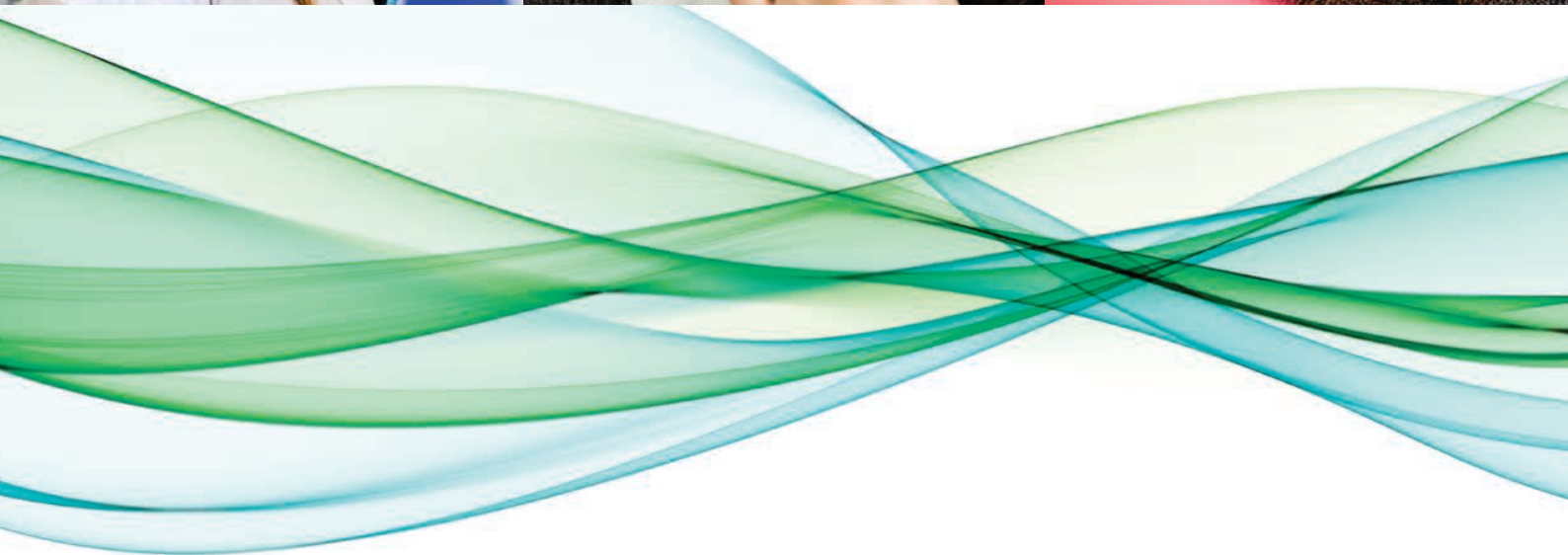




Mercy Health

Care first



2017

RESEARCH AND DEVELOPMENT REPORT

We can never say "it is enough"
*Venerable Catherine McAuley,
Foundress of the Sisters of Mercy*



Mercy Hospital for Women research student Ms Hope Eveline Carter Moylan

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MESSAGE FROM THE GROUP CHIEF EXECUTIVE OFFICER

I am proud to present the 2017 Mercy Health Research and Development Report, a compendium of research projects and publications undertaken at Mercy Health over a busy 12-month period.



I continue to be inspired by our research teams whose fierce curiosity pushes the boundaries of what is possible in the laboratory and clinic. Whether you are the parent of a baby in the Neonatal Intensive Care Unit or a family member watching a loved one battling dementia, research gives you something precious and essential: hope. It is hope that drives our researchers to innovate and excel across myriad fields including fetal and newborn health, women's health, paediatrics and aged care.

Our international perinatal centre of excellence, Mercy Perinatal, is going from strength to strength with groundbreaking research into stillbirth, ectopic pregnancy and preeclampsia. For millions of women and babies around the world, Mercy Perinatal is a beacon of hope as it continues to strive towards its goal of bringing mothers and babies safely home.

Mercy Health researchers continue to make great strides in their fields. PhD candidate Danielle Forster is investigating treatment protocols for babies at risk of brain damage; Professor Harry Georgiou's Biomarker Discovery Group is making progress towards developing a predictive test for preterm labour; and our allied health researchers are making inroads in fields as diverse as pastoral care and falls prevention. Every line in this report — each citation, project and presentation — takes us closer to realising our mission to bring God's mercy to those in need.

Adjunct Professor Stephen Cornelissen
Group Chief Executive Officer, Mercy Health

MESSAGE FROM THE CHIEF MEDICAL OFFICER

The 2017 Research and Development Report marks the 10th annual publication of our research achievements. The volume of research and journal publications at Mercy Health has increased significantly over the past decade.



We are grateful to all the funding bodies, donors and committees that have supported our research in the past, and those that continued to do so in 2017. I would like to especially acknowledge the Norman Beischer Medical Research Foundation, which has consistently supported Mercy research over many years.

The Mercy Health Human Research Ethics Committee also performs an important and much appreciated role. I thank the Chair, Tim O'Leary, and his team for their contribution. The Academic Research and Development Committee continues to approve small grants for start-up research and audits within Mercy Health. These seed grants are always gratefully received.

The University of Melbourne Department of Obstetrics and Gynaecology at Mercy Hospital for Women, Heidelberg, continues to produce the largest research output. We congratulate professors Sue Walker AO and Stephen Tong, along with the other university research leaders and teams, on consistently producing an excellent research output as well as many peer-reviewed journal publications.

Finally, I thank all the researchers in the many departments that have contributed to this report. We should all be proud of the achievements in our 10th year of reporting.

Associate Professor David Allen
Chief Medical Officer, Mercy Health



*Mercy Hospital for Women researcher
Sally Beard*

A good beginning is of great importance.

The Venerable Catherine McAuley

THANK YOU TO OUR SUPPORTERS AND PARTNERS

We acknowledge and celebrate the partnerships we have forged in 2017 and our shared vision for a better future through research and education.

Mercy Health gratefully acknowledges funding support from the following sources in 2017:

Austin Medical Research Foundation
Australia New Zealand Gynaecological Oncology Group
Mercy Health Foundation
National Health and Medical Research Council
National Institute for Health Research, United Kingdom
Norman Beischer Medical Research Foundation
Stillbirth Foundation Australia
Sylvia and Charles Viertel Charitable Foundation
University of Melbourne.

We also extend our appreciation to our external research partners in 2017:

La Trobe University
University of Melbourne
University of Notre Dame.



Baby Ira



Renee and Anoop with baby Navya

Each day should bring us nearer to that perfection
to which we are bound to aspire.

The Venerable Catherine McAuley

ACADEMIC RESEARCH AND DEVELOPMENT COMMITTEE SMALL GRANTS 2017

These valuable grants are an essential source of funding
for start-up research and audits at Mercy Health.

Dr Megan Di Quinzio and Dr Harry Georgiou

Identification of novel biomarkers to predict preterm labour

Dr Martha Lappas

Molecular mechanisms controlling human pregnancy and labour

Professor Sonia Grover

**Persistent Pelvic Pain (PPP) Study: Factors that influence outcomes
in women presenting with persistent pelvic pain**

Ms Jane Middleton

**Pregnant, parenting and a long way from home: International students in Victoria
accessing public maternity, paediatric and early parenting care**

Professor Sue Walker AO

**The impact of sleep disordered breathing on overnight fetal heart rate patterns
in pregnancies complicated by preterm uterine growth restriction**

Ms Anne Harrison

**Move baby move: A qualitative exploratory study of attitudes, barriers and enablers
to physical activity in women with gestational diabetes mellitus**

Dr Debjyoti Karmakar

**Bilateral Extraperitoneal Uterosacral Vaginal Vault Suspension:
A long term follow up retrospective audit**

Mr Umesh Baskaran

**Sensory-dysfunction in carpal tunnel syndrome: Relationship between static touch,
texture discrimination and hand dexterity in carpal tunnel syndrome**

Professor Moyez Jiwa

**Is there a wealth to work absenteeism correlation? The influence of local and national
economic prosperity on the incidence of sickness absence in the Wyndham locale**

Dr Ian Letson

**A prospective observational study of maternal supine hypotension by serial transthoracic
echocardiography studies over the course of pregnancy in healthy women**

Ms Magdalena Pliszka

Peanut Balls in the first stage of labour for the management of pain and birth outcome



*Baby Heath at Mercy Hospital
for Women*

WOMEN'S AND CHILDREN'S SERVICES

Mercy Health continues to pursue the dream of a safer motherhood and the best possible start to life.

UNIVERSITY OF MELBOURNE DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY, MERCY HOSPITAL FOR WOMEN

The Department coordinates teaching of medical students in obstetrics and gynaecology and plays a pivotal role in research.

Mercy Perinatal: the first 12 months

In the first 12 months since launching Mercy Perinatal, there has been exciting progress in each of the domains of clinical care, research and education.

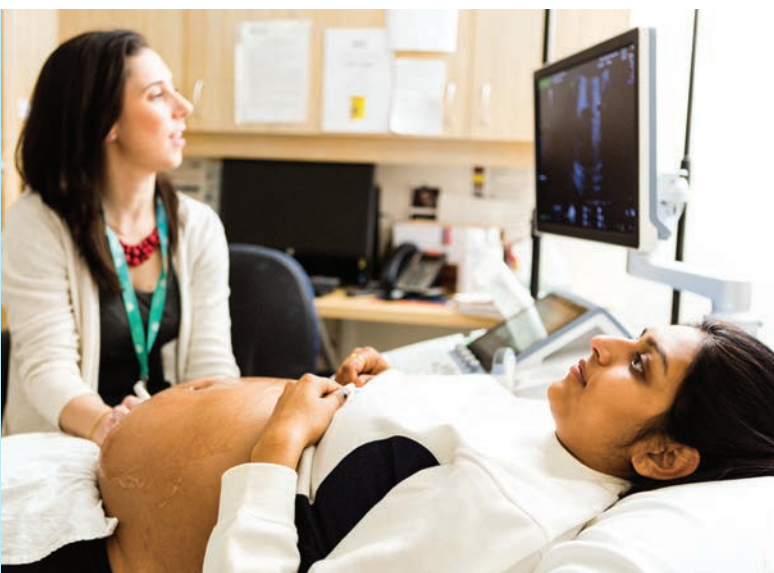
The Maternal Fetal Medicine centre is the clinical arm of Mercy Perinatal. The multidisciplinary teams in our sub-specialist clinics continue to care for some of the highest-risk pregnancies in the state. We have sought to enable equitable access to tertiary services through initiatives such as our telemedicine clinic, which services areas as remote as Darwin, Northern Territory.

Mercy Perinatal continues to take a lead in perinatal education. Our Fetal Medicine at Twilight symposia has extended its reach via webinar to more than 80 sites across Australia. Our inaugural Perinatal Mental Health Symposium addressed assessment and management of perinatal mental health disorders. Mercy Perinatal also incorporated a new Ultrasound Course for Midwives, focussed on fetal surveillance in high-risk pregnancies. Our flagship conference, the Global Obstetric Update, sold out three months in advance and received glowing reviews from attendees.

Team

Mercy Perinatal remains focussed on leading an international research program. Co-directors Professor Stephen Tong (Head of the Translational Obstetrics Group) and Professor Sue Walker AO (Head of Perinatal Medicine) have continued to develop key concepts in the areas of stillbirth prevention, preeclampsia treatment and novel therapies for ectopic pregnancy. Key achievements in these three initiatives are summarised below and reflect a collaborative effort with scientists and clinicians across many disciplines and institutes. Our international collaborators include Stellenbosch University, South Africa; University of Edinburgh and University of Manchester, UK; and Universidad de los Andes, Chile.

Fostering the next generation of talented clinician-researchers is an important part of Mercy Perinatal's mission. We were delighted to welcome the inaugural Mercy Perinatal Research Fellows to our department in 2017. Dr Fiona Brownfoot PhD and Dr Anthea Lindquist PhD have made major inroads in their areas of research interest: therapeutics for preeclampsia and perinatal epidemiology, respectively. We owe thanks to our funding bodies, our stellar research midwifery team, the Mercy Health Human Research Ethics Committee, and our patients who join with us in pursuing the dream of a safer motherhood and the best possible start to life. Without them, none of this would be possible.



Dr Hannah Skrzypek performing a scan on patient Nidhi

Key projects

Ectopic pregnancy

Ectopic pregnancy affects 1–2 per cent of all pregnancies. Mercy Perinatal has been leading a comprehensive research effort to develop effective drug treatments to replace surgery as a treatment for ectopic pregnancies. If successful, it will mean safer, cheaper and more accessible treatment for this dangerous medical condition while also retaining the ability for future pregnancy.

The team has previously identified a promising drug combination of gefitinib and methotrexate, and this concept is currently being tested in a large multicentre clinical trial in the United Kingdom. In 2017, the group produced compelling laboratory data suggesting that vinorelbine has potential as another medical treatment. This concept will be studied in an international trial in Auckland, New Zealand, led by Dr Prathima Chowdary.

Stillbirth

Every day in Australia, six lives are lost to stillbirth. Babies who are experiencing fetal growth restriction are at 3–4 fold increased risk of stillbirth. By developing better ways of identifying the growth-restricted fetus, we could dramatically reduce the rate of stillbirth by offering closer surveillance and timely delivery to those affected. The Fetal Longitudinal Assessment of Growth (FLAG) study involves blood samples taken in late pregnancy from over 2,000 women. By examining the unique genetic and protein signatures in these blood samples, our scientific team has identified unique proteins that could form the basis of a future simple blood test to assess placental health in late pregnancy. If successful, this could transform pregnancy care.

Preeclampsia

Preeclampsia affects five per cent of women and claims the lives of about 70,000 women and half a million babies worldwide each year. Mercy Perinatal has set up a drug screening pipeline to discover novel preeclampsia treatments. Through our collaboration in South Africa, we have been able to fast-track the most promising candidates to clinical trials, led by our international Mercy Perinatal Research Fellow, Dr Cathy Cluver. In 2017, Dr Cluver completed the first treatment trial for preterm preeclampsia, well ahead of time and budget. The next trial is already underway.

Perinatal Research Group (Professor Sue Walker AO)

Research team

Professor Sue Walker AO

Dr Alexis Shub

Dr Elizabeth McCarthy

Associate Professor Lisa Hui

Dr Alison Fung

Dr Alice Robinson

Dr Teresa MacDonald

Dr Fiona Brownfoot

Dr Anthea Lindquist

Mrs Nadia Bardien

Mrs Gabrielle Pell

Ms Anna Middleton.

Projects and grants

Advances in Prenatal Genomic Testing

L Hui, A Lindquist

Collaborators: Professor Jane Halliday,
Murdoch Children's Research Institute

Diabetes and Obesity

E McCarthy, A Shub, M Lappas

Collaborators: Dr Jane Wilcox, Deakin University

Fetal Growth Restriction and Stillbirth

S Walker, T MacDonald, A Robinson, L Hui

Perinatal Sleep Research

S Walker, A Fung, H Skrzypek

Collaborators: Dr Mark Howard and Ms Danielle Wilson,
Institute for Breathing and Sleep, Austin Health

Perinatal Infectious Diseases

L Hui, N Hannan

Collaborators: Professor Luc de Catte, UZ Leuven
(Belgium), Royal Hospital for Women (NSW),
Dr Antonia Shand, Randwick NSW

Australian Placental Transfusion Study

S Walker

Funded by NHMRC

*EPPI Trial — Enoxaparin for the Prevention of
Preeclampsia and Intrauterine growth restriction*
S Walker

Funded by University of Auckland Faculty Research
Development Fund; A+ Trust Auckland District Health
Board Charitable Trust; Australasian Society of
Thrombosis and Hemostasis Scientific and Education
Trust; and the University of Auckland School of Medicine
Performance Based Research Fund

MAGENTA trial: Magnesium Sulphate at 30–34 weeks' gestational age: neuroprotection trial

S Walker

Funded by NHMRC

STRIDER Trial: a randomised controlled trial of Sildenafil in Dismal Prognosis Early-onset Intrauterine Growth Restriction.

S Walker

Funded by Health Research Council of New Zealand (HRC) and Cure Kids New Zealand

Improving the prediction and detection of contributors to term stillbirth

S Walker, S Tong, C Whitehead

Funded by NHMRC (2014–2016)

Fetal Longitudinal Assessment of Growth Study (FLAG)

S Walker (CIA)

Funded by Stillbirth Australia Foundation (2016–2017)

Developing potential biomarkers of fetal brain development after congenital cytomegalovirus infection

L Hui (CIA)

Funded by Sylvia and Charles Viertel Charitable Foundation (2016–2017)

Noninvasive prenatal testing (NIPT) to detection Early Ovarian cancer (NEO study)

L Hui (CIA)

Funded by Norman Beischer Medical Research Foundation (2016–2017)

New ways to identify fetal macrosomia in late pregnancy

S Walker, T MacDonald, L Hui, S Tong

Funded by Norman Beischer Medical Research Foundation (2017)

Can circulating biomarkers predict the development of type 2 diabetes in women with a previous GDM pregnancy?

M Lappas, A Shub

Funded by Norman Beischer Medical Research Foundation (2016–2017)

Circulating cardiovascular biomarkers to predict the development of type 2 diabetes in women with a previous GDM pregnancy

M Lappas, A Shub

Funded by Norman Beischer Medical Research Foundation (2016–2017)

Does breastfeeding protect against the development of impaired glucose tolerance or type 2 diabetes?

A Shub, M Lappas

Funded by Norman Beischer Medical Research Foundation (2017).



Patient Lara having an ultrasound

Publications

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Taryn and Andrew with baby Hannah

Mercy Health researchers are striving to dramatically reduce the rate of stillbirth, which claims six lives a day in Australia.

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Academic achievements

Dr Teresa MacDonald received an oral presentation award and a people's choice award at the inaugural University of Melbourne Department of Obstetrics and Gynaecology Research Student Symposium.

Dr Teresa MacDonald received the Illumina Trainee Women's Health Award, Best Oral Presentation, RANZCOG trainees.

Dr Teresa MacDonald received the Austin LifeSciences ResearchFest Olivia Newton-John Cancer Research Institute Scholarship.

Dr Teresa MacDonald received the PSANZ-PRS Mont Liggins Early Career award which funded her travel to present her research at the Perinatal Research Society conference in Atlanta, USA.

Dr Teresa MacDonald was awarded the PSANZ New Investigator Award for best Oral Presentation in Obstetrics and Gynaecology.

Dr Teresa MacDonald received a PSANZ Early Career Research Travel Award.

Associate Professor Lisa Hui was awarded the University of Melbourne Ackman Travelling Scholarship to visit the Eunice Kennedy Shriver National Institute of Child Health and Development (NICHD) and attend BioTech Laboratory Workshops on Next Gen Sequencing at the National Institutes of Health, USA 2017–19 (\$15,570).

Associate Professor Lisa Hui was an invited keynote speaker at the Circulating Nucleic Acids in Plasma and Serum scientific meeting in Montpellier, France in October 2017.

Associate Professor Lisa Hui was appointed to the editorial board of the scientific journal *Prenatal Diagnosis* in 2017.

L-R Dr Natasha De Alwis, Dr Carole-Anne Whigham, Dr Natalie Hannan, Dr Natasha Pritchard, Dr Natalie Binder, Mrs Ping Cannon, Professor Stephen Tong, Ms Roxanne Hastie, Dr Fiona Brownfoot, Dr Tu'uhevaha Kaitu'u-Lino, Ms Sally Beard, Ms Vi Nguyen



Translational Obstetrics Group (Professor Stephen Tong)

In 2017, the Translational Obstetrics Group continued to pursue new therapeutics and diagnostics to treat major pregnancy complications.

Highlights of 2017

Of the many papers published by the team in 2017, one that appeared in the prestigious journal *Hypertension* generated significant media interest and subsequent citations. The paper identified the exciting possibility that proton pump inhibitors may be useful to treat or prevent preeclampsia.

Also in 2017, a clinical trial to test whether proton pump inhibitors can be used to treat preeclampsia completed recruitment in South Africa (in collaboration with Tygerberg Hospital).

The team also continued to collaborate in a major phase III clinical trial based in the United Kingdom, to test a new treatment for ectopic pregnancy. This is being undertaken in collaboration with Professor Andrew Horne in Edinburgh and it tests a concept developed by the Translational Obstetrics Group. Another notable achievement of the year was by Dr Carole-Ann Whigham, who received the only New Investigator Award from the Society of Reproductive Biology satellite meeting in Edinburgh.

Research team

Professor Stephen Tong
Dr Tu'uhevaha Kaitu'u-Lino
Dr Natalie Hannan
Dr Fiona Brownfoot
Ms Roxanne Hastie
Dr Carole-Anne Whigham
Dr Teresa MacDonald
Ms Natasha De Alwis
Dr Natasha Pritchard
Mrs Ping Cannon
Ms Vi Nguyen
Dr Natalie Binder
Ms Sally Beard.

Projects and grants

From pathogenesis to therapeutics:
targeting two signalling pathways as a
therapeutic strategy to treat preeclampsia
T Lino, S Tong, N Hannan
Funded by NHMRC Project Grant (2017–2019)

New generation antiplatelet therapies
to prevent preeclampsia
N Hannan, S Tong, T Kaitu'u-Lino
Funded by NHMRC Project Grant (2017–2019)

Fetal Longitudinal Assessment of Growth (FLAG) study
— looking for new markers that can predict when a
baby is small and at risk of stillbirth
S Walker
Funded by Stillbirth Australia Foundation (2016–2017)

Fetal Longitudinal Assessment of Growth (FLAG) study
— looking for new markers that can predict if a mother
is at risk for preeclampsia
S Walker
Funded by Stillbirth Australia Foundation (2016–2017)

Fetal Hypoxia Study (FOX) — development of a blood
test to detect babies at risk of imminent stillbirth
S Walker
Funded by Stillbirth Australia Foundation (2016–2017)

Placental targeted nanomedicine to treat preeclampsia
N Hannan, L Harris, S Tong
Funded by NHMRC Project Grant (2017–2019)

Combination treatments to treat preeclampsia
F Brownfoot, TJ Kaitu'u-Lino, SP Walker, S Tong
Funded by Norman Beischer Medical Research
Foundation

Identification of a new tablet-based therapy
to treat ectopic pregnancy
S Tong, A Horne, T Lino, E Lim
Funded by NHMRC Project Grant (2017–2019)

Sulfasalazine as a treatment for preeclampsia,
involving bench and bedside studies
F Brownfoot, TJ Kaitu'u-Lino, SP Walker, S Tong
Funded by Norman Beischer Medical Research
Foundation

The effect of sildenafil on the antiangiogenic
marker of preeclampsia sFlt-1
S Tong
External funding

*Systematic screening approach to identify
new therapeutics for preeclampsia*
S Tong, T Lino, N Hannan
Funded by NHMRC (2016–2019)

*From pathogenesis to therapeutics:
targeting two signaling pathways as a
therapeutic strategy to treat preeclampsia*
T Lino, S Tong, N Hannan
Funded by NHMRC (2017–2019)

*Development of vinorelbine as a tablet based
therapy to cure ectopic pregnancies*
S Tong, A Horne, T Lino, E Lim
Funded by NHMRC (2017–2019)

*New generation anti-platelet therapies
to prevent preeclampsia*
N Hannan, S Tong, T Kaitu'u-Lino
Funded by NHMRC (2017–2019)

*Nanomedicine targeted delivery of therapeutics
to the placenta to treat preeclampsia*
N Hannan, L Harris, S Tong
Funded by NHMRC (2017–2019)

*Identifying biomarkers for prediction of preeclampsia
at 28 weeks' gestation*
T Kaitu'u-Lino, T Macdonald, SP Walker, S Tong
Funded by Norman Beischer Medical Research
Foundation

*Treating preterm preeclampsia with sulfasalazine:
an early phase clinical trial*
F Brownfoot, TJ Kaitu'u-Lino, SP Walker, S Tong
Funded by Norman Beischer Medical Research
Foundation

*New ways to identify fetalmacrosomia
in late pregnancy*

SP Walker, T MacDonald, L Hui, S Tong
Funded by Norman Beischer Medical Research
Foundation

*A multi-centre double-blind randomised trial of a
combination of methotrexate and gefitinib versus
methotrexate alone as a treatment for ectopic
pregnancy (GEM 3)*

S Tong (Second principle investigator)
Funded by National Institute for Health Research,
United Kingdom (2016–2018)

*Investigating mechanisms of preeclampsia
and developing novel therapeutics*

N Hannan (CIA)
Funded by Veski Inspiring Women Fellowship
(2016–2018)

*Pharmacokinetics of sulfasalazine
to treat preeclampsia*

F Brownfoot
Funded by Society of Obstetric Medicine
for Australia and New Zealand

Prevention and treatments for preeclampsia

F Brownfoot
Funded by a RANZCOG Early Career Research Grant

*Combination sulfasalazine and metformin:
a new therapy for preeclampsia*

F Brownfoot
Funded by Austin Medical Research Foundation

Publications

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Baby Meleane

MacDonald, TM, Kaitu'u-Lino, TJ, Walker, SP, Dane, KL, Lockie, EB, Tong, S, et al. Variable effect of maternal oral glucose load on circulating cell-free placental mRNAs. *J Matern Fetal Neonatal Med.* 2017 Mar;30(5):501–503. DOI: 10.1080/14767058.2016.1177815

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Palmer, KR, Kaitu'u-Lino TJ, Cannon P, Tuohey L, De Silva MS, Varas-Godoy M, et al. Maternal concentration of the placental specific sFLT-1 variant, sFLT-1 e15a, in fetal growth restriction and preeclampsia. *J Matern Fetal Neonatal Med.* 2017;30(6):635–639.

Hannan NJ, Brownfoot FC, Cannon P, Deo M, Beard S, Nguyen TV, et al. Resveratrol inhibits release of soluble fms-like tyrosine kinase (sFlt-1) and soluble endoglin and improves vascular dysfunction – implications as a preeclampsia treatment. *Sci Rep.* 2017 May 12;7(1):1819.

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Tong S, Mol BW, Walker SP. Preventing preeclampsia with aspirin: does dose or timing matter? *Am J Obstet Gynecol.* 2017;216(2):95–97.

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Pritchard N, Lindquist A, Hiscock R, Ruff S, Tong S, Brownfoot FC. High dose compared with low-dose oxytocin for induction of labour of nulliparous women at term. *J Matern Fetal Neonatal Med.* 2017;26:1–7.

Presentations

Kaitu'u-Lino TJ. Mitochondrial Regulation of sFlt-1 in preeclampsia. Pregnancy Research Group, Griffith University, Gold Coast

Kaitu'u-Lino TJ. Treating an age old disease. Australian Reproduction Update, Melbourne, November 2017

Hannan N. The embryo and pregnancy complications. Australian Reproduction Update, Melbourne, November 2017

De Alwis N. Hypoxia increases trophoblast and placental expression of candidate blood markers of severe fetal growth restriction. Australian Reproduction Update, Melbourne, November 2017

Hannan N. Treating placental dysfunction: pre-clinical strategies. International Federation of Placental Associations (IFPA) annual meeting, Manchester, UK, August/September 2017

Whigham C-A. Circulating endothelial transcription factor GATA2 is decreased in preeclampsia and may contribute to maternal endothelial dysfunction. IFPA annual meeting, Manchester, UK, August/September 2017

Hannan N. Targeted nanoparticle delivery of short interfering RNAs to treat preeclampsia. Society for Reproductive Investigation annual meeting, Orlando, USA, March 2017

Hastie R. New medical therapeutics for ectopic pregnancy. Society for Reproductive Investigation annual meeting, Orlando, USA, March 2017

Whigham C-A. Circulating endothelial transcription factor GATA2 is decreased in preeclampsia and may contribute to maternal endothelial dysfunction. Medical Research Centre/Society for Reproductive Investigation satellite meeting, Edinburgh, Scotland, August 2017

Hannan N. Targeted nanoparticle delivery of short interfering RNAs to treat preeclampsia. Frontiers in Reproduction Annual Symposium, Marine Biological Laboratories, Massachusetts USA

Hannan N. (Invited seminar) Novel approaches to treat preeclampsia: new drugs to new delivery. Centre for Reproductive Health, University of Edinburgh, Scotland, UK

Hannan N. (Invited seminar) Novel approaches to treat preeclampsia: new drugs to new delivery. University of California, San Francisco USA

Hannan N. (Invited speaker) Be BOLD for change. International Women's Day Seminar, Mercy Hospital for Women, Melbourne

Tong S. (Invited speaker) Translational obstetrics: from concept to reality. Victorian Clinical Science Symposium, Exhibition Centre, Melbourne

Tong S. (Invited plenary presentation) Repurposing drugs to fast track the translation of new treatments to tackle major pregnancy complications. Women's and Children's Hospital/Robinson Research Institute (University of Adelaide), joint Grand Round, Adelaide

Tong S. (Invited plenary presentation) Developing new treatments for major pregnancy complications. JN De Villiers Lecture, Tygerberg Hospital, South Africa

Tong S. (Invited plenary presentation) Translating new treatments for preeclampsia and ectopic pregnancy, from preclinical discovery to clinical trials. Medical Research Centre/Society for Reproductive Investigation satellite meeting, Edinburgh, Scotland, August 2017

Tong S. (Invited speaker) Identifying and evaluating novel therapeutics to treat preeclampsia. IFPA annual meeting, Manchester, UK, August/September 2017

Tong S. (Invited speaker) Clinical cases on the management of fetal growth at term. IFPA annual meeting, Manchester, UK, August/September 2017

Tong S. (Invited speaker) Developing new therapeutics and diagnostics for major pregnancy complications. St Marys' Hospital and University of Manchester, UK

Brownfoot F. (Invited speaker) Novel therapeutics for preeclampsia. University of Auckland, New Zealand

Brownfoot F. Novel treatments for preeclampsia. Growing Tall Poppies, Swinburne University

Hastie, R. Novel treatments for ectopic pregnancies. Growing Tall Poppies, Swinburne University.



Baby Sienna



Biomarker Discovery Group (Dr Harry Georgiou)

The Biomarker Discovery Group continues to study perinatal morbidity and mortality, with the aim of identifying better prognostic biomarkers of preterm labour and bringing these discoveries to commercial production and clinical application.

Research team

Dr Harry Georgiou
Associate Professor Megan Di Quinzio
Ms Gabrielle Pell
Ms Claire Grant
Ms Tal Amitay.

Project

Predicting preterm labour
H Georgiou, M Di Quinzio, G Pell, C Grant, T Amitay
Funded by Carmentix Singapore and the Norman Beischer Medical Research Foundation.

Publications

Wookey AF, Chollangi T, Yong HE, Kalionis B, Brennecke SP, Murthi P, et al. Placental vitamin D-binding protein expression in human idiopathic fetal growth restriction. *J Pregnancy*. 2017;5120267. DOI:10.1155/2017/5120267

Al-Sowayan B, Keogh RJ, Abumaree M, Georgiou HM, Kalionis B. The effect of endothelial cell activation and hypoxia on placental chorionic mesenchymal stem/stromal cell migration. *Placenta*. 2017 Nov;59:131–38. DOI:10.1016/j.placenta.2017.06.341

Presentations

Di Quinzio M. Predicting preterm delivery — current status and future directions (Part I). Australasian Association of Clinical Biochemists (AACB) 55th Annual Scientific Conference, Melbourne, Australia, September 2017

Georgiou H. Predicting preterm delivery — current status and future directions (Part II). AACB 55th Annual Scientific Conference, Melbourne, Australia, September 2017

Georgiou H. Novel biomarkers of preterm labour. 2017 Preterm Birth International Collaborative (PREBIC), Haikou Hainan, China, October 2017.



L-R: Quality Control Manager Ms Tal Amitay, Clinical Research Midwife and Manager Ms Gabrielle Pell, Clinical Research Midwife Belinda Bozykowski (joined 2018), Medical Scientist Ms Claire Grant, Chief Scientist Dr Harry Georgiou, Clinical Research Midwife Rebecca Jones (joined 2018), Senior Obstetrician and Associate Professor Megan Di Quinzio and Clinical Research Midwife Lucinda Kuhnd (joined 2018)

Obstetrics, Nutrition and Endocrinology Group (Associate Professor Martha Lappas)

The Obstetrics, Nutrition and Endocrinology Group continues to research the cellular and molecular mechanisms that govern birth, as well maternal diabetes, obesity and fetal growth and development.

Research team

Associate Professor Martha Lappas

Dr Ratana Lim

Dr Stella Liong

Mrs Gillian Barker

Ms Caitlyn Nguyen-Ngo

Ms Yasaswi Kaumadha Wijesuriya

Ms Priyanka Goradia

Ms Manisha Miranda.

Projects

Preterm birth

Preterm birth is one of the most significant healthcare issues globally. An effective medical therapy that could stop idiopathic preterm labour would be a major advance. Progress is made difficult by the fact that the human birth process is not completely understood. Over the past decade, our Obstetrics, Nutrition and Endocrinology Group has identified a number of 'master regulators' of the mechanisms that govern birth. The team is now in the process of targeting these pathways using both in vitro and in vivo models. This research promises to offer new insights into the development of therapeutics for the management of preterm birth.

Gestational diabetes

Gestational diabetes has an impact that extends well beyond pregnancy and childbirth, with the potential for lifelong morbidity or mortality for both mother and baby. Little progress, however, has been made with interventions aimed at prevention. Numerous epidemiological studies have linked fruit and vegetable consumption with a reduced risk of various diseases. Many of these beneficial properties have been attributed to phytochemicals such as the citrus flavones that are found in citrus fruits. In this research, we are assessing whether phytochemicals can prevent the development of gestational diabetes and improve fetal outcomes.

Projects and grants

The transmission of perinatal maternal mental health to preschool emotional disorders: Examining pathways and intervention points in the MPEWS study

M Galbally, A Lewis, P Boyce, M van IJzendoorn, T Oberlander, E van Rossum, M Lappas, J Ryan, M Mohebbi

Funded by NHMRC (2016–2020)

Understanding and preventing complications of pregnancy

M Lappas

Funded by the University of Melbourne

Histidine as a novel therapy to prevent the development of gestational diabetes

M Lappas

Funded by Austin Medical Research Foundation

Research Fellowship

M Lappas

Funded by the University of Melbourne (2016–2017)

Sirtuin 1 – A key player in the pathogenesis of gestational diabetes mellitus?

M Lappas

Funded by Norman Beischer Medical Research Foundation (2016–2017)

Can circulating biomarkers predict the development of type 2 diabetes in women with a previous GDM pregnancy?

M Lappas, A Shub

Funded by Norman Beischer Medical Research Foundation

Circulating cardiovascular biomarkers to predict the development of type 2 diabetes in women with a previous GDM pregnancy

M Lappas, A Shub

Funded by Norman Beischer Medical Research Foundation (2016–2017)

Does breastfeeding protect against the development of impaired glucose tolerance or type 2 diabetes?

A Shub, M Lappas

Funded by Norman Beischer Medical Research Foundation (2016–2017)

Do women with GDM who have overweight offspring have increased leptin and decreased adiponectin levels?

A Shub, M Lappas

Funded by Norman Beischer Medical Research Foundation (2016–2017)

Publications

Galbally M, Spigset O, Johnson AR, Kohan R, Lappas M, Lewis AJ. Neonatal adaptation following intrauterine antidepressant exposure: assessment, drug assay levels, and infant development outcomes. *Pediatr Res.* 2017;82:806–813.

Galbally M, van IJzendoorn M, Permezel M, Saffery R, Lappas M, Ryan J, et al. Mercy Pregnancy and Emotional Well-being Study (MPEWS): Understanding maternal mental health, fetal programming and child development. Study design and cohort profile. *Int J Methods Psychiatr Res.* 2017;26(4).

Jayabalan N, Nair S, Nuzhat Z, Rice GE, Zuniga FA, Sobrevia L, et al. Cross talk between adipose tissue and placenta in obese and gestational diabetes mellitus pregnancies via exosomes. *Front Endocrinol (Lausanne).* 2017;8:239.

Lappas M. The adaptor protein p62 mediates nuclear factor kappaB activation in response to inflammation and facilitates the formation of prolabor mediators in human myometrium. *Reprod Sci.* 2017;24:762–772.

Lappas M. RKIP is decreased in laboring myometrium and modulates inflammation-induced pro-labor mediators. *Reproduction* 2017;153:545–553.

Lappas M. A20, an essential component of the ubiquitin-editing protein complex, is a negative regulator of inflammation in human myometrium and foetal membranes. *Mol Hum Reprod.* 2017;23:628–645.

Lappas M. The IL-1beta signalling pathway and its role in regulating pro-inflammatory and pro-labour mediators in human primary myometrial cells. *Reprod Biol.* 2017;17:333–340.

Lim R, Barker G, Lappas M. TRADD, TRAF2, RIP1 and TAK1 are required for TNF-alpha-induced pro-labour mediators in human primary myometrial cells. *Am J Reprod Immunol.* 2017 Jul;78(1). DOI: 10.1111/aji.12664

Lim R, Barker G, Lappas M. Inhibition of PIM1 kinase attenuates inflammation-induced pro-labour mediators in human foetal membranes in vitro. *Mol Hum Reprod.* 2017;23:428–440.

Lim R, Barker G, Lappas M. Optineurin suppression activates the mediators involved in the terminal effector pathways of human labour and delivery. *Reprod Fertil Dev.* 2017;29:1074–1084.

Lim R, Barker G, Lappas M. TLR2, TLR3 and TLR5 regulation of pro-inflammatory and pro-labour mediators in human primary myometrial cells. *J Reprod Immunol.* 2017;122:28–36.

Lim R, Barker G, Lappas M: SMAD7 regulates proinflammatory and prolabor mediators in amnion and myometrium. *Biol Reprod.* 2017;97:288–301.

Liong S, Barker G, Lappas M. Placental Pim-1 expression is increased in obesity and regulates cytokine- and toll-like receptor-mediated inflammation. *Placenta.* 2017;53:101–112.

Liong S, Lappas M. Lipopolysaccharide and double stranded viral RNA mediate insulin resistance and increase system a amino acid transport in human trophoblast cells in vitro. *Placenta.* 2017;51:18–27.

Liong S, Lim R, Barker G, Lappas M. Hepatitis A virus cellular receptor 2 (HAVCR2) is decreased with viral infection and regulates pro-labour mediators. *Am J Reprod Immunol*. 2017 Jul;78(1). DOI: 10.1111/aji.12696

McCarthy EA, Walker SP, Ugoni A, Lappas M, Leong O, Shub A. Authors' reply re: Self-weighting and simple dietary advice for overweight and obese pregnant women to reduce obstetric complications without impact on quality of life: a randomised controlled trial. *BJOG*. 2017;124:698.

Murthi P, Davies-Tuck M, Lappas M, Singh H, Mockler J, Rahman R, et al. Maternal 25-hydroxyvitamin D is inversely correlated with foetal serotonin. *Clin Endocrinol (Oxf)*. 2017;86:401–409.

Richardson L, Vargas G, Brown T, Ochoa L, Trivedi J, Kacerovsky M, et al. Redefining 3Dimensional placental membrane microarchitecture using multiphoton microscopy and optical clearing. *Placenta*. 2017;53:66–75.

Shub A, Churilov L, Miranda M, Georgiou HM, Lappas M. Postpartum maternal adipokines and infant weight for length at 1 year in women with gestational diabetes. *J Matern Fetal Neonatal Med*. 2017 Dec 7:1–4.

Tran HT, Liong S, Lim R, Barker G, Lappas M. Resveratrol ameliorates the chemical and microbial induction of inflammation and insulin resistance in human placenta, adipose tissue and skeletal muscle. *PloS One* 2017;12:e0173373.

Willcox JC, Wilkinson SA, Lappas M, Ball K, Crawford D, McCarthy EA, et al. A mobile health intervention promoting healthy gestational weight gain for women entering pregnancy at a high body mass index: the txt4two pilot randomised controlled trial. *BJOG* 2017 Oct;124:1718–1728. DOI: 10.1111/1471-0528.14552.

Awards and academic achievements

Ms Martha Lappas, 2013–17, NHMRC Career Development Fellowship, Level 2

Ms Martha Lappas, 2017, University of Melbourne Research Fellowship

Ms Martha Lappas, 2017–18, Preterm Birth International Collaborative (PREBIC) Australasian Board Director

Ms Caitlyn Nguyen-Ngo, 2017–20, Australian Government Research Training Program (RTP) Scholarship

Ms Yasaswi Kaumadha Wijesuriya, graduated Bachelor of Science (Honours) with a High Distinction

Ms Caitlyn Nguyen-Ngo, Australian Government Research Training Program (RTP) Scholarship (three-year PhD scholarship).

Presentations

Lappas M. (Invited speaker) Prevention of preterm birth: Novel targets of inflammation in the myometrium. 2017 Australian Physiological Society meeting, Melbourne, Australia, November 2017

Lappas M. (Invited speaker) Novel targets for preventing spontaneous preterm birth. Society for Reproductive Investigation (SRI) 64th Annual Scientific Meeting, Orlando, Florida, USA, March 2017

Lappas M. (Invited speaker) Novel targets for inhibition of inflammation for the prevention of PPROM. SRI 64th Annual Scientific Meeting, Orlando, Florida, USA, March 2017

Liong S. The role of bromodomain protein 4 on the pathophysiology of preeclampsia. Joint Annual Scientific Meetings of the Endocrine Society of Australia and the Society for Reproductive Biology, Perth, Australia, August 2017.

Baby Meleane

This research promises to offer new insights into the development of therapeutics for the management of preterm birth.





Obstetric Research Group (Dr Alexis Shub)

The Obstetric Research Group led by Dr Alexis Shub continues to concentrate on research in the fields of gestational diabetes mellitus (GDM) and obesity in pregnancy. Predictive circulating biomarkers are also being explored.

Projects and grants

Can circulating biomarkers predict the development of type 2 diabetes in women with a previous GDM pregnancy?

M Lappas, A Shub

Norman Beischer Medical Research Foundation
(2016–2017)

Circulating cardiovascular biomarkers to predict the development of type 2 diabetes in women with a previous GDM pregnancy

M Lappas, A Shub

Norman Beischer Medical Research Foundation
(2016–2017)

Does breastfeeding protect against the development of impaired glucose tolerance or type 2 diabetes?

A Shub, M Lappas

Norman Beischer Medical Research Foundation
(2016–2017).

*L-R Clinical Nurse Consultant Deborah Boyce,
PhD Student Felicia Widyaputri, Dr Christine Houlihan,
Student Ms Rebecca Williamson and Dr Alexis Shub*

Obstetric Research Group (Dr Elizabeth McCarthy)

Projects

Data collection: Audit of outcomes of diagnostic amniocentesis and chorionic villous sampling at Mercy Hospital for Women

T Carins, L Hui

Data collection: Audit of maternal pertussis immunization at The Northern Hospital

A J de Faria, P Howat, L Hui

Data collection: Commenced re-audit of term breech outcomes

S Ruff, L Hui

Data collection: Updated meta-analysis of maternal emotional outcomes following diet or lifestyle interventions in pregnancy

N Chisholm, L Hui

Data collection: Qualitative studies into pregnant women and medical staff's perceptions of current and future, video-assisted methods for teaching medical students obstetric abdominal examination

D Wilson, L Hui

Data collection: Commenced retrospective review of mid-trimester loss at MHW, including the rates of antiphospholipid antibody positivity, negativity and lack of testing

R Taleb, L Hui

Data collection: Ethics approval obtained for audit of Early Pregnancy Assessment Clinic (EPAC) at MWH
M Overdeest, L Hui.

DEPARTMENT OF GYNAECOLOGICAL ONCOLOGY, MERCY HOSPITAL FOR WOMEN

Many of the group's research projects are part of national and international collaborations. Members of the department continue to present papers at both national and international meetings.

Research team

Associate Professor Peter Grant
Associate Professor David Allen
Dr Simon Hyde
Dr Julie Lamont
Dr Adam Pendlebury
Dr George Au Yeung
Dr Serene Foo
Associate Professor Linda Milishkin
Dr Kristen Moloney.

Projects and grants

Ovarian Cancer Prognosis and Lifestyle Study (OPAL)
P Webb, M Friedlander, P Grant, A Obermair,
A deFazio
Funded by NHMRC

PARAGON – Phase 2 study of aromatase inhibitors in women with potentially hormone responsive recurrent/metastatic gynaecological neoplasms
P Grant, S Hyde, L Milishkin
Funded by ANZGOG

ARIEL 2. A Phase 2, Open-Label Study of Rucaparib in Patients with Platinum-Sensitive, Relapsed, High-Grade Epithelial Ovarian, Fallopian Tube or Primary Peritoneal Cancer
P Grant, L Milishkin, D Rischin, S Hyde, J Lamont, D Allen, S Foo
Funded by Clovis Oncology

Cascade. A cancer tissue collection after death (cascade) programme to improve our understanding of the progression from primary stage cancer to metastatic disease
D Bowtell, P Grant, J Lamont, S Hyde, L Milishkin, G Au Yeung

Ovarian ctDNA study. Circulating Tumour DNA as a Marker of Residual Disease and Response to Adjuvant Chemotherapy in Stage I-III Optimally Debulked Epithelial Ovarian, Fallopian Tube and Primary Peritoneal Cancer
S Ananda, L Milishkin, G Au Yeung, P Grant, S Hyde, S Foo, J Lamont, A Pendlebury

Phaedra. A Phase 2 Trial of Durvalumab in Advanced Endometrial Cancer
L Milishkin, G Au Yeung, P Grant, S Hyde, S Foo, J Lamont
Funded by ANZGOG

National Gynaecological Oncology Registry (NGOR): Ovarian Registry Pilot project
P Grant
In collaboration with Monash University, the Royal Women's Hospital, Monash Health and Epworth HealthCare.

*L-R Dr Julie Lamont, Dr Adam Pendlebury,
Associate Professor Peter Grant,
Dr Kristen Moloney, Dr Simon Hyde*

The Department of
Gynaecological Oncology
continues to have an active role
in research and education.

Publications

Glubb DM, Johnatty SE, Quinn MCJ, O'Mara TA, Grant P, Gao B, et al. Analyses of germline variants associated with ovarian cancer survival identify functional candidates at the 1q22 and 19p12 outcome loci. *Oncotarget*. 2017 Jun 15;8(39):64670–84.

Bonaventura A, O'Connell RL, Mapagu C, Beale PJ, McNally OM, Mileschkin LR, et al. Paragon (ANZGOG-0903): Phase 2 Study of anastrozole in women with estrogen or progesterone receptor-positive platinum-resistant or refractory recurrent ovarian cancer. *Int J Gynecol Cancer*. 2017 Jun;27(5):900–6

Pendlebury A, Hannan NJ, Binder N, Beard S, McGauran M, Grant P, et al. The circulating microRNA-200 family in whole blood are potential biomarkers for high-grade serious epithelial ovarian cancer. *Biomed Rep*. 2017 Mar;6(3):319–22

Lee YC, Bressel M, Grant P, Russell P, Smith C, Picken S, et al. Improved quality of risk-reducing salpingo-oophorectomy in Australasian women at high risk of pelvic serous cancer. *Fam Cancer*. 2017 Oct;16(4):461–69

Theuws J, Allen DG. Effect of treatment choices for cervical adenocarcinoma in situ on rates of residual disease, recurrence and progression. *South Afr J Gynaecol Oncol*. 2017; 9(2):30–34.

Presentations

Allen D. Challenges in Australia with Colposcopy and Cervical Cancer Screening. (Session Chair) International Federation of Cervical Pathology and Colposcopy (IFCPC), 2017 World Congress, Orlando, Florida, April 2017

Allen D. Primary HPV Screening — Current state of the science in Australia. IFCPC, 2017 World Congress, Orlando, Florida, April 2017

Allen D. Changing colposcopy practice and the introduction of quality assurance monitoring. IFCPC, 2017 World Congress, Orlando, Florida, April 2017

Allen D. HPV vaccination challenges and solutions in Australia. IFCPC, 2017 World Congress, Orlando, Florida, April 2017.



DEPARTMENT OF PAEDIATRICS, MERCY HOSPITAL FOR WOMEN

The research activity of the Department of Paediatrics is centred on a number of core themes: respiratory management and the prevention of chronic lung disease; nutrition; brain injury; infection and immunity; and long-term neurodevelopmental outcomes.

The Department of Paediatrics team often collaborates in large multinational research studies and we have presented research outcomes at national and international conferences.

The team's cardio-respiratory research spans the research spectrum from laboratory work to clinical trials and collaboration with industry to develop respiratory equipment. In this space, the Mercy Hospital for Women Neonatal Unit is a leader in the research and development of respiratory support via high-flow nasal cannulae. Meanwhile, researchers are also collaborating in the Melbourne Infant Study: BCG for allergy and infection reduction (MISBAIR). This is a randomised controlled trial investigating whether administration of BCG vaccine to term infants soon after birth can decrease the risk of infection and allergies.

The Department is also involved in the Victorian Infant Collaborative Study (VICS), which tracks the neurodevelopmental outcomes of infants at various stages. Mercy Hospital for Women infants enrolled in the 2016–17 cohort will be the first to investigate the use of a smartphone app to monitor movement, which may provide an early alert of the possibility of a child developing cerebral palsy.

For more information on Department research involving the Mercy Health Breastmilk Bank see page 32 and for research into brain injury see page 34.

Research team

Dr Clare Collins
Dr Jim Holberton
Ms Danielle Forster
Dr Dan Casalaz
Dr Ajit Aiyappan
Dr Gillian Opie
Dr Ashwantha Enjapoori
Dr Sri Ponraj.

Projects and grants

Comparison of cerebral haemodynamics in preterm infants receiving Nasal Continuous Positive Airway Pressure and High Flow Nasal Therapy
C Collins

OCHIE Study
D Forster

OPTIMIST Study
A Aiyappan
Funded by NHMRC

VICS Study. Victorian Infant Collaborative Support Group
G Opie

Betacasomorphins in Human Breast Milk
G Opie, A Enjapoori
Funded by Deakin University

Investigation of a novel method of pasteurisation for Human Expressed Breast Milk
G Opie, S Ponraj
Funded by Deakin University

Comparison of the Pharyngeal Pressures in two high-flow nasal cannulae devices
C Collins, J Holberton
Funded by the Norman Beischer Medical Research Foundation

Developmental Outcomes at 2-3 Years of Age for Premature Infants Extubated to Either High Flow Nasal Cannulae or Nasal Continuous Positive Airway Pressure

C Collins
Funded by the Norman Beischer Medical Research Foundation

MISBAIR Study
Dan Casalaz
Funded by NHMRC.

Publications

Yoder BA, Manley B, Collins C, Ives K, Kugelman A, Lavizzari A, et al. Consensus approach to nasal high-flow therapy in neonates. *J Perinatol*. 2017 Jul;37(7):809–13.

Tarnow-Mordi W, Morris J, Kirby A, Robledo K, Askie L, Brown R, et al. Delayed versus immediate cord clamping in preterm infants. *N Engl J Med*. 2017 Dec 21;377(25):2445–55.

Doyle LW, Carse E, Adams AM, Ranganathan S, Opie G, Cheong JLY, et al. Ventilation in extremely preterm infants and respiratory function at 8 years. *N Engl J Med*. 2017 Jul 27;377(4):329–37.

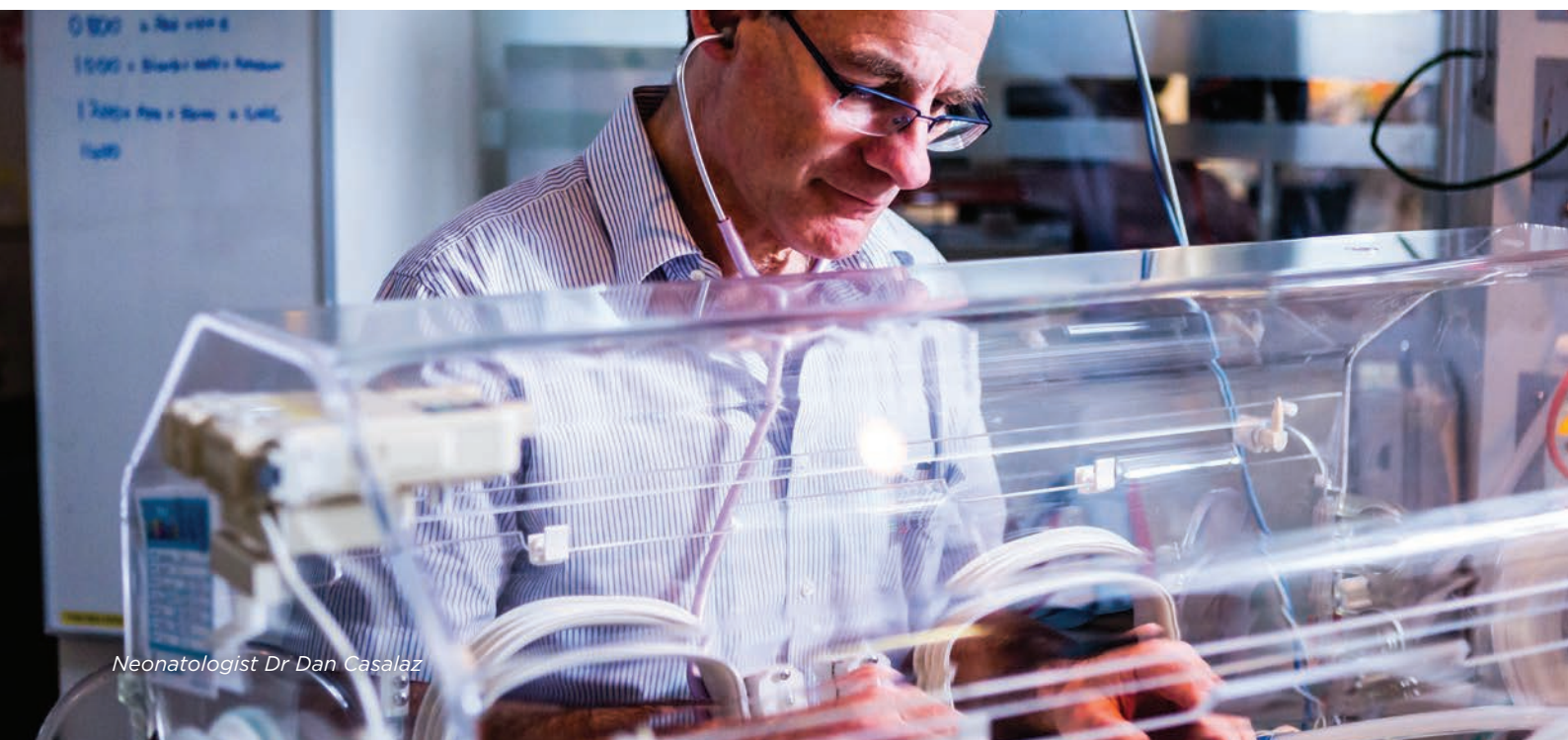
Forster DA, Moorhead AM, Jacobs SE, Davis PG, Walker SP, McEgan KM, et al. Advising women with diabetes in pregnancy to express breastmilk in late pregnancy (Diabetes and Antenatal Milk Expressing[DAME]): a multicentre, unblinded, randomised controlled trial. *Lancet*. 2017 Jun 3;389(10085):2204–13.

Collins CT, Makrides M, McPhee AJ, Sullivan TR, Davis PG, Thio M, et al. Docosahexanoic acid and bronchopulmonary dysplasia in preterm infants. *N Engl J Med*. 2017 Mar 30;376(13):1245–55.

Yeo KT, Kong JY, Sasi A, Tan K, Lai NM. Stopping feeds for prevention of transfusion-associated necrotizing enterocolitis in preterm infants (Protocol). *Cochrane Database Syst Rev*. 2017;12:CD012888. DOI: 10.1002/14651858.CD012888.

Presentation

Tan K, Sasi A. Risk factors for pneumothorax in preterm infants < 32 weeks — a case control study. Pediatric Academic Society Meeting, San Francisco, May 2017.



Neonatologist Dr Dan Casalaz

DEPARTMENT OF PAEDIATRICS, MERCY HOSPITAL FOR WOMEN

MERCY HEALTH BREASTMILK BANK RESEARCH AND EXPANSION

The Mercy Health Breastmilk Bank was established in 2011 and remains the only one of its kind in Victoria.

Each year, the Mercy Health Breastmilk Bank provides sick and vulnerable babies at Mercy Hospital for Women with access to pasteurised donated breastmilk when their mothers experience difficulty with their own supply. As a result, the team is regularly approached by laboratory scientists wanting to evaluate particular aspects of human milk.

“Our knowledge about human breastmilk is still very limited compared to what we know about cows’ milk,” Mercy Health Breastmilk Bank Founder and Head of Unit Dr Gillian Opie explains. “Any work we can do to help support scientists give us a better understanding of how unique each mother’s milk is — is really important.”

In 2017, the Mercy Health Human Research Ethics Committee (HREC) approved two independent projects for postdoctoral scientists from Deakin University, Dr Ashwantha Enjapoori and Dr Sri Ponraj.

Dr Enjapoori is investigating beta-casomorphins (BCMs) — a group of very small milk proteins. BCMs are thought to exert analgesic, antioxidant and satiety functions in newborn babies and may also regulate immune functions. However, most of what is known about BCMs is from studying cows’ milk.

“We will be asking our breastmilk donors if they would like to be involved (in this study) and if they do we will be collecting a breastmilk sample from them each month,” Dr Opie says.

Meanwhile, Dr Ponraj has developed a novel method of pasteurising cows’ milk using plasma technology.

Dr Ponraj found that shooting microscopic plasma bubbles through cows’ milk could be an alternative to pasteurisation. Now, he wants to explore how this could be used to pasteurise human milk.

“This technology has the advantage of reducing bacterial contamination without impacting essential human proteins and antibodies,” Dr Opie explains.

“This is very preliminary research but it may form a foundation for more sophisticated pasteurisation and ultimately better infant feeding in the future when a mother is not able to feed her own baby.”

The Mercy Health Breastmilk Bank also continues to audit its practices to see how it can refine and improve its processes.

Expansion plans for the breastmilk bank were finalised with the Department of Health and Human Services in 2017, and these will be a key focus for the team in 2018.

The Mercy Health Breastmilk Bank will collaborate with the Royal Women’s Hospital, Monash Medical Centre and the Royal Children’s Hospital to establish satellite sites. This is expected to triple the number of breastmilk donors and recipients in Victoria.

“I am excited that very premature and sick babies in other Victorian nurseries will soon be able to have the benefit of pasteurised donor breastmilk in circumstances when their own mother is not able to supply sufficient breastmilk,” Dr Opie says.



*Mercy Health Breastmilk Bank Founder
and Head of Unit Dr Gillian Opie*

Any work we can do to help support scientists give us a better understanding of how unique each mother’s milk is — is really important.

Dr Gillian Opie



Mercy Health Breastmilk Bank Founder and Head of Unit Dr Gillian Opie and Chief Executive – Health Services Adjunct Professor Linda Mellors

RESEARCHING SOME OF OUR SICKEST BABIES

Ms Danielle Forster, PHD candidate and voluntary researcher at University of Melbourne and Mercy Hospital for Women.

Nestled among many wires, tubes and beeping machines, the subjects of Ms Danielle Forster's research are among the sickest babies in the Mercy Hospital for Women Neonatal Intensive Care Unit. The babies in her study experienced a reduction in oxygen supply around the time of birth, placing them at risk of developing a condition called Hypoxic Ischemic Encephalopathy (HIE). In about 65 per cent of babies, HIE leads to significant neurological disability or death.

The current treatment protocol for HIE is to cool the baby's body temperature down to 33.5 degrees within six hours of birth for exactly 72 hours. This cooling treatment has been shown in several large studies to reduce the risk of disability or death to 55 per cent. It is most effective in babies that have experienced mild to moderate hypoxia (reduced oxygen supply).

"That's where I came into it," explains Ms Forster, a biomedical engineer who specialised in clinical engineering and has undertaken her research at Mercy Hospital for Women under the supervision of Dr James Holberton and Dr Virginia Saxton and the University of Melbourne's Dr Emmanuel Koumoundouros. "The accepted practice for deciding whether or not an infant has had an hypoxic incident was to use ultrasound to calculate the resistive index (RI) in the cerebral artery. This resistance is lowered after a hypoxic event due to the 'brain-sparing effect', a physiological effect that preferentially redirects blood flow to the brain when oxygen reserves are low. My research looked at whether RI is a reliable measure or if there is a better marker that can be used to measure severity, which could improve treatment protocols."

So how reliable is the RI measurement? In order to research the 18 babies in her study, Ms Forster learned how to perform cranial ultrasounds herself and set up a protocol for the babies' RI to be measured once a day and every two hours during the 12-hour re-warming period. Although the RI provides a general indication of whether or not an hypoxic event has occurred, it does not reflect the subtleties of severity. Moreover, it is a one-off measurement requiring a skilled operator, thereby its usefulness is limited.

That is why a new measure is needed to help researchers better understand cerebral perfusion (how much blood there is in the brain) and cerebral blood-flow, and how these are altered in HIE. There is potentially more to discover. To that end, Ms Forster was fortunate to secure a very special frequency-domain Near Infrared Spectrometer (NIRS) for the hospital — the first of its kind in Australia. NIRS sensors applied to a baby's head give Ms Forster absolute measurements of Oxyhaemoglobin and De-Oxyhaemoglobin in the brain tissue continuously whilst the infant is cooled. Ms Forster is aware these sensors attached to the baby's head may be an added encumbrance for the child and parents, however she is confident the data will benefit other families in future. "Many parents just want to help, even if it's not going to have a direct impact on their own baby," she says. Early results have been encouraging insofar as they support Ms Forster's hypotheses.

Ms Forster is beginning to link her data to developmental outcomes of the very first infants tested. This will help improve early categorisation of infants, enabling paediatricians to individualise treatment in the future — most likely by adapting the duration of the HIE cooling treatment. "We'd like to be able to wait until we can say this infant is ready to be rewarmed, thus giving them a better chance," Ms Forster says. "That's the ultimate goal."

Many parents just want to help, even if it's not going to have a direct impact on their own baby.

Ms Danielle Forster



Ms Danielle Forster with the department's new Near Infrared Spectrometer (NIRS) machine

DEPARTMENT OF UROGYNAECOLOGY, MERCY HOSPITAL FOR WOMEN

Women with disorders of the bladder and pelvic floor are referred to the Department of Urogynaecology for specialist care.

Apart from providing clinical services to patients, the department also conducts research and collaborates with international colleagues.

Research team

Dr Lin Li Ow
Dr Debjyoti Karmakar
Dr Payam Nikpoor
Professor Peter Dwyer
Dr Yik Lim
Dr Lore Schierlitz
Mrs Christine Murray
Ms Elizabeth Thomas.

Projects

Randomised controlled pilot study to compare TVT and Monarc suburethral sling procedure in women with urodynamic stress incontinence and intrinsic sphincter deficiency
L Schierlitz

Non-invasive transcutaneous tibial and sacral nerve stimulation as a treatment for overactive bladder: A pilot study
L Schierlitz

RCT of vaginal extraperitoneal uterosacral ligament suspension (VEULS) with anterior mesh versus sacrocolpopexy — four-year outcome
LL Ow

Long-term follow up of extraperitoneal vault suspension for post-hysterectomy vault prolapse
D Karmakar

Long-term comparison of Burch colposuspension versus TVT for stress urinary incontinence
D Karmakar

Pilot project to develop a patient-reported scale for emptying of bladder after pelvic floor surgery
D Karmakar and P Nikpoor

Association of pregnancy and mode of delivery on urinary incontinence: a prospective population-based study
P Nikpoor

A prospective longitudinal analysis of sexual function and the mode of delivery: five years post partum
P Nikpoor

A review on recurrent cystitis
P Nikpoor

Voiding dysfunction: a review
P Nikpoor.

Publications

Dwyer PL, Karmakar D. Transvaginal excision of complete vaginal septum with hysterectomy in a nulliparous woman with uterus didelphys. *Int Urogynecol J.* 2017 May;28(5):795–96

Lim YN, Dwyer P, Murray C, Karmakar D, Rosamilia A, Thomas E. Long-term outcomes of intravesical dimethyl sulfoxide/heparin/hydrocortisone therapy for interstitial cystitis/bladder pain syndrome. *Int Urogynecol J.* 2017 Jul;28(7):1085–89

Karmakar D, Mostafa A, Abdel-Fattah M. Long-term outcomes of transobturator tapes in women with stress urinary incontinence: E-TOT randomised controlled trial. *BJOG.* 2017 May;124(6):973–81

Karmakar D. Urogynaecology digest. *Int Urogynecol J.* 2017;(28):1757. DOI: 10.1007/s00192-017-3397-1

Karmakar D, Mostafa A, Abdel-Fattah M. A new validated score for detecting patient-reported success on postoperative ICIQ-SF: a novel two-stage analysis from two large RCT cohorts. *Int Urogynecol J.* 2017 Jan;28(1):95–100. DOI: 10.1007/s00192-016-3070-0

Walsh CE, Ow LL, Rajamaheswari N, Dwyer PL. The Manchester repair: an instructional video. *Int Urogynecol J.* 2017 Sep;28(9):1425–27.



*Mercy Hospital for Women gynaecologist
Dr Kate Tyson with a patient*

BUILDING EVIDENCE FOR BETTER DECISIONS

Dr Lin Li Ow, Department of Urogynaecology,
Mercy Hospital for Women

Intrinsic Sphincter Disorder (ISD) is a severe form of urinary incontinence which affects 20 per cent of all women with urinary stress incontinence. Currently, surgical treatment for ISD involves placing a mid-urethral sling which restores continence by supporting the middle urethra and prevents involuntary urethral opening during coughing and exertion. Mercy Hospital for Women Researcher and Urogynaecology Consultant Dr Lin Li Ow has been investigating the effectiveness of two of the three types of slings: the retropubic sling versus the mini-sling.

“The retropubic sling has been around since 1996 and has an 80-90 per cent success rate in the long term. However, it does carry a risk of injury to the bladder or bowel and developing pelvic haematoma or de novo urgency [a new type of incontinence]. There is also a possibility that it can cause voiding dysfunction,” Dr Ow explains.

Studies show that mini-slings are as effective as the transobturator sling. Mini-slings are shorter slings with a safer mechanism of installation compared to the longer slings, which traverse the whole length of the pubic bone. The mini-slings involve a shorter operative time and hospital stay, are associated with fewer complications, carry less risk of injury to the bladder and less postoperative pain. The focus of Dr Ow’s research is to determine whether the mini-sling is as effective as the retropubic sling in treating stress incontinence and ISD.

The retropubic versus mini-sling trial is an ongoing, multi-site study involving the Mercy Health Urogynaecology Unit and Monash University. Dr Ow’s aim is to recruit 152 subjects, of which 58 have already signed up.

Despite the recent negative press coverage about the adverse effects of vaginal mesh in some patients, Dr Ow believes that this trial is important as it will help to provide evidence-based decisions for the treatment of stress urinary incontinence associated with ISD. Currently, there is very little data comparing the mini-slings with the retropubic sling.

The use of vaginal mesh has come under scrutiny in recent times. “Everyone is very cautious about vaginal mesh which can be used to treat patients with pelvic organ prolapse and it can also be used as a sling to treat urinary incontinence,” Dr Ow says. “However, they are separate treatments for two different conditions. We are seeing good long-term results with the retropubic sling and all of the sling operations are minimally invasive to the patient.”

Dr Ow’s work builds on an existing body of research produced by the Mercy Hospital for Women Department of Urogynaecology, headed by Professor Peter Dwyer. Peter’s department is involved in many research trials which have led the way in treating stress urinary incontinence and regularly publishes its findings in prestigious journals.



We are seeing good long-term results with the retropubic sling and all of the sling operations are minimally invasive to the patient.

Dr Lin Li Ow

Dr Lin Li Ow



DEPARTMENT OF GYNAECOLOGY, MERCY HOSPITAL FOR WOMEN

Within the Department of Gynaecology,
the Plenty gynaecology team led by Professor Sonia Grover
has continued to achieve an excellent research output.

Plenty gynaecology team:

Professor Sonia Grover
Dr Claire Peterson
Dr Charlotte Elder
Dr Kent Kuswanto
Dr Deepti Rampal
Ms Alex McCutchan
Ms Nimita Origanti.

Pelvic pain and adolescent gynaecology research teams:

Professor Sonia Grover
Dr Samantha Mooney
Professor Peter Maher (Endosurgery A unit)
Dr Amy Fitzgerald
Dr Siana Madden
Dr Kelly Mirowska-Allen
Dr Megan Sewell
Ms Sarah Maxwell.

Projects

*Resources needs of young people with disorders
of sex development*

R Mortimer, S Grover, et al

*Resource needs and utilisation of parents of children
with disorders of sex development*

G Tonkin-Hill, S Grover, et al

Long-term follow-up of girls who have labial adhesions

J Norris, C Elder, D Rampal, S Grover.

Publication

Cornelisse VJ, Jones RA, Fairley CK, Grover SR.
The medical care of the neovagina of transgender
women: a review. Sex Health. 2017;14:442–50.

Presentations

Grover SR. Premature ovarian insufficiency: new
genetic perspectives. ALOGIA (Latin American Society
Paediatric and Adolescent Gynaecology), Montevideo,
Uruguay, May 2017

Grover SR. Cyclic non-gynaecological symptoms.
ALOGIA (Latin American Society Paediatric and
Adolescent Gynaecology), Montevideo, Uruguay,
May 2017

Rampal D, Dunford A, Elder C, Grover SR. Cyclical
non-gynaecological symptoms — do they help us to
better understand dysmenorrhea and endometriosis-
associated pain? World Endometriosis Congress,
Vancouver, Canada, May 2017

Abu Bakar M, Ong YC, Grover SR. Successful medical
management of significant adolescent dysmenorrhoea
appears to make severe endometriosis a preventable
disease. World Endometriosis Congress, Vancouver,
Canada, May 2017

*Ms Alex McCutchan, Dr Samantha Mooney,
Professor Peter Maher, Ms Nimita Origanti,
Professor Sonia Grover*

You should remember that
not to advance is to go back.

The Venerable Catherine McAuley

Hutchinson B, Yoo MJ, Grover SR. Does altered uterine pressure play a part in the development of adenomyosis? A cohort study suggesting it may. World Endometriosis Congress, Vancouver, Canada, May 2017

Heynemann S, Dauer R, Barnes C, Grover SR. The prevalence of bleeding disorders in women with proven endometriosis. World Endometriosis Congress, Vancouver, Canada, May 2017

SR Grover. Non contraceptive uses of the ocp, complex patients and parental attitudes. European Association of Paediatric and Adolescent Gynaecology, Vilnius, Lithuania, June 2017

SR Grover. Long-term outcomes in disorders of sex development. European Association of Paediatric and Adolescent Gynaecology, Vilnius, Lithuania, June 2017

Rampal D, Dunford A, Elder C, Grover SR. Menstrual events requiring intensive care admission. European Association of Paediatric and Adolescent Gynaecology, Vilnius, Lithuania, June 2017

Dunford S, Rampal D, Keilly M, Grover SR. Vulvodynia in a paediatric and adolescent population: a case series. European Association of Paediatric and Adolescent Gynaecology, Vilnius, Lithuania, June 2017

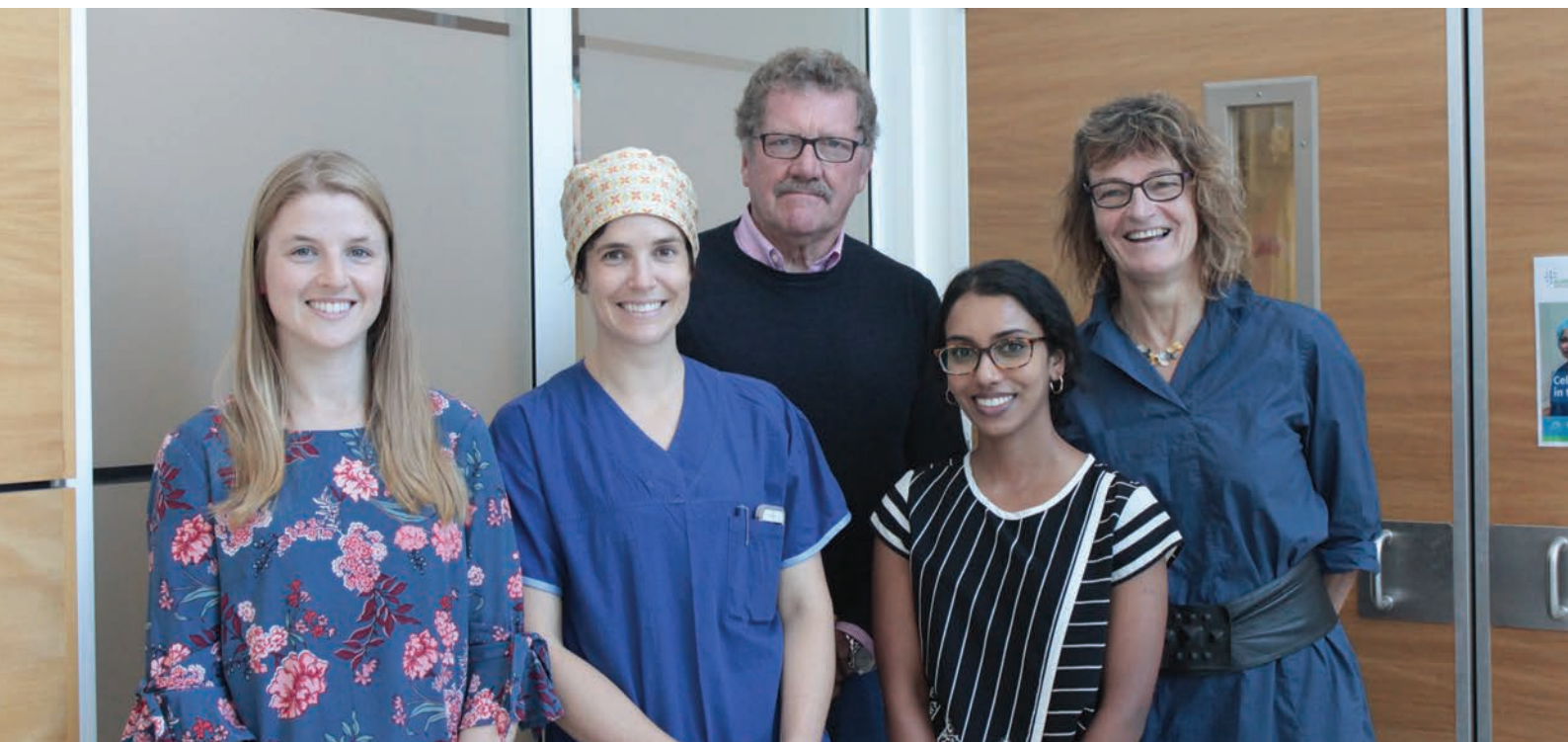
Tonkin-Hill G, O'Connell MA, Bonelli R, Hanna C, Mortimer R, Grover SR. What are the resource needs of adolescents with DSD? International Symposium on Disorders of Sex Development, Copenhagen, Denmark, June 2017

Mortimer R, Tonkin-Hill G, Hanna C, O'Connell MA, Grover SR. Supporting parents of children with a difference in sex development. International Symposium on Disorders of Sex Development, Copenhagen, Denmark, June 2017

Hanna C, O'Connell MA, Grover SR. The clinical coordinator of services for patients with differences of sex development, an Australian first. International Symposium on Disorders of Sex Development, Copenhagen, Denmark, June 2017

Heynemann S, Dauer R, Barnes C, Grover SR. The prevalence of bleeding disorders in women with histologically proven endometriosis. Congress of the International Society of Thrombosis and Haemostasis, Berlin, Germany, July 2017

Grover SR. Congenital adrenal hyperplasia — long-term outcomes from the other side of the world — Australia and Malaysia. Swedish Society of Obstetrics and Gynaecology, Stockholm, Sweden, August 2017.



DEPARTMENT OF ENDOSURGERY, MERCY HOSPITAL FOR WOMEN

The Department maintains a special interest in the management of cases of severe pelvic endometriosis and works closely with the Austin Health colorectal team. The team also maintains an active research interest, nationally and internationally.

Research team

Professor Peter Maher
Dr Emma Readman
Dr Prathima Chowdary
Dr Lenore Ellet
Dr Janine Mainwaring
Dr Kate McIlwaine
Dr Melissa Druitt
Dr Tony Ma
Dr Melissa Cameron
Dr Marsali Newman.

Projects

Whole genome sequencing for the diagnosis of leiomyosarcoma

Chowdary P, Ellet L, Maher P

Treatment of endometrial polyps with levonorgestrel intrauterine device

Readman E, Chowdary P, Ellet L, Mainwaring J, McIlwaine K, Newman M, Maher P

The use of a multimedia module to aid the informed consent process in junior doctors consenting patients for laparoscopic surgery — a pilot study

Chowdary P, Ellet L, Maher P

Retrospective imaging review of patients with severe endometriosis and suspected bowel involvement and the development of a e-scoring system to predict those requiring bowel resection

Brusic A, Esler S, Chowdary P, Sleeman M, Readman E, Ellett L, Maher P, Yang N.

Publications

Chowdary C, Morrisson S, Readman E. Pelvic floor muscle dysfunction in chronic pelvic pain and sexual pain. AGES eSCOPE, 2017;63:17–21.

Presentations

Readman E. Do we really need to learn that much surgery. AGES Annual Scientific Meeting, Sydney, Australia, March 2017

Readman E. Hysteroscopic workshop. Mongolia, June 2017

Stone K, Chowdary C, Readman E, Druitt M, Ma T, McIlwaine K, Ellett L, Cameron M, Maher P. Multicentre retrospective study to assess diagnostic accuracy of ultrasound for superficial endometriosis — are we any closer? 13th World Congress on Endometriosis, Vancouver, Canada, May 2017

*Mercy Hospital for Women
gynaecologist Dr Kate Tyson*

The Department of Endosurgery specialises in the management of women's health using keyhole surgery.

Chowdary C, M Newman, Ma T, Ellett L, Cameron M, Maher P, Readman E. Pilot study to assess the possible role of the Mirena Intrauterine Device (IUD) in the management of endometrial polyps. AGES Annual Scientific Meeting, Sydney, Australia, March 2017

Chowdary C, Stone K, Readman E, Druitt M, Ma T, McIlwaine K, Ellett L, Cameron M, Maher P. Multicentre retrospective study to assess diagnostic accuracy of ultrasound for superficial endometriosis. AGES Annual Scientific Meeting, Sydney, Australia, March 2017

Poon C, Chowdary P, Manwaring J, Maher P. Laparoscopic management of a left interstitial ectopic pregnancy. AGES Annual Scientific Meeting, Sydney, Australia, March 2017

Chowdary C, Newman M, Ma T, Ellett L, Cameron M, Maher P, Readman E. Pilot study to assess the possible role of the Mirena Intrauterine Device (IUD) in the management of endometrial polyps. 13th World Congress on Endometriosis, Vancouver, Canada, May 2017

Utama D, Chowdary P, Readman E. The travelling Mirena: a case review. AGES Annual Scientific Meeting, Sydney, Australia, March 2017

McGauran M, Chowdary P, Morison S, Readman E. Gynaecologist's guide to examination for chronic pelvic and sexual pain. RANZCOG Provincial Fellows Annual Scientific Meeting 2017

DeBortoli J, Chowdary P, Readman E. Perineal cysts and abscesses: a review of classification systems and management options. RANZCOG Annual Scientific Meeting, Auckland, New Zealand, 2017

Chowdary P, Burling M, Maher P, Readman E, Van De Weijer P, Tan A. Effect of warm humidified carbon dioxide on oxygenation levels on open abdominal surgery — a pilot investigation. Won early career research award. RANZCOG Annual Scientific Meeting, Auckland, New Zealand, 2017.



MIDWIFERY PROFESSORIAL UNIT, MERCY HOSPITAL FOR WOMEN AND LA TROBE UNIVERSITY

A successful partnership between these two units means staff are supported to be leaders in innovation, education, clinical care and research.

The team encourages and mentors research initiated by midwives and nurses. Midwives and nurses also have access to higher learning in their areas of expertise and clinical interest, which in turn results in publications and presentations at health forums and conferences.

Research team

Professor Sue McDonald

Ms Mary McCarthy

Ms Gillian Evans

Associate Prof Scott Simmons

Ms Sharon Olivier

Ms Maggie Pliszka

Ms Caroline Carr

Ms Andrea Vassallo

Ms Helen Patterson

Ms Julie Kane.

Projects

Development and implementation of an obstetric triage decision aid (OTDA) to provide structured and standardised triage of pregnant and postpartum women who present unscheduled to hospital with obstetric and non-obstetric conditions

M McCarthy, S Simmons, S McDonald, S Olivier, W Pollock

Funded by Better Care Victoria

Innovative team approach to the reduction (prevention) of first caesarean section (InTACT)

S McDonald, M Pliszka, C Carr, A Vassallo, J Kane

Funded by Mercy Health Foundation and Mercy Health

Quality of information and psychological support for women who present to Werribee Mercy Hospital and Mercy Hospital for Women emergency departments following early pregnancy loss

M McCarthy, S McDonald, W Pollock, L O'Neill

Funded by Mercy Health Academic Research and Development Committee

The 'Connect' (comparison of nasal continuous positive airway pressure — nCPAP — in tertiary and non-tertiary centres) project: a multi-centre retrospective review of the management of nCPAP in neonates >32 weeks gestation presenting with respiratory distress in the first 24 hours of age

H Patterson, W Pollock

Funded by the Ella Lowe Research Grant from the Nurses Board Victoria Legacy Limited.

*L-R Ms Andrea Vassallo,
Ms Caroline Carr, Ms Deb Pidd,
Prof Sue McDonald, Ms Mary
McCarthy, Ms Tegan Bassett,
Dr Wendy Pollock and Ms Christine
Murray. Absent: Ms Helen Patterson*

We support staff to be
leaders in innovation, education,
clinical care and research.

Publications

Flood M, Pollock W, McDonald SJ, Davey M-A. Accuracy of postpartum haemorrhage data in the 2011 Victorian Perinatal Data Collection: results of a validation study. *Aust N Z J Obstet Gynaecol.* 2017 Apr;58(2):210–216. DOI: 10.1111/ajo.12692

Flood MM, McDonald SJ, Pollock WE, Davey M-A. Data accuracy in the Victorian Perinatal Data Collection: Results of a validation study of 2011 data. *Health Inf Manag.* 2017 Sep;46(3):113–126. DOI: 10.1177/1833358316689688

Flood M, McDonald SJ, Davey M-A, Pollock W. Monitoring postpartum haemorrhage in Australia: opportunities to improve reporting. *Women Birth.* 2017 Apr;31(2):89–95. DOI: 10.1016/j.wombi.2017.07.012

Taylor JA, McDonald SJ, Earnest A, Buttery J, Fusinato B, Hovenden S. Quality improvement initiative to reduce central line infection in neonates using checklists. *Eur J Pediatr.* 2017 May;176(5):639–46. DOI: 10.1007/s00431-017-2888-x

Middlemiss W, Stevens H, Ridgway L, McDonald S, Koussa M. Response-based sleep intervention: helping infants sleep without making them cry. *Early Hum Dev.* 2017;108:49–57.

Abstracts and presentations

Bassett T, McDonald SJ, Dodd A, Harrison K, Johnstone M. Documentation including a Track and Trigger indicator on Partogram; Improving intrapartum outcomes. Proceedings from the 31st International Confederation of Midwives (ICM) Triennial Congress, Toronto, Canada, June 2017

Hungerford-Morgan T, Carr C, McDonald SJ, Harrison K, Bassett T, Johnstone M, Chuang S. Midwives performing perineal repair: creating a new normal. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017

McDonald SJ, Harrison K, Kumar A, Pollock W, Davey M-A. Improving the accuracy of estimated blood loss in water. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017

Pidd D, McDonald SJ. Bumps, Birth and Beyond: A waiting room video series enhancing person centred care. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017

Pidd D, McDonald SJ. Comprehensive initial antenatal assessment and physical examination: An advanced education program enhancing midwives autonomy. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017



McCarthy M, McDonald SJ. Improving recognition and management of perinatal sepsis. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017

McCarthy M, McDonald SJ. Supporting women who have experienced early pregnancy loss. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017

Harrison K, McDonald SJ. Transition to a caseload model of care: a two-year evaluation of outcomes, collaboration and satisfaction. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017

Middlemiss W, Stevens H, Ridgway L, Koussa M, McDonald SJ. No Need to Make Babies Cry: Responding to infant sleep cues increases infants' total sleep time. Society for Research in Child Development Biennial Meeting, Austin, USA, April 2017

Wallace H, Taft A, McDonald SJ, Belton S, Soares A, da Concencao Matos L, Agueda Isolina M, da Costa E, Henderson, H. Body mapping for insights into reproductive ethnoanatomy and ethnophysiology in Timor-Leste: crossing cultures, boundaries and languages through drawing. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017

Wallace H, Taft A, McDonald SJ, Belton S, da Concencao Matos L, Agueda Isolina M, da Costa E, Henderson, H. Reproductive health decision-making in Timor-Leste and perceived impact on maternal health. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017

Flood M, McDonald SJ, Pollock W, Davey M-A. Midwives are key to high quality perinatal data. Proceedings from the 31st ICM Triennial Congress, Toronto, Canada, June 2017.



Patient at Mercy Hospital for Women



*Mercy Hospital for Women midwife
Tegan Bassett speaking to Abbey*



*Mercy Hospital for Women
physiotherapists Alice Prescott
and Emma Herron*

AMBULATORY, COMMUNITY AND ALLIED HEALTH SERVICES

Allied Health includes dietetics, occupational therapy, pastoral care, pharmacy, physiotherapy, radiography, social work, sonography and speech pathology.

ALLIED HEALTH

The Department of Allied Health provides specialist clinical services to support patient care and optimise patient health outcomes.

Allied Health staff work within multidisciplinary teams and departments across a range of clinical specialty areas, with inpatients and outpatients. Allied Health is committed to improving patient care through research and projects focussed on evaluating current practice and implementing new service initiatives. This work is achieved through collaboration with our internal partners and also with external organisations such as universities.

Research team

Ms Jane Middleton
Ms Anne Harrison
Mr Umesh Baskaran
Ms Mary Klasen
Sr Trudy Keur
Ms Amy Steventon
Ms Elise Fraser
Ms Rebecca Maguire
Ms Skye Spencer
Mr Praveen Mulinti
Mr Andrew Beveridge
Ms Rebecca Hardman
Ms Susan Grabsch
Ms Bridget Moore
Ms Erica Clifford
Mrs Kim Tardio
Ms Suzanne Chia
Ms Cindy Chan
Ms Leah Dowling
Ms Tara Southgate
Ms Natalija Nesvadba.



Mercy Health Allied Health team

Projects and grants

Move baby move: A qualitative exploratory study of attitudes barriers and enablers to physical activity in women with gestational diabetes mellitus

A Harrison

Funded by Mercy Health

Sensory dysfunction in carpal tunnel syndrome: relationship between static touch/pressure threshold, texture discrimination and hand dexterity in carpal tunnel syndrome

U Baskaran, L Carey

Funded by Mercy Health

What are the benefits of pastoral care to hospital patients and aged care residents?

M Klasen, T Keur, in collaboration with Australian Catholic University

Transcutaneous tibial nerve stimulation for overactive bladder

A Steventon, E Fraser, R Maguire

Pregnant, parenting and a long way from home: International students in Victoria accessing maternity, paediatric and early parenting care

J Middleton

Funded by Mercy Health

Meet me in nursery

S Spencer

Modified safe recovery program: a falls prevention education program

P Mulinti, A Beveridge

Improving access to outpatient physiotherapy at Mercy Hospital for Women

R Maguire

TeleHealth: streamline ongoing care for lymphoedema patients

R Hardman, S Grabsch

Healthy choices: implementing healthy food and drink vending machines at Werribee Mercy Hospital

B Moore, E Clifford

Improving falls risk screening in Werribee Mercy Hospital physiotherapy outpatients

K Tardio, S Chia, C Chan

Cultural foods for GDM: developing educational tools for culturally diverse women with gestational diabetes mellitus

L Dowling, T Southgate, N Nesvadba

Caring for bereaved families: a review of clinical processes in caring for families bereaved due to perinatal loss

M Klasen, A Olsson

Changing clinical demographics: Mercy Lymphoedema Clinic — the past 10 years

R Hardman, S Grabsch.

Publications

Barradell S, Blackstock FC, Tang CY, Leo J. “Being absorbed in that environment: it’s just so beneficial” — the experience of physiotherapy students in a situated learning pilot study. *Int J Practice-based Learning Health Soc Care*. 2017;5(1):12–23

Klasen M, Bhar S, Ugalde A, Hall C. Clients’ perspectives on outcomes and mechanisms of bereavement counselling: a qualitative study. *Aust Psychol*. 2017;52:363–71.

Presentations

Harrison A. Exercise improves glycaemic control in women with gestational diabetes mellitus. Victorian Allied Health Research Conference, Melbourne, Australia, March 2017

Mulinti P. Safe recovery falls prevention. Victorian Allied Health Research Conference, Melbourne, Australia, March 2017

Harrison A. Move baby move. Exercise improves glycaemic control in women with gestational diabetes mellitus: a systematic review. Australian Physiotherapy Association Conference, Sydney, Australia, October 2017

*Werribee Mercy Hospital patient
Bernie with volunteer Suraja*

Harrison A. Attitudes, barriers and enablers to physical activity in pregnant women: a systematic review. Australian Physiotherapy Association Conference, Sydney, Australia, October 2017

Leo J. A learner centred mindset: Development of a professional education strategy. National Allied Health Conference, Sydney, Australia, August 2017

Swaby M. Adaptive allied health leadership: Cultivating resilience to thrive and survive. National Allied Health Conference, Sydney, Australia, August 2017

Klasen M, Olsson A. When the mosaic shatters: Pastoral care with families experiencing the death of a baby. Spiritual Care Australia Conference, Newcastle, Australia, May 2017

Musarra L. Establishing Allied Health within community palliative care.

Occupational Therapy Australia National Conference, Perth, Australia, July 2017

Middleton J. Pregnant, parenting and a long way from home: International students in Victoria accessing maternity, paediatric and early parenting care. Evidence for Equity: Multicultural Women's Reproductive and Sexual Health Conference, Brisbane, Australia, July 2017

Middleton J. Pregnant, parenting and a long way from home: International students in Victoria accessing maternity, paediatric and early parenting care. ISANA International Education Association Conference, Gold Coast, Australia, December 2017.

PHARMACY

Research team

Mr James Dwyer

Ms Misha Lodin.

Publication

Lodin M, Dwyer J. The role of amiloride in managing patients with lithium-induced nephrogenic diabetes insipidus. J Pharm Pract Res. 2017;47:389–92. DOI:10.1002/jppr.1251.





Operating staff going into theatre at Werribee Mercy Hospital

SURGICAL AND SPECIALIST SERVICES

The program involves general surgical and surgical sub-specialist services, including the anaesthetic service at Mercy Hospital for Women and Werribee Mercy Hospital.

DEPARTMENT OF ANAESTHESIA, PERIOPERATIVE AND PAIN MEDICINE, MERCY HOSPITAL FOR WOMEN

The Department of Anaesthesia, Perioperative and Pain Medicine's major research theme involves the use of transthoracic echocardiographic (TTE) assessment of cardiac output in pregnancy.

In 2017, the department added to this theme with a newly approved study evaluating cardiovascular changes at different gestations in pregnant women. This work will continue in 2018. The department also developed and initiated a number of audits of its clinical practice, leveraging its access to a large number of patients within the maternity service.

A new Research Administrative Assistant position has proven to be highly successful. The role assists with report writing, facilitation of ethics submissions and various aspects of research project development and implementation.

Research team

Clinical Associate Professor Scott Simmons

Dr Richard Hiscock

Dr Patricia Newell

Dr Paul McMackin

Dr Ian Letson

Dr Lucinda Verco

Ms Rachel Murdoch

Dr Nick Jegathesan

Dr Catherine Pease

Dr Frank Parker

Dr Heather Loane,

Dr Michelle Nguyen

Dr Heidi Liesegang

Dr Jennifer Fu.

Projects

Comparative incidence of epidural blood patch between spinal and epidural neuraxial technology in an obstetric population — a retrospective study
S Simmons, R Hiscock, P Newell, P McMackin

A prospective observational study of maternal supine hypotension by serial transthoracic echocardiography studies over the course of pregnancy in healthy women
S Simmons, I Letson, R Hiscock, L Verco, R Murdoch

Code white at Mercy Hospital for Women — a four-year audit (2013–2017)
N Jegathesan, S Simmons, C Pease, F Parker

EpiCCS — Australasia: Epidemiology of critical care provision after surgery
S Simmons, R Hiscock, H Loane, I Letson, M Nguyen

Anaesthetic management and role of Sugammadex in a patient with Churg-Strauss Syndrome — Case study
S Simmons, H Liesegang, J Fu

Transthoracic echocardiographic assessment of cardiac output in healthy women at elective caesarean section under spinal anaesthesia with Ephedrine and Metaraminol hypotension prophylaxis: An observational cohort study
S Simmons, R Hiscock, S Ilyas, E Casey, S MacColgain, L Cardoso

Clinical audit of epidural labour analgesia — 10 years' experience from 2006 to 2015
S Simmons, R Hiscock

Clinical audit of category 1 including Code Green caesarean sections at Mercy Hospital for Women from 2011 to 2015
S Simmons, R Hiscock, G Paulsen, S MacColgain



General Anaesthesia for caesarean section at Mercy Hospital for Women (2011–2015)

I Letson, S Simmons, J McGuire

ROTEM

S Simmons, R Hiscock, A Iliov

Management of ectopic pregnancies requiring surgical care — a 3 year audit

S Simmons, H Loane

Pregabalin for the management of post-dural puncture headache after unintentional dural puncture in obstetrics patients: A randomised, double-blind, placebo-controlled trial

S Simmons, P Newell.

Publications

Cyna AM, Simmons SW. Enhancing communication in obstetric anaesthesia — listen, listen, listen... *Int J Obstet Anesth*. 2017 Nov;32:87–88. DOI: <https://doi.org/10.1016/j.ijoa.2017.06.006>

Simmons S, Cyna AM. ‘Medicolegal’ or ‘patient-centred’ consent? *Anaesthesia*. 2017;72:917–18. DOI:10.1111/anae.13927

Cyna AM, Simmons SW. Guidelines on informed consent in anaesthesia: unrealistic, unethical, untenable. *Br J Anaesth*. 2017 Dec 1;119(6):1086–89. DOI:10.1093/bja/aex347

Simmons S, Cyna A. Informed consent in the age of peri-operative medicine: is it possible? *Australas Anaesth* 2017. 2017;335–43

Prichard N, Lindquist A, Hiscock R, Ruff S, Tong S, Brownfoot F. High-dose compared with low-dose oxytocin for induction of labour of nulliparous women at term. *J Matern Fetal Neonatal Med*. 2017 Sep;26:1–7.

Presentations

Simmons, S. (Invited speaker) Communication in anaesthesia plenary. Combined Communication, Education, Welfare, Leadership and Management SIG Meeting, Sunshine Coast, Australia, October 2017

Simmons, S. (Chair) Communication in anaesthesia SIG: Thinking big — when less is more. ANZCA Annual Scientific Meeting, Brisbane, Australia, May 2017.



*Werribee Mercy Hospital
staff member Ayesha D'Souza*



MERCY MENTAL HEALTH

Mercy Mental Health serves a diverse population in Victoria's rapidly expanding western suburbs.

DEPARTMENT OF PERINATAL MENTAL HEALTH

The Department of Perinatal Mental Health at Mercy Hospital for Women provides clinical care for women who may be suffering from symptoms of mental illness during and after pregnancy.

Growing awareness of the perinatal period as a time of increased maternal vulnerability to mental illness, as well as a critical period of human development, drives the ongoing research and education activities of this department.

Specialty services are provided to vulnerable populations, including women with major mental illnesses such as Bipolar Affective Disorder and Schizophrenia, women with substance abuse issues, younger mothers, and those identifying as Aboriginal and/or Torres Strait Islander.

The department maintains active involvement in teaching at all levels. Dr Gaynor Blankley delivers lectures within the Master of Psychiatry course for psychiatry trainees by the University of Melbourne. Medical students also attend during their psychiatry rotation. This year also marked the inaugural Perinatal Mental Health Symposium held in conjunction with Mercy Perinatal. The symposium was a great success, with 300 delegates from a range of disciplines attending a day of presentations on the theme of perinatal mental health.

Projects

Mercy Pregnancy and Emotional Wellbeing Study (MPEWS)

Professor Megan Galbally, now based in Perth where she is Foundation Chair of Perinatal Psychiatry at Murdoch University, continues to oversee this longitudinal study of the effect of perinatal depression and its treatment on women and their children. The original Mercy Health-based cohort of 282 women is currently undertaking wave six assessment at four years postpartum and a further 200 women have been recruited.

MPEWS is a national and international interdisciplinary collaboration with data collected from early pregnancy onwards. The scope of the project encompasses biological, social and psychological measures to comprehensively assess the complex ramifications of perinatal depression.

The Melbourne-based cohort assessments are coordinated by Tina Vaiano. Dr Gaynor Blankley continues as an investigator on the project and Dr Josephine Power is undertaking a PhD examining child outcomes in the original cohort.

Grant

Dr Josephine Power was awarded the Pat & Toni Kinsman Research Scholarship by the Royal Australian and New Zealand College of Psychiatrists. The grant will be used to examine the relationship between maternal oxytocin levels during pregnancy and the subsequent attachment between mother and infant.

Publication

Commentary on RANZCP clinical practice guidelines for the management of schizophrenia and related disorders. Aust N Z J Psychiatry. 2017 Mar;51(3):289-290. Galbally M, Nguyen TN, Snellen M.



Presentations

Snellen M. Informed consent, pharmacology and pregnancy. Lecture, Northern Hospital, March 2017

Snellen M, Thompson G, Murdoch N. Legal Identity and the Process of Obtaining Informed Consent for Medical Treatment. International Academic Forum (IAFOR) ACP Conference, Kobe, Japan, March 2017

Snellen M. Informed consent, pharmacology and pregnancy. Lecture, Monash University Kuala Lumpur Campus, Malaysia, May 2017

Snellen M. What is postnatal depression and what to do about it. Lecture, Monash University Johur Bahru Campus, Malaysia, May 2017

Snellen M. Management of major mental illness in pregnancy. RANZCOG Revision Series, June 2017

Snellen M. How to ensure informed consent when prescribing for pregnant and breastfeeding women. Perinatal Mental Health Symposium, August 2017.

Snellen M. Challenging patients: bipolar disorder in the perinatal period. Perinatal Mental Health Symposium, August 2017

Snellen M. The process of obtaining informed consent when prescribing psychotropics in pregnancy. Lecture, Department of Psychiatry, National Taiwan University Hospital, December 2017

Snellen M, Thompson G, Murdoch N. A psychiatrist's role in times of doubt. ANCIPS, Raipur, India, January 2017

Blankley G, Snellen M, Power J. Mercy Perinatal Mental Health Symposium, Melbourne, August 2017.



A RICH FIELD FOR FUTURE RESEARCH

Werribee Mercy Hospital received more than \$34 million in capital funding in 2014 that has enabled the expansion of our adult mental health program.

As we strive to meet demand, our mental health teams are also seeing the impact of a changing cultural landscape in Melbourne's west.

"The area has seen wave after wave of different migrating and refugee communities contributing to a more diverse community," says Mercy Mental Health outgoing Program Director Mario Blandin de Chalain. "Different cultural groups may have other ways of thinking about mental health. They may not be the traditional western ways, such as medication or going to health professionals. Some groups may seek support from religious leaders, for example."

Some communities may be more prone to mental illness because of relocation or past trauma, and access is an issue across the board due to language barriers. In response, Mercy Mental Health has sought to increase the number of bicultural workers whose clinical role extends to engaging with communities to improve awareness and access to our services.

While our primary goal is to manage clinical demand, Mercy Mental Health Clinical Services Director Dean Stevenson sees the possibility of more focus on quality improvement and evaluation going forward. One area for evaluation might be the introduction of a dialectical behaviour therapy (DBT) program in early 2018, for people with borderline personality disorders.

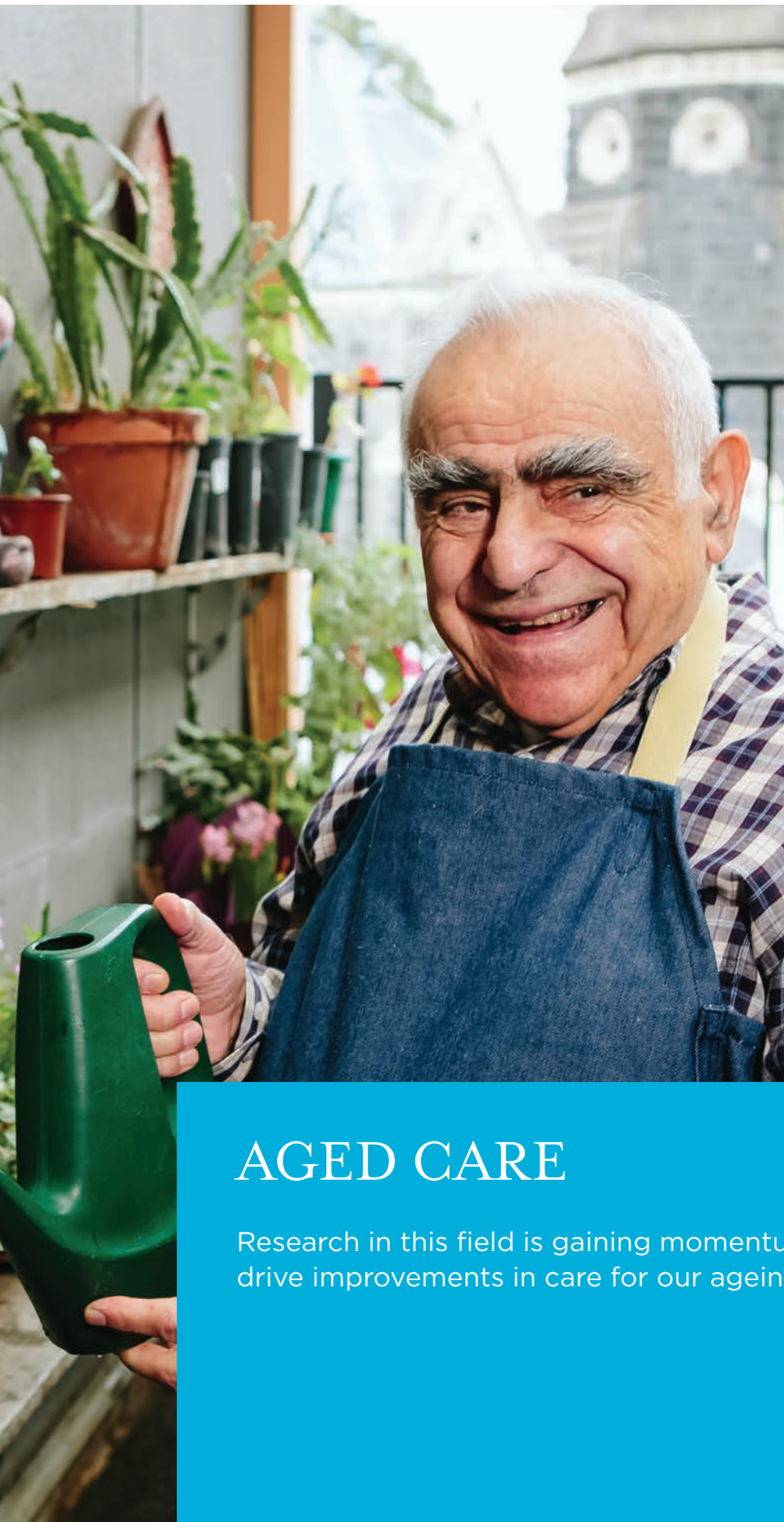
Another could involve evaluation of treatment pathways, helping establish a typical journey through our services. "This gives you a standard against which you can measure treatment and gives patients and families a clearer idea of what to expect at the start of their journey," Associate Professor Stevenson says.

Another area that may lend itself to research is the evolution of peer support workers across Victoria, including at Mercy Mental Health. These are workers who have experience of mental illness themselves or as a family member or carer. Anecdotally, families have reported feeling more supported and clients have reported feeling more understood because they are speaking to a person who has 'been there before'. However, the many unknowns of the program include how a peer support worker might feel going back to a setting in which they may have been an involuntary patient. "It could either be very stressful for the worker or very helpful for the patient — an example of someone who has come through the other end, an example of hope," Mr Blandin de Chalain says. "We could be asking: what are the benefits, how can we replicate it and is there some way to quantify it. It is a potentially very rich field of research."

"We have incredibly passionate people within the program who, given the opportunity, will come up with brilliant ideas for research," Mr Blandin de Chalain says. The challenge for the Mercy Mental Health team is to carve a space for research projects and to blossom and secure the required philanthropic support while managing the service demands of a booming population.

"It is a potentially very rich field of research."

*Outgoing Mercy
Mental Health Program Director
Mario Blandin de Chalain*



Mercy Place Abbotsford resident Bobby

AGED CARE

Research in this field is gaining momentum and will help drive improvements in care for our ageing population.

PROGRESSING OUR RESEARCH

Research in aged care is less advanced than health services within Mercy Health and Australia more broadly. Over the past decade, Mercy Health has been attempting to build our research capacity in this critical area with the generous support of donors.

Affiliations with a number of universities — specifically Australian Catholic University and more recently the University of Notre Dame — have been pivotal in helping us work towards this goal. While still in its infancy, our body of research in aged care is gaining momentum and results are starting to impact both care and education.

Consumer Directed Care in Residential Aged Care

Collaboration with Australian Catholic University

**Funded by Mercy Health Foundation,
Dementia Collaborative Research Centres
and Illawarra Retirement Trust**

Publication

Older and wiser: Putting the consumer's voice at the centre of residential aged care. Australian Catholic University, Institute for Health and Ageing

Consumer directed care (CDC) empowers aged care residents with dementia to choose how their care is delivered, so they can enjoy the best possible quality of life. In residential aged care homes, CDC depends on an effective partnership between residents, staff

and families. Australia currently has no evidence-based training platform to develop or sustain these partnerships.

The Older and Wiser project trialled a new approach to training. It measured the direct impact of the training on quality of life and satisfaction with care for residents with dementia. It also evaluated job satisfaction, relationships with residents and the cost-effectiveness of CDC in aged care homes. The evaluation showed that training staff in CDC has a positive impact on resident wellbeing.

Talk2me Technology

Collaboration with National Ageing Research Institute

**Funded by the Australian Government
Department of Health**

The Talk2me project involves development of a tablet-based app that will allow people with dementia from culturally and linguistically diverse (CALD) backgrounds to easily communicate with carers who do not speak the same language. People from CALD backgrounds who have dementia and live at home do not always receive care from ethno-specific organisations or from people who speak the same language. Yet effective communication relating to everyday issues is essential for older people — particularly those with dementia — to support orientation, safety and essential care needs. It also gives them the confidence they need to remain at home for as long as possible.

Process and outcome evaluation will be conducted at several stages throughout the project. This will inform the effectiveness of the design, the validity of the technology for translating everyday communication and the usefulness of the technology.



Mercy Place Montrose residents Tony and Beryl

Home & Community Care market research

Collaboration with Colmar Brunton

Funded by Mercy Health

In September 2016, Mercy Health Home & Community Care engaged external market research company Colmar Brunton to research clients' experiences of our services. Conducted three times a year, the market research tracks the impact of Mercy Health at key interactions. It helps Mercy Health understand which elements of the client and family member experience drive satisfaction and impact on loyalty.

Wave 1 took place in September/October 2016. Wave 2 took place in November/December 2017 and included Southern Cross Care (Vic), which had recently merged with Mercy Health. Wave 3 will take place in 2018. The specific research objectives include client engagement, client wellbeing, client and family decision-maker expectations; effort in engaging with Mercy Health; satisfaction; and advocacy. By looking at client satisfaction, needs met effort and brand advocacy, Colmar Brunton can provide insights into and recommendations regarding how to optimise Mercy Health's ongoing service delivery and performance.

Umps Health Project

Collaboration with Umps Health

Funded by Equity Trustees and supported by The Australian Centre for Social Innovation

Mercy Health Foundation and Mercy Aged and Community Care have partnered with technology start-up Umps Health to work towards a future in which technology supports older people with diverse care needs to age in their home, and improves the quality of formal and informal care.

The Umps Health project involves using non-invasive, passive sensors to detect how and when people interact with their everyday household appliances like their kettle, TV and microwave. Patterns of interactions with devices are mapped to each individual. Umps Health analyses these patterns of behaviour to detect subtle abnormalities in our clients' routines with the aim of predicting when an incident, like a fall, might occur. It also provides reassurance to family members that their loved one is maintaining their usual routine at home. This information is presented to family members in the form of a dashboard accessible by mobile, tablet and computer.

The program will evaluate whether remotely monitoring a person's wellbeing can help sustain the informal carer relationship and relieve stress and anxiety associated with being a carer. The pilot program will run from November 2017 to April 2018, and involve up to 20 households. The findings will be published.

*Mercy Place Warrnambool staff member
Marlon Sabay with resident gardener Sr Francis*

Affiliations with a number of universities have been pivotal in helping us work towards the goal of building our research capacity in aged care.

Program to Enhance Adjustment to Residential Care (PEARL)

Collaboration with Swinburne University (initial project with Australian Catholic University)

Funded by National Health and Medical Research Council

Residents who have just moved into aged care are at greater risk of experiencing depression. This research project seizes on that transition period as an opportunity for early intervention. The project is a cluster randomised controlled trial of a psychological intervention, made up of five individual sessions with residents. Staff are supported to tailor care to residents' needs, interests, aptitudes and backgrounds. The sessions aim to support residents' adjustment to permanent residential aged care, improving new residents' quality of life and reducing the severity and incidence of depression.

The project will evaluate the efficacy of the PEARL intervention in reducing symptoms of depression among newly admitted aged care residents. The study will determine whether PEARL plus usual care (intervention group) is superior to usual care alone (control group).

We will also evaluate whether exposure to indoor and outdoor greenery within the residential care environment is protective to mental health, quality of life and wellbeing of new residents.

Socio-Spatial Analysis of the Design and Lived Experiences of Residential Aged Care Models: A Qualitative Study of Traditional and Small Household Typologies

Collaboration with University of Notre Dame (WA)

Funded by Mercy Health Foundation, Mercy Health and the University of Notre Dame

The objective of this research project is to reveal the socio-spatial factors within case study buildings that may enhance or inhibit quality of care and contribute to residents' quality of life.

The project aims to:

- document, analyse and interpret the design, layout and lived experiences of Residential Aged Care design models against key social-spatial themes
- compare the architecture, layout and lived experiences of traditional and small household living approaches through a socio-spatial lens
- improve our understanding of the key attributes and backgrounds of our best aged care employees.

The project will use standard tools and practices that are in common usage within the architectural and qualitative research sector. The research will support Mercy Health to understand the different building types and how these impact on care. It will influence the briefing and design requirements of proposed capital building investment.





*Werribee Mercy Hospital Emergency
Department (ED) Registrar
Dr Simon Leckenby and
ED nurse Ms Tayla Fanning*

PROJECTS APPROVED BY MERCY HEALTH HUMAN RESEARCH ETHICS COMMITTEE 2017

Project title	Principal investigator(s)
Retrospective audit of spontaneous intrauterine pregnancy losses up to 29mm crown rump length	Dr Elizabeth McCarthy and Ms Megan Overdeest, University of Melbourne, Mercy Hospital for Women
Comparison of two standard-of-care surgical techniques for stress urinary incontinence	Dr Debjyoti Karmakar, Department of Urogynaecology, Mercy Hospital for Women
A prospective observational study of maternal supine hypotension by serial transthoracic echocardiography studies over the course of pregnancy in healthy women	Clinical Associate Professor Scott Simmons Department of Anaesthesia, Perioperative and Pain Medicine, Mercy Hospital for Women
Pilot project to develop a patient reported scale for emptying of bladder after pelvic floor surgery	Dr Debjyoti Karmakar, Department of Urogynaecology, Mercy Hospital for Women
Safety and pharmacokinetics of Sulfasalazine used for the treatment of preterm preeclampsia. An early phase clinical trial	Dr Fiona Brownfoot, University of Melbourne and Mercy Perinatal, Mercy Hospital for Women
Admissions and readmissions for diabetic ketoacidosis (DKA) in 15–25-year-olds at Western Health from 1 July 2011 to 30 June 2013	Associate Professor Christine Rodda and Dr Annie Hung, Western Health, and Associate Professor David O’Neal, Werribee Mercy Hospital
Correlation of MRI findings for suspected placental adhesion with surgical outcomes: A retrospective study	Dr Neil Israelsohn, Department of Obstetrics and Maternity Services, Mercy Hospital for Women
Will whole genome sequencing save the morcellator?	Dr Prathima Chowdary, Mercy Hospital for Women
Audit of investigations performed during pregnancy and the post-partum period for suspected pulmonary embolism at Mercy Hospital for Women	Dr Suet-Wan Choy, Department of Obstetrics, Mercy Hospital for Women
Is clinical suspicion as accurate as third trimester ultrasound at identifying the growth-restricted fetus at term?	Dr Fiona Brownfoot, University of Melbourne and Mercy Perinatal, Mercy Hospital for Women
Code white and post-partum haemorrhage (PPH) at Mercy Hospital for Women: A four-year audit (2013–2017)	Dr Nick Jegathesan, Department of Anaesthesia, Perioperative and Pain Medicine, Mercy Hospital for Women
A qualitative exploratory study of attitudes, barriers and enablers to physical activity in women with gestational diabetes mellitus (Werribee Mercy Hospital and Mercy Hospital for Women)	Ms Anne Harrison, Werribee Mercy Hospital
Glucose-lowering effect of walking breaks in pregnancy study (GLOW in pregnancy)	Dr Robyn Larsen, Baker Institute, and Associate Professor Martha Lappas, University of Melbourne, Mercy Hospital for Women
Is there a wealth to work absenteeism correlation? The influence of local and national economic prosperity on the incidence of sickness absence in the Wyndham locale	Professor Moyez Jiwa and Ms Christine Vescovi, University of Notre Dame, Werribee Mercy Hospital
The effects of sildenafil on the anti-angiogenic factors of preeclampsia	Dr Tu’uhevaha Kaitu’u-Lino, University of Melbourne, Mercy Hospital for Women

Project title	Principal investigator(s)
Is discordant growth in extremely low-birth weight twins a risk factor for adverse long-term neurodevelopmental outcome? Experience of a single tertiary care perinatal centre in metropolitan Melbourne	Dr Tejas Doctor, Department of Paediatrics, Mercy Hospital for Women
The use of multimedia module to aid the informed consent process in junior doctors consenting patients for laparoscopic surgery: A pilot study	Dr Stephanie Jackson, Endosurgery Registrar, Mercy Hospital for Women
Identification of endogenous and exogenous bioactive peptides in human breastmilk	Dr Ashwantha Enjapoori, Deakin University, and Dr Gillian Opie, Mercy Health Breastmilk Bank
Evaluation of the implementation and use of My Cancer Care Record (My CCR)	Ms Anna Mascitti, North Eastern Melbourne Integrated Cancer Services (NEMICS), and Associate Professor Peter Grant, Department of Gynaecological Oncology, Mercy Hospital for Women
A Phase II study using durvalumab in advanced endometrial cancer (PHAEDRA)	Associate Professor Linda Mileschkin, Gynaecological Oncology Department, Mercy Hospital for Women
Nanopore MinION: A potential bedside test to rapidly screen pregnant women for their group B streptococcus status	Dr Natasha Pritchard, University of Melbourne, Mercy Hospital for Women
The objective Behavioural Assessment of Breaks in SITting in pregnancy study (BABY-SIT in pregnancy study)	Dr Robyn Larsen, Baker Institute, and Associate Professor Martha Lappas, University of Melbourne, Mercy Hospital for Women
A retrospective review of undiagnosed breech at Mercy Hospital for Women: Re-audit 2001–2015 compared with 2001–2010	Dr Elizabeth McCarthy, University of Melbourne, Mercy Hospital for Women
Predictors of survival in patients with low-grade serous carcinoma of the ovary	Ms Yasmin Tissen, Radboud University, Netherlands, based at the Department of Gynaecological Oncology, Mercy Hospital for Women
Evaluation of the implementation of a digital dictation system in a large health service	Dr Christopher Bain, Health Information Services, Mercy Hospital for Women
Evaluation of group antenatal and postnatal care for refugee-background women	Dr Elisha Riggs, Healthy Mothers Healthy Families, Murdoch Children's Research Institute, and Ms Natalija Nesvadba, Multicultural Services, Mercy Hospitals Victoria Ltd
ENDIA — Early environmental determinants of pancreatic islet autoimmunity: A pregnancy-to-early-life cohort study in children at risk of type 1 diabetes (Werribee Mercy Hospital)	Dr Rebecca Thomas and Dr Sheetal Tipnis, Werribee Mercy Hospital
Anti-phospholipid antibodies occurrence and mid-trimester pregnancy loss 10+0 to 23+6 weeks: A retrospective audit	Dr Elizabeth McCarthy, University of Melbourne, Mercy Hospital for Women
Evaluation of longer-term effectiveness and utilisation of skills obtained during HIV and Hepatitis C pre- and post-test discussion course for midwives providing antenatal care	Professor Sue McDonald, La Trobe University Professorial Unit, Mercy Hospital for Women

Project title	Principal investigator(s)
Pregnant, parenting and a long way from home: International students in Victoria accessing public maternity, paediatric and early parenting care	Ms Jane Middleton, Department of Social Work, Mercy Hospital for Women
The experience and needs of nurses transitioning to community-based palliative care in the western suburbs of Melbourne	Ms Jennifer Grace, Mercy Palliative Care, Sunshine
EpiCCS — Australasia: Epidemiology of critical care provision after surgery	Clinical Associate Professor Scott Simmons, Department of Anaesthesia, Perioperative and Pain Medicine, Mercy Hospital for Women
The patterns and acuity of paediatric presentations at Werribee Mercy Hospital Emergency Department	Professor Moyez Jiwa and Sophie Graham, University of Notre Dame, Werribee Mercy Hospital
Predicting preterm labour: A population-based diagnostic trial	Dr Harry Georgiou, Royal Women's Hospital and University of Melbourne, Mercy Hospital for Women
Improving the health of Aboriginal mothers and babies through continuity of midwife care: A mixed methods translational study (Women's Journey)	Professor Helen McLachlan, La Trobe University, and Ms Marika Jackomos, Mercy Hospital for Women
What are the benefits of pastoral care to hospital patients and aged care residents?	Professor Sandra Jones, Australian Catholic University, and Ms Mary Klasen and Sr Trudy Keur, Mercy Hospital for Women and Werribee Mercy Hospital
Ovarian Cancer Clinical Quality Registry: A pilot study	Professor John Zalcborg, Monash University, and Associate Professor Peter Grant, Department of Gynaecological Oncology, Mercy Hospital for Women
National Gynae-Oncology Registry	Professor John Zalcborg, Monash University, and Associate Professor Peter Grant, Department of Gynaecological Oncology, Mercy Hospital for Women
Paediatric registrars' opinions of the intensive orientation teaching program provided at a tertiary Neonatal Intensive Care Unit	Associate Professor Deborah Colville, Monash University, and Dr Asiyath Rasheed, Department of Paediatrics, Mercy Hospital for Women
The success of research implementation strategies on evidence-based decision-making by allied health managers: A randomised controlled trial	Mr Mitchell Sarkies, Monash Health Allied Health Research Unit, and Ms Meredith Swaby, Ambulatory, Community and Allied Health Services, Mercy Health
Patients suffering from substance dependence and their use of the emergency department	Professor Moyez Jiwa, University of Notre Dame, Werribee Mercy Hospital, and Dr John Pascoe, Emergency Department, Werribee Mercy Hospital
Breastmilk as a pharmaceutical ingredient for life-saving paediatric medicines	Professor Ben Boyd, Monash University, and Dr Gillian Opie, Mercy Health Breastmilk Bank

Project title	Principal investigator(s)
Circulating tumour DNA as a marker of residual disease and response to adjuvant chemotherapy in stage I–III optimally debulked epithelial ovarian, fallopian tube and primary peritoneal cancer	Associate Professor Linda Mileschkin, Department of Gynaecological Oncology, Mercy Hospital for Women
A comparison of cerebral haemodynamics in preterm infants receiving nasal Continuous Positive Airway Pressure (nCPAP) with nasal High Flow Therapy (nHFT)	Dr Clare Collins, Department of Paediatrics, Mercy Hospital for Women
PAEAN: Preventing Adverse Outcomes of Neonatal Hypoxic Ischaemic Encephalopathy with Erythropoietin: A phase III randomised placebo controlled multicentre Australian trial	Associate Professor Helen Liley, NHMRC Clinical Trial Centre, and Dr Clare Collins, Department of Paediatrics, Mercy Hospital for Women
Incorporating Continuous Glucose Monitoring (CGM) as part of a Gestational Diabetes Mellitus model of care to enhance the efficient use of healthcare resources: A pilot study	Associate Professor David O’Neal, Medical, Subacute and Palliative Care, Werribee Mercy Hospital
Evaluation of B12 and holotranscobalamin levels in pregnancy at Mercy Hospital for Women	Dr Kathy Paizis, Austin Health, and Dr Suet-Wan Choy, Department of Obstetrics, Mercy Hospital for Women
Comparative incidence of epidural blood patch between spinal and epidural neuraxial techniques in an obstetric population: A retrospective study	Clinical Associate Professor Scott Simmons, Department of Anaesthesia, Perioperative and Pain Medicine, Mercy Hospital for Women
Sensory dysfunction in carpal tunnel syndrome: Relationship between static touch, texture discrimination and hand dexterity in carpal tunnel syndrome	Professor Leanne Carey, La Trobe University, and Ms Umesh Baskaran, Werribee Mercy Hospital
The neonatal septic workup: A clinical audit	Dr Lindsay Zhou, Department of Paediatrics, Mercy Hospital for Women
Clinical characteristics of patients with preeclampsia at term: Predicting the development of severe disease	Dr Fiona Brownfoot, University of Melbourne and Mercy Perinatal, Mercy Hospital for Women
The Cross-Country Ultrasound Study (CROCUS)	Professor Ingrid Mogren, La Trobe University, and Professor Sue McDonald, La Trobe Professorial Unit, Mercy Hospital for Women
How is moral distress experienced by specialist community palliative care health professionals?	Dr Ros McDougall, University of Melbourne, and Dr Caroline Ong RSM, Doctoral student
Non-invasive transcutaneous tibia and sacral nerve stimulation as a treatment for refractory overactive bladder	Dr Lore Schierlitz, Department of Urogynaecology, Mercy Hospital for Women
Improving the integration and communication of end-of-life care services: A pilot study	Ms Sue Williams, National Ageing Research Institute, and Ms Wendy Dunn, Mercy Health
Audit of epidural analgesia and anaesthesia in parturient women	Dr Ibrahim Yacoub, Werribee Mercy Hospital

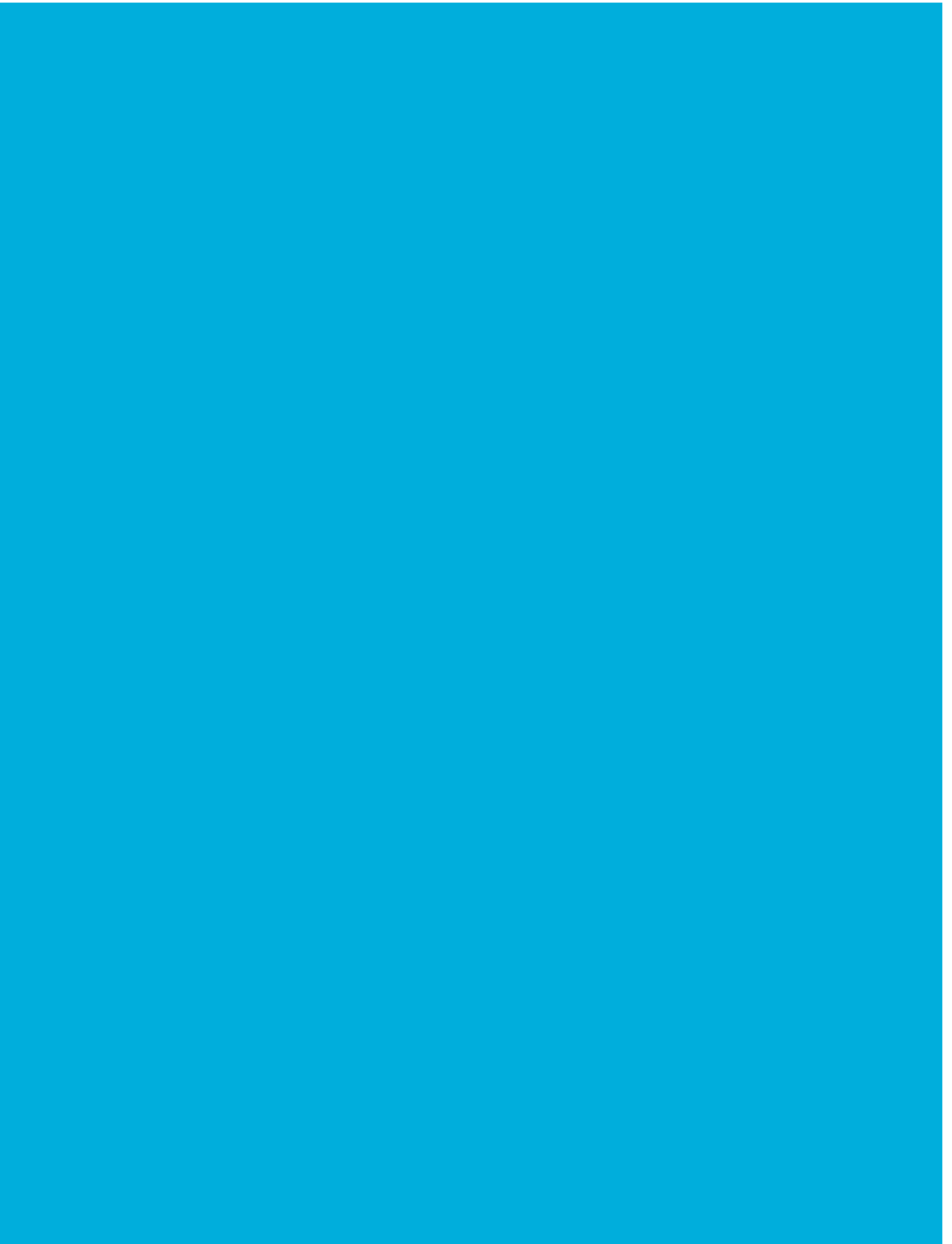
Project title	Principal investigator(s)
Cervical case categorisation and quality study	Associate Professor Kerry Ireland-Jenkin, Pathology Department, Austin Health, Associate Professor Peter Grant, Department of Gynaecological Oncology, Mercy Hospital for Women
Talk2Me technology: Enabling older people at home from culturally and linguistically diverse backgrounds to communicate their everyday needs	Dr Francis Batchelor, National Ageing Research Institute, and Ms Wendy Dunn, Mercy Health
Chronic lung disease in preterm neonates: Follow-up study	Dr Clare Collins, Department of Paediatrics, Mercy Hospital for Women
PARCS project building the evidence base of Prevention and Recovery Care Services (PARCS): A study of recovery-orientated outcomes	Professor Jane Pirkis, Centre for Mental Health, University of Melbourne, and Mr Matt Schoemaker, Mercy Health
Plasma decontamination to extend shelf life of human milk whilst maintaining nutrition	Dr Sri Balaji Ponraj, Deakin University, and Dr Gillian Opie, Mercy Health Breastmilk Bank
Sodium Glucose Transporter 2 Inhibitor (SGLT2i) associated diabetic ketoacidosis	Dr Rinky Giri, St Vincent's Hospital, and Associate Professor David O'Neal, Medical, Subacute and Palliative Care, Werribee Mercy Hospital
The effect of intrauterine growth restriction on the growth trajectory of newborns in the Neonatal Intensive Care Unit and Special Care Nursery	Dr Fiona Brownfoot, University of Melbourne and Mercy Perinatal, Mercy Hospital for Women



Mercy Hospital for Women Clinical Nurse Consultant Deborah Boyce showing patient Lisa how to use an insulin pump



*Danielle Maas with baby Zali,
born at Mercy Hospital for Women*





*Nurse Fiona Ip with patient Syed
at Werribee Mercy Hospital*

