



2022

RBWH Research Report

**WOMEN'S AND NEWBORN
SERVICES**

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Women's and Newborn Services



Professor Leonie Callaway
Director of Research
Women's and Newborn Services



Peter Buttrum
Service Line Director
Women's and Newborn Services

We are delighted to present our 2022 research report.

Research cultivates and improves the curiosity and enquiry of our staff, which in turn attracts the best and brightest minds. And we know that even the simplest research improves clinical care and clinical outcomes. Which is why we continue to invest in research expertise and capability across our services.

Across Women's and Newborn Services, we have a wealth of PhD qualified clinicians, clinician PhD scholars, and research interest and capacity that is growing and deepening. This report also demonstrates extensive evidence of engagement in collaborative national research, highly competitive NHMRC and MRFF funded research, and investigator led research. While this highly prestigious research is important, we are also delighted to see more clinical nursing staff, residents, registrars and junior consultants presenting their research at national and international meetings, and publishing simple clinical audits, case reviews and case series. We know that many stellar research careers have started with a simple case report, and we applaud everyone who took this first foray into research.

We wish to congratulate Dr Deanne August and Dr Helen Tanner on the award of their PhDs. We wish them all the very best for their academic careers going forward.

Throughout these research reports, we can see there has been many research awards across our teams. Over many years, the work of Professor Leonie Callaway has been supported within RBWH and by the RBWH Foundation. This work, over the last 20 years, supported by so many people within RBWH was recognised by the Women's Health Australasia Medal of Distinction for 2022. This is a testament to the extraordinary team and support within the Women's and Newborn Services environment.

Some of the most important research outlined here relates to the basics of good clinical practice. For example, our academic clinicians in Neonatology are doing important and life changing work around how to feed infants, how to prevent loss of skin integrity and how to provide better intravenous access. We have an important program of research in Endometriosis, which has been a neglected area of women's health.

We are delighted to welcome Associate Professor Lauren Kearney, a conjoint appointment between UQ and RBWH. This has already strengthened our research capacity in midwifery, nursing care, research priority setting, and consumer led research. Thank you for choosing to work with us, Lauren.

And finally, we pass on our sincere thanks to our external research partners such as Universities, research institutes and funding bodies, along with all our staff who support these vital research activities.

Grantley Stable Neonatal Unit

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

The RBWH Neonatal Research group continues to strategically explore local clinical questions and collaborate in important national and international research opportunities.

This year has seen momentum and progress as a leader of unique research outcomes for Neonates and their families. Highlights include a dedicated group of clinician researchers whose programs of work include incubator humidification, growth and feeding of preterm and late preterm infants, skin injury measurement, neonatal vascular access, as well as innovation in health care assessment and delivery. The team were successful in a novel collaboration with Herston Biofabrication Unit and QIMR Berghofer Medical Research Institute for an RBWH foundation grant, publications and continued collaboration across Metro North service and Children's Health Queensland. Additional allocates as the research culture supports an environment for quality improvement outcomes, including the Mother's Own Milk team who were awarded a Qualities Awards Recognising Remarkable Initiates and Excellence in Service (QUARRIES).

We continue to be inspired by the families and babies that are cared for in the Grantley Stable Neonatal Unit, to seek and answer the most important research questions, toward improving their outcomes and quality of life.

Successful PhD candidates in 2022

Name	PhD Title	Month Completed	Affiliated University	Summary
Deanne August	Neonatal skin injuries from mechanical forces: a multicentre, mixed methods study	July 2022	James Cook University	Deanne August studied neonatal skin injuries through a multicentre, mixed methods research comprised of eight methods, to explore and determine epidemiologic factors of injury. Findings included methods for neonatal injury assessment, multiple forces contributed towards injury; neonates have increased risk compared to older populations; many injuries are currently unpreventable, and identification of new extrinsic and intrinsic risk factors.



Research Awards and Achievements

Please list any research-related awards or achievements

Recipient (RBWH staff in bold)	Award	Event
Mother's Own Milk (Kristina Palmer-Field, Melissa Lai, Donna Bostock, Jackie Clement, Louise Johnston, Michelle Gavin, Tiffany Porter, Jennifer Ribergaard, Meg McLean)	Qualities Awards Recognising Remarkable Initiates and Excellence in Service (QUARRIES)	Royal Brisbane and Women's Hospital 2022
Deanne August	Best Presenter	Australian College of Neonatal Nurses National Conference 2022
Determining reference ranges for well term neonates overnight oximetry team (including Professor Mark Davies, Anndrea Flint, Dr Melissa Lai and Dr Deanne August, Kate Coghill)	Highly Commended Presentation	Redcliff Research Symposium
Melissa Lai (for projects establishing new technologies (COMFIT & ELITE))	J Gupta Scholarship, PSANZ 2022	Perinatal Society of Australia and New Zealand
Deanne August (on behalf of Nicole Marsh, Lyn Chapple, Pieter Koorts, Melissa Lai , Joshua Byrnes, Rob Ware, Kathleen Finalyson, Craig McBride, Bronwyn Griffin, Fiona Coyer , Amanda Ullman)	Australian College of Neonatal Nurses- Research SIG Scholarship and Neo-Skin SIG Scholarship to support What lies beneath: accurate measurement and sequelae of neonatal mechanical skin injuries follow-up study	Australian College of Neonatal Nursing
Eley V, Lehner C, Martin E, Lee N, Donovan T , Dhanani J, Roberts J.	John Boyd Craig Research Award for a highly ranked project relating to pain. Nebulised fentanyl for labour pain – a pharmacokinetic and feasibility study.	Australian and New Zealand College of Anaesthetists 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
Melissa Lai, Deanne August, Mark Davies, Jackie Clement, Linda Cobbald, Nathan Stevenson, Kartik Iyer, Mathilde Desselle, David Forrestal	RBWH Neonatal Research	Towards custom fitted CPAP devices for premature infants (COMFIT)	RBWH Foundation	\$75,000	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	Total number of RBWH Patients Recruited
Melissa Lai	Deanne August, Mark Davies, Jackie Clement, Linda Cobbald, Lyn Chapple, Katherine White, Nathan Stevenson, Kartik Iyer, Mathilde Desselle, David Forrestal, Isabel Byram	Towards custom fitting CPAP devices for premature infants (COMFIT)	12	12
Deanne August	Nicole Marsh, Lyn Chapple, Pieter Koorts, Melissa Lai, Joshua Byrnes, Rob Ware, Kathleen Finalyson, Craig McBride, Bronwyn Griffin, Fiona Coyer, Amanda Ullman	What lies beneath: accurate measurement and sequelae of neonatal mechanical skin injuries	24	24
Tim Donovan	Linda Cobbald, Deanne August, Melissa Lai	LPT cohort study: The impact of nutrition, growth and body composition on neurodevelopmental outcome in late preterm infants	40	40
Gill Noreiks	Mark Davies, Melissa Lai	HUMIDITY – RCT incubator humidity for ELBW infants	140	140
Lisa McKeown	Leonie Callaway, Katie Foxcroft, Vanessa Cobham, Kylie Burke	Parental psychological distress associated with high-risk infants admitted to the Neonatal Intensive care	102	102
Karen Whitfield	Donna Bostock, Pieter Koorts, Kristen O'Connor, Mark Davies, Deanne August	Micronutrient levels in infants	66	66
Jane Pienaar	Mark Davies, Nilushka Van Der Walt	Retrospective review of HFOV and CO2 levels in a tertiary nursery	0	122
Priyam Jha	Melissa Lai, Mark Davies	An evaluation of the use of spinal ultrasounds in neonates at a tertiary level neonatal unit	148	148
Jane Pienaar	Julie Wixey, Paul Colditz, Melissa Lai, Ian Wright, Hannah Musco	Retrospective study of ibuprofen administration on neurodevelopmental outcomes in IUGR neonates in Australia	734	734

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
Kristina Palmer-Field	Melissa Lai, Donna Bostock, Jackie Clement, Louise Johnston, Michelle Gavin, Tiffany Porter, Jennifer Ribergaard, Sue Childs, Alex Carter	Improving exclusive mother's own milk feeding in premature infants	200	200
Claire Mellick	Melissa Lai	Retrospective review of neurodevelopmental outcomes of infants following therapeutic hypothermia for hypoxic ischaemic encephalopathy in a tertiary nursery	83	83

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
A/Prof/Brett Manley	Pieter Koorts	Multicentre Randomised Controlled Trial of Surfactant Plus Budesonide to Improve Survival Free of Bronchopulmonary Dysplasia in Extremely Preterm Infants PLUSS	55	55
Pieter Koorts	Alice Rumbold, Lisa Yelland, Carmel Collins, Maria Makrides, Andy McPhee, Amy Keir, Laura Klein, Melissa Lai, Karen Langford, Lyn Chapple, Tim Donovan, Deanne August	Effect of supplementary pasteurised donor human milk, compared with standard formula on time to full enteral feeds, feeds tolerance, growth, breastfeeding and length of hospital stay in moderate and late preterm babies-a pilot randomised GIFT	28	28
Elsa Wynd	Peter Trnka, Karen Moritz, Joan Li, Michael Guandalini, Melissa Lai, Adam Hoellering	Assessing the impact of prematurity on renal medulla development	1	74
Thuy Frakking	Paul Colditz , Christopher Carty, Melissa Lai , Anne Chang, Kelly Weir, Belinda Schwerin, Stephen So, Michael David, Tim Hong, John Waugh	Swallowing Sounds in Premature Babies (SUPERB): a multi-centre cohort study	12	12
Peter Scally	Tim Donovan , Kelvin Feng, Marita Prior, Rebecca Liong, Ee Shern Lian, Anzela Anzela	Establishing the ideal position of the endotracheal tube in very low birthweight neonates	480	480
Jackson Green	Barbara Lingwood , Yvonne Eiby, Tim Donovan	Haemoglobin levels in the first days of life in very preterm infants	209	209
Roslyn Boyd	Pieter Koorts	NEBO: Neonatal Encephalopathy Brain Outcomes: Prospective study of Clinical and MRI Biomarkers in term born infants to improve accurate and earlier prediction of Cerebral Palsy	Follow up only	15

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
Helen Liley	Paul Colditz	RCT - PAEAN -Preventing Adverse Outcomes of Neonatal Hypoxic Ischaemic Encephalopathy with Erythropoietin: A Phase III Randomised Placebo Controlled Multicentre Clinical Trial	Follow up only	29
Paul Dawson	Pieter Koorts	Neuroprotective role of sulphate among preterm babies (SuPreme Study)	Follow up only	532

Research Publications

Authors

Investigator	ORCID ID
Mark Davies	0000-0003-2179-4367
Paul Colditz	0000-0002-6408-8238
Tim Donovan	0000-0002-4710-0186
Deanne August	0000-0002-7204-7065
Melissa Lai	0000-0002-1970-7247
Philip Scott	0000-0002-6364-7288
Pieter Koorts	0000-0001-7505-2014
Lisa McKeown	0000-0002-1457-2320
Katie Foxcroft	0000-0003-1851-036x

Publications in 2022

Journal Articles (RBWH staff in bold)

McIntyre C, August D, Cobbald L, Lack G, Takashima M, Foxcroft K, Marsh N, Smith P, New K, Koorts P, Irwin A, Ullman A. Neonatal vascular access practice and complications an observational study of 1,375 catheter days. *Journal of Perinatal and Neonatal Nursing* Feb 2022 DOI:10.1097/JPN.0000000000000589

McKeown L, Burke K, Cobham VE, Kimball H, Foxcroft K, Callaway L. The Prevalence of PTSD of Mothers and Fathers of High-Risk Infants Admitted to NICU: A Systematic Review. *Clin Child Fam Psychol Rev.* 2022 Dec 23. doi: 10.1007/s10567-022-00421-4. Epub ahead of print. PMID: 36564614

Jardine L, Caldararo D, **Davies MW, Colditz PB.** Accelerometer measures in extremely preterm and or extremely low birth weight infants and association with abnormal general movements assessments at 28- and 32-weeks postmenstrual age. *Early Hum Dev* 2022; Nov. DOI- 10.1016/j.earlhumdev.2022.105685

Lai MM, D'Acunto G, Guzzetta A, Finnigan S, Ngenda N, Ware RS, Boyd RN, Colditz PB. Infant massage and brain maturation measured using EEG: A randomised controlled trial. *Early Human Development* 2022, Vol 172

Flint A, **August D, Lai MM, Chawla J, Ballard E, Davies MW.** Determining reference data for overnight oximetry in neonates: A pilot study. *Early Human Development* 2022, v168 (doi.org/10.1016/j.earlhumdev.2022.105571)

Journal Articles (RBWH staff in bold)

Pienaar J, Davies MW. Carbon dioxide levels when starting high frequency ventilation in neonates. *Open Journal of Pediatrics* 2022. 12, 353-357.

Davies MW (on behalf of Cochrane Clinical Answers Editors). How do short feeding intervals compare with long feeding intervals for bolus feedings in very preterm infants? *Cochrane Clinical Answers* 2022. DOI: 10.1002/cca.3874.

O'Connor K, Davies MW. Macrolides for the prevention and management of bronchopulmonary dysplasia in preterm neonates (Protocol). *Cochrane Database of Systematic Reviews*, Issue. Art. No.: CD015063.

Parker SL, Irwin AD, **Hosking F, August D, Schoenmaker B**, Pandey S, Wallis SC, Lipman J, **Roberts JA, Davies MW.** Innovation in microsampling for therapeutic drug monitoring of gentamicin in neonates: a proof-of-concept study. *International Journal of Antimicrobial Agents* 2022, 59(2)

Hall S, August D, Coyer F, Marsh N Neonatal skin injury scales: a scoping review with narrative synthesis protocol *Wounds Practice and Research*, Sept 2022

Dufficy M Takashima M, Cunningham J, Griffin B, McBride C, **August D**, Ullman A. Extravasation injury management for neonates and children: a systematic review and aggregated case series. *Journal of Hospital Medicine* Oct 17(10):832-842.

August D, Kandasamy Y, Ray R, New K, Lindsay D. Evaluation of the consistency of neonatal skin injury assessment using clinical images and the metric and graduated colour. *Journal of Tissue Viability*, 2022 08/01

Dargaville PA, Kamlin OF, Orsini F, Wang X, De Paoli AG, Kanmaz Kutman HG, Cetinkaya M, Kornhauser-Cera L, Derrick M, Özkan H, Hulzebos CV, Schmölzer GM, Aiyappan , Lemyre B, Kuo S, Rajadurai VS, O'Shea J, oj Biniwale M, Ramanathan R, Kushnir A, Bader D, Thomas MR, Chakraborty M, Buksh MJ, Bhatia R, Sullivan CL, Shinwell ES, Dyson A, Barker DP, Kugelman A, **Donovan TJ**, Tauscher MK, Murthy V, Ali SKM, Yossuck P, Clark HW, Soll RF, Carlin JB, Davis PG, for the OPTIMIST-A Trial Investigator: Effect of Minimally Invasive Surfactant Therapy vs Sham Treatment on Death or Bronchopulmonary Dysplasia in Preterm Infants with Respiratory Distress Syndrome The OPTIMIST-A Randomized Clinical Trial *JAMA*. doi:10.1001/jama.2021.21892

Stevenson NJ, **Lai MM**, Starkman HE, Colditz PB, Wixey JA. Electroencephalographic studies in growth-restricted and small-for-gestational-age neonates. *Pediatric Research* 2022; 23 Feb

Scott PA, Lai MM, Inglis GDT, Davies MW. Neonatal early-onset sepsis calculator safety in an Australian tertiary perinatal centre. *J Paeds Child Health* 2022; 6 Jan

Hong L, **Davies MW**, Whitfield K. Noradrenaline use for neonatal circulatory support. *J Paediatr Child Health* 2022;**58**:2084-2090

O'Connor KL, Hurst C, Llewellyn S, **Davies MW.** Factors associated with successful extubation following the first course of systemic dexamethasone in ventilator dependent preterm infants with or at risk of developing bronchopulmonary dysplasia. *Pediatr Pulmonol* 2022;**57**:1031–1041.

Keynote or Plenary Lectures given in 2022

Date	Title
November 14, 2022	Lisa McKeown - New South Wales- Perinatal and Infant Mental Health Symposium 2022 – <i>Addressing challenges in the perinatal period: NICU admission</i>
September 12, 2022	Melissa Lai – New South Wales – Australian and New Zealand Neonatal Network Clinical Practice Improvement Conference 2022 – <i>Maximising Exclusive Mother's Own Milk Feeding in Premature Infants</i>

Obstetrics & Gynaecology

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

The Department of Obstetrics and Gynaecology delivers excellent patient-centred care and high-quality tertiary and quaternary obstetrics and gynaecology services for MNHHS and QLD. The department is involved in multidisciplinary research to ensure the care of the women we treat and manage is contemporary and evidenced based. Collaborative research is the key – strengthening collaborations and partnerships in line with the strategic directions, and Metro North Health's Research Strategy 2017-2022 to encourage collaboration and excellence across the themes of diagnostics, therapeutics and health services.

Maternity Services collaborate closely with the Perinatal Research Centre, University of QLD and UQCCR for local state and commonwealth grants and multi-centre research projects. The department has been progressive in the enhancement of research activities in the area of antenatal care, general obstetrics and gynaecology.

The Obstetrics and Gynaecology department continues to collaborate with numerous other departments within Metro North Hospital and Health Service (MNHHS) as well as with UQ, QUT, UQCCR, Mater Hospital, interstate hospitals and New Zealand. A growing academic team in O&G along with O&G PhD scholars (Tanaka, Smith) and more registrars and residents undertaking and presenting research is increasing research output to enhance clinical outcomes.

Doctors Amoako and Tanaka have an ongoing research project into the genetics of endometriosis, and via the RBWH research foundation. In 2019, Metro North Health partnered with the University of Queensland to offer a collaborative research grant to Dr Amoako and the project team to enable new collaborative research between clinicians, academics, and scientists with the potential to lead to ongoing research of direct benefit to Metro North Health patients and the community. This collaboration leverages new technologies in advanced imaging, machine learning, genetic profiling, molecular and cellular phenotyping, and spatial genomics to build knowledge and advance cost-effective solutions to change the poor outcomes for women with endometriosis. They have established the Endometriosis Research Queensland Study (ERQS), a flagship research platform that underpins a comprehensive program of clinical, basic science and translational endometriosis research in Queensland. The ERQS is a collaborative project between UQ and the RBWH, bringing together a diverse, interdisciplinary team of clinician researchers and experts in the fields of genetics, cell and molecular biology, imaging, bioinformatics, and computational biology. We aim to accelerate endometriosis research translation and deliver research that meets national and international priorities. The ERQS platform takes an innovative and integrative approach to establish a high-quality, standardised clinical and surgical database populated with linked professionally processed and curated biospecimen repositories and provide critical resources for data analysts, clinical and basic scientists, that can be applied to answer pressing questions in endometriosis.

Dr Lehner has completed a research project pertaining to COVID and peri mental health effects and submitted the manuscript for publication. The Gynaecology Oncology department continue their focus on conducting surgical clinical trials to develop the best standard of care for women experiencing gynaecological cancer and have been awarded 5 grants to undertake further clinical trials.

The Maternal Fetal Medicine unit has been very proactive in fostering an environment conducive to prospective and retrospective research and audits as well as partnering with centres in both Australia and New Zealand to develop collaborative research. Currently, Prof Sailesh Kumar is involved with the MRFF grant trial i-SEARCH and the RBWH funded RIDSTRESS trial. The MFM unit is also involved in multicentric international trial commencing next year with regards to the use of antenatal corticosteroids in elective CS.

In 2022 key research outputs include grants, publications, presentations at national and international meetings. Overall, there are 5 trials currently underway in 2022, added to this achievement, there have been 4 grants awarded including 3 NHMRC/MRFF grant.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Alexandra Fullerton, E Ballard, Rebecca MN Kimble	Young Researcher Award	RANZCOG ASM 8-12 October 2022
Victoria Eley, Christoph Lehner, Elizabeth Martin, Nigel Lee, Tim Donovan, Jayesh Dhanani, Jason Roberts	John Boyd Craig Research Award (ANZCA) for a highly ranked project relating to pain	ANZCA

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
Professor Rebecca Kimble Chief Investigator with UQ Professor Karen Barlow and collaborators Monash University	WNS	Develop and implement an International Clinical Guideline on Mild Traumatic Brain Injury	NHMRC MRFF	\$490,000	2022 2 years
Victoria Eley, Christoph Lehner, Elizabeth Martin, Nigel Lee, Tim Donovan, Jayesh Dhanani, Jason Roberts		Nebulised fentanyl for labour pain – a pharmacokinetic and feasibility study – The FUN Study	ANZCA Project Grant	\$63,483.00	2022-2023
Prof Sailesh Kumar , Assoc Prof Christine Catling, Assoc Prof Donna Hartz, Dr Louise Thornton, Assoc Prof Kompal Sinha, Carolyn Murray, Valsamma Eapen, Kellie Wilton		BUBs Quit Study: clinical Midwife Specialist to assist pregnant women to quit smoking using counselling and embedded technology	NHMRC	\$1,245,561.55	2022-2026
Sailesh Kumar, Christoph Lehner, Akwasi Amoako, Renuka Sekar , Paul Colidtz, Callander E.		Reducing emergency caesarean birth for fetal distress in women with small or poorly grown infants using Sildenafil Citrate – The RidStress 2 Randomised Controlled Trial	RBWH & RBWH Foundation Project Grant	\$150,000.00	2021-2023
Keisuke Tanaka	Obstetrics and Gynaecology	Investigation of endocannabinoid system signalling pathways and their regulations in endometriosis establishment, progression and severity	RBWH Foundation	\$138,977.00	3yrs, 2020-2022

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
Nigel Lee, Sue Kildea, Lena Birgitta Mårtensson, Yu Gao, Leonie Callaway , Belinda Barnett, Akwasi Amoako, Trish Smith, Janine Farquharson, Sarah Kirby	Obstetrics and Gynaecology	SATURN trial, Novel Use of Water for Injections to Relieve Contraction Pain in Labour	MRFF - NHMRC	\$302,942.00	3 years 2021-2023
Victoria Eley , Severine Navarro, Akwasi Amoako, Leonie Callaway		Do pre-delivery antibiotics affect the neonatal microbiome and immune system? Intravenous Cefazolin v Placebo before elective caesarean section: RCT Feasibility Study	The Children's Hospital Foundation	\$55,000.00	2021-2022
Brett Mckinnon, Grant Montgomery, Sally Mortlock, Akwasi Amoako, Keisuke Tanaka	Obstetrics and Gynaecology	Environmental risk factors for endometriosis	Endometriosis Australia	\$41,250	2021-2022
Chris Lehner , Anousha Pamela Woods, Susan de Jersey, Katie Foxcroft , Alka Kothari, Akwasi Amoako, Leonie Callaway , Tracey Mackle Sailesh Kumar, Petrina Duncan	Obstetrics and Gynaecology	The impact of the COVID-19 pandemic on maternal depression and related disorders during the perinatal period.	RBWH Foundation	\$13,156.00	2020-2021
Ismail Sebina, Christoph Lehner, Akwasi Amoako		FLT3L expression is essential for protection against preterm birth	QIMR Berghofer seed funding grants 2021 for early career researchers	\$49,900.00	2021-2022
Tarnow-Mordi W, Popat H, Keir A, Aziz K, Lui K, Lehner C , Gordon A, Kumar S, Robledo K, Polglase G, Bonney D, Mattin M, Strunk T, Spotswood N	Obstetrics & Gynaecology	Delayed Cord Clamping in babies born before 37 weeks gestation to prevent anaemia, death and disability (WAMM – Wait a Minute or More): a pragmatic stepped-wedge implementation trial	MRFF-NHMRC	\$2,975,545.90	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	Total number of RBWH Patients Recruited
Lehner C	Woods A, de Jersey S , Lawton S, Foxcroft K , Kothari A, Amoako A , Kumar S , Callaway L , Mackle T, Bennett E:	The impact of the COVID-19 pandemic on maternal depression and related disorders during the perinatal period		1784
Field B	Lehner C	Raising awareness of decreased fetal movements and initial rollout of the Safer Baby Bundle in a tertiary maternity unit – impact on service utilisation, obstetric activity and perinatal outcomes at the Royal Brisbane and Women’s Hospital	N/A	
Kumar S	Lehner C , Amoako A , Sekar R , Colditz P, Callander E	Reducing emergency caesarean birth for fetal distress in women with small or poorly grown infants using Sildenafil Citrate – The RidStress 2 Randomised Controlled Trial	9	9
Kumar S	Mol BW, Tarnow-Mordi W, Flenady V, Liley H, Badawi N, Walker S, Hyett J, Askie L, Callander E	Can intrapartum Sildenafil Citrate safely avert the risks of contraction-induced hypoxia in labour? iSEARCH – a pragmatic multicentre Phase III randomised controlled trial.	32	32
Victoria Eley	Severine Navarro, Akwasi Amoako , Leonie Callaway	Do pre-delivery antibiotics affect the neonatal microbiome and immune system? Intravenous Cefazolin v Placebo before elective caesarean section: RCT Feasibility Study	15	30
Akwasi Amoako, Keisuke Tanaka, Akram Khalil, David Baartz,	Grant Montgomery (IMB, UQ), Brett McKinnon (IMB, UQ), Sally Mortlock (IMB, UQ), Joanna Crawford (IMB, UQ)	Understanding the Pathogenesis of Endometriosis and Treatment Response	100	450
Akwasi Amoako, Keisuke Tanaka, Akram Khalil, David Baartz, Matthew Smith	Grant Montgomery (IMB, UQ), Brett McKinnon (IMB, UQ), Sally Mortlock (IMB, UQ), Joanna Crawford (IMB, UQ)	Endocannabinoid Signalling in Endometriosis-Associated Pain: A potential Therapeutic Target	N/A	
Akwasi Amoako, Keisuke Tanaka, Akram Khalil, David Baartz, Matthew Smith	Grant Montgomery, Brett McKinnon, Sally Mortlock, Joanna Crawford	Somatic mutation in endometriotic lesions and their relationship to disease progression, severity and symptoms	N/A	
Keisuke Tanaka, Akram Khalil, David Baartz, Akwasi Amoako	Pathmila Navaratne	Management of Tubal ectopic pregnancy with intravenous Methotrexate	N/A	
Akwasi Amoako, Keisuke Tanaka	Lauren MacArthur	Understanding the impact of endometriosis and chronic pelvic pain on women’s lives through a qualitative study	N/A	

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
Akwasi Amoako, Keisuke Tanaka, Rebecca Kimble	Alexandra Wisentaner	Laparoscopic investigation for endometriosis in symptomatic adolescents	N/A	

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
Thuy Frakking	Alison Craswell, Anne Clayton, Karen Hay, Shahida Rehman, Alka Kothari, Christoph Lehner , Julia Affleck	Outcomes of breech birth by mode of delivery across hospitals within Metro North Hospital & Health Service: a retrospective observational study"	N/A	
Ismail Sebina	Christoph Lehner , Simon Phipps, Lisa Bain, Marloes Dekker, Akwasi Amoako	The role of FLT3L in the pathophysiology of preeclampsia and preterm birth"	20	83
Tarnow-Mordi, W et al (University of Sydney)	Karen Baker	Lactoferrin Evaluation in Anaemia in Pregnancy: LEAP-1 Should we treat iron deficiency anaemia of pregnancy with lactoferrin? A randomised controlled trial	0	110
Fernando S.F. Guimaraes UQ)	Gustavo Rossi Timothy McCulloch Bianca Balzasch Jane Sun, Akwasi Amoako , Christoph Lehner	Enhanced Natural Killer Cell Therapies: A new cell immunotherapy approach against cancer	24	58
Nigel Lee	Sue Kildea, Lena Birgitta Mårtensson, Yu Gao, Leonie Callaway , Belinda Barnett, Akwasi Amoako	Novel Use of Water for Injections to Relieve Contraction Pain in Labour	210	210
Jodie Painter (QIMR), Cecelia Lindgren (Oxford)	Hayden Homer	Large-scale genome-wide analyses to investigate the genetic aetiology of miscarriage	N/A	

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	Total number of RBWH Patients Recruited
Professor Rebecca Kimble	Professor Karen Barlow UQ and collaborators Monash University	Develop and implement an International Clinical Guideline on Mild Traumatic Brain Injury.	Nil	Nil

Research Publications

Authors

Investigator	ORCID ID
Rebecca Marie Nutan Kimble	0000-0001-9044-194X
Christoph Lehner	0000-0001-8466-0273
Keisuke Tanaka	0000-0001-8958-0731
Akwasi Amoako	0000-0002-9428-650X
Rebecca Kimble	0000-0001-9044-194X
Akram Khalil	0000-0001-8790-670X
Hayden Homer	0000-0002-3104-0449

Publications in 2022

Journal Articles (RBWH staff in bold)

Wee A, Bagchi T, **Kimble RMN**: Creation and maintenance of neo-vagina with the use of vaginal dilators as first line treatment - results from a quaternary paediatric and adolescent gynaecology service in Australia
Journal: Australian and New Zealand Journal of Obstetrics and Gynaecology published January online 2022, print June 2022:62:439-444 DOI:10.1111/ajog.13487

Tanaka K, Gilroy D, Subramaniam S, Lakshmi P, Bhadravathi L, Madhura W, Leanne M, Atluri S, **Schmidt B**, **Ganter P**, **Baartz D**, **Smith M**, Mortlock S, Henders A, **Khalil, A** Montgomery y G, McKinnon B and **Amoako A**: Protocol for the Endometriosis Research Queensland Study (ERQS): an integrated cohort study approach to improve diagnosis and stratify treatment. BMJ Open, Oct 2022 12 (10) e064073, 1-10. doi: 10.1136/bmjopen-2022-064073

McKinnon Brett D, Lukowski, Samuel W, Mortlock S, Crawford J, Atluri S, Subramaniam S, Johnston RL, Nirgianakis K, **Tanaka K**, **Amoako A**, Mueller MD, Montgomery GW: (2022). Altered differentiation of endometrial mesenchymal stromal fibroblasts is associated with endometriosis susceptibility. Communications Biology, 5 (1) 600, 600. doi: 10.1038/s42003-022-03541-3

Ho, Nicole, Liu, Cathy Z., **Tanaka, Keisuke, Lehner, Christoph, Sekar, Renuka**, Amoako, Akwasi A (2022). The association between induction of labour in nulliparous women at term and subsequent spontaneous preterm birth: a retrospective cohort study. Journal of Perinatal Medicine, 50 (7), 926-932. doi: 10.1515/jpm-2021-0111

Ye, Yunan and **Homer, Hayden A** (2022). Two-step nuclear centring by competing microtubule- and actin-based mechanisms in 2-cell mouse embryos. EMBO reports, 23 (11) e55251. doi: 10.15252/embr.202255251

Zhou, Chenxi and **Homer, Hayden A**. (2022). The oocyte spindle midzone pauses Cdk1 inactivation during fertilization to enable male pronuclear formation and embryo development. Cell Reports, 39 (5) 110789, 110789. doi: 10.1016/j.celrep.2022.110789

McDermott L, Pelecanos A, Krepska A, de Jersey S, **Sekar R**, Mao D, Lee G, Blackie A, Eley V: Single-centre survey of women reflecting on recent experiences and preferences of oral intake during labour. Aust N Z J Obstet Gynaecol. 2022 Oct;62(5):643-649. doi: 10.1111/ajog.13509. Epub 2022 Mar 27. PMID: 35342926

Moore R, Moore D, Macarthur L, **Homer H**, Cameron, Bell N: (2022). Fertility Awareness and Attitudes Among Women Embarking on a Career in Medicine. Fertility & Reproduction, 04 (03n04), 153-153. doi: 10.1142/s2661318222740656

Mardina, Zahrina, Venezuela, Jeffrey, **Maher C**, , Shi, Zhiming, Dargusch, Matthew S. and Atrens, Andrej (2022). Design, mechanical and degradation requirements of biodegradable metal mesh for pelvic floor reconstruction. Biomaterials Science, 10 (13), 3371-3392. doi: 10.1039/d2bm00179a

Journal Articles (RBWH staff in bold)

Tanaka K, Amoako AA, Mortlock S, Rogers PAW, Holdsworth-Carson SJ, Donoghue JF, Teh WT, Montgomery GW, McKinnon: Gene expression of the endocannabinoid system in endometrium through menstrual cycle. B.Sci Rep. 2022 Jun 7;12(1):9400. doi: 10.1038/s41598-022-13488-4. PMID: 35672435

Mayne L, Liu C, **Tanaka K, Amoako A**: Caesarean section rates: applying the modified ten-group Robson classification in an Australian tertiary hospital. J Obstet Gynaecol. 2022 Jan;42(1):61-66. doi: 80/01443615.2021.1873923. Epub 2021 May 2. PMID: 33938362

Rosser S, **Sekar R, Laporte J**, Duncombe G, Bendall A, **Lehner C**, Portmann C, McGrath P, **Lust K, Ganter P, Kumar S**: Late termination of pregnancy at a major Queensland tertiary hospital, 2010-2020", Med J Aust 2022; 217 (8):410-414 doi: 10.5694/mja2.51697

Keynote or Plenary Lectures given in 2022

Date	Title
April 2022	Christoph Lehner . <i>The Australian Preterm Birth Prevention Alliance</i> . Queensland Safer Baby Bundle Workshop 3, Brisbane
May 2022	Christoph Lehner . Session Chair: Plenary Session - Pregnancy and Long-Term Health, Perinatal Society of Australia and New Zealand Annual Congress, Adelaide
June 2022	Christoph Lehner . Session Chair: Partnership - Centre of Research Excellence in Stillbirth and the Australian Preterm Birth Prevention Alliance, Planning Day, Brisbane
July 2022	Christoph Lehner . <i>The partnership between the Australian Preterm Birth Prevention Alliance and the Stillbirth CRE</i> , National Safer Baby Bundle Virtual Forum
September 2022	Christoph Lehner . <i>Preterm Birth Prevention</i> , Brisbane Local Medical Association, Educational Dinner Meeting, Brisbane
September 2022	Christoph Lehner . <i>Preterm Birth Prevention – Why us and why now?</i> , Australian College of Midwives (ACM) National Conference, Cairns
October 2022	Christoph Lehner . <i>Every Week Counts – The National Preterm Birth Prevention Collaborative</i> , The Royal Australian and New Zealand College of Obstetricians & Gynaecologists (RANZCOG) Annual Scientific Meeting, Gold Coast
October 2022	Christoph Lehner . <i>The National Preterm Birth Prevention Program in Australia</i> , Silver Jubilee Congress, South Asian Federation of Obstetrics & Gynaecology (SAFOG) in association with the 55 th Annual Scientific Conference of the Sri Lankan College of Obstetricians & Gynaecologists (SLCOG), Colombo/Sri Lanka
October 2022	Christoph Lehner . <i>Preterm Birth Prevention, Optimising timing of birth and Stillbirth Prevention</i> , Metro North GP Alignment Maternity Workshop, Brisbane
October 2022	Christoph Lehner . <i>Framework for Success: Breakthrough Series Collaborative Model</i> , Every Week Counts National Preterm Birth Prevention Collaborative, Learning Session 1, Sydney
October 2022	Fullerton A , Ballard E, Kimble RMN : Royal Australian and New Zealand College of Obstetricians and Gynaecologists Annual Scientific Meeting Gold Coast 8-12 October 2022- Category One caesarean section process, ten-year experience at an Australian tertiary Obstetrics hospital of Decision to Delivery and Decision to Incision times
November 2022	Christoph Lehner The Australian Preterm Birth Prevention Alliance, Perinatal Mortality Education Session, Queensland Maternal and Perinatal Quality Council (QMPQC)
November 2022	Christoph Lehner Safely optimizing timing of birth – a panel discussion , Western Australian Safer Baby Bundle (SBB) Forum, Fremantle

Poster Presentations

Date	Title
8-12 October 2022	Julian Vitali, David Baartz, Rebecca MN Kimble 2005-2022 Laparoscopic Hemi-hysterectomies for Mullerian Tract outflow obstructions- Conditions, Surgical time, complications and subsequent pregnancies E-Poster RANZCOG ASM gold Coast 8-12 October 2022

8-12 October 2022	Divya Viswanathan, Bridgett Sutton, Rebecca MN Kimble MRI concordance for Mullerian anomalies with nclinical, surgical and histological findings, a 19-year study at the Queensland Statewide PAG Service. E-Poster RANZCOG ASM 8-12 October 2022
October 2022	Ashley Venables, Alicia Veasey, Brooke O'Brien, Rebecca MN Kimble : Cyclical Progesterone treatment for young girls presenting with Heavy Menstrual Bleeding, irregular menstrual cycles, and severe dysmenorrhea secondary to the physiological progesterone deficiency associated with anovulatory cycles of the maturing Brain: A review of data from 2016-2020 E-Poster
June 2022	Lau, Max, Tanaka, Keisuke, Amoako, Akwasi, Rudra, Thangeswaran (2022). <i>Maternal complications after extremely preterm classical and low transverse caesarean sections</i> . RCOG World Congress 2022, London, United Kingdom, 13 - 15 June 2022.

Obstetric Medicine

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


The department of Obstetric Medicine continues to progress practice changing research into maternal and fetal outcomes during and after pregnancy. In particular focus are the ongoing themes of cardiac disease in pregnancy, diagnosis and management of gestational diabetes and broadening the knowledge about breastfeeding in the context of maternal diabetes. New projects have commenced evaluating the impact of prior bariatric surgery on pregnancy outcomes and the accurate diagnosis of gestational diabetes in this cohort.

The department has created a database to record the medical and medication history for the women attending our general medical clinics with the aim to streamline the creation of future projects.

We continue to encourage the presentation and publication of challenging cases to disseminate the knowledge we have acquired in relation to the care of women with rare conditions where the available literature is limited.

Successful PhD candidates in 2022

Name	PhD Title	Month Completed	Affiliated University	Summary
Helen Tanner	The prevalence and management of ketones in pregnancy		UQ	Current dietary advice for pregnant women is to avoid diets that lead to increased ketones. Studies have shown an association between maternal ketones and adverse childhood and fetal outcomes, particularly reduced childhood intelligence quota (IQ). However, these studies have found conflicting results leaving clinicians unsure how concerned to be about maternal ketones.



Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Prof Leonie Callaway	Medal of Distinction 2022	Women's Health Australia
Leonie Callaway, Katie Foxcroft, Marloes Nitert Dekker, Helen Barrett,	Clinical Research Award: Puzzling Probiotics and Preeclampsia	2022 Research Excellence Awards

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
Graves N, Hillman K, Willmott L, White B, Harvey G, L Callaway Cardona-Morrell M, Barnett A, Lee X		InterACT study: Intervention for Appropriate Care and Treatment	NHMRC	\$1,008,215	2018-2022
Shipton E	Obstetric Medicine	PhD models of care and Breastfeeding	RBWH Foundation	\$114,247	2019-2022
McKeown L	Obstetric medicine	The prevalence of post-traumatic stress disorder in parents of infants in the Neonatal Intensive Care Unit	RBWH Foundation	\$116,613	2020-2023
Prasad S, Atherton J, Parsonage W, Lo A, Callaway L, Lust K, Robinson H	Cardiology & Obstetric medicine	Serial evaluation of advanced echocardiographic parameters during healthy pregnancy — a prospective observational cohort study	RBWH Foundation	\$40,000	2020-2022
Prasad S, Atherton J, Parsonage W, Lo A, Callaway L, Lust K, Robinson H	Cardiology & Obstetric medicine	Serial evaluation of advanced echocardiographic parameters during healthy pregnancy — a prospective observational cohort study	Australian Society of Ultrasound Medicine	\$20,000	2020-2022
Abdullah Mamun, Peter Sly, Yaqoot Fatima, Kevin Thomas, Frances Boyle, Leonie Callaway		Trihalomethanes in pregnancy and birth outcomes in Queensland: integrated data analysis and case studies for better policy and health outcomes.	NHMRC	\$522,284	2020-2023
Alex Lindgren, Alka Kothari, Kylie Burke, Katie Foxcroft, Meredith Shallcross, Elizabeth Ryan, Catherine Alexander, Lisa McKeown, Leonie Callaway		An assessment of the impact COVID-19 pandemic on maternity and neonatal health workers in the Metro North Hospital and Health care service	RBWH Foundation COVID-19 Grants	\$39,689.00	2020 -2022

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
Chris Lehner , Anousha Pamela Woods, Susan de Jersey , Katie Foxcroft , Alka Kothari, Akwasi Amoako , Leonie Callaway , Tracey Mackle Sailesh Kumar , Petrina Duncan	Obstetrics and Gynaecology	The impact of the COVID-19 pandemic on maternal depression and related disorders during the perinatal period.	RBWH Foundation	\$13,156.00	2020-2022
Susie D Jersey , Michael D'Emden , Leonie Callaway , Nina Meloncelli, David McIntyre, Adrian Barnett		We changed Australia's approach to Gestational Diabetes Mellitus screening and diagnosis during COVID-19: Are these changes worth continuing?	RBWH Foundation COVID-19 Grants	\$49,572.00	2020-2022
Nigel Lee, Sue Kildea, Lena Birgitta Mårtensson, Yu Gao, Leonie Callaway , Belinda Barnett, Akwasi Amoako , Trish Smith , Janine Farquharson , Sarah Kirby	Obstetrics and Gynaecology	SATURN trial, Novel Use of Water for Injections to Relieve Contraction Pain in Labour	MRFF - NHMRC	\$302,942.00	2021-2023
Skouteris H, Teede H, Boyle J, Moran L, Thangaratinam S, Hills A, Venn A, Jack B, Norman R, Ademi Delaney Z, Callaway L , (Chair of Advisory Group).	Centre for Research Excellence in Preconception and Pregnancy.	Prevention of Maternal Obesity	NHMRC.	\$2,496,527	2019-2024
Victoria Eley , Severine Navarro, Akwasi Amoako , Leonie Callaway		Do pre-delivery antibiotics affect the neonatal microbiome and immune system? Intravenous Cefazolin v Placebo before elective caesarean section: RCT Feasibility Study	The Children's Hospital Foundation	\$55,000.00	2021-2022
Leonie Callaway , Bhavisha Bakrania		Aspirin for the treatment of cardiac dysfunction in preeclampsia	RBWH Foundation	\$74,620	2022-2023
L Callaway , A Kothari, I Szollosi, D Mann, D Wilson, P Terrill		High resolution measurement of sleep position during pregnancy and the impact on infant birthweight	Metro North Collaborative Research Grants	\$47,268.40	2022

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
Kearney L, Eley V, Lehner C, Swift A, De Jersey S, August D, Thompson J, Jenkinson B, Spinks J, Marsh N, Ullman A	WNS	Fluids in Labour: EnsUring Maternal Euvolemia (FLUME) Study	RBWH Foundation / SERTA	\$65,000	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	Total number of RBWH Patients Recruited
Emma Shipton	Leonie Callaway, Susie de Jersey, Katie Foxcroft, Nigel Lee	Antenatal Models of Care and the effect on breast feeding post discharge	Recruitment completed	359
Leonie Callaway	Alexander Lindgren, Katie Foxcroft, Meredith Shallcross, Elizabeth Ryan, Lisa McKeown, Leonie Callaway, Alka Kothari, Kylie Burke, Catherine Alexander	An assessment of the impact of COVID-19 pandemic on Maternity health workers in the Metro North Hospital and Health care service	Recruitment completed	276 RBWH (510 total for all 3 sites)

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
Graves N, Hillman K, Willmott L, White B, Harvey G, Cardona-Morrell M, Barnett A, Lee X	L Callaway	InterACT study: Intervention for Appropriate Care and Treatment Reducing Non-Beneficial Treatment at the End-of-Life.		
EURObservational research programme	Lust K, Parsonage W	Registry of pregnancy and cardiac disease	N/A	
Sullivan E, Cordina R, Simmons L, Pollock W, Kennedy D, Vaughan G, Li Z, O'Brien A, Turnbull K, Peek M, Celermajer D, Lam L, Zentner D, Hyett J, Clarke M	Lust K, Parsonage W	NSW longitudinal study of first-time mothers with heart disease and their babies	N/A	
Regan AK, Andrews RM, Moore HC, Binks MJ, McHugh L, Pereira G, Blyth CC, Van Buynder PG,	Lust K	Links2HealthierBubs: Influenza and pertussis vaccine effectiveness in pregnancy	N/A	

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
Chang A, Binks M, Smith-Vaughan H, Pizzutto S, O'Grady K, Marshall H, Toombs M, Torzillo P, Grimwood K	Lust K	Pneumatters - Preventing early-onset pneumonia in Indigenous infants through maternal immunisation: a multi-centre randomised controlled trial.	7	38
Abdullah Mamun	Leonie Callaway , Peter Sly, Yaqoot Fatima, Kevin Thomas, Frances Boyle	Trihalomethanes in pregnancy and birth outcomes in Queensland: integrated data analysis and case studies for better policy and health outcomes.	N/A	N/A
Chris Lehner , Anousha Pamela Woods	Susan de Jersey, Katie Foxcroft , Alka Kothari, Akwasi Amoako, Leonie Callaway , Tracey Mackle Sailesh Kumar, Petrina Duncan	The impact of the COVID-19 pandemic on maternal depression and related disorders during the perinatal period.	N/A	N/A
Susie D Jersey	Leonie Callaway, Michael D'Emden , Nina Meloncelli, David McIntyre, Adrian Barnett	We changed Australia's approach to Gestational Diabetes Mellitus screening and diagnosis during COVID-19: Are these changes worth continuing?		66
Victoria Eley	Severine Navarro, Akwasi Amoako, Leonie Callaway	Do pre-delivery antibiotics affect the neonatal microbiome and immune system? Intravenous Cefazolin v Placebo before elective caesarean section: RCT Feasibility Study	15	30
Skouteris H, Teede H, Boyle J, Moran L, Thangaratinam S, Hills A, Venn A, Jack B, Norman R, Ademi Delaney Z, Callaway L , (Chair of Advisory Group)	Centre for Research Excellence in Preconception and Pregnancy.	Prevention of Maternal Obesity		
Roni Cole	Rachael Nugent; Lauren Kearney ; Beng Ng; Imogen Kettle; Leah Hardiman; Leonie Callaway; Patricia Smith	<u>Generating Research to improve Outcomes for Women and Children Services: the GROW project</u>	50	50 in addition to consumer/clinician attendance at final workshop (3)

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	Total number of RBWH Patients Recruited
A/Prof Karin Lust	Chang A, Binks M, Smith-Vaughan H, Pizzutto S, O'Grady K, Marshall H, Toombs M, Torzillo P, Grimwood K	Pneumatters - Preventing early-onset pneumonia in Indigenous infants through maternal immunisation: a multi-centre randomised controlled trial.	7	38
Ms Claire Reilly	A/Prof Maree Toombs Prof Anne B Chang Ms Remai Mitchell A/Prof Karin Lust Dr Hasthika Ellepola Ms Lisa Emmett Ms Sophia King	PneuMatters: The facilitators and barriers to vaccination uptake in pregnancy amongst Aboriginal and Torres Strait Islander women	7	7
Leonie Callaway	Michelle O'Connor, Lauren Kearney, Sonita Giudice, Tara Denaro, Sonia Pervin	Maternal and Neonatal Outcomes for Aboriginal and Torres Strait Islander Women Birthing in Metro North Health: Outcomes and opportunities	No active recruitment – accessing PDC retrospective cohort	N/A

Research Publications

Authors

Investigator	ORCID ID
Karin Lust	0000-0002-6536-7191
Leonie Callaway	0000-0002-0137-9935
Helen Tanner	0000-0002-2066-4862
Katie Foxcroft	0000-0003-1851-036x
Lauren Kearney	0000-0003-0299-6537
Fiona Britten	0000-0002-0148-7442

Publications in 2022

Journal Articles (RBWH staff in bold)

Lee N, Gao Y, Mårtensson LB, **Callaway L**, Barnett B, Kildea S; Sterile water injections for relief of labour pain (the SATURN trial): study protocol for a randomised controlled trial. *Trials*. 2022 Feb 16;23(1):155. doi: 10.1186/s13063-022-06093-3. PMID: 35172876

Altemani F, Barrett HL, **Callaway LK**, McIntyre HD, Dekker Nitert M: Reduced Abundance of Nitrate-Reducing Bacteria in the Oral Microbiota of Women with Future Preeclampsia. *Nutrients*. 2022 Mar 8;14(6):1139. doi: 10.3390/nu14061139. PMID: 35334796

Britten FL, Lai CT, Geddes DT, **Callaway LK**, Duncan EL: Is Secretory Activation Delayed in Women with Type Two Diabetes? A Pilot Study. *Nutrients*. 2022 Mar 22;14(7):1323. doi: 10.3390/nu14071323. PMID: 35405936

Journal Articles (RBWH staff in bold)

Buckley S, Uvnäs-Moberg K, Pajalic Z, Luegmair K, Ekström-Bergström A, Dencker A, Massarotti C, Kotlowska A, **Callaway L**, Morano S, Olza I, Magistretti CM: Maternal and newborn plasma oxytocin levels in response to maternal synthetic oxytocin administration during labour, birth and postpartum - a systematic review with implications for the function of the oxytocinergic system. *BMC Pregnancy Childbirth*. 2023 Mar 2;23(1):137. doi: 10.1186/s12884-022-05221-w. PMID: 36864410

Blake JA, Pelecanos A, Najman JM, **Callaway L**, Scott JG: The association between birth by caesarean section at term and offspring cognitive and academic performance: A birth cohort study. *Aust N Z J Obstet Gynaecol*. 2022 Apr;62(2):226-233. doi: 10.1111/ajo.13403. Epub 2021 Jul 5. PMID: 34224139

Lee N, Gao Y, Mårtensson LB, **Callaway L**, Barnett B, Kildea S. Correction: Sterile water injections for relief of labour pain (the SATURN trial): study protocol for a randomised controlled trial. *Trials*. 2022 Apr 15;23(1):321. doi: 10.1186/s13063-022-06171-6. PMID: 35428356

de Jersey S, Meloncelli N, Guthrie T, Powlesland H, **Callaway L**, Chang AT, Wilkinson S, Comans T, Eakin E: Outcomes from a hybrid implementation-effectiveness study of the living well during pregnancy Tele-coaching program for women at high risk of excessive gestational weight gain. *BMC Health Serv Res*. 2022 May 3;22(1):589. doi: 10.1186/s12913-022-08002-5. PMID: 35501807

de Jersey S, Guthrie T, **Callaway L**, Tyler J, New K, Nicholson J: A theory driven, pragmatic trial implementing changes to routine antenatal care that supports recommended pregnancy weight gain. *BMC Pregnancy Childbirth*. 2022 May 18;22(1):416. doi: 10.1186/s12884-022-04750-8. PMID: 35585502

Shipton E, Meloncelli N, **D'Emden M**, McIntyre HD, **Callaway L**, Barnett A, **de Jersey S**: Gestational diabetes screening from the perspective of consumers: Insights from early in the COVID-19 pandemic and opportunities to optimise experiences. *Aust N Z J Obstet Gynaecol*. 2022 Aug 12. doi: 10.1111/ajo.13600. Online ahead of print. PMID: 35962529

Meloncelli N, **Shipton E**, Doust J, **D'Emden M**, McIntyre HD, **Callaway L**, **de Jersey S**: Clinicians' perspectives on gestational diabetes screening during the global COVID-19 pandemic in Australia. *Aust N Z J Obstet Gynaecol*. 2022 Aug 12;10.1111/ajo.13601. doi: 10.1111/ajo.13601. Online ahead of print. PMID: 35962532

Tran N, **Callaway L**, Shen S, Biswas T, Scott JG, Boyle F, Mamun A: Screening for adverse childhood experiences in antenatal care settings: A scoping review. *Aust N Z J Obstet Gynaecol*. 2022 Oct;62(5):626-634. doi: 10.1111/ajo.13585. Epub 2022 Jul 31. PMID: 35909247 Review.

Shipton EV, **Callaway L**, **Foxcroft K**, Lee N, **de Jersey SJ**: Midwife-Led Continuity of Antenatal Care and Breastfeeding Duration Beyond Postpartum Hospital Discharge: A Systematic Review. *J Hum Lact*. 2022 Oct 5;8903344221126644. doi: 10.1177/08903344221126644. Online ahead of print. PMID: 36197006 Review.

Smith PA, Kilgour C, Rice D, **Callaway LK**, Martin EK: Implementation barriers and enablers of midwifery group practice for vulnerable women: a qualitative study in a tertiary urban Australian health service. *BMC Health Serv Res*. 2022 Oct 19;22(1):1265. doi: 10.1186/s12913-022-08633-8. PMID: 36261823

Brown C, Lee XJ, Farrington A, Shield C, Carter HE, McPhail SM, Cardona M, Hillman K, **Callaway L**, Willmott L, White BP, Harvey G, Graves N, Barnett AG: Impact of a prospective feedback loop on care review activities in older patients at the end of life. A stepped-wedge randomised trial. *BMC Geriatr*. 2022 Nov 16;22(1):860. doi: 10.1186/s12877-022-03554-x. PMID: 36380290 Clinical Trial.

Murphy VE, Jensen ME, Holliday EG, Giles WB, Barrett HL, **Callaway LK**, Bisits A, Peek MJ, Seeho SK, Abbott A, Robijn AL, Colditz PB, Searles A, Attia J, McCaffery K, Hensley MJ, Mattes J, Gibson PG. Effect of asthma management with exhaled nitric oxide *versus* usual care on perinatal outcomes. *Eur Respir J*. 2022 Nov 17;60(5):2200298. doi: 10.1183/13993003.00298-2022. Print 2022 Nov. PMID: 35777773 Clinical Trial.

O'Connor H, Li S, Hodge A, **Callaway L**, David McIntyre H, Barrett H, Wilkinson SA, Nitert MD: Gut microbiome composition is similar between pregnant women with excess body fat with healthy and less healthy dietary intake patterns. *J Hum Nutr Diet*. 2022 Dec 5. doi: 10.1111/jhn.13123. Online ahead of print. PMID: 36471554

Meurk C, Roberts S, Lam M, Wittenhagen L, **Callaway L**, Moss K, Lucke J, Barker R, Waterson E, Rawlinson C, Malmstrom N, Weaver E, Hoehn E, Bosley E, Watson S, Heffernan E: Suicide crises among women and mothers during and around the time of pregnancy: Prevalence and timing of initial contact with first responders and health services. *Aust N Z J Psychiatry*. 2023 Feb;57(2):291-301. doi: 10.1177/00048674221101517. Epub 2022 Jun 2. PMID: 35652302

McKeown L, **Burke K**, Cobham VE, Kimball H, **Foxcroft K**, **Callaway L**: The Prevalence of PTSD of Mothers and Fathers of High-Risk Infants Admitted to NICU: A Systematic Review. *Clin Child Fam Psychol Rev*. 2023 Mar;26(1):33-49. doi: 10.1007/s10567-022-00421-4. Epub 2022 Dec 23. PMID: 36564614

Journal Articles (RBWH staff in bold)

Mchugh L, Van Buynder P, Sarna M, Andrews RM, Moore HC, Binks MJ, Pereira G, Blyth CC, **Lust K**, Foo D, Regan AK: Timing and temporal trends of influenza and pertussis vaccinations during pregnancy in three Australian jurisdictions: The Links2HealthierBubs population-based linked cohort study, 2012-2017. Aust N Z J Obstet Gynaecol. 2023 Feb;63(1):27-33. doi: 10.1111/ajog.13548. Epub 2022 Jun 13. PMID: 35696340

Rosser S, Sekar R, Laporte J, Duncombe GJ, Bendall A, **Lehner C**, Portmann C, McGrath P, **Lust K**, Ganter P, Kumar S: Late termination of pregnancy at a major Queensland tertiary hospital, 2010-2020. Med J Aust. 2022 Oct 17;217(8):410-414. doi: 10.5694/mja2.51697. Epub 2022 Sep 7. PMID: 36071581

Byth LA, **Lust K**, Jeffree RL, Paine M, Voldanova L., **Craven AM**: Management of idiopathic intracranial hypertension in pregnancy: Obstet Med. 2022 Sep;15(3):160-167. doi: 10.1177/1753495X211021333. Epub 2021 Jun 9. PMID: 36262821 Review.

Chang AB, Toombs M, Chatfield MD, Mitchell R, Fong SM, Binks MJ, Smith-Vaughan H, Pizzutto SJ, **Lust K**, Morris PS, Marchant JM, Yerkovich ST, O'Farrell H, Torzillo PJ, MacLennan C, Simon D, Unger HW, Ellepola H, Odendahl J, Marshall HS, Swamy GK, Grimwood K. Study Protocol for Preventing Early-Onset Pneumonia in Young Children Through Maternal Immunisation: A Multi-Centre Randomised Controlled Trial (PneuMatters). Front Pediatr. 2022 Jan 17;9:781168. doi: 10.3389/fped.2021.781168. eCollection 2021. PMID: 35111703

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Robinson PC, Liew DFL, **Tanner HL**, Grainger JR, Dwek RA, Reisler RB, Steinman L, Feldmann M, Ho LP, Hussell T, Moss P, Richards D, Zitzmann N: COVID-19 therapeutics: Challenges and directions for the future. Proc Natl Acad Sci U S A. 2022 Apr 12;119(15):e2119893119. doi: 10.1073/pnas.2119893119. Epub 2022 Apr 6. PMID: 35385354

Bermas BL, Gianfrancesco M, **Tanner HL**, Seet AM, Aguiar MC, Al Adhoubi NK, Al Emadi S, Cunha BM, Flood R, Kusevich DA, McCarthy EM, Patel NJ, Ruderman EM, Sattui SE, Sciascia S, Siddique F, Valenzuela-Almada MO, Wise LM, Worthing AB, Zell J, Bhana S, Costello W, Duarte-Garcia A, Grainger R, Gossec L, Hausmann JS, Hyrich K, Lawson-Tovey S, Liew JW, Sirotych E, Sparks JA, Sufka P, Wallace ZS, Machado PM, Strangfeld A, Clowse MEB, Yazdany J, Robinson PC. J Rheumatol. COVID-19 in Pregnant Women With Rheumatic Disease: Data From the COVID-19 Global Rheumatology Alliance. 2022 Jan;49(1):110-114. doi: 10.3899/jrheum.210480. Epub 2021 Sep 1. PMID: 34470798

Galibert S, O'Rourke N, **Wolski P**, Schmidt B. Hepatic cirrhosis with portal hypertension secondary to alpha-1 antitrypsin deficiency and autoimmune hepatitis in pregnancy: A case report. J Case Rep Images Obstet Gynecol Nov 2022;8(2):38-44.

Keynote or Plenary Lectures given in 2022

Date	Title
4 th May 2022	Prof Leonie Callaway : A Carer perspective on advocating for the person with a higher weight, QuEDS Annual Forum, Brisbane QLD
16 th June 2022	Prof Leonie Callaway : Preventing Congenital Syphilis, QLD Maternity & Neonatal Clinical Network - Directors of Midwifery and Directors of Obstetrics & Gynaecology Forum
21 st July 2022	Prof Leonie Callaway : A family Friend with Anorexia, Eating Disorders Family Association.
7 th September 2022	Prof Leonie Callaway : Preconception Care – The Science and Art of Medicine, IMSANZ, Manly
7 th October 2022	Prof Leonie Callaway : UQ Academy of Medicine: Clinical Update, Case study
12 th October 2022	Prof Leonie Callaway : Adequate Postnatal Care and Inter-Generational Birth Trauma – RANZCOG ASM, Gold Coast
4 th November 2022	Prof Leonie Callaway : Pregnancy, Postpartum Care and Developmental Origins of Health. Qld Clinical Senate Meeting - The first 2,000 days, Brisbane QLD
December 2022	Prof Leonie Callaway : More than meets the eye: Weaving research and clinical practice together. Women's Health Australasia – Australia wide forum

Poster Presentations

Date	Title
October 2022	Frost J, Callaway L, Weaver E: The conundrum of defining and measuring maternal morbidity. Society of Obstetric Medicine of Aust & NZ ASM Hobart Tasmania
October 2022	Kearney , Nugent, Maher, Shipstone, George, Robins, Boulton, Thompson, Bogossian (2022). Factors Associated with Spontaneous Vaginal Birth in Nulliparous Women. Poster presentation, Australian College of Midwives, National Conference

Perinatal Research Centre

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

The Perinatal Research Centre (PRC), directed by Professor Paul Colditz, is committed to improving health for mothers and babies through world class biomedical and clinical research. Our multidisciplinary research team, consisting of clinicians, scientists, allied health professionals and engineers, aims to discover and translate research advances into clinical practice and better health outcomes for mothers and babies. Research within the PRC covers several related areas including fetal growth restriction led by Dr Julie Wixey, nutrition and systems physiology led by Dr Yvonne Eiby and Dr Barbara Lingwood, signal processing led by Prof Boualem Boashash as well as clinical trials involving the Royal Brisbane and Women's Hospital.

2022 was a successful year for the Perinatal Research Centre. We were awarded a 2022 RBWH Research grant led by Prof Paul Colditz and Dr Julie Wixey to identify brain-specific blood biomarkers of injury in the growth restricted newborn. Fetal growth restriction (FGR) can affect the developing brain resulting in poor outcomes such as intellectual impairment and cerebral palsy. Early detection of brain injury in these newborns is critical for early intervention to improve long-term prognosis for these babies. This project is using novel methods to detect markers of brain injury in the blood of FGR newborns for rapid determination of adverse brain outcomes.

Dr Yvonne Eiby continues with her 4-year 2020 NHMRC Ideas grant examining why preterm babies may have poor outcomes. Preterm babies often have poor heart function that is associated with adverse neurodevelopmental outcomes. Preterm babies may also be vulnerable to low blood volume due to leaky capillaries. This study is examining whether leaky capillaries result in a loss of blood following birth and subsequently poor neurodevelopmental outcomes for these babies.

We secured further funding from NHMRC with our collaborators for a Synergy Grant focussing on reducing the incidence of cerebral palsy through novel early biomarkers and therapeutic trials. This study is incorporating advanced neuroimaging, genetics, and liquid biopsy, enabling fetal and newborn diagnosis, prognosis, and prediction of treatment responses to prevent, treat and cure cerebral palsy.

Our ongoing funding is creating amazing results and media interest and we look forward to another year of high impact translational research. We would like to thank RBWH Foundation and so many members of the public for their generous support which is vital to improving outcomes for mothers and babies through research.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Dr Kate Beecher-Matthews	Early Career Researcher of the Year	UQCCR 2022 Directors Awards
Tam Nguyen	UQCCR HDR Expo Poster Award Mid Candidature – Structured Assessment	UQCCR HDR Expo
Tam Nguyen	UQCCR HDR Expo Poster Award Mid Candidature – People's Choice	UQCCR HDR Expo
Dr Julie Wixey	Researcher of the Year	UQCCR 2022 Directors Awards
Dr Bhavisha Bakrania	Judith Whitworth Award	The High Blood Pressure Research Council of Australia Annual Symposium 2022
Dr Julie Wixey	People's Choice winner	Faculty of Medicine Research Week
Dr Julie Wixey	Research Stimulus Fellowship	The University of Queensland

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
Eiby Y, Wright I, Lingwood B , Pang J	Perinatal Research Centre	Loss of blood volume at the capillary level contributes to poor outcomes for preterm babies	NHMRC Ideas grant	\$300,000	4 years, 2020-2023
Wixey J	Perinatal Research Centre	Targeting injured brain cells to protect growth restricted infants	Mary McConnel Career Boost Program for Women in Paediatric Research, Children's Hospital Foundation	\$50,000	3 years, 2021-2023
Wixey J, Colditz P , Bjorkman ST, Chand K, Patel J, Khosrotehrani K	Perinatal Research Centre	Long-term protection in the growth restricted newborn	Research Foundation of Cerebral Palsy Alliance grant	\$200,000	4 years, 2021-2024
Chand K	Perinatal Research Centre	Targeting the NLRP3-inflammasome in IUGR brain injury	Rebecca L Cooper Project grant	\$100,000	3 years, 2020-2022
Eapen V, Liaw S-T, Pritchard M, Lingam R, Woolfenden S, Jalaludin B, Page A, Kohlhoff J, Scott J, Lawson K	Perinatal Research Centre	Watch Me Grow: Changing practice to improve Universal Child Health and Developmental Surveillance in the primary care setting	NHMRC Partnership Grant	\$1.1M	6 years, 2019-2025
Callaway L , Bakrania B	Perinatal Research Centre	Aspirin for the treatment of cardiac dysfunction in preeclampsia	Royal Brisbane and Women's Hospital Foundation	\$75,000	2022-2023
Boyd R, Novak I, Rose S, Fahey M, Colditz P , Hunt R, Badawi N, Sakzewski L, Corbett M, Comans T, Gecz J	Perinatal Research Centre	Cerebral Palsy Synergy Network to Protect, Repair and improve outcomes	NHMRC Synergy Grant	\$5M	5 years, 2022-2026

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
Paul Colditz	Boyd R, Malhotra A, Rose S, Boashash B, Ditchfield M, Fahey M, Pannek K, Moldrich R	Neurodevelopment of the preterm infant (PREBO)	0	144
Paul Colditz	Wixey J	Brain-specific blood biomarkers of injury in the growth restricted newborn		
Paul Colditz	Eiby Y	Identifying priority targets for effective blood volume management in preterm infants		
Paul Colditz	Eiby Y, Wixey J	NeoBRAIN		

Research Publications

Authors

Investigator	ORCID ID
Paul Colditz	0000-0002-6408-8238
Melissa Lai	0000-0002-1970-7247
Barbara Lingwood	0000-0002-8143-2707
Tim Donovan	0000-0002-4710-0186

Publications in 2022

Journal Articles (RBWH staff in bold)

1. Pagnozzi AM, van Eijk L, Pannek K, Boyd RN, Saha S, George J, Bora S, Bradford D, Fahey M, Ditchfield M, Malhotra A, Liley H, **Colditz PB**, Rose S, Fripp J. Early brain morphometrics from neonatal MRI predict motor and cognitive outcomes at 2-years corrected age in very preterm infants. *Neuroimage*. 2023 Feb 15;267:119815. doi: 10.1016/j.neuroimage.2022.119815. Epub 2022 Dec 15. PMID: 36529204.
2. Crompton K, Godler DE, Ling L, Elwood N, Mechinaud-Heloury F, Soosay Raj T, Hsiao KC, Fleming J, Tiedemann K, Novak I, Fahey MC, Wang X, Lee KJ, **Colditz PB**, Edwards P, Reddihough D. Umbilical cord blood cell clearance post-infusion in immune competent children with cerebral palsy. *Cells Tissues Organs*. 2022 Oct 19. doi: 10.1159/000527612. Epub ahead of print. PMID: 36261026.
3. Huf IU, Baque E, **Colditz PB**, Chatfield MD, Ware RS, Boyd RN, George JM. Neurological examination at 32-weeks postmenstrual age predicts 12-month cognitive outcomes in very preterm-born infants. *Pediatr Res*. 2022 Sep 23. doi: 10.1038/s41390-022-02310-6. Epub ahead of print. PMID: 36151299.
4. Eapen V, Liaw ST, Lingam R, Woolfenden S, Jalaludin B, Page A, Kohlhoff J, Scott JG, Lawson KD, Lam-Cassettari C, Heussler H, Descallar J, Karlov L, Ong N, **Colditz PB**, Littlewood R, Murphy E, Deering A, Short K, Garg P, Blight V, Rodgers K, Chalmers L, Webb KL, Atkins H, Newcomb D, Beswick R, Thomas C, Marron C, Chambers A, Scheinplflug S, Statham M, Samaranyake D, Chay P, Tam CWM, Khan F, Mendoza Diaz A, Cibralic S, Winata T, Pritchard M. Watch me grow integrated (WGM-I): protocol for a cluster randomised controlled trial of a web-based surveillance approach for developmental screening in primary care settings. *BMJ Open*. 2022 Aug 17;12(8):e065823. doi: 10.1136/bmjopen-2022-065823. PMID: 35977775; PMCID: PMC9389092.
5. **Lai M**, D'Acunto G, Guzzetta A, Finnigan S, Ngenda N, Ware RS, Boyd RN, **Colditz PB**. Infant massage and brain maturation measured using EEG: A randomised controlled trial. *Early Hum Dev*. 2022 Sep;172:105632. doi: 10.1016/j.earlhumdev.2022.105632. Epub 2022 Jul 22. PMID: 35905636.
6. Khlif MS, Mesbah M, **Colditz PB**, Boashash B. Neonatal EEG seizure detection using a new signal structural complexity measure based on matching pursuit decomposition with nonstationary dictionary. *Comput Methods Programs Biomed*. 2022 Sep;224:107014. doi: 10.1016/j.cmpb.2022.107014. Epub 2022 Jul 9. PMID: 35849896.
7. Murphy VE, Jensen ME, Holliday EG, Giles WB, Barrett HL, Callaway LK, Bisits A, Peek MJ, Seeho SK, Abbott A, Robijn AL, **Colditz PB**, Searles A, Attia J, McCaffery K, Hensley MJ, Mattes J, Gibson PG. Effect of asthma management with exhaled nitric oxide *versus* usual care on perinatal outcomes. *Eur Respir J*. 2022 Nov 17;60(5):2200298. doi: 10.1183/13993003.00298-2022. PMID: 35777773; PMCID: PMC9669403.
8. Kwong AK, Boyd RN, Chatfield MD, Ware RS, **Colditz PB**, George JM. Early Motor Repertoire of Very Preterm Infants and Relationships with 2-Year Neurodevelopment. *J Clin Med*. 2022 Mar 25;11(7):1833. doi: 10.3390/jcm11071833. PMID: 35407440; PMCID: PMC9000187.
9. Chand KK, Pannek K, **Colditz PB**, Wixey JA. Brain Outcomes in Runted Piglets: A Translational Model of Fetal Growth Restriction. *Dev Neurosci*. 2022;44(4-5):194-204. doi: 10.1159/000523995. Epub 2022 Mar 9. PMID: 35263744.
10. Stevenson NJ, **Lai MM**, Starkman HE, **Colditz PB**, Wixey JA. Electroencephalographic studies in growth-restricted and small-for-gestational-age neonates. *Pediatr Res*. 2022 Dec;92(6):1527-1534. doi: 10.1038/s41390-022-01992-2. Epub 2022 Feb 23. PMID: 35197567; PMCID: PMC9771813.
11. Evans T, Boyd RN, **Colditz PB**, Sanders M, Whittingham K. Predictors of Maternal Bonding and Responsiveness for Mothers of Very Preterm Infants. *J Clin Psychol Med Settings*. 2022 Jun;29(2):391-402. doi: 10.1007/s10880-021-09833-w. Epub 2022 Jan 23. PMID: 35066796.

Journal Articles (RBWH staff in bold)

12. Berkhout A, Kapoor V, Heney C, Jones CA, Clark JE, Britton PN, Vaska VL, **Lai MM**, Nourse C. Epidemiology and long-term neurological sequelae of childhood herpes simplex CNS infection. *J Paediatr Child Health*. 2022 Aug;58(8):1372-1378. doi: 10.1111/jpc.15992. Epub 2022 May 5. PMID: 35510684; PMCID: PMC9546081.

13. Flint A, August D, **Lai M**, Chawla J, Ballard E, Davies MW. Determining reference data for overnight oximetry in neonates: A pilot study. *Early Hum Dev*. 2022 May;168:105571. doi: 10.1016/j.earlhumdev.2022.105571. Epub 2022 Apr 1. PMID: 35390559.

14. Scott PA, **Lai M**, Inglis GDT, Davies MW. Neonatal early-onset sepsis calculator safety in an Australian tertiary perinatal centre. *J Paediatr Child Health*. 2022 May;58(5):863-867. doi: 10.1111/jpc.15860. Epub 2022 Jan 6. PMID: 34990032.

15. Eiby YA, Wright IMR, Stark MJ, **Lingwood BE**. Red cell infusion but not saline is effective for volume expansion in preterm piglets. *Pediatric Research*. 2022 1-7. doi: 10.1038/s41390-022-02403-2

16. Forbes EM, Bakrania BA, Steane SE, Moritz KM, **Lingwood BE**, Eiby YA. Expression of TRPM6 and TRPM7 in the preterm piglet heart. *Front Pediatr*. 2022 Aug 23;10:891722. doi: 10.3389/fped.2022.891722. PMID: 36081632; PMCID: PMC9445433.

17. Chand KK, Miller SM, Cowin GJ, Mohanty L, Pienaar J, **Colditz PB**, Bjorkman ST, Wixey JA. *Mol Neurobiol*. 2022 Feb;59(2):1018-1040. doi: 10.1007/s12035-021-02654-w. Epub 2021 Nov 26.

Queensland Centre for Gynaecological Cancer

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

QCGC Research's mission is to research and develop the best standard of care for women experiencing gynaecological cancer. This includes finding causes for and preventing gynaecological cancer; and finding better treatment options to cure women affected by gynaecological cancer. In 2022 we commenced the Pre-ANVU study which is a feasibility of Groin Ultrasound to Predict Groin Lymph Node Involvement in Patients with Histologically Proven Vulvar Cancer. In 2022 we received NHMRC funding to create, implement and evaluate a personalised decision tool to support women with endometrial cancer in their treatment decision making. This project builds on our recently completed phase 2 randomised clinical trial, feMMe, and will facilitate informed clinical discussions that weigh up risks versus benefits in an evidence-based way.

In 2022 we continued the ENDO3 Trial which is a surgical multicentre randomised trial investigating Sentinel Node Biopsy in Endometrial Cancer. We also continued our study of exercise in ovarian cancer (ECHO) and also exercise studies in recurrent ovarian cancer (ECHO-R) and gynaecological cancer (ACUMEN), as well as commencing the MOST trial which is a randomised controlled trial to compare three-monthly nurse-led follow-up via telehealth) with routine clinic-based or telehealth follow-up, following completion of first-line chemotherapy in patients with epithelial ovarian cancer.

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
Prof Andreas Obermair Prof Monika Janda Prof Carlos Salomon Gallo, & Sandie Mccarthy,	QCGC Research	A non-surgical alternative to hysterectomy for the treatment of endometrial cancer	NHMRC Partnership Projects	739,426	2022-2024
Prof Andreas Obermair	QCGC Research	Creating treatment options for endometrial cancer through high-level clinical trials	NHMRC Investigator Grants	\$2,250,000	2021-2025
Prof Andreas Obermair Dr Jim Nicklin, Dr Andrea Garrett	QCGC Research	A Phase III randomised clinical trial comparing sentinel node biopsy with no retroperitoneal node dissection in early stage endometrial cancer (ENDO-3)	Wesley	\$107,605	2020-2023
Prof Andreas Obermair	QCGC Research	Implementing non-surgical options for endometrial cancer treatment into clinical practice	ICON Cancer Centre	\$150,000	2020-2022

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
Prof Sandra Hayes, Prof Andreas Obermair Prof Monika Janda, Prof Elizabeth Eakin, Dr Catherine Shannon Dr Jeff Goh , Dr Vanessa Beesley, Prof Dimitrios Vagenas, Dr Rosalind Spence	QCGC Research	A Phase II trial evaluating feasibility, safety and efficacy of an individually tailored exercise intervention during chemotherapy for recurrent ovarian cancer (MRFF EPCDR Administered by Griffith)	Griffith University	\$253,313	2020-2023
Prof Andreas Obermair Prof Monika Janda Prof Carlos Salomon Gallo, & Sandie Mccarthy,	QCGC Research	A non-surgical alternative to hysterectomy for the treatment of endometrial cancer	Cherish Women's Cancer Foundation	\$260,000	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	Total number of RBWH Patients Recruited
Prof Andreas Obermair	Prof Jim Nicklin, Dr Andrea Garrett , Prof Val GebSKI, Prof Monika Janda, Prof Sandi Hayes, Prof Nicholas Graves, Prof Linda Mileshkin, Dr Ming-Yin Lin, Prof George Hanna	A Phase III randomised clinical trial comparing sentinel node biopsy with no retroperitoneal node dissection in early-stage endometrial cancer (ENDO-3)	28	44
Prof Andreas Obermair	A/Prof Carlos Salomon, Dr Eva Baxter, Dr Jamie Kutasovic, Dr Andrew Lai, Dr Michelle Alizart, Prof Margaret Cummings, A/Prof Olga Kondrashova	Identifying predictive biomarkers for progestin treatment of early-stage endometrial cancer	-	-
Dr Kristen Moloney	Prof Andreas Obermair , Prof Neville F Hacker, A/Prof Carlos Salomon, Dr Eva Baxter, Dr Shohreh Rezaei	Feasibility of Groin Ultrasound to Predict Groin Lymph Node Involvement in Patients with Histologically Proven Vulvar Cancer (Pre-ANVU)	6	6
Dr Michael Wilkinson, Dr Rhett Morton	Prof Andreas Obermair, Ms Karen Sanday, Dr Ze Zhang	Can the log reduction in serum CA-125 levels predict successful interval cytoreduction surgery in ovarian cancer patients?	-	-

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
Sandi Hayes (Griffith)	Prof Andreas Obermair Prof Monika Janda, Prof Elizabeth Eakin, Dr Catherine Shannon Dr Jeff Goh , Dr Vanessa Beesley, Prof Dimitrios Vagenas, Dr Rosalind Spence	A Phase II trial evaluating feasibility, safety and efficacy of an individually tailored exercise intervention during chemotherapy for recurrent ovarian cancer (ECHO-R)	5	14
Sandi Hayes (Griffith)	Prof Andreas Obermair (Gyn Onc), Dr Jim Nicklin (Gyn Onc) A/Prof Russell Land (Gyn Onc) Dr Andrea Garrett (Gyn Onc), Dr Amy Tang (Gyn Onc)	A Phase III randomised controlled trial of exercise during chemotherapy for patients commencing first line treatment for ovarian cancer (ECHO)	26	134
Prof Alexandra McCarthy (UQ)	Dr Andrea Garrett Tom Bailey (UQ) A/Prof Tina Skinner (UQ) Ms Elizabeth Stewart (UQ)	Enhancing Treatment Outcomes after Gynaecological Cancer: Using Exercise to Promote Health after Cancer Therapy (ACUMEN)	21	33
Prof Paul Cohen	Dr Paul Cohen, Prof Michael Friedlander, Prof Penelope Webb, Prof Val GebSKI, Prof Madeleine King, Prof Phyllis Butow, Prof Andreas Obermair (Gyn Onc), A/Prof Rachael Morton, Ms. Wanda Lawson, Prof Patsy Yates, Dr Rachel Campbell, A/Prof Tarek Meniawy, Dr Andrew Dean, Dr Jeffrey Goh (Med Onc), A/Prof Philip Beale, A/Prof Orla McNally, Prof Linda Mileskin, Ms. Jane Hill, Mr. Cyril Dixon, Ms. Sue Hegarty, Prof Jim Codde, Ms Angela Ives, Dr Yeh Chen Lee, A/Prof Alison Brand, Ms Anne Mellon, Dr Mihitha Ariyapperuma, Dr Andrew Kiberu	Getting the MOST out of follow-up: a randomised controlled trial to compare three-monthly nurse-led follow-up via telehealth, including monitoring serum CA125 and other relevant tumour markers, and patient reported outcomes using the MOST (Measure of Ovarian Symptoms and Treatment concerns) with routine clinic-based or telehealth follow-up, following completion of first-line chemotherapy in patients with epithelial ovarian cancer (MOST)	5	5
Prof Andreas Obermair	Dimitrios Nasioudis MD, Robert L Giuntoli II MD,	Outcomes of sentinel lymph node biopsy for patients with early-stage squamous cell carcinoma of the vulva	-	-

Research Publications

Authors

Investigator	ORCID ID
Andreas Obermair	0000-0003-2199-1117
Andrea Garrett	0000-0001-6595-1905
Kirsten Moloney	0000-0003-1068-5202

Publications in 2022

Journal Articles (RBWH staff in bold)

1. Beesley, V. L., T. L. Ross, M. T. King, R. Campbell, C. M. Nagle, **A. Obermair**, P. Grant, A. DeFazio, P. M. Webb, and M. L. Friedlander. 2022. 'Evaluating patient-reported symptoms and late adverse effects following completion of first-line chemotherapy for ovarian cancer using the MOST (Measure of Ovarian Symptoms and Treatment concerns)', *Gynecol Oncol*, 164: 437-45.
2. Cibula, D., L. Dostálek, J. Jarkovsky, C. H. Mom, A. Lopez, H. Falconer, G. Scambia, A. Ayhan, S. H. Kim, D. Isla Ortiz, J. Klat, **A. Obermair**, G. Di Martino, R. Pareja, R. Manchanda, J. Kost'un, R. Dos Reis, M. M. Meydanli, D. Odetto, R. Laky, I. Zapardiel, V. Weinberger, K. Benešová, M. Borčinová, F. Cardenas, E. Wallin, L. Pedone Anchora, H. Akilli, N. R. Abu-Rustum, S. A. Barquet-Muñoz, V. Javůrková, D. Fischerová, and Lrcw van Lonkhuijzen. 2022. 'Post-recurrence survival in patients with cervical cancer', *Gynecol Oncol*, 164: 362-69.
3. Cohen, P. A., P. M. Webb, M. King, **A. Obermair**, V. GebSKI, P. Butow, R. Morton, W. Lawson, P. Yates, R. Campbell, T. Meniawy, M. McMullen, A. Dean, J. Goh, O. McNally, L. MilesShkin, P. Beale, R. Beach, J. Hill, C. Dixon, S. Hegarty, J. Codde, A. Ives, Y. C. Lee, A. Brand, A. Mellon, S. Bilic, I. Black, S. Jeffares, and M. Friedlander. 2022. 'Getting the MOST out of follow-up: a randomized controlled trial comparing 3 monthly nurse led follow-up via telehealth, including monitoring CA125 and patient reported outcomes using the MOST (Measure of Ovarian Symptoms and Treatment concerns) with routine clinic based or telehealth follow-up, after completion of first line chemotherapy in patients with epithelial ovarian cancer', *Int J Gynecol Cancer*, 32: 560-65.
4. GebSKI, V., **A. Obermair**, and M. Janda. 2022. 'Toward Incorporating Health-Related Quality of Life as Coprimary End Points in Clinical Trials: Time to Achieve Clinical Important Differences and QoL Profiles', *J Clin Oncol*, 40: 2378-88.
5. Gersekowski, K., R. Delahunty, K. Alsop, E. L. Goode, J. M. Cunningham, S. J. Winham, P. Pharoah, H. Song, S. Jordan, S. Fereday, A. DeFazio, M. Friedlander, **A. Obermair**, and P. M. Webb. 2022. 'Germline BRCA variants, lifestyle and ovarian cancer survival', *Gynecol Oncol*, 165: 437-45.
6. Grace, L., **K. Sanday**, **A. Garrett**, **R. Land**, J. Nicklin, **A. Obermair**, **A. Rao**, **A. Tang**, and E. R. Allanson. 2022. 'Vaginal vault smear cytology in detection of recurrence after hysterectomy for early cervical cancer', *Int J Gynecol Cancer*, 32: 853-60.
7. **Moloney, K.**, **A. Rao**, and **A. Obermair**. 2022. 'Collaborative centralization of gynaecological cancer care', *Curr Opin Oncol*, 34: 518-23.
8. O'Hara, M., M. Janda, A. L. McCarthy, J. Nicklin, G. Walker, and **A. Obermair**. 2022. 'Patient experiences of conservative treatment for early stage endometrial cancer and endometrial hyperplasia with atypia using levonorgestrel intrauterine device: A qualitative study', *Gynecol Oncol Rep*, 39: 100914.
9. **Obermair, A.**, O. McNally, R. Farrell, R. Ribeiro, and J. S. Ng. 2022. 'Are endometrial cancer clinical practice management guidelines sufficiently consumer centric?', *Int J Gynecol Cancer*, 32: 961-62.

Keynote or Plenary Lectures given in 2022

Date	Title
11 October 2022	Garrett, Andrea, and Kristen Moloney . 2022. "Decision Making in Gynaecology." In RANZCOG Annual Scientific Meeting 2022. Gold Coast

08 April 2022	kin, Youg Tae, Sang Wun Kim, Jae Yun Song, Keun Ho Lee, and Andreas Obermair . 2022. "Fluorescence image guided lymphatic mapping and sentinel lymph node dissection." In SLN Korea - Stryker. The Korean Society of Gynecologic Endoscopy.
18 June 2022	Obermair, Andreas , and Hao Xiang. 2022. "Optimising tissue acquisition for Molecular testing: A look into tissue samples & stewardship." In Precision Medicine Summit – Bringing diagnostics into focus. Sydney.