

RBWH

TWENTY

20

RESEARCH REPORT

**WOMEN'S AND NEWBORN
SERVICES**

Metro North
Health



Queensland
Government

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Women's and Newborn Services



Associate Prof Karin Lust
Service Director
Women's and Newborn Services



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

Women's and Newborn Services (WNS) provides comprehensive care to women, infants, and families within our own community, and also to the people of Queensland and beyond.

While there were many plans at the beginning of 2020, we know that all the best laid plans need to be put aside, in the face of a global pandemic. However, our staff, consumer representatives and broader community worked tirelessly to do what was needed to continue to provide excellent care during this challenging year.

In the midst of planning whole new virtual models of care, and writing new clinical guidelines, the resourcefulness and innovation of the Women's and Newborn Research team shone through. Several major projects relating to COVID-19 were planned, written and approved.

With tenacity and persistence, our team were awarded three of the nine RBWH Foundation COVID-19 research grants. These related to the impact of changes to care for women and their babies, staff wellbeing, and an assessment of a new approach to screening for gestational diabetes prompted by trying to reduce health care exposure.

Together, our team supports 7 maternity clinical trials, 16 neonatal clinical trials, 1 gynaecology clinical trial and 5 Gynaecology Oncology clinical trials. Research teams in WNS were successful in being awarded 34 research grants in 2020. We currently have 35 research higher degree students within WNS. Two of our midwifery research higher degree students – Emma Shipton and Lisa McKeon had their RBWH Foundation Scholarships renewed to continue to support their work. Another highlight for WNS in 2020 was that Professor Leonie Callaway, Director of Research WNS, was a finalist in the MNHHS Researcher of the Year Awards.

We are delighted to see more and more clinical staff from all disciplines in WNS undertake research and share their outcomes which are presented locally, nationally and internationally (via online platforms in 2020) at conferences, and this research then leads to publications. This is once again a team effort, with more senior clinicians taking an interest in supervising junior staff to undertake high quality research.

It takes time and patience to establish a vibrant research culture. It also takes resilience, particularly in the face of challenges of the kind we have all confronted in the last year. I would like to acknowledge the continued growth in research activity across WNS and congratulate and thank all the staff and patients for their contributions to this.

Research in WNS is in excellent hands – and the secret of success is in collaboration, curiosity, and collegiality. We achieve far more together, than apart.

Grantley Stable Neonatal Unit

RBWH Neonatal Research Coordinator position has been a successful addition to the Neonatal team. The role monitors and report on research activities and outcomes, as well as assist with development of research protocols and managing approval of ethical and clinical governance for numerous projects. This position also organises Steering Committee Meetings, facilitates the roll out of single site and multisite research, as well as liaising with investigators to provide educational sessions for clinical staff about studies and research topics.

Four local trials/projects were awarded research grant funding from the RBWH Foundation 2020 Grant Round. Three of these projects have progressed to Ethics submission or approval with hopes to start recruitment in mid-2020.

The tied fund account has generated almost \$6000 in funds to date. This year the Steering Committee has reviewed several possible initiatives for the funding, most put on delay due to COVID-19.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Deanne August	2021 Research Grant Award	RBWH Foundation
Karen Whitfield	Metro North Research Excellence Award	RBWH Foundation
Karen Whitfield	Research Support Award	RBWH Foundation
Lisa McKeown	2021 Post Graduate Scholarship	RBWH Foundation

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Jany Pienaar	Grantley Stable Neonatal Unit	Neurodevelopmental outcomes at 2 years following ibuprofen treatment for patent ductus arteriosus in the preterm small for gestational age newborn: potential for neuroprotection	RBWH Foundation	\$40,000	2020
Deanne August, Dr Nicole Marsh, Colette McIntyre, Dr Pieter Koorts, Dr Rebecca Allen, Dr Linda McLaughlin, Prof Rob Ware, Katie Foxcroft, Linda Cobbald, Gillian Lack, Kate Coghil, Gemma Yates, Patricia Smith, Assoc Prof Amanda Ullman	Grantley Stable Neonatal Unit	Implementing the near infrared (NIR)-informed peripheral intravenous catheter (PIVC) scrums in neonatal care: an intervention study	RBWH Foundation	\$40,000	2020
Pieter Koorts, Suzanne Parker, Melissa Lai, Jason Roberts	Grantley Stable Neonatal Unit	Establishing an effective treatment of Sedation for Neonates requiring life-saving Tracheal Intubation (SoNaTina Study)	RBWH Foundation	\$40,000	2020
Timothy Donovan	Grantley Stable Neonatal Unit	The Impact of Nutrition, Growth and Body Composition on Neurodevelopmental Outcome in Late Preterm Infants	RBWH Foundation	\$40,000	2020
Lisa McKeown	Grantley Stable Neonatal Unit	The prevalence of post-traumatic stress disorder in parents of infants in the Neonatal Intensive Care Unit	RBWH Foundation	\$40,000	2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Lisa McKeown	Grantley Stable Neonatal Unit	Psychology HDR Statistical and Methodology Training Support Scholarship	UQ school of Psychology	\$1680.00	2020-2021

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Jasmine Antoine	Mark Davies, Garry Inglis	Bacterial colonisation of endotracheal tube (ETT) in infants less than 32 weeks gestation	1054	1054
Melissa Weber	Melissa Lai (PhD Candidate), Mark Davies	An Audit of Noise levels in a Level Six Intensive Care Neonatal Unit	-	-
Kristin O'Connor	Mark Davies	Determining the criteria for predicting successful extubation with systemic dexamethasone in premature infants	-	-
Gill Noreiks	Melissa Lai (PhD Candidate), Mark Davies	HUMIDITY - Incubator humidity for 1 or 2 weeks for ELBW babies	103	103
Mark Davies	Deborah Gilmour	NeoSTRESS: Study of Transfer and Retrieval Environmental StressorS upon neonates via a smartphone application - Acceleration/vibration, light & sound	-	-
Tim Donovan	Paul Colditz	PEACH: Long-term Outcome of Neonatal Adiposity	30	30
Dayan DeAlwis	Mark Davies	Cochrane review - Late surfactant in very preterm neonates who still required mechanical ventilation after day 7	-	-
Neeraj Mehta	Melissa Lai , Drum Patel	Neonatal transfusions and clinical triggers	100	100
Paul Colditz	Roslyn Boyd, A Malhotra, Stephen Rose, B Boashash, M Ditchfield, M Fahey, K Pannek, R Moldrich	PREBO Neurodevelopment of the preterm infant	2 RBWH	153 RBWH 176 Total study
Drum Patel	Pieter Koorts, Karen Langford, Lyn Chapple, Melissa Lai, Mark Davies, Kate Cogill	Pasteurised Donor Human Milk in late preterm and term infants: A Randomised Controlled Trial	TBC	TBC
Nu Nu Lwin	Melissa Lai, Mark Davies	Very preterm infants and ELBW outcomes in a tertiary nursery	-	-
Stefanie Rutz	Melissa Lai, Kate Cogill, Mark Davies	Optimising term LBW infants' discharge home - RCT	-	-
Adam Hoellering		Retrospective review of IVH in a tertiary nursery	200	200
Pieter Koorts	Suzanne Parker, Melissa Lai , Jason Roberts	Establishing an effective treatment of Sedation for Neonates requiring life-saving Tracheal Intubation (SoNaTIna Study)	TBC	TBC
Jany Pienaar	Mark Davies	Retrospective review of HFOV and CO2 levels in a tertiary nursery	-	-

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Lisa McKeown	Professor Vanessa Cobham, Professor Leonie Callaway and Katie Foxcroft	The prevalence of Post-Traumatic Stress disorder symptoms of parents of high-risk infants in the Neonatal Intensive Care Unit	36	36
Tim Donovan	Barbara Lingwood, Yvonne Eiby, Melissa Lai , Simon Finnigan	The Impact of Nutrition, Growth and Body Composition on Neurodevelopmental Outcome in Late Preterm Infants	11	11
Deanne August	Dr Nicole Marsh, Colette McIntyre, Dr Pieter Koorts, Dr Rebecca Allen, Dr Linda McLaughlin , Prof Rob Ware, Katie Foxcroft, Linda Cobbald, Gillian Lack, Kate Coghill, Gemma Yates, Patricia Smith , Assoc Prof Amanda Ullman	Implementing the near infrared (NIR)-informed peripheral intravenous catheter (PIVC) scrub in neonatal care: an implementation project	166	166
Karen Whitefield	Donna Bostock, Pieter Koorts, Kristen O'Conner, Mark Davies and Mr E Tanvir	Micronutrients levels in Infants	40	40
Karen Whitefield	Donna Bostock , Ms Chia-Lin Hsieh	To investigate the extent of micronutrient adherence and reasons for nonadherence in infants	20	20
Francine Hosking	Mark Davies , Adam Irwin, Suzanne Parker, Jason Roberts	Optimising Treatment of Infection in Neonates using Micro sampling (OPTIONS)	24	24
Jasmine Antoine	Linda McLaughlin and Tamsin Roberts (from MMH)	Milk curd obstruction- rates and management	-	-

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Julie Wixey, Jany Pienaar , Paul Colditz, Ian Wright	Jany Pienaar, Melissa Lai (PhD Candidate)	Retrospective study of ibuprofen administration on neurodevelopmental outcomes in IUGR neonates in Australia	50	50
Anndrea Flint	Mark Davies, Melissa Lai (PhD Candidate)	Determining reference ranges for well term neonates overnight oximetry	10	16
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	10	14
Amanda Ullman, Deanne August	Colette McIntyre, Katie Foxcroft, Linda Cobbald, Gill Lack	NeOnatal Vascular Access (NOVA) study: an observational audit of neonatal vascular access complications	104	104
Peter Dargaville	Tim Donovan, Melissa Lai (PhD Candidate)	RCT - OPTIMIST-A Trial. Multicentre randomised controlled trial of minimally invasive surfactant therapy in preterm infants 25-28 weeks gestation on continuous positive airway pressure	2	-

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Elsa Wynd	Melissa Lai, Adam Hoellering	AIM-PREM: Assessing the Impact of Prematurity on Renal Medulla development	66	100
Paul Dawson	Pieter Koorts, Paul Colditz, Nadia Badawi, Roslyn Boyd, Vicki Flenady, Elizabeth Hurriion, Francis Bowling, Sailesh Kumar	Neuroprotective role of sulphate among preterm babies (SuPreme Study)	99	532
Iona Novak	Paul Colditz	RCT - GAME: Harnessing Neuroplasticity to Improve Motor Performance in Infants with Cerebral Palsy: a Pragmatic Randomized Controlled Trial		
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	12	298 study total
Roslyn Boyd	Paul Colditz	RCT - REACH: Randomised trial of Rehabilitation very EARly in Congenital Hemiplegia	-	-
Alicia Spittle	Pieter Koorts Melissa Lai (PhD Candidate)	Kite-Early identification of infants with cerebral palsy: implementation of evidence-based guidelines into practice	26	26

Research Publications

Journal Articles

1. **Antoine J, Inglis GDT,** Way M, O'Rourke P, **Davies MW.** Bacterial colonisation of the endotracheal tube in ventilated very preterm neonates: A retrospective cohort study. *J Paediatr Child Health.* 2020; 56:1607-1612. <https://doi.org/10.1111/jpc.15046>
2. **August DL, Chapple L,** Flint A, Macey J, NG L, and New K. (2020). Facilitating neonatal MARSII evidence into practice: Investigating multimedia resources with Australian Neonatal Nurses – a participatory action research project. *Journal of Neonatal Nursing.* 2020; In Press <https://doi.org/10.1016/j.jnn.2020.12.001>
3. **August DL,** Kandasamy Y, Ray R, Lindsay D, and New K. Fresh perspectives on hospital acquired neonatal skin injury prevalence from a multicentre study: length of stay, acuity and incomplete course of antenatal steroids. *Journal of Perinatal and Neonatal Nursing.* 2020;13. Publish ahead of print. doi: 10.1097/JPN.0000000000000513
4. Berkhout A, Kapoor V, Heney CI, Jones C, Clark J, Vaska V, **Lai M,** Nourse C. Herpes Simplex virus infection in infants: 13 year evaluation (2005-2017) of laboratory confirmed cases in Queensland, Australia. *Pediatric Infect. Dis. J.* 2020; Published ahead of print
5. **Gilmour D, Davies MW,** Duong KM, Gilmour IJ. NeoSTRESS: Study of Transfer and Retrieval Environmental StressorS upon neonates via a smartphone application – Sound. *J Paediatr Child Health.* 2020; 56(9):1396-1401
6. **Paliwoda M,** Bogossian F, **Davies M,** Ballard E, and New K. Physiological vital sign differences between well newborns greater than 34 weeks gestation: A pilot study. *JNN.* 2020;26(4):226-231. <https://doi.org/10.1016/j.jnn.2020.02.002>

Conference Presentations – Invited Speaker, Oral and Poster

Oral Presentations

1. **McKeown L.** (December 2020). "The Prevalence of post-traumatic stress disorder (PSD) symptoms in parents of high-risk infants in the neonatal intensive care unit (NICU)". The Inaugural Herston Health Precinct Symposium

2. **Lai M.** (December 2020). Infant massage and brain maturation measured by EEG. The Inaugural Herston Health Precinct Symposium

3. **Donovan T,** Lawton S, Lack G, Eiby Y, Lingwood B. (December 2020). 'Quality of Growth Predicts Neurodevelopment in Very Preterm Infants'. The Inaugural Herston Health Precinct Symposium

4. **Paliwoda M.** (September 2020). Differences in physiological vital signs between well late preterm and term newborns: A pilot study. The ACNN annual conference 2020

5. **Paliwoda M.** (September 2020). Physiological vital sign reference ranges for well late preterm newborns. The ACNN annual conference 2020

6. **McKeown L.** (September 2020). The Prevalence of Post-traumatic stress disorder symptoms in parents of high-risk infants in the neonatal intensive care unit. The ACNN annual conference 2020

7. **Cobbald L.** (September 2020). Lessons learned from neonates with difficult intravascular access: Two case reports. The ACNN annual conference 2020

8. **August, D.** (September 2020). Conceptualising skin development diagrammatically from foetal and neonatal scientific evidence. The ACNN annual conference 2020

Poster Presentations

1. **Lai M.** (December 2020). Infant massage and brain maturation measured by EEG. The Inaugural Herston Health Precinct Symposium

2. **Lai M.** (December 2020). Sedation by Propofol for neonatal intubation: a randomised controlled trial. The Inaugural Herston Health Precinct Symposium

Obstetrics & Gynaecology

The Department of Obstetrics and Gynaecology provides tertiary and quaternary obstetrics and gynaecology services for MNHHS and QLD. The departments are 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.

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 Dr Lehner is conducting research pertaining to COVID and peri mental health effects. 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. Dr Duncombe has been awarded a RBWH foundation Project Grant to conduct research centred on indicators of early gestational Pre-eclampsia (pre- 16 weeks pregnant).

In 2020 key research outputs include grants, publications, presentations at national and international meetings and PhD completions (or PhD supervision). Overall, there are 12 trials currently underway with 2 trials anticipated to commence in 2021, added to this achievement, there have been 4 RBWH Foundation Project Grants awarded and 1 NHMRC grant.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Allegra Boccabella	Professor William Egerton Research Award	Herston Health Care Symposium 2020
Allegra Boccabella, Thangeswaran Rudra	Oral presentation Winner: Can we ignore a pregnant women's snore?	Herston Health Care Symposium 2020
Professor Rebecca Kimble	Professor Fred Ledischke Medal for Contribution to Paediatric and Adolescent Gynaecology and as the second Full Professor in the Department of Paediatric Surgery Children's Health Services	Queensland Children's Hospital
Professor Rebecca Kimble	Best Paper of 2020 the International Journal of Obstetric Anaesthesia Baseline parameters for rotational thromboelastometry (ROTEM) in healthy pregnant women: A comparison of labouring women and non-labouring women in Australia Int J Obstet Anaesth 2020;41:7-13	

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Keisuke Tanaka	Obstetrics and Gynaecology	Investigation of endocannabinoid system signalling pathways and their regulations in endometriosis establishment, progression and severity	RBWH Foundation	\$45,992	2020
Greg Duncombe	Maternal Fetal Medicine and Exosome Research Laboratory	Validation of a rapid and simple method to classify women at risk to develop preeclampsia before 16 weeks of pregnancy	RBWH Foundation	\$40,000	2020
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	RBWH Foundation COVID-19 Grant	\$13,156.00	2020

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
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		
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)	Somatic mutation in endometriotic lesions and their relationship to disease progression, severity and symptoms		
Keisuke Tanaka, Akram Khalil, David Baartz, Akwasi Amoako, Renuka Sekar	Emma Ballard, Elise Coghill	Management of caesarean scar pregnancy with high dose intravenous methotrexate infusion therapy: 10-year experience at a single tertiary centre		
Akwasi Amoako, Renuka Sekar, Christoph Lehner	Cathy Liu, Nicole Po , Anh D Nguyen	Prediction and Prevention of preterm labour		
Keisuke Tanaka, Akram Khalil, David Baartz, Akwasi Amoako	Stephanie Zhu	Comparing Surgical and Medical Management of Tubo-Ovarian Abscess: A Retrospective Single Tertiary Centre Study		
Akwasi Amoako, Christoph Lehner, Shannyn Rosser	Thomas Yeung	Comparison of maternal and fetal/neonatal outcomes for women undergoing water birth compared to land birth		
Akwasi Amoako, Renuka Sekar, Christoph Lehner, Shannyn Rosser	Geraldine Herweijer	Accuracy of fetal biometry, particularly estimated fetal head circumference in third trimester ultrasound: A retrospective cohort study		
Akram Khalil, David Baartz, Akwasi Amoako	Pathmila Navaratne	Management of Tubal ectopic pregnancy with intravenous Methotrexate		

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Keisuke Tanaka, Akram Khalil, David Baartz, Akwasi Amoako	Kath Adams	Management and Outcomes of Ovarian Torsion: A Retrospective Analysis		
Thushani Adikari, Thangeswaran Rudra		Retrospective Study on Obstetrics Outcome following HELLP Syndrome		
Chloe Adams	Katie Foxcroft, Karen Baker, Melissa Wright, Belinda Baker	Does introduction of a standardised procedure on TOV in gynaecological patients improve staff compliance and satisfaction?		
Archana Nagendiram, Thangeswaran Rudra		Obstetrics Outcome in Twin Vaginal Delivery Compared to Caesarean Section – a Retrospective Cohort Study		
Chui Mel, Thangeswaran Rudra		Trial of Instrumental Delivery vs Second Stage Caesarean Section: A Retrospective Observational Study		
James Henshaw, Thangeswaran Rudra		A retrospective cohort study of obstetric outcomes of super obese women (BMI >50) delivering at the Royal Brisbane and Women's Hospital (RBWH) compared to obesity Class I, II, III and BMI < 30		
Anousha Woods, Thangeswaran Rudra		The effect of antenatal betamethasone on neonatal outcomes in late preterm and term elective caesarean section deliveries		
Brielle Andreatidis, Thangeswaran Rudra		Impact of Socio demographic factors on maternal and perinatal outcomes		
Anushka Kothari, Thangeswaran Rudra		Retrospective cohort study of women diagnosed with secondary postpartum haemorrhage		
Pui lam Kwan, Thangeswaran Rudra		Obstetric outcome following Pruritic Urticarial Papules and Plaques of Pregnancy (PUPPPs) study		

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Grant Montgomery (IMB, UQ), Brett Mckinnon (IMB, UQ), Sally Mortlock (IMB, UQ), Joanna Crawford (IMB, UQ)	Akwasi Amoako, Keisuke Tanaka, Akram Khalil, David Baartz, Matthew Smith	Genetics of Reproductive Disorders - Functional Consequences of Genetic Variations in Endometriosis		
Murray D Mitchell (QUT), Hassendrini N Peiris (QUT), Olivia Holland (QUT)	Fatema B Almughliq, Yong Q Koh, Kanchan Vaswani, Keisuke Tanaka, Christoph Lehner, Renuka Sekar, Akwasi A Amoako, Sailesh Kumar	Identification of true preterm labour-uses of eicosanoids and exosomes as biomarkers		

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Grant Montgomery (IMB, UQ), Brett Mckinnon (IMB, UQ), Sally Mortlock (IMB, UQ), Joanna Crawford (IMB, UQ)	Akwasi Amoako, Keisuke Tanaka, Akram Khalil, David Baartz, Matthew Smith	Progesterone and Immune induced transcriptomic changes in endometrial stromal fibroblasts, their contribution in endometriosis pathogenesis and potential for targeted treatment		
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	81	545 Study total
Jodie Painter (QIMR), Cecelia Lindgren (Oxford)	Hayden Homer	Large-scale genome-wide analyses to investigate the genetic aetiology of miscarriage		
Venerina Johnston, Margaret Cook, Ameer Alhusuny	Akram Khalil	Neck/Shoulder and Vision Problems in Surgeons Performing Minimally Invasive Surgeries		

Research Publications

Journal Articles

- Lee J, Wyssusek KH, **Kimble RMN**, Way M, van Zundert AA, Cohen J, Rowell J, Ealy VA: Baseline parameters for rotational thromboelastometry (ROTEM) in healthy laboring women: A prospective observational study BJOG: An International Journal of Obstetrics and Gynaecology Manuscript Volume 127 Issue 7 (2020) ID BJOG-19-1109.R2 Published 14 January 2020
- Smith M**: Prophylactic Cefazolin Dosing in Women with Body Mass Index >35 kg·m⁻² Undergoing Cesarean Delivery: A Pharmacokinetic Study of Plasma and Interstitial fluid. Anesthesia and Analgesia, April 2020
- Lee J, **Ealy V, Wyssusek K, Kimble RMN**, Way M, Cohen J, van Zundert A: The influence of Obesity on coagulation in healthy term pregnancy as assessed by rotational thromboelastometry. Australia and New Zealand Journal of Obstetrics and Gynaecology 6 March 2020
- O'Brien B, Dahiya R, **Kimble R**: Hyperandrogenism, insulin resistance and acanthosis nigricans (HAIR-AN syndrome): an extreme subphenotype of polycystic ovary syndrome, BMJ Case Reports Volume 13, Issue 4
- J Lee, **KH Wyssusek, RMN Kimble**, M Way, AA van Zundert, J Cohen, J Rowell, **VA Ealy**: Baseline parameters for Rotational Thrombo-elastometry (ROTEM) in healthy pregnant Australian women: A comparison of laboring and non-labouring women at term; International Journal of Obstetric Anaesthesia 41, 7-13, 2020
- Gadsbøll K, Petersen OB, Gatinois V, Strange H: Current Use Of Noninvasive Prenatal Testing In Europe, Australia And The Usa: A Graphical Presentation, The NIPT-map Study Group, Bo Jacobsson, Ronald Wapner and Ida Vogel. Acta Obstet Gynecol Scand. March 16 2020;1-9. DOI: 10.1111/aogs.13841
- Chung P, Cheer K, Malacova E, Okano S, **Rudra T**: Obstetric outcomes in major vs minor placenta praevia: A retrospective cohort study. Aust N Z J Obstet Gynaecol 2020 Jul 29. doi: 10.1111/ajo.13218. Online ahead of print
- Tanaka K**, Mayne L, **Khalil A, Baartz D**, Eriksson L, Mortlock S, Montgomery G, McKinnon B, **Amoako A**. (2020). The role of the endocannabinoid system in aetiopathogenesis of endometriosis: a potential therapeutic target. European Journal of Obstetrics and Gynaecology and Reproductive Biology, 244, 87-94. doi: 10.1016/j.ejogrb.2019.11.012
- Tanaka K**, Ballard E, **Petersen D, Amoako A, Khalil A, Baartz D** (2020). Effect of retaining the uterus during anterior resection for rectosigmoid bowel endometriosis. Journal of Gynecologic Surgery. doi: 10.1089/gyn.2020.0101
- Liu C, Ho N, **Tanaka K, Lehner C, Sekar R, Amoako A** (2020). Does the length of second stage of labour or second stage caesarean section in nulliparous women increase the risk of preterm birth in subsequent pregnancies? Journal of Perinatal Medicine. doi: 10.1515/jpm-2020-0269

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11. Zhu S, Ballard E, **Khalil A, Baartz D, Amoako A, Tanaka K** (2020). Impact of early surgical management on tubo-ovarian abscesses. *Journal of Obstetrics and Gynaecology*, 1-5. doi: 10.1080/01443615.2020.1821620

 12. Wei Z, Greaney J, Loh N, **Homer H** (2020). Nampt-mediated spindle sizing secures a post-anaphase increase in spindle speed required for extreme asymmetry. *Nature Communications*, 11 (1) 3393, 3393. doi: 10.1038/s41467-020-17088-6

 13. Ilijas D, Wei Z, **Homer H**. (2020). Sirt1 sustains female fertility by slowing age-related decline in oocyte quality required for post-fertilization embryo development. *Aging Cell*, 19 (9) e13204, e13204. doi: 10.1111/ace1.13204

 14. Subramanian N, Lavin M, **Homer H**. (2020). Premature ovarian ageing following heterozygous loss of Senataxin. *Molecular Human Reproduction*. doi: 10.1093/molehr/gaaa080

 15. **Maher C**, Baessler K, Barber M, Cheon C, Consten E, Cooper K, Deffieux Xavier, Dietz V, Gutman R, van Iersel J, Nager C, Sung V, de Tayrac R (2020). Summary: 2017 International Consultation on Incontinence evidence-based surgical pathway for pelvic organ prolapse. *Female Pelvic Medicine and Reconstructive Surgery*, 26 (1), 30-36. doi: 10.1097/SPV.0000000000000591
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Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

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1. **Dr Sekar R**: Echo and obstetric management of cardiac disease in pregnancy - panel discussion: Herston Health Symposium December 2020

 2. **Lust K, Rudra T**: Heart Disease in Pregnancy – panel discussion, Herston Health Symposium December 2020
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Oral Presentations

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1. **Dr Sekar R**: Fetal Echo and Obstetric management of Cardiac patients, Herston Health Symposium December 2020

 2. **Boccabella A, Rudra T**: Can we Ignore a pregnant women's snore? Herston Health Symposium December 2020

 3. **Kwan PI, Rudra T**: Adverse obstetric outcome following PUPPP, Herston Health Symposium December 2020

 4. **Henshaw J, Rudra T**: Super Obesity: An Obstetricians Dilemma, Herston Health Symposium December 2020
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Poster Presentations

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1. **Dr Sekar R**: Antenatal Steroids Improving Premature Neonatal Outcomes – QuARRIES Awards nomination 2020

 2. **Boccabella A, Rudra T**: Rising Classical Caesarean Section – Is it a Cause for concern? Herston Health Symposium December 2020

 3. **Kothari A, Coundouris S, Rudra T**: Secondary postpartum haemorrhage following caesareans: Causes, management and outcomes. Herston Health Symposium December 2020

 4. **Rudra T, Henshaw J**: Super Obesity: An Obstetricians Dilemma. Herston Health Symposium December 2020

 5. **Kwan PI, Rudra T**: Adverse obstetric outcome following PUPPP. Herston Health Symposium December 2020

 6. **Mel C, Rudra T**: Outcome following the Trial of Instrumental. Herston Health Symposium December 2020

 7. **Herweijer G, Baartz D, Sekar R, Watson V, Rosser S, Tanner H**: A bhcg of 1.9 million: A DCDA twin pregnancy with complete molar pregnancy and co-existing live fetus. Herston Health Symposium December 2020
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Obstetric Medicine

The department of Obstetric Medicine conducts high level research into complications of pregnancy and maternal and fetal outcomes. The department continues to collaborate with other departments within Metro North and research centres across Australia to further our understanding of complex pregnancies. Cardiology and maternal metabolism continue to be a focus of research within Obstetric Medicine. A new focus of research in 2020 was the impact of COVID-19 on antenatal care and pregnancy outcomes. Research highlights include Professor Leonie Callaway being awarded as a finalist for Metro North Researcher of the year and the department being awarded nine research grants.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Prof Leonie Callaway	Finalist – Researcher of the Year	2020 Metro North Research Excellence Awards

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Emma Shipton	Obstetric Medicine	PhD models of care and Breastfeeding	RBWH Foundation	\$38,082.52	2020
Lisa McKeown	Obstetric medicine	The prevalence of post-traumatic stress disorder in parents of infants in the Neonatal Intensive Care Unit	RBWH Foundation	\$38,871.49	2020
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
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	ASUM	\$20,000	2020
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
Susie D Jersey, Michael D’Emden, Prof 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
Helen Funk, Cheryl-Anne Murphy, Elizabeth Rigg, Prof, Tracey Mackle, Prof Leonie Callaway		Disrupted access to public hospital antenatal birth & parenting group education during the COVID-19 pandemic: Exploring parent’s experiences of transitioning to parenthood	Redcliffe Hospital Private Practice Trust Fund Advisory Committee	\$10,000	2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Chris Lehner , Anousha Pamela Woods, Susan de Jersey , Katie Foxcroft , Alka Kothari, Akwasi Amoako , Prof 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	RBWH Foundation COVID-19 Grants	\$13,156.00	2020
A/Prof Abdullah Mamun Prof Peter Sly, Dr Yaqoot Fatima, Prof Kevin Thomas, A/Prof Frances Boyle, Prof 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

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Prof Leonie Callaway Katie Foxcroft	Helen Barrett, Marloes Dekker, David McIntyre	Do Probiotics in Pregnancy Prevent Allergic Disease in Children?	107	
Prof Leonie Callaway	A/Prof Karin Lust , Katie Foxcroft , Sarah Davidson , Andreas Suhrbier, Severine Navarro, Susan de Jersey , Victoria Eley	COVID-19 in Mothers and Babies	0	0
Chris Lehner	Katie Foxcroft , Akwasi Amoako , Leonie Callaway , Petrina Duncan , Anousha Pamela Woods, Susan de Jersey , Alka Kothari, Tracey Mackle, Sailesh Kumar	The impact of the COVID-19 pandemic on maternal depression and related disorders during the perinatal period	Audit of charts 91/1453	-
Prof Leonie Callaway	Alexander Lindgren, Katie Foxcroft , Meredith Shallcross , Elizabeth Ryan , Lisa McKeown , 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	115	115
Prof L Callaway , P Colditz	P Murphy V, Gibson P, Hensley M, Mattes J, Giles W, Peek M, Bisits A, McCaffery K, Barrett H	Breathing for Life Trial	Recruitment completed	138
Emma Shipton	Leonie Callaway , Susie de Jersey , Katie Foxcroft , Nigel Lee	Antenatal Models of Care and the effect on breast feeding post discharge	92	92

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Murphy V, Gibson P, Hensley M, Mattes J, Giles W, Peek M, Bisits A, McCaffery K, Barrett H	Prof Callaway L , Colditz P	Breathing for Life Trial	Recruitment completed	138 RBWH 1200 Australia
Graves N, Hillman K, Willmott L, White B, Harvey G, Cardona-Morrell M, Barnett A, Lee X	Prof L Callaway	Reducing Non-Beneficial Treatment at the End-of-Life.	4 sites recruited.	-

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
EURObservational research programme	A/Prof Lust K, Parsonage W	Registry of pregnancy and cardiac disease	N/A	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	A/Prof Lust K, Parsonage W	NSW longitudinal study of first-time mothers with heart disease and their babies	N/A	N/A
Regan AK, Andrews RM, Moore HC, Binks MJ, McHugh L, Pereira G, Blyth CC, Van Buynder PG	A/Prof Lust K	Links2HealthierBubs: Influenza and pertussis vaccine effectiveness in pregnancy	N/A	N/A
Chang A, Binks M, Smith-Vaughan H, Pizzutto S, O'Grady K, Marshall H, Toombs M, Torzillo P, Grimwood K	A/Prof Lust K	Pneumatters - Preventing early-onset pneumonia in Indigenous infants through maternal immunisation: a multi-centre randomised controlled trial	12	131
Ben Stokes, Alka Kothari	Katie Foxcroft	Patient Satisfaction with Telehealth in antenatal care during the Covid-19 pandemic	303	652 MN
Susie D Jersey	Prof 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?	0 Recruitment commenced 2021	0
Helen Funk,	Prof Leonie Callaway, Cheryl-Anne Murphy, Elizabeth Rigg, Prof Tracey Mackle	Disrupted access to public hospital antenatal birth & parenting group education during the COVID-19 pandemic: Exploring parent's experiences of transitioning to parenthood		
A/Prof Abdullah Mamun	Prof Leonie Callaway, Prof Peter Sly, Dr Yaqoot Fatima, Prof Kevin Thomas, A/Prof 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
Skouteris H, Teede H, Boyle J, Moran L, Thangaratinam S, Hills A, Venn A, Jack B, Norman R, Ademi Delaney Z	Centre for Research Excellence in Preconception and Pregnancy Prof L Callaway - Chair of Advisory Group	Prevention of Maternal Obesity		
Prasad S, Atherton J, Parsonage W, Lo A	Prof L Callaway, A/Prof K Lust, Robinson H	Serial evaluation of advanced echocardiographic parameters during healthy pregnancy — a prospective observational cohort study	N/A	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 Patients Recruited in 2020	Total number of 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	12	131

Research Publications

Journal Articles

- Matusiak K, Barrett HL, **Lust K, Callaway LK**, Dekker Nitert MN: Self-reported periconception weight loss attempts do not alter infant body composition. *Nutrition*. 2020 Sep;77:110781. doi: 10.1016/j.nut.2020.110781. Epub 2020 Feb 29. PMID: 32283340
- Carter HE, Lee XJ, Gallois C, Winch S, **Callaway L**, Willmott L, White B, Parker M, Close E, Gravesl: Factors associated with non-beneficial treatments in end of life hospital admissions: a multicentre retrospective cohort study in Australia. *BMJ Open*. 2019 Nov 4;9(11):e030955. doi: 10.1136/bmjopen-2019-030955. *BMJ Open*. 2019. PMID: 31690607 Free PMC article
- Lee XJ, Farrington A, Carter H, Shield C, Graves N, McPhail SM, Harvey G, White BP, Willmott L, Cardona M, Hillman K, **Callaway L**, Barnett AG. A stepped-wedge randomised-controlled trial assessing the implementation, impact and costs of a prospective feedback loop to promote appropriate care and treatment for older patients in acute hospitals at the end of life: study protocol. *BMC Geriatr*. 2020. 29;20(1):262
- Robinson P, Richards D, **Tanner H**, Feldmann M. Accumulating evidence suggests anti-TNF therapy needs to be given trial priority in COVID-19 treatment. *The Lancet Rheumatology*. published Sept 4 2020
- Parsonage WA**, Zentner D, **Lust K**, Kane SC, Sullivan EA. Heart, Lung Circ. Heart Disease and Pregnancy: The Need for a Twenty-First Century Approach to Care. 2020 Jul 28
- Boyle S**, Sung-Him Mew T, **Lust K**, McKenzie S, Javorsky G, **Parsonage W**. Heart, Lung and Circulation. Pregnancy Following Heart Transplantation: A Single Centre Case Series and Review of the Literature. On line 2020 July 28
- North A, Barrett H, **Lust K**, Whitfield K. Therapeutic anticoagulation during the postnatal peripartum period: a survey of clinical practice *Journal of Pharmacy Practice and research*, 2020
- Rudland VL, Price SAL, Hughes R, Barrett HL, Lagstrom J, Porter C, Britten FL, Glastras S, Fulcher I, Wein P, Simmons D, McIntyre HD, **Callaway L**: ADIPS 2020 guideline for pre-existing diabetes and pregnancy. *Aust N Z J Obstet Gynaecol*. 2020 Dec;60(6):E18-E52. doi: 10.1111/ajo.13265. Epub 2020 Nov 16. PMID: 33200400
- Rudland VL, Price SAL, **Callaway L**: ADIPS position paper on pre-existing diabetes and pregnancy. *Aust N Z J Obstet Gynaecol*. 2020 Dec;60(6):831-839. doi: 10.1111/ajo.13266. Epub 2020 Nov 2. PMID: 33135798
- Green A, **Callaway L**, McIntyre HD, Mitchell B: Diagnosing and providing initial management for patients with Gestational Diabetes: What is the General Practitioner's experience?. *Diabetes Res Clin Pract*. 2020 Aug;166:108290. doi: 10.1016/j.diabres.2020.108290. Epub 2020 Jun 29. PMID: 32615279
- Jensen ME, Robijn AL, Gibson PG, Oldmeadow C; Managing Asthma in Pregnancy study collaborative group; Breathing for Life Trial collaborative group, Murphy VE. Longitudinal Analysis of Lung Function in Pregnant Women with and without Asthma: *J Allergy Clin Immunol Pract*. 2020 Nov 13:S2213-2198(20)31217-4. doi: 10.1016/j.jaip.2020.10.061. Online ahead of print. PMID: 33197643
- Robijn AL, Barker D, Gibson PG, Giles WB, Clifton VL, Mattes J, Peek MJ, Barrett HL, Seeho SK, **Callaway LK**, Abbott A, Attia J, Wark PA, Jensen ME, Murphy VE: Factors associated with non-adherence to inhaled corticosteroids for asthma during pregnancy. *The Journal of Allergy and Clinical Immunology: In Practice*. <https://doi.org/10.1016/j.jaip.2020.09.045> (2020)

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13. Tomsett KI, Barrett HL, Dekker EE, **Callaway LK**, McIntyre DH, Dekker Nitert M: Dietary Fiber Intake Alters Gut Microbiota Composition but Does Not Improve Gut Wall Barrier Function in Women with Future Hypertensive Disorders of Pregnancy. *Nutrients*. 2020 Dec 17;12(12):3862. doi: 10.3390/nu12123862.PMID: 33348731
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Book Chapters / Letters

1. **Tellam J, Lust K**: Adrenal disease in pregnancy. www.glowm.comThe Global Library Of Women's Medicine. 2020
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Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

1. **Lust K**: Contraception for Cardiologists. Cardiac Society of Australia and New Zealand Annual Scientific Meeting 11 December 2020
 2. **Callaway L**: Trauma Informed Care for Women. National Conference on Incontinence 29 October 2020
 3. **Callaway L**: QLD Guidelines update – GDM screening and oral glucose tolerance test (OGTT) during pregnancy and postpartum. Women's Healthcare Australia, Safety and Quality in Maternity Care Forum. 19 November 2020
 4. **Callaway L**: Overview of the 2019 QMPQC Report, Queensland Maternal and Perinatal Quality Council Webinar 27 November 2020
 5. **Lust K, Rudra T**: Heart Disease in Pregnancy – panel discussion, Herston Health Symposium December 2020
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Oral Presentations

1. **Callaway L**: Preventing Babies from Being Admitted to Neonatal Intensive Care Unit (NICU). Herston Health Symposium, consumer showcase December 2020
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Poster Presentations

1. Shipton E, **Callaway L, Foxcroft K**, Lee N, **de Jersey S**. Midwife-led continuity of care and breastfeeding duration: A systematic review, Herston Symposium Dec 2020
 2. **Herweijer G, Baartz D, Sekar R, Watson V, Rosser S, Tanner H**: A bhcg of 1.9 million: A DCDA twin pregnancy with complete molar pregnancy and co-existing live fetus. Herston Health Symposium December 2020
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Perinatal Research Centre

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 neonatal brain injury and neuroprotection led by Dr Tracey Bjorkman, fetal growth restriction led by Dr Julie Wixey, systems physiology led by Dr Barbara Lingwood and Dr Yvonne Eiby, signal processing led by Prof Boualem Boashash as well as clinical trials involving the Royal Brisbane and Women's Hospital.

2020 has already been a successful year for the Perinatal Research Centre. Dr Yvonne Eiby received a 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. Dr Kirat Chand was awarded a Project grant from the Rebecca L Cooper Medical Research Foundation examining inflammatory processes in the growth restricted newborn brain.

We were awarded two 2020 RBWH Research grants. One led by Dr Pienaar and Dr Wixey examining brain outcomes in small for gestational age (SGA) babies. SGA is a baby that does not grow well inside the womb. Brain impairment in SGA newborns is a major cause of death and disability worldwide – with not treatments available for these babies. Ibuprofen has been linked to better brain outcomes following its use for heart conditions in preterm babies. This study will examine neurodevelopmental outcomes in preterm SGA infants following ibuprofen treatment. The other grant is led by Dr Tim Donovan and Dr Barbara Lingwood examining the impact of nutrition, growth and body composition on neurodevelopmental outcome in late preterm infants.

Dr Lai and Dr Bjorkman continue to lead a RBWH grant examining a novel treatment to reduce brain injury in newborn babies. A lack of oxygen around the time of birth results in damage to the brain (HIE) causing lifelong mental and physical disabilities including epilepsy and cerebral palsy. This pilot project will investigate a potential adjunctive therapy (fetuin) to complement hypothermia to reduce brain injury and improve neurodevelopmental outcomes.

Professor Paul Colditz continues to lead a \$1.65 million NHMRC grant over 5 years to predict neurodevelopmental disability in babies born very preterm. By identifying structural and functional brain connectivity features earlier and more accurately than currently possible in the preterm brain, this research will enable better prediction of longer-term motor and neurodevelopmental function. This will lay the groundwork for new interventions to prevent or effectively treat brain injury. NHMRC and external sources have been instrumental in our continuing work on IUGR and HIE projects using placental stem cells as a treatment for brain injury. Data from our encouraging preliminary studies have been presented at multiple National and International conferences.

The RBWH NICU will contribute to a new multicentre Phase III randomised controlled trial funded by NHMRC to determine whether Erythropoietin treatment can prevent adverse outcomes in babies with HIE. Other ongoing clinical trials which utilise state-of-the-art methods and techniques include predicting motor outcomes in preterm babies using MRI, optimising adaptation of the cardiovascular system to extrauterine life in the very preterm baby and determining the effects of different feeding regimens on development in preterm babies.

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, Lions Medical Research Foundation, BrisBand members 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
Julie Wixey	CASS Travel Award	Hershey Conference on Developmental Brain Injury, Sweden
Stephanie Miller	Dean's Award for Outstanding HDR Theses	Faculty of Medicine, The University of Queensland
Kirat Chand	Early Career Researcher of the Year	UQCCR Directors Awards
Julie Wixey	Rising Star of the Year, Commendation	UQ Faculty of Medicine Excellence Awards
Susie de Jersey	Chief Executive's Awards	MNHHS Research Awards

Recipient (RBWH staff in bold)	Award	Event
Susie de Jersey	MNHHS Clinician Researcher Fellowship	MNHHS

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
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	2020-2023
Pienaar J , Wixey J, Lai M, Colditz P , Wright I, Oei J	Perinatal Research Centre	Neurodevelopmental outcomes at 2 years following ibuprofen treatment for patent ductus arteriosus in the preterm small for gestational age newborn: potential for neuroprotection?	RBWH and RBWH Research Project Grant	\$40,000	2020
Donovan T , Lingwood B	Perinatal Research Centre	The Impact of nutrition, growth and body composition on neurodevelopmental outcome in late preterm infants	RBWH and RBWH Research Project Grant	\$40,000	2020
Wixey J, Chand K	Perinatal Research Centre	The right cell – which stem cells provide optimal neuroprotection in the growth restricted newborn?	UQ Early Career Researcher Award	\$40,000	2020-2021
Chand K	Perinatal Research Centre	Targeting the NLRP3-inflammasome in IUGR brain injury	Rebecca L Cooper Project grant	\$100,000	2020-2022
De Jersey S	Perinatal Research Centre; Nutrition and Dietetics	Improving nutrition related antenatal care to optimise future health outcomes for mothers and their offspring	MNHHS Clinician Research Fellowships	\$255,157	2020-2024
De Jersey S	Perinatal Research Centre; Nutrition and Dietetics	Improving nutrition related antenatal care to optimise future health outcomes for mothers and their offspring	UQ Faculty of Medicine Clinician Research Support	\$160,000	2020-2024
Christoph Lehner , Prof Leonie Callaway , Sailesh Kumar , Katie Foxcroft , Stephanie Lawton , Akwasi Amoako , Alka Kothari, Susie de Jersey	Women's and Newborn Services, Nutrition and Dietetics RBWH; Mater Health Services; Redcliffe Maternity Services; Perinatal Research Centre	The impact of the COVID-19 pandemic on maternal depression and related disorders during the perinatal period	RBWH Foundation COVID-19 Grants	\$12,891.84	2020-2021
Susie de Jersey , Michael d'Emden , Prof Leonie Callaway , H. David McIntyre, Nina Meloncelli, Adrian Barnett.	Perinatal Research Centre; Nutrition and Dietetics, Women's and Newborn Services, Dept of Endocrinology, RBWH; Mater Health Services; School of Public Health, QUT, Sunshine Coast HHS, UQ	We changed the whole of 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	2020-2021

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Jany Pienaar	Wixey J, Lai M, Colditz P , Wright I, Oei J	Neurodevelopmental outcomes at 2 years following ibuprofen treatment for patent ductus arteriosus in the preterm small for gestational age newborn: potential for neuroprotection?		
Mel Lai	Bjorkman T, Wixey J, Colditz P	Does the plasma protein fetuin protect the injured newborn brain?		
Paul Colditz	Khosrotehrani K, Wixey J	Improving brain outcomes in the growth restricted newborn using placental stem cell treatment		
Paul Colditz	Khosrotehrani K, Bjorkman T, Patel J, Wixey J	Stem cell treatment for neonatal hypoxic ischemic encephalopathy		
Paul Colditz	Khosrotehrani K, Bjorkman T, Fisk N, Lingwood B , Wixey J	Improving brain oxygen levels in babies using stem cell treatment		
Barbara Lingwood	Stark M, Colditz P , Wright I, Eiby Y	A pre-clinical trial of early blood transfusion for improving cerebral oxygen delivery in very preterm neonates		
Paul Colditz	Koorts P , Liley H, Hunt R, Jacobs S, Badawi N, Morris S, Osborn D	PAEAN: Preventing Adverse Outcomes of Neonatal Hypoxic Ischaemic Encephalopathy with Erythropoietin: A Phase III Randomised Placebo Controlled Multicentre Clinical Trial		
Paul Colditz	Boyd R, Malhotra A, Rose S, Boashash B, Ditchfield M, Fahey M, Pannek K, Moldrich R	Neurodevelopment of the preterm infant (PREBO)		

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
James Roberts	Michael Breakspear, Sampsa Vanhatalo, Paul Colditz	Novel methods for early bedside detection and prognosis of preterm brain injury		
Julie Wixey	Kirat Chand, Tracey Bjorkman, Paul Colditz	Contribution of systemic inflammatory response to brain injury in growth restricted newborns		
Roslyn Boyd	I Novak, E Wallace, N Badawi, M Fahey, S Rose, P Colditz , J Ziviani, C Elliott, N Stott	Australasian Cerebral Palsy Clinical Trials Network (AusCP-CTN): optimizing interventions and effective services for children with cerebral palsy		
Roslyn Boyd	Paul Colditz , S Rose, M Karunanithi, A Smith, A Scuffham, P Edwards, I Novak, C Morgan, N Badawi	Advancing Cerebral Palsy in Queensland		

Research Publications

Journal Articles

1. Yim SY, Guthrie T, **de Jersey SJ**. Impact of service-wide initiatives to support healthy pregnancy weight gain on weight-related documentation. *Aust N Z J Obstet Gynaecol*. 2020;60(3):355-60
2. Stevenson NJ, Oberdorfer L, Tataranno ML, Breakspear M, **Colditz PB**, de Vries LS, et al. Automated cot-side tracking of functional brain age in preterm infants. *Ann Clin Transl Neurol*. 2020
3. Saha S, Pagnozzi A, Bourgeat P, George JM, Bradford D, **Colditz PB**, et al. Predicting motor outcome in preterm infants from very early brain diffusion MRI using a deep learning convolutional neural network (CNN) model. *Neuroimage*. 2020;215:116807
4. Reinebrant HE, Wixey JA, Buller KM. Hypoxia-ischemia in the immature rodent brain impairs serotonergic neuronal function in certain dorsal raphe nuclei. *Neural Regen Res*. 2020;15(3):457-63
5. Porteous H, **de Jersey S**, Palmer M. Attendance rates and characteristics of women with obesity referred to the dietitian for individual weight management advice during pregnancy. *Aust N Z J Obstet Gynaecol*. 2020;60(5):690-7
6. Pannek K, George JM, Boyd RN, **Colditz PB**, Rose SE, Fripp J. Brain microstructure and morphology of very preterm-born infants at term equivalent age: Associations with motor and cognitive outcomes at 1 and 2 years. *Neuroimage* 2020;221:117163
7. Miller N, Mallan KM, Byrne R, **de Jersey S**, Jansen E, Daniels LA. Non-responsive feeding practices mediate the relationship between maternal and child obesogenic eating behaviours. *Appetite*. 2020;151:104648
8. Meloncelli NJL, Barnett AG, **D'Emden M, De Jersey SJ**. Effects of Changing Diagnostic Criteria for Gestational Diabetes Mellitus in Queensland, Australia. *Obstetrics and gynecology*. 2020;135(5):1215-21
9. Meloncelli N, Barnett A, **de Jersey S**. Staff resourcing, guideline implementation and models of care for gestational diabetes mellitus management. *Aust N Z J Obstet Gynaecol*. 2020;60(1):115-22
10. Meloncelli N, Barnett A, **de Jersey S**. An implementation science approach for developing and implementing a dietitian-led model of care for gestational diabetes: a pre-post study. *BMC Pregnancy Childbirth*. 2020;20(1):661
11. **Lingwood BE**, Al-Theyab N, Eiby YA, **Colditz PB, Donovan TJ**. Body composition in very preterm infants before discharge is associated with macronutrient intake. *Br J Nutr*. 2020;123(7):800-6
12. Lewis CA, **de Jersey S**, Seymour M, Hopkins G, Hickman I, Osland E. Iron, Vitamin B12, Folate and Copper Deficiency After Bariatric Surgery and the Impact on Anaemia: a Systematic Review. *Obes Surg*. 2020;30(11):4542-91
13. Guthrie TM, **de Jersey SJ**, New K, Gallegos D. Midwife readiness to provide woman-centred weight gain support: Exploring perspectives across models of care. *Women Birth*. 2020;33(6):e567-e73
14. George JM, Pagnozzi AM, Bora S, Boyd RN, **Colditz PB**, Rose SE, et al. Prediction of childhood brain outcomes in infants born preterm using neonatal MRI and concurrent clinical biomarkers (PREBO-6): study protocol for a prospective cohort study. *BMJ open*. 2020;10(5):e036480
15. Crompton K, Novak I, Fahey M, Badawi N, Wallace E, Lee K... **Colditz PB**, et al. Single group multisite safety trial of sibling cord blood cell infusion to children with cerebral palsy: study protocol and rationale. *BMJ open*. 2020;10(3):e034974
16. Caesar R, **Colditz PB**, Cioni G, Boyd RN. Clinical tools used in young infants born very preterm to predict motor and cognitive delay (not cerebral palsy): a systematic review. *Dev Med Child Neurol*. 2020

Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

1. **de Jersey S.** Prevention of obesity in pregnancy: opportunities abound. Australian and New Zealand College of Anaesthetists & the Faculty of Pain Medicine. Perioperative medicine sig virtual meeting October 2020
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Oral Presentations

1. **Lewis C, de Jersey S,** Seymour M, Hopkins G, Hickman I, **Osland E.** Haematinic deficiency after bariatric surgery – A systematic review. ANZMOSS – ANZGOSA 2020 Conference – virtual, October 2020.
 2. **Donovan T,** Lawton S, Lack G, Eiby Y, **Lingwood B.** Quality of growth predicts neurodevelopment in very preterm infants. 29th Annual RBWH Healthcare Symposium. Dec 2020
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Poster Presentations

1. Shipton E, **Callaway L, Foxcroft K,** Lee N, **de Jersey S.** Midwife-led continuity of care and breastfeeding duration: A systematic review, Herston Symposium Dec 2020
 2. McDermott L, Pelecanos A, Krepska A, **de Jersey S,** Mao D, Lee G, Blackie A, **Eley V.** Oral intake in labour, Herston Symposium Dec 2020
 3. Kirat Chand, Lipsa Mohanty, Elliot Teo, Lara Jones, John Luff, SL Sim, Jatin Patel, Kiarash Khosrotehrani, **Paul Colditz,** Tracey Bjorkman, Julie Wixey. Improving the neurovasculature of growth restricted newborns following ibuprofen or placental stem cell treatment. 29th Annual RBWH Healthcare Symposium. Dec 2020
 4. Dana Smyth, Tracey Bjorkman, Julie Wixey, Kirat Chand, Stephanie Miller. The effect of neonatal seizures and therapeutic hypothermia following HI on phosphorylated KCC2 expression. 29th Annual RBWH Healthcare Symposium. Dec 2020
 5. E. Teo, K.K. Chand, J.A. Wixey, S.M. Miller, L.E. Jones, J Luff, S.L. Sim, J. Patel, K. Khosrotehrani, **P.B. Colditz,** S.T. Bjorkman. Combining two good things: placental stem cells and hypothermia for neonatal hypoxic-ischemic encephalopathy. 29th Annual RBWH Healthcare Symposium. Dec 2020
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Queensland Centre for Gynaecological Cancer

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. We have a focus on conducting surgical clinical trials. In 2020 we continued our studies of exercise in ovarian cancer; a trial of non-surgical treatment for early stage endometrial cancer; and the IMAGINE Study which aims to implement and evaluate a model of training for practising gynaecologists in Total Laparoscopic Hysterectomy.

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Prof Andreas Obermair, Jim Nicklin , Val Gebiski, Sandra Hayes, Monika Janda	QCGC Research	A Phase III randomised clinical trial comparing sentinel node biopsy with no retroperitoneal node dissection in early stage endometrial cancer (ENDO-3)	RBWH Foundation	\$40,000	2020-2021
Prof Andreas Obermair, Jim Nicklin, 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
Sandra Hayes, Prof Andreas Obermair Monika Janda, Elizabeth Eakin, Catherine Shannon Jeff Goh , Vanessa Beesley, Dimitrios Vagenas, 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	\$299,756	2020-2023

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Prof Andreas Obermair	Jim Nicklin (Gyn Onc), Russell Land (Gyn Onc), Andrea Garrett (Gyn Onc), Amy Tang (Gyn Onc), Lewis Perrin (Mater), Marcelo Nascimento (GCUH), Jonathan Carter (Chris O'Brien), Orla McNally (The Women's), Kym Reid (Monash), Yee Leung (KEMH), Stuart Salfinger (SJOG), Peter Sykes (Christchurch), Cecile Bergzoll (Wellington), Lois Eva (Auckland)	A Phase II Randomised Clinical Trial of Mirena® ± Metformin ± Weight Loss Intervention in Patients with Early Stage Cancer of the Endometrium.	0	45
Prof Andreas Obermair	Monika Janda (QUT)	A stepped wedge cluster trial to implement and evaluate a model of training for practising gynaecologists in Total Laparoscopic Hysterectomy	NA	NA

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Prof Andreas Obermair Paul Thomas	Jim Nicklin (Gyn Onc), Russell Land (Gyn Onc), Andrea Garrett (Gyn Onc), Amy Tang (Gyn Onc)	Impact of gated PET/CT on the diagnosis of distant metastases of advanced epithelial ovarian, fallopian tube, and primary peritoneal cancer	0	84
Dr Andrea Garrett	Dr Geraldine Herweijer, Dr Andrea Garrett, Dr David Baartz, Ms Karen Sanday, Ms Shona Morrison	A review of the outcomes of second and subsequent dilatation and curettage (D&Cs) at the Queensland Trophoblast Centre (QTC)		
Dr Andrea Garrett	Dr Katherine Artis, Dr David Baartz , Dr Margaret Cummings, Ms Shona Morrison, Ms Karen Sanday , Dr Adam Ewing	Retrospective Genetic analysis of Complete Hydatidiform Moles to investigate for any identifiable biomarkers that will determine the development of persistent disease requiring chemotherapy		46
Dr Shaun McGrath	Dr Jim Nicklin , Dr Lew Perrin, Dr Naven Chetty, Prof Andreas Obermair, Dr Andy Garrett, Dr Russell Land , Dr Marcelo Nascimento, Dr Amy Tang	Early stage cervical cancer – QCGC. A retrospective analysis of laparoscopic Radical hysterectomy versus abdominal radical hysterectomy in patients with early stage cervical cancer - The QCGC experience		
Dr Shih-Ern Yao	Dr Jessica Robertson, Dr Jim Nicklin, Ms Karen Sanday	Survival outcomes of patients with advanced ovarian and related cancer who have a suboptimal response to neoadjuvant chemotherapy		

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Sandi Hayes (QUT)	Prof Andreas Obermair (Gyn Onc), Jim Nicklin (Gyn Onc) Russell Land (Gyn Onc) Andrea Garrett (Gyn Onc), Amy Tang (Gyn Onc)	A Phase III randomised controlled trial of exercise during chemotherapy for patients commencing first line treatment for ovarian cancer	16	84
Pedro Ramirez (MD Anderson USA)	Prof Andreas Obermair (Gyn Onc), Jim Nicklin (Gyn Onc) Russell Land (Gyn Onc), Andrea Garrett (Gyn Onc)	A Phase III Randomized Clinical Trial Comparing Laparoscopic or Robotic Radical Hysterectomy versus Abdominal Radical Hysterectomy in Patients with Early Stage Cervical Cancer	0	61
Tom Bailey (UQ)	Dr Andrea Garrett Prof Alexandra McCarthy (UQ) A/Prof Tina Skinner (UQ) Ms Elizabeth Stewart (UQ)	Enhancing Treatment Outcomes after Gynaecological Cancer: Using Exercise to Promote Health after Cancer Therapy		

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Andrea Garrett	Multicentre Italian Trials in Ovarian Cancer (MITO), Gynaecologic Oncology Surgery of the National Cancer Institute of Naples, Italy	Cytoreductive Surge Endometrial Cancer Retrospective Study		
Prof Andreas Obermair	The Gynaecologic Oncology Centre, Dept of Obstetrics and Gynaecology, First Faculty of Medicine, Charles University, Prague and General University Hospital Prague, Karen Sanday, Dr Stacey Davie	Recurrence pattern of cervical cancer: implications for tailored surveillance strategy SCCAN		
Dr Andrea Garrett	Prof Hextan YS Ngan Department of Obstetrics and Gynaecology, University of Hong Kong	Outcome of treatment for Gestational Trophoblastic Neoplasia - A multicentre retrospective study		

Research Publications

Journal Articles

- Allanson ER**, Peng Y, Choi A, Hayes S, Janda M, **Obermair A**. A systematic review and meta-analysis of sarcopenia as a prognostic factor in gynecological malignancy. *Int J Gynecol Cancer*. 2020 Aug 2;ijgc-2020-001678. doi: 10.1136/ijgc-2020-001678
- Bartels HC, Rogers AC, Janda M, **Obermair A**, Brennan DJ. Quality of life following minimally invasive hysterectomy compared to abdominal hysterectomy: A metanalysis. *Eur J Obstet Gynecol Reprod Biol*. 2020 Sep;252:206-212
- Fleming S, Jones T, Janda M, Vagenas D, Ward L, Reul-Hirche H, Sandler C, **Obermair A**, Hayes S. Physical activity trajectories following gynecological cancer: results from a prospective, longitudinal cohort study. *Int J Gynecol Cancer*. 2020 Jul 29;ijgc-2020-001543. doi: 10.1136/ijgc-2020-001543
- Pigott A, **Obermair A**, Janda M, Vagenas D, Ward LC, Reul-Hirche H, Hayes SC. Incidence and risk factors for lower limb lymphedema associated with endometrial cancer: Results from a prospective, longitudinal cohort study *Gynecol Oncol*. 2020 Aug;158(2):375-381
- Obermair A**, Baxter E, Brennan DJ, McAlpine JN, Muellerer JJ, Amant F, van Gent MDJM, Coleman RL, Westin SN, Yates MS, Krakstad C, Janda M. Fertility-sparing treatment in early endometrial cancer: current state and future strategies. *Obstet Gynecol Sci*. 2020 Jul;63(4):417-431
- Sivakumaran T, Mileshkin L, Grant P, Na L, DeFazio A, Friedlander M, **Obermair A**, Webb PM, Au-Yeung G; OPAL Study Group. Evaluating the impact of dose reductions and delays on progression-free survival in women with ovarian cancer treated with either three-weekly or dose-dense carboplatin and paclitaxel regimens in the national prospective OPAL cohort study. *Gynecol Oncol*. 2020 Jul;158(1):47-53
- Caughey L, Sanjida S, **Obermair A**, Janda M. The use of CAM products, practices, and practitioners by long-term endometrial cancer survivors in Australia. *Support Care Cancer*. 2020 Nov;28(11):5479-5489
- Baxter E, Brennan DJ, McAlpine JN, Mueller JJ, Amant F, van Gent MDJM, Huntsman DG, Coleman RL, Westin SN, Yates MS, Krakstad C, Quinn MA, Janda M, **Obermair A**. Improving response to progestin treatment of low-grade endometrial cancer. *Int J Gynecol Cancer*. 2020 Nov;30(11):1811-1823
- Sanjida S, **Obermair A**, Gebiski V, Armfield N, Janda M. Long-term quality of life outcomes of women treated for early-stage endometrial cancer. *Int J Gynecol Cancer*. 2020 Dec 24;ijgc-2020-002145
- Obermair A**, Simunovic M, Janda M. The impact of team familiarity on surgical outcomes in gynaecological surgery. *J Obstet Gynaecol*. 2020 Feb;40(2):290-292

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11. Steele ML, Janda M, Vagenas D, Ward LC, Cornish BH, Box R, Gordon S, Matthews M, Poppitt SD, Plank LD, Yip W, Rowan A, Reul-Hirche H, **Obermair A**, Hayes SC. A Bioimpedance Spectroscopy-Based Method for Diagnosis of Lower-Limb Lymphedema. *Lymphat Res Biol*. 2020 Apr;18(2):101-109

 12. Janda M, Armfield NR, Kerr G, Kurz S, Jackson G, Currie J, Page K, Weaver E, Yazdani A, **Obermair A**. Patient-Reported Experiences After Hysterectomy: A Cross-Sectional Study of the Views of Over 2300 Women. *J Patient Exp*. 2020 Jun;7(3):372-379

 13. Bartels HC, Rogers AC, Janda M, **Obermair A**, Brennan DJ. Quality of life following minimally invasive hysterectomy compared to abdominal hysterectomy: A meta-analysis. *Eur J Obstet Gynecol Reprod Biol*. 2020 Sep;252:206-212

 14. **Yao SE, Tripcony L, Sanday K**, Robertson J, Perrin L, Chetty N, **Land R, Garrett A, Obermair A**, Nascimento M, **Tang A**, Jagasia N, **Singh P, Nicklin J**. Survival outcomes after delayed cytoreduction surgery following neoadjuvant chemotherapy in advanced epithelial ovarian cancer. *Int J Gynecol Cancer*. 2020 Dec;30(12):1935-1942

 15. Hansen JM, Nagle CM, Ibiebele TI, Grant PT, **Obermair A**, Friedlander ML, DeFazio A, Webb PM; Ovarian Cancer Prognosis and Lifestyle Study Group. A healthy lifestyle and survival among women with ovarian cancer. *Int J Cancer*. 2020 Dec 15;147(12):3361-3369

 16. Frumovitz M, **Obermair A**, Coleman RL, Pareja R, Lopez A, Ribero R, Isla D, Rendon G, Bernardini MQ, Buda A, Moretti-Marquez R, Zevallos A, Vieira MA, Zhu T, Land RP, **Nicklin J**, Asher R, Robledo KP, GebSKI V, Ramirez PT. Quality of life in patients with cervical cancer after open versus minimally invasive radical hysterectomy (LACC): a secondary outcome of a multicentre, randomised, open-label, phase 3, non-inferiority trial. *Lancet Oncol*. 2020 Jun;21(6):851-860. doi: 10.1016/S1470-2045(20)30081-4. Erratum in: *Lancet Oncol*. 2020 Jul;21(7):e341

 17. **Obermair A**, Asher R, Pareja R, Frumovitz M, Lopez A, Moretti-Marques R, Rendon G, Ribeiro R, Tsunoda A, Behan V, Buda A, Bernadini MQ, Zhao H, Vieira M, Walker J, Spirtos NM, **Yao S**, Chetty N, Zhu T, Isla D, Tamura M, **Nicklin J**, Robledo KP, GebSKI V, Coleman RL, Salvo G, Ramirez PT. Incidence of adverse events in minimally invasive vs open radical hysterectomy in early cervical cancer: results of a randomized controlled trial. *Am J Obstet Gynecol*. 2020 Mar;222(3):249.e1-249.e10

 18. Beesley VL, Webber K, Nagle CM, DeFazio A, **Obermair A**, Williams M, Friedlander M, Webb PM; OPAL Study Group. When will I feel normal again? Trajectories and predictors of persistent symptoms and poor wellbeing after primary chemotherapy for ovarian cancer. *Gynecol Oncol*. 2020 Oct;159(1):179-186
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