch S, Blakey I, Kunic Z, Saunus J, Paterson B, Hogg P, Huda P, et. al. Melissa Latter	Department of Nuclear Medicine	2022 ARC Research Hub for Advanced Manufacture of Targeted Radiopharmaceuticals	University of Queensland Hub Director: Prof Kristofer Thurecht	\$5 million	2022-2006
Scott A, Robinson R, Pattison DA , Gilfillan C, Clifton-Bligh R, Bailey D, Francis R, Barnes E, Solomon B, Mulhern B	Department of Nuclear Med Specialised PET Services, RBWH	Medical Research Future Fund (MRFF) grant for I-124 PET Directed Redifferentiation Therapy for Radioiodine Refractory Thyroid Cancer: the I-FIRST Study	MRFF – Rare Cancers Rare Diseases & Unmet Need	\$2.7 million	2021 – Ongoing

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 RBWH Patients Recruited in 2022
Stuart Ramsay	Manoj Bhatt, John Atherton, Annmarie Bosco, Eva Wagner, Shankar Vamadevan, Roslyn Francis, William MacDonald	Multicentre registry of individuals undertaking bone scans to assess for suspected transthyretin (ATTR) cardiac amyloidosis	15
Paul Thomas	Hooper J, Munro T, Wyld D, Perrin L, Lourie R, Rose S, Puttick S	A new radio-imaging agent to guide targeted therapy for epithelial ovarian cancer	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 RBWH Patients Recruited in 2022
Emmett L	Goh JC, Pattison DA, Dhiantravan N, Ramsay SC, Thomas P, Suder A, Al-Saig H, Kuchel A.	ENZA-P Trial	2
Azad A	Suder A, Pattison DA, Dhiantravan N, Ramsay SC, Thomas P, Suder A, Al-Saig H, Kuchel A.	UpFrontPSMA Trial	8
Sandhu S	Wyld DK, Pattison DA, Eastgate M, Lin C, Chua B, Al-Saig H.	TarGeted THerapy and Avelumab in Merkel Cell Carcinoma (GoTHAM) Trial	0
Sandhu S	Goh JC, Gan CL, Dhiantravan N, Pattison DA, Ramsay SC, Thomas P, Suder A	EVOLUTION: 177Lu-PSMA Therapy Versus 177Lu-PSMA in Combination With Ipilimumab and Nivolumab for Men With mCRPC (ANZUP2001)	8

Research Publications

Authors

Investigator	ORCID ID
Paul Thomas	http://orcid.org/0000-0002-2420-0950
Stuart Ramsay	https://orcid.org/0000-0001-7009-4864
David Pattison	https://orcid.org/0000-0001-9718-5598
Melissa Latter	https://orcid.org/0000-0001-5382-9611

Publications in 2022

Journal Articles (RBWH staff in bold)

- Kisiel N, **Thomas P**. Potential Pitfall in the Interpretation of Ganglioneuronal Uptake of 18F-PSMA-1007 PET/CT Scans Performed With a High Spatial Resolution Digital PET Scanner. *Clinical Nuclear Medicine* 2022- in press
- Xia Y, Eeles E, Fripp J, Pinsker D, **Thomas P, Latter M**, Doré V, Fazlollahi A, Bourgeat P, Villemagne VL, Coulson E, Rose S. Reduced cortical cholinergic innervation measured using [18F]-FEOBV PET imaging correlates with cognitive decline in mild cognitive impairment. *Neuroimage: Clinical* 2022;34:102992
- McGahan W, **Chikatamarla V, Thomas P, Cavallucci D**, O'Rourke N, **Burge M**. High SUVmax on routine pre-operative FDG-PET predicts early recurrence in pancreatic and peri-ampullary cancer. *HBP* 2022;24:1387-93
- Scott AP, Thomas P, Pattison DA**, Francies L, Ridge P, **Tey S, Kennedy G** [18F]GE-180 PET/CT assessment of enterocytic translocator protein (TSPO) over-expression: a pilot study in gastrointestinal GVHD. *Bone Marrow Transplant* 2022;57:517-519
- Tariq A, McGeorge S, Pearce A, Rhee H, Wood S, **Kyle S**, Marsh P, Raveenthiran S, Wong S, McBean R, Westera J, **Dunglison N, Esler R**, Navaratnam A, **Yaxley J, Thomas P, Pattison D, Roberts M**. Characterization of tumor thrombus in renal cell carcinoma with prostate specific membrane antigen (PSMA) positron emission tomography (PET)/computed tomography (CT). *Urologic Oncology* 2022;40:276.e1-e9
- Bennett OA, **Ramsay SC**, Malacova E, Bourgeat P, **Goodman SJ**, Dunn CJ, **Robinson BM**, Lee K, **Pattison DA**. Regional differences in the reduction in cerebral FDG uptake induced by the ketogenic diet. *Eur J Hybrid Imaging*. 2022 Dec 15;6(1):29. doi: 10.1186/s41824-022-00150-5.
- Pattison DA, Debowski M, Gulhane B, Arnfield EG**, Pelecanos AM, **Garcia PL, Latter MJ**, Lin CY, Roberts MJ, **Ramsay SC, Thomas PA**. Prospective intra-individual blinded comparison of [18F]PSMA-1007 and [68 Ga]Ga-PSMA-11 PET/CT imaging in patients with confirmed prostate cancer. *Eur J Nucl Med Mol Imaging*. 2022 Jan;49(2):763-776.
- Buteau JP, Martin AJ, Emmett L, Iravani A, Sandhu S, Joshua AM, Francis RJ, Zhang AY, Scott AM, Lee ST, Azad AA, McJannett MM, Stockler MR, Williams SG, Davis ID, Hofman MS; **TheraP Trial Investigators** and the Australian and New Zealand Urogenital and Prostate Cancer Trials Group. PSMA and FDG-PET as predictive and prognostic biomarkers in patients given [177Lu]Lu-PSMA-617 versus cabazitaxel for metastatic castration-resistant prostate cancer (TheraP): a biomarker analysis from a randomised, open-label, phase 2 trial. *Lancet Oncol*. 2022 Nov;23(11):1389-1397.
- Li M, Chan DL, Tapia Rico G, Cehic G, Lawrence B, Wyld D, **Pattison DA**, Kong G, Hicks R, Michael M, Kiberu AD, Lim J, Clifton-Bligh R, Tsang V, Roach PJ, Leyden J, Diakos CI, Price TJ, Pavlakis N. Australasian consensus statement on the identification, prevention and management of hormonal crises in patients with neuroendocrine neoplasms (NENs) undergoing peptide receptor radionuclide therapy (PRRT). *Neuroendocrinology*. 2022 Sep 1.
- Arnfield EG**, Roberts MJ, **Pattison DA**. Lymph node classification in E-PSMA reporting guidelines for PSMA-PET. *Eur J Nucl Med Mol Imaging*. 2022 Aug 13.
- Simpson-Page E, **Coogan P**, Kron T, **Lowther N**, Murray B, Noble C, Smith I, Wilks R, Crowe SB. Webinar and survey on quality management principles within the Australia and New Zealand ACPSEM Workforce. *Phys Eng Sci Med* (2022)
- Wang R, Better N, Sivaratnam D, Westcott J, Forehan S, Christie M, **Pattison DA**, Furlanos S. 99m Tc-Sestamibi Thyroid Scintigraphy in Amiodarone-Induced Thyrotoxicosis : Functional Imaging-Histopathologic Correlation. *Clin Nucl Med*. 2022 Sep 1;47(9):e582-e584
- Emmett L, **Pattison DA**, Roberts MJ. All Prostate-specific Membrane Antigen Peptides Are Equal, but Some Are More Equal than Others. *Eur Urol Oncol*. 2022 Jun;5(3):283-284.
- Lee ST, Emmett LM, **Pattison DA**, Hofman MS, Bailey DL, **Latter MJ**, Francis RJ, Scott AM. The Importance of Training, Accreditation, and Guidelines for the Practice of Theranostics: The Australian Perspective. *J Nucl Med*. 2022 Jun;63(6):819-822.
- Tariq A, Kwok M, Pearce A, Rhee H, **Kyle S**, Marsh P, Raveenthiran S, Wong D, McBean R, Westera J, **Dunglison N, Esler R**, Navaratnam A, **Yaxley JW, Thomas P, Pattison DA**, Roberts MJ. The role of dual tracer PSMA and FDG PET/CT in renal cell carcinoma (RCC) compared to conventional imaging: A multi-institutional case series with intra-individual comparison. *Urol Oncol*. 2022 Feb;40(2):66.e1-66.e9.

Keynote or Plenary Lectures given in 2022

Date	Title
27-28 th Aug 2022	David Pattison, Co-convenor, Australasian Association of Nuclear Medicine Specialists (AANMS) Theranostics Course, Sofitel Brisbane Central Hotel.
July 2022	Melissa Latter, organising committee member of RACI2022 Congress
13-15 th May 2022	Melissa Latter organising committee member of Australian and New Zealand Society of Nuclear Medicine (ANZSNM) ASM

Supportive and Palliative Care

Research highlights for the year (1 January – 31 December 2022)

The Royal Brisbane Palliative and Supportive Care Department has continued to collaborate with other specialties within the Royal Brisbane Hospital to produce research projects and activities. Of note is our involvement in the phase IIb trials for the investigation of cannabis for symptom control in patients with cancer.

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 RBWH Patients Recruited in 2022
Robbie Ley Greaves	Carol Douglas, Fiona Coyer	The Intensive Care Palliative Liaison Study (INCEPTION study)	285

Research Publications

Authors

Investigator	ORCID ID
Dr Alison Kearney	00023361192X
Dr Katrina Kramer	

Publications in 2022

Journal Articles (RBWH staff in bold)

Hardy J, Greer R, Huggett G, **Kearney A**, Gurgenci T, Good P: Phase IIb Randomized, Placebo-Controlled, Dose Escalating, Double-Blind Study of Cannabidiol Oil for the Relief of Symptoms in Advanced Cancer (MedCan1-CBD). J Clin Oncol. 2022 November 21, doi: 10.1200/JCO.22.01632.

Hepburn K, Purtell L, Austin L, Berquier I, Kramer K, Bonner A, Healy H: Frailty in People with Advanced Chronic Kidney Disease (CKD) Attending a Kidney Supportive Care (KSC) Service, Nephrology, 2022, 27 (S1), pp. 88-88

Keynote or Plenary Lectures given in 2022

Date	Title
27th May 2022	Symptom Management Case Scenarios – Kidney Supportive Care Symposium – Dr Katrina Kramer

Pharmacy Department

Research highlights for the year (1 January – 31 December 2022)

This year has seen pharmacy research further develop and expand with researchers presenting their work in national and international forums.

Highlights for funding have included two major collaborative projects securing funding; Prof Ian Coombes together with Prof Charles Denaro are Chief Investigators on a \$2.7 million MRFF funded project entitled 'A systems approach to enhancing community-based medication Review' (ASPIRE). In collaboration with University of Sydney this project will evaluate the impact of post discharge home medicine review on reduction of unplanned re-admissions to hospital.

Prof Jason Robert's research program and influence expands his research in antimicrobial resistance and Pharmacokinetic optimisations by securing NHMRC \$2.5 million for his Centre of Research Excellence - REduce the burden of antimicrobial reSistance through oPtimal, persONalised Dosing (RESPOND). Prof Roberts is also part of a collaborative receiving a LTLTC \$2 million grant.

In support of developing researchers in the pharmacy department two of the clinical team have been awarded foundation grants to continue their HDR research and one pharmacist continues on a RBWH PhD scholarship.

Collaborations continue to be at the centre of all research with the wider Pharmacy department and Clinical Pharmacology department investigating and publishing research associated with the medication safety of strategies including electronic medicines management and evaluation and feedback on clinician performance.

Late 2021 also saw the establishment of Centres for Safe and Effective Medication Practice Research CSEMPR – a collaboration between UQ School of Medicine and Pharmacy and MNHHS with Prof Chris Freeman appointed with three post doctorate pharmacy researchers beginning a program of translatable research grant application and collaboration. One post-doctoral student was allocated to RBWH Pharmacy Department and visited the department every fortnight to answer questions and assist clinicians with research.

The publications and presentations section also illustrates a wide array of productivity from our extended range of practitioner clinician researchers from undergraduate pharmacy students to HDR students and post doctorate early and mid and later career researchers.

Successful PhD candidates in 2022

Name	PhD Title	Month Completed	Affiliated University	Summary
Dr Kamrul Islam	Microbiological evaluation of piperacillin/tazobactam versus meropenem against extended-spectrum beta-lactamase-producing Escherichia coli	July 2022	The University of Queensland	Kamrul's thesis aims to evaluate the microbiological efficacy of piperacillin/tazobactam monotherapy, and in combination with the aminoglycoside antibiotic amikacin, versus meropenem monotherapy against ESBL-producing and non-producing E. coli clinical isolates.
Dr Gloria Wong	A pharmacokinetic/ pharmacodynamic and clinical outcome evaluation of beta-lactam antibiotic therapeutic drug monitoring (TDM) in critically ill patients		The University of Queensland	Gloria explored the impact of hypoalbuminaemia on beta-lactam PK/PD in the critically ill, and utilization of unbound drug measurements in TDM to optimise beta-lactam dosing. It described the application of beta-lactam TDM-guided dosing program in critically ill patients with the use of directly-measured unbound drug concentration data.
Dr Caleb Economou	The effect of renal replacement therapies on the pharmacokinetics of key antibiotics used in critically ill patients	April 2022	The University of Queensland	Caleb sought to address the dearth of information on the adequacy of dosing antibiotics in this severely-ill patient population. His thesis characterises the pharmacokinetics of hydrophilic antibiotics that are commonly used in critically ill patients undergoing renal replacement therapy.

Name	PhD Title	Month Competed	Affiliated University	Summary
Dr Sazlyna Mohd Szally Lim	Evaluation of combination antibiotic regimens for the treatment of multidrug-resistant Acinetobacter baumannii infections	August 2022	The University of Queensland	Sazlyna's thesis evaluated the non-polymixin-based combinations used to treat multidrug resistant Acinetobacter baumannii a serious, ongoing problem in many hospitals, particularly in intensive care settings. She sought to define the safe and optimal combination treatment regimens, targeting carbapenem-resistant MDR A. baumannii.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Elizabeth McCourt , Teyl Engstrom, Martin Canning, Katharine Dekker , Panteha Voussoughi , Oliver Bennett , Angela North , Jason Pole, Peter Donovan , Clair Sullivan	Professor William Egerton Award for Best Discovery and Innovation Research	Herston Health Precinct Symposium 2022
Midori Nakagaki for PostMAN Clinic	Finalist in Metro North Research Excellence Award (Clinical Research)	
Midori Nakagaki , Jessica McIlwain , Fang Min Foo , Yatika Jivan , Glen Kennedy	EBMT Pharmacist Abstract Award 1 st Place	EBMT 2022
Ruby Cole	Best Rapid Paper	Metro North Mental Health Research Symposium
	2021 Fred J Boyd Award	SHPA, The Society of Hospital Pharmacists of Australia, awarded in 2022

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Lia Paradissis	Pharmacy	Medication harm in patients after Acute Myocardial Infarction	University PhD Scholarship	\$90,000	3 years in 2 nd year
Kylie Mueller , Karen Whitfield , Ian Coombes	Pharmacy	Impact of early discharge, follow up in high risk cardiac patients	RBWH, Foundation Scholarship	\$38,082	1 year
Karen Davies , Karen Hay, Peter Donovan , Ian Coombes , Karen Whitfield	Pharmacy, clinical pharmacology	Evaluation of Nurse Medication Administration Evaluation Feedback Tool -	MN Collaborative Research	\$50,000	1 years (ended Dec 2022)
Tim Chen, Sarah Hilmer, Ian Coombes , Charles Denaro	Pharmacy + Internal medicine	ASPIRE <u>A</u> Systems aPproach to enhancing community-based medication <u>R</u> eview	MRFF	\$2.7 Million (RBWH + MN PHN is 1 of 4 sites)	5 years

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
ROBERTS, Jason A; HODGE, Anthony; *WALLIS, Steven C; ELEY, Victoria A & TOGNOLINI, Angela R		Pharmacokinetic profile and breastmilk excretion of sugammadex in pregnant women (ANZCA grant administered by Metro North HHS)	Metro North Hospital and Health Service	\$7,986	1 year 2022-2023
ROBERTS, Jason A		Prospective, Open-Label, Randomized Control Trial on Pharmacokinetics of Direct Oral Anticoagulant (Apixaban) in Prevention of Primary Nephrotic Syndrome Associated Thromboembolic Disease (RBWH admin)	Metro North Hospital and Health Service	\$11,946	1 year, 2022-2023
Roberts JA.	ICU	PERSONA: PERSONalised Anti-infective treatment solutions: all patients, all ages, all countries.	University of Queensland Strategic Initiatives Fund	\$780,000.	2021-24,
Roberts JA	ICU	REDEFINING ANTIMICROBIAL USE TO REDUCE RESISTANCE AND PROLONG THEIR CLINICAL UTILITY	Queensland Advancing Clinical Research Fellowship, Queensland Health	\$499,950	2020-24
ROBERTS, Jason A		CT-Perfusion for neurological diagnostic evaluation: a prospective Canadian multicenter diagnostic test study	Centre Hospitalier de l'Universite de Montreal	\$21,438	1 year, 2022-2023
ROBERTS, Jason A; LIPMAN, Jeffrey; *PATERSON, David & *ABDUL-AZIZ, Mohd H B		Continuous vs intermittent infusion of beta-lactam antibacterial drugs: impact on resistance and outcomes in sepsis - PMWP 170	United States Food and Drug Administration	546,843	1 year, 2022-2023
*ABDUL-AZIZ, Mohd H B; *PARKER, Suzanne L & *ROBERTS, Jason A		Optimising dosing regimens of antimicrobials in critically ill children on extracorporeal membrane oxygenation (ECMO)	Preclinical and Clinical Early Career Research	2021 - 2022	1 year, 2021 - 2022
ROBERTS, Jason A; Slavin, M.; *PATERSON, David; COMANS, Tracy A; LIPMAN, Jeffrey; Landersdorfer, C.; Joynt, G.; Bellomo, R. & others	ICU	Centre of Research Excellence - REduce the burden of antimicrobial reSistance through oPtimal, persONalised Dosing (RESPOND)	NHMRC Centres of Research Excellence	\$3,000,000	5 years, 2021 - 2025

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
ROBERTS, Jason A; TOGNOLINI, Angela R; JACKSON, Dwane L; ELEY, Victoria A; WYSSUSEK, Hildegard K; VAN ZUNDERT, Adrien A J & LIPMAN, Jeffrey		Intraoperative lignocaine infusions: Development of an optimised infusion dosing regimen for obese patients (Led by MNHHS)	Metro North Hospital and Health Service	28,000	1 year, 2021
*PARKER, Suzanne L; Lister, P.; *ROBERTS, Jason A; *ABDUL-AZIZ, Mohd H B; SCHLAPBACH, Jan L; MATTKE, Adrian & *WALLIS, Steven C		PIMS Study: An investigation of the utility of Microsampling versus traditional blood sampling for antibiotic pharmacokinetics in Children (SCHS Wishlist Foundation grant administered by SCHHS)	Sunshine Coast Hospital and Health Service	\$4,844	1 year 2021-2022
*ROBERTS, Jason A		Optimising antibiotic dosing for critically ill patients	Queensland Advancing Clinical Research Fellowship	\$549,945	4 years 2020 - 2023
*ROBERTS, Jason A; LIPMAN, Jeffrey; De Waele, J. & *KOULENTI, Despoina		Novel dosing regimens to maximise antibiotic effectiveness for treatment of pneumonia in the intensive care unit	NHMRC Project Grant	\$815,403	4 years, 2019-2023

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 RBWH Patients Recruited in 2022
Midori Nakagaki, Glen Kennedy	Nicole Gavin, Karen Whitfield, Alexandra Clavarino	A Randomised Trial of Topical Polaprezinc to Prevent Oral Mucositis in Patients Undergoing Haematopoietic Stem Cell Transplantation (ToPaZ Study)	36
Danielle Silvestro	Vivian Day, Grant Partridge	Implementation and assessment of competency standards for key skill requirements for RBWH Cancer Care staff	N/A
Midori Nakagaki	Nicole Gavin, Karen Whitfield, Alexandra Clavarino, Glen Kennedy	A real-world accuracy of oral mucositis grading in patients undergoing hematopoietic stem cell transplantation	
Midori Nakagaki	Nicole Gavin, Karen Whitfield, Alexandra Clavarino, Glen Kennedy	The incidence of severe oral mucositis and taste disturbance in patients undergoing different hematopoietic stem cell transplantation regimens	
Midori Nakagaki,	Jessica McIlwain, Fang Min Foo	Initial dose of Ciclosporin A in obese patients undergoing haematopoietic stem cell transplantation: Safety of actual weight based dosing	

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022
Midori Nakagaki, Laura Kurucz	Paul Klages, Nicole Gavin, Kieren Barker, Vivian Day	Routine scheduling of post-bone marrow transplant vaccination at the Post-BMT outpatient clinic	
Shannon Pallett Midori Nakagaki	Elango Pillai Pharmacy student	Vancomycin therapeutic drug monitoring and acute kidney injury in haematology and bone marrow transplant patients	
Adrienne Kostellar	Ian Coombes, Andrew Hale, Michael Barras, Neil Cottrell	Characteristics of readmitted patients reviewed by a high-risk discharge pharmacist	10
Kim Ta	Tia Stuart, Sam Tapp, Kate McCarthy, Michael Holt, Andrew Hale	Making home oral antibiotic administration safer: evaluation of a Complex Outpatient Antibiotic Therapy (CoPAT) service	

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 RBWH Patients Recruited in 2022
Sarah Steinke	Carla Scuderi, Andrew Mallett, Sharad Ratanjee, Chris Freeman, Chiyau Lau, Ben Lundie, Meg Jepessen, Saras Menon, Jamie Kutasovic, Peter Donovan	Implementation of a multidisciplinary pharmacogenomics-guided model of care: Pilot study	-
Christy Noble	Ian Coombes. Elizabeth Molloy	The nature and effect of pharmacists' engagement with feedback in interdisciplinary hospital settings	
Tim Chen	Ian Coombes, Charles Denaro, Karen Leutsch, Carl Schnieder, Sasha bennet, Daniele Gnidic, Sarah Hilmer	The investigation of impact of post discharge home medication review on unplanned hospital re-admission (ASPIRE)	

Research Publications

Authors

Investigator	ORCID ID
Ian Coombes	https://orcid.org/0000-0002-1009-6136
Karen Whitfield	https://orcid.org/0000-0002-8628-6796
Midori Nagakaki	https://orcid.org/0000-0003-4086-6960
Elizabeth McCourt	https://orcid.org/0000-0002-9090-3515
Karen Davies	https://orcid.org/0000-0003-3510-5227
Abby Yu	https://orcid.org/0000-0002-0705-6459
Karen Bettenay	https://orcid.org/0000-0002-2120-0496
Jason Roberts	https://orcid.org/0000-0001-6218-435X

Elizabeth Doran	https://orcid.org/0000-0003-4823-938X
Carla Scuderi	https://orcid.org/0000-0002-3651-8325
Adrienne Kostellar	https://orcid.org/0000-0002-5457-6924

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Scuderi, Carla; Parker, Suzanne ; **Jacks, Margaret** ; **John, George** ; McWhinney, Brett ; Ungerer, Jacobus; Mallett, Andrew; **Healy, Helen**; Roberts, Jason; Staatz, Christine. Finger-prick microsampling methods can replace venepuncture for simultaneous therapeutic drug monitoring of tacrolimus, mycophenolic acid, and prednisolone concentrations in adult kidney transplant patients.. *Therapeutic Drug Monitoring* (:):10.1097/FTD.0000000000001024, September 06, 2022. | DOI: 10.1097/FTD.0000000000001024

Scuderi, C., **Rice, M.**, Hendy, A., **Anning, N.**, Perks, S., Antonel, M., Brown, L., Rawlings, C. and **Ratanjee, S.** (2022), Implementing pharmacist-led deprescribing in the haemodialysis unit: a quality use of medicine activity in the Queensland hospital setting. *J Pharm Pract Res*, 52: 357-362. <https://doi.org/10.1002/jppr.1820>

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Lu, Z.Q., **McCourt, E.**, Goodhew, K., Gupta, D., Chuan, F., Mok, L., Peters, R., Ha, T., Fowler, D., Dobbyn, D.M., Hetherington, J., Challa, P., Kannan, S., Korczyk, D., Russell, A. and Mugwagwa, A.N. (2023), Secular trends in the utility of SGLT-2 inhibitors in heart failure patients with type 2 diabetes mellitus across Metro South Health hospitals in South-East Queensland. *Intern Med J*. <https://doi.org/10.1111/imj.15993>

Tait JR, Bilal H, Rogers KE, Lang Y, Kim T-H, Zhou J, Wallis SC, Bulitta JB, Kirkpatrick CMJ, Paterson DL, Lipman J, Bergen PJ, **Roberts JA**, Nation RL, Landersdorfer CB. Effect of Different Piperacillin-Tazobactam Dosage Regimens on Synergy of the Combination with Tobramycin against *Pseudomonas aeruginosa* for the Pharmacokinetics of Critically Ill Patients in a Dynamic Infection Model. *Antibiotics*. 2022; 11(1):101. <https://doi.org/10.3390/antibiotics11010101>

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- Kong FYS, Unemo M, Lim SH, Latch N, Williamson DA, **Roberts JA**, Wallis SC, Parker SL, Landersdorfer CB, Yap T, Fairley CK, Chow EPF, Lewis DA, Hammoud MA, Hocking JS. Optimisation of treatments for oral *Neisseria gonorrhoeae* infection: Pharmacokinetics Study (STI-PK project) - study protocol for non-randomised clinical trial. *BMJ Open*. 2022 Nov 11;12(11):e064782. doi: 10.1136/bmjopen-2022-064782. PMID: 36368750; PMCID: PMC9660608.
- Vesa Cheng, Mohd H Abdul-Aziz, Fay Burrows, Hergen Buscher, Young-Jae Cho, Amanda Corley, Arne Diehl, Eileen Gilder, Stephan M Jakob, Hyung-Sook Kim, Bianca J Levkovich, Sung Yoon Lim, Shay McGuinness, Rachael Parke, Vincent Pellegrino, Yok-Ai Que, Claire Reynolds, Sam Rudham, Steven C Wallis, Susan A Welch, David Zacharias, John F Fraser, Kiran Shekar, **Jason A Roberts** (2022). Population Pharmacokinetics of Vancomycin in Critically Ill Adult Patients Receiving Extracorporeal Membrane Oxygenation (an ASAP ECMO Study). *Pharmacology Jan* 66:1.
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- Andras Farkas, Katerina Oikonomou, Mohammad Ghanbar, Phillip Villasurda, Julie Varghese, Jeffrey Lipman, Joseph Sassine, Dwarakanathan Ranganathan, **Jason A Roberts**. (2022). Population Pharmacokinetics of Intraperitoneal Gentamicin and the Impact of Varying Dwell Times on Pharmacodynamic Target Attainment in Patients with Acute Peritonitis Undergoing Peritoneal Dialysis. *Antimicrobial Chemotherapy*
- Mohammad H Alshaer, Sylvain Goutelle, Barbara A Santevecchi, Bethany R Shoulders, Veena Venugopalan, Kartikeya Cherabuddi, Jiajun Liu, Patrick J Kiel, **Jason A Roberts**, Fekade Bruck Sime, Marc H Scheetz, Michael N Neely, Charles A Peloquin (2022) Cefepime Precision Dosing Tool: from Standard to Precise Dose Using Nonparametric Population Pharmacokinetics. *Antimicrobial Chemotherapy*
- David MP De Oliveira, Brian M Forde, Minh-Duy Phan, Bernhard Steiner, Bing Zhang, Johannes Zuegg, Ibrahim M El-Deeb, Gen Li, Nadia Keller, Stephan Brouwer, Nichaela Harbison-Price, Amanda J Cork, Michelle J Bauer, Saleh F Alquethamy, Scott A Beatson, **Jason A Roberts**, David L Paterson, Alastair G McEwan, Mark AT Blaskovich, Mark A Schembri, Christopher A McDevitt, Mark von Itzstein, Mark J Walker (2022). Rescuing Tetracycline Class Antibiotics for the Treatment of Multidrug-Resistant *Acinetobacter baumannii* Pulmonary Infection. *Antimicrobial Chemotherapy*
- Eveline Wallenburg, Roger J.M. Brüggemann, **Jason A. Roberts**, Nynke G.L. Jager, Marta Ulldemolins, Sarah Wilkes, Jeroen Schouten, Paul K.L. Chin, Rob ter Heine. A meta-analysis of protein binding of flucloxacillin in healthy volunteers and hospitalized patients, *Clinical Microbiology and Infection*, Volume 28, Issue 3, 2022, Pages 446.e1-446.e7,
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Narayan Pant, Steven C. Wallis, **Jason A. Roberts**, Damon P. Eisen, In vitro effect of synovial fluid from patients undergoing arthroplasty surgery on MRSA biofilm formation, *Journal of Antimicrobial Chemotherapy*, Volume 77, Issue 4, April 2022, Pages 1041–1044,

Whitmore, T. J., Cheng, V., Rawlins, M. D., Morgan, D., Chang, T., O'Halloran, S., Dyer, J. R., Boan, P., & **Roberts, J. A.** (2022). Pharmacokinetics of valganciclovir and voriconazole during prolonged intermittent renal replacement therapy in a lung transplant recipient. *Transplant Infectious Disease : an official journal of the Transplantation Society*, 24(2), e13818. <https://doi.org/10.1111/tid.13818>

Sharrock, Lucy^{1,3}; Ankravs, Melissa J.¹⁻³; Deane, Adam M.^{1,2}; Rechnitzer, Thomas¹; Wallis, Steven C.⁶; **Roberts, Jason A.**^{6,7,8}; Bellomo, Rinaldo^{1,2,4,5}. Clearance of Piperacillin-Tazobactam and Vancomycin During Continuous Renal Replacement With Regional Citrate Anticoagulation. *Therapeutic Drug Monitoring* ():10.1097/FTD.0000000000001028, August 19, 2022. | DOI: 10.1097/FTD.0000000000001028

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Cheng, V., Abdul-Aziz, M.H., Burrows, F. **Roberts, JA et al.** Population Pharmacokinetics and Dosing Simulations of Ceftriaxone in Critically Ill Patients Receiving Extracorporeal Membrane Oxygenation (An ASAP ECMO Study). *Clin Pharmacokinet* **61**, 847–856 (2022). <https://doi.org/10.1007/s40262-021-01106-x>

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Aaron J Heffernan, Fekade B Sime, Nilesh Kumta, Steven C Wallis, Brett McWhinney, Jacobus Ungerer, Gloria Wong, Gavin M Joynt, Jeffrey Lipman, **Jason A Roberts** (2022) . Multicenter Population Pharmacokinetic Study of Unbound Ceftriaxone in Critically Ill Patients. *Pharmacology, Research Article* 16 May 2022

Minyon L Avent, Kate L McCarthy, Fekade B Sime, Saiyuri Naicker, Aaron J Heffernan, Steven C Wallis, David L Paterson, **Jason A Roberts** (2022) Evaluating Mono- and Combination Therapy of Meropenem and Amikacin against *Pseudomonas aeruginosa* Bacteremia in the Hollow-Fiber Infection Mode. *Antimicrobial Chemotherapy Research Article* 20 April 2022

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Kamrul Islam, Fekade B Sime, Michelle J Bauer, Brian M Forde, Steven C Wallis, Patrick Harris, Saiyuri Naicker, Tahmina Shirin, Zakir H Habib, Meerjady S Flora, **Jason A Roberts** (2022) Pharmacodynamic evaluation of piperacillin/tazobactam against extended-spectrum β -lactamase (ESBL)-producing versus non-ESBL-producing *Escherichia coli* in a hollow-fibre infection model. *International Journal of Antimicrobial Agents* Volume 60, Issue 2, August 2022, 106623.

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- Kiran Shekar, Mohd H Abdul-Aziz, Vesa Cheng, Fay Burrows, Hergen Buscher, Young-Jae Cho, Amanda Corley, Arne Diehl, Eileen Gilder, Stephan M Jakob, Hyung-Sook Kim, Bianca J Levkovich, Sung Yoon Lim, Shay McGuinness, Rachael Parke, Vincent Pellegrino, Yok-Ai Que, Claire Reynolds, Sam Rudham, Steven C Wallis, Susan A Welch, David Zacharias, John F Fraser, **Jason A Roberts** (2022) Antimicrobial Exposures in Critically Ill Patients Receiving Extracorporeal Membrane Oxygenation. *American Journal of Respiratory and Critical Care Medicine*
- Legg, A., Meagher, N., Johnson, S.A. **Roberts, JA et al.** Risk Factors for Nephrotoxicity in Methicillin-Resistant *Staphylococcus aureus* Bacteraemia: A Post Hoc Analysis of the CAMERA2 Trial. *Clin Drug Investig* **43**, 23–33 (2023). <https://doi.org/10.1007/s40261-022-01204-z>
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- Kong FYS, Unemo M, Lim SH, **Roberts, JA et al** Optimisation of treatments for oral *Neisseria gonorrhoeae* infection: Pharmacokinetics Study (STI-PK project) – study protocol for non-randomised clinical trial. *BMJ Open* 2022;12:e064782. doi: 10.1136/bmjopen-2022-064782
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- Anh Quan Truong, Xuan Co Dao, Dinh Hoa Vu, Hoang Anh Nguyen, Thi Hong Gam Do, Nhan Thang Tran, Nhat Minh Tran, Ngan Binh Vu, Hong Nhung Pham, Van Cuong Bui, The Anh Trinh, Quoc Tuan Dang, Gia Binh Nguyen, Jeffrey Lipman, Menino O Cotta, **Jason A Roberts** (2022) Optimizing Meropenem in Highly Resistant *Klebsiella pneumoniae* Environments: Population Pharmacokinetics and Dosing Simulations in Critically Ill Patients. *Antimicrobial Agents and Chemotherapy* Vol. 66, No. 11
- Zoe McQuilten, Balasubramanian Venkatesh, Vivekanand Jha, **Jason Roberts**, Susan Morpeth, James Totterdell, Grace McPhee, John Abraham, Niraj Bam, Methma Bandara, Ashpak Bangi, Lauren Barina, Bhupendra Basnet, Hasan Bhalley, Khemr Bhusal, Umesh Bogati, Asha Bowen, Andrew Burke, Devasahayam Christopher, Sanjeev Chunilal, Belinda Cochrane, Jennifer Curnow, Varaprasad Babu Dara Reddy, Santa Das, Ashesh Dhungana, Gian Luca Di Tanna, Ravindra Dotel, Hyjel DSouza, Jack Dummer, Sourabh Dutta, Hong Foo, Timothy Gilbey, Michelle Giles, Kasiram Goli, Adrienne Gordon, Pradip Gyanwali, Bernard Hudson, Manoj Jani, Purnima Jevaji, Sachin Jhawar, Aikaj Jindal, M. Joseph John, Mary John, Flavita John, Oommen John, Mark Jones, Rajesh Joshi, Prashanthi Kamath, Gagandeep Kang, Achyut Karki, Abhishek Karmalkar, Baldeep Kaur, Kalyan Chakravarthy Koganti, Jency Koshy, S K Mathew, Jillian Lau, Sharon Lewin, Lyn-li Lim, Ian Marschner, Julie Marsh, Michael Maze, James McGree, James McMahon, Robert Medcalf, Eileen Merriman, Amol Misal, Jocelyn Mora, Vijaybabu Mudaliar, Vi Nguyen, Matthew O'Sullivan, Suman Pant, Pankaj Pant, David Paterson, David Price, Megan Rees, James Owen Robinson, Benjamin Rogers, Sandhya Samuel, Joe Sasadeusz, Deepak Sharma, Prabhat Sharma, Roshan Shrestha, Sailesh Shrestha, Prajowl Shrestha, Urvi Shukla, Omar Shum, Christine Sommerville, Tim Spelman, Richard Sullivan, Umashankar Thatavarthi, Huyen Tran, Nanette Trask, Claire Whitehead, Robert Mahar, Naomi Hammond, James David McFadyen, Thomas Snelling, Joshua Davis, Justin Denholm, Steven YC Tong; Anticoagulation and Antiplatelet Strategies in Non-Critically Ill Patients with Covid-19. *Blood* 2022; 140 (Supplement 1): 326–328. doi: <https://doi.org/10.1182/blood-2022-168448>
- Steven Y C Tong, Jocelyn Mora, Asha C Bowen, Matthew P Cheng, Nick Daneman, Anna L Goodman, George S Heriot, Todd C Lee, Roger J Lewis, David C Lye, Robert K Mahar, Julie Marsh, Anna McGlothlin, Zoe McQuilten, Susan C Morpeth, David L Paterson, David J Price, **Jason A Roberts**, J Owen Robinson, Sebastiaan J van Hal, Genevieve Walls, Steve A Webb, Lyn Whiteway, Dafna Yahav, Joshua S Davis, for the *Staphylococcus aureus* Network Adaptive Platform (SNAP) Study Group, The *Staphylococcus aureus* Network Adaptive Platform Trial Protocol: New Tools for an Old Foe, *Clinical Infectious Diseases*, Volume 75, Issue 11, 1 December 2022, Pages 2027–2034, <https://doi.org/10.1093/cid/ciac476>
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- Ming G Chai, **Jason A Roberts**, Andras Farkas, Menino O Cotta, Accuracy of a precision dosing software program for predicting antibiotic concentrations in critically ill patients, *Journal of Antimicrobial Chemotherapy*, 2022;, dkac392, <https://doi.org/10.1093/jac/dkac392>
- Anticoagulation Strategies in Non–Critically Ill Patients with Covid-19. *NEJM Evidence* 2022;2 (2) Denholm, J.T., Venkatesh, B., Davis, J. **Roberts JA. et al.** ASCOT ADAPT study of COVID-19 therapeutics in hospitalised patients: an international multicentre adaptive platform trial. *Trials* **23**, 1014 (2022). <https://doi.org/10.1186/s13063-022-06929-y>
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- Williams, P, Cotta, MO, Abdul-Aziz, MH, Wilks, K, Farkas, A, **Roberts, JA.** In silico evaluation of a beta-lactam dosing guideline among adults with serious infections. *Pharmacotherapy*. 2023; 00: 1- 10. doi:10.1002/phar.2753
- Lim, CK, **Roberts, J**, Moso, M, et al. Mpox diagnostics: review of current and emerging technologies. *J Med Virol*. 2023; 95:e28429. doi:10.1002/jmv.28429

Book Chapters (RBWH staff in bold)

Watson K, **McCourt E**, Babigumira P, Ashiru-Oredope D. *Pharmacy Practice and Emergency Preparedness Resilience and Response* in Encyclopedia of Evidence in Pharmaceutical Public Health and Health Services Research in Pharmacy

Keynote or Plenary Lectures given in 2022

Date	Title
2nd December 2022	Dr Elizabeth McCourt: Session chair of lightning talks (L01) at Society of Hospital Pharmacists Australia Medicines Management 2022
2nd December 2022	Carla Scuderi: Session chair of lightning talks (L04) at Society of Hospital Pharmacists Australia Medicines Management 2022
2nd December 2022	Paul Firman: Session chair of invited speakers (S4) at Society of Hospital Pharmacists Australia Medicines Management 2022
1st December 2022	Prof Jason Roberts: Oration for 2021 Fred J Boyd Award delivered at Society of Hospital Pharmacists Australia Medicines Management 2022
5th November 2022	Kim Ta: 'Drug toxicity and Adverse reactions' (Invited speaker) - Nontuberculous Mycobacteria (NTM) Symposium 2022
30th July 2022	Carla Scuderi: Pharmaceutical Society of Australia 2022 lecture SGLT2 inhibitors in CKD
25th March 2022	Carla Scuderi: Australian Pharmacy Professional 2022 lecture SGLT2 inhibitors

Department of Rheumatology

Research highlights for the year (1 January – 31 December 2022)

Associate Professor Philip Robinson sadly passed away on 3 January 2023 after a short, unexpected illness. He was the research lead for the Department of Rheumatology for the last 8 years. Phil was a stellar researcher and post PhD did a post doc at Queensland Brain Institute, UQ, as the ARA-RACP Starr Research Fellow. In the 8 years following completion of his PhD, Phil had published over 170 articles with citations in excess of 6000 had a H index of 44. His research interests were broad and included axial spondylitis, inflammatory eye disease and gout. In recent years he co-founded the COVID-19 Global Rheumatology Alliance and this is his defining contribution to the field of rheumatology. Originally through twitter Phil and his collaborators connected and created the alliance, they harnessed the power of multiple research and clinical groups, individual rheumatologists and researchers and patient partners across the world. Phil's leadership and collaborative skills came to the fore as he supported and mentored alliance members, early career clinicians and researchers and patients. He connected people in a worldwide pandemic, in the most uncertain of times and the outputs were tremendous. His passion, hard work and commitment to this will be remembered and honoured by his colleagues.

Sexual Health and HIV Service

Research highlights for the year (1 January – 31 December 2022)

Two phase 3 global pharmaceutical (Merck Sharp & Dohme Corp HIV investigational drug randomized controlled trials have continued despite the ongoing challenges of COVID 19 pandemic onsite at Sexual Health and HIV Services (SHHS) (Biala) in collaboration with Infectious Diseases Research Department (RBWH):

MK8591A-018

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 Bictegravir/Emtricitabine/Tenofovir Alafenamide (BIC/FTC/TAF)

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 participant retention for the site for both studies during the ongoing challenges and uncertainties of the COVID 19 pandemic throughout the active treatment phase for these studies. Funding received from participation in these clinical trials has financially supported the Clinical Nurse Research position at 0.5 FTE.

CEASE-D

Control and Elimination within Australia of Hepatitis C from people living with HIV (CEASE)

A Hepatitis C virus surveillance study in its final clinical data follow up phase, which was delayed due to the COVID pandemic. SHHS is now actively assessing this cohort for their last trial visits for HCV viraemia analysis, behavioural and quality of life assessments.

START

The strategic timing of Antiretroviral Treatment (START) study.

What started in 2006 as an international HIV treatment RCT is now in its final year of longitudinal follow up, which is continuing to demonstrate how early treatment has benefitted people living with HIV. SHHS has now completed this final year's data collection and results will be published in the coming months.

THE AUSTRALIAN HIV OBSERVATIONAL DATABASE(AHOD)

AHOD is an observational cohort study of more than 4,000 HIV positive patients in Australia under routine clinical care. It was established in 1999 to monitor treatment uptake and outcomes. Since its inception, AHOD has provided the best available surveillance data on trends in antiretroviral treatment uptake and use in Australia and has a central role in State and Commonwealth Health Departments in the planning of HIV care. This is an ongoing Australia wide project that the clinic has been involved with over the years. Data collection for this project has been a huge task due to the lack of an electronic data base. Our clinic had to manually complete all the required fields for the current reporting period (2021-2022) which was an almost impossible task due to staffing constraints. In the past 15yrs past, data collection for this project was electronically collected by the clinic. The electronic data base for our clinic was phased out and replaced with eiMR .

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Dr Emily Bryan	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	2yrs, 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 RBWH Patients Recruited in 2022	Total number of RBWH Patients Recruited
Eugene Priscott	Sonia Benn Arron Sparkes Eugene Priscott Sara Yegenah Theo Van Lieshout	MK8591A-017	0 (closed)	5
Eugene Priscott	Sonia Benn Arron Sparkes Eugene Priscott Sara Yegenah Theo Van Lieshout	MK8591A-018	0 (closed)	4

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 RBWH Patients Recruited in 2022	Total number of RBWH Patients Recruited
Eugene Priscott	Sonia Benn Arron Sparkes Eugene Priscott Sara Yegenah Theo Van Lieshout	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	0	5
Eugene Priscott	Sonia Benn Arron Sparkes Sara Yegenah Theo Van Lieshout	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 Bictegravir/Emtricitabine/Tenofovir Alafenamide (BIC/FTC/TAF)	0	4
Eugene Priscott	Sonia Benn	Australian HIV Observational Database (AHOD)	0	73

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of RBWH Patients Recruited in 2022	Total number of RBWH Patients Recruited
Theo Van Lieshout	Sonia Benn	CEASE-D Control and Elimination within Australia of Hepatitis C from people living with HIV	0	13
Theo Van Lieshout	Sonia Benn	START Strategic Timing and initiation of early Anti-Retroviral Treatment	0	7
Emily Bryan	Ken Beagley Alison Carey Logan Trim Andrew Redmond Julian Langton-Lockton Luke Coffey David Whiley Jacob Tickner Emma Sweeney	Sexually transmitted infections in men: are current diagnostics only detecting the tip of the iceberg?	0 (SHHS not a recruitment site)	0

Research Publications

Publications in 2022

Journal Articles (RBWH staff in bold)

Ekanayake Weeramange C, Tang KD, Vasani S, **Langton-Lockton J**, Kenny L, Punyadeera C. DNA Methylation Changes in Human Papillomavirus-Driven Head and Neck Cancers. *Cells* [Internet]. 2020 May 31 [cited 2022 Jan 25];9(6). Available from: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens&db=mdc&AN=32486347&site=eds-live>

Ekanayake Weeramange C, Liu Z, Hartel G, Li Y, Vasani S, **Langton-Lockton J**, et al. Salivary High-Risk Human Papillomavirus (HPV) DNA as a Biomarker for HPV-Driven Head and Neck Cancers. *The Journal of Molecular Diagnostics* [Internet]. 2021 Oct 1 [cited 2022 Jan 25];23(10):1334–42. Available from: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens&db=edselp&AN=S1525157821002117&site=eds-live>

Brazier E, Maruri F, Duda SN, Tymejczyk O, Wester CW, Somi G, **Rowling, D**, et al. Implementation of “Treat-all” at adult HIV care and treatment sites in the Global leDEA Consortium: results from the Site Assessment Survey. *JOURNAL OF THE INTERNATIONAL AIDS SOCIETY* [Internet]. 2019 Jul 1 [cited 2022 Jan 25];22(7):e25331. Available from: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens&db=edswsc&AN=000478602900009&site=eds-live>

Herbert S, Pühr R, Petoumenos K, Lewis DA, Varma R, Couldwell DL, **Rowling, D**, et al. Characteristics of heterosexually-acquired compared to homosexually-acquired HIV and implications for clinical practice: results from the Australian HIV Observational Database. *AIDS care* [Internet]. 2021 Apr 15 [cited 2022 Jan 25];1–7. Available from: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens&db=mdc&AN=33856950&site=eds-live>

Bansi-Matharu L, Phillips A, Oprea C, Grabmeier-Pfistershammer K, Günthard HF, De Wit S, **Rowling, D**, et al. Contemporary antiretrovirals and body-mass index: a prospective study of the RESPOND cohort consortium. *The Lancet HIV* [Internet]. 2021 Nov [cited 2022 Jan 25];8(11):e711–22. Available from: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens&db=mdc&AN=34555326&site=eds-live>

Baxter J, Dunn D, Tostevin A, Marvig R, Bennedbæk M, Cozzi LA, **Rowling, D** et al. Transmitted HIV-1 drug resistance in a large international cohort using next-generation sequencing: results from the Strategic Timing of Antiretroviral Treatment (START) study. *HIV Medicine* [Internet]. 2021 May [cited 2022 Jan 25];22(5):360–71. Available from: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,athens&db=asx&AN=149846730&site=eds-live>

Department of Thoracic Medicine

Research highlights for the year (1 January – 31 December 2022)

1. Chris Bolliger award for Best paper in Journal RESPIRATION : Dear Prof. Fielding,

On behalf of the Editorial Team at *Respiration*, it is my pleasure to inform you that your group's article: "First Human Use of a New Robotic-Assisted Fiber Optic Sensing Navigation System for Small Peripheral Pulmonary Nodules" (David I.K. Fielding, Farzad Bashirzadeh, Jung Hwa Son, Maryann Todman, Adrian Chin, Lionel Tan, Karin Steinke, Morgan N. Windsor, Author Wai Sung) *Respiration* 2019;98:142-150 has been awarded the "[Chris Bolliger Award](#)" for 2022. As you are probably aware, this award named after *Respiration's* former Editor is given to original research published in the journal which have made significant impact."

2. Collected samples from our 500th patient as part of the National study of lung cancer genomics run by RBWH Thoracic Medicine- the Debutant Study, a collaborative study with us, UQCCR, QIMR Berghofer, and 6 other sites around Australia
3. Completion of the PET First study- a large prospective dual centre study involving multiple departments applying a novel approach to pre-biopsy assessment of lung nodules
4. Commencement of the Registry study of the first robotic bronchoscope deployed in Australia- the ION system

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Peter Simpson(UQ) David Fielding Karin Steinke Katia Nones (QIMR B) Nic Waddell (QIMR B)	Thoracic Medicine	Improving genomic testing rates for inoperable lung cancer patients	NHMRC- MRFF	\$2.49 million	4 years 2021-2025
Peter Simpson(UQ) Andrew Dalley David Fielding	Thoracic Medicine	How best to guide Metastatic Lung Cancer Treatment	RBWH Foundation	\$40,000	2020-2022
Sarju Vasani David Fielding Chamindie Punyadeera	ENT Thoracic Medicine	Saliva testing in lung nodule discrimination	Metro North	\$40,000	2021-2
David Fielding	Thoracic Medicine	Robotic Bronchoscopy	Qld Technology Future Fund	\$1.4 million	2019-present
Tony Chen Miao Xu Robert Boots	Thoracic Medicine	Collaborated Learning with medical data making high-stake decision without information leakage	Cyber Security research grant University of Queensland	\$74,923	2021

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Darren O'Brien,	Thoracic and Sleep Medicine	<i>TeleSleep Case Test and Service</i>	Qld Technology Future Fund,	\$530,616	<i>Pilot</i> 2021-22
Courtney Jarrett	Thoracic and Sleep Medicine	<i>Evaluation of the TeleSleep Pilot Model for the delivery of sleep services to regional patients</i>	Allied Health Professions' Office of Queensland (AHPOQ) Health Practitioner Research Scheme (HPRS).	\$23,631	2022
Courtney Jarrett, Collaborative for recipient.	Thoracic and Sleep Medicine	Pre-RHD Scholarship	Allied Health Research, Learning and Innovation (CAHRLI)		2021-22
Joanne Wex, Laura Marriott, Darren O'Brien,	Thoracic and Sleep Medicine	Grant recipients	Allied Health Professional Enhancement Program (AHPEP)		October 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 RBWH Patients Recruited in 2022
David Fielding	Chamindie Punyadeera, Sarju Vasani, Jung Hwa Son	Biomarkers of pulmonary nodules	10
David Fielding	Jung Hwa Son Farzad Bashirzadeh	PET First- a prospective study of ordering of investigations in lung nodules	98
David Fielding	Kim Ryan, Farzad Bashirzadeh Mahendra Singh Lakshmy Nandakumar	Debutant study- extended molecular analysis of EBUS TBNA samples in lung cancer	200
David Fielding	Jung Hwa Son Farzad Bashirzadeh Jason Madore Bill Dougall Touraj Taheri	Immunohistochemistry of EBUS TBNA samples for co-markers of PDL1	40
Robert Boots,	Oliver Rawashdeh, Judith Bellapart, Craig Winter, Shane Townsend, Dylan Flaws, Darren O'Brien, Chris Zappala, Pierre Clement, Nerman Karamujic, Gemma Crawley, Hervey Lau,	Sleep and Chronotype following aneurysmal Subarachnoid Haemorrhage.	
Hervey Lau	Geoffrey Fanning, Dinithi Samarungana, Darren O'Brien,	Factors associated with non-adherence to CPAP therapy: an audit of the Queensland Health Sleep Disorders Program	

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 RBWH Patients Recruited in 2022
Kekoolani Visan,	Andreas Moller David Fielding Jung Hwa Son Farzad Bashirzadeh	Extracellular microvesicles in lung nodule discrimination	50 75
Rob Boots	Tony Chen Miao Xu, UQ	Collaborated Learning with medical data making high-stake decision without information leakage	
Jennifer Paratz,	Peter Thomas, Norman Morris, Robert Boots, Louise Gustafsson, Judith Hough, Julie Hides, Anthony Trojman,	Morbidity Post COVID-19: Investigation and Call to Action.	
Li J (Aust Institute for Bioengineering and nanotechnology)	Fielding D Wuetrich A Trau M Lobb R	Digital Decoding of Single Extracellular Vesicle Phenotype Differentiates Early Malignant and Benign Lung Lesions	30
Clare Pekins	Mala McHale, Simon Kilner, Scott Ruddell, Trish McLean, Hervey Lau	Evaluation of a group cognitive behavioural therapy intervention for comorbid insomnia	

Research Publications

Authors

Investigator	ORCID ID
David Fielding	0000-0003-2311-4919
Farzad Bashirzadeh	
Michael Holt	
Rob Boots	0000-0002-2436-7654
Hervey Lau	
Kimberley Ryan	0000-0002-8188-9977
Jung Hwa Son	
Chris Zappala	
Darren O'Brien	

Publications in 2022

Journal Articles (RBWH staff in bold)

David Fielding, Andrew J Dalley, Mahendra Singh, Lakshmy Nandakumar³, Vanessa Lakis⁴, Haarika Chittoory², David Fairbairn³, Ann-Marie Patch⁴, Stephen H. Kazakoff⁴, Kaitin Ferguson², **Farzad Bashirzadeh**¹, Michael Bint⁵, Carl Pahoff⁶, Jung Hwa Son¹, Alan Hodgson³, Sowmya Sharma^{4,7}, Nicola Waddell⁴, Sunil R Lakhani^{2,3}, Gunter Hartel^{4*}, Katia Nones^{4,8*}, Peter T Simpson^{2*}. Evaluating Diff-Quick cytology smears for large panel mutation testing in lung cancer - predicting DNA content and success with low malignant cellularity samples. *Cancer Cytopathology* In Press 2022

D Fielding, AJ. Dalley, MSingh, L Nandakumar, KaNones, Va Lakis, HaChittoory, K Ferguson, **FBashirzadeh**, M Bint, CPahoff, **J Son**, A Hodgson, Sowmya Sharma, D Godbolt, K Coleman, L Whitfield, N Waddell, S Lakhani, G Hartel, Peter T. Simpson. Prospective Optimization of Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration Lymph Node Assessment for Lung Cancer: Three Needle Agitations Are Noninferior to 10 Agitations for Adequate Tumor Cell and DNA Yield. *JTO Clinical Research Reports*. 2022; 3:100403

Li J; Sina AAI; Antaw F **Fielding D**; Möller A; Lobb R; Wuethrich A; Trau M. Digital Decoding of Single Extracellular Vesicle Phenotype Differentiates Early Malignant and Benign Lung Lesions. *Advanced Science* 2022 Nov 17, pp. e2204207. *Date of Electronic Publication*: 2022 Nov 17.

Steinfort DP; Siva S; Rangamuwa K; Lee P; **Fielding D**; Nguyen P; Jennings BR; Yo S; Hardcastle N; Kothari G; Crombag L; Annema J; Yasufuku K; Ost DE; Irving LB. Systematic endoscopic staging of mediastinum to determine impact on radiotherapy for locally advanced lung cancer (SEISMIC): protocol for a prospective single arm multicentre interventional study. *BMC pulmonary medicine* 2022 22 (1), pp. 364

Ramarao-Milne P; Kondrashova O; Patch AM; Nones K; Koufariotis LT; Newell F; Addala V; Lakis V; Holmes O; Leonard C; Wood S; Xu Q; Mukhopadhyay P; Naeini MM; Steinfort D; Williamson JP; Bint M; Pahoff C; Nguyen PT; Twaddell S; Arnold D; Grainge C; Basirzadeh F; **Fielding D**; Dalley AJ; Chittoory H; Simpson PT; Aoude LG; Bonazzi VF; Patel K; Barbour AP; Fennell DA; Robinson BW; Creaney J; Hollway G; Pearson JV; Waddell N. Comparison of actionable events detected in cancer genomes by whole-genome sequencing, in silico whole-exome and mutation panels. *ESMO open* ISSN: 2059-7029, 2022 ;7 : 100540

Herath S; **Bashirzadeh F**; Mahajan H; Ing A; **Fielding D** Using the GenCut core biopsy tool with the radial endobronchial ultrasound guide sheath enables a high-quality histology sample capable of programmed cell death ligand 1 (PD-L1) testing. *Respirology case reports* 2022; 10 :e0935

Lancini D, Tan WL, Guppy-Coles K, **Boots R**, Prasad S, Atherton J, Martin P. Critical illness associated new onset atrial fibrillation: subsequent atrial fibrillation diagnoses and other adverse outcomes. *EP Europace*. 2022; pages euac174

Boots RJ, Xue G, Tromp D, Rawashdeh O, Bellapart J, Townsend S, Rudd M, Winter C, Mitchell G, Garner N, Clement P, Karamujic N, Zappala C. Circadian Rhythmicity of Vital Signs at Intensive Care Unit Discharge and Outcome of Traumatic Brain Injury. *Amer J Critical Care*. 2022; 31:472-482.

Boots R, Mead G, Rawashdeh O Bellapart, J Townsend S, Paratz J, Garner N, Clement P, Oddy D. Temperature profile Adverse Outcomes Post ICU Discharge (TAOPID): Insights into the 24-hour circadian temperature profile prior to ICU discharge predicts adverse health outcomes during ward care Circadian Investigators in Critical Illness. *Am J Crit Care* 2022; 31:e1-9

Bissett BM, Leditschke IA, Neeman T, Green M, Marzano V, Erwin K, van Haren FMP, **Boots R**, Paratz J. Does mechanical threshold inspiratory muscle training promote recovery and improve outcomes in patients who are ventilator-dependent in the intensive care unit? The IMPROVE randomised trial. *Australian Critical Care* 2022. DOI: <https://doi.org/10.1016/j.aucc.2022.07.002>

Hawke K, **Joshi K**, **Lau H**, Halder A, Duncan P, Wolski P. Anomalous systemic arterial supply to the basal segment of the lung presenting with haemoptysis in the third trimester of pregnancy. *Obstetric Medicine*. 2022;0(0). doi:10.1177/1753495X221125975.

Book Chapters (RBWH staff in bold)

Shen S, Xu M, Yue L, **Boots R**, Chen W. Death Comes But Why: An Interpretable Illness Severity Predictions in ICU. In *Web and Big Data 6th International Joint Conference, APWeb-WAIM 2022 Nanjing, China, November 25–27, 2022 Proceedings, Part I*. Bohan Li, Lin Yue, Chuanqi Tao, Xuming Han, Diego Calvanese Toshiyuki Amagasa (Eds.) p 60-75. Springer Nature Switzerland 2023. ISBN 978-3-031-25157-3

Keynote or Plenary Lectures given in 2022

Date	Title
November 2022	D Fielding. Update on Bronchoscopic Advances. World Association Bronchology Annual Scientific Meeting Marseilles
November 2022	D Fielding Pulmonary Nodule Biopsy. World Association Bronchology Annual Scientific Meeting Marseilles
October 2022	D Fielding IASLC Asia Conference on Lung Cancer. Robotic Bronchoscopy
November 2022	D Fielding Brisbane Cancer Conference Molecular diagnostics for lung cancer

Queensland Statewide Antimicrobial Stewardship Program

Research highlights for the year (1 January – 31 December 2022)

The research highlights for the Queensland Statewide Antimicrobial Stewardship Program were the result of collaboration between the Infectious Diseases and Pharmacy departments at MNHHS and Queensland Infection Control Network which developed a quality improvement initiative in the form of an eLearning module for a high risk medication, vancomycin. This was supported by a CAHRLI Innovation Challenge grant and Graduate Certificate in Health Science (Health Services Innovation) program.

In collaboration with Children's Health Queensland Hospital and Health Services, AusHSI and The University of Queensland an innovative Antimicrobial Stewardship Program for children in remote and regional areas: optimising antibiotic use through early intravenous-to-oral conversion was implemented and resulted in two publications of the program outcomes.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Minyon Avent	Graduate Certificate in Health Science (Health Services Innovation)	QUT June 2022

Research Grants

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded (whole all years)	Length of Awards in years and years active
Minyon Avent	RBWH Pharmacy department/Infectious Diseases/QLD Statewide AMS Program	Optimising vancomycin therapy for MRSA blood stream infections	CAHRLI Innovation Challenge	\$7,000	1 yr, 2021-2022

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 participants Recruited in 2022
Minyon Avent	Will Franks, Andrew Redmond, Kathryn Daveson, Sundresan Naicker	Optimising vancomycin therapy for MRSA blood stream infections	28

Research Publications

Authors

Investigator	ORCID ID
Minyon Avent	http://orcid.org/0000-0001-7228-2834

Kathryn Daveson	https://orcid.org/0000-0002-8940-337X
Sarah Boyd	https://orcid.org/0000-0002-5158-5032

Publications in 2022

Journal Articles (RBWH staff in bold)

Sharman LS, **Avent ML**, Lyall V, Irwin AD, Graham N, Fejzic J, Clark JE, van Driel M. Improving paediatric antimicrobial stewardship in remote and regional Queensland hospitals: development and qualitative evaluation of a tailored intervention for intravenous-to-oral antibiotic switching. *BMJ Open* in press 2022-064888.

Avent ML, McCarthy KL, Sime FB, Naicker S, Heffernan AJ, Wallis SC, **Paterson DL, Roberts JA**. Evaluating Mono- and Combination Therapy of Meropenem and Amikacin against *Pseudomonas aeruginosa* Bacteremia in the Hollow-Fiber Infection Model. *Microbiol Spectr*. 2022 Jun 29;10(3):e0052522. doi: 10.1128/spectrum.00525-22. Epub 2022 Apr 20. PMID: 35442072; PMCID: PMC9241727.

Avent ML, Lee XJ, Irwin AD, Graham N, Brain D, Fejzic J, van Driel M, Clark JE. An innovative antimicrobial stewardship programme for children in remote and regional areas in Queensland, Australia: optimising antibiotic use through timely intravenous-to-oral switch. *J Glob Antimicrob Resist*. 2022 Mar;28:53-58. doi: 10.1016/j.jgar.2021.11.014. Epub 2021 Dec 13. PMID: 34915202

Sandaradura I, Alffenaar JW, Cotta MO, **Daveson K**, Day RO, Van Hal S, Lau C, Marriott DJE, Penm J, Roberts JA, Tabah A, Williams P, Imani S Emerging therapeutic drug monitoring of anti-infective agents in Australian hospitals: Availability, performance and barriers to implementation. *Br J Clin Pharmacol*. 2022 Feb;88(2):669-679. doi: 10.1111/bcp.14995. Epub 2021 Jul 31. PMID: 34289135

Keynote or Plenary Lectures given in 2022

Date	Title
November 28, 2022	Minyon Avent (chair) Tools for Enhanced Antimicrobial Stewardship in Low- and Middle-Income Countries, 32nd International Congress of Antimicrobial Chemotherapy (ICC), Perth