

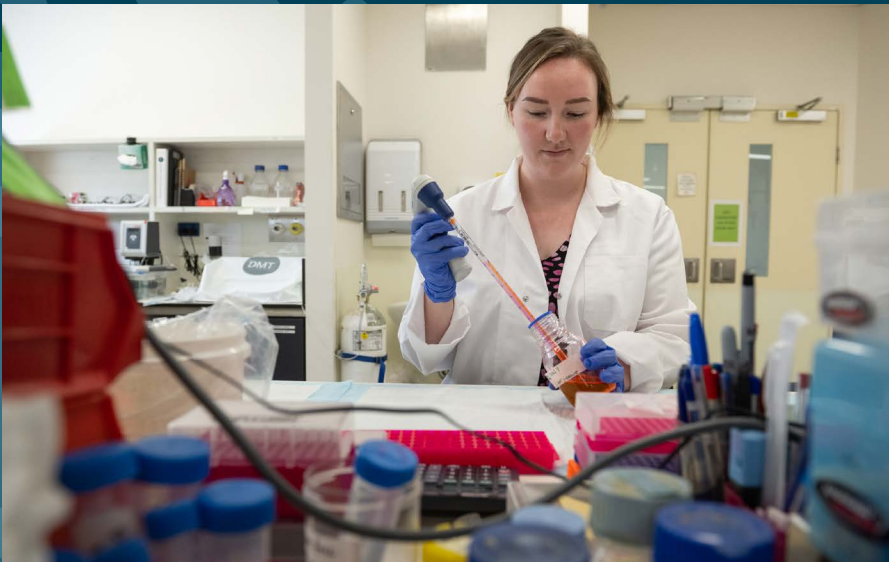


Mercy Health
Care first



Mercy Hospitals
Victoria Ltd

2023 RESEARCH REPORT





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Message from the

Group CEO



The 2023 Research Report provides insight into the exceptional work being undertaken by our dedicated teams at Mercy Health, highlighting our commitment to creating quality health outcomes.

Our investment in translational research demonstrates our sector leadership and enables us to measurably improve care outcomes. The scope, ambition and impact of our research efforts is made possible through collaboration, innovation and the ongoing pursuit of knowledge.

In recent years Mercy Health has benefitted from an explosion of talent in obstetrics research. In 2023 our researchers were named investigators in national and international grants totalling \$54 million. While this report highlights five areas of research, we have many more dedicated researchers and projects underway.

While Australia is one of the safest places in the world for a baby to be born, death in the perinatal period is still not uncommon. On an average day in Australia, six babies are stillborn and two die within 28 days of birth. Professor Sue Walker's research aims to reduce the burden of preventable stillbirths. Co-director of Mercy Perinatal, Professor Walker was recognised for her significant contribution to health and medical science with her election as Fellow to the highly prestigious Australian Academy of Health and Medical Sciences in 2023.

In pregnancy, the use of new medications that haven't been appropriately evaluated can have harmful consequences for unborn infants. As a result, therapeutic development for treating pregnancy complications is significantly lacking. Postdoctoral researcher Dr Natasha de Alwis from Mercy Perinatal is testing novel drugs on placental tissues and cells after delivery – research that could have profound benefits for pregnant women worldwide.

Gynaecological cancers account for 16% of cancers diagnosed in women worldwide. After the cancer is treated, many women then need to

manage ongoing bladder and bowel problems. Associate Professor Helena Frawley's research is focussed on physiotherapy treatment after cancer, as well as endometriosis and pelvic pain.

After many decades of being largely ignored by doctors, women's pelvic pain is now being taken seriously. Associate Professor Emma Readman, Director of Minimally Invasive Gynaecology at Mercy Health, leads the Mercy Hospital for Women Ambulatory Hysteroscopy Service. The team is improving patient outcomes through benchmarking based on a database of more than 5000 patients.

Werribee Mercy Hospital is located in Wyndham, one of Australia's fastest growing areas. While the hospital's paediatric department is relatively new, it is growing quickly, as is its commitment to research. Paediatrician Dr Jye Gard is investigating unusual cases that present in our emergency department. He is also leading the 'Home Grown' study on the growth velocity of newborns receiving in-hospital versus neonatal hospital in the home care.

As you read this report, I hope you are inspired by the commitment and vision of our research community. Together, we continue to shape a future where our healthcare is driven by evidence, compassion and innovation. Thank you for your interest in our work as we strive to improve health outcomes and advance knowledge in service of our community and beyond.

A handwritten signature in black ink, appearing to read 'Angela Nolan'. The signature is written in a cursive, flowing style. It is positioned above a thin horizontal line.

Angela Nolan

Group Chief Executive Officer, Mercy Health

Message from

Chief Medical Officer and Director of Research



We are delighted to introduce the 2023 Mercy Health Research Report. Over the year, researchers across Mercy Health met with big successes and engaged the world.

The powerhouse of obstetric researchers belonging to Mercy Perinatal prodigiously nabbed a swag of highly sought National Health and Medical Research Council (NHMRC) and Australian Research Council (ARC) grants (collectively totalling \$4 million, all led by those with their own research teams at Mercy Hospital for Women).

It was a fine year. Major NHMRC grants include two prestigious NHMRC Fellowship Grants to nourish the careers of two promising early career clinical researchers (Drs Anthea Lindquist and Teresa MacDonald); and two NHMRC Ideas Grants so that Professor Natalie Hannan can improve health outcomes of those affected by preeclampsia, and A/Prof Fiona Brownfoot to develop next-generation devices to monitor the wellbeing of unborn babies. Professor Tu'uhevaha Kaitu'u-Lino received a prestigious Fellowship from the ARC. These are but a tiny snapshot of the many achievements of the Mercy Perinatal team. Mercy Perinatal now likely has the most Professors (five of them), Associate Professors (two) and Senior Lecturers (six) engaged in pregnancy research of any centre in Australia.

Outside of pregnancy research, those in other disciplines have been very successful. A/Prof Helena Frawley from the physiotherapy department delivered an invited address in Edinburgh on non-surgery options to tackle endometriosis. The gynaecological endosurgery unit were highly active, running 20 clinical studies that included clinical trials. There are too many excellent research

achievements to note here, so we encourage you to look through this research report.

This year, our report kicks off with a showcase of some Mercy Health researchers and their projects. We hope these case studies are an inspiring read as you learn more about their work, about which they are very passionate. For each of the researchers highlighted there are many others who are tirelessly working and making a difference – we thank you all.

We would like to thank our many funding bodies, donors, supporters, partners and collaborators – without your support, our research would not be possible. We would also like to thank Tim O'Leary for his leadership of the Mercy Health Human Research Ethics Committee. The support of the Mercy Health Group Chief Executive Officer, Angela Nolan, and the entire Executive team for our research program is greatly appreciated.

Finally, we sincerely thank all the researchers in the many clinical departments for their ongoing commitment and outstanding work – 2023 was a great year for research at Mercy Health because of what you do.

Research and healthcare are integrally entwined. Without research we would not be seeing the major advances in healthcare that makes a difference to our patients, and the health of our community. Mercy Health has a strong tradition of world-leading research and we are constantly building on this tradition and growing.

Adjunct Professor Jeffrey Kirwan
Chief Medical Officer

Professor Stephen Tong
Director of Research

About Mercy Health

Mercy Health offers acute and subacute hospital care, aged care, mental health programs, specialist women's healthcare, early parenting services, palliative care, home and community care, and training and development for our staff.

Our values of **compassion, hospitality, respect, innovation, stewardship** and **teamwork** guide us in all that we do. They reflect the key behaviours that guide our interactions with each other and everyone we serve.

The modern story of Mercy Health began with the founding of the Order of the Sisters of Mercy in Dublin in 1831 by Catherine McAuley, who dedicated her life to serving people in need.

The Sisters of Mercy went on to found convents, schools and hospitals around the world. They arrived in Australia in 1846, led by Mother Ursula Frayne. The Australian congregation grew and established schools and convents around the country and opened their first hospitals in Brisbane and Sydney.

Following a devastating influenza pandemic, the Sisters of Mercy opened their first Victorian hospital — St Benedict's in Malvern — in 1920. They established a reputation for excellence in care and hospitality that has grown in strength to this day. The success of St Benedict's allowed the Sisters to open Mercy Private Hospital in East Melbourne in 1934, Mercy Maternity Hospital (later renamed Mercy Hospital for Women) in 1971, and Werribee Mercy Hospital in 1994.

Today, Mercy Health is a dynamic, growing organisation, caring for people through all stages of life. In addition to acute and subacute hospital care, we provide aged care, mental health programs, maternity and specialist women's and newborns' health services, early parenting services, home care services and health worker training and development.



Left: Coonil House in Malvern, which became the site of St Benedict's Hospital. Below: The impressive Art Deco facade of Mercy Private Hospital.





Mercy Health promotes research throughout the organisation, including obstetrics, aged care and palliative care.

Research at Mercy Health

Mercy Health promotes research throughout the organisation, supporting innovative projects and trials in areas including obstetrics, gynaecology, mental health, paediatrics, reproductive medicine, aged care, midwifery and palliative care.

The extent and diversity of research undertaken reflects a high level of interest and commitment to research and improvement in the delivery of care.

There has been exceptional achievement across our research program.

Several long-term studies within our University of Melbourne Department are yielding results of global significance, and many other areas in our hospitals are regularly publishing in peer-reviewed journals. Research in other areas such as allied health and aged care continues to evolve.

Mercy Health launched Mercy Perinatal in 2016. Perinatal aspires to become a leading international perinatal centre of excellence uniting the three pillars of education, clinical care and research.

Mercy Perinatal has taken a lead in education initiatives and is one of the leading centres of maternal fetal medicine in Australia with many specialty clinics.

Research teams under the Mercy Perinatal banner have already taken therapeutic and diagnostic concepts from initial discovery in the laboratory to major international trials in the United Kingdom, South Africa, New Zealand and Australia.

The five strategic commitments in The Mercy Health Strategic Framework 2023-2027, highlights our focus on innovation, research and excellence.

2023 highlights

Mercy Health researchers were named investigators in national and international grants totalling

\$54 million.

Neonatologist Dr Shiraz Badurdeen

was awarded a Jack Brockhoff Foundation Early Career Medical Research Grant to develop a novel device to improve oxygen safety for sick newborns worldwide.

Professor Stephen Tong,

co-director of **Mercy Perinatal**, was invited to present his team's research to develop a new stillbirth prevention blood test at the 2023 Stillbirth Summit in San Diego.

Doctors Teresa MacDonald and Anthea Lindquist,

both **Mercy Perinatal**, were awarded prestigious NHMRC Investigator Fellowships (each worth around \$500,000)

Professor Susan Walker,

co-director of **Mercy Perinatal**, was elected to the highly prestigious Australian Academy of Health and Medical Sciences.

A/Prof Helena Frawley,

physiotherapist, delivered an invited presentation on non-drug and non-surgical therapies to tackle endometriosis pain at the World Congress of Endometriosis, Edinburgh in Scotland.

Professor Tu'uhevaha Kaitu'u-Lino

was awarded an Australian Research Council Future Fellowship

– \$1,110,415.

A/Prof Fiona Brownfoot,

Mercy Perinatal, was awarded an NHMRC Ideas Grant to develop a novel device to detect fetal low oxygen levels during labour

– \$744,019.70.



Professor Lisa Hui, Professor Natalie Hannan and A/Prof Fiona Brownfoot

were awarded Dame Kate Campbell Fellowships (given to the top 10% of researchers at the University of Melbourne).

Clinicians Dr Rangi De Silva (obstetrician) and Dr Ranmali Rodrigo (neonatologist) completed their PhDs.

Professor Natalie Hannan, Mercy Perinatal, was awarded an NHMRC ideas grant to investigate future risk of cardiovascular disease following preeclampsia

– \$1,129,807.

Dr Amber Kennedy,

obstetrician, reported school-age assessments were no worse among IVF-conceived children compared to naturally conceived children in the highly regarded journal PLoS Medicine.

The endosurgery department ran 20 research projects at Mercy Hospital for Women.

Roxanne Hastie,

perinatal epidemiologist and member of Mercy Perinatal, was promoted to Associate Professor.

Alex Roddy Mitchell,

midwife and PhD candidate, published a global survey reporting rates of perinatal depression in the prestigious journal JAMA Psychiatry.

Does therapeutic testing on the placenta hold the key to safe new drugs during pregnancy?

The consequences of using new medications in pregnancy without appropriate evaluation has led to harmful consequences in the unborn infant. As a result, therapeutic development for treating major pregnancy complications such as preterm birth is significantly lacking, with no specific drugs developed for complications of pregnancy.

How then does medicine move forward to reduce major complications such as preeclampsia, poor fetal growth, and gestational diabetes?

One way, believes researcher **Dr Natasha de Alwis** from Mercy Perinatal and The University of Melbourne, is through testing novel drugs on placental tissue and cells after delivery – research that could have profound benefits for pregnant women worldwide.

Dr de Alwis is a Postdoctoral Researcher in the Therapeutics Discovery and Vascular Function in Pregnancy Group at the University of Melbourne. Her research focus is in understanding the development of pregnancy complications, particularly preeclampsia and fetal growth restriction, and in developing novel therapeutic strategies to prevent and treat them.

“It is challenging because maternal and neonatal safety is cited as the greatest concern by researchers and pharmaceutical companies,” she said. “This means that for a lot

of pregnancy complications, we are still using ‘old’ and ‘non-specific’ drugs such as aspirin. We don’t have anything new to offer pregnant women with serious complications.

“We also don’t fully know the safety of drugs when used in pregnancy, that people might be taking for pre-existing conditions, such as inflammatory diseases and mental health issues. There is an urgent unmet need for therapeutic development in the obstetric field.”

Dr de Alwis explains the placenta – as the ‘gatekeeper’ to the unborn baby – might hold answers. By testing new and existing medications in placental tissue and cells, the group can start to assess if they might be safe for the fetus and whether they can counter the underlying pathology key to the complications.

“I have to say we love the placenta – it is essential to the growing fetus,” Dr de Alwis said. “We are very privileged at Mercy Health because here in the laboratory, we have quick access to newly

delivered placentas. Our research midwives talk to new mothers and ask if they are willing to allow us to collect samples from the placenta they have delivered. Many women agree, for which we are very grateful.

“We test drugs on tissue from healthy placentas, as well as from placentas from pregnancies delivered preterm or with complications, to see if new or existing medications are safe. If they are, we have more confidence that the placenta will keep functioning at its best, providing the developing baby with all the nutrients required to grow well.”

The Department of Obstetrics, Gynaecology and Newborn Health (University of Melbourne) laboratory based in the Mercy Hospital for Women (Heidelberg) now has hundreds of placenta samples banked, which will enable researchers to study the mechanisms that drive pregnancy complications. This can help inform which drugs would be most effective for treatment.

The team investigate whether therapies used for non-pregnancy conditions could be repurposed to treat pregnancy complications. The focus is on the newest generation drugs, designed to be most effective and efficient.

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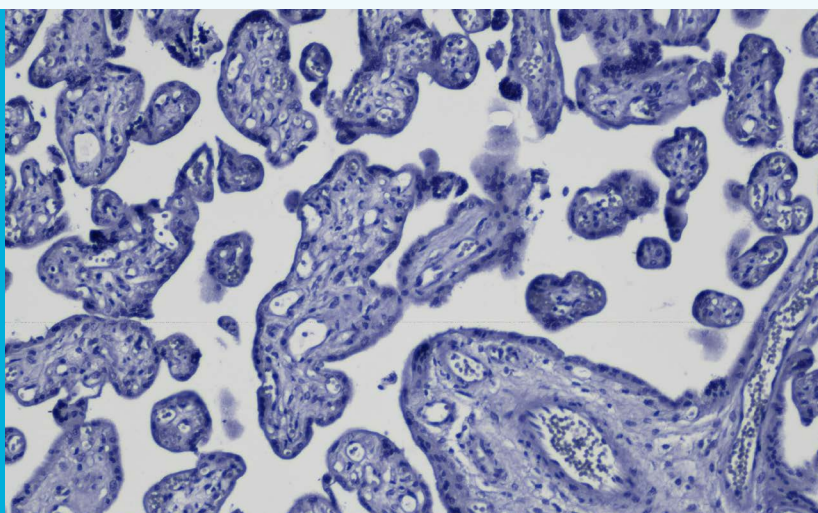
Dr Natasha de Alwis

I have to say we love the placenta – it is essential to the growing fetus”

What is the placenta?

The placenta is an organ that forms as part of the conceptus during pregnancy, and facilitates transfer of oxygen, nutrients and antibodies from the mother to the developing baby. After birth, the placenta is delivered.

In many cultures, the human placenta is revered for its symbolism of life, spirit and connection.



Section of human placenta stained with Hematoxylin and eosin (purple/blue) to study the microanatomy of the tissue sample, and differentiate cell types.

Credits: Dr Natalie Binder

Dr de Alwis' current focus is on investigating antibody therapies that neutralise inflammatory factors.

"We want to know whether blocking key inflammatory factors in preeclampsia might be able to stop inflammation and the damage it causes in the mother's system – stopping the fire before it spreads," she said.

The team also have an interest in developing new therapies specifically for use during pregnancy. Using groundbreaking nanomedicine technologies, they are designing vehicles that can carry medication specifically to target organs in the maternal systems – permitting the use of lower drug concentrations, minimising side effects and preventing passage to the developing baby.

"We are investigating whether the therapies are toxic to placental cells, or affect key cellular functions like growth, apoptosis (cell death) and oxidative stress," Dr de Alwis said. "If they don't impact cell survival, we would evaluate further knowing they are likely to be safe."

The team also assess drug actions on blood vessels collected from small fat biopsies and the placenta. They can then test the effect of medications on the maternal blood vessels which control blood pressure and the blood supply to the fetus. They then move on to sophisticated models to generate rigorous preclinical data to support the safety and effectiveness of medications.

"At the Mercy we are doing research that could have profound benefits for pregnant women worldwide," Dr de Alwis said.

In Australia, access to tertiary care centres such as the Mercy means that most women will survive in Australia, but there are long-term effects of having preeclampsia for both the mother and the child, including higher risk of developing cardiovascular disease.

"Our research aims to develop new preventative and treatment strategies that actually target the specific mechanisms and molecules that underpin the progression of preeclampsia," Dr de Alwis said. "We hope this work will generate new avenues for prevention and treatment, hopefully saving lives all over the world, but also preventing the long-term complications.

"The importance of women's health research is finally becoming recognised – and is a priority for industry and government in Australia.

"We are excited about the future of our field, and really passionate about driving the research that will ensure all women can have a safe pregnancy."



What is preeclampsia?

Pre-eclampsia is a serious condition where high blood pressure develops during pregnancy, affecting both the mother and unborn baby. There may also be high levels of protein in the mother's urine, which indicates kidney damage, and other signs of organ damage.

Preeclampsia puts stress on the heart and other organs and is associated with several serious effects, including kidney dysfunction, swelling of hands, feet and face, dizziness, headaches and vision disturbances.

In severe cases, preeclampsia can lead to maternal and infant death. In some cases, the baby needs to be delivered prematurely.

More than 70,000 mothers and half a million babies die every year due to preeclampsia (International Society for the Study of Hypertension in Pregnancy Guidelines 2021). In Australia, one in 20 pregnancies will be diagnosed with preeclampsia.



Searching for the ‘holy grail’ of blood tests to prevent stillbirth

Australia is one of the safest places in the world for a baby to be born, yet death occurring within the perinatal period is not uncommon. **On an average day in Australia, six babies are stillborn and two die within 28 days of birth (neonatal death).**

The trauma of stillbirth stays with the families for the rest of their lives. It is a tragedy that **Professor Sue Walker** desperately wants to change.

“Families don’t just dream of having a baby – they dream of having a healthy child who will kick a ball, and read books, and make friends,” she said. “When complications set in during a pregnancy, suddenly all of those dreams are up in the air, but perhaps never more so than when families experience the tragedy of stillbirth.”

Professor Walker is a maternal fetal medicine sub-specialist and an academic clinical researcher who holds the Sheila Handbury Chair of Maternal Fetal Medicine. In 2005, Professor Walker founded the Perinatal Medicine Department at Mercy Hospital for Women. Since then, the Maternal Fetal Medicine Unit has flourished into a tertiary referral site for some of the highest risk pregnancies in Victoria.

In parallel with growth of the clinical service has been a steep upward trajectory in research performance and impact.

“There has been a phenomenal explosion of talent at Mercy Health in obstetrics research,” she said. “It’s fair to say that we are – if not the – one of the leading sites nationally in terms of attracting grant funding, in terms of publications and outputs, in training of PhD students – the research leaders of tomorrow – and in terms of national and international presence of our researchers.

“There has been enormous growth in all areas of our research – from basic science through to clinical studies, cohort studies, randomised controlled trials, epidemiological research and implementation science.”

Mercy Perinatal – founded in 2016 – has been the powerhouse that has brought together the three pillars of clinical care, education and research in high-risk pregnancy. It is the contribution of all these areas that combine to achieve the dream of bringing mothers and their babies safely home.

Professor Walker’s research focus is reducing the burden of preventable stillbirths.

“One of the leading contributors to stillbirth is where the placenta fails to provide enough



Professor Sue Walker

oxygen and nutrition for the baby to support its healthy growth and development,” she said. “Our focus is to try and improve the identification of babies where the placenta is not functioning well because fetal growth restriction is one of the leading contributors to stillbirth.

“If you know that babies are at risk then you’re able to monitor those babies more closely in late pregnancy and offer them timely delivery before stillbirth can occur. Improved detection of fetal growth restriction can halve stillbirth risk.”

Professor Walker said one area of focus was on improving the tools to identify placentas that are failing as the pregnancy advances.

“We know the importance of identifying checkpoints of placental health – assessing not just the size of the baby but also the growth of the baby,” she said. “For example, we might see that early in the pregnancy the baby was on the 80th percentile, but a few months later it’s on the 30th percentile. So, what is going on?”

Dr Teresa MacDonald, an obstetrician and post-doctoral researcher at Mercy has just completed a study involving nearly 25,000 women who had two or more scans at Mercy Hospital for Women over a decade.

“This study aimed to determine what patterns of fetal growth trajectory constitute a ‘red flag’ – that is, what degree of slowing growth identifies a failing placenta, and a baby at increased risk of stillbirth or other adverse outcomes,” Professor Walker said. “This information is not readily available to clinicians, but knowing what

represents healthy- or impaired-fetal growth could help improve detection of babies at risk.”

Ultrasound however has its limitations – including cost and accessibility, the quality of the equipment and experience of the technician – so the team are also working to develop the ‘holy grail’ of blood tests.

“Can we have a blood test that could tell us whether the placenta is functioning poorly, meaning the baby is at risk? This would be much more accessible – patients would get the same result whether they are living in a remote community or in the middle of a city,” Professor Walker said.

The research, led by Professor Stephen Tong and Professor Tu’uhe Kaitu’u-Lino has uncovered that a placentally-derived protein, SPINT1, is an identifier that signals a pregnant woman’s baby is at risk of being born small or needing extra support after birth.

“We have identified that SPINT1 outperforms any currently available blood marker for detecting small babies and we are developing our own advanced screening technique to effectively measure SPINT1,” Professor Walker said.



“This work has been possible thanks to the thousands of women at Mercy who have contributed blood samples to our research, and the contributions of our many collaborators from other parts of the world. But we are not done yet! The next step is to further validate this test across populations, and then work towards clinical translation. These next steps are crucial – but it will be transformative if we could introduce such a blood test into routine care at 36 weeks to inform care for the rest of the pregnancy.

“We would then be able to say to a woman, your blood test result lies in the bottom 10% and we know that that means you’ve got a 1 in 4 chance of the baby being born very small (<3rd centile) or needing extra support after birth. This ‘red traffic light’ at the checkpoint would suggest we need to institute closer surveillance as we come to the end of pregnancy and offer timely and well monitored birth as we approach term. In contrast, a very high level of SPINT1 confers a very low risk of adverse outcome. These women could

remain in low-risk care and avoid unnecessary intervention.”

The next steps are to develop a commercial grade test – one that could be used in laboratories around the world. Such work is well underway, and the team expect to have this test ready by the end of 2024.

Further validation is planned in multiple maternity settings across Australia and around the world. Consumers will be involved in the crucial next steps to ensure the test is appropriate, accessible and applicable to them and to guide the research team on ‘threshold setting’.

“Ensuring the test meets the needs of pregnant women, and those caring for them, is crucial in accelerating the pace of translation,” Professor Walker said. “This is very exciting as we work toward implementing this ‘checkpoint of placental health’ with the vision to save families from the inestimable tragedy of stillbirth – and bring more babies safely home.”



A telehealth solution to pelvic floor muscle training after cancer

WITH gynaecological cancers accounting for 16% of cancers diagnosed in women worldwide, such a diagnosis is a traumatic event in a woman's life.

After the disease is treated, whether by surgery, radiotherapy, chemotherapy or combination and the woman is, ideally, declared cancer-free, the woman hopes to return to normality. But for many, urinary and bowel problems are their next battle.

Associate Professor Helena Frawley leads Allied Health research at the Mercy Hospital for Women and the Royal Women's Hospital. She also leads the women's health physiotherapy research program and teaches in the postgraduate women's health program in the School of Health Sciences at the University of Melbourne.

A/Prof Frawley, who graduated in physiotherapy 40 years ago, discovered early in her career that the focus in women's health physiotherapy was on the childbearing year – pregnancy and the few months after birth.

"I've long been involved as a clinician helping women manage the challenges of that period, but over the years it became obvious that there was a desperate need for research into pelvic floor problems for other reasons and that affect women at different stages in life," she said.

Physiotherapy treatment after gynaecological cancer, as well as endometriosis and pelvic pain, are now her key areas of interest.

"There is a likelihood that cancer surgery will impact nerves and muscles, and radiotherapy can also affect the pelvic tissues," A/Prof Frawley said.

"For several years, women focus on recovering from the cancer and cancer treatments and survivorship. It's not until sometime later that they start to turn to issues that are impacting the quality of their lives, such as pelvic floor problems affecting the bladder and bowel.

"Unfortunately, many women do not reach out to discuss these issues with their specialists or their family doctors, due to stigma and embarrassment, and because they have already been through a lot and do not want to deal with more interventions."

Just as many women do not ask their doctors for support, many doctors fail to ask patients if there are bladder or bowel control problems – and miss the opportunity to refer them to physiotherapy.

Traditionally, physiotherapists have assessed pelvic floor muscle function and taught pelvic floor muscle exercises through internal examinations. However, this can be a challenge for patients who do not have access to a physiotherapist in their region.

"Providing pelvic floor muscle training via telehealth without an in-person assessment presents specific challenges," A/Prof Frawley said. "Correct technique is essential for successful training, but the clinician is unable to assess and confirm that the patient is performing a correct contraction during a telehealth consultation.



Associate Professor
Helena Frawley

“However, use of an intra-vaginal device, which provides real-time information about the patient’s muscle contraction technique to clinician and patient provides an opportunity to assess this function remotely.”

In 2023, A/Prof Frawley’s team, led by PhD candidate Robyn Brennen, published the results of a study that assessed the feasibility and clinical outcomes of telehealth-delivered pelvic floor muscle training for urinary and/or faecal incontinence after gynaecological cancer surgery, and presented this study at the Clinical Oncology Society of Australia meeting.

In this pre-post cohort clinical trial, 36 patients with incontinence after gynaecological cancer surgery underwent a 12-week physiotherapist-supervised telehealth-delivered program.

The intervention involved seven videoconference sessions with real-time feedback from an intra-vaginal device and a daily home pelvic floor exercise program. The femfit® device was used, a New Zealand-developed product which is fitted with sensors that measure internal pressure along the wall of the vagina and sends real-time feedback. The woman downloaded the app and with a physiotherapist on a video call, the clinician and patient discussed if the woman was correctly contracting her muscles.

Clinical outcomes were assessed at baseline, immediately post-intervention, and at three-month post-intervention.

A/Prof Frawley said most of the participants were highly engaged, attending at least six sessions, with all clinical outcomes improving immediately post-intervention.

“This is a new and sophisticated way to teach and analyse pelvic floor muscle exercises,” A/Prof Frawley said. “If we find the intervention works to significantly reduce urinary incontinence in a future randomised controlled trial, it will open up post-cancer physiotherapy treatment to rural and remote patients, and even to metropolitan patients who find it difficult to secure in-person appointments with a physiotherapist skilled in this technique.”

Overall, the study found that telehealth-delivery using the device may be feasible to treat urinary and bowel incontinence after gynaecological cancer surgery.

“This is a treatment that could make a significant difference to women after cancer treatment, so a randomised controlled trial is warranted,” she said.

Werribee Mercy ups its research game

Demand for Werribee Mercy clinical services is surging, given it sits in Wyndham, one of Australia's fastest growing areas.

It is estimated the region, south-west of Melbourne, will be home to more than 500,000 people by 2040 – many of them families with young children, and many from non-Australian backgrounds. While the hospital's paediatric department is relatively new, it is growing quickly – as is its commitment to research.

Consultant paediatrician **Dr Jye Gard** said the hospital was seeing a diverse range of young patients, including some who were acutely unwell and with diseases rarely seen in Australia.

The 2016 Census showed that 48% of the Wyndham population was born overseas. This was an increase of 55.6% from 2016.

"We have unusual cases come through our doors," Dr Gard. "For instance, we had a young girl with disseminated tuberculosis. She was very sick but fortunately is now doing well. We also had a child with avian flu, who was one of the first cases that had been seen in Australia for a couple of years.

"Another patient had a condition that is something a doctor might only see once in their career – tyrosinaemia, a genetic metabolic disorder. This all means our healthcare professionals are being exposed to very interesting cases, and we are keen to publish and present on them as much as we can."

Dr Gard is also involved in 'Home Grown', a significant study on the growth velocity of newborns receiving in-hospital versus neonatal hospital in the home care.

"We have found that children grow just as well on our Neonatal Hospital In The Home (HITH) service as in a Special Care Nursery," he said. "This is a very important and impactful finding that could change many nurseries' practices."

The Werribee Mercy's Neonatal HITH thought creatively about how to expand the program to accommodate certain preterm and low birth weight babies.

"We have 10 virtual HITH beds for newborns who have jaundice and need light therapy," Dr Gard said. "We also have been helping other babies establish good feeding in the home environment. In the past there was a view that babies who go home too early won't grow as fast or as well as another child, but we're finding this is not the case.

"Having this data is groundbreaking and is attracting a lot of attention – I hope that other nurseries in Australia will follow suit as it is an excellent model of care and helps parents and families in other ways as well."



Consultant paediatrician
Dr Jye Gard

The Paediatric Unit is also involved in several multisite research projects.

- Improving Childhood Asthma Management is a Safecare initiative developed due to the western suburbs of Melbourne having the most readmissions in Victoria of paediatric asthma. The hospital is working alongside Joan Kirner Hospital, Northern Hospital and Royal Children's Hospital in developing and piloting improvement ideas and measuring outcomes.
- Werribee Paediatrics is involved in recruiting paediatric asthma patients in a multi-centre randomised double blind placebo trial assessing the reduction of recurrent admissions using OK85 for the treatment of preschool wheeze.
- Werribee Special Care nursery is a secondary site for another multisite study – The Circa Diem Study. This looks at cognitive improvement by early restoration of circadian rhythms in very preterm infants through environmental modification.
- The Werribee Mercy Paediatric department is involved in outreach clinics in schools with vulnerable populations and data is being collated on the experience of families and educators as well as the outcomes for the children.
- There are also two smaller studies looking at blood cultures and contamination and neonatal readmissions.



Building a databank of endosurgery outcomes for worldwide research

In the bad old days, many doctors would roll their eyes when their female patients complained of constant pelvic pain. “She’s crazy,” was a common refrain.

Today, thankfully, the pendulum has swung ‘200 per cent’, says **Associate Professor Emma Readman**, a specialist gynaecologist who is director of Minimally Invasive Gynaecology at Mercy Hospital for Women.

“For many years, women with pain were poorly treated and I’m very proud there has been a massive shift,” she said. “These days, clinicians take their patients’ pain seriously and are focused on how to concentrate resources for the woman.”

The Endosurgery Department at Mercy Hospital for Women is part of a group called EnDIT (endometriosis diagnosis, innovation and treatment), in partnership with other Australian and international research groups, and is the co-recipient of an Medical Research Future Fund grant of more than \$3 million for research into endometriosis-associated pelvic pain.

“We have nine studies in this important research suite and hope that these will contribute significantly into the outcomes for individuals with endometriosis,” A/Prof Readman said.

A/Prof Readman also runs the Mercy Hospital for Women Ambulatory Hysteroscopy Service. The service provides outpatient gynaecology procedures and investigates heavy or irregular periods and bleeding after menopause, and removes endometrial polyps. Patients do not

need to be admitted to hospital, and procedures do not require a general anaesthetic.

She took over what began as a monthly clinic in 1997. It now runs six lists a month and produces internationally published research. The outpatient hysteroscopy clinic sees more than 300 patients a year – more than the inpatient service.

“In many other countries, outpatient hysteroscopy clinics are standard, but Australia had never done it,” A/Prof Readman said. “But we did it because our patients needed it. We had to push for funding. Now it is very successful, and we have health services from across Australia wanting to copy our model.”

The service has an ‘uncommonly’ large database of more than 5000 patients, which allows them to regularly publish.

“From very early, we collected data on our patients, on pain scores, outcomes and procedures,” A/Prof Readman said. “This means that we can provide Australian benchmarking, and any new procedures introduced can be audited and evaluated.

“This is the gold standard for any clinical service, and means we have published the most data on outpatient hysteroscopy in Australia.”



This is the gold standard for any clinical service, and means we have published the most data on outpatient hysteroscopy in Australia.”

Associate Professor
Emma Readman

The team is currently running nearly 20 studies, including

- a laparoscopic study showing the incidence of adhesions in those undergoing laparoscopy following previous surgery
- sexual function analysis in women undergoing surgery for severe endometriosis
- the design and implementation of a shared care model for outpatient gynaecology pain clinics
- the use of Botox for pelvic floor muscle tenderness
- development of an outpatient hysteroscopy prediction tool to assist in triaging those to achieve a successful procedure
- a Hysteroscopic morcellation v bipolar resection study for retained products of conception, and
- a study collecting never before documented foundation data on the presence of gas bubbles during hysteroscopy.

“I’m very excited about our research into using Botox and am working my way towards a randomised trial,” A/Prof Readman said. “It’s not funded yet, but I am hopeful. We need Australian data.”



2023 Successful Small Grants Applications

Mercy Health Small Grants aim to support the research activity of early career researchers across Mercy Health, and those mainly employed in a clinical position

Name of research project	Applicant
Exploration of patient's perceptions about the inpatient/family-activated escalation process	Anne Harrison
Do proceduralists matter: success and patient satisfaction during outpatient hysteroscopy	Marcus Davenport
Chemotherapy response score and Ki-67 labelling index after Neoadjuvant Chemotherapy	Monica McGuaran
Weight change and endometrial hyperplasia progression, persistence or regression	Renee Cocks
Evaluation of a new model of community palliative care: Urgent Needs Identification and Team Evaluation (UNITE)	Annie Chiu
Hysterectomy Multimedia Study	Avelyn Wong
Changing indications for prenatal genetic services: implications for genetic counselling	Joanne Kelley
Persistent Pelvic Pain and Urinary Symptoms: <i>A sense of urgency</i>	Samantha Mooney

We were fortunate to receive two additional grants of \$3000 each from the Wyndham Health Foundation.

- Michael Layley – Paediatric Services – Ready, Steady, Home. Impacts of a Paediatric Hospital in The Home service on the wait times in an emergency department.
- Jye Gard – Paediatric and Newborn Services – Home Grown – Comparing the growth velocity of newborns receiving in-hospital versus neonatal hospital in the home care.

Our supporters, partners and collaborators

We acknowledge and celebrate the partnerships we have forged in 2023 and our shared vision for a better future through research and education.

Austin Health

Australasian
Gynaecological
Endoscopy and
Surgery Society

Australia
New Zealand
Gynaecological
Oncology Group

Australian Catholic
University

Australian Research
Council

Australian Society
for Colposcopy and
Cervical Pathology

Canadian Institutes
of Health Research

Clovis Oncology

Department of
Premier and Cabinet
(Victoria)

Epworth HealthCare

Ferring COVID-19
Investigational Grants

HealthWest
Partnership

Hologic

Hume City Council
Maternal and Child
Health Service

La Trobe University

Medical Research
Future Fund,
Department of
Health (Australian
Government)

Melbourne Academic
Centre for Health

Mercy Health
Academic Research
and Development
Committee Small
Grants

Mercy Health
Foundation

Mercy Perinatal

Monash Health

Monash Medical
Centre

Monash University

Murdoch Children's
Research Institute

National Health and
Medical Research
Council

Norman Beischer
Medical Research
Foundation

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Melbourne Primary
Health Network

Northern Health

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VicSEG New Futures

Victorian Clinical
Genetics Services

Victorian
Collaborative
Healthcare Recovery
Initiative

Victorian Fetal
Therapy Service

Victorian Foundation
for Survivors of
Torture: Foundation
House

World Health
Organisation

Wyndham Council
Maternal and Child
Health Service

Women's and children's

Translational Obstetrics Group

Headed by Professors Stephen Tong and Tu'uhevaha Kaitu'u-Lino, the Translational Obstetrics Group is a multi-disciplinary team hunting for new discoveries to diagnose or treat major pregnancy complications. We are a large laboratory research team with an international reputation.

In 2023, the team had multiple focuses:

- Developing and testing novel ectopic pregnancy therapies
- Developing and testing novel preeclampsia therapeutics
- Identifying circulating biomarkers for placental insufficiency and stillbirth
- Elucidating the pathogenesis of pregnancy complications, preeclampsia and fetal growth restriction

The team had considerable international impact, publishing papers in some of the world's top journals, including *The Lancet*, *Nature Medicine* and many in prestigious scientific journals in their field.

In 2023, some of the team's achievements included contribution to peer-reviewed publications and successful award of Australian Research Council Future Fellowship to Professor Tu'uhevaha Kaitu'u-Lino.

Research team

Stephen Tong	Georgia Wong
Tu'uhevaha Kaitu'u-Lino	Stefan Botha
Ping Cannon	Manju Kandel
Tuong-Vi Nguyen	Sunhild Hartmann
Anna Nguyen	Lucy Bartho
Ciara Murphy	



Grants

Year	Sponsor	Project Title	Investigators	Amount
2020 – 2024	NHMRC Synergy Grant	Developing new diagnostics to prevent stillbirth	S Tong (CIA) T Kaitu'u-Lino (CID)	\$5,000,000
2021 – 2023	NHMRC Ideas Grant	Developing a Screening Test to Identify Women at Risk of Preeclampsia	T Kaitu'u-Lino (CIA)	\$1,119,284
2023-2027	NHMRC Investigator Fellowship		S Tong	\$2,500,000
2022-2024	ARC – Discovery Project	Is SPINT1 a key regulator of placental development?	T Kaitu'u-Lino (CIA)	\$536,000
2023-2027	ARC – Future Fellowship	Exploring protease inhibitors in placental development and maturation	T Kaitu'u-Lino (CIA)	1,110,415
2023-2027	ARC Future Fellowship Establishment Grant, University of Melbourne	Exploring protease inhibitors in placental development and maturation	T Kaitu'u-Lino (CIA)	\$150,000
2023	Austin Medical Research Foundation	Characterisation of LAIR1 in healthy and pathological pregnancies	L Bartho	\$15,000

Publications

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Presentations

Team Member	Role	Event	Title	Location
T Kaitu'u-Lino	Presenter	ANZ College of Anaesthetists	Novel predictive biomarkers for preeclampsia	Sydney, Australia
T Kaitu'u-Lino	Presenter	Somalologic User Group Meeting	Aptamer technology to predict pregnancy complications	Tokyo, Japan
T Kaitu'u-Lino	Presenter	Group Research Day, National University of Singapore	SPINT1 – a potential biomarker for predicting fetal growth restriction	National University of Singapore, Singapore
T Kaitu'u-Lino	Presenter	IFPA	Scientific Do's and Don'ts	Christchurch, New Zealand

Team Member	Role	Event	Title	Location
T Kaitu'u-Lino	Presenter	Preeclampsia Symposium	A preclinical pipeline to study molecules dysregulated in preeclampsia	Cape Town South Africa
T Kaitu'u-Lino	Presenter	University of Melbourne Honours Program	Preventing Stillbirth – research into fetal growth restriction	Melbourne, Australia
T Kaitu'u-Lino	Presenter	Mercy Hospital for Women Grand Round	International Women's Day	Melbourne, Australia
S Tong	Presenter	Global Obstetrics Update	Believing your hypothesis is bad science	Melbourne, Australia
S Tong	Presenter	Stillbirth Summit, Star Legacy Foundation	Generating diagnostics that flags babies in peril from poor placental function	San Diego, United States
S Tong	Presenter	Preeclampsia Symposium	Developing new therapeutics for preeclampsia – lessons learnt	Cape Town, South Africa
S Tong	Presenter	Preeclampsia Symposium	Grant Writing Seminar	Cape Town, South Africa
S Tong	Presenter	Once off special Seminar	Grant Writing Seminar	Menzies Institute for Medical Research
S Tong	Presenter	Once off special seminar	Grant Writing Seminar	Burnet Institute
L Bartho	Presenter	Somalogic User Group Meeting	Aptamer technology to predict pregnancy complications	Tokyo, Japan
L Bartho	Presenter	Group Research Day, National University of Singapore	Discovering new biomarkers to predict disease of pregnancy	National University of Singapore, Singapore
L Bartho	Presenter	Reproductive Biology Laboratory, University de Andes	EV Isolation to Enhance Biomarker Sensitivity for Prediction of Preeclampsia or Fetal Growth Restriction	Santiago, Chile
L Bartho	Presenter	Mississippi Centre for Clinical and Translational Research	Lipid Metabolites to Predict Patients at Risk of Developing Preeclampsia	Zoom
L Bartho	Presenter	Society for Reproductive Biology (SRB), selected for SRB/ ANZPRA New Investigator Award session	Metabolic profiles are dysregulated in pregnant women before and after the diagnosis of preeclampsia	Brisbane, Queensland
L Bartho	Presenter	Perinatal Society of Australia and New Zealand	Could Polar Lipidomics Identify Pregnancies at Risk of Late-Onset Preeclampsia?	Melbourne, Victoria

Date	Team Member	Role	Event	Title	Location
Jan 2023	C Murphy	Presenter	Society for Reproduction and Fertility (SRF)	SPINT1: regulation and function in human placental trophoblasts	Belfast, Northern Ireland (UK)
Jan 2023	C Murphy	Presenter	Centre for Trophoblast Research, University of Cambridge	The function of SPINT1 and SPINT2 in placental development and insufficiency	Cambridge, England (UK)
Jan 2023	C Murphy	Presenter	Tommy's Maternal and Fetal Health Research Centre, University of Manchester	The function and regulation of SPINT1 and SPINT2 in the developing placenta	Manchester, Cambridge (UK)
Mar 2023	C Murphy	Poster Presenter	Perinatal Society of Australia and New Zealand (PSANZ)	Functional studies of SPINT1 and its regulation in the developing placenta	Melbourne, Victoria
Jun 2023	C Murphy	Presenter	MDHS No Bell Prize, University of Melbourne	<i>finalist</i>	Melbourne, Victoria
Sep 2023	C Murphy	Poster Presenter	International Federation of Placental Associations (IFPA)	<i>In vitro</i> investigation into the regulation and function of SPINT1, a biomarker for fetal growth restriction	Rotorua (New Zealand)
Nov 2023	C Murphy	Presenter	MDHS Graduate Research Conference, University of Melbourne	Why SPINT1 is dysregulated in placental insufficiency and what its role is in physiological placental development	Melbourne, Victoria
Nov 2023	C Murphy	Presenter	Society for Reproductive Biology (SRB)	SPINT1: expression, regulation and function in the developing placenta	Brisbane, Queensland
Jun 2023	S Botha	Presenter	Preeclampsia Research, Stellenbosch University and University of Gothenburg	A global approach to advancing prediction and understanding of preeclampsia pathogenesis	Cape Town, Western Cape, (RSA) and Gothenburg, Västergötland, (SE)
Nov 2023	S Botha	Presenter	Berlin University Alliance (BUA)	A global approach to advancing prediction and understanding of placental insufficiency/preeclampsia	Berlin, (Ger) and Melbourne, Victoria
Nov 2023	S Botha	Poster Presenter	Society for Reproductive Biology (SRB)	Cystatin 6 (CST6) expression is increased in preeclamptic pregnancies	Brisbane, Queensland
Dec 2023	S Botha	Presenter	Australian and New Zealand Placental Research Association (ANZPRA)	Thrombospondin-1 (THBS1) – a regulator of angiogenesis in preeclampsia	Sunshine Coast, Queensland

Date	Team Member	Role	Event	Title	Location
Nov 2023	M Kandel	Presenter	Society for Reproductive Biology (SRB)	Elucidating the function of Sialic acid-binding immunoglobulin-like lectin-6 (SIGLEC6) in preeclampsia	Brisbane, Queensland
Mar 2023	G Wong	Presenter	Society for Reproductive Investigation (SRI)	Leucine-rich repeat-containing G protein-coupled receptors 4 and 5 (LGR4 and LGR5) in placental development and preeclampsia	Brisbane, Queensland
Mar 2023	G Wong	Presenter	Perinatal Society of Australia and New Zealand (PSANZ)	Leucine-rich repeat-containing G protein-coupled receptor 4 and 5 (LGR4 and LGR5) in preeclampsia and their potential role in progenitor placental cells	Melbourne, Victoria
Sep 2023	G Wong	Poster Presenter	International Federation of Placental Association (IFPA)	Characterising side population genes in placentas from patients with preeclampsia and/or fetal growth restriction	Rotorua, New Zealand
Aug 2023	G Wong	Presenter	Australian Reproduction Update	Assessing side population markers in placentas of human placental insufficiency	Melbourne, Victoria
Nov 2023	G Wong	Presenter	Society for Reproductive Biology (SRB)	Investigating side population marker expression in placental insufficiency	Brisbane, Queensland

Awards

A Roddy-Mitchell: Harold Mitchell Postgraduate Travelling Scholarship.

A Roddy-Mitchell: PSANZ New Investigator Award for Epidemiology.

Perinatal Epidemiology Group

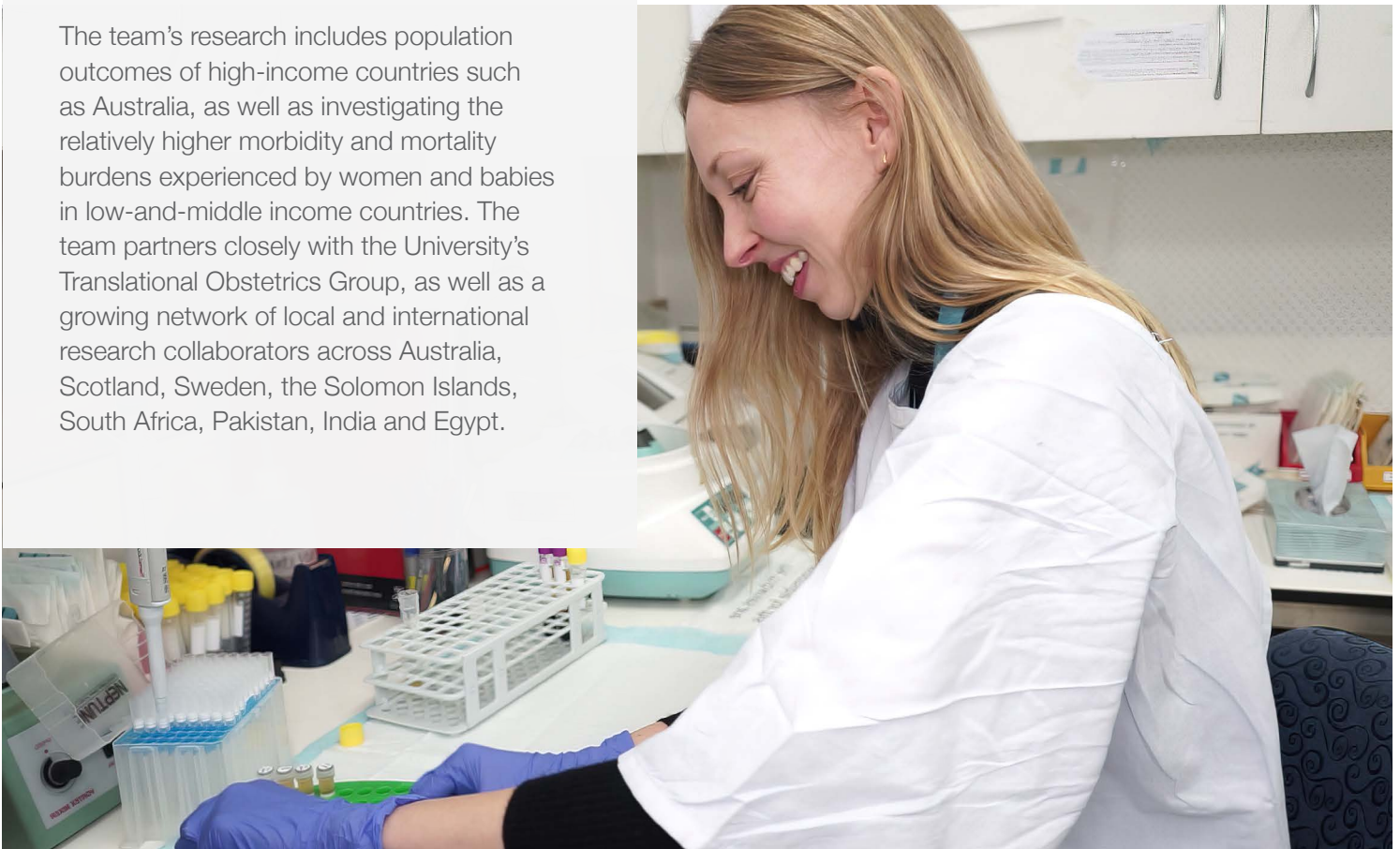
The Perinatal Epidemiology Group, co-led by Associate Professor Roxanne Hastie, Dr Anthea Lindquist and Professor Stephen Tong, is a multidisciplinary team of scientists, clinician researchers and PhD candidates.

The team aims to discover which factors of pregnancy pose relative risks or benefits to the health and future wellbeing of mothers and their children. Using large, population-wide health datasets ('big data'), the team links pregnancy outcome information with health (morbidity), death (mortality) and other socio-developmental outcome data. This ultimately allows for improved health information, counselling and clinical care to be made available to those planning a family, and to parents during pregnancy and following birth.

The team's research includes population outcomes of high-income countries such as Australia, as well as investigating the relatively higher morbidity and mortality burdens experienced by women and babies in low-and-middle income countries. The team partners closely with the University's Translational Obstetrics Group, as well as a growing network of local and international research collaborators across Australia, Scotland, Sweden, the Solomon Islands, South Africa, Pakistan, India and Egypt.

Research team

Dr Anthea Lindquist
Associate Professor Roxanne Hastie
Professor Stephen Tong
Dr Parinaz Mehdipour
Dr Manarangi De Silva
Dr Natasha Pritchard
Dr Amber Kennedy
Ms Anna Middleton
Ms Alexandra Roddy Mitchell
Dr Hannah Gordon
Ms Jessica Atkinson
Dr Richard Hiscock



Grants and scholarships

Year	Sponsor	Project Title	Investigators	Amount
2023	NHMRC Postgraduate Research Scholarship	Characterising the perinatal, neonatal and school-age childhood outcomes associated with diabetes in pregnancy	Dr Hannah Gordon	\$136,151
2023	Norman Beischer Medical Research Foundation Innovation Grant	Development of an obstetric growth centile calculator and app	Dr Natasha Pritchard	\$51,125
2023	Austin Medical Research Fund	Grant	Dr Amber Kennedy	\$10,000
2023	Australian Government Research Training Program Scholarship	Characterising the impacts of hypertensive disorders of pregnancy and their management on maternal and offspring outcomes	Jessica Atkinson	\$37,000
2023	Hubert Sydney Jacobs Memorial Scholarship	Perinatal mental health in low and middle-income countries	Alex Roddy Mitchell	
2023	Faculty of Medicine, Dentistry and Health Sciences	Henry and Rachel Ackman Travelling Scholarships	Dr Hannah Gordon and Jessica Atkinson	\$5,000

Publications

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 - Roddy Mitchell A, Gordon H, Lindquist A, Walker SP, Homer CS, Middleton A, Cluver CA, Tong S, Hastie R. Prevalence of Perinatal Depression in Low-and Middle-Income Countries: A Systematic Review and Meta-analysis. *JAMA Psychiatry*. 2023 May 1;80(5).
 - Hong J, Atkinson J, Roddy Mitchell A, Tong S, Walker SP, Middleton A, Lindquist A, Hastie R. Comparison of Maternal Labor-Related Complications and Neonatal Outcomes Following Elective Induction of Labor at 39 Weeks of Gestation vs Expectant Management: A Systematic Review and Meta-analysis. *JAMA Network Open*. 2023 May 1;6(5):e2313162-.
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Presentations

Team Member	Role	Event	Title	Location
A/Prof Roxanne Hastie	Invited Speaker	2023 National University of Singapore	Using Big Data to Improve Clinical Care	Singapore
A/Prof Roxanne Hastie and Dr Anthea Lindquist	Invited Speakers	2023 Global Obstetric Update	Journal Club on the Run	Melbourne
A/Prof Roxanne Hastie and Dr Anthea Lindquist	Invited Speakers	2023 Mercy Perinatal Fetal Medicine at Twilight	Current controversies in neurodevelopmental outcomes following corticosteroid administration	Melbourne
Alex Roddy Mitchell	Invited Speaker	2023 Hudson Institute of Medical Research – Symposium	Mental illness during the perinatal period	Melbourne
Dr Hannah Gordon	Invited Speaker	2023 Translational Preeclampsia Research Update, Sweden	Metformin use in pregnancy and preeclampsia among women with diabetes: a population-based Scottish cohort study	Sweden
Dr Hannah Gordon	Poster Presenter	2023 Australian and New Zealand Neonatal Network conference	In-utero transfer, active management and 28-day survival rates in extremely preterm inborn infants in Victoria, Australia	Sydney
Dr Hannah Gordon	Invited Speaker	2023 Mercy Perinatal Fetal Medicine at Twilight	In-utero transfer, active management and 28-day survival rates in extremely preterm inborn infants in Victoria, Australia	Melbourne

Jessica Atkinson	Contributor	2023 RANZCOG ASM	The impact of planned birth at 39 weeks' gestation on educational outcomes: A causal inference analysis	Perth
Alex Roddy Mitchell	Abstract Presenter	2023 University of Melbourne MDHS Graduate Research Conference	The prevalence of six perinatal anxiety disorders in low- and middle-income countries: a systematic review and meta-analysis	Melbourne
Alex Roddy Mitchell	Abstract Presenter	2023 Perinatal Society of Australia and New Zealand	The prevalence of perinatal anxiety in low- and middle-income countries: a systematic review and meta-analysis	Melbourne
Dr Parinaz Mehdipour	Internal Presentation	2023 Perinatal Epidemiology Group	Inverse probability weighting using the propensity score for causal estimation effect (Internal group presentation)	Melbourne

Noteworthy collaborations

The Perinatal Epidemiology Group is proud to have collaborated with some of the world's leading women's health scientists, researchers, and epidemiologists during 2023. Our brilliant and growing international network of collaborators includes Professor Sue Walker (Australia – Mercy Perinatal; University of Melbourne) Professor Caroline Homer and Professor Joshua Vogel (Australia – Burnet Institute); Professor Andrew Horne and Ms Ann Doust (Scotland – University of Edinburgh; Royal Infirmary of Edinburgh); Associate Professor Cathy Cluver (South Africa – Stellenbosch University; Tygerberg Hospital); Professor Anna-Karin Wikström and Associate Professor Lina Bergman (Sweden – Uppsala University; University of Gothenburg); Dr LeeAnne Panisi (Solomon Islands – The National Referral Hospital, Honiara); A/Prof Farhat Ahmed (Fatima Memorial Hospital, Lahore – Pakistan); Dr Essam Othman (Assiut University, Assiut – Egypt).

Awards

- Dr Rangi De Silva, Dr Parinaz Mehdipour, Dr Amber Kennedy, Dr Natasha Pritchard – PhD conferrals
- Dr Amber Kennedy – PhD Prize, Norman Beischer Medical Research Foundation
- Dr Amber Kennedy, Dr Rangi De Silva, Dr Natasha Pritchard – Postdoctoral Research Fellowship, Mercy Perinatal
- Dr Hannah Gordon – FRANZCOG training examination passes
- Dr Parinaz Mehdipour – Associate teaching award, Melbourne School of Population and Global Health

Obstetric Diagnostic and Therapeutics Group

The Obstetric Diagnostics and Therapeutics Group is focused on developing novel devices and treatments to improve pregnancy outcomes. Comprising a team of clinicians – obstetricians and midwives, scientists and engineers our multidisciplinary team is in the perfect position to innovate.

We have three main research themes focused on developing novel devices to improve fetal monitoring, treatments for placental disease and therapies to treat post-partum haemorrhage. We have taken many of these from lab assay to clinical trial. We are also commercialising our technology through start-up Kali Healthcare.

Research team members

A/Prof Fiona Brownfoot

Dr Elif Kadife

Dr Abu Rana

Ms Alesia Harper

Dr Debjyoti Karmarker

Dr Prathima Chowdary



Grants and funding

Ideas grant NHMRC

Launch Vic Alice Anderson Fund

University of Melbourne Pre-seed Fund

Norman Beischer Medical Research Foundation Project Grant

Austin Medical Research Foundation Grant

Melbourne Medical School Early Career Researcher Grants

Department of Obstetrics, Gynaecology and Newborn Health – Trevor B Kilvington Bequest grant

Publications

- Mendis L, Palaniswami M, Brownfoot F, Keenan E. The Effect of Fetal Heart Rate Segment Selection on Deep Learning Models for Fetal Compromise Detection. *Annu Int Conf IEEE Eng Med Biol Soc.* 2023 Jul;2023:1-4.
- Mendis L, Palaniswami M, Brownfoot F, Keenan E. Computerised Cardiotocography Analysis for the Automated Detection of Fetal Compromise during Labour: A Review. *Bioengineering (Basel).* 2023 Aug 25;10(9):1007.
- Louw V, Brownfoot F, Cluver C, Decloedt E, Kellermann T. An LC-MS/MS method for the simultaneous quantitation of sulfasalazine and sulfapyridine in human placenta. *J Pharm Biomed Anal.* 2023 Oct 25;235:115633.
- Baird L, Cannon P, Kandel M, Nguyen TV, Nguyen A, Wong G, Murphy C, Brownfoot FC, Kadife E, Hannan NJ, Tong S, Bartho LA, Kaitu'u-Lino TJ. Paternal Expressed Gene 10 (PEG10) is decreased in early-onset preeclampsia. *Reprod Biol Endocrinol.* 2023 Jul 18;21(1):65.
- Kadife E, Harper A, Chien K, Lino TK, Brownfoot FC. Novel genes associated with a placental phenotype in knockout mice also respond to cellular stressors in primary human trophoblasts. *Placenta.* 2023 Aug;139:68-74
- Chowdary P, Hastie R, Lino T, Middleton A, Capes G, Humphries A, Abed-Ali A, Anderson M, Mol BWJ, Horne A, Lim E, Andrew P, Brownfoot F, Tong S. Oral vinorelbine to treat women with ectopic pregnancy: a phase 1 clinical safety and tolerability study. *Fertil Steril.* 2023 Sep;120(3 Pt 2):695-696.
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Presentations

Team Member/s	Role	Event	Title	Location
Elif Kadife, Alesia Harper, Fiona C. Brownfoot	Invited presenters	Australia and New Zealand Society for Placenta Research (ANZPRA)	Developing placental xenograft models for therapeutic testing and discovery	Sunshine Coast
Elif Kadife, Alesia Harper, Fiona C. Brownfoot	Invited presenters	International Federation of Placenta Associations (IFPA)	Effect of metformin on mitochondrial dynamics in trophoblast cells	Rotorua, New Zealand
Elif Kadife, Alesia Harper, Fiona C. Brownfoot	Poster presenters	Society for Reproduction Investigation (SRI)	A potential mechanism of action for metformin to treat preeclampsia: Antioxidant defence in trophoblasts reduces reactive oxygen species production	Brisbane

Noteworthy collaborations

Dr Rick (Guei-Sheung) Liu (Centre for Eye Research Australia) is an internationally recognised expert in ophthalmic gene therapy. He has extensive experience in design and development of innovative gene therapy approaches. His team is working toward discovering entirely new gene therapies for preeclampsia.

Dr Ashleigh Poh (Olivia Newton-John Cancer Research Institute) is an early career researcher with the cancer and inflammatory laboratory. Dr Liu works with Dr Poh on several projects involving CRISPR mediated gene editing technologies, which are underutilised within the field of obstetrics and will enable novel discoveries in molecular mechanisms of pregnancy complications.

Professor Kieran Harvey (Peter MacCallum Cancer Centre) leads the Organogenesis and Cancer Program. Professor Harvey was part of the group that discovered YAP involved in organ size control and regeneration. Professor Harvey advises the team in testing the therapeutic potential of these drugs in treating placental and fetal growth restriction.

Dr Diana Stojanovski (Bio21 Institute) is lab head and an internationally renowned mitochondrial and proteomics expert. She is investigating the main mode of action for our most successful (clinically trialled) therapeutic encompassing mitochondrial function and structure.

Awards and achievements

A/Prof F Brownfoot – Dame Kate Campbell Fellowship

Dr Debjyoti Karmarker – Postgraduate Scholarship

Dr Elif Kadife – Department of Obstetrics, Gynaecology and Newborn Health Fellowship

Dr Elif Kadife – Short-term Scholar- Frontiers in Reproduction- Mastroianni-Segal-Koide Scholarship

Hui Perinatal Research Group

The Hui Perinatal Research Group is a multidisciplinary team of researchers working to improve health outcomes for mothers and babies. The Hui perinatal research team also has members based at the Reproductive Epidemiology group at the Murdoch Children's Research Institute, and in the Department of Obstetrics and Gynaecology at Northern Health (co-lead with Professor Natalie Hannan).

Research team members

Professor Lisa Hui
 Dr Melvin Marzan
 Dr Ishara Atukorala
 Dr Tanya Tripathi
 Dr Natalia Rode
 Jo Watson
 Dr Willem Gheysen
 Cecilia Pynaker

Grants and funding

Year	Sponsor	Project Title	Investigators	Amount
2023 -2027	University of Melbourne Medical School	Dame Kate Campbell Fellowship	Lisa Hui (CI)	\$433,000
2022 – 2024	NBMRF Clinical Research Fellowship	Education, Serology and Evaluation to prevent congenital cytomegalovirus infection	Lisa Hui (CI)	\$600,000
2021 – 2025	Emerging Leader 2 Clinical Investigator Fellowship	Closing the critical knowledge gaps in perinatal genomics	Lisa Hui (CI)	\$1,281,125
2021 – 2023	University of Melbourne Medical School	Strategic Grant for Outstanding Women	Lisa Hui (CI)	\$56,000
2020 – 2023	National Health and Medical Research Council Cohort Study Grant	Childhood Outcomes of fetal genomic variants: The PrenatAL Microarray (PALM) cohort study	Lisa Hui (CI)	\$727,858
2023	Safer Care Victoria research fellowship	Exploring the impact of COVID-19 on maternal and newborn health in Victoria	Lisa Hui (CI)	\$49,000
2022 – 2027	MRFF Mitochondrial Donation Pilot Program	The mitoHOPE (Healthy Outcomes Pilot and Evaluation) Program	Lisa Hui (CI-Y)	\$15,000,000



Year	Sponsor	Project Title	Investigators	Amount
2022 – 2026	NHMRC cohort study grant	Whole-of-population CRISPR point-of-care testing for congenital cytomegalovirus to prevent hearing and neurodevelopment disabilities through a public health approach	Lisa Hui (CI-I)	\$2,058,920.60
2022 – 2024	Cerebral Palsy Alliance	Evaluating patient and GP knowledge of congenital CMV prevention behaviours before and after the launch of a GP eLearning module	Lisa Hui (CI-B)	\$48,400
2021 – 2023	Australian Research Council Partnership Grant	Ethical, Social and Regulatory Issues in Advanced Prenatal Testing	Lisa Hui (CI-C)	\$571,076
2024 – 2026	University of Melbourne	Hallmark Research Initiative in Reproductive Justice Grant	Lisa Hui	\$450,000
2023	Austin Medical Research Foundation	Austin Medical Research Foundation grant	Ishara Atukorala	\$15,000
2023	Safer Care Victoria	Fellowship	Melvin Marzan	\$49,000
2024 – 2025	Cerebral Palsy Alliance	Emerging Researcher Grants Program	Tanya Tripathi	\$74,868
2023	Cerebral Palsy Alliance	PhD scholarships grant	Dr Han-Shin Lee	\$50,000
2023	Norman Beischer Medical Research Foundation	Innovation Grant	Dr Willem Gheysen	\$39,000

Publications

- Manno JM, Marzan MB, Rolnik DL, Potenza S, Pritchard N, Said JM, Palmer KR, Whitehead CL, Sheehan PM, Ford J, Mol BW, Walker SP, Hui L. Reduction in spontaneous and iatrogenic preterm births in twin pregnancies during COVID-19 lockdown in Melbourne, Australia: a multicenter cohort study. *BMC Pregnancy Childbirth*. 2023 Dec 11;23(1):846. doi: 10.1186/s12884-023-06137-9.
- Xie M, Tripathi T, Holmes NE, Hui L. Serological screening for cytomegalovirus during pregnancy: A systematic review of clinical practice guidelines and consensus statements. *Prenat Diagn*. 2023 Jun;43(7):959-967. doi: 10.1002/pd.6397.
- Rudd, I. P., Marzan, M. B., and Hui, L. Cytomegalovirus serological screening at the first antenatal visit: A tertiary-centre audit of general practitioner practices and maternal seroprevalence. *Aust N Z J Obstet Gynaecol*. 2023 Jun;63(3):454-459. doi: 10.1111/ajo.13645.
- Hui L, Ellis K, Mayen D, Pertile MD, Reimers R, Sun L, Vermeesch J, Vora NL, Chitty LS. Position statement from the International Society for Prenatal Diagnosis on the use of non-invasive prenatal testing for the detection of fetal chromosomal conditions in singleton pregnancies. *Prenat Diagn*. 2023 Jun;43(7):814-828. doi: 10.1002/pd.6357.
- Hui L, Marzan MB, Rolnik DL, Potenza S, Pritchard N, Said JM, Palmer KR, Whitehead CL, Sheehan PM, Ford J, Mol BW, Walker SP. Reductions in stillbirths and preterm birth in COVID-19-vaccinated women: a multicenter cohort study of vaccination uptake and perinatal outcomes. *Am J Obstet Gynecol*. 2023 May;228(5):585.e1-585.e16. doi: 10.1016/j.ajog.2022.10.040.
- Hui L, Johnson JA, Norton ME. ISPD 2022 debate- When offering a first trimester ultrasound at 11 + 0 to 13 + 6 weeks, a detailed review of fetal anatomy should be included. *Prenat Diagn*. 2023 Apr;43(4):421-427. doi: 10.1002/pd.6251.
- Calvert, C., Brockway, M. M., Zoega, H., Hui, L., Azad, M. B. Changes in preterm birth and stillbirth during COVID-19 lockdowns in 26 countries. *Nat Hum Behav*. 2023 Apr;7(4):529-544. doi: 10.1038/s41562-023-01522-y
- Pynaker, C., Norris, F., Hui, L., and Halliday, J. Perinatal outcomes and genomic characteristics of fetal copy number variants: An individual record linkage study of 713 pregnancies. *Prenat Diagn*. 2023 Apr;43(4):516-526. doi: 10.1002/pd.6305.
- Johnston, M., Warton, C., Pertile, M. D., Taylor-Sands, M., Delatycki, M. B., Hui, L., Savulescu, J., and Mills, C. (2023). Ethical issues associated with prenatal screening using non-invasive prenatal testing for sex chromosome aneuploidy. *Prenat Diagn*, 2023 Feb;43(2):226-234. doi: 10.1002/pd.6217.
- Hui, L., Langlois S. Prenatal screening and diagnosis of sex chromosome conditions: The new normal? *Prenat Diagn*. 2023 Feb;43(2):131-132. doi: 10.1002/pd.6323.
- Loughry, L., Pynaker, C., White, M., Halliday, J., and Hui, L. State-wide increase in prenatal diagnosis of Klinefelter syndrome on amniocentesis and chorionic villus sampling: Impact of non-invasive prenatal testing for sex chromosome conditions. *Prenat Diagn*. 2023 Feb;43(2):156-161. doi: 10.1002/pd.6103.
- Hui, L., and Halliday, J. A decade of non-invasive prenatal screening in Australia: National impact on prenatal screening and diagnostic testing. *Aust N Z J Obstet Gynaecol*. 2022 Dec 18. doi: 10.1111/ajo.13638.

Presentations

Dates	Team Member/s	Role	Title	Event	Location
March 2023	Lisa Hui	Oral (Speaker selected from abstract)	Maternal COVID-19 vaccination uptake and perinatal outcomes in Melbourne	PSANZ 2023	Melbourne
May 2023	Lisa Hui	Oral (Invited speaker)	CMV Screening during pregnancy	Women's Healthcare Australasia	Online
Jan 2023	Lisa Hui	Oral (Invited speaker)	"What should we be doing to prevent congenital CMV? The ESE-CMV study	Mercy Hospital for Women grand rounds	Melbourne
June 2023	Lisa Hui	Conference co-chair	First trimester screening	27th International Conference on Prenatal Diagnosis and Therapy	Edinburgh, UK
June 2023	Lisa Hui	Oral (Invited speaker)	Overview of the 2023 International Society for Prenatal Diagnosis position statement on NIPT in singleton pregnancies	27 th International Conference on Prenatal Diagnosis and Therapy	Edinburgh, UK
June 2023	Lisa Hui	Oral (Invited speaker)	Imaging and fetal phenotyping (case-report)	27 th International Conference on Prenatal Diagnosis and Therapy	Edinburgh, UK
July 2023.	Lisa Hui	Oral (Invited speaker)	The potential of cfRNA to reveal maternal-fetal states	NIAID, (NICHD & National Institute of Health	USA
July 2023	Lisa Hui	Invited expert	Workshop: MBS funding for NIPT	The XXIII International Congress of Genetics and Genomics	Melbourne
August 2023	Lisa Hui	Oral (Invited speaker)	CMV in pregnancy – an update	Maternal Fetal Medicine and Obstetrics Symposium	Brisbane
August 2023	Lisa Hui	Oral (Invited speaker)	2023 ISPD statement on NIPT	Maternal Fetal Medicine and Obstetrics Symposium	Brisbane
August 2023	Lisa Hui	Oral (Invited speaker)	Integrating NIPT not 1 st trimester screening	Maternal Fetal Medicine and obstetrics Symposium	Brisbane
November 2023	Lisa Hui	Oral (Invited speaker)	NIPT and fetal ultrasound – how do they work together?	Taiwan Maternal Fetal Medicine Annual Congress	Taiwan
October 2023	Natalia Rode	Oral	Engaging GPs in antenatal CMV education and awareness	Congenital CMV symposium	USA
October 2023	Tanya Tripathi, Jo Watson	Oral	The lived experience of suspected CMV infection in pregnancy	Congenital CMV symposium	USA
October 2023	Lisa Hui	Oral	Screening in pregnancy and VCV – what's stopping us?	Congenital CMV symposium	USA
October 2023	Ishara Atukorala	Oral	Amniotic fluid and congenital CMV: Beyond PCR	Congenital CMV symposium	USA

Dates	Team Member/s	Role	Title	Event	Location
October 2023	Ishara Atukorala	Oral	First trimester placental exposure to novel CMV antiviral drugs – an in vitro toxicity study	University of Melbourne – MDHS – Early Career Researcher Symposium	Melbourne
October 2023	Lisa Hui	Oral (Invited speaker)	The COVID-19 Pandemic and Perinatal Outcomes: What Happened to Stillbirths and Preterm Births During the Melbourne Lockdown?	Western Health Research Week	Melbourne
November 2023	Ishara Atukorala	Oral	First trimester placental exposure to novel CMV antiviral drugs an in vitro toxicity study	Northern Health Research Week	Melbourne
November 2023	Lisa Hui	Oral (Invited speaker)	Build it and they will come – growing translational research capacity through the NCHER reproductive health biobank	Northern Health Research Week	Melbourne
December 2023	Lisa Hui	Oral (Invited speaker)	Update on NIPT for GPs	Shared Maternity Care Collaborative Workshop	Melbourne
December 2023	Lisa Hui	Oral (Invited speaker)	Is antenatal screening and maternal treatment with valaciclovir the solution to congenital CMV?	Fetal Medicine at Twilight	Melbourne

Noteworthy collaborations

- Honorary research fellow, Professor Jane Halliday, Murdoch Childrens Research Institute
- Dr Hayley Smithers-Sheedy, Senior Research Fellow, Cerebral Palsy Alliance Research Institute
- Professor Melissa Wake, Generation Victoria (GenV) Birth Cohort, Murdoch Childrens Research Institute
- Professor Alicia Oshlack group, Peter MacCallum Cancer Centre
- Professor Bhupinder Pal group, Olivia Newton John Cancer Research Institute
- Professor David Amor, Group Leader, Murdoch Children’s Research Institute

Awards and achievements

Lisa Hui – Promotion to Level E Professor, University of Melbourne 2023; Promotion to Group Leader, Reproductive Epidemiology group, Murdoch Children’s Research Institute 2023; University of Melbourne MDHS Dame Kate Campbell Fellowship 2023-2028

Ishara Atukorala – Peter Brooks Award for the best oral presentation at Northern Health R

Therapeutics Discovery and Vascular Function Group

The Therapeutics Discovery and Vascular function in Pregnancy group is focused on understanding serious pregnancy complications such as preeclampsia, preterm birth, and fetal growth restriction with the ultimate goal of developing novel therapeutics to treat these often life-threatening conditions. As well as repurposing safe in-pregnancy drugs for the treatment of pregnancy complications, the team has a strong focus on innovative drug packaging and targeted delivery systems, employing nanoparticle technology to advance therapeutic development in the obstetrics field.



Dr Natasha de Alwis

Research team members

- Professor Natalie Hannan
- Dr Natalie Binder
- Dr Natasha de Alwis
- Bridget Arman
- Bianca Fato
- Rose Freemantle
- Chloe Miles
- Anjali Garg
- Lydia Baird

Publications

- Masoumeh Ghorbanpour S, Wen S, Kaitu'u-Lino TJ, Hannan NJ, Jin D, McClements L. Quantitative Point of Care Tests for Timely Diagnosis of Early-Onset Preeclampsia with High Sensitivity and Specificity. *Angew Chem Int Ed Engl.* 2023 Jun 26;62(26):e202301193. doi: 10.1002/anie.202301193. Epub 2023 May 15. PMID: 37055349.
- Arman BM, Binder NK, de Alwis N, Kaitu'u-Lino TJ, Hannan NJ. Repurposing existing drugs as a therapeutic approach for the prevention of preterm birth. *Reproduction.* 2022 Dec 2;165(1):R9-R23. doi: 10.1530/REP-22-0226. PMID: 36305709.
- Baird L, Cannon P, Kandel M, Nguyen TV, Nguyen A, Wong G, Murphy C, Brownfoot FC, Kadife E, Hannan NJ, Tong S, Bartho LA, Kaitu'u-Lino TJ. Paternal Expressed Gene 10 (PEG10) is decreased in early-onset preeclampsia. *Reprod Biol Endocrinol.* 2023 Jul 18;21(1):65. doi: 10.1186/s12958-023-01116-3. PMID: 37464405; PMCID: PMC10355026.
- Binder NK, de Alwis N, Beard S, Kadife E, Harper A, Kaitu'u-Lino TJ, Brownfoot FC, Hannan NJ. Sulfasalazine for the treatment of preeclampsia in a nitric oxide synthase antagonist mouse model. *Placenta.* 2023 Feb;132:20-26. doi: 10.1016/j.placenta.2023.01.001. Epub 2023 Jan 4. PMID: 36623415.

- Bartho LA, Kandel M, Walker SP, Cluver CA, Hastie R, Bergman L, Pritchard N, Cannon P, Nguyen TV, Wong GP, MacDonald TM, Keenan E, Hannan NJ, Tong S, Kaitu'u-Lino TJ. Circulating Chemerin Is Elevated in Women with Preeclampsia. *Endocrinology*. 2023 Mar 13;164(5):bqad041. doi: 10.1210/endo/bqad041. PMID: 36882076; PMCID: PMC10032305.
- Nguyen A, Cannon P, Kandel M, Nguyen TV, Baird L, Wong G, Hannan NJ, Tong S, Bartho L, Kaitu'u-Lino TJ. Cell surface associated protein mucin 15 (MUC15) is elevated in preeclampsia. *Placenta*. 2023 Sep 7;140:39-46. doi: 10.1016/j.placenta.2023.07.013. Epub 2023 Jul 20. PMID: 37531748.
- Arman BM, Binder NK, de Alwis N, Beard S, Debruin DA, Hayes A, Tong S, Kaitu'u-Lino TJ, Hannan NJ. Assessment of the tocolytic nifedipine in preclinical primary models of preterm birth. *Sci Rep*. 2023 Apr 6;13(1):5646. doi: 10.1038/s41598-023-31077-x. PMID: 37024530; PMCID: PMC10079980.
- Fato BR, Beard S, Binder NK, Pritchard N, Kaitu'u-Lino TJ, de Alwis N, Hannan NJ. The Regulation of Endothelin-1 in Pregnancies Complicated by Gestational Diabetes: Uncovering the Vascular Effects of Insulin. *Biomedicine*. 2023 Sep 28;11(10):2660. doi: 10.3390/biomedicine11102660. PMID: 37893034; PMCID: PMC10603897.
- Binder NK, Beard S, de Alwis N, Fato BR, Nguyen TV, Kaitu'u-Lino TJ, Hannan NJ. Investigating the Effects of Atrial Natriuretic Peptide on the Maternal Endothelium to Determine Potential Implications for Preeclampsia. *Int J Mol Sci*. 2023 Mar 24;24(7):6182. doi: 10.3390/ijms24076182. PMID: 37047162; PMCID: PMC10094118.

Presentations

- International Federation of Placental Associations 2023, New Zealand
- SOMANZ Annual Scientific Meeting 2023, Adelaide
- Society of Reproductive Biology Annual Meeting 2023, Brisbane
- Faculty of Medicine, Dentistry and Health Sciences Early Career Academic Network Symposium 2023, Melbourne
- Northern Health Research Week 2023, Melbourne
- Austin Health Research Week 2023, Melbourne
- Perinatal Society of Australia and New Zealand 2023, Melbourne
- Australian Reproduction Update 2023, Melbourne
- International Society for the Study of Hypertension in Pregnancy 2023, India

Awards and achievements

- Society for Reproductive biology Mercy Perinatal Mid-career medal for Women's health – Natalie Hannan
- Deans Award of Excellence, Dame Kate Campbell Fellowship, The university of Melbourne – Natalie Hannan
- Arthur Nyulasy Prize – Natasha de Alwis
- ANZPRA New Investigator IFPA Travel Award – Natasha de Alwis
- Andrew Phippard Memorial Award – Natasha de Alwis
- Northern Health Research Week –Natasha de Alwis
- Best talk (Melbourne Medical School) – Natasha de Alwis
- Austin Life Sciences for Discovery Research – Rose Freemantle
- MDHS Innovation and Enterprise Bootcamp Pitch Event – Bianca Fato
- ANZPRA New Investigator Award – Bianca Fato

Grants and funding

Year	Sponsor	Investigators	Amount
2023	NHMRC Ideas Grant	Natalie Hannan (CIA) and Natasha de Alwis (CIC)	\$1,129,806.40
2023	Department of Obstetrics and Gynaecology Fellowship	Natasha de Alwis	\$105,636
2023	Trevor B Kilvington Bequest Grant	Natasha de Alwis	\$49,225.40
2023	Norman Beischer Innovation Grant	Natasha de Alwis	\$69,964
2023	Henry and Rachel Ackman Travelling Scholarship	Natalie Binder	\$18,239
2023	The University of Melbourne Early Career Researcher Grant	Natasha de Alwis	\$39,934.79
2023	Society of Obstetric Medicine Australia and New Zealand Early Researcher Grant	Natasha de Alwis	\$10,000
2023	Department of Obstetrics and Gynaecology Fellowship	Natalie Binder	\$114,645
2023	Trevor B Kilvington Bequest Grant	Natalie Binder	\$49,584
2023	Norman Beischer Innovation Grant	Natalie Binder	\$63,958
2023	Henry and Rachel Ackman Travelling Scholarship	Natalie Binder	\$19,557.50
2023	Austin Medical Research Foundation Grant in Aid for Medical Research	Natalie Binder	\$10,000

Walker Perinatal Medicine Group

Professor Sue Walker is Head of the Department of Obstetrics, Gynaecology and Newborn Health, University of Melbourne. Along with collaborations with the Translational Obstetrics Group, the Perinatal Epidemiology Group and Professor Lisa Hui's Perinatal Research Group, her team also lead research on the reduction of preventable stillbirth through improved detection of fetal growth restriction, and the impact of sleep disordered breathing on pregnancy outcomes.

The Maternal Fetal Medicine specialists also lead research in high-risk pregnancy, fetal diagnosis and therapy. They are Principal Investigators for multiple perinatal trials and cohort studies being conducted at Mercy Hospital for Women, including the C-Steroid Trial (examining the role of corticosteroids prior to late pregnancy caesarean section: PI: E McCarthy); PreCEDE Trial (examining the role of corticosteroids prior to late pregnancy caesarean section among diabetic women: PI: A Shub); Protect-Me (the role of melatonin as a neuroprotective agent in women with early onset fetal growth restriction: PI: S Walker); Turrific (Rifampicin vs Ursodeoxycholic acid for women with cholestasis in pregnancy: PI S. Walker); Gen V (Victorian Birth Cohort; completed recruitment 2023: PI: S Walker). The Clinical Trials are co-ordinated by our Clinical Trial Co-ordinator, Yvonne Brown and Research Manager Kaitlin Constable.

Research team members

- Professor Sue Walker AO
- Dr Teresa MacDonald
- Dr Alison Fung
- Dr Elizabeth McCarthy
- Dr Alexis Shub
- Dr Dani Wilson
- Yvonne Brown
- Kaitlin Constable

Publications

- Alda MG, Holberton J, MacDonald TM, Charlton JK. Small for gestational age at preterm birth identifies adverse neonatal outcomes more reliably than antenatal suspicion of fetal growth restriction. *J Matern Fetal Neonatal Med.* 2023. doi: 10.1080/14767058.2023.2279017
- Bartho LA, Keenan E, Walker SP, MacDonald TM, Nijagal B, Tong S, Kaitu'u-Lino TJ. Plasma lipids are dysregulated preceding diagnosis of pre-eclampsia or delivery of a growth restricted infant. *EBioMedicine.* 2023. doi: 10.1016/j.ebiom.2023.104704.
- Bartho LA, Kandel M, Walker SP, Cluver CA, Hastie R, Bergman L, Pritchard N, Cannon P, Nguyen TV, Wong GP, MacDonald TM, Keenan E, Hannan NJ, Tong S, Kaitu'u-Lino TJ. Circulating Chemerin is elevated in women with preeclampsia. *Endocrinology.* 2023. doi: 10.1210/endo/bqad041.
- Hiscock RJ, Atkinson JA, Tong S, Walker SP, Kennedy A, Cheong JYL, et al. Educational Outcomes for Children at 7 to 9 Years of Age After Birth at 39 vs 40 to 42 Weeks' Gestation. *JAMA Network Open.* 2023;6(11):e2343721-e.
- Manno JM, Marzan MB, Rolnik DL, Potenza S, Pritchard N, Said JM, Walker SP, et al. Reduction in spontaneous and iatrogenic preterm births in twin pregnancies during COVID-19 lockdown in Melbourne, Australia: a multicenter cohort study. *BMC Pregnancy and Childbirth.* 2023;23(1):846.



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- Guzys A, Reid SM, Bolch C, Reddihough DS, Teoh M, Palma-Dias R, Walker SP, et al. Developmental outcomes for survivors of placental laser photocoagulation for the management of twin-to-twin transfusion syndrome. *BMC Pregnancy and Childbirth*. 2023;23(1):699.
- Atkinson J, Hastie R, Walker S, Lindquist A, Tong S. Telehealth in antenatal care: recent insights and advances. *BMC Medicine*. 2023;21(1):332.
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Presentations

Dates	Team Member/s	Role	Title	Event	Location
November 2023	Sue Walker	Convenor and Chair	CMV at Twilight	Mercy Perinatal Fetal Medicine at Twilight	Melbourne
October 2023	Teresa MacDonald	Invited Presenter	Putting the “Growth” in growth scan	RANZCOG ASM	Perth
October 2023	Sue Walker	Convenor and Chair	Fetal Cardiology	Mercy Perinatal Fetal Medicine at Twilight	Melbourne
October 2023	Teresa MacDonald	Invited Presenter	Assessing fetal growth velocity to detect fetuses at risk	Annual Stillbirth Forum	Brisbane
October 2023	Teresa MacDonald	Presenter	Slowing growth velocity as an indicator of fetal growth restriction in appropriate-for-gestational-age fetuses	International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) World Congress	Seoul, South Korea
October 2023	Sue Walker	Invited speaker	Debate: progesterone for preterm birth reduction	International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) World Congress	Seoul, South Korea

October 2023	Sue Walker	Chair	Improving understanding of causes of stillbirth	2023 National Stillbirth Forum	Brisbane
October 2023	Sue Walker	Convenor and Speaker	Heads and Hearts: Reigniting passion in healthcare leadership	Mercy Perinatal Seminar	Melbourne
September 2023	Sue Walker	Speaker	Prediction and prevention of Stillbirth	9 th Annual NeoPaed conference	Sydney
September 2023	Sue Walker	Convenor and Chair	Critical Care at Twilight	Mercy Perinatal Fetal Medicine at Twilight	Melbourne
July 2023	Teresa MacDonald	Speaker	Detection and Management of Fetal Growth Restriction	RANZCOG Regional meeting	Sydney
May 2023	Sue Walker	Convenor and Chair	Gestational Diabetes at Twilight	Mercy Perinatal Fetal Medicine at Twilight	Melbourne
April 2023	Sue Walker	Convenor and Chair	Prediction and Prevention	Mercy Perinatal Fetal Medicine at Twilight	Geelong
April 2023	Sue Walker	Invited Speaker	ICU Obstetric Emergencies	Austin ICU Registrar Obstetric Education	Melbourne
March 2023	Sue Walker	Invited Speaker	'Cultivating Career Growth for Women in Healthcare and Research'	Monash Partners Early and Mid-Career Symposium	Melbourne
March 2023	Sue Walker	Invited speaker	The Serious Six study day	Mercy Health	Melbourne
March 2023	Sue Walker	Invited Speaker	Subsequent pregnancy after stillbirth	Perinatal Society of Australia and New Zealand 2023 Annual Congress	Melbourne
March 2023	Teresa MacDonald	Presenter	Perinatal mortality is increased with a slowing fetal growth rate in the second half of pregnancy	Perinatal Society of Australia and New Zealand (PSANZ) Annual Scientific Congress	Melbourne
February 2023	Sue Walker	Convenor and Chair	Young Lungs and Growing Minds at Twilight	Mercy Perinatal Fetal Medicine at Twilight	Melbourne
Jan 2023	Sue Walker	Invited Speaker	Assessment of Fetal Wellbeing during pregnancy and labour	Victorian Perinatal Pathology Service	Melbourne

Grants and funding

Year	Sponsor	Project Title	Investigators	Amount
2023	Womens Health Network	Research, Translation and Impact Network Early Mid-Career Researcher Funded Award	Teresa MacDonald	\$50,000
2022 – 2023	MRFF	Improving the Health and Wellbeing of Indigenous Mothers and Babies	Sue Walker (CI)	\$4,999,905
2021 – 2026	NHMRC	Centre for Research Excellence in Stillbirth	Sue Walker (CIH)	\$2,500,000
2021 – 2023	NHMRC	Ideas Grant: Developing a Screening Test to Identify Women at Risk of Preeclampsia	Sue Walker (CIB)	\$1,119,284
2020 – 2024	MRFF	Can intrapartum Sildenafil safely Avert the Risks of Contraction-induced Hypoxia in labour? iSEARCH – a pragmatic Phase 3 Randomised Controlled Trial	Sue Walker (CI)	\$3,418,152
2020 – 2024	NHMRC	Synergy Grant: Developing new diagnostics to prevent stillbirth	Sue Walker (CIB)	\$5,000,000
2020 – 2024	NHMRC	PROTECT Me: Assessing Antenatal Maternal Melatonin Supplementation in Fetal Growth Restriction to Improve Neurodevelopmental Outcomes	Sue Walker (AI)	\$1,607,081
2022-2023	Centre for Research Excellence in Stillbirth	Future Leader's Fellowship	Teresa McDonald	\$50,000

Noteworthy collaborations

Fetal Growth Restriction

- Professor Sebastian Illanes, Universidad de los Andes, *Chile*
- Professor Lesley McCowan, Auckland University, *New Zealand*
- Professor Jenny Myers, Manchester University, *United Kingdom*
- Professor Gordon Smith, Cambridge University, *United Kingdom*

Therapeutics for Preeclampsia

- A/Prof Cathy Cluver, Stellenbosch University, *South Africa*
- Professor David Hall, Stellenbosch University, *South Africa*
- A/Prof Lina Bergman, Gothenburg University, *Sweden*
- Professor Christoph Lees, Imperial College, *United Kingdom*
- Professor Lucy Chappell, Kings College, *United Kingdom*

Perinatal Epidemiology

- A/Prof Cathy Cluver, Stellenbosch University, *South Africa*
- A/Prof Lina Bergman, Gothenburg University, *Sweden*

Sleep Research

- Professor Mark Howard, Institute of Breathing and Sleep, Austin Health, *Australia*

Awards and achievements

- Sue Walker: Fellow of the Australian Academy of Health and Medical Sciences
- Sue Walker: Medal of Distinction, Women's Health Australasia
- Sue Walker: Graduate Australian Institute of Company Directors
- Teresa McDonald: Invited Speaker – Mercy Hospital for Women's International Women's Day Grand Round

Endosurgery

The department specialises in providing advanced laparoscopic surgery to women. The research focuses of the team include pelvic pain, endometriosis, abnormal uterine bleeding and improving surgical techniques.

Research team members

Associate Professor Emma Readman	Dr Pinar Cingiloglu
Dr Lenore Ellett	Dr Hannah Gordon
Dr Samantha Mooney	Dr Evangeline Shalou
Dr Kate Stone	Dr Madeleine Smith
Dr Natalie Yang	Dr Samantha Sloss
Dr Charlotte Reddington	Dr Emma McLaughlin
Dr Lauren Hicks	Dr Laurence Jacuzzi
Dr Helen McNamara	Dr Melinda Fernando
Dr Avelyn Wong	Dr J Gollow
Michal Zelcer	Dr G Aitkin



Projects and grants

What lies beneath: umbilical adhesions following abdomino-pelvic surgery

L Ellett

Funded by Australasian Gynaecological Endoscopy and Surgery Society (AGES) Research Grant

Outpatient hysteroscopy prediction tool

L Hicks

Funded by Hologic

Vaginal Diazepam following Mirena IUD insertion

M Smith

Funded by Mercy Health Academic Research and Development Committee Small Grants

Assessing uterosacral thickness on ultrasound as a soft marker for peritoneal endometriosis

K Stone

Funded by AGES Research Grant

Sexual function in women undergoing surgery for severe endometriosis: a prospective cohort study

H McNamara

Hysteroscopic morcellation vs bipolar resection for retained products of conception: a pilot randomised controlled trial

S Mooney

Funded by AGES Research Grant

Pelvic pain clinic: the design and implementation of a shared care model

E Readman, G Aitken

Gas bubbles during hysteroscopy: a descriptive cohort pilot study

A Wong

A randomised controlled trial evaluating the use of a multimedia video to improve consent in patients undergoing total laparoscopic hysterectomy.

A Wong

Funded by Mercy Health Academic Research and Development Committee Small Grants

Retrospective assessment of bowel and sexual function after surgery for Deep Infiltrating Endometriosis

L Jacuzzi, J Gollow

Collaborations

Pelvic floor muscle tenderness in women undergoing surgery for endometriosis

H Frawley; C Cheng; Mercy Health; Royal Women's Hospital; University of Melbourne Department of Obstetrics and Gynaecology

Funded by NHMRC Medical Research Future Fund grant for endometriosis research

Treatment with PEA/PLD for endometriosis-related pain: a randomised controlled trial

M Amir; Mercy Health; Royal Women's Hospital; University of Melbourne Department of Obstetrics and Gynaecology

Funded by NHMRC Medical Research Future Fund grant for endometriosis research

Screening for the absence vs presence of endometriosis in women with pelvic pain

C Reddington; Mercy Health; Royal Women's Hospital; University of Melbourne Department of Obstetrics and Gynaecology

Funded by NHMRC Medical Research Future Fund grant for endometriosis research

Endometriosis Longitudinal Fertility Study

S Mooney; V Ross; Mercy Health; Royal Women's Hospital; University of Melbourne Department of Obstetrics and Gynaecology

Funded by NHMRC Medical Research Future Fund grant for endometriosis research

Botulinum toxin type A for the treatment of persistent pelvic pain and pelvic floor tension myalgia.

H McNamara, C Cheng. Mercy Health; Royal Women's Hospital; University of Melbourne Department of Obstetrics and Gynaecology

Funded by Norman Beischer Medical Research Foundation Innovation Grant

Endometrial RNA and proteins in human embryo implantation and their relevance to infertility

E Dimitriadis, E Readman

Randomised study examining utility of smart-phone based mindfulness meditation on trainee wellbeing

H McNamara, L Ellett

Publications

Cingiloglu P, Mooney S, Readman E, McNamara H, Choong S, Stone K, Ellett L. A Rare Case of Intramyometrial Pregnancy. *J Minim Invasive Gynecol.* 2023 Jul 26;S1553-4650(23)00286-8. doi: 10.1016/j.jmig.2023.07.009. Epub ahead of print. PMID: 37506877.

Fang QY, Campbell N, Mooney SS, Holdsworth-Carson SJ, Tyson K. Evidence for the role of multidisciplinary team care in people with pelvic pain and endometriosis: A systematic review. *Aust N Z J Obstet Gynaecol.* 2023 Sep 27. doi: 10.1111/ajo.13755. Epub ahead of print. PMID: 37753632.

Fox R, Aitken G, Mooney SS. Management of secondary postpartum haemorrhage: A systematic review. *Eur J Obstet Gynecol Reprod Biol.* 2023 Jan 23;282:116-123. doi:10.1016/j.ejogrb.2023.01.023. Epub ahead of print. PMID: 36708658.

Mooney SS, Sumithran P. Does weight loss in women with obesity induce regression of endometrial hyperplasia? A systematic review. *Eur J Obstet Gynecol Reprod Biol.* 2023 Jun 28;288:49-55. doi: 10.1016/j.ejogrb.2023.06.028. Epub ahead of print. PMID: 37423122.

Schulte RL, Fox R, Anderson J, Young N, Davis L, Saxton V, Mooney SS. Medical management of retained products of conception: A prospective observational study. *Eur J Obstet Gynecol Reprod Biol.* 2023; 285:153-158

Sewell M, Mooney S, Cvejic E, Stone K. The myometrial-cervical ratio: Can a simple sonographic measurement improve diagnosis of adenomyosis in a regional setting? *Ultrasound.* 2023;0(0). doi:10.1177/1742271X231164591

Steele LA, Mooney SS, Gilbee ES, Grover SR. When you see nothing at all: Outcomes following a negative laparoscopy. A systematic review. *Aust N Z J Obstet Gynaecol.* 2023 Sep 22. doi: 10.1111/ajo.13749. Epub ahead of print. PMID: 37737451.

Young N, Quinlivan J, Fox R, Anderson J, Davis L, Mooney SS. Economic cost of secondary postpartum haemorrhage: A case-control study at a tertiary hospital in Australia. *Aust N Z J Obstet Gynaecol.* 2023 Mar 21. doi: 10.1111/ajo.13664. Epub ahead of print. PMID: 36944552.

Presentations

Aitken, G. Implementation of a Shared-Care Clinic Design for Management of Persistent Pelvic Pain. Poster presentation, RANZCOG ASM 2023

Fernando, M., Readman, E., Wong, A. A Torted Dilemma: An Unusual and Complex Case of Labial Torsion in the Morbidly Obese Comorbid Patient. Poster presentation, RANZCOG ASM 2023

Mooney, S. Does weight loss in women with obesity induce regression of endometrial hyperplasia? A systematic review. AGES ASM 2023

Mooney, S. Uncompounding the vagina. AGES Pelvic Floor symposium 2023

Reddington, C. Surgical site infections. AGES ASM 2023

Readman, E. Invited faculty Foundations of Surgery RANZCOG workshop – Laparoscopic Entry. 18th and 19th March 2023

Readman, E. How the Interdisciplinary Care Model for Pelvic Pain Creates Better Outcomes. RANZCOG regional symposium Hobart, 30th March to 2nd April 2023

Readman, E. How to set up and Run an Outpatient hysteroscopy Service. Mercy hospital OPH workshop, 13th May 2023

Readman, E. Complications of laparoscopy – prevention and management. Laparoscopic Surgery Course 18-20th May 2023

Readman, E. Heavy menstrual bleeding and pelvic pain. Sexual Health Victoria, 16th Nov 2023

Nursing and midwifery professoriate

The Nursing and Midwifery Professoriate is a joint venture between Mercy Health and La Trobe University that promotes research and evidence-based practice. It is part of the La Trobe University and Mercy Health Academic Research Collaboratives in Health.



Research team members

- Professor Christine East
- Dr Kritika Poudel, Post-partum haemorrhage
- Dr Maggie Flood, Post-partum haemorrhage
- Dr Laura Whitburn, Labour pain
- Brooke Henshall, PhD Candidate, Midwifery, La Trobe University
- Deb Pidd, PhD Candidate, Midwifery, La Trobe University
- Chris Martin, Candidate, Professional Doctorate in Nursing, La Trobe University
- Raquel Dumas, Candidate, Professional Doctorate in Nursing, La Trobe University
- Lisa Speedie, Professional Doctorate in Nursing, La Trobe University
- Tess Crane, PhD Candidate, La Trobe University
- Olivia Sonneborn, PhD Candidate, Nursing, La Trobe University
- Nicki Hartney, Candidate, Professional Doctorate in Midwifery, La Trobe University
- Josh Roberts, Candidate, Professional Doctorate in Nursing, La Trobe University

Projects and grants

Exploring 10 years of Consultative Council on Obstetric Paediatric Mortality and Morbidity recommendations.

C East

Funded by Safer Care Victoria. \$98,000 2022-2024

Induction of labour: a shared decision – A pilot project to develop surveys for women before and after their induction of labour.

C East, M Buultjens, J Fielding, A Dawes

Risk factors for severe perineal trauma during childbirth

C East, M Pliszka, S Hellard, G Costa

Risk factors for postpartum haemorrhage

C East, C Carr, S Hellard, T Culvenor, K Poudel

Antenatal Art Therapy.

T Crane, M Buultjens, P Fenner, C East

Digital capability of the care workforce and technology-enabled healthcare delivery

ME Morris, NK Brusco, J Jones, NF Taylor, CE East, AI Semciw, K Edvardsson, C Thwaites, SL Bourke, UR Khan, S Fowler-Davis.

Factors to consider in an evidence-based “first-time parents’ program”

R Dumas, C East, J Davis, C Adams

Family centred neonatal and paediatric care: scoping review

B Copnell, K Edvardsson, E Greenwood, L Ridgway, S Hokke, C East, L McKenna, C Adams, EM Henderson

Father and non-birth parent engagement and involvement in child, family and community health settings

C Adams, K Edvardsson, C East, A O’Neill, L Hooker, L Ridgway, R Gray

Finding a pathway to reduce maternal anxiety in pregnancy following a previous psychologically traumatic birth.

D Pidd, M Newton, I Wilson, C East

Generation Victoria: cohort of Victorian children born in 2021 and 2022 and their parents.

M Wake on behalf of GenV. Mercy Health: S Walker, C East

Long COVID support – what lessons can we learn from regional and metropolitan services in Victoria?

B Grant B, R Armstrong R, CE East.

Funded by Mercy Health Services Research Committee Small Grants. \$3,000 2022-2023

Developing a woman-centred, inclusive definition of physiological birth using a multi-method exploratory sequential design.

B Henshall, J Davis J, C East

Labour pain assessment: pilot evaluation of a new woman-centred approach.

L Whitburn, CE East, M-A Davey, L Jones

Funded by Mercy Health Academic Research and Development Committee Small Grants (2020-21)

Midwives’ ways of working with labour pain.

K Dawson, E Newnham, L Jones, CE East, L Whitburn

Nursing students’ reflective practice

L Speedie, G Malik, C East

Prevention of Adverse Child Behavioural Development Following Maternal Depression in Pregnancy.

J Milgrom, H Skouteris, M Galbally, C East, V Glover.

Funded by NHMRC Project Grant APP1143448, \$794,828. 2018-2022

Sleep deprivation and Registered Nurses’ medication errors

C Martin, C East, J Joyce-McCoach, M Peddle

Defining best practice for women’s oral intake in labour

N Hartney, C East, L Whitburn

Nurse preparedness in non-pharmacological interventions and education of acute pain management for surgical and trauma patients.

O Sonneborn, G Malik, C East

Nursing workloads and adverse events in neonatal intensive care

J Roberts, J Davis, C East

Publications

Morris ME, Brusco NK, McAleer R, Billett S, Brophy L, Bryant R, Carey L, Wright AC, East C, Eckert M, Edvardsson K, Fetherstonhaugh D, Fowler-Davis S, Frederico M, Gray R, McCaskie D, McKinstry C, Mitchell R, Oldenburg B, Shields N, Smith K, Spelten E, Taylor N, Thwaites C, Young S, Blackberry I. Professional care workforce: a rapid review of evidence supporting methods of recruitment, retention, safety, and education. *Hum Resour Health*. 2023 Dec 13;21(1):95. doi: 10.1186/s12960-023-00879-5

Sutton E, Detering K, East CE, Whittaker A. Women's Expectations About Birth, Requests for Pain Relief in Labor and the Subsequent Development of Birth Dissonance and Trauma. *BMC Preg Child*. 2023. 23: 777. <https://doi.org/10.1186/s12884-023-06066-7>

Martin CV, Joyce Mc-Coach J, Peddle M, East CE. Sleep deprivation and medication administration errors in Registered Nurses – a scoping review. *J Clin Nurs*. 2023. 00:1-15. DOI: 10.1111/jocn.16912

Willey SE, Gibson M, Blackmore R, Goonetilleke L, McBride J, Highet N, Ball N, Gray K, Melvin G, Boyd ML, East C, Boyle J. Perinatal mental health screening for women of refugee background: addressing a major gap in pregnancy care. *Birth*. 2023. 00:1-13 DOI: 10.1111/birt.12782

East CE, Arafabid N, Liu JJ, Poudel K, Raghunathan K. Review of 10 years of CCOPMM recommendations on postpartum haemorrhage, fetal surveillance and neonatal resuscitation – for Safer Care Victoria. 2023. Mercy Health and La Trobe University

Flood MM, Pollock WE, McDonald SJ, Cullinane F, Davey MA. Primary postpartum haemorrhage adversely impacts breastfeeding initiation in Victoria, Australia. *Women Birth*. 2023 May 12:S1871-5192(23)00073-2. doi: 10.1016/j.wombi.2023.05.001. Epub ahead of print. PMID: 37183136

Pidd D, Newton M, Wilson I, East CE. Optimising maternity care for a subsequent pregnancy after a psychologically traumatic birth – a scoping review. *Women and Birth* 2023. 36(5) 10.1016/j.wombi.2023.03.006

Milgrom J, Hirshler Y, Holt C, Skouteris H, Galbally M, East C, Glover V, Reece J, O'Donnell KJ, Walker SP, Malloy S, Gemmill AW. Early intervention to prevent adverse child emotional and behavioural development following maternal depression in pregnancy: study protocol for a randomised controlled trial. *BMC Psychol*. 11(1) 10.1186/s40359-023-01244-w

Morris ME, Brusco NK, Jones J, Taylor NF, East CE, Semciw AI, Edvardsson K, Thwaites C, Bourke SL, Khan UR, Fowler-Davis S. The widening gap between digital capability of the care workforce and technology-enabled healthcare delivery: A nursing and allied health analysis. *Healthcare*. 2023. 11:994. <https://doi.org/10.3390/healthcare11070994>

Skalecki S, Lawford H, Gardener G, Coory M, Bradford B, Warrilow K, Wojcieszek A, Newth T, Weller M, Said J, Boyle F, East C, Gordon A, Middleton P, Ellwood D, Flenady V. My Baby's Movements: an assessment of the effectiveness of the My Baby's Movements phone program in reducing late-gestation stillbirth rates. *ANZJOG* 2023. 63(3); 378-83. DOI: 10.1111/ajo.13647

Geriatrics

Research informs what type of care, services and environments should be provided – whether that be in a residential aged care home, an independent living village, or by providing community aged care and disability services to assist people to live independently at home.

Publications

Lange PW, Turbić A, Soh CH, Clayton-Chubb D, Lim WK, Conyers R, Watson R, Maier AB. Melatonin does not reduce delirium severity in hospitalized older adults: Results of a randomized placebo-controlled trial. *J Am Geriatr Soc.* 2024 Mar 4. doi: 10.1111/jgs.18825. Epub ahead of print. PMID: 38438279.

Toro C, Felmingham B, Jhadav M, Celermajer DS, La Gerche A, O'Sullivan J, Kumar S, Mateos MK, Fulbright J, Govender D, Collier L, Cheung M, Eisenstat DD, Lange PW, Ayer J, Elliott DA, Conyers R. Lessons learnt in the first year of an Australian pediatric cardio oncology clinic. *Cardiooncology.* 2023 Dec 7;9(1):45. doi: 10.1186/s40959-023-00194-x. PMID: 38062530; PMCID: PMC10702043.



Allied health



Research team members

Associate Professor Helena Frawley, *PhD*

Anne Harrison, *Doctor of Physiotherapy*

RHD students

Emma Heron, Curtin University, WA

Funding and research grants

Physiotherapy

Title of grant	Funder, period of funding	Investigator list
Implementing univerSal Tele-prehabilitation into cAnceR caRe pathwayS STARRS trial	MRFF Clinician Researchers – Nurses Midwives and Allied Health 2022 (Application 2024254)	Frawley H (CI-E)
TELE-CONNECT: TELEhealth Exercise for CONTinence after GyNaEcological Cancer Treatment	Victorian Cancer Agency 2021 – 2024 (Application 20029). Mid-Career Research Fellowship	Frawley H (CI-A)
Pelvic floor muscle tenderness in women having investigative laparoscopy for pelvic pain: a prospective cohort study	MRFF EPCDR Endometriosis (Application ID: APP1199715), 2020 – 2025.	Frawley H (CI-A), Cheng C, Readman E, Harlow K, Ellett L, Mooney S, Hicks L, Reddington C, Healey M, Amir M, Rogers P
The feasibility of pelvic floor therapies to treat urinary and/or faecal incontinence in women following surgery for gynaecological cancer: a telehealth intervention trial.	Physiotherapy Research Foundation Seeding Grant (2018 – 2023, S18-018)	Brennen R, Frawley H (CI-B)
Pelvic floor dysfunction in women with gynaecological cancer	Physiotherapy Research Foundation Project Grant (2018 – 2023, PG17-021)	Frawley H (CI-A)
Exploration of the awareness and perceptions of admitted patients and families about the REACH (Recognise, Engage, Act, Call, Help) inpatient / family-activated escalation process (for communication concerns about patient deterioration)	Mercy Health Research Committee Small Grants 2023-24	Harrison A (CI-A)

Research projects underway, HREC approved

Physiotherapy

Title / name of project	Lead investigator	Names of collaborators	AH clinician researchers
TELE-CONNECT: TELehealth Exercise for CONTinence after GyNaEcological Cancer Treatment	Frawley H	Frawley H, Denehy L, Bennell K, Nelligan R, Ravi A, Hyde S, McNally O, Yao S-E, Lamb K, McManus F, Susanto N, Edib Z	Ravi A
Pelvic floor muscle tenderness in women having investigative laparoscopy for pelvic pain: a prospective cohort study	Frawley H	Frawley H, Cheng C, Readman E, Smith D, Harlow K, Ellett L, Mooney S, Hicks L, Maguire R, Reddington C, Healey M, Amir M, Rogers P	Ravi A
The feasibility of pelvic floor therapies to treat urinary and/or faecal incontinence in women following surgery for gynaecological cancer: a telehealth intervention trial	Brennen R (CI-A), Frawley H (Site PI)	Brennen R, Frawley H, Lin K-Y, Jobling T, Denehy L, McNally O, Hyde S, Edbrooke L, Granger C, Soh S-E	
Natural history of pelvic floor dysfunction in women with gynaecological cancer	Brennen R (CI-A), Frawley H (Site PI)	Brennen R, Frawley H, Lin K-Y, Jobling T, Denehy L, McNally O, Hyde S, Edbrooke L	
Exploration of the awareness and perceptions of admitted patients and families about the REACH (Recognise, Engage, Act, Call, Help) inpatient / family-activated escalation process (for communication concerns about patient deterioration).	Harrison A (CI-A)	Harrison A, Prajin, A	Harrison A
Therapeutic ultrasound treatment for inflammatory conditions of the lactating breast: a randomised controlled trail	Heron, E		
Trans-tibial and sacral nerve stimulation for overactive bladder: pilot study	Joint project between Urogynaecology and Physiotherapy departments	Vardy J, Kostos J	Vardy J, Kostos J

Publications

Journal publications

Physiotherapy

Citation	Pubmed, Web of Science or Journal link
Brennen R, Soh SE, Denehy L, Lin KY, Jobling T, McNally OM, Hyde S, Kruger J, Frawley H. Pelvic floor muscle training delivered via telehealth to treat urinary and/or faecal incontinence after gynaecological cancer surgery: a single cohort feasibility study. <i>Support Care Cancer</i> . 2023 Sep 23;31(10):589. doi: 10.1007/s00520-023-08050-5.	pubmed.ncbi.nlm.nih.gov/37740820/
Dacic JG, Hay-Smith EJC, Lin KY, Cook JL, Frawley HC. Women's preferences for pelvic floor screening in sport and exercise: a mixed-methods study integrating survey and interview data in Australian women. <i>Br J Sports Med</i> . 2023 Nov 30;57(24):1539-1549. doi: 10.1136/bjsports-2023-107017.	pubmed.ncbi.nlm.nih.gov/37648412/
Kadah S, Soh SE, Morin M, Schneider M, Ang WC, McPhate L, Frawley H. Are pelvic pain and increased pelvic floor muscle tone associated in women with persistent noncancer pelvic pain? A systematic review and meta-analysis. <i>J Sex Med</i> . 2023 Aug 25;20(9):1206-1221. doi: 10.1093/jsxmed/qdad089.	pubmed.ncbi.nlm.nih.gov/37507352/
Dacic JG, Hay-Smith J, Lin KY, Cook J, Frawley HC. Experience of Playing Sport or Exercising for Women with Pelvic Floor Symptoms: A Qualitative Study. <i>Sports Med Open</i> . 2023 Apr 25;9(1):25. doi: 10.1186/s40798-023-00565-9.	pubmed.ncbi.nlm.nih.gov/37097457/
Benjamin DR, Frawley HC, Shields N, Peiris CL, van de Water ATM, Bruder AM, Taylor NF. Conservative interventions may have little effect on reducing diastasis of the rectus abdominis in postnatal women – A systematic review and meta-analysis. <i>Physiotherapy</i> . 2023 Jun;119:54-71. doi: 10.1016/j.physio.2023.02.002.	pubmed.ncbi.nlm.nih.gov/36934466/
Dacic JG, Hay-Smith J, Cook J, Lin KY, Frawley HC. Screening for pelvic floor symptoms in exercising women: a survey of 636 health and exercise professionals. <i>J Sci Med Sport</i> . 2023 Feb;26(2):80-86. doi: 10.1016/j.jsams.2023.01.008.	pubmed.ncbi.nlm.nih.gov/36739199/
Kadah S, Soh SE, Morin M, Schneider M, Heron E, Frawley H. Is there a difference in pelvic floor muscle tone between women with and without pelvic pain? A systematic review and meta-analysis. <i>J Sex Med</i> . 2023 Jan 14;20(1):65-96. doi: 10.1093/jsxmed/qdac002.	pubmed.ncbi.nlm.nih.gov/36897234/
Brusco N, Morris ME, Foster S, Woods J, McCaskie D, Goodman S, Barnes C, Keren C, Frawley H. Improving stroke clinical guideline adherence in an Australian hospital using a clinician-led implementation process. <i>Top Stroke Rehabil</i> . 2023 Oct;30(7):738-750. doi: 10.1080/10749357.2022.2141819.	pubmed.ncbi.nlm.nih.gov/36323526/

Colombage UN, Soh SE, Lin KY, Kruger J, Frawley HC. The feasibility of pelvic floor training to treat urinary incontinence in women with breast cancer: a telehealth intervention trial. <i>Breast Cancer</i> . 2023 Jan;30(1):121-130. doi: 10.1007/s12282-022-01405-6. Epub 2022 Sep 26.	pubmed.ncbi.nlm.nih.gov/36163601/
Colombage UN, Soh SE, Lin KY, Frawley HC. Pelvic floor muscle function in women with and without breast cancer: A cross-sectional study. <i>Continence</i> . 2023;5.	https://www.sciencedirect.com/science/article/pii/S2772973723000085

Psychology

Citation	Pubmed, Web of Science or Journal link
Annesley, S., Josev, E.K., Tavoletti, M. (2023, February). We can learn a lot about long COVID from years of diagnosing and treating chronic fatigue syndrome. <i>The Conversation</i> , published online February 23rd 2023.	https://theconversation.com/we-can-learn-a-lot-about-long-covid-from-years-of-diagnosing-and-treating-chronic-fatigue-syndrome-196128
Cheong, J.L.Y.; Olsen, J.E.; Konstan, T.; Mainzer, R.M.; Hickey, L.M.; Spittle, A.J.; Wark, J.D.; Cheung, M.M.; Garland, S.M.; Duff, J., Clark, M.; Stevens, P.; Doyle, L.W.; Anderson, P.; Boland, R.; Burnett, A.; Charlton, M.; Davis, N.; Hickey, L.; Johnston, E.; Josev, E.K.; Lee, L.; McDonald, M.; Novella, B., Opie, G.; Pigdon, L.; Roberts, G.; Stewart, A.; Turner, A-M.; Woods, T. (2023). Growth from infancy to adulthood and associations with cardiometabolic health in individuals born extremely preterm. <i>The Lancet Regional Health – Western Pacific</i> , 34: 100717.	https://doi.org/10.1016/j.lanwpc.2023.100717
Douglas E; Hodgson KA; Olsen JE; Manley BJ; Roberts CT; Josev EK; Anderson PJ; Doyle LW; Davis PG; Cheong JLY, and the Victorian Infant Collaborative Study Group (2023). Postnatal corticosteroids and developmental outcomes in extremely preterm or extremely low birth weight infants: The Victorian Infant Collaborative Study 2016–17 cohort. <i>Acta Paediatr</i> . 2023; 112: 1226–1232.	https://doi.org/10.1111/apa.16696
Doyle LW, Chen J, Boland RA, Kane, S.C., Mainzer, R., Roberts, G., Josev, E.K., Clark, M., Anderson, P.J., Cheong, J.L.Y. (2023). Diagnostic accuracy of small-for-gestational-age status for infant mortality and school-age outcomes of live births <28 weeks' gestation: a cohort study. <i>Archives of Disease in Childhood – Fetal and Neonatal Edition</i> 2023;108:649-654.	https://10.1136/archdischild-2023-325515
Doyle, L.W., Ranganathan, S., Spittle, A.J., Opie, G., Mainzer, R.M., Cheong, J.L.Y. for the Victorian Infant Collaborative Study Group (includes Josev, E.K.). (2023). Expiratory airflow at 7–8 years of age in children born extremely low birthweight from 14 years before to 14 years after the introduction of exogenous surfactant. <i>eClinical Medicine</i> , 62: 102115.	https://doi.org/10.1016/j.eclinm.2023.102115

Book chapters

Physiotherapy

Citation	Pubmed, Web of Science or Journal link
Frawley, H. C., and Morin, M. (2023). Chronic pelvic floor pain. In K. Bø, L. C. Berghmans, M. van Kampen, and S. Morkved (Eds.), Evidence based physical therapy for the pelvic floor: bridging science and clinical practice (3rd ed.). London: Elsevier.	https://shop.elsevier.com/books/evidence-based-physical-therapy-for-the-pelvic-floor/bo/978-0-7020-8308-2
Frawley, H. C., and Brennen, R. (2023). Gynaecological cancer and pelvic floor dysfunction. In K. Bø, L. C. Berghmans, M. van Kampen, and S. Morkved (Eds.), Evidence based physical therapy for the pelvic floor: bridging science and clinical practice (3rd ed.). London: Elsevier.	https://shop.elsevier.com/books/evidence-based-physical-therapy-for-the-pelvic-floor/bo/978-0-7020-8308-2
Bø, K., and Frawley, H. (2023). Pelvic floor muscle training in prevention and treatment of pelvic organ prolapse In K. Bø, L. C. Berghmans, M. van Kampen, and S. Morkved (Eds.), Evidence based physical therapy for the pelvic floor: bridging science and clinical practice (3rd ed.). London: Elsevier.	https://shop.elsevier.com/books/evidence-based-physical-therapy-for-the-pelvic-floor/bo/978-0-7020-8308-2

Presentations

Physiotherapy

Collaborators list	Title of presentation	Type of presentation	Conference name	Date of presentation; Location of presentation or URL if online
Helena Frawley	Non-pharmacological and non-surgical therapies for endometriosis pain	International Oral Invited	World Congress on Endometriosis	6 May 2023, Edinburgh https://wce2023.com/dr-helena-frawley/
Harrison A, Frawley H, Taylor N, Shields N.	A consumer co-created infographic improves knowledge about physical activity and self-efficacy to exercise in women with GDM: a randomised trial	National Conference Oral – selected from submitted abstract	APA Physiotherapy Conference	5th October 2023, Brisbane, Australia
Colombage UN, Soh S-E, Yin K-Y, Brennen R, Frawley HC	Experiences and perspectives of pelvic floor dysfunction and treatment in women with breast cancer: a qualitative study	National Conference; Poster selected from submitted abstract	Clinical Oncology Society of Australia	October, Melbourne
Colombage UN, Soh S-E, Yin K-Y, Brennen R, Frawley HC	Feasibility of delivering pelvic floor muscle training to treat urinary incontinence in women with breast cancer: a telehealth study	National Conference; Poster selected from submitted abstract	Clinical Oncology Society of Australia	October, Melbourne

Brennen R, Lin K-Y, Denehy L, Soh S-E, Jobling T, McNally O, Hyde S, Frawley HC	Prevalence and incidence of pelvic floor disorders before and after hysterectomy for gynaecological cancer.	National Conference; Poster selected from submitted abstract	Clinical Oncology Society of Australia	October, Melbourne
Brennen R, Lin K-Y, Denehy L, Soh S-E, Jobling T, McNally O, Hyde S, Frawley HC	Associations between pelvic floor symptoms, physical activity and health-related quality-of-life 3-months after hysterectomy for gynaecological cancer	National Conference; Poster selected from submitted abstract	Clinical Oncology Society of Australia	October, Melbourne
Brennen R, Lin K-Y, Denehy L, Soh S-E, Jobling T, McNally O, Hyde S, Frawley HC	Is telehealth pelvic floor muscle training feasible to treat incontinence after gynaecological cancer?	National Conference; Poster selected from submitted abstract	Clinical Oncology Society of Australia	October, Melbourne
Dakic JG, Hay-Smith J, Lin K-Y, Cook J, Frawley HC	Pelvic health screening in sports – current practice and how could we do it better?	National Conference; Oral presentation selected from submitted abstract [Nominated for finalist for Best Paper in Physical Activity and Health Promotion section]	Asics Sports Medicine Australia Conference	Noosa, Australia
Dakic JG, Hay-Smith J, Lin K-Y, Cook J, Frawley HC	Women's preferences for pelvic floor screening in sport and exercise: a mixed methods study integrating survey and interview data in Australian women [Awarded Wendy Ey Best Paper – Women in Sport Award].	National Conference; Oral presentation selected from submitted abstract [Awarded Wendy Ey Best Paper – Women in Sport Award]	Asics Sports Medicine Australia Conference	Noosa, Australia
Colombage UN, Soh S-E, Yin K-Y, Brennen R, Frawley HC.	Experiences and perspectives of pelvic floor dysfunction and treatment in women with breast cancer: a qualitative study.	National Conference; Oral presentation selected from submitted abstract	Australian Physiotherapy Association IGNITE conference	Brisbane, Australia.
Colombage UN, Soh S-E, Yin K-Y, Brennen R, Frawley HC.	Feasibility of delivering pelvic floor muscle training to treat urinary incontinence in women with breast cancer: a telehealth study.	National Conference; Oral presentation selected from submitted abstract	Australian Physiotherapy Association IGNITE conference	Brisbane, Australia.
Brennen R, Lin K-Y, Denehy L, Soh S-E, Jobling T, McNally O, Hyde S, Frawley HC	Pelvic floor disorders, physical activity and quality of life after gynaecological cancer.	National Conference; Oral presentation selected from submitted abstract	Australian Physiotherapy Association IGNITE conference	Brisbane, Australia.

Dakic JG, Hay-Smith J, Lin K-Y, Cook J, Frawley HC	Experience of playing sport or exercising for women with pelvic floor symptoms: a qualitative study	National Conference; Oral presentation selected from submitted abstract	National Conference on Incontinence	Adelaide, Australia
Brennen R, Lin K-Y, Denehy L, Soh S-E, Jobling T, McNally O, Hyde S, Kruger J, Frawley HC	Telehealth-delivered pelvic floor muscle training to treat urinary and/or faecal incontinence after gynaecological cancer surgery: a single cohort feasibility study.	National Conference; Oral presentation selected from submitted abstract	National Conference on Incontinence	Adelaide, Australia
Brennen R, Lin K-Y, Denehy L, Soh S-E, Jobling T, McNally O, Hyde S, Frawley HC	Natural history of pelvic floor disorders before and after hysterectomy for gynaecological cancer	National Conference; Oral presentation selected from submitted abstract	National Conference on Incontinence	Adelaide, Australia

Allied Health

Collaborators list	Title of presentation	Type of presentation	Conference name	Date of presentation; Location of presentation or URL if online
Cooke P, Leo J, Harrison A	An Allied Health Assistant workforce journey: an observational study	National Conference Oral – selected from submitted abstract	Allied Health Assistant Conference	November 2024, Melbourne, Australia



Awards and achievements

Occupational Therapy

Awardee	Title of award / achievement / other	Period of award (if relevant)	Title of project
Umesh Baskaran	MACH Health Services Fellowship	July 2023 to July 2024	Investigating the impact of an advanced practice hand therapist-led clinic on simple upper limb fractures safely change patient access, clinical outcomes and patient accessibility when compared to usual care.

Psychology

Awardee	Title of award / achievement / other	Period of award (if relevant)	Title of project
Elisha Josev	The Victorian Infant Collaborative Study was awarded the 'Interdisciplinary Award' at the University of Melbourne Faculty of Medicine, Dentistry and Health Sciences Staff Excellence Awards in 2023	2023	Victorian Infant Collaborative Study

Palliative care services

Palliative care focuses on improving the quality of life for patients with serious illnesses through a comprehensive approach that addresses their physical, emotional, and psychological needs. This holistic care demands a collaborative, multidisciplinary approach to effectively managing the complex array of symptoms and challenges patients and their families face.

In 2023, our focus was on further enhancing our research capabilities and actively involving the multidisciplinary team. Establishing a Palliative Care Research Group is a step forward in bringing ideas and interests together, sharing challenges, and celebrating progress.

Research team members

Dr Annie Chiu
Dr Than Aye
Dr Lucy Kernick
Deanne Layton
Dr Maria Pisasale
Jennifer Zerafa
Dr Andrew Ng
Kirsten Mitchner
Dr Catherine Oliver
Cathy Dow
Dr Frances Squires
Kirsten Kopelke

Research projects

- Incidence and risk factors for falls with injury in the community palliative care setting: a retrospective cohort study
Dr Frances Squires, Deanne Layton, Cathy Dow, Kirsten Kopelke, Jennifer Zerafa, Kirsten Michener, A/Prof Lange
- Palliative Care Input and Treatment Patterns in Heart Failure Patients at End-of-Life in a Hospital Setting- A Retrospective Cohort Study
Dr Than Aye, Dr Maria Pisasale
- A Prospective Observational study of chronic non-malignant pain in patients referred to a Palliative care service. Dr Lucy Kernick

Publications

- UNITE team at Mercy Palliative Care – Integration of an urgent multidisciplinary response into community palliative care. Accepted for poster presentation for PCNA conference 2024
Val Crane, Deanne Layton, Arlene Miller, Kirsten Mitchener, Jenni Zerafa
- Ages Care Residential in Reach Collaboration at Mercy Palliative Care
Accepted for poster presentation for PCNA conference 2024
Val Crane, Deanne Layton, John Stafford
- Kernick L, Glare P, Hosie A, Chiu A, Kissane D. Prevalence and management of chronic nonmalignant pain in palliative care populations: A systematic review. Palliative Supportive Care. 2023 Apr 11;11:1-7. doi: 10.1017/S1478951523000378



Mercy Health
Care first

