

Together, creating possible

Annual Report 2019



Welcome to the 2019 MCRI Annual Report

COVID-19 has changed our lives
and reshaped our world.

Although this Annual Report
represents our work in 2019, the
world we live in has changed.

We hope that you, your families
and loved ones are keeping well and
safe in these challenging times.

At the Murdoch Children's Research
Institute and on the Melbourne
Children's campus we are reminded
of the key role of scientific work and
discovery, and the importance of
connection and of our community.

The Institute is dedicated to
bringing our strengths and single-
minded focus on children's health
to the COVID-19 response.

We are working with focus,
empathy, kindness and agility.

Take good care - be well and safe.

With gratitude,

Suzi Carp & Prof Kathryn North AC

The Murdoch Children's
Research Institute
acknowledges the Traditional
Custodians of the land upon
which we are located. We pay
our respect to their Elders
past, present and emerging.



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Chairman's message



As Chairman of this remarkable Institute, it is my great privilege to acknowledge another incredible year for MCRI.

As I write this message, we are in the middle of the COVID-19 pandemic which has had a profound effect on how we view the world. I am therefore all the more grateful for this Annual Report and the opportunity it provides to reflect and recognise the wonderful work, achievements and impact MCRI has had over the past twelve months.

We started 2019 with our spectacular Biennale celebration held at the iconic Stokehouse. It was perfectly curated by our Development Board and, most importantly, raised much needed funds and awareness for precision child health. However, from where we are today, it feels like this event happened a lifetime ago. We look forward to the time when we can once again come together in support of this vital cause in such a celebratory way.

Recognising the need to continue to drive positive impact in the area of children's health globally, and in light of our international standing, MCRI created the US Development Board, chaired by our incredibly dedicated ambassador and Director, Sarah Murdoch. This board comprises a dynamic and impressive group of individuals who all have deep connections to Australia and the work we do here at MCRI.

We also presented at the Milken Asian Summit in Singapore in September, which we hope will be the start of a

meaningful and strategic relationship with the Milken Institute.

This year saw us successfully secure a \$10 million grant for Professor Andrew Steer's life-changing scabies research as part of the Macquarie 50th Anniversary Award. This transformative global award, from my perspective, represents the very essence of why MCRI is so special. It reflects the altruistic nature of our work and our unflinching commitment to caring and supporting the most vulnerable communities in the world.

We are incredibly grateful to Macquarie for this catalytic gift which we believe will pave the way for better outcomes for hundreds of millions of people living with the burden of scabies globally.

You'll be reading more in this year's report about our Dame Elisabeth lunch hosted by our ambassador and long-time friend and supporter, Paula Fox AO, and her family. Here we gathered to honour, remember and celebrate the legacy of Dame Elisabeth Murdoch AC DBE.

Together with the Board, I would like to take this opportunity to recognise and congratulate Professor Kathryn North on receiving the highest Australian civilian honour in our country – a Companion of the Order of Australia – for her services to genomic medicine. She also received a NHMRC Outstanding Contribution award and, more recently, the Peter Wills Medal.

I'm pleased to announce a new record in Institute revenue. This represents a doubling of revenue over the past five years and it is another reflection of the extraordinary work and leadership of Kathryn and her team. Congratulations to all on this significant financial milestone.

Each year, our campus partners The Royal Children's Hospital, the University of Melbourne Department of Paediatrics and The Royal Children's Hospital Foundation work collaboratively with us to create opportunities for all children to live a healthy and fulfilled life.

All of us at MCRI, whether it be our Directors, campus partners, supporters or friends, are committed to creating a world where all children can live life to their full potential. Children really are at the heart of everything we do and what my time here has shown me is that together we can make a real and profound difference to the lives of so many.

I am constantly reminded of the enormity of our work, the humanity that connects us all and the need to continue to be our best and work together so, in the words of poet, Maya Angelou, we can continue to be *"a rainbow in somebody else's cloud"*.

Thank you to the MCRI team, our magnificent donors, our Council of Ambassadors, our Development Boards, Committees and of course our Directors – MCRI would not be all that it is today without your generosity, spirit and unwavering commitment, for which we are truly grateful.

On behalf of the Board, I am proud to share this annual report with you, and offer a heartfelt thank you for being such an integral part of this extraordinary journey.

Suzi Carp
Chairman

Director's message



It is so exciting to lead an Institute where our researchers are working every day to ensure that every child has the opportunity to live a healthy and fulfilled life.

Before we take time to celebrate our achievements of 2019, it is essential to acknowledge the extraordinary times we are experiencing in 2020.

MCRI's founder, the late Dame Elisabeth Murdoch AC DBE, was incredibly prescient when she remarked that *"medical research is vital, not only to solve the problems of today, but emerging problems we will face tomorrow and many years from now"*.

At MCRI, we have harnessed the great strength and breadth of our research expertise to respond to the COVID pandemic. Since March 2020, we have established a multi-disciplinary research program of more than 60 of our clinician-scientists and researchers with expertise in infectious diseases, clinical epidemiology, clinical trials, immunology, virology, genomics, stem cell biology, mental health, social science and population health. We have established research partnerships locally, nationally and internationally, and are making a major contribution to the global effort to effectively treat and prevent COVID-19 infection. We are also working with government and the community to identify and prevent the long-term societal and mental health impacts of the prolonged lockdown on children and families.

Our focus on the health and wellbeing of our children has never been more important.

As of September 2020, I am looking forward to the day that we can again enjoy the buzz and energy of a bustling Institute, and engage with our community without a computer screen between us. But now is also a time to reflect on 2019 and the crucial role of our research in child health – which is what sustains us.

In 2019, we launched our five-year strategic plan – *Towards Precision Child Health*. It sets

out the four strategic pillars to achieve that goal – Impact, Excellence, People and Sustainability – and these four pillars are the structure for this Annual Report.

Collaboration is at the core of our success. Within MCRI, we work closely together across the Institute, from our brilliant researchers to our devoted and hardworking team in Research Support and Operations. On the Melbourne Children's Campus, our partners at The Royal Children's Hospital, the University of Melbourne Department of Paediatrics and The Royal Children's Hospital Foundation are fundamental to how our research creates real world solutions for children and families.

A notable highlight of one of our local collaborations is the 'Hospital in the Home' study. We were able to show that treating kids for cellulitis (a potentially serious bacterial skin infection) at home is just as effective, and also less expensive, for the healthcare system and the family, leading to better quality of life for children and families. This study involves all of our Campus partners, and is changing how we care for children across the country.

There are so many more examples of our productive partnerships. In 2019, we led a national program focussed on the implementation of genomic medicine in child healthcare around Australia. We established the World Scabies Program to tackle that insidious condition, starting in the Asia Pacific. We launched our new Stafford Fox Stem Cell Medicine Disease Modelling and Drug Screening Facility to realise the promise of stem cell medicine. And we conducted world-leading Lifecourse research, following 1000s of children and their families from birth to adolescence, to study the intergenerational pathways of disease, including obesity and mental health issues.

Our work to *create possible, together* extends from our Melbourne Children's campus across the world. I am proud to announce the establishment, in 2019, of the International Precision Child Health Partnership (IPCHiP). IPCHiP brings together the world's top four children's medical research institutions –

Great Ormond Street (UK), Toronto Sick Kids (Canada), Boston Children's Hospital (USA) and Melbourne Children's (Australia).

Being a part of IPCHiP puts MCRI in an even more powerful position to tackle and solve the major health problems facing our children, and to promote and advocate for child health research. Together, our first initiative as part of IPCHiP will focus on using genomics to bring accurate and rapid diagnoses to our sickest children, and to use that knowledge to develop and test targeted therapies. Genomics is already making a difference for children, and has long been a strategic priority at MCRI. With IPCHiP, we will work alongside our global partners to extend its impact.

In 2019, we have introduced a range of new career development programs to further enhance the Institute's reputation and appeal for existing and future staff. For example, we have established a career disruption support program, recognising that the time when you are building a research career often corresponds with the peak years for starting a family.

At MCRI, over two thirds of our team are women. We are proudly part of WISPP, Women in Science Parkville Precinct, which works to advance research and translation by providing an environment that allows more women in science to lead and excel. Our leadership and mentorship programs continue to support and develop the next generation of leaders.

Every person who works at MCRI, and every person who supports us, plays a role in making our incredible achievements possible. I am grateful for the deep, ongoing commitment of our donors and supporters; the magnificent work from our Board and Executive; and the efforts every day of our incredible team. We are saving lives and making a difference for children here and around the world. And every one of you is playing a part.

A handwritten signature in black ink, reading 'Kathryn C. North'.

Professor Kathryn North AC
Director



Our purpose

We want all children to have
the opportunity to live a
healthy and fulfilled life

Winner of the 2018 MCRI
Healthy Time Photo
Competition. Photo taken
by Mike Chadwick.



Chapter 1: Impact

Our research has an impact for children and families today, and into the future.

GENOMICS

MCRI is at the forefront of genomic medicine, in Australia and around the world

Genomic medicine is changing lives for kids and families

Cases like Sebastian's demonstrate the incredible power of genomic research.

When Sebastian was born in late 2018, high blood pressure was making his heart work too hard. Rather than order a barrage of tests, MCRI's Acute Care Genomics study into the impact of rapid genomic sequencing was able to help.

Our acute care genetics team sequenced Sebastian's DNA to see if the problem was genetic.

In just 66 hours Sebastian was diagnosed with a rare genetic disease – generalised arterial calcification of infancy (GACI). GACI leads to increased calcium deposits in the arteries, making it harder for the heart to push blood around. The rapid diagnosis meant he was given effective treatment, quickly. In the past, such a diagnosis may have taken weeks or months – if it was made at all.

A few months later, Sebastian's condition stabilised. "He began to do really well," says mum Monique. "He kicked a heap of goals he'd missed up until that point."



Setting a new standard

Genomic research is the study of all our genetic information – which is all 23,000 genes in our body.

Genomic medicine uses that information to more accurately diagnose and treat disease, a process that is rapidly transforming healthcare. In the case of rare childhood syndromes, genomics can increase the diagnostic rate fivefold, and reduce the cost of diagnosis by 75 per cent.

MCRI is one of the world's most impactful child health research institutes, with significant strength in genomics. This allows us to make major differences for children and families, and to build and maintain strong and equal partnerships with other global leaders.

Our program of ultra-rapid genomic testing – sequencing the DNA of critically ill babies and children – is revolutionising the diagnosis and treatment of rare and potentially severe genetic conditions. Results now take days rather than months.

This remarkable advancement brings with it hope – and some challenges – for scientists, clinicians and families.

MCRI and Victorian Clinical Genetics Services (VCGS) clinical geneticist Associate Professor Zornitza Stark leads a team at the vanguard of making acute care genomics routine healthcare practice in Australia. Genomic testing is becoming standard paediatric care in the UK and US, where governments are moving towards funding the tests.

Many more children are now benefiting from early diagnosis, accurate prognosis,

better-tailored management and refined treatment options.

“Providing fast and accurate answers for families is just the beginning,” says Zornitza, highlighting the possibilities for genomic research and medicine that are quickly becoming reality. “Implementing rapid genomics into paediatric acute care has made a huge difference in diagnosis and treatment.”

The value of rapid testing

The potential impact of rapid genetic testing is immense. Rare genetic conditions affect fewer than one in 2000 people but make a major contribution to the chronic disease burden by significantly increasing medical costs, stress and time requirements for families, and reducing children's ability to have a normal childhood.

Despite being individually rare, collectively a rare genetic disease affects one in every 12 Australian births.

At MCRI, alongside our partners in VCGS, a highly collaborative, cross-disciplinary ‘rapids team’ of clinical geneticists, paediatricians, genetic counsellors, bioinformaticians and medical scientists works on the tests around the clock.

As in Sebastian's case, results can be achieved in just days.

The clinical team keeps families informed the entire time and provides pre and post-test counselling.

In the short term, this has meant swifter clinical decision-making, better treatment plans and faster recovery. In the long term, it helps families make more informed choices and access vital support networks.

Stronger together

Our strong partnerships have allowed us to combine resources with other organisations to massively increase our genomic research capacity.

Genomic research addresses individually rare and ultra-rare diseases, which means a researcher in Melbourne or even Australia might never have seen that particular genetic difference before. Worldwide collaboration increases opportunities to share observations and knowledge.

In the Acute Care Genomics project, we joined forces with Australian Genomics, The Royal Children's Hospital and multiple other sites around Australia. More than half the children in this pioneering study received a diagnosis, and three quarters of those had their care changed.

The rapid turnaround of results reduces the ‘diagnostic odyssey’ that many children undergo while families seek a diagnosis. This can go on for years and often involves invasive tests.

“We incrementally improved our processes to deliver results in shorter and shorter timeframes,” Zornitza says. “We’ve shown that rapid genomic sequencing is highly useful in the acute paediatrics setting and can be delivered at scale in a busy neonatal intensive care unit.”

“Rapid genomic testing is absolutely ready for full-scale implementation in the Australian healthcare system.”

Find out more

Meet Sebastian and his mum and dad



Watch the video at mcri.edu.au/thankyou

GLOBAL HEALTH

MCRI is building a safer future for children worldwide through our expertise in infection and immunity, population health and clinical sciences

Pacific partnerships lead to healthier lives

Long-term partnerships can generate great benefits for communities.

For almost two decades, MCRI researchers have worked closely with the Fiji Ministry of Health and Medical Services to address significant health issues including rheumatic heart disease, scabies, vaccine-preventable diseases and maternal, newborn, child and adolescent health.

Award from Macquarie to have major impact

In 2019, Macquarie Group announced a significant award to mark its 50th anniversary. There was \$50 million to be shared between the five groups worldwide who could present the best and most compelling idea to address an area of social need.

The project had to be catalytic.

At MCRI, our global health researchers had a bold and compelling idea: they wanted to tackle the devastating Neglected Tropical Disease scabies.

Almost 1000 groups from around the world entered the competition, vying for a chance to share in the \$50 million.

Long-time MCRI supporters banded together to support our bid.

[Read more about the impact of bold thinking and community support on p40.](#)

In 2019, the close relationship led to a significant breakthrough when MCRI was named one of five winners globally to share in the \$50 million Macquarie 50th Anniversary Award. It means an opportunity to drive back scabies for the whole population of Fiji and the Solomon Islands through mass administration of the drug ivermectin.

MCRI's Professor Andrew Steer says that "our research has found that ivermectin is a highly effective community-based treatment. It has been used to treat over 1 billion people for other parasitic infections and is known to be very safe."

"This award recognised the global significance of the partnership's scabies research," says Hon. Dr Ifereimi Waqainabete, the Fijian Minister for Health and Medical Services. "Health research is a key tool to deliver change that positively impacts the lives and health outcomes of our people."

Professor Kim Mulholland of MCRI outlines a long partnership in Fiji, which began with strong leadership from the Fiji Ministry of Health and Medical Services and from clinicians including Dr Lisi Tikoduadua, who recognised the importance of local research to inform health policy and programs.

"20 years of work has made major contributions to the health of Fijians" says Kim.

"Fijian-led health research is critical to overcoming local health challenges," says Andrew.

"The Ministry of Health and Medical Services plays a leading role in defining what the important health issues are for children and adolescents in communities, and how we respond."

The Hon. Dr Ifereimi Waqainabete believes research can "identify the priorities, provide supporting evidence, assist in strengthening health systems, and ensure that we are using our resources in a cost-effective and efficient manner".

Our collaboration has given the Fijian Government confidence to invest in vaccines for diseases such as rotavirus diarrhoea and bacterial pneumonia, which every year are responsible for the deaths of almost half a million children under five.

Our work together has also underpinned Fiji's decision to introduce the HPV vaccine for cervical cancer, which is the country's leading cause of cancer-related deaths.



Global health at MCRI

The need for increasing antimicrobial stewardship

Antimicrobial resistance has been identified by the World Health Organization as one of the top ten threats to global health.

Antimicrobial stewardship – ensuring these vital drugs are used appropriately – is essential to ensure the usefulness of antibiotics into the future. Our partnerships with researchers in low and middle-income countries have revealed this is a growing issue in both Indonesia and Vietnam.

MCRI and University of Melbourne Professor Julie Bines worked with Dr Jarir At Thobari from Universitas Gadjah Mada, Yogyakarta, to evaluate antimicrobial use in infants in Indonesia. They found that, despite the overall low community consumption rate, antibiotic overuse for certain infections offered a major opportunity to develop stewardship programs.

Overuse of antibiotics runs the risk of leading to diseases that evolve resistance to the available antibiotics, making them effectively untreatable.

MCRI's Professor Steve Graham is working closely with Dr Hoang Tran and Dr Phuong Nguyen, senior paediatricians at Da Nang Hospital for Women and Children, to evaluate and address inappropriate antibiotic use in newborns and children in Vietnam.

Phuong's PhD research highlights excessive antibiotic use and unnecessarily high costs of care for children admitted with pneumonia, the most common cause of paediatric hospital admission in Vietnam. She has shown that most paediatricians in Vietnam believe that improved antibiotic stewardship is needed and that over-the-counter antibiotics should be restricted.

What we've learned from medical educators in Laos

Consultant paediatrician and medical educator with the University of Melbourne,

MCRI Associate Professor Amy Gray, has sustained a 10-year partnership with the University of Health Sciences (UHS) in Vientiane, Lao PDR, to educate future doctors.

Amy says much has been learned about overcoming the challenges of medical education in resource-limited settings.

"UHS have recognised the need to 'leapfrog' current medical education models and instead adopt a forward-thinking approach to aim for what medical education could look like in Australian institutions five years from now," says Amy.

"For example, potential exists in team-based learning as an educational method, which is feasible in Laos with current staff-to-student ratios.

"With a growing number of medical students seeking online resources, targeted development of multimedia resources and other information-sharing tools such as blogs, offer potential to make content available in a timely way that can be adapted over time."

The Murdoch Children's Research Institute is a signatory to the Australian Council for International Development (ACFID) Code of Conduct. As a signatory, our work is conducted with transparency, accountability and integrity in line with the guidelines and principles of the ACFID Code of Conduct.



Further information on the code is available on the ACFID website www.acfid.asn.au

STEM CELLS

MCRI is a global leader in stem cell biology, using stem cells to study disease mechanisms and develop tailored therapies



Leading the way

MCRI is one of few institutes globally with the in-house capacity to complete the end-to-end process of inducing, editing and utilising induced pluripotent stem cells for high-throughput drug-disease modelling and discovery.

The advancements will hopefully help patients like James. Now 10, James was born with the serious and rare condition hypoplastic left heart syndrome (HLHS). Only half his heart functions properly.

His mum Nikki says the team caring for James has been amazing, and they are now looking to research that could find a treatment or cure for HLHS.

"My family needs options," she says. "To get those options we need research by people who have the drive, the vision and the knowledge to find the answers we so desperately need."

MCRI Cardiac Regeneration Laboratory Head Associate Professor Enzo Porrello says patients like James inspire the research and underline its importance. "By recreating heart tissue with a patient's stem cells, we hope to eventually treat these serious conditions."





Harnessing the power of stem cells

Scientific discovery pairs deep, insightful thinking with good old-fashioned elbow grease.

The extraordinary vision and indomitable working spirit of the team behind the MCRI Stem Cell Medicine program is taking us into areas only dreamed of a few years ago.

Our researchers are creating, manipulating and screening stem cells to develop personalised and novel treatments for rare and serious diseases.

MCRI's workhorse of the lab is induced Pluripotent Stem Cells (iPSC). These are created in the lab from a patient's blood and skin cells, which are turned back into stem cells. These redeveloped stem cells can be transformed into specialised cells and mini-organs to test and study in the laboratory.

Our iPSC expertise now encompasses a range of tissues, including kidney, heart, brain, blood, muscle, bones and immune cells. With the support of our in-house iPSC Derivation and Gene Editing team, MCRI researchers have access to bespoke iPSCs in the quest to find new treatments for currently incurable diseases.

Professor Melissa Little, Stem Cell Medicine Program Leader, says: "Our Stem Cell Medicine program is opening a door to a whole new world of treatment possibilities. With the advent of disease modelling, drug screening and cellular therapy technologies, we hope to deliver more effective and targeted treatments for patients.

"Ultimately we aim to deliver more effective and personalised treatments or cures for every child."

A model solution

The multi million dollar Stafford Fox Medical Research Foundation Stem Cell Medicine Disease Modelling and Drug Screening Facility will scale up and streamline disease modelling and drug screening to identify safe and

effective treatments for childhood diseases and disorders. Targets include asthma, genetic heart and kidney disease, and Type 1 diabetes.

The fully integrated facility is the first of its kind in Australia to combine a \$3 million dollar, four-in-one robotic system with advanced stem cell production facilities.

Its key pieces of equipment were installed in 2019, making the facility one of only a handful in the world able to create, grow and differentiate patient stem cells, perform high-throughput drug screens and then visualise the cellular outcomes in 3D.

Dr Alejandro Hidalgo-Gonzalez heads the facility and says its ability to conduct experiments faster and with even greater accuracy will enable his team to perform 4000 drug screens on human samples in the time it would take to process 100 manually.

This means faster answers for patients, improved treatment choices and more time for researchers to search for their next big breakthrough.

The flexibility, support and generosity of the Stafford Fox Medical Research Foundation (SFMRF) over many years has been crucial to establish MCRI's Stem Cell Medicine program.

"We're so proud to have been supporters of the Stem Cell Medicine program at MCRI since its origin in 2012. It is extraordinary to see the heights the program has already reached, and astonishing to think what's to come," says SFMRF Trustee Ken Wallace.

Alejandro, whose appointment was possible thanks to the SFMRF, says MCRI's location on the Melbourne Children's campus provides invaluable opportunities to rapidly translate his team's work into real-world outcomes. "We have built a world-class facility, open to researchers across a range of childhood diseases," he says, referring to the way that stem cell modelling is now part of a wide range of research into conditions including autism and speech disorders.

Outside MCRI, the facility has the capacity and ability to support the work of research groups within the Parkville Precinct and beyond.

"In 2019 we moved closer to our goal of making it standard practice to model the disease of a patient with a serious genetic condition so that we can create an effective treatment designed personally for them," says Alejandro. "This will be life-changing for many patients and their families. For some it may mean better treatment results, and for others possibly even a cure."

Generating new therapies

Organ regeneration, cell therapies and tissue engineering all show immense potential.

This ground-breaking work could ultimately treat thousands of children like James. It includes:

- Revolutionising congenital kidney disease research by growing mini-kidneys to model patient disease and seek targeted therapies
- Improving outcomes for children who need bone marrow transplants because of leukaemia, the most common childhood cancer
- Using patient stem cells to create models to better understand how the brain develops and how it can misdevelop, leading to rare but devastating conditions such as leukodystrophies, RETT syndrome, autism and mitochondrial diseases
- Searching for cures for congenital heart disease by recreating human heart tissue derived from patients' own stem cells to understand how the heart could regenerate. In Australia, congenital heart diseases affect up to 10 of every 1000 babies born. Our mini-hearts, grown in the laboratory, allow us to investigate the causes of these heart diseases, test heart drug toxicity and eventually bioengineer heart tissues for transplantation.

CLINICAL SCIENCES

MCRI clinical sciences researchers care for babies, children and adolescents with serious acute and chronic illness

Reaching for the stars

Many of us would like to be a bit taller, but for some children it would be life-changing.

A world-first treatment, developed from MCRI-led research, is allowing those with achondroplasia to grow at the same rate as their peers and possibly avoid surgery.

Achondroplasia is caused by a gene mutation affecting about one in 25,000 babies. Until recently there was no treatment. Children with the condition have impaired bone growth in the limbs, spine, and base of the skull. They may also have curvature of the spinal cord, bowed legs and spinal cord compression. About half need corrective surgery.

MCRI clinical geneticist Professor Ravi Savarirayan has spent almost 10 years working to counter the inhibited growth and other complications.

A ray of hope emerged in 2011, when he learned that scientists had found that a small molecule dubbed CNP was an important bone growth regulator and blocked the pathway responsible for achondroplasia.

Successful trials

As a result, the drug vosoritide was developed to improve bone growth in children with the condition.

Since Ravi treated his first human patient in 2013, he has led several successful trials of the drug.

He says the results of these and other studies are extremely promising. "If it works as hoped, vosoritide could help children with achondroplasia grow taller and avoid surgery," he says.

"This could be life-changing for many children and their families."

The Phase 2 study of children aged five to 14 found those who took higher doses grew faster for up to 42 months. Importantly, vosoritide was generally well-tolerated.

These ground-breaking findings were reported in the prestigious New England Journal of Medicine.

Bike rides and running races

For children successfully treated with vosoritide, growing at the same rate as other kids their age makes a world of difference.

The primary goal of the trial was to stop the significant medical complications that can come with achondroplasia and avoid complicated major surgery, but many children and families saw some added benefits.

For some children, the extra height meant being able to reach the pedals on a bicycle for the first time. Families and teachers reported that the children were better able to keep up with friends in the playground.

Ravi says achondroplasia is caused by overactivity of a signal that stops growth, and could be likened to overwatering a plant.

"Basically vosoritide kinks the hose so that the plant gets the right amount of water and can resume regular growth," he says.

Now, Ravi's guidelines for managing achondroplasia in children have been adopted into the practice guidelines at The Royal Children's Hospital in Melbourne and dozens more hospitals around the world.

Find out more

Watch Ravi discuss his research



Watch now at
mcri.edu.au/ravi



A united approach

This research is a prime example of MCRI's work with the Melbourne Children's Trial Centre (MCTC), a unique collaboration between The Royal Children's Hospital, MCRI, The Royal Children's Hospital Foundation and The University of Melbourne.

MCTC, led by Professor Andrew Davidson, supports clinicians and researchers to initiate and perform trials of new therapies, like the one for vosoritide. Clinical trials are essential to explore the effectiveness of promising new therapies, and to determine how existing treatments can be used most effectively.

The unique collaboration with MCTC takes research from 'bench to bedside'.

A leader in paediatric trial design, MCTC runs a range of clinical trials and has staff to support each stage from concept to protocol design, trial conduct and analysis. It collaborates with other research institutes, universities and industry leaders across a range of complex projects.

"Trials like the Phase 2 vosoritide project, which ran across Australia, the UK, France and the USA, would not be possible without these links," Ravi says.

Professor Andrew Davidson, Medical Director of MCTC, says: "The Melbourne Children's Trial Centre gives MCRI and the Melbourne Children's campus a unique capacity to trial our research in a way that has great benefit for researchers and clinicians as well as patients and families."

VCGS

The Victorian Clinical Genetics Service (VCGS) is a specialist laboratory and clinical genetics service. VCGS is MCRI's partner in translating our genomic research into the clinic.

Revolutionising care

through personalised medicine

Imagine not knowing what is making your baby sick.

You and the medical team can't make informed decisions about the best care for your child. You don't know whether any other children you might have will be at risk. And you can't reach out to other families experiencing the same condition for support.

For too long, that has been the terrible reality for parents of children with unknown genetic conditions. But thanks to Whole Genome Sequencing (WGS), the latest tool in genomic medicine, things are changing – fast.

WGS is truly revolutionary. It gives doctors the ability to search within the genome for an answer. It's transforming how children with rare genetic conditions are treated, giving families new hope.

One human genome is more than 99 per cent identical to another – but it's the less than one per cent difference that can provide medical insights into how these genetic variations affect a patient's care.

WGS, available at Victorian Clinical Genetics Services (VCGS), a wholly owned subsidiary of MCRI, maps all three billion 'letters' that make up a person's DNA – that's three times the number of stars in the Milky Way. The order and sequence of these letters contain valuable information about someone's genetic predisposition to disease.

The sheer amount of information available through WGS is proving incredibly valuable to find answers for sick children with previously undiagnosed conditions, but it needs specialist research and clinical interpretation to deliver the best outcomes.

Associate Professor Sue White, VCGS Deputy Clinical Director, says WGS is helping to deliver precision medicine based on an individual's genome, rather than a one size fits all approach.

"Tools like WGS can help us better understand the mechanisms that cause an individual child's disease or condition. It allows us to tailor a patient's care for better outcomes in a way that is truly personalised."

In 2019, VCGS received NATA accreditation, the highest standard for laboratories. They believe they are setting the national benchmark for the provision of genomic services with a fully integrated laboratory and clinical WGS service.

For VCGS CEO, Dr Damien Bruno, this impressive achievement is a sign of the huge potential of WGS.

"We are exceptionally proud to receive NATA accreditation and global recognition as a WGS provider of the highest quality standard," he says..

"Whole Genome Sequencing has had a rapid transition from research to clinical use. We're entering into a new era where precision medicine has the potential to transform and save lives."



Taking research from the lab to the clinic

Before Whole Genome Sequencing (WGS) became available, traditional genomic testing only investigated the parts of our DNA that code for proteins. For some of the very sick babies who are tested, this is enough for doctors to find out what has gone wrong, but many families are still left searching for answers.

Every day brings new families to VCGS with complex questions about their child's health, which makes rapid translation from the research lab and into clinical practice essential to improve the lives of these children and their families.

For the VCGS head of Genetics and Genomics and MCRI researcher, Dr Sebastian Lunke, the ability to fast track WGS from research and move it into clinical practice means that children and their families in Australia now have access to the best testing in the world.

"VCGS is critical in enabling translation of the research at VCGS and MCRI into clinical practice. We have had a profound impact on the accessibility of clinical genomic testing in Australia. With WGS, clinicians can now use world-leading tests that have an immediate impact for children and their families."

VCGS, as the translation partner of MCRI, has been pivotal globally in helping to provide answers for these families by fast-tracking genomic research into everyday clinical practice for clinicians. VCGS provides genetic testing for over 160,000 Australians each year. The close relationship between the clinical delivery and MCRI research touches the lives of many.

As genomic sequencing becomes more common in clinical practice, it's essential for clinicians to be able to draw on the highest quality services and interpretation to use genomic testing.

INFECTION AND IMMUNITY

Working to address infectious diseases and immune and allergy problems that impact children both locally and globally



No place like home

Having shown excellent results from a trial treating children with cellulitis, the researchers set their sights on other conditions that could also benefit from home treatment.

One of those diseases is bronchiectasis, a lung condition that brought a seven-year-old boy called Leroy to hospital at Christmas time.

Bronchiectasis would normally require a lengthy stay in hospital for antibiotics. In Leroy's case, it would have meant being in hospital for Christmas, a hard ask for a seven year old.

With hospital in the home treatment, Leroy was back in his own bed and waiting for Santa on Christmas Eve.

Instead of up to two weeks away from his family, Leroy had daily visits by a nurse to administer antibiotics and a physiotherapist to help with his breathing. A second physio appointment by teleconference allowed further observation and advice.

As a result, he enjoyed Christmas and the new year at home with mum Amy, dad Simon and sister Violet, playing with their dogs and new toys while welcoming visits from relatives and neighbours. He also got to enjoy home-cooked food.

"The fact that the team came to us made it so much easier," Amy says. "Leroy was really happy being at home. He was more comfortable, for sure. It worked beautifully for us!"



Breaking the mould

Despite brighter décor and better treatments, hospital remains a daunting place for children.

Besides feeling unwell, they miss family, friends, home and maybe even school. For parents, it means enormous stress and worry, missing work, and higher costs in terms of fuel, parking, meals and more.

Imagine, then, if kids could be successfully treated at home – possibly with even better results.

Moving treatment from hospital to home is happening for more children thanks to a world-first trial developed by MCRI researchers and their colleagues at The Royal Children's Hospital (RCH).

Hospital-in-the-Home

'Hospital-in-the-Home' is a well-established option for patient care after hospital admission. But our researchers wanted to know if we could skip hospital admission altogether and send children home to complete their care after coming into the emergency department.

The project compared the outcomes of 188 children aged six months to 18 years who presented at hospital with the common, and sometimes painful, bacterial skin infection cellulitis. Cellulitis treatment often means a hospital admission to receive intravenous (IV) antibiotics.

Following parental consent into the randomised control trial, a coin toss decided whether the children would receive IV antibiotics in hospital, or at home, with daily staff visits.

The Melbourne Children's campus offered a unique location for this MCRI-led study, given our co-location, shared facilities and close ties with the RCH.

Surprising results

When the results of the trial into skipping the hospital portion of treatment came in, researchers were astounded.

Treatment was successful for 98 per cent of children at home, compared to 93 per cent in hospital.

Home treatment also saved money for families and hospitals. The hospital saved almost \$1500 per patient. For families, at-home treatment cost an average of \$400 less than a hospital stay.

Hospital-in-the-Home medical lead, Associate Professor Penelope Bryant, describes it as "an amazing result that we didn't expect".

"Doctors need to be confident that sending a child home for IV antibiotics directly from emergency is effective and safe," she says.

"For the first time we have truly shown that is the case; and by avoiding hospital admission altogether, children also avoid risks such as hospital-acquired resistant infections."

Clinician-researcher Dr Laila Ibrahim led the project for her doctorate, with senior authors and investigators Penelope and Paediatric Emergency Medicine Professor Franz Babl. "My dream is that almost every child, once medically stable, should be treated at home," says Laila.

The results were featured on the cover of the prestigious journal, *The Lancet Infectious Diseases*. They showed that children treated at home had better outcomes in a range of areas, including adverse events, patient satisfaction and parental and child quality of life.

Further research

Hospital-in-the-Home is now standard care for children presenting to RCH with cellulitis requiring IV antibiotics. It is also part of the RCH Paediatric Clinical Practice Guidelines, which guide hospitals on the east coast of Australia.

More studies are planned or underway for appendicitis, urinary tract infections and bronchiolitis, and patients with autism spectrum disorder are now being treated at home where possible.

Better together

The power of PREDICT to improve health for children

The Hospital-in-the-Home project is an example of the work that can be done through PREDICT – the Paediatric Research in Emergency Departments International Collaborative.

PREDICT has successfully coordinated paediatric emergency research since it was founded in 2004. In 2019, it received funding for a five-year Paediatric Emergency Medicine Centre of Research Excellence (PEM-CRE) from the National Health and Medical Research Council of Australia.

PREDICT was born out of recognition that the role of Emergency Departments (EDs) as the hospital's 'front door' puts them in a unique position. EDs can initiate research into the wide range of acute care issues that bring children and their families to hospital, including those who end up being successfully treated under Hospital-in-the-Home. The PEM-CRE will further that work.

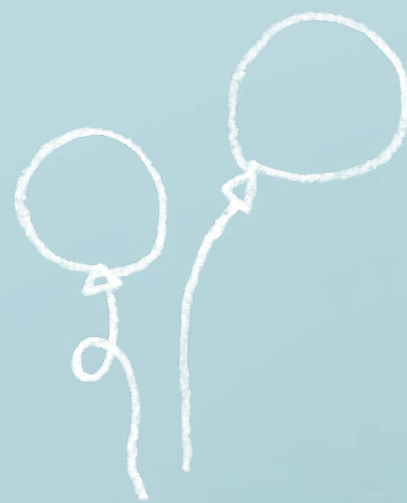
Paediatric Emergency Medicine Professor and Vice-Chair of PREDICT Franz Babl says: "PREDICT will provide an improved evidence base for emergency care in children and a platform for emergency and paediatric researchers from all specialties to conduct acute care research."

POPULATION HEALTH

Studying the health of communities and populations, including the determinants, distribution and management of health at the population level

At the Centre

Celebrating 25 years of the Centre for Community Child Health



From birth to eight years old, kids do a huge amount of growing, learning and changing.

These enormously impactful years, which lay the foundations for the adults we become, are the focus of the researchers at the Centre for Community Child Health.

The Centre, a department of The Royal Children's Hospital (RCH) and research team at MCRI, plays a key role in ensuring MCRI's work in population health goes beyond the hospital walls to support the best start in life for every child in the community.

The Centre began its life in 1994 in a pair of cramped offices, wedged in next to the RCH Emergency Department. This connection, which made collaboration simple from the start, has paid off. Twenty-five years on, the Centre has led the implementation of many state and nation-wide programs that have changed the face of child health.

MCRI's population health research studies, many led from the Centre, have been pivotal to this success. They have created better understanding of the many complex and interrelated factors that influence child and adolescent health.

1.

Measuring how every child develops

In 2003, the Centre led a group of national stakeholders to consider if a Canadian-developed tool called the Early Development Instrument (EDI) would be useful in Australia. The EDI was designed to measure the developmental health and wellbeing of young children when they began school.

After adapting the Canadian EDI to use in Australia, the Centre led its national implementation from 2004-08, in partnership with Telethon Kids Research Institute in Perth and supported by the federal government.

The survey that Australian primary school kids and parents know as the AEDC was born.

With its national rollout, Australia became the first country in the world to collect national data on the developmental health of all children starting school. This laid the foundation for the Australian government's commitment to ongoing, three-yearly data collection cycles, under the name the Australian Early Development Census (AEDC).

2.

Getting it right, from the start

The powerful data from the first rollout of the AEDC showed that at least one in every five Australian children starts school without the developmental capabilities to take advantage of the learning and other opportunities schools provide. They were coming to school without being ready.

It was clear to ensure that every child could take full advantage of their school years, it was going to be important to work with children and families before school began. This led to the right@home program.

Right@home is embedded in the national maternal and child health service. It works to improve outcomes for children and their families by building parents' capacity to provide safe, responsive care and a home environment that supports children's learning.

Results have shown that the program makes a positive difference in children's school readiness and parents' skills. The program was named a finalist in VicHealth's 2019 awards.

3.

A resource for Australian parents

A third major innovation to come out of the Centre's 25 years is the Raising Children Network, raisingchildren.net.au.

The website began in 2006 with support from the federal government. The Centre worked with partners to create a resource

for Australian parents that supported them from pregnancy to adolescence.

Now, it is a space for parents and carers, with videos, parenting forums, and information on topics from parenting pre-teens, to bathing babies. MCRI continues to be actively involved as a research and knowledge partner.

The Raising Children Network provides a comprehensive and trusted resource for parents across Australia and internationally. In 2019, the website recorded more than 33 million page views.

A bright future for community child health

Under the leadership of Founding Director Professor Frank Oberklaid and Associate Professor Jill Sewell, these and many more programs have contributed to the Centre's stellar reputation across Australia and around the world.

As the Centre celebrates its 25-year anniversary, Professor Sharon Goldfeld is taking over the directorship with her sights firmly on what's in store for the next quarter-century.

"One of the strongest things about the Centre is its people," says Sharon. "It's the human capital, but it's also the heart."

"Today's kids are growing up in an extraordinarily complex environment, and we need to support them with extraordinarily clever ideas."

The Centre's work aligns with other important aspects of MCRI's population health research, including studies of Aboriginal health and mental health.



Supporting mental health

MCRI research published in 2019 found that the vast majority of Australian children with mental health disorders are not getting sufficient professional help. Girls, young children and families from non-English-speaking backgrounds are the least likely to access services.

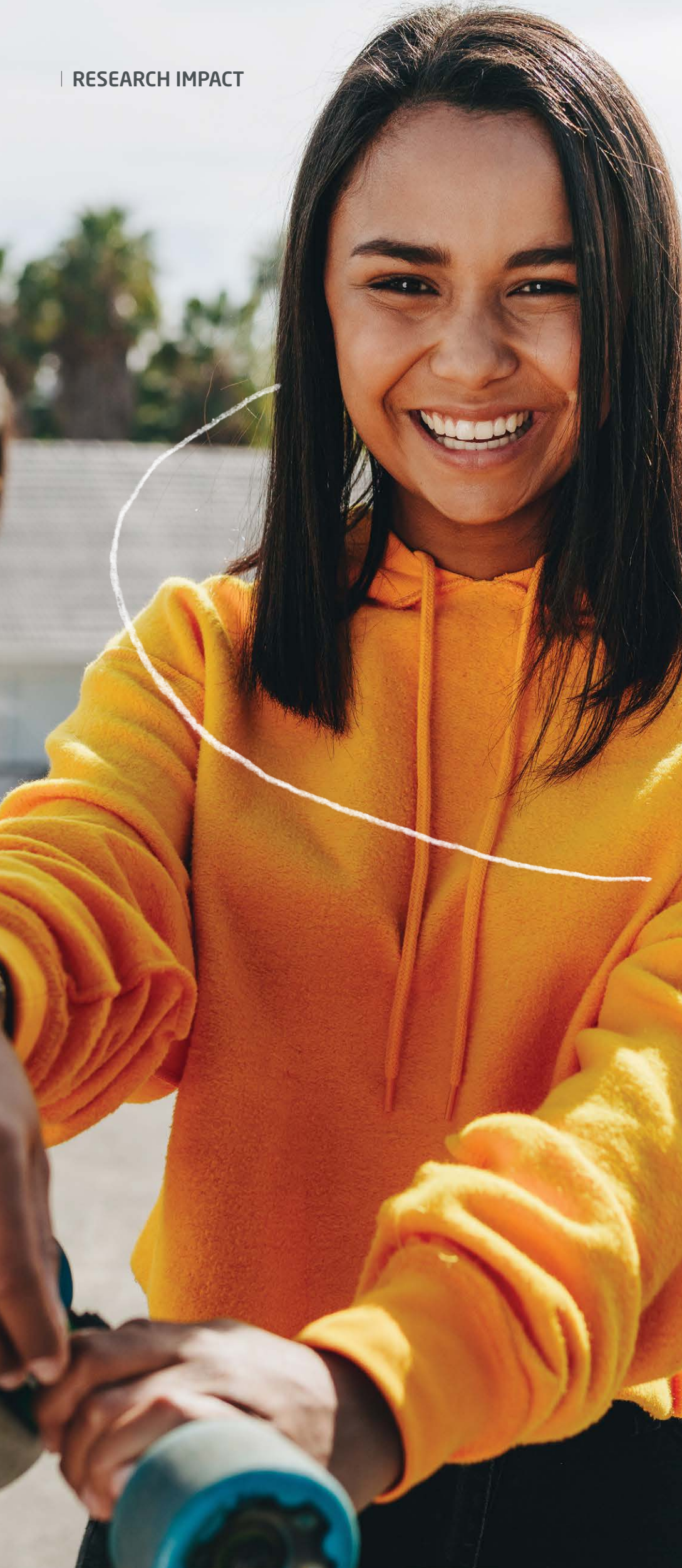
"Fewer than one in four children with mental health problems saw a health professional in the 18 months after they were identified as having a problem," says lead author Professor Harriet Hiscock.

Harriet says families may delay getting help for young children in the hope that they will 'grow out' of the mental disorder. They may also not know where to get help, or cannot afford it. Her team is now working on developing and testing models of accessible and affordable mental healthcare to remove these barriers.

Aboriginal Health

Aboriginal health is a key focus for MCRI, under the direction of Aboriginal Health Group Leader Professor Stephanie Brown. October saw the inaugural meeting of the MCRI Aboriginal Reference Group, which provides strategic guidance and cultural advice to the Aboriginal and Torres Strait Islander Leadership Team, the Institute Director and the Institute Executive.

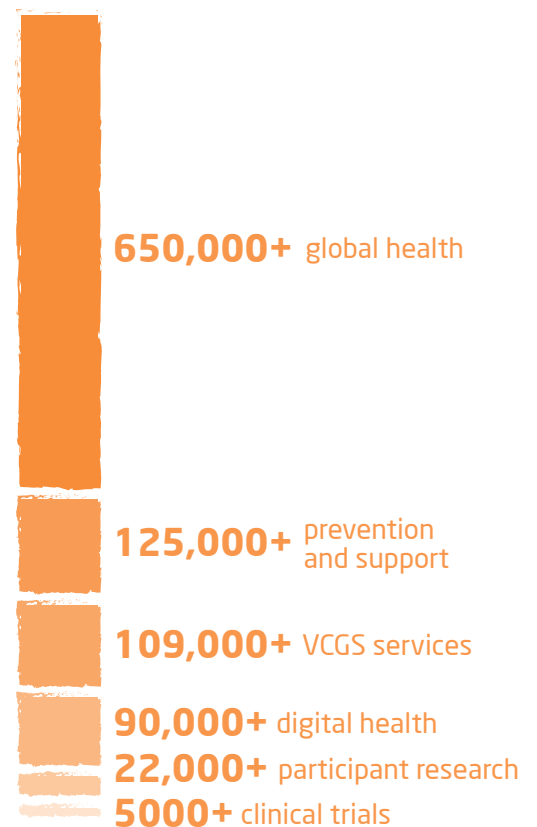
The Reference Group members are Aunty Di Kerr, N'arweet Carolyn Briggs, Andrew Jackomos (co-chair), Graham Gee (co-chair), Justin Mohamed, Trevor Pearce, Selena White, Denis McDermott, Indi Clarke and Sandra Eades.



Murdoch Children's Research Institute research contributes to changes in policy and practice in Australia and around the world.

Here are just a few examples of the impact we made in 2019.

1,000,000+
children benefit
from our research:





Our research impact in 2019

How research from the Institute changes policy, processes and lives



Complex disorders

Genomics offers opportunities to study and manage complex disorders and rare genetic diseases, which affect at least one in 12 births.

Work led from MCRI, alongside research partners in Australia and around the world, has shown that integrating genomic medicine into children's healthcare reduces costs and impact for families and is feasible for clinicians, see more on p6.

In response, the federal government announced the Genomics Health Futures Mission to invest \$500 million over 10 years in genomic research.

This will improve testing and diagnosis, help personalise treatment options, and reduce unnecessary interventions and health costs.



Allergy

MCRI's world-leading allergy research showed that in Melbourne, 1 in 10 12-month-old babies had a food allergy; a rate much higher than previously suspected. Our vital allergy research has now been translated into an app and a podcast to help parents, caregivers and allergy sufferers get easy access to expert advice.

In 2019, the AllergyPal app more than doubled its downloads, and the first release of the Allergies podcast saw it reach more than 50,000 downloads by year end.

Now, our researchers are leading work to develop the skills of community paediatricians in treating children's allergies to streamline allergy management and reduce pressure on hospital allergy clinic waiting lists.



Rare disease

Rare diseases are not so rare – one in every 12 babies is born with one.

The Victorian State Government directed \$8.4 million in funding over four years for genomic sequencing for undiagnosed individuals, following the highly successful Childhood Syndromes project which raised the rate of diagnoses from 8 per cent to 54 per cent. The project was led by staff at MCRI's wholly owned subsidiary, the Victorian Clinical Genetics Service.



Scabies

The Tropical Diseases Group, an international alliance led by MCRI's Professor Andrew Steer, was instrumental in the campaign to get the World Health Organization to name scabies as a neglected tropical disease (NTD). In resource-poor communities, including remote Aboriginal and Torres Strait Islander communities in Australia, scabies can affect up to half of children.

Listing as an the NTD means public health efforts to eliminate scabies worldwide are prioritised and can be better aligned.



Sleep

Every parent knows just how disruptive children's sleep issues can be for the whole household. In 2019, MCRI researchers Professor Harriet Hiscock and Associate Professor Emma Sciberras translated their years working in sleep research into a podcast to help parents with child sleep problems from infancy to adolescence. The Sleep podcast also covered guidance for children with additional needs, such as autism and ADHD.

The podcast was incredibly popular, with almost 20,000 downloads by year end.



Hearing loss

There are more than 11,000 Australian children under 17 who are fitted with hearing aids or have a cochlear implant.

Research into childhood hearing loss, led by Dr Valerie Sung, has led to practice changes including the launch of the Caring for Hearing Impaired Children clinic at the RCH, and the development of national consensus guidelines for medical management of childhood hearing loss.

Research and advocacy from key researchers involved in the program continues to be instrumental in improving health equity and access to treatment.



Concussion

With up to one in five children experiencing concussion in childhood, it's vital to communicate clearly about how to manage recovery for the best outcomes.

MCRI's world-leading research into acquired traumatic brain injury has been translated into international guidelines for the management of child concussion and continues to be a driving force to improve community awareness of the issue.

MCRI's concussion research was developed into the HeadCheck app in 2018 to help parents manage their children's concussion. In 2019 that app became a podcast, Concussion, developed in partnership with the AFL with the expertise of Professor Vicki Anderson.



Our beliefs

Every child deserves a healthy start to life.
The relentless pursuit of excellence through
passion, innovation, integrity & efficiency.

A culture of curiosity and scientific rigour
which leads to discovery.

Our job doesn't end until we make a difference.

We will find a cure.

Research provides hope.

Children are at our heart.

Every child deserves a chance at childhood.

Cooperative team work makes us great.



Charlotte is a kidney transplant patient and part of MCRI's stem cell medicine research. MCRI researchers are using stem cells derived from Charlotte's blood to help other children who have the same kidney condition.



Chapter 2: Excellence

Striving to be international leaders in research areas that provide children with a healthy start to life and successful journey to adulthood



Research metrics

150+

Disease areas investigated

300+

Medically trained researchers

Equal 2nd worldwide

For quality and impact of our research*

1210

Research papers

(includes letters, editorials ie: journal publications that aren't original research)

1019

Peer-reviewed publications

(original research papers, includes reviews)

72

Policies and patents

30%+

Publications in top 10% of international journals

9

Device clinical trials

300

Drug clinical trials

*Clarivate Analytics Bibliometric Report 2017

From left: Prof Melissa Little, A/Prof Cathy Quinlan, Prof John Christodoulou and Prof David Thorburn



Collaborations

- 🌀 MCRI-administered projects
- ✳ Collaborative projects



Honours, awards and prizes

MCRI researchers were recognised through many fellowships, prizes and national honours in 2019.

The Institute attracts and inspires high-performing individuals to do their very best work and achieve new heights.



Prof Melissa Little

Alfred Newton Richards Award for 2019 and Honorary Doctorate from Leiden University

These awards recognise Prof Little's outstanding research in the area of kidney disease



Dr Valerie Sung

Nelson Alexander Charitable Foundation donation

To support the work of VicCHILD

L'Oreal Women in Science Fellowship

To support her study of childhood hearing loss



Rachel Kennedy

2019 Churchill Fellowship

For travel to gather insights that could benefit children and young people living with neuromuscular disorders in Australia



Dr Laila Ibrahim

Early Career Researcher Award

For excellent basic and applied research by early career researchers



Dr Graham Gee

NHMRC Rising Star Award

Dr Gee submitted the top-ranked application by an Indigenous Researcher in the Early Career Fellowship scheme



Prof Fiona Russell

Frank Fenner Prize

In recognition of her translational and transformative global health research



Prof Franz Babi

Best Paediatric Emergency Research Award

The European Society for Emergency Medicine recognises exemplary work in paediatric emergency research



Dr Amanda Gwee

RACP Research Establishment Fellowship

For the development of an app to allow for precision-dosing of antibiotics in children



Prof Julian Savulescu

Fellowship of the Australian Academy of Health and Medical Science

To recognise significant lifetime achievement in the field of health and medical science



Sue West

on behalf of the CCCH Research Translation team

Driving the Impact Agenda 2019

For their work to drive research translation for impact on the Melbourne Children's campus



A/Prof Penelope Bryant

University of Melbourne Medical School's Strategic Grants for Outstanding Women

An award to assist talented female academics to negotiate some of the challenges they face in sustaining and building careers



A/Prof Winita Hardikar AM

Member of the Order of Australia

For significant service to medicine, particularly to paediatric liver disease and transplantation



A/Prof Brigid Jordan AM

Member of the Order of Australia - Queen's birthday

For significant service to medicine in the field of paediatrics and infant mental health



Prof Lex Doyle AO

Officer of the Order of Australia - Queen's birthday

For distinguished service to medicine and to medical education, as a neonatal paediatrician, academic, author and researcher



Prof Ruth Bishop AC

Companion of the Order of Australia - Queen's birthday

For eminent service to global child health through the development of improved vaccines for paediatric gastroenteritis and to medical research



Prof Kathryn North AC

Companion of the Order of Australia

For national and international leadership in genomic medicine, her contribution to the advancement of genetic, neurological and child health and mentorship.

NHMRC outstanding contribution award and Peter Wills Medal

These awards recognise her outstanding long-term contribution to the NHMRC and Australian research



Prof Andrew Steer

Part of consortium awarded \$35M

To fasttrack the development of a vaccine against Strep A

Macquarie 50th Anniversary Award

\$10M for a program to tackle scabies in the entire populations of Fiji and the Solomon Islands

Sylvia and Charles Viertel Charitable Foundation Senior Medical Research Fellowship

Among the most prestigious awards available in medical research in Australia



Find out more

MCRI is proud to celebrate all our honours recipients in 2019, not just the small selection who appear here.

You can also learn about our student winners on page 34.



Our values

Support the individual
Perseverance
Generosity of spirit
Creativity & innovation
Scientific integrity
Relationships
& collaboration
Courage



Dr Dan Pellicci, Cellular
Immunology Group Leader
with members of his team in
2019, Chris, Scott and Elena.



Chapter 3: People

Establishing an environment that fosters and develops brilliant minds to enable the growth of our research stars



Thank you

The impact that we have is not possible without the support of all these people - and many more.



6A Foundation
Mrs & Mr Anna & James a'Beckett
Mrs Antoinette Albert
Mr Kenneth Allardice & Ms Julie Roy
Alport Syndrome Foundation
Associate Professor Andrew Alston
Ms Roseanne Amarant
Mr & Mrs John & Ros Andrews
Appel Family
Australian And New Zealand
Association of Paediatric Surgeons
(ANZAPS)
Australian And New Zealand College
Of Anaesthetists (ANZCA)
Australian Communities Foundation
sub-fund Unico Community Fund
Australian Food Allergy Foundation
Australian Pain Society
Aust Rotary Health
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Dr & Mrs David & Anne Barton
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Mr & Mrs Andrew & Annie Bell
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Ms Danielle Besen
Besen Family Foundation
Big W
Bill And Melinda Gates Foundation
Bio Tools Pty Ltd
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Mr & Ms David & Elizabeth Briskin
Mr & Mrs Nick & Prue Brown
Ms Diana Bryant
BUPA Australia
Mr John Burke
Mr John Calvert-Jones AM
& Mrs Janet Calvert-Jones AO
Calvert-Jones Foundation
Cameron Foundation
Mrs Krystyna Campbell-Pretty
Carla Zampatti Foundation
Mr & Mrs Grant & Linda Cashin
Cass Foundation
Mr Steven Casper & Ms Ilana Wald
George & Freda Castan Families
Charity Drive Days
Charles and Cornelia Goode Foundation
Ms Xueying Chen
Cher Family Foundation
Children's Cancer Foundation
Mrs & Mr Vanessa & Andrew Chrapot
Mrs & Mr Ronda & Ernest Clarke
Mr Trevor S Cohen AM & Mrs Heather
Cohen
Ms Amanda Coombs
Mr Laurence Cox AO & Mrs Julie Ann
Cox AM
Ms Fiona Crosby
Mr & Mrs Simon & Sophie Crowe
The Cuming Bequest
Ms Georgia Danos & Mr Julian Dunne
Dr Charles Day & Ms Elise Everest
Mr & Mrs Jonathan & Ella Deague
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Debra Australia

Department Of Defense - USA
 DHB Foundation
 Diabetes Australia
 Dina and Ron Goldschlager Family Charitable Foundation
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 Dr Annette Domanti
 Mr Albert Donald
 DS Capital Endowment
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 Estate of L I Roach
 Estate of Nance Elizabeth Creaton
 Estate of Sylvia Gelman
 Eureka Benevolent Foundation
 Mrs Meredith Evans
 Eventcraft
 Fairley Pty Ltd
 Fight Cancer Foundation
 Mr & Mrs Rob & Sandy Fildes
 Financial Markets Foundation For Children
 The Flew Foundation
 Flicker of Hope Foundation
 Mr & Mrs Andrew & Lucy Fortey
 Foundation For Angelman Syndrome Therapeutics Aust (Fast)
 Foundation For Prader-Willi
 The Fox Family Foundation
 Foxtel
 Mr & Mrs Peter & Lisa Fox
 Mr & Mrs Graeme & Pamela Fraser
 Geoff, Lesley & Marcus Freeman
 Mr & Mrs Marcus & Sarah Freeman
 Dr & Mrs John & Diana Frew
 Mr & Mrs Zac & Rebecca Fried
 FSHD Global Research Foundation
 Fuchs Lubricants (Australasia) Pty Ltd
 Future Generation Investment Company
 Mrs & Mr Coral & Tony Gallasch
 Mr & Mrs Tony & Helen Gandel
 Gandur Family Foundation
 Mr & Mrs Michael & Helen Gannon
 Mr & Mrs Ross & Judith Gardner
 Mr & Mrs John & Gaye Gaylard
 Mr Barry Gold
 Ms Melissa Goode & Mr Christopher Archibald
 Gourlay Charitable Trust
 Grand Challenges - Canada
 Mr & Mrs Mark & Nicola Granter
 Gras Foundation Trust
 Grill'd Health Burgers
 Mr Maurice E Hall
 Mr Brian Hamersfeld & Ms Natalie Bloom

Mr & Mrs Leonard & Tanya Hamersfeld
 Harbig Family Foundation
 Harold Mitchell Foundation
 Heart Foundation
 Heartkids
 Helen Macpherson Smith Trust
 The Herald & Weekly Times
 Mr William H Hodgson
 Hoffmann Schroepfer Foundation
 Mr Mark Holckner
 Mr & Mrs Patrick & Susan Houlihan

HUG Foundation
 Mr Matthew Hunter
 Mr David Hunter
 & Ms Edwina Molony
 Mr & Mrs Geoff & Hilary Hunter
 The Ian Potter Foundation
 In celebration of Josh Davies' Bar Mitzvah
 In celebration of Luke Jeremy
 In celebration of Maureen Barden's birthday
 In celebration of Sascha Sable's Bat Mitzvah
 In lieu of birthday gifts Anthony Eisen's birthday
 In memory of Charlotte Pryke
 In memory of Edith 'Judy' Ashton
 In support of Adelaide Best
 In support of Bruce Lefroy Centre for Genetic Health Research
 In support of GFM Wealth Trivia Night
 In support of Jack Wilson
 In support of Katherine Jelo
 In support of Leila Vicariotto
 International Foundation For Dermatology
 International Foundation For Ethical Research
 The Isabel & John Gilbertson Charitable Trust
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 Mrs Wendy James-Ross
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 Mr David Jenkins & Ms Fran H Lefroy
 Mr & Mrs Dean & Shareen Joel



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 Mr Vas Katos & Mrs Nicole Georgelos
 Mr Ian Kennedy AM
 & Dr Sandra Hacker AO
 Dutch Kidney Foundation
 The Kids Cancer Project
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 Ms Bronwyn Kitchen
 Mr & Mrs Clark & Sara Kirby
 Mr Robert Kirby AO
 & Mrs Mem Kirby
 The Kimberley Foundation
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 Dr & Mrs George & Joan Lefroy
 Ms Marj Lefroy
 Ms Nichola Lefroy and Mr Sam Riggall
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 & Mr Ben Krasnostein
 Life Healthcare
 Listamere Pty Ltd
 Mr Brian Little
 Logan Family Foundation
 Ms & Mr Nicky & Jonathan Long
 Macquarie Group
 Maddie Riewolt's Vision

Mr Joel Mahemoff
 & Dr Neda Haghighi
 Mrs Jessica Mariani
 & Mr Gerry Davies
 Mason Foundation
 Marketing Melodies
 Mrs Judy A Matear
 The McBain Family
 Chris & Denis McConnell
 Mr Neil McGregor
 Ms Elizabeth McLawrin
 McMeckan Family Foundation
 The McPhee Charitable Fund
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 Mrs Margaret Molony
 Ms Susan Molony
 Mrs Diana Morgan AM
 Ms Lucy Morton
 Muscular Dystrophy Australia
 Mr Baillieu Myer AC & Mrs Sarah Myer
 The Myer Foundation
 National Blood Authority
 National Institute Of Health (NIH)
 National Foundation for Medical Research and Innovation
 Nelson Alexander Charitable Foundation
 Dr Philip Myles Neri
 News Corp Australia
 NHMRC
 Noisy Beast
 Mrs Dorothea Nossbaum
 Mr Bari Nuhiji
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 The Phyl Waterhouse Memorial Fund
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 Mr Anthony Pratt & Ms Claudine Revere
 Prior Foundation
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 Mrs & Mr Adrian & Michael Quilter
 Mr Bryce Raworth
 The Ray and Margaret Wilson Foundation
 The Research Foundation, Cerebral Palsy Alliance
 Rebecca L Cooper Foundation
 Reemst & George Endowment at the APS Foundation
 Rellim Foundation
 Ms Jenny Renton
 Mr Andrew Rettig & Mrs Amanda Briskin-Rettig

Mr & Mrs Clint & Emma Rippon
 The Robert and Mem Kirby Foundation
 Mrs Judith Robinson
 Mr Ken Roche AO & Mrs Gail Roche
 Mr & Mrs Zac & Cecilia Rosenberg
 The Ross Trust
 Rotary Club of Altona City
 Rotary Club of Camberwell
 The Royal Australasian College of Physicians (RACP)
 Royal Children's Hospital Foundation
 Adam & Yoko Ryan and Family
 Mr & Mrs Nathan & Dahlia Sable
 The Samuel Nissen Charitable Foundation
 Save our Sons Duchenne Foundation



The Scobie & Claire Mackinnon Trust
 Mr Leon Skaliotis
 Mr & Mrs Colin & Jan Smith
 Mr & Mrs Rodney & Ann Smorgon
 Society For Paediatric Anaesthesia In New Zealand And Australia (SPANZA)
 Sohn Hearts and Minds
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 Dr David Thurin AM & Mrs Lisa Thurin
 Mr & Mrs Michael & Emily Tong
 Tour de Cure
 Mr Thomas Truong
 Mr & Mrs Patrick & Margaret Upfold
 Mr & Mrs Tony & Judy Van Bergen
 VCF Bird Family Charitable Trust
 Mr Enrico Vicariotto
 Vertex Pharmaceuticals - Vertex Innovation Award
 veski
 Victorian Medical Insurance Agency Limited
 Vincent Chiodo Charitable Foundation
 The Vourvourian Philanthropic Society of Melbourne & Victoria
 Mr Barry Watchorn
 WeAreDigital
 Mr & Mrs Tom & Sarah Whinney
 Mr Ray Wilson
 Mr & Mrs Andrew & Elina Wilson
 Mr & Mrs Graeme & Frances Witcombe
 The Wolf Foundation
 Yabby Lake

OPERATIONS

Underpinning our research is an operations team that delivers outstanding results in human resources, communications and more

Towards even greater impact

Our bold vision to bring greater precision to child health diagnosis, treatment and cures is supported by continued efforts to create a sustainable, long-term future for our Institute.

Investing in the success of our people

Attracting, retaining and developing the brightest talent is fundamental to achieving our ambitious plans. Our People and Culture team work in partnership with our staff and students to provide an environment that supports and accelerates learning, growth and development.

A focus on our strategic priorities has shaped our success in 2019.

We introduced our Leading for Impact program, a leadership development pathway for emerging and senior leaders. In 2019 we had 14 senior leaders and 25 emerging leaders participate and build the skills required to be a successful leader in medical research today.

To ensure MCRI continues to attract the best people, and that we set them on a course for success, we fortified our entire recruitment lifecycle. We enhanced the experience of individual applicants, streamlined application and on-boarding processes, enhanced communications and proactively strengthened partnerships campus-wide.

By the close of 2019 we had actioned more than 700 recruitment requests, supported over 200 hiring managers, and successfully rolled out a number of diverse leadership and support initiatives that will continue to evolve throughout 2020.

Our work to celebrate and support diversity and inclusion expanded throughout 2019.

In recognition that building a research career coincides for many with the time when people start building a family, we introduced programs that support research staff during times of leave and career disruption. We also installed change tables in bathrooms to make the Institute more parent friendly, and reviewed our primary caregiver leave policy to include all staff, regardless of gender.

We were named a member of the Australian Network on Disability, the only research institute in Australia with that status; delivered a seminar about autism spectrum disorder; and broadcast the Disability Film Festival. We supported our LGBTQI+ researchers through the Queers in Science initiative and the LGBTQI+ research symposium, in conjunction with other research institutes in the Parkville Precinct.

Everyday safe, healthy and well

The safety of our staff, students, contractors and volunteers across MCRI and VCGS is paramount. We work in a range of environments, in Australia and overseas, from offices to laboratories, clinical spaces, to the field. Each has its own unique set of health and safety hazards.

MCRI continues an excellent safety record. Our safety performance indicators improved from 2018 to 2019. We introduced an electronic risk management database which incorporates hazard or incident reporting, safety inspections and risk assessments.

We pride ourselves on a very supportive injury management program for work and non-work-related injuries to ensure that our staff can be their best. We have an active program at MCRI to provide appropriate and timely expertise and solutions to reduce our workplace risk of injury.

Building strength in partnerships

Our commercialisation and business development team are behind ambitious plans to build partnerships with industry

to translate our work into real-life outcomes for children and families.

There are some 450 active research projects at the Institute, with more than 50 projects aiming to develop new diagnostics tests, treatments and interventions, medical devices and digital technology solutions. A number of new partnerships were established in 2019, including with international vaccine manufacturers to help bring MCRI's rotavirus vaccine to market. In Australia, we continue to build on our successful partnerships with the AFL in concussion and with the Victorian Department of Health and Human Services for our sleep portfolio.

Increasing community engagement

With the boosts from our many major research stories, and an improved pathway to media coverage, we saw significant growth in traditional and social media coverage in 2019.

The social media growth indicates a heightened level of engagement with the wider public, and a growing level of awareness of the Institute and how we are improving health outcomes for children.



Media mentions



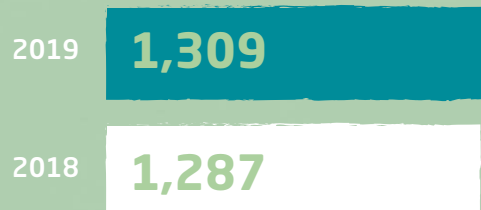
Social media engagement



Website users



Staff numbers



Gender breakdown*



*MCRI recognises that gender is not always a binary question. Our systems have a third category for those who identify as non-binary.

Employee health and safety



2.51*

Lost time injury frequency



3.77*

Days away restricted or transferred

*per 106 work hours

STUDENTS

Our students play an essential role in our research and on the Melbourne Children's campus, where they bring to life our commitment to comprehensive education and training alongside outstanding research

The future of research

Students are the research leaders of the future - in 2019 they showed the world why.

At MCRI, we nurture and inspire the next generation of researchers and clinician-scientists.


Our unique learning environment, drawing on our co-location with The Royal Children's Hospital and the University of Melbourne Department of Paediatrics, creates direct connections from education, to bench, to bedside. Our students have a clear view of the lives their work is impacting.


We provide stewardship and collaboration opportunities as standard. All students can join the Research Students Association (RSA), which works to foster connections between students across the various research areas, and provides an active social life for the many students on campus.

All students and staff benefit from the rich education environment and opportunities for ongoing learning and professional development.



Above: MCRI students learning and connecting in 2019

 **475**
students studied at
MCRI in 2019

 **180**
students completed their
studies at MCRI in 2019

Our students were recognised with a number of honours in 2019. Highlights included:

Xavier Busuttil-Crellin
won Best Honours/Equivalent Oral Presentation Award at the Australian Society for Medical Research (ASMR) Student Symposium

Jocelyn Chan
won one of only three Travel Scholarships awarded annually by the Australian Epidemiological Association

Brittany Croft
awarded The Lalor Foundation Merit Award for the 'most meritorious, well-interpreted and significant research presented by students at an international conference'

Cindy Lee
named the winner of the Community Population & Global Health Category in the 3 Minute Thesis competition

Yichao Wang
awarded best presentation at the European Academy of Allergy and Clinical Immunology Congress

Find out more

See more honours, awards and prizes on pg 26.

Making a wee difference

Dr Jonathan Kaufman was inspired to solve a tricky problem – how to easily collect a urine sample from a baby to test for urinary tract infections (UTIs).

Jonathan, a final year PhD student with MCRI's Health Services Research Group and the University of Melbourne, came across the difficulty of diagnosing UTIs in his work as a paediatrician at Sunshine Hospital and The Royal Children's Hospital.

UTIs are one of the most common bacterial infections of early childhood worldwide; of all children with a fever, seven per cent will have a UTI. But fever can indicate lots of things in childhood, which makes a urine test essential. Unfortunately, taking a urine sample can be incredibly difficult.

Jonathan's research focuses on a new method that gently triggers bladder reflexes to allow for sample collection. Importantly, the method's simplicity means it can be used in low-resource settings, such as in low and middle-income countries.

This idea evolved into Jonathan's PhD and ignited a new passion for research. He has been able to see his research in action, benefiting children around the world – his findings have been included in guidelines in Australia, the UK, Canada, Italy and Finland.

"It's hard to believe that five years ago this was just an idea, and now it's a successful research series. There are eight publications so far, including the main trial published in The BMJ. The research has been recognised with over 20 awards and prizes," he says.

"There have been challenges as well, but when you're part of an amazing team at a place like MCRI, doing great research becomes possible."

Your support can help to create possible

E philanthropy@mcri.edu.au

T 03 8341 6200

W mcri.edu.au/get-involved

"It is a privilege to witness the extraordinary commitment of MCRI's donors. This ongoing philanthropic support is vital to help MCRI's brilliant minds deliver the best possible outcomes for children and their families."

Matthew Hannan,
Head of Engagement
and Philanthropy

Ruby has BPAN, an ultra-rare genetic brain disorder. MCRI researchers are striving for a scientific breakthrough for the disorder within Ruby's lifetime.



Chapter 4: Sustainability

Ensuring long-term sustainability to set up our future

The power of partnerships

Bringing together donors and researchers to take game-changing research from idea to reality

Donors and supporters are vital partners in our work at MCRI. Their passion, commitment and support inspires us every day and makes so much of our transformational work possible.

Our ongoing relationship with this very special community motivates us to excel.

Whether you have supported us from the start, or only recently joined the MCRI supporter community, we are grateful for all that you do.

Thank you.

A Flicker of Hope

Zoe, a young Melbourne woman, is supporting our research into the rare, inherited disorder neurofibromatosis type 1 (NF1), through the Flicker of Hope Foundation.

NF1 affects around 10,000 Australians. It causes tumours to grow on nerve endings throughout the body, which can affect major organs and lead to a variety of serious health issues.

Dr Jonathan Payne's team at MCRI has been supported by Flicker of Hope. "We are so inspired by the passion shown by Zoe and all the supporters through Flicker of Hope," he says.

"With the clinical trial, we are working to create hope for everyone affected by NF1".

Zoe, who was diagnosed with NF1 at just four months old, says: "Rare diseases are challenging for research funding and with Flicker of Hope I want to raise enough money to support a clinical trial that can hopefully lead to new options."

A revolution in brain surgery

Imaging can show surgeons working to address paediatric epilepsy and brain tumours where the problem is, but they needed a real-time guide in the operating theatre.

As a PhD student, Dr Joseph Yang dreamed of a solution to this abiding challenge of brain surgery – how to see the best path through the brain to the problem, while doing the least possible damage.

With the support of the Johnstone Family Foundation, Dr Joseph Yang's team has developed and implemented Karawun, a new piece of software that translates the advanced MRI imaging the surgeons need into image guidance in the surgical setting.

"This incredible gift from the Johnstone Family Foundation has directly impacted the way we perform brain surgeries and improved quality of life for children," says Joseph.

Growing stronger kids and communities

The Centre for Community Child Health (CCCH) has been at the forefront of Australian research into early childhood development and behaviour for over two decades.

A long collaboration with Bupa has enabled CCCH to translate the findings from years of work in community child health into resources that are used by policy makers and professionals seeking new ways of working in communities.

The Centre's Founding Director Professor Frank Oberklaid says "The long-term relationship with Bupa has been instrumental to our work at the Centre for Community Child Health. We are grateful to them for recognising the value of keeping all kids healthy and well, in the community and in their families."

Sixteen years of breakthroughs

The Lefroy family were moved to support MCRI after learning about our life-changing research into rare and genetic diseases.

"Our help, modest though it might be, can make amazing breakthroughs possible. It's a huge privilege to be part of the MCRI family," says George Lefroy.

With their support, the Bruce Lefroy Centre was founded to conduct research into genetic diseases, under the direction of Professor Martin Delatycki. The team has made major discoveries and is developing better treatments for conditions like brain malformations, Friedreich's ataxia and haemochromatosis.

Find out more

See the Lefroys meeting some of those who've benefited from the Bruce Lefroy Centre's research



Watch the video now at
mcri.edu.au/thankyou



A lasting impact

As a long-term donor to MCRI, Tess has followed with interest the impact that MCRI's research has on children's lives. Last year, when it was time to update her Will, she decided to include a residual gift for MCRI to support a cause close to her heart.

Tess made sure to include her children when making her decision so they fully understood how important it was to her. "I appreciate how fortunate I have been in my life and now I want to do something everlasting and give others the chance to enjoy a better quality of life," she says.

For more information, visit mcri.edu.au/bequest



Professor Martin Delatycki
with George and Joan Lefroy



Taking action to tackle a neglected disease



In 2019, Macquarie Group celebrated its 50th anniversary and announced a major award to mark the occasion: the \$50 million Macquarie 50th Anniversary Award.

The Award would be shared between five organisations with a bold idea to address an area of social need. It was a global competition, and MCRI had a project that fit the brief perfectly.

Professor Andrew Steer, who leads Infection and Immunity at MCRI, had a long-held ambition to make a major difference in communities that are impacted by scabies. His ambition seemed like the sort of bold idea that the award was calling for. He wanted to treat scabies through a public health program so that children and communities can thrive

Scabies is a tiny mite linked to major skin infections, blood poisoning, kidney failure and potentially heart disease. Globally, there are an estimated 455 million cases of scabies every year, and around two million people are affected at any one time.

Of course, such a large amount of money attracted a large number of applicants, but MCRI's bid ultimately made it past almost 1000 applicants to be awarded \$10 million.

With that money, we will implement the World Scabies Program (WSP) to treat 1.5 million people with the widely-used and safe drug ivermectin. Ivermectin has been proven to reduce scabies' prevalence in a community from 30 per cent to under two per cent.

WSP will start with the entire populations of Fiji and the Solomon Islands where scabies is endemic and has significant impacts, especially for children. With many more countries and communities affected worldwide, these countries are likely to be the first of many.

In the race for \$10 million, leading advocates from MCRI's supporter community were key to our success. Former MCRI Chairman Laurie Cox AO, Council of Ambassadors member Dame Quentin Bryce AC DBE, and long-term supporter Sir Gustav Nossal all wrote letters of support.

Margaret Gurry and Jean Miller, a Council of Ambassadors member and founding Institute donor, along with Sir Gus Nossal, participated in interviews with Macquarie representatives as part of the competitive process.

"We were so pleased to be able to lend our support to this inspiring project," says Jean Miller. "We feel immensely proud to contribute to the world-changing work of the Global Health initiative, and the Institute as a whole".

Lisa George, Global Head of the Macquarie Group Foundation, was deeply impressed by the scope and ambition of MCRI's pitch for the Macquarie 50th Anniversary Award. "The World Scabies Program presented a truly unique opportunity to change the lives of millions of people.

"The excellence of MCRI's program of research made it clear that this was the sort of bold, catalytic project that we were seeking to fund through our Award. We are excited to support MCRI to make this incredible project happen."

The Macquarie Group Foundation is the philanthropic arm of Macquarie Group. The Foundation provides support to hundreds of community organisations globally each year through financial support, volunteering and skills sharing.



Celebrating with our supporters

Events allow us to thank our long-standing and committed donors, share our story with new supporters, and celebrate what we have achieved – and can achieve – together.

1. At the 2019 Annual Showcase, from L-R: Chairman Suzi Carp, Director Prof Kathryn North AC, Janet Calvert-Jones AM, Jean Miller.

Founding donor Jean Miller was honoured with the biennial Janet Calvert-Jones Award at the MCRI 2019 Annual Showcase.

2. At the 2019 Biennale, Australian Development Board members from L-R: Vas Katos, Kate Mohr, Elizabeth Briskin, with Suzi Carp, Prof Kathryn North AC and Dion Appel.

We thank the Biennale committee for their incredible effort organising such a successful event.

3. At the 2019 Dame Elisabeth Luncheon, from L-R: host Paula Fox AO, Prof Kathryn North AC, Ros Packer AC and Dame Quentin Bryce AC DBE.

Thank you to our Council of Ambassadors for their involvement, especially Paula Fox for hosting in her beautiful home.

4. At the 2019 Dame Elisabeth Luncheon, MC Lisa Wilkinson with Nikki Burgess and her son James Thornton.

Find out more

At the 2019 Dame Elisabeth Luncheon, we were delighted to share a video honouring our inspirational co-founder Dame Elisabeth Murdoch AC DBE.



Enjoy that video at
mcri.edu.au/DameE

MCRI Board of Directors

Six times per year, our hard-working group of Board of Directors meet. They are drawn from across business and finance, health and research, and work to guide and challenge the strategic direction of the Institute.

The Board acts independently and objectively.



Suzi Carp

Chairman
US Development Board member



Simon Rothery

Deputy Chairman
Investment Committee Chair



Sarah Murdoch

US Development Board Chair



Prof Kathryn North AC

Director
VCGS Board member



Paul Rayner

Audit, Finance and Risk Committee Chair
Investment Committee member



Prof John Prins



Dominic Stevens



Patrick Houlihan

Marketing Council Chair
Audit, Finance and Risk Committee Deputy Chair



Hon Rob Knowles AO



Kate Mohr

Development Board Chair
US Development Board member



John Stanway



Steven Casper



Dr Brandon Carp

VCGS Board Chair
Translation and Commercialisation Committee member



Prof Shitij Kapur

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Development Board

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Helen Kurincic
Prof Kathryn North AC
Prof Andrew Sinclair
Dr John Zelcer

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Patrick Houlihan
– Deputy Chair
Lachlan Armstrong*
David Gillespie

Translation and Commercialisation Committee

Geraldine Farrell – Chair
Dr Brandon Carp
Andrew Cox
David Link
Steve Pask
Jenny Petering

Investment Committee

Simon Rothery – Chair
Adrian Redlich – Deputy Chair
Ariane Barker
Brad Davis*
Paul Rayner

Council of Ambassadors

The Honourable Dame
Quentin Bryce AD CVO
Mrs Janet Calvert-Jones AO
Mrs Paula Fox AO
Mrs Jean Miller
Lady Primrose Potter AC
Mrs Jeanne Pratt AC
Mrs Frances Underwood
Ms Carla Zampatti AC

*Stepped down in 2019.
Thank you for your service.

Year at a glance



\$82.30m Research and government grants

\$40.74m Contract research, clinical trials and other

\$31.58m VCGS

\$17.74m Donations, fundraising and bequests

\$172.35m
Total revenue

Statement of profit or loss and other comprehensive income

For the year ended 31 December 2019

	Consolidated		The company	
	2019	2018	2019	2018
In dollars	\$'000	\$'000	\$'000	\$'000
Revenue from research and clinical activities	147,333	132,020	116,130	104,467
Depreciation and amortisation	(7,060)	(7,093)	(6,040)	(6,059)
Other expenses for research and clinical activities	(161,461)	(140,970)	(130,985)	(114,208)
Surplus/(deficit) from research and clinical activities	(21,188)	(16,043)	(20,895)	(15,802)
Donation, estates, bequest and fundraising income	17,736	16,054	17,736	16,054
Fundraising expense	(1,548)	(1,242)	(1,548)	(1,242)
Net surplus obtained from fundraising activities	16,188	14,812	16,188	14,812
Finance income	7,285	1,536	6,912	1,201
Operating surplus for the period	2,285	305	2,205	210
Total comprehensive surplus for the period	2,285	305	2,205	210

Statement of cash flows

For the year ended 31 December 2019

	Consolidated		Company	
	2019	2018	2019	2018
In dollars	\$'000	\$'000	\$'000	\$'000
Cash flows from operating activities				
Patient fees received	25,629	23,799	-	-
Government and other grants received	106,726	80,496	98,382	73,070
Donations received	17,736	15,682	17,736	15,682
Interest received	1,087	992	903	764
Other receipts	31,722	26,703	35,069	30,577
Advances to (from) related parties	-	-	(94)	78
Cash paid to suppliers and employees	(161,828)	(136,900)	(132,618)	(111,640)
Net cash provided from (used in) operating activities	21,072	10,772	19,378	8,531
Cash flows from operating activities				
Cash flows from investing activities				
Investment income received	6,198	545	6,009	436
Acquisition of property, plant and equipment	(8,881)	(2,586)	(7,937)	(2,394)
Acquisition of investments	(12,470)	(9,872)	(10,790)	(3,786)
Net cash provided from (used in) investing activities	(15,153)	(11,913)	(12,718)	(5,744)
Net increase / (decrease) in cash and cash equivalents	5,919	(1,141)	6,660	2,787
Cash equivalents at 1 January	21,482	21,322	19,464	15,376
Effect of foreign exchange on opening cash balances	1,917	1,301	1,922	1,301
Cash equivalents at 31 December	29,318	21,482	28,046	19,464



Statement of financial position

As at 31 December 2019

	Consolidated		Company	
	2019	2018	2019	2018
In dollars	\$'000	\$'000	\$'000	\$'000
Current assets				
Cash and cash equivalents	29,318	21,482	28,046	19,464
Trade receivables and other assets	14,475	14,486	10,364	11,155
Other investments	55,350	39,455	47,249	32,862
Total current assets	99,143	75,423	85,659	63,481
Non-current assets				
Trade receivables and other assets	55,000	56,341	55,000	56,341
Other investments	49,046	52,764	43,800	47,690
Property, plant and equipment	14,992	11,420	13,721	10,485
Intangibles	-	411	-	-
Total non-current assets	119,038	120,936	112,521	114,516
Total assets	218,181	196,359	198,180	177,997
Current liabilities				
Trade and other payables	54,722	37,542	49,708	33,336
Employee benefits	18,082	15,866	12,227	10,692
Total current liabilities	72,804	53,408	61,935	44,028
Non-current liabilities				
Trade and other payables	3	3	-	-
Employee benefits	3,015	2,579	2,580	2,216
Total non-current liabilities	3,018	2,583	2,580	2,216
Total liabilities	75,822	55,990	64,515	46,244
Net assets	142,359	140,369	133,665	131,755
Members' funds				
Accumulated funds	142,319	140,329	133,665	131,755
Other reserve	40	40	-	-
Total members' funds	142,359	140,369	133,665	131,755



Our manifesto

We believe that for every question there's an answer.

For every child's illness there must be a cure.

For every obstacle there must be a way around.

What inspires us is asking the big questions -

Why is it so? Why does it happen? How can we fix it?

What excites us is tackling the big issues
affecting children's health.

Children are at our heart, in our blood, and in our bones.

We believe every child deserves a healthy start to life.

And a happy and prosperous community
needs healthy children.

We believe in the power of curiosity, cleverness
and cutting-edge research.

We are excited by discovery and new knowledge
to make a difference.

The future is purchased by the present,
we can shape the future, we can change the world.

So every child can have a childhood.

So every child can grow to reach their full potential.

Children are at the heart of everything we do.



Prof Kathryn North AC,
with children from the
MCRI community





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f t i y in

