BETTER TOGETHER

IMPROVING CARE THROUGH COLLABORATION

THE WOMEN'S RESEARCH REPORT 2018

the women's
the royal women's hospital
victoria australia

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2018 highlights

$20.3m GRANTS HELD
$7.2m GRANTS SPENT

10 RESEARCH CENTRES

231 PUBLICATIONS

95 RESEARCH STUDENTS

4,847 PATIENTS RECRUITED

58 CLINICAL TRIALS

$11.1m NHMRC GRANTS HELD
$3.3m NHMRC GRANTS SPENT

Foreword

It has been a standout year for research at the Royal Women's Hospital, with our people delivering new and improved health outcomes for women and newborns, and setting the standard for best practice and innovation locally and internationally.

The theme of this year's report is 'Better together: improving care through collaboration'. This title reflects the unique and valuable contribution the Women's makes as a partner within the Melbourne Biomedical Precinct and the important role our hospital plays in advancing the health agenda for women and newborns.

Some of the patients who have participated in, and benefited from, our research programs feature in this report. Their stories highlight our focus on patient-centred research that delivers life-changing outcomes for the women and newborns in our care.

We are proud to be leading the way in research that has a dedicated focus on women and babies, in particular those with very complex and specialised needs. This report reflects the breadth of our work across all aspects of health – physical, mental, emotional and social. It also demonstrates how the positive impacts of our research extend beyond the many thousands of individuals we care for, to the patient's family unit and broader community.

There are many highlights from the year past.

IN TOTAL, THE WOMEN'S 10 RESEARCH CENTRES WERE COLLECTIVELY AWARDED MORE THAN $20 MILLION IN COMPETITIVE GRANTS. WE PUBLISHED 231 PEER-REVIEWED MEDICAL PAPERS, SUPERVISED 95 STUDENTS (24 STUDENTS COMPLETED AND 71 ONGOING), AND CONDUCTED 58 CLINICAL TRIALS WITH MORE THAN 4,500 PATIENTS PARTICIPATING.

It has been a bumper year in terms of National Health and Medical Research Council (NHMRC) funding, with our researchers securing $13.3 million in NHMRC grants in 2018 – more than double the amount received the year before.

A substantial refurbishment of our research facility at Parkville saw the addition of dedicated space for up to 26 students. Office capacity was increased and the laboratory was refurbished and restructured to accommodate the needs of new and existing research groups.

We were delighted to welcome Professor Suzanne Garland AO with her Centre for Women's Infectious Disease group, who joined us from Bio21. In addition, Professor Clare Scott and colleagues joined the Women's Cancer Research Centre, and Professor Eva Dimitriadis and colleagues joined our Gynaecology Research Centre.

It is a great credit that we are attracting this calibre of talent, enhancing the already strong team we have in place. We would like to acknowledge the contribution, effort and passion of the Women's research leaders, whose teams have excelled under the expert leadership of each director.

We are very proud to introduce the 2018 Research Report and hope you are inspired as you read about the progress of our work over the past year.

Dr Sue Matthews
Chief Executive, the Women's

Professor Peter Rogers
Director of Research

ACKNOWLEDGEMENT OF TRADITIONAL OWNERS

The Royal Women's Hospital acknowledges and pays respect to the peoples of the Kulin Nations, the traditional owners of the country on which our sites at Parkville and Sandringham stand and we pay our respects to their Elders past, present and emerging.

The Women's is committed to improving health equity for Aboriginal and Torres Strait Islander women, children and families and we recognise the fundamental significance of cultural traditions, beliefs and connection to country for the health and wellbeing of Aboriginal and Torres Strait Islander peoples.

We acknowledge the importance of kinship and family structures as a cohesive force that binds Aboriginal and Torres Strait Islander peoples and we recognise their cultures, community connection, and self-determination as critical protective factors for wellbeing.

THANKS TO OUR SUPPORTERS

The Royal Women's Hospital Foundation raises vital funds to drive research, innovation and progress across all areas of the hospital, and to focus on new initiatives that make a big difference to the women and babies of this generation and the next.

We wish to acknowledge the very valuable fundraising support the Women's Foundation provides, and the many contributions from the broader academic and research community.

As a public hospital, the Women's relies on the generous support of donors to fund vital clinical research, including many of the initiatives highlighted in this report.

We offer heartfelt thanks to our community supporters, donors, charitable trusts and patients past and present. Their generosity helps ensure best practice and progressive healthcare services for thousands of women and babies across the State.

THANKS TO OUR CONTRIBUTORS

We would like to sincerely thank all those who contribute in some way to our research efforts: the many different funding agencies; our research staff and collaborators; our non-research staff who support our research in so many ways; our dedicated Human Research and Ethics Committee members; and most importantly, the patients who contribute to our research effort through participation in clinical trials.

Improving care through collaboration

The Women's is a core member of the Melbourne Biomedical Precinct, one of the world's leading biomedical centres that includes over 30 world-class hospitals, medical research institutes, bio-technology companies and universities.

Identified as one of the Victorian Government's six Employment Clusters, investment in the Precinct is creating a multi-institutional, world-class asset for Victoria.

The precinct employs 49,000 people, educates over 7,000 biomedical, health and medical students each year, and produces approximately 24 per cent of Australia's output in academic journals. Its work is at the forefront of improving outcomes in areas such as child and adolescent health, cancer, women's health, mental health and neurosciences, infectious diseases and immunology, and heathy ageing.

As a member of the Melbourne Biomedical Precinct, the Women's collaborates with precinct partners to: deliver outstanding research outcomes and innovations in clinical care; attract and foster the best and brightest talent; and educate the next generation of world-class researchers and clinicians.

As a large specialist hospital we are able to attract researchers from around the world keen to pursue their quest for knowledge. Our focus on translational research through collaborative partnerships means research teams are often drawn from across the Precinct to deliver research outcomes that can be translated into innovative treatments, new practices and improved care regimes at the bedside.

In collaboration with our partners, the Women's conducts approximately 60 clinical trials each year, involving more than 4,500 participants and producing 231 publications. Trials include the testing of new models of care for women and newborns, cancer treatments, vaccines, surgical and other medical treatments, medical devices and behavioural therapies.

The Women's must attract funds for our research activities from a range of non-government sources, including academic and philanthropic grants. Commercialisation is a priority of the Melbourne Biomedical Precinct strategic plan and an area in which the Women's is increasing its involvement. We know commercialisation is a key driver of innovation and is becoming a critical part of knowledge-intensive economies. Industry partners can help fund more clinical trials, fast track the translation of lifesaving treatments, and capture value that might otherwise go offshore.

Unlocking the value from digital health and big data is another priority area of the Melbourne Biomedical Precinct strategic plan, and an important goal which the Women's is working towards achieving. High quality data helps to deliver new research insights, encourages novelty and innovation, and is critical to delivering better patient outcomes. The new Connecting Care in Parkville electronic medical record system, scheduled for delivery in mid-2020, aims to deliver these goals. It will be implemented across Parkville's four public hospitals, transforming patient care and research across the Precinct.

The Women's membership in the Melbourne Biomedical Precinct delivers numerous benefits for the women and newborns of Victoria. The Parkville precinct, with its concentration of hospitals, research facilities and academic campuses, gives extraordinarily talented individuals from a range of disciplines an unparalleled opportunity to work together, delivering enormous value now and in the future.

Newborn Research Centre

The motto of the Women's Newborn Research Centre is "making the babies better". To achieve this, the team at the centre is working hard to give all babies, irrespective of their size and maturity at birth, the best chance of growing into healthy adults.

Research in the delivery room is a difficult task due to the often chaotic and stressful environment but the centre has demonstrated that it is possible to do high-quality studies and discover new ways of monitoring and treating newborn babies.

The centre conducts research into the care given to babies immediately after birth, throughout their time in hospital and during their first years at home. The centre is also working towards a better understanding of the long-term outcomes for tiny babies beyond the nursery, including into adulthood.

Professor Peter Davis
Director

Dr Jennifer Dawson
Deputy Director

FIRST DAYS CRUCIAL TO LONG-TERM HEALTH OF PRETERM BABIES

Lead researcher
Associate Professor Jeanie Cheong

New research looking at the first days of life of very preterm babies means doctors can now more accurately inform parents about their baby's long term health risks.

The study of 751 babies found the likelihood of extremely preterm babies surviving without long-term disability dramatically improved each day post-birth, and most significantly in the first week of life.

Neonatologist and lead researcher Associate Professor Jeanie Cheong, said the research found that most babies born before 28 weeks will survive if they are offered intensive care, and 83 per cent who do survive will have no major long-term disability – compared with 97 per cent of children born on time.

"Now that we can be confident a preterm baby's risk of death on discharge is similar to that of a healthy full-term baby, doctors can hopefully provide more comfort and assurance to parents who are often very anxious when going home from hospital," A/Professor Cheong said.

Researchers were able to identify four clinical events that were associated with a higher risk of long-term disability in very preterm babies: the first two relate to major brain injury; the third to babies receiving corticosteroids to treat or prevent lung injury; and the fourth were babies needing surgery in the newborn period.

Lisa Santalucia's twin boys were involved in the research after her sons Noah and Oliver were born at 24 weeks gestation. Noah survived just one day.

"After losing Noah, I was terrified that Oliver would die even after he was well enough to come home," Ms Santalucia said. Oliver is now a healthy 13 year old with no long-term disabilities.

"It is great that other parents in similar situations can now be reassured by this research and feel more confident when they take home their baby," she said.

This research was published in The Lancet Child and Adolescent Health.

Neonatologist, Associate Professor Cheong cares for a pre-term baby

NEW TRIAL COULD PREVENT LUNG DISEASE IN BABIES

Lead researcher
Dr Brett Manley

Dr Brett Manley is leading a Melbourne-based team running an international trial that could improve the survival rates of very preterm babies and decrease their risk of developing chronic lung disease.

Worldwide, approximately one in two babies born before 28 weeks' gestation will die or develop bronchopulmonary dysplasia (BPD) – a chronic lung condition associated with brain development problems and breathing difficulties later in life.

The Preventing Lung Disease Using Surfactant and Steroid (PLUSS) trial involves giving babies born before 28 weeks a steroid treatment directly into their lungs through a breathing tube, coupled with the existing treatment of surfactant, in the hope this will reduce inflammation in the lung and prevent the development of BPD. The babies are assessed at 36 weeks for signs of chronic lung disease of prematurity.

"Early research has shown a dramatic decrease in BPD with the addition of steroid to surfactant and we are hopeful for similar results in this much larger trial. This would represent a major step forward in the treatment of preterm babies and could change clinical practice world-wide," Dr Manley said.

Zoe Starr and Luke Mitchell's twins Otto and Sid were born at 25 weeks and were involved in the trial. Otto struggled to breathe on his own and was on breathing support for the first five weeks of his life.

Ms Starr said, "We wanted to be involved in the PLUSS study so that hopefully they and future babies will benefit from this new treatment that potentially helps babies' lung development and prevents chronic lung disease."

Gynaecology Research Centre

The Women's Gynaecology Research Centre brings together clinical, psychosocial and laboratory expertise to investigate common conditions affecting women of all ages.

The centre's research has directly improved patient care through prevention, diagnosis and management of a wide range of conditions affecting women's health.

Professor Eva Dimitriadis joined the Women's Gynaecology Research Centre in 2018. Her work focuses on endometrial-embryo interactions and placental biology with applications in infertility, In Vitro Fertilisation (IVF), pregnancy disorders and endometrial cancer.

Professor Martha Hickey
Co-Director

Professor Eva Dimitriadis
Co-Director

Professor Peter Rogers
Deputy Director

NEW DECISION AID TOOL HELPS WOMEN IMPROVE KNOWLEDGE OF ELECTIVE EGG FREEZING

Lead researchers
Dr Michelle Peate and
Professor Martha Hickey

The prevalence of age-related infertility has risen sharply in Australia due to a growing trend for women to delay starting a family until their early thirties or later.

Advances in technology and legislation mean that women can elect to freeze their eggs in the hope of deferring pregnancy, and uptake of this option is on the rise. However, the procedure is costly, and there is no guarantee of success.

A three-part study of Australian women aged 18 to 45 years who were interested in egg freezing firstly sought to gather insights on their understanding of the elective process, before piloting a new decision aid tool.

The initial phase involving over 350 women explored what they understood about egg freezing and whether they wanted more information and support.

Almost all women (95 per cent) felt that being informed about egg freezing was important yet four in five (80 per cent) were uncertain about what to do.

"Most sources of information are not comprehensive. They try to give a simple overview, and don't answer the questions that matter most, or don't answer in enough detail," said one woman.

In the second stage, almost 30 women reviewed a newly developed decision aid tool for elective egg freezing, providing feedback about its usefulness and relevance.

The study revealed that not only do women want support around their decision making, they also want the information to be personalised for them. The final stage of our study will help to achieve this by providing a full evaluation of the tool we've developed," said one of the lead researchers, Dr Michelle Peate.

Dr Peate (R) consults a patient about the decision aid tool

ENDOMETRIAL SCRATCHING BEFORE IN VITRO FERTILIZATION DID NOT RESULT IN HIGHER BIRTH RATES

Lead researcher
Dr Wan Teh

A significant international study has revealed there is a lack of evidence to support the effectiveness of endometrial scratching before in vitro fertilization (IVF), despite it being a common technique used to improve the likelihood of pregnancy.

Endometrial scratching involves taking a biopsy of the lining of the uterus (endometrium). This technique is proposed to facilitate embryo implantation and increase the probability of pregnancy in women undergoing IVF.

The international study was a randomised controlled trial of women undergoing IVF and sought to assess if endometrial scratching was effective at increasing birth rates. Of the 1,364 women in the study, 690 underwent endometrial scratching and 674 received no treatment (control group).

The frequency of live birth was 26.1 per cent in both the endometrial-scratch group and the control group. There were no significant between-group differences in the rates of ongoing pregnancy, clinical pregnancy, multiple pregnancy, ectopic pregnancy, or miscarriage.

The study shows that this common IVF treatment promoted as a fertility booster was not effective.

"There is no evidence that endometrial scratching is effective in promoting pregnancy and we would encourage IVF clinics to stop offering it," lead researcher at the Women's, Dr Wan Teh said.

This research was published in the New England Journal of Medicine.

Centre for Women's Infectious Diseases

The Centre for Women's Infectious Diseases conducts clinical research, cutting-edge molecular diagnostics and geno-surveillance in the fields of neonatal and infectious diseases research, including reproductive and sexual health.

Key research areas include cervical and anal cancer, and sexual health and mother-to-baby infections, with emphasis on providing evidence for changes that may translate into clinical practice to support improved patient health.

Professor Suzanne Garland AO
Director

Dr Gerald Murray
Senior Scientist

33
PUBLICATIONS

$1.4m
GRANT FUNDING SPENT AT THE WOMEN'S

$3.8m
GRANT FUNDING HELD

ELIMINATION OF CERVICAL CANCER IN SIGHT

Lead researchers
Dr Dorothy Machalek and
Professor Suzanne Garland AO

Rates of Human Papillomavirus (HPV) in women aged 18 to 24 in Australia have dramatically dropped from 22.7 per cent to just 1.5 per cent over the last 10 years due to the effectiveness of the HPV vaccination program.

Around 530,000 women worldwide are diagnosed with cervical cancer each year, but this type of cancer could be effectively reduced to a rare cancer within the next 20 years, with Australia set to be the first country according to the International Papillomavirus Society (IPVS).

Lead researcher Dr Dorothy Machalek said, "While only 65 per cent of women in the study were fully vaccinated, the 'herd effect' has helped deliver a better than anticipated decline. Prior to the vaccination program, almost all sexually active people had contracted HPV."

The IPVS is made up of the world's leading cervical cancer and HPV researchers, including Professor Suzanne Garland AO (President Elect for IPVS), who advises the WHO and global policy makers on cervical cancer prevention and screening.

"Rates of cervical cancer will drop from around the current 930 cases a year in Australia to just a few. Our national HPV immunisation program for boys and girls, combined with our cervical cancer population screening using more sensitive screens of HPV DNA instead of the Pap test, means we are well positioned to be the first country to effectively eliminate this deadly cancer," said Professor Garland.

"Maintaining high rates of screening is crucial to achieving elimination as between 10 and 30 per cent of HPV types that cause cervical cancer are not covered by vaccination," she added.

This research was published in the Journal of Infectious Diseases.

Dr Machalek explains the HPV vaccine to Mia and Caitlin

NEW TEST DEVELOPED TO DIAGNOSE COMMON STI

Lead researchers
Dr Gerald Murray
and Professor Suzanne Garland AO

An Australian developed diagnostic test is being rolled out across the country for a little known sexually transmitted infection (STI) which has been linked with infertility and increases the risk of spontaneous miscarriage and premature birth for pregnant women.

About 400,000 Australians are likely to have the STI Mycoplasma genitalium, similar to chlamydia. Up until now, most GPs have not been able to diagnose this STI and have used empirical treatment, leading to Mycoplasma genitalium being resistant to most antibiotics.

The Women's has been involved in developing the test for this STI and has undertaken research to assess its effectiveness.

"Only two antibiotic classes can treat Mycoplasma genitalium and in up to 10 per cent of cases the disease is found to be resistant to front line medication. This test allows clinicians to not only receive a diagnosis, but be guided specifically to which treatment to pursue," said Professor Suzanne Garland, Centre Director.

Chris Williams from Melbourne had never heard of Mycoplasma genitalium when diagnosed at one of the few clinics piloting the test.

"It meant they could give me one antibiotic for a week to weaken it, then a stronger one," said Mr Williams.

A second test showed he was cured.

Research reveals that Mycoplasma genitalium is drug resistant in at least 50 per cent of cases.

"Mycoplasma genitalium is essentially acting like a superbug and we desperately need new antibiotics as more diseases become drug resistant," added lead researcher, Dr Gerald Murray.

Pregnancy Research Centre

The focus of the Women's Pregnancy Research Centre is to better understand the causes of pregnancy disorders that compromise the health of mothers and their babies. Common pregnancy complications include miscarriage, pre-eclampsia, fetal growth restriction, gestational diabetes and preterm labour.

The centre's work on pregnancy and its disorders ranges from basic biomedical laboratory research through to clinical studies, treatment trials and public health initiatives, all designed to support evidence-based clinical practice.

The mission of the centre is to apply contemporary research techniques to the investigation of clinically important problems in maternal and fetal medicine and related fields.

Professor Shaun Brennecke
Director

Dr Bill Kalionis
Deputy Head,
Laboratory Research

NEW TEST PREDICTS POTENTIALLY DEADLY PRE-ECLAMPSIA

Lead researcher
Professor Shaun Brennecke

The Women's was the first Australian hospital to introduce a new blood test to help predict who will and will not develop pre-eclampsia in the four weeks following testing.

Pre-eclampsia is the most common serious medical disorder in pregnancy across the world and can be life-threatening for both women and babies.

Women who have experienced pre-eclampsia in a previous pregnancy or who have symptoms or signs of the condition are being given the test, called pre-eclampsia ratio test (PERT).

"Currently, the only way to cure pre-eclampsia is to end the pregnancy by delivering the baby, even if the pregnancy is still many weeks from full term. This test allows clinicians to assess the severity of the pre-eclampsia and to decide the best time to deliver the baby. It also allows time to stabilise the mother and prepare the baby for delivery," said lead researcher, Professor Shaun Brennecke.

"Use of PERT at the Women's has shown two thirds of women with symptoms of possible pre-eclampsia will test negative for the condition," he added. "Now we can reassure these women that they are very unlikely to develop the condition in the next four weeks and allow them to remain at home."

Hannah Torres developed pre-eclampsia in the late stages of her pregnancy. After delivering son Mateo, Mrs Torres became severely unwell as a result of pre-eclampsia and spent a week in critical care.

"Knowing that for future pregnancies I can have a test to tell me if I'm at risk of developing it again, I think that's wonderful," said Mrs Torres.

Research midwife Adrienne White (L) with patient Stephanie Boag

STUDY TO PREDICT WOMEN AT RISK OF PRETERM DELIVERY

Lead researcher
Associate Professor Harry Georgiou

A major three-year study that could result in a test to accurately predict if women will experience preterm labour during their pregnancy would enable clinicians to offer suitable, potentially life saving care to women and babies.

Lead researcher, Associate Professor Harry Georgiou said, "Every year, about 15 million babies worldwide are born pre-term and more than one million will die, mostly in developing countries. A reliable predictive test could revolutionise maternity care."

The study of more than 3,000 women involves taking mid-pregnancy swabs from participants. The swabs will be analysed for certain protein biomarkers to check how closely those biomarkers are associated with eventual preterm labour in women who suffer from this complication.

"As many as one in 10 women end up going into premature labour without warning, despite having a healthy pregnancy up to that point and having no identified risk factors. With this 'bed-side' test, we are aiming to accurately predict preterm birth, months before any symptoms arise. This would allow us to predict or delay labour by several days, or even weeks, which can make a huge difference to the baby's overall health and minimise future health complications associated with being born prematurely," said Associate Professor Georgiou.

Briony Swart experienced two preterm births at 21 weeks. After close monitoring at the Women's Preterm Labour Clinic, Briony gave birth at term to baby Ziggy. She hopes a test to identify those at risk of preterm labour will help women like her in future.

Women's Cancer Research Centre

Behind the work in the Women's Cancer Research Centre is the philosophy that every woman should be given the opportunity to take part in research at every stage of her care journey.

As a multidisciplinary team, research at the centre considers the different gynaecological cancers: uterine; ovarian/fallopian tube; cervical; and vulval.

Researchers and clinicians also focus on the conditions which may lead to these cancers, as well as the genetic variations which put women at increased risk of gynaecological cancers. With this in mind, women are recruited where possible to clinical trials at the Women's, and collaboratively through the Victorian Comprehensive Cancer Centre (VCCC) Parkville Clinical Trials Unit, exploring all aspects of the clinical journey.

Professor Clare Scott joined the Women's Cancer Research Centre in 2018, where she leads and collaborates on laboratory and translational research into rare cancers across a range of trials.

Associate Professor Orla McNally
Director Gynaecology Tumour Stream, Victorian Comprehensive Cancer Centre (VCCC)

RARE GYNAECOLOGICAL CANCERS PROGRAM

Lead researcher
Professor Clare Scott

More people die from rare cancers in Australia than any other single cancer type. This is particularly significant in the case of gynaecological cancers, where more than half (55 per cent) are rare.

"Treatments for many rare cancers have not advanced at the same pace as treatments for more common cancers," said lead researcher, Professor Clare Scott. "However, through genomic testing we can develop new strategies and select the best treatments for patients diagnosed with rare cancers."

Professor Scott leads the Walter and Eliza Hall Institute (WEHI) Stafford Fox Rare Cancer Program at the Women's and is collaborating with Professor Sean Grimmond at the University of Melbourne to perform whole genome sequencing on select rare gynaecological cancers.

Genomic testing is essential for rare cancers as patients often lack evidence-based therapies if treated based on histology alone.

This was highlighted in the preliminary data from the NOMINATOR trial which found that one-fifth of rare cancers tested could be matched to an existing drug already proven in another cancer type. A further third had tumours that may be targetable in the future.

"In many of these cases, clues have been discovered which are now unravelling the wiring of these cancers, to help develop treatment plans," said Professor Scott.

Sutita Otuhouma was diagnosed with a rare uterine cancer and has been a participant in the NOMINATOR trial and Stafford Fox Rare Cancer Program: "I'm 100 per cent behind research because it can help me or other women in the future."

Research participant, Sutita Otuhouma (L), with Professor Scott

NEW TEST FOR ENDOMETRIAL CANCER MAY IMPROVE PROGNOSIS

Lead researcher
Associate Professor Orla McNally

The use of an extra test for women with endometrial cancer may help to improve their care by identifying earlier on those women who are at higher risk of having metastases and therefore require more surgery.

A protein called Human Epididymis Protein 4 (HE4) has been shown to be elevated in patients with endometrial cancer. Increased levels of HE4 may be associated with invasion of the cancer into the myometrium (the muscle or middle layer of the uterus) and therefore a poorer prognosis.

In the management of endometrial cancer, the availability of a reliable tumour biomarker taken prior to surgery would enhance risk assessment greatly; it could predict the absence of high risk features and help guide patient management.

This study examined 100 patients with a new diagnosis of histologically confirmed endometrial cancer who were eligible for standard operative management.

It sought to assess the feasibility of using HE4 independently or alongside other modalities such as MRI and tumour marker CA125 to guide treatment options in early stage endometrial cancer. Following surgery, information was obtained about grade, tumour type, depth of invasion and spread to lymph glands to see if the HE4 level predicted these risk factors before surgery.

Lead researcher, Associate Professor Orla McNally said, "The HE4 test can help identify patients who are more likely to have low grade cancer and therefore, a lower risk of lymph node metastases, potentially avoiding lymph node surgery which is associated with significant side effects."

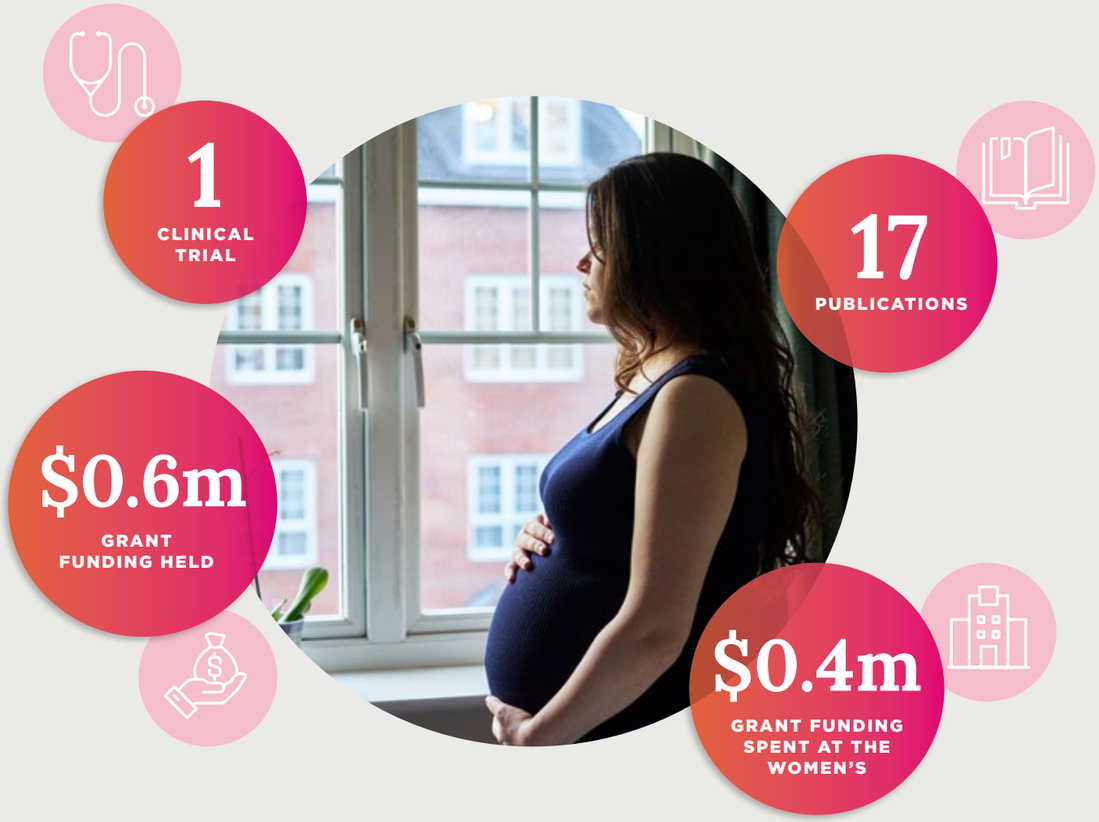
Centre for Women's Mental Health

The Centre for Women's Mental Health was established in 2007 to provide clinical services, undertake research and provide education and training across the Women's. The centre's research focuses on the psychological aspects of physical health issues, pregnancy and early parenting.

Specific areas of interest include support for women with a cancer diagnosis, promotion of healthy ageing and psychological interventions for women impacted by trauma. Programs in early parenting and postnatal mood disorder and anxiety are also being evaluated.

The centre offers support where social factors such as family violence, substance misuse and refugee status impact wellbeing and psychological health.

Professor Louise Newman AM
Director



NEW HOSPITAL-LED COMMUNITY SERVICE FOR VULNERABLE MUMS AND BABIES

Lead researcher
Professor Louise Newman AM

Mothers and their newborns will benefit from the extension of an evidence-based support program run by the Women's aimed at bridging the gap between in-hospital and community care for women who are experiencing early parenting stress, depression and anxiety.

The Building Early Attachment and Resilience (BEAR) House pilot study will see groups of six mothers and their babies take part in the six week program and will also provide support to partners/fathers.

Building on existing BEAR programs, this pilot focuses on providing early parenting guidance and advice from specialist healthcare workers, including a maternal child health nurse, psychologists, and mental health professionals.

Lead researcher, Professor Louise Newman AM, said there was a good body of evidence to indicate that what happens in the first three years of a child's life can affect whether they will be vulnerable to mental disorders later in life.

"We know that if a child has a good experience in those very early months and years, it builds up resilience and can protect the child from future mental health risk," said Professor Newman.

"BEAR House is largely designed to support mothers who may have difficulties with early parenting and attachment with their newborn due to historical or recently diagnosed mental health challenges."

"This pilot study will allow us to assist new mothers in how to care for and form strong attachments with their newborn in a supportive setting where we can follow progress of both mother and infant and provide the tailored support they need," she said.

Anoushka Berkley was a participant in some of the Women's earlier BEAR programs: "I've been fortunate to participate in both the Mind Body Baby and Parenting with Feelings programs at the Women's and they have been so helpful both for preparing me for birth and now for understanding my baby."

Professor Newman with a past participant in the BEAR programme, Anoushka Berkley and her baby Theo

EXPLORING MENTAL HEALTH NEEDS FOR CANCER DIAGNOSIS DURING PREGNANCY

Lead researcher
Associate Professor Lesley Stafford

Cancer diagnosis during pregnancy is uncommon, affecting approximately one in 1,000-1,500 women. However, the incidence is slowly climbing, reflecting higher rates of cancer in the general population as well as the increasing average age of childbearing women.

Maternal-child bonding and attachment after birth have a profound influence on the baby's emotional, cognitive and neurological development, yet little is known about how a cancer diagnosis in pregnancy affects parenting and mother-infant attachment.

This new study led by Associate Professor Lesley Stafford seeks to investigate the healthcare experience, mental health and supportive care needs of women living in Australia diagnosed with cancer during pregnancy.

Associate Professor Stafford said a diagnosis of cancer during pregnancy can be distressing for the expectant mother and partner as well as to the treating team and there is a need for more empirical data to inform responsive care.

"While the epidemiology and medical management of pregnancy during cancer has been documented, other areas of clinical importance, including psychological health of the mother are yet to be sufficiently explored," said Associate Professor Stafford.

"This project aims to provide a rich account of the experiences of women and their partners following a diagnosis of cancer during pregnancy with a focus on mental health and supportive care needs, the impact on parenting and family, as well as clinicians' experiences of caring for these women."

"With this information, we will be able to develop a consistent, well-coordinated and evidence-based model of care that is suitable for use in our cancer services," she said.

Midwifery and Maternity Services Research Unit

The Midwifery and Maternity Services Research Unit is committed to making sure the care provided to women in pregnancy and childbirth is evidence-based and of the highest possible quality.

The centre's main focus is on exploring how care is provided so the best possible outcomes are achieved for mothers and babies. This includes work on midwife-led models of care, breastfeeding, and perinatal mental health.

Integral to the work is actively exploring the views and experiences of women, as well as the midwives who care for them. The unit also works to build research capacity among midwives, nurses and allied health clinicians.

Professor Della Forster
Director

CLOSING THE GAP IN MIDWIFERY CARE

Lead researcher
Professor Della Forster

A new program introduced at the Women's and three other Victorian hospitals in 2017 has resulted in a large increase in the number of pregnant Aboriginal and Torres Strait Islander women receiving care from a known midwife.

Known as 'Baggarrook' at the Women's, the program involves three midwives providing care to Indigenous women, with the same midwife looking after each woman during pregnancy, birth and post-birth. Since the model started in March 2017, the number of Aboriginal and Torres Strait Islander women receiving this care at the Women's increased from six to more than 130.

Lead researcher, Professor Della Forster said there are major differences in health outcomes for Aboriginal and Torres Strait Islander mothers and babies, including higher rates of preterm birth, pregnancy loss, low birthweight and neonatal or special care unit admissions.

"Previous research shows that one-on-one midwife-led care (caseload midwifery) is the gold standard in maternity care, leading to fewer childbirth complications and better health outcomes for mothers and babies," said Professor Forster.

"Unfortunately, many Aboriginal and Torres Strait Islander women have been missing out on this type of care for reasons such as the lack of available places or because of later presentation to the Women's due to being transferred from outside Melbourne."

"The Baggarrook project aims to make sure Aboriginal and Torres Strait Islander women have access to caseload midwifery care and the health benefits associated with the model. In the future, we'd love to see this model available at all maternity hospitals and to all Victorian women," she said.

Participant in the Baggarrook program, Rosie Wise Britton and her baby Jindara with midwife, Amelia Stephens (L)

EXPLORING MIDWIVES' PROFESSIONAL SATISFACTION AND EXPERIENCES

Researchers
Robyn Matthews, Della Forster, Rebecca Hyde, Fleur Llewelyn

To help get a better understanding of the views and experiences of midwives at the Women's, a survey was conducted in 2017 that included questions on professional satisfaction and burnout. The aim was to quantify these issues and better understand the impacts on the midwifery workforce.

The response rate of 96 per cent of the sample (n=255) demonstrated a high level of engagement. Almost half the respondents (48 per cent) had been qualified less than five years. Compared to those who had been qualified over ten years, these midwives had lower levels of satisfaction with their professional support and their experience working with families.

Midwives were asked what would make an enjoyable shift and the overwhelming response was that they wanted to provide a high level of care and work with colleagues who had a good work ethic.

According to the analysis, which included data collected using the Copenhagen Burnout Inventory tool, two thirds of respondents were experiencing personal burnout. Almost half had work-related burnout and less than 10 percent had client-related burnout. Midwives who were less than ten years post qualification had almost twice the rates of personal and work-related burnout compared with those who were greater than ten years post qualification.

Researcher and PhD candidate Robyn Matthews said, "The low level of client-related burnout indicates that midwives are not stressed by the women and families they care for, but rather the amount of work they do. Our midwives are passionate about providing high quality care and it is important that our workforce strategies support their health and wellbeing to facilitate that."

Centre for Family Violence Prevention

The Centre for Family Violence Prevention focuses on improving the safety, health and wellbeing of women and their families. We know that many women attending hospital experience abuse and violence and feel afraid of their partner or family.

To make women and their children feel safer, the Women's is assisting health services to step up to the challenge of preventing the harm caused by family violence.

The centre conducts practical research, working with women who have lived experience, as well as practitioners, to test health interventions (including the use of technologies) for identification, early intervention and response for women of all ages and backgrounds.

The centre also supports hospital staff in their clinical work by providing evaluation of effective, evidence-based models of care within the context of family violence.

Professor Kelsey Hegarty
Director

Dr Laura Tarzia
Deputy Director

IMPROVING DETECTION OF FAMILY VIOLENCE IN ANTENATAL CARE

Lead researcher
Professor Kelsey Hegarty

A multi-site study led by the Women's is developing sustainable ways for screening antenatal patients experiencing family violence and providing staff with the skills and tools to address this issue. Results of this study are informing hospital antenatal care across Victoria and NSW.

Based on a large survey of patients, it was found that one in ten women attending the Women's antenatal clinics has experienced family violence in the last twelve months.

Staff perspectives were also explored and many said they feel they are ideally placed to deal with this sensitive issue as the hospital is a trusted institution. However, as one practitioner highlighted, the need for training was evident, "We are taught not to ask something we can't manage".

Lead researcher Professor Kelsey Hegarty said antenatal care provides an important opportunity to identify and respond to the issue of family violence because staff work with women over time, creating an environment where women feel safe to disclose.

"We are addressing barriers to screening and providing practical recommendations for transforming the system to enable safe, effective, evidence-based screening for family violence in pregnancy care," said Professor Hegarty.

"We know that women experiencing abuse are more likely to disclose if they are approached in a non-judgemental and empathetic manner, while staff are more likely to engage in addressing the issue if we set up organisational and staff supports such as ongoing training, scripts, protocols, clinical champion support, and referral pathways," she said.

Professor Hegarty consults an antenatal patient

FAMILY VIOLENCE COMMON AMONGST HEALTH WORKERS

Lead researcher
Elizabeth McLindon

A study by researchers from the Women's and the University of Melbourne revealed that family violence is prevalent among female healthcare workers, with almost half (45 percent) of women surveyed declaring they had experienced some form of abuse.

The Victorian-based study involving 471 female healthcare workers uncovered that one in nine had themselves experienced abuse by a partner during the previous 12 months; and one in eight had been sexually assaulted by a partner since the age of 16.

Lead researcher Elizabeth McLindon said it was significant that many female healthcare workers had themselves experienced domestic and family violence when they were the ones likely to be identifying and helping other women and children in abusive situations.

"Healthcare workers who have experienced violence and abuse may go the extra mile in supporting survivor patients, but for other women, discovering and hearing stories of people's experiences of violence could actually trigger their own personal trauma," Ms McLindon said.

"Hospitals have an important role to play in supporting healthcare workers to ensure their wellbeing is not negatively impacted by their day-to-day work. This may also improve the support provided to survivor patients," she added.

Study co-author Professor Kelsey Hegarty, said the study reinforced the reality that family violence affects all women in the community and there is a real need to implement the necessary workplace supports for the benefit of both employees, and patients.

This research was published in BMC Women's Health.

Anaesthetics Research Centre

The goal of the Anaesthetics Research Centre is to reduce maternal suffering and death by achieving optimal maternal health before, during and after birth.

The centre's work addresses the problems of high blood pressure, obstetric critical illness, and improving anaesthesia and analgesia for pregnant women, especially in the perioperative period.

Research at the centre aims to increase understanding of heart function and structure in pregnant women and the cause of preeclampsia.

Associate Professor Alicia Dennis
Director

8
CLINICAL TRIALS

13
PUBLICATIONS

$0.2m
GRANT FUNDING HELD

$0.1m
GRANT FUNDING SPENT AT THE WOMEN'S

UNDERSTANDING PREECLAMPSIA THROUGH CARDIAC MAGNETIC RESONANCE, POSITIONING STUDIES AND EXERCISE TESTING

Lead researcher
Associate Professor Alicia Dennis

Preeclampsia is the most common serious condition of pregnancy, affecting one in 20 women in Australia. It is a leading cause of maternal morbidity and mortality worldwide and the main reason pregnant women are admitted to intensive care during pregnancy.

The cardiovascular system, through the development of high blood pressure, plays a central role in the pathophysiology and clinical indicators of preeclampsia.

This condition can lead to a range of complications, including high blood pressure, fluid retention and protein in the urine, and can cause maternal circulation problems, which can affect the blood supply to the fetus.

Associate Professor Alicia Dennis has been leading research at the Women's to better understand the changes in the heart of women with preeclampsia, as well as how to potentially manage this condition.

Cardiac magnetic resonance and transthoracic echocardiography

In a world first, researchers at the Women's have undertaken clinical studies using cardiac magnetic resonance to examine the effect of high blood pressure on the hearts of women with preeclampsia.

The research found that preeclampsia patients' hearts pumped more forcefully and were stiffer than healthy pregnant women. Significantly, it was discovered that the walls of their hearts were larger and that this swelling is due to fluid and not muscle, as was previously thought.

"This is a new discovery; the women's hearts with preeclampsia look and function differently to healthy pregnant women, and our next focus will be trying to understand more about why this is the case," said A/Professor Dennis.

Prone position

The prone position is where a person lies horizontally with chest down and back up.

Blood pressure was measured in pregnant women with preeclampsia after lying on their back and after lying prone, with appropriate pillows. All the women found the prone position acceptable and it reduced blood pressure in some women with preeclampsia, without causing any problems.

"With appropriate pillows, the prone position is safe for pregnant women; there is almost no pressure on the blood vessels in the abdomen and we think that blood flow to the baby will be better in women with preeclampsia," said A/Professor Dennis.

Cardiovascular fitness

The Six Minute Walk test was used to measure distances walked, heart rate recovery after exercise in pregnant women and to determine the average healthy walking speed in late pregnancy.

Our multicentre exercise testing study determined the speed and distance healthy pregnant women can walk at term and has created, for the first time, the reference ranges for exercise using the Six Minute Walk test.

"Not only did these studies focus on gaining a deeper understanding of the physiological reactions to exercise but, consistent with our patient-focussed approach to research, we developed reference ranges that can be used to assess fitness levels in pregnant women," A/Professor Dennis said.

This research was published in the International Journal of Obstetric Anesthesia, BMC Pregnancy and Childbirth and Anesthesia Analgesia.

Associate Professor Dennis monitors a patient

Allied Health Research

Allied health and clinical support services research involves work relating to single allied health disciplines as well as collaboration with other Women's research centres and services.

There are four major departments that contribute to allied health research: pharmacy; nutrition and dietetics; social work; and physiotherapy. Each of these areas is concerned with exploring various clinical conditions and participates in clinical research to determine evidence based interventions and treatment.

The Women's pharmacy department and the Pauline Gandel Women's Imaging Centre also play a pivotal role in research conducted by other services.

Sandra Gates
Director

IMPROVING DIAGNOSIS OF CRANIOSYNOSTOSIS PRIOR TO BIRTH

Lead researcher
Dr Edward O'Mahony

A study into craniosynostosis – where babies are born with a fused skull – is aiming to improve the accuracy of early detection to facilitate consultation and counselling for impacted parents.

Craniosynostosis is a rare condition caused by genetic disorders which impairs brain, skull and face development and results in a range of syndromes.

The outcomes for babies with this condition depends on the type and severity of the syndrome and in some cases it can lead to death. Accurate diagnosis prior to birth is important for counselling parents on what to expect.

The study involved reviewing thirteen cases of craniosynostosis of babies born at the Women's between 2009 and 2018. Their fetal and postnatal MRI and post-mortem data was reviewed, with Apert syndrome being the most common of the craniosynostosis syndromes identified.

Cross referencing ultrasound and MRI imaging showed that ultrasound facilitated initial diagnosis and assessment of health conditions associated with the syndrome, while MRI allowed for assessment of the midline brain structures.

"The current approach to antenatal diagnosis by a single type of imaging is challenging but our study has demonstrated that ultrasound and MRI imaging complement each other in the characterisation and diagnosis of craniosynostosis syndromes," said Consultant Ultrasonologist at the Women's, Dr Edward O'Mahony.

"An unexpected discovery was the association of Apert syndrome and polyhydramnios potentially representing a tracheo-oesophageal abnormality. We believe this new insight will better equip clinicians who encounter this rare and challenging condition," Dr O'Mahony said.

Dr O'Mahony views a brain image from the study

VICARIOUS TRAUMA AND THE HEALTH PROFESSIONAL

Lead researcher
Christina Coldebella

A study into the experience of vicarious trauma by social workers has revealed that more than half are personally impacted by distressing situations encountered at work.

Vicarious trauma, where people absorb a portion of trauma to which they are exposed, is a normal response, typically experienced by healthcare workers who have an empathetic orientation and deal with high numbers of people in distress.

In addition to situations like bereavement, there has been an increase in health professionals recognising and responding to family violence which is thought to be a contributing factor to vicarious trauma.

Social workers are particularly affected and 40 people from this group at the Women's responded to a survey to help understand and alleviate the impact of vicarious trauma on healthcare professionals.

One-third (33 per cent) of those surveyed said they are mildly to moderately affected by vicarious trauma, while 53 per cent said they were exposed to a large or overwhelming amount of trauma.

Encouragingly, two in three staff (68 per cent) said they feel supported at work, however, they would welcome additional coping mechanisms.

Social worker Christina Coldebella said, "We have gained important baseline knowledge about the incidence and impact of vicarious trauma among the social worker population and these are learnings which can be applied to the wider healthcare workforce."

"Our focus now is on designing appropriate models of support spanning self-care, information sessions and support groups for wider hospital staff," she added.

Organisational chart

CHIEF MEDICAL OFFICER
DR MARK GARWOOD

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PROFESSOR PETER ROGERS

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BOARD DIRECTOR AND COMMITTEE CHAIR
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PROFESSOR DELLA FORSTER

CENTRE FOR WOMEN'S MENTAL HEALTH
PROFESSOR LOUISE NEWMAN AM

ANAESTHETICS RESEARCH
ASSOCIATE PROFESSOR ALICIA DENNIS

FAMILY VIOLENCE PREVENTION
PROFESSOR KELSEY HEGARTY

ALLIED HEALTH RESEARCH
SANDRA GATES

Student completions

Doctor of Philosophy (PhD)

Brown V, MPsych/PhD, Uni Melb. *Cognitive models of menopausal symptoms.* Supervisors: Bryant C, Judd F.

Jensen Van Vuuren A, PhD, Uni Melb. *Cerebral arterial asymmetries of the neonate.* Supervisors: Cheong J, Rogerson S, Saling M.

Kampan N, PhD, Monash Uni. *Investigating the role of immune responses in preventing relapse in women with high-grade serous ovarian cancer (HGSOC).* Supervisors: McNally O, Plebanski M.

Saha M, PhD, La Trobe Uni. *Experiences of breastfeeding women requiring medicines.* Supervisors: Amir L, Ryan K.

Seah SJ, PhD, Uni Melb. *Attitudes to ageing and physical activity in midlife.* Supervisors: Bryant C, Brown L.

Stabolidis A, MPsych/PhD, Uni Melb. *Development of an app for women with chronic pelvic pain.* Supervisors: Bryant C, Healey M, Phillips L, Wadley G.

Masters of Science

Imbulana D, Masters BMedSci, Uni Melb. *A randomised trial of a nasal barrier dressing to reduce nasal trauma in very preterm infants receiving CPAP treatment: The (PRONOSE Study).* Supervisors: Manley B, Davis P.

Johnson J, MSc, Uni Melb. *The role of placenta-derived Mesenchymal Stem Cell exosomes in endothelial cell repair.* Supervisors: Kalionis B, Georgiou HM, Brennecke SP.

Bachelor (Honours)

Ashilah Rifai D, BMedSci (Hons), Uni Melb. *A review of 510 patients with borderline ovarian tumour at RWH from 1994-2015.* Supervisor: McNally O.

Balgovind P, BSc (Hons), Uni Melb. *HPV in young men study.* Supervisors: Machalek D, Garland S, Cornall A.

Bellis E, BSc (Hons), Uni Melb. *Exploring the unmet needs of parents of adolescent girls living with heavy menstrual bleeding and pelvic pain.* Supervisors: Peate M, Marino J, Jayasinghe Y, Girling J.

Jiang K, BSc (Hons), Uni Melb. *Dietary habits and mental health in females aged 16-29 years.* Supervisors: Wark J, Garland SM, Gorelik A.

Li A, BSc (Hons), Uni Melb. *Exploring the unmet needs of adolescent girls living with heavy menstrual bleeding and pelvic pain.* Supervisors: Peate M, Marino J, Jayasinghe Y, Girling J.

Meyers M, BMedSci (Hons), Uni Melb. *Women at increased risk of gynaecological malignancy by inheritance.* Supervisors: McNally O, Wrede D.

Petautschnig S, BSc (Hons), Uni Melb. *Biomarkers of human papillomavirus-related cancers.* Supervisors: Cornall A, Garland SM, Machalek D, Molano-Luque M.

Waters G, BSc (Hons), Uni Melb. *Evaluation of a paediatric oncofertility decision aid for parents.* Supervisors: Jayasinghe Y, Peate M.

Medical Degree Research Project

Brown L, MDRP, Uni Melb. *Priorities of women with menopausal symptoms after cancer.* Supervisors: Marino J, Hickey M.

Clegg T, MDRP, Uni Melb. *Degrees and Delaying Childbearing: Female university student's knowledge and views of elective egg freezing.* Supervisors: Lew R, Peate M, Hammarberg K.

McKay C, MDRP, Uni Melb. *Prevalence and health consequences of risk-taking behaviours in young females with Type 1 diabetes.* Supervisors: Wark J, Garland SM, Nankervis A, Gorelik A.

Moore B, MDRP, Uni Melb. *Informed consent in obstetric anaesthesia - what women want to know.* Supervisors: Dennis A, Simmons S.

Moore K, MDRP, Uni Melb. *Obstetric Trauma - a 10 year audit of the Royal Women's Hospital and Royal Melbourne Hospital.* Supervisors: Sheehan P, Truesdale M.

Srinivisan S, MDRP, Uni Melb. *Australian women's experiences of reproductive coercion and their expectations of health professionals.* Supervisors: Marino J, Tarzia L, Hegarty K.

Sugrue T, MDRP, Uni Melb. *The Six Minute Walk test in mid- pregnancy.* Supervisor: Dennis A.

Publications 2018

A total of 231 papers were published in peer reviewed medical journals by the Women's in 2018.

The publications below highlight the quality of our research at a national and international level. The papers have been selected based on the quality of the journal in which they are published. The journals selected are in the top two per cent of journals, as is indicated by an 'impact factor' greater than 10. Impact factor (as determined by InCites Journal Citation Reports) is a measure of the frequency with which the 'average article' in a journal has been cited in a particular year or period.

A full list of 2018 publications is available for each research centre on the Women's website at www.thewomens.org.au/research.

Askie LM, Darlow BA, Finer N, Schmidt B, Stenson B, Tarnow-Mordi W, et al. *Association Between Oxygen Saturation Targeting and Death or Disability in Extremely Preterm Infants in the Neonatal Oxygenation Prospective Meta-analysis Collaboration.* JAMA: the journal of the American Medical Association. 2018;319(21):2190-201.

de Boer SM, Wortman BG, Bosse T, Powell ME, Singh N, Hollema H, et al. *Clinical consequences of upfront pathology review in the randomised PORTEC-3 trial for high-risk endometrial cancer.* Annals of oncology: official journal of the European Society for Medical Oncology / ESMO. 2018;29(2):424-30.

Friedlander M, Gebski V, Gibbs E, Davies L, Bloomfield R, Hilpert F, et al. *Health-related quality of life and patient-centred outcomes with olaparib maintenance after chemotherapy in patients with platinum-sensitive, relapsed ovarian cancer and a BRCA1/2 mutation (SOLO2/ENGOT Ov-21): a placebo-controlled, phase 3 randomised trial.* Lancet Oncol. 2018;19(8):1126-34.

Garsed DW, Alsop K, Fereday S, Emmanuel C, Kennedy CJ, Etemadmoghadam D, et al. *Homologous Recombination DNA Repair Pathway Disruption and Retinoblastoma Protein Loss Are Associated with Exceptional Survival in High-Grade Serous Ovarian Cancer.* Clin Cancer Res. 2018;24(3):569-80.

Hickey M, McNamara HC, Mishra GD. *Menopausal Estrogen Therapy and Breast Cancer Mortality.* JAMA: the journal of the American Medical Association. 2018;319(2):193.

Joffe H, Hickey M. *Should Hormone Therapy Be Used to Prevent Depressive Symptoms During the Menopause Transition?* JAMA Psychiatry. 2018;75(2):125-6.

Kim SY, Khanal D, Tharkar P, Kalionis B, Chrzanowski W. *None of us is the same as all of us: resolving the heterogeneity of extracellular vesicles using single-vesicle, nanoscale characterization with resonance enhanced atomic force microscope infrared spectroscopy (AFM-IR).* Nanoscale Horiz. 2018;3(4):430-8.

Kondrashova O, Topp M, Nesic K, Lieschke E, Ho GY, Harrell MI, et al. *Methylation of all BRCA1 copies predicts response to the PARP inhibitor rucaparib in ovarian carcinoma.* Nature communications. 2018;9(1):3970.

O'Mara TA, Glubb DM, Amant F, Annibali D, Ashton K, Attia J, et al. *Identification of nine new susceptibility loci for endometrial cancer.* Nature communications. 2018;9(1):3166.

Rojas-Camayo J, Mejia CR, Callacondo D, Dawson JA, Posso M, Galvan CA, et al. *Reference values for oxygen saturation from sea level to the highest human habitation in the Andes in acclimatised persons.* Thorax. 2018;73(8):776-8.

National Health and Medical Research Council Grants 2018

Centre for Clinical Research Excellence

Canfell K, Brotherton J, Saville M, Castle P, Kaldor J, Garland S, Kelaher M, Guy R, Valley A, Simms K. *Centre for Research Excellence in Cervical Cancer Control (C4).* $2,486,382; 2018-2022

Doyle LW, Davis P, Anderson P, Hunt R, Cheong J, Jacobs S, Roberts G, Spittle A, Thompson D, Dawson J. *Centre for Research Excellence in Newborn Medicine.* $2,500,000; 2014-2018

Hegarty K, Brown S, Humphreys C, Taft A, Arabena K, Sanci L, MacMillan H, Feder G, Glover K, Anderson P. *Centre for Research Excellence to promote Safer Families: tailoring early identification and novel interventions for intimate partner violence.* $2,497,801; Dec 2016-2021

Mishra G, Hickey M, Dobson A, Gannon B, Doust J, Fisher J, Cicuttini F, Huxley R, Tooth L, Brown H. *Centre of Research Excellence on Women and Non-communicable Disease (CRE WaND): Prevention and Detection.* $2,495,848; 2018-2023

Partnership Grants

McLachlan H, Forster D, Kildea S, Freemantle C, Browne J, Jacobs S, Oats J, Donath S, Newton M, Chamberlain C. *Improving the health of Aboriginal mothers and babies through continuity of midwife care.* $1,496,531; Dec 2015-2020

Taft A, Shiell A, Hegarty K, Feder G, Mazza D, Yelland J. *HARMONY: a cluster randomised controlled trial of a whole of general practice intervention to prevent and reduce domestic violence among migrant and refugee communities.* $595,288; 2018-2021

Teede H, Butler R, Robinson M, Vincent A, Anderson J, Tregloan L, Hart R, Hickey M. *Early menopause: Implementation research using the experiences and perspectives of women and health professionals to Translate evidence into practice.* $390,074; 2016-2018

Spittle A, Novak I, Boyd R, Morgan C, Doyle L, Dale R, Scuffham P, Whittingham K, Colditz P, Pannek K. *Early diagnosis and early intervention for infants with cerebral palsy: implementation of international evidence-based guidelines into practice.* $1,196,361; 2018-2023

Program Grants

Hooper S, Davis P, Wallace E. *Improving perinatal outcomes.* $6,115,355; 2017-2021

Kaldor J, Garland SM, Fairley C, Law M, Grulich A. *Discovery & translation of interventions to control sexually transmitted infections and their consequences.* $10,000,000; 2015-2019

Targeted call for Research

Kelaher M, Paradies Y, Ritte R, Nicholson J, Brown S, Hegarty K, Armstrong G, Water L. *Responding to Aboriginal and Torres Strait Islander family aspirations to foster self determination and social and emotional wellbeing.* $1,924,345; 2018-2022

Project grants

Anderson P, Halliday J, Elliott E, Penington A, Thompson D, Muggli E, Spittle A, Forster D, Lewis S, Hearps S. *Long-term effect on offspring of low to moderate or binge drinking during pregnancy. $*1,665,672; 2018-2021

Cheong J, Doyle L, Wark J, Cheung M, Irving L, Burnett A. *Impact of extreme prematurity or extreme low birthweight on young adult health and well-being: The Victorian Infant Collaborative Study (VICS) 1991-92 Longitudinal Cohort.* $725,496; 2016-2018

Craig J, Seal M, Silk T, Burnett A, Theda C, Scurrah K. *Quantifying the role of epigenetic factors in neurocognitive outcomes: a twin study.* $1,495,848; 2018-2021

Dimitriadis E, Menkhorst E, Koga K. *Critical regulators of placentation.* $907,092; 2016-2019

Dimitriadis E, Gantier M, Menkhorst E, Rombauts L. *Critical regulators of endometrial receptivity.* $768,699; 2016-2019

Dimitriadis E, Rombauts L. *Facilitating endometrial receptivity to improve pregnancy outcomes.* $734,252; 2017-2020

Forster D, McLachlan H, Dennis CL, Nicholson J, Shafiei T, Shiell A, Nguyen C, Nguyen T. *Preventing postnatal depression in new mothers using telephone peer support: a randomised controlled trial.* $850,069; 2018-2021

Hooper S, Davis P, TePas A, Kitchen M. *Optimising non-invasive ventilation at birth for preterm infants.* $735,912; 2016-2019

Hooper S, Wallace M, Polglase G, Kitchen M, Flemmer A, Thio M. *Improving the neonatal transition in infants with a congenital diaphragmatic hernia.* $551,644; 2016-2018

Hyett J, Tarnow-Mordi W, Tong S, Morris J, Hannan N, Dekker G, Brennecke S, Walker S, da Silva Costa F, Poon C. *Can esomeprazole improve outcomes in women at high risk of pre-eclampsia? A Phase II placebo-controlled randomised, multi-centre clinical trial.* $1,597,124; 2018-2020

Liley H, Hunt R, Jacobs S, Badawi N, Novak I, Gold L, Batti M, O'Connell R. *Preventing adverse outcomes of neonatal encephalopathy with erythropoietin: A randomized controlled multicenter Australian trail.* $2,010,583; 2014-2018

Manley B, Buckmaster A, Davis P, Wright I, Owen L, Arnolda G. *Improving breathing support for newborn infants in non-tertiary centres: The HUNTER Trial.* $1,203,844; 2016-2019

Mol B, Askie L, Thangaratinam S, Brennecke S, Wang R, Hyett J, Gibson R, Stark M, Espinoza D. *Prediction and prevention of spontaneous preterm birth: an individual participant data meta-analysis comprising of prognostic and therapeutic data.* $1,103,273; 2018-2020

Parkington H, Brennecke S. *Failure-to-progress in human labour results from a profound electrical negativity of the uterine cells: targeting the ion channels involved.* $564,540; 2017-2019

Phillips K, Friedlander M, Oza A, Brand A, Stewart C, Scott C. *STICs and STONes: a randomised, phase II, double-blind, placebo-controlled trial of Aspirin in chemoprevention of ovarian cancer in women with BRCA1 and BRCA2 Mutations.* $653,892; 2017-2021

Poynten M, Grulich A, Templeton D, Jin J, Tabrizi S, Waterboer T. *Serological responses to anal HPV infection: Characterising the natural history of anal HPV.* $220,000; 2016-2018

Rogers P, Montgomery G, Holdsworth-Carson S, *Identification and function of genes that increase risk for endometriosis.* $1,180,912; 2016-2019

Scott C, Wakefield M, Drapkin R. *Engineering MYCN models of high-grade serous ovarian cancer (HGSC).* $797,477; 2016-2019

Simmer K, Jacobs S, Strunk T, Tarnow-Mordi W, Patole S, Anderson P, Hague W, Inder T, Doherty D, Marlow N, Barrington K. *Can Pentoxifylline improve long-term outcomes in preterm infants with late-onset sepsis or necrotizing enterocolitis? A pragmatic, randomized, placebo controlled trial.* $2,972,803; 2016-2020

Spittle A, Anderson P, Doyle L, McGinley J, Clark R, Thompson D, Lee K, Cheong J. *Motor trajectories of children born <30 weeks' gestation from birth to 5 years: early predictors and functional implications.* $668,387; 2016-2019

Valley A, Castle P, Saville M, Brotherton J, Mola G, Lavu E, Kariwiga G, Kelly A, Cornall A, Simms K. *Point-of-care HPV-DNA testing for cervical cancer screening in high-burden, low-resource settings.* $891,184; 2016-2019

Personal support

Boland R. Career Development Award: *Evaluating regionalised perinatal care in Victoria.* $171,537; 2015-2018

Cheong J. Career Development Fellowship. *Improving the health and development of high risk preterm newborns.* $333,709; 2018-2021

Davis PG. Practitioner Fellowship: *Improving the health of newborn infants.* $551,432; 2014-2018

Dennis A. Early Career Fellowship. *Myocardial structure and function in pre-eclampsia using cardiac magnetic resonance and echocardiography.* $187,322; 2016-2019

Hickey M. Practitioner Fellowship: *Advancing and promoting midlife health for women.* $452,004; 2014-2018

Jayasinghe Y. TRIP Fellowship: *Improving the quality of oncofertility care in children, adolescents and young adults with cancer: implementation of a novel fertility preservation decisional support tool to translate evidence into best practice.* $177,197; 2017-2018

Manley B. Early Career Fellowship: Breathing easier: optimising non-invasive ventilation of preterm infants. $258,605; 2015-2018

Owen L. Early Career Fellowship: *Right from the start: improving respiratory support for preterm infants from their first breath to independent breathing. $*258,605; 2015-2018

Spittle AJ. Career Development Fellowship. *Early detection and intervention for infants at high risk of motor impairments.* $419,180; 2016-2019

Thio M. Career Development Fellowship. *Improving respiratory transition and outcomes of newborn infants.* $262,251; 2016-2019

Support our work

The Royal Women's Hospital Foundation raises funds to support the vital work of the Women's.

Gifts to the Women's are an integral part of the research, innovation and leadership that brings advances in health care for women and newborns as described in this report.

Your donation will support quality research at the Women's, now and into the future.

To donate or to find out more, please visit www.thewomens.org.au/support-us.

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