



Children's Health Queensland

Research Impact Report 2025



Queensland
Government



Contents

Children’s Health Queensland Hospital and Health Service pays respect to the Traditional Custodians of the lands on which we walk, talk, work and live.

We acknowledge and pay our respects to Aboriginal and Torres Strait Islander Elders past, present and emerging.

We acknowledge the historical and contemporary impacts of Queensland’s history of colonisation on the health and wellbeing of Aboriginal and Torres Strait Islander peoples.

We recognise the ongoing intergenerational trauma and racism experienced by members of the community.

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Message from the Board Chair and Chief Executive

Every breakthrough in child health begins with a simple goal: helping children live healthier, fuller lives.

At Children's Health Queensland, research and innovation is how we turn that goal into reality, transforming discovery into better care, better experiences, and better outcomes for children and young people.

In 2025, that commitment continued to grow in strength and impact.

We are proud to have again been awarded Gold Certification for Excellence in Person-Centred Care by Planetree International, making Children's Health Queensland the only Planetree-certified organisation in Australia and the only Gold-certified paediatric provider globally. This prestigious recognition reflects what matters most: care shaped around the needs of children, young people and their families.

Our research community is also increasingly global. This year, our clinicians and researchers partnered with counterparts in leading institutions across 65 countries. These collaborations are not only advancing knowledge but actively shaping clinical practice worldwide. One example is the development of a new international standard to measure children's recovery after surgery, created in partnership with paediatric hospitals in Australia and the United States (see page 6).

Closer to home, we remain deeply committed to improving health outcomes for Aboriginal and Torres Strait Islander children and young people. Through initiatives such as culturally responsive training for healthcare workers in rural and remote communities, we are strengthening respiratory care and supporting families to access high-quality care in their local communities (see page 15).

The reach and impact of our research expertise continues to grow, with 805 publications and book chapters authored and 132 new research projects commenced this year alone. Behind these numbers is a culture of curiosity and collaboration, where our people embrace imagination to explore new possibilities in paediatric care, from early intervention to advanced therapies for complex conditions.



Heather Watson



Frank Tracey

We would like to sincerely thank our researchers, clinicians and partners. Your dedication is making a meaningful difference, not only in Queensland but for children and families around the world.

Looking ahead, we are entering an exciting new chapter. In 2026, we will launch a new research strategy to accelerate our impact, strengthen our capacity and capability, and respond to a rapidly evolving healthcare landscape. The introduction of new technologies, in particular, is constantly transforming the way we provide healthcare—and shifting consumer expectations of how and where care is provided.

We will also focus on expanding research translation, deepening partnerships, and embedding culturally safe care for Aboriginal and Torres Strait Islander children and young people to help drive health equity.

Our vision remains clear: to improve health outcomes for every child and young person, and to ensure each has the opportunity to thrive and reach their full potential.

Together, we are shaping the future of paediatric healthcare through research, innovation and a shared commitment to putting children at the centre of everything we do.

Heather Watson

Board Chair

Adjunct Professor Frank Tracey

Chief Executive

Children's Health Queensland
Hospital and Health Service

2025 at a glance

132
new research projects*

31
new clinical trials**

247
active clinical trials

1,527
patients recruited to
clinical trials

216
new projects reviewed
by HREC***

215
new projects approved
by HREC***

Research grants income 2025

\$2,447,924
grants funding
awarded to Children's
Health Queensland

\$24,158,058
total funding awarded for
projects with Children's
Health Queensland

Other income

\$6m
clinical
trials

\$7.2m
Grants and
academic

\$3.2m
philanthropic and
Industry

Collaborated with leading institutions
in **65** countries



*Total projects authorised by the Children's Health Queensland Research Governance Office.

**Total clinical trials authorised by the Children's Health Queensland Research Governance Office.

***Human Research Ethics Committee (HREC)

Message from the Director of Research and Board Research Committee Chair

Research is a part of everything we do. Across Children's Health Queensland, our people engage with research in some form every day: integrating discovery into clinical practice and building a culture that continually seeks better ways to improve the health and wellbeing of children and young people.

In 2025, we strengthened this culture even further.

We established new governance structures, including a Research Executive Committee and a Research Integrated Operations Committee, bringing together researchers, clinicians and operational leaders. These groups are helping to ensure research is not only conducted at the highest standard, but also seamlessly translated into better care at the bedside.

At the same time, we continued to invest in our people and in collaboration. A series of discipline-focused symposia, led by clinical teams, created opportunities for staff to share insights, build capability and work across traditional boundaries—sparking new ideas and solutions that benefit children across multiple areas of care. Clinical trials remain central to how we deliver the next generation of treatments. This year, our clinicians initiated 31 new trials and maintained 247 active studies, giving more than 1,500 children and young people access to new and potentially life-changing therapies as well as improved models of care.

Our researchers also secured more than \$2 million in grant funding, supporting important work across priority areas and strengthening our contribution to paediatric research locally and globally. None of this progress happens in isolation. It is made possible by the dedication of our researchers, clinicians and support teams, and by the strength of our partnerships. We would like to sincerely thank everyone who contributes to research at Children's Health Queensland, including the Children's Health Queensland Research Directorate, our Human Research Ethics Committee, the Children's Hospital Foundation, and our Board and Executive.



Andy Moore



Simon Denny

We also value the ongoing collaboration of our academic and research partners, including The University of Queensland, Queensland University of Technology and the Translational Research Institute. Together, we are creating an environment where research can thrive.

This report highlights the depth and impact of our research in 2025. It is a testament to what we have achieved—and a reminder of what is still possible.

As we look ahead, our focus is clear: to continue building our research capability, to translate discovery into meaningful change, and to ensure we are ready to harness every opportunity to improve the lives of children and young people.

Associate Professor Andy Moore
Director of Research

Professor Simon Denny
Board Research Committee Chair

Our strategy

Children's Health Queensland's research strategy is driven by our vision to lead life-changing care for children and young people — for a healthier tomorrow.

Children's Health Queensland Research Strategy 2023-2025

Our research strategy aims to mobilise and empower the Queensland paediatric research community to lead groundbreaking research and translate new knowledge into better health outcomes for children and young people across Queensland and the world.

Our research enablers



Workforce

We aim to build our research workforce at all career stages, increasing the number of Children's Health Queensland staff leading and collaborating on research across all areas.



Clinical excellence

We strive to increase and improve access to clinical trial activity across Queensland, with a strong focus on Aboriginal and Torres Strait Islander children and young people and those from culturally and linguistically diverse (CALD) backgrounds.



Partnerships

We collaborate broadly with clinical and non-clinical partners from academia, industry and the community.



Technology and critical infrastructure

We leverage Children's Health Queensland's clinical infrastructure, people, systems and data as well as statewide services to answer clinically important questions, inform new research initiatives and implement research findings into practice.

Indicators of success

We aim to increase the number of Children's Health Queensland staff as lead investigators on research grants and publications, and have more clinicians enrolled in and completing high degrees by research (HDR) and supervising HDR students. We strive to see more paediatric clinical trials open and accessible to all children, young people and their families across Queensland, as well as a greater volume of research studies across the spectrum. The research we lead and collaborate on will improve clinical practice, quality, innovation and service. We are also committed to increasing consumer engagement in research.

World-first tool provides standard measure of children's recovery after surgery

An international collaboration between Queensland Children's Hospital, the Children's Hospital of Philadelphia and Boston Children's Hospital has delivered the first validated scale to measure quality of recovery after surgery and anaesthesia in children.

The Paediatric Scale for Quality of Recovery (PedSQoR) is the first tool of its kind to provide a standardised, patient-centred assessment of recovery for children aged 2 to 17 years old.

The scale has addressed a gap in paediatric perioperative care, where no equivalent measure to adult recovery tools previously existed.

Measuring the quality of a patient's recovery is vital, and reliable patient-centred outcome metrics are needed for clinical investigations and quality improvement.

Queensland Children's Hospital researchers collaborated with their counterparts at the Children's Hospital of Philadelphia, Boston Children's Hospital, and the Royal Children's Hospital Melbourne over five years to develop the scale.

Extensive literature review, expert panels, in-depth interviews with families and large-scale surveys informed the development of the new tool.

Queensland Children's Hospital staff specialist anaesthetist and Associate Professor at The University of Queensland, Paul Lee-Archer, said the PedSQoR exceeded traditional measures such as complications or length of stay, assessing both physical and mental wellbeing.

"Initially, we surveyed more than 1,000 children and their caregivers with a 50-item questionnaire to measure physical, functional, emotional and cognitive recovery after surgery and anaesthesia," A/Prof Lee-Archer said.

"This was further refined into our final, validated 20-item questionnaire, providing insights into a child's overall wellbeing – including their sleep, appetite and mood changes, as well as functional recovery.

"The PedSQoR provides a global measure and can be used across all paediatric age groups at multiple timepoints following surgery.

"In adults, quality of recovery has been measured in a standardised way for around 20 years. Until now, this kind of holistic tool hasn't been available for children," he said.

The PedSQoR has already been integrated into routine clinical use in many paediatric hospitals across North America and is now undergoing further validation, translation and testing in additional patient groups.


Researchers hope the scale will become a standard outcome measure in paediatric perioperative research and quality improvement, supporting more consistent measurement and improved recovery outcomes for children worldwide.

This project was supported by a grant from the Society for Paediatric Anaesthesia in New Zealand and Australia.

Development of the Pediatric Scale for Quality of Recovery (PedSQoR). Anesthesiology 43, 2 (2025), <https://doi.org/10.1097/aln.0000000000005503>

A young child with dark skin and curly hair is lying in a hospital bed, smiling broadly. The child is wearing a white hospital gown and is partially covered by a light blue blanket. The bed has a light blue pillow and sheet. On the right side of the frame, the back of a caregiver's head and shoulder is visible, looking towards the child. The background is slightly blurred, showing the white metal frame of the hospital bed.

**This tool provides
a global measure
for all paediatric
age groups at
multiple post-surgery
timepoints**



We can improve
care for the sickest
children, while still
using antibiotics
rationally and
effectively

Statewide pathway improves antibiotics use for children with suspected sepsis

Appropriate antibiotic use for children with suspected sepsis in Queensland emergency departments has improved following the introduction of a statewide paediatric sepsis pathway.

Sepsis is a life-threatening condition that occurs when the body has an extreme reaction to an infection. For children, recognising sepsis early can be difficult, as symptoms can resemble common childhood illnesses. Unlike a regular illness, children with sepsis can deteriorate very quickly, making early detection and timely treatment critical for the best possible outcome.

Sepsis is the leading cause of preventable death of children in Queensland, with 748 sepsis-related deaths of infants and children recorded in the state between 2004 and 2021.

In 2019, the Queensland Paediatric Sepsis Pathway (QPSP) was introduced across Queensland Health to support emergency departments with a standardised approach to early sepsis recognition, alongside clear, evidence-based guidance on antibiotic use.

Children's Health Queensland Infectious Diseases Senior Medical Officer and Principal Research Fellow in Paediatric Infectious Diseases at The University of Queensland, Associate Professor Adam Irwin, has now led a study examining the impact of the statewide pathway on antibiotic decision-making.

Researchers examined care provided to more than 1,800 children screened for sepsis in three Queensland emergency departments across eight months. This data was compared with care delivered in 2017, before the pathway was introduced.

The findings showed clear improvements, with clinicians more likely to prescribe the appropriate antibiotic at the correct dose. Appropriate antibiotic choice increased from 56 per cent to 73 per cent, and correct dosing improved from 71 per cent to almost 90 per cent.

"We also found that while there was an important increase in antibiotic use in emergency departments, particularly for antibiotics recommended by the pathway, this did not lead to higher hospital-wide antibiotic use," A/Prof Irwin said.

"This shows we can improve care for the sickest children, while still using antibiotics rationally and effectively."

This research builds on earlier evidence that the QPSP improves outcomes for children with severe sepsis and septic shock. Together, the findings show the pathway is delivering safer, more consistent care for children and young people across Queensland.

The study has already informed the next phase of sepsis care. In 2025, Children's Health Queensland launched a digital paediatric sepsis pathway, embedded into the state's integrated electronic medical record system and is now used by clinicians caring for thousands of children each year. By translating research into care at scale, this work is helping ensure Queensland children with suspected sepsis receive the right care, at the right time.

This study was supported by the Children's Hospital Foundation, a Practitioner Fellowship and Investigator Fellowship from the National Health and Medical Research Council of Australia. The Queensland Paediatric Sepsis Program is funded by Queensland Health.

Impact of a statewide sepsis pathway on quality of antibiotic use in children in the Emergency Department. Intensive Care Medicine – Paediatric and Neonatal 3, 11 (2025). <https://doi.org/10.1007/s44253-025-00060-x>



Study tracks rise and impact of e-scooter injuries in Queensland children

Queensland Children's Hospital trauma researchers have shone a light on the growing toll of e-scooter injuries in children in an Australian-first study.

The retrospective study reviewed paediatric e-scooter injuries requiring admission at Queensland Children's Hospital for more than 24 hours between January 2009 and September 2024.

Over this period, 64 children aged 16 and under were admitted with serious injuries sustained while riding e-scooters.

Sadly, two children died due to severe brain injuries sustained. In both cases, the child was not wearing a helmet at the time of the accident.

The study also found one in four children required intensive care treatment and surgery was required in nearly two-thirds of cases, highlighting the severity of injuries being sustained.

Queensland Children's Hospital Director of Paediatric Surgery, Burns and Trauma, Professor Roy Kimble, said the findings revealed the stark reality of the severe and life-altering injuries children were experiencing.

"The study highlights that the incidence of e-scooter accidents is increasing, and that they are causing serious, sometimes fatal, injuries in children.

"Surgery was required in more than 65 per cent of patients, including 28 per cent of children who underwent neurosurgery as a result of their injuries," Prof Kimble said.

Admissions linked to e-scooter injuries more than doubled between 2021 and 2024, mirroring the growing popularity and use of e-scooters across Queensland.

Head, face and neck injuries were the most common, accounting for more than half of all cases reviewed.

Fractures were the most frequent injury type, with skull fractures occurring in 40 per cent of cases.

Falls were the leading cause of injury, responsible for more than 70 per cent of incidents, while collisions accounted for nearly 30 per cent.

Concerning safety trends of low helmet use and underage riders were also identified. Of the patients whose helmet status was recorded, more than 64 per cent were not wearing a helmet at the time of their injury. More than one in five injured children were also below the legal age for riding an e-scooter in Queensland.

"The high rate of surgical intervention and low helmet use suggest a need for more robust safety measures and public awareness of the risks," Prof Kimble said.

This research played an important role in highlighting the rise in e-scooter related injuries in children and was submitted as supporting data to the Queensland Parliament as part of an inquiry into e-mobility safety and use.

Heads Up: A Retrospective Review of Paediatric Trauma Secondary to Electric Scooters at a Tertiary Paediatric Trauma Centre in Queensland. ANZ Journal of Surgery 96, 1-2 (2025). <https://doi.org/10.1111/ans.70393>

Paediatric x-ray study paves way for statewide shift in practice

Children's Health Queensland has embraced a new approach to radiation protection in paediatric medical imaging, leading Queensland hospitals to change a long-established practice to deliver a more patient-centred experience and improved diagnostic imaging.

A 14-month study examined the discontinuation of patient contact shielding in paediatric general radiography at the Queensland Children's Hospital, documenting the planning behind the change and the consumer response.

Traditionally, routine practice has involved placing a physical barrier, usually made of lead, over sensitive parts of the body that are not the area of interest, but still either near or within the x-ray beam.

This method of patient contact shielding began after World War II, when radiation risks were poorly understood and imaging doses were much higher.

Today, advances in imaging technology mean routine patient shielding provides little meaningful protection, as x-ray doses from modern equipment have been significantly reduced.

Removing patient shielding improves image clarity by ensuring no anatomy is obscured, can reduce the need for repeat images and helps patients receive accurate results with less potential unnecessary exposure.

To support the discontinuation of patient shielding at the Queensland Children's Hospital, the medical imaging department identified potential barriers to change, such as work culture and family expectations, and developed resources to guide the transition.

Children's Health Queensland advanced medical physicist, Dr Elaine Ryan, said early planning was essential to empower staff and support collaboration with families and patients.

"We developed tailored training and resources for staff, communication materials for families, and physically removed access to patient shielding from the x-ray rooms to support consistent practice," Dr Ryan said.

"Staff were prepared, so they were comfortable to enact this change and could use the knowledge gained from training sessions to reassure patients, parents and carers this new approach was evidence-based and safe."

Imaging records from more than 1,600 examinations before the policy change were analysed to determine how often shielding was being used.

Following the discontinuation of patient contact shielding, more than 7,500 children and families attending for x-ray imaging were prospectively followed to measure the transition.

"We expected families whose children required frequent x-rays might have more questions, given their familiarity with patient shielding," Dr Ryan said.

"However, fewer than one per cent of families raised questions and those who did were more curious about the evidence rather than critical of the change.

"For six months we collected data on the response to the change and were surprised by how successful the transition was. The confidence parents and carers have in their care team also played an important role in supporting the change," she said.

This project has led the way for other Hospital and Health Services (HHSs) across Queensland to implement a similar change in practice.

Alongside publishing their findings, the medical imaging team has developed a toolkit with resources for other HHSs to support the transition, which was distributed to other departments via statewide special interest groups.

From Evidence to Practice: Implementation and Evaluation of the Discontinuation of Patient Contact Shielding in Paediatric Radiography. Journal of Medical Radiation Sciences (2025). <https://doi.org/10.1002/jmrs.70053>





Global study aims to uncover childhood origins of Type 1 diabetes

Children's Health Queensland researchers are contributing to a world-first longitudinal study, following children from pregnancy through to 10 years to better understand the origins of Type 1 diabetes.

Starting in 2013, the Environmental Determinants of Islet Autoimmunity (ENDIA) study is the only international study to track children across the entirety of this developmental period, providing in-depth insights into how early-life environmental factors interact with genetic risk.

The national ENDIA cohort includes around 1,500 children recruited from across Australia, each with a first-degree relative living with Type 1 diabetes.

The Queensland Children's Hospital is the sole site in Queensland, with more than 130 children and families currently participating in the study.

Children's Health Queensland Director of Endocrinology and Diabetes and Associate Professor at The University of Queensland, Tony Huynh, is the lead researcher in Queensland.

A/Prof Huynh said children involved in the study were reviewed every three months until the age of two, then six-monthly until age 10.

"At each visit, we collect comprehensive samples like blood, urine, stools and swabs. We even have an 'ENDIA Tooth Fairy' to collect baby teeth," A/Prof Huynh said.

"While we know there's a genetic predisposition to Type 1 diabetes, an environmental trigger is believed to initiate the autoimmune process.

"The samples collected allow us to examine immune markers, the gut microbiome and other biological signals to help predict risk more accurately," he said.

Translating this research into care, the Endocrinology and Diabetes team at Queensland Children's Hospital has developed a new standard of care clinic with a pathway to monitor children with positive islet autoantibodies and refer those with a positive coeliac screen. Positive islet autoantibodies are immune proteins that attack insulin-producing pancreatic cells and indicate type 1 diabetes risk, diagnosis, and progression.

This approach significantly reduces the risk of children presenting with severe diabetic ketoacidosis.

"Diabetic ketoacidosis happens when your body lacks insulin so begins breaking down fat into ketones that build up in the blood, making it dangerously acidic," A/Prof Huynh said.

"When families know their child is at risk, these outcomes change dramatically. In a cohort of children who have undergone screening, the rates of diabetic ketoacidosis go from 40 per cent down to around 5 or 6 per cent."

To date, 25 children recruited to the study have developed Type 1 diabetes, 38 have sustained positive islet autoantibodies, and 51 have been diagnosed with coeliac disease.

Through its leadership and clinical integration, Queensland Children's Hospital remains at the forefront of advancing early detection and care for children at risk of Type 1 diabetes.

This study is supported by the work of study coordinator and research nurse, Helen Griffiths, and senior medical officer, Kriti Joshi.

This research is funded by Breakthrough T1D, the Commonwealth of Australia grant for Accelerated Research under the Medical Research Future Fund, Leona M. and Harry B. Helmsley Charitable Trust, and The National Health and Medical Research Council of Australia.

Evolution of islet autoantibodies in the Environmental Determinants of Islet Autoimmunity (ENDIA) prospective cohort. Diabetologia (2025) <https://doi.org/10.1007/s00125-025-06591-4>



Culturally tailored training strengthens First Nations respiratory care

The first culturally responsive spirometry training and mentoring program developed for Aboriginal and Torres Strait Islander healthcare workers is improving respiratory care for children and communities across Queensland.

One in three Aboriginal and Torres Strait Islander peoples live with chronic respiratory disease, making early and accurate detection in children and young people critical to improving long-term health outcomes.

Aboriginal and Torres Strait Islander healthcare workers are central to the early diagnosis and ongoing management of these conditions, particularly in rural and remote areas.

To support this delivery of care, the Indigenous Health Worker Spirometry Training and Mentoring program was developed, delivering culturally responsive training to improve spirometry capability.

Spirometry is a simple lung function test used to diagnose and monitor conditions such as asthma and chronic lung disease.

The culturally tailored program combines a two-day face-to-face workshop with telehealth mentoring, providing ongoing support and feedback to embed skills in clinical practice.

Research led by Children's Health Queensland respiratory scientist, Leanne Rodwell, evaluated spirometry tests delivered by 360 participants, predominantly First Nations healthcare workers. The evaluation assessed whether tests were performed correctly (acceptability) and produced consistent, reliable results (repeatability).

"Both test acceptability and repeatability improved following face-to-face training, with further improvements observed after the introduction of telehealth mentoring," Dr Rodwell said.

"Telehealth mentoring also enhanced engagement with healthcare workers throughout the study, supporting ongoing confidence and connection beyond the initial face-to-face session."

The program's success is strengthened by interactive, peer-led activities and First Nations artwork by Jaularoi woman Susie Klein, helping create a culturally responsive, safe and engaging learning environment.

By supporting Aboriginal and Torres Strait Islander healthcare workers to deliver high-quality spirometry testing, children and young people can access respiratory care closer to home.

The development of this program was supported by the Indigenous Respiratory Outreach Care service and funding from Making Tracks.

A Culturally Responsive Indigenous Health Worker Spirometry Training and Mentoring Programme (IHWS) Increases Quantity and Quality of Spirometry Performed in Primary Care. Australian Journal of Rural Health, 33, 6 (2025). <https://doi.org/10.1111/ajr.70112>



Study reveals high rate of hidden motor skill challenges in young chronic pain sufferers

Persistent pain affects one in five children and young people across Queensland. New research has revealed many of these children also experience significant motor skill challenges that have previously gone unnoticed.

The research led by Children's Health Queensland senior physiotherapist and clinical fellow, Dr Rebecca Fechner, assessed whether delays in motor skill development were common among children referred to the Queensland Interdisciplinary Paediatric Persistent Pain Service at the Queensland Children's Hospital.

"We know children living with chronic pain often struggle to take part in everyday activities like school, sport and play. But missing out on these opportunities can have an impact on their sensory-motor development," Dr Fechner said.

"Over time, reduced participation can affect tasks like catching or throwing a ball, balance, coordination, or even fine motor skills such as writing. As we start to see gaps compared to peers, this can have a social and emotional impact."

Despite clinicians observing participation challenges in many patients, the true prevalence of motor proficiency delay had never been formally measured.

To gain an improved understanding, the team conducted a cross-sectional study of 94 children and young people aged 6 to 18 years old attending the Queensland Interdisciplinary Paediatric Persistent Pain Service.

The cohort completed the Bruininks–Oseretsky Test of Motor Proficiency (BOT-2), a standardised developmental assessment that evaluates fine and gross motor skills and compares performance with same-age peers.

The results revealed that motor skill challenges were far more common than expected. Overall, 83 per cent of children showed difficulties in at least one motor-proficiency subtest, such as coordination or balance, and 41 per cent had delayed overall motor proficiency scores.

"Before we started using a standardised assessment, clinicians were often relying on observation alone," Dr Fechner said.

"When we formally measured motor proficiency, it became clear that these challenges were experienced more frequently and at a higher level than first anticipated."

The success of this research led to a change in clinical practice, with routine BOT-2 screening now offered for children referred to the persistent pain service.

This approach helps clinicians identify hidden participation barriers and tailor rehabilitation programs to support safe movement, functional recovery and return to daily activities.

Early identification can also make a meaningful difference outside the hospital setting, particularly in schools.

"When schools receive an objective report showing a child's motor skills compared with their peers, it helps them understand what that child is experiencing," Dr Fechner said.

"It validates the child's challenges and allows teachers to put the right supports in place."

The study was conducted through Dr Fechner's PhD with the University of Technology Sydney, with support from a Children's Health Queensland Study, Education and Research Trust Account grant. Dr Fechner's research was supported by Linsay Rogers, Dr Mark Alcock (co-authors) and Dr Joshua Pate (supervisor).

The Prevalence of Coexisting Motor Proficiency Delay and Chronic Pain in Children Presenting to a Tertiary Pain Service: A Cross-Sectional Observational Study. The Clinical Journal of Pain, 41, 9 (2025).
<https://doi.org/10.1097/ajp.0000000000001297>





Findings showed
an average
reduction of
around two hours
in clear fluid
fasting duration



'Countdown to Theatre' initiative cuts fasting time for children

A nurse-led initiative at the Queensland Children's Hospital has reduced children's pre-operative fasting times, improving the experience for patients and families while maintaining clinical safety.

Current clinical guidelines to reduce the risk of surgical complications recommend fasting for six hours for solid food, four hours for breastmilk and one hour for clear fluids, but previous studies have shown most children fast for significantly longer in clinical practice.

Registered nurse, Erika Dulay, identified an opportunity to improve the patient experience by exploring whether clear fluids could be safely offered closer to surgery, while streamlining communication between wards and operating theatres.

"Fasting can be difficult for children and stressful for their families, particularly when the timing of surgery can change due to unexpected emergency surgeries and other issues," Ms Dulay said.

"Children also have higher metabolic needs and smaller energy reserves than adults, making them more vulnerable to dehydration and hypoglycaemia. We wanted to explore how we could safely improve the fasting experience."

Working with staff across nursing, anaesthetics and surgery, the team developed the 'Countdown to Theatre' intervention. The approach empowers bedside nursing staff to proactively manage clear fluid intake for children awaiting surgery.

Under the initiative, children are offered small amounts of clear fluids at set intervals while awaiting theatre, provided they are not expected to proceed to surgery within the next hour.

Nurses manage the type, timing and volume of fluids according to clear guidance aligned with existing fasting policies.

"By giving nurses clear responsibility and guidance, we created a system where children could safely access fluids more regularly while still ensuring they were appropriately fasted before anaesthesia," Ms Dulay said.

"This also helped families feel more reassured during the waiting period, as they knew exactly when their child could next have a drink."

More than 900 observations were recorded from 774 patients over nine months following implementation. The results showed a reduction of around two hours in the average clear fluid fasting duration.

Parents also reported improvements in their child's fasting experience following the intervention. Survey responses showed higher overall satisfaction and an increase in families describing the fasting duration as appropriate.

Importantly, the intervention maintained clinical safety, with no increase in intravenous fluid requirements or fluid boluses (rapid administration of a large volume of IV fluids).

The success of this initiative has improved clinical care and led to the introduction of a refined perioperative fasting guideline at the Queensland Children's Hospital, 'Sip 'Til Send', which allows patients to consume small amounts of approved clear fluids right up until they are transferred to the operating theatre.

This study was supported by a Study, Education, Research Trust Account grant awarded by the Research Advisory Committee at the Centre for Children's Health Research.

Implementation of the 'Countdown to Theatre' Approach to Bridge the Evidence-Practice Gap in Paediatric Preoperative Fasting: A Quality Improvement Initiative. Journal of Advanced Nursing (2025), <https://doi.org/10.1111/jan.70162>

Pioneering study to improve antimicrobials in lifesaving organ support treatments

The largest paediatric international pharmacokinetic study into the effect of lifesaving organ support equipment on antibiotics and antifungal medicines behaviour is paving the way for safer, and more effective dosing for critically ill children.

Children's Health Queensland pharmacist lead (critical care) Michele Cree, led the research into how these antimicrobials are distributed and cleared in critically ill children receiving advanced lifesaving organ support technologies, such as extracorporeal membrane oxygenation (ECMO or heart and lung machine) and continuous renal replacement therapy (CRRT or kidney machine).

"A review of the literature highlighted significant gaps in our understanding of how these medicines for critically ill kids may be impacted by ECMO and CRRT," Ms Cree said.

To explore this, donated blood was used in an ex vivo (outside the body) closed paediatric ECMO circuit to simulate a treatment in a 3kg infant. Previous studies investigated the recovery over time for usually single antibiotics or antifungals.

This study investigated 11 commonly used antibiotics and antifungals over 7 hours to assess if these medicines were lost by the paediatric ECMO circuitry.

While similar studies in adults have identified medicine loss, differences in ECMO circuitry mean paediatric-specific research is needed to address this gap.

Plasma samples were taken at regular time intervals to determine whether the medicines were being lost through the ECMO circuitry. A control assessed if the antimicrobial degraded over time.

"We identified a reduced antimicrobial concentration in more than 60 per cent of the antibiotics and antifungals studied, which in clinical settings, could lead to inadequate antimicrobials concentrations in critically ill children, increasing the risk of treatment failure and antimicrobial resistance," Ms Cree said.

"Medications that are lipophilic or "fat loving" were likely to be adsorbed onto the paediatric ex-vivo ECMO circuit, which means the child does not receive the medication.

"These findings suggest that current antibiotic and antifungal dosing regimens need to be reviewed for critically ill kids receiving ECMO to ensure they are receiving an effective treatment dose," she said.

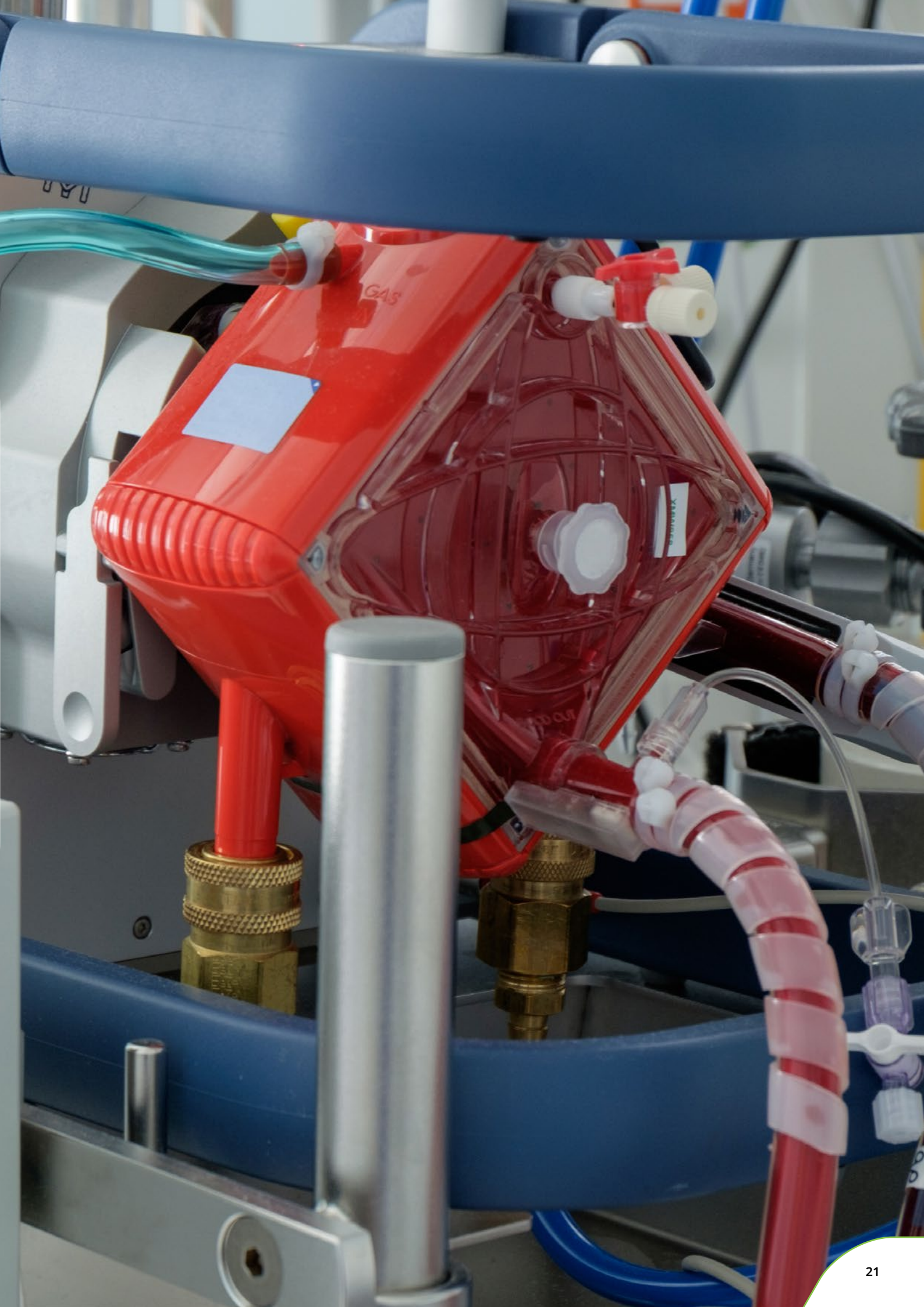
By identifying how these medicines are distributed and cleared, the findings will inform safer, more effective dosing that will improve treatment success and reduce the risk of antibiotic resistance.

This initial research lays the foundation for improved outcomes for critically ill children with severe infections, both in Australia and internationally.

This study was supported with funding from the Children's Health Queensland Study Education and Research Trust account and The University of Queensland scholarship support. The preliminary findings were disseminated at World Federation Paediatric Intensive and Critical Care Symposium in 2024 and Australia and New Zealand Intensive Care conference in 2025.

Analysis of the paediatric ex-vivo closed ECMO circuit was undertaken at The University of Queensland's Centre for Clinical Research.

The Impact of an Ex Vivo Pediatric Extracorporeal Membrane Oxygenation Circuit on Sequestration of Antimicrobials. Critical Care Explorations 7,11 (2025). <https://doi.org/10.1097/cce.0000000000001338>



Immune cell atlas to help shape new immunotherapy treatments for children

Researchers are mapping the development of children's immune systems to deliver better and tailored treatments for children with cancer and immune-related conditions.

The Ian Frazer Centre for Children's Immunotherapy Research (IFCCIR) fosters collaboration between immunologists, paediatricians, and technology experts to explore how children's immune systems respond to disease and therapy.

IFCCIR Clinical Director and Director of Oncology Services Group at the Queensland Children's Hospital, Associate Professor Wayne Nicholls, said researchers aimed to develop therapies that were effective and minimised adverse effects in young patients.

"Children are not small adults. Their immune systems are unique, and understanding these differences is key to developing treatments that are effective in children," A/Prof Nicholls said.

"The lack of detailed knowledge about how the paediatric immune system develops has historically limited the ability to design effective treatments."

To address this gap, researchers are developing a Paediatric Immune Cell Atlas (PICA). Using advanced single-cell sequencing, researchers map how children's immune systems develop across both healthy children and those living with immune-related conditions.

In 2025, sequencing had been completed on blood samples from around 200 patients at Queensland Children's Hospital, with the goal of reaching 1,000 to complete the PICA.

"Once the mapping is complete, we can compare blood samples from children with immune-related diseases to our paediatric immune atlas, giving us a clear picture of what 'normal' immune function looks like at different stages of development," A/Prof Nicholls said.

"In autoimmune diseases, the immune system attacks the body's own cells, while in cancer, it fails to eliminate tumours. By mapping these differences, we can determine how immune cells behave in health and disease.

"This knowledge will be invaluable in developing new immunotherapy treatments and ultimately can be used by clinicians around the world to tailor treatment plans for children," he said.

Alongside this foundational work, IFCCIR is advancing personalised immunotherapy approaches, including mRNA-based cancer vaccines designed using each individual child's tumour and immune system.

In 2025, the team also successfully developed patient-derived tumour cells or lab-grown cells taken directly from children's tumour tissues.

These are now being grown in 3D systems that closely mimic the body's natural environment, allowing researchers to study how immune cells interact with tumours in realistic conditions.

"We have an opportunity to make a real difference in the world of paediatric cancer and medicine," A/Prof Nicholls said.

"For Queensland children, having this level of research capability locally means faster translation from discovery to bedside, with hopes the next generation benefits directly from advances happening now."

Clinical collaboration remains central to the IFCCIR's success, with partnerships between Children's Health Queensland, The University of Queensland (UQ), and QIMR Berghofer Medical Research Institute, hosted within the UQ Child Health Research Centre.

The research is made possible with funding from partners including the Children's Hospital Foundation, UQ, and the Medical Research Future Fund.



Research
capability locally
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Empowering parents improves the treatment outcomes for young people with eating disorders

Outcomes for young people with eating disorders can be fast-tracked by empowering parents and carers with targeted pre-treatment psychoeducation and support programs prior to starting more traditional treatments, a pilot study has found.

This approach improves parental confidence, as well as a young person's physical and mental health, which may set up further success in ongoing treatment pathways.

Early intervention is essential for young people with eating disorders, as early treatment can preserve and even restore regular growth and development.

While treatments such as family-based therapy and cognitive behavioural therapy for eating disorders are well established, immediately accessing such treatments is not always possible due to waitlists and clinician availability. It also remains unclear which approach is most effective for individual patients.

To gain an improved understanding of success indicators, Children's Health Queensland's Eating Disorder Program team launched a clinical registry in 2021.

The registry now includes data from 250 young people and their families. Information is collected at intake, after any treatment changes, and at discharge.

It captures details about a young person's eating disorder, co-occurring health or mental health conditions, parental wellbeing, family dynamics, medical history and key physical measurements such as height and weight.

Eating Disorders Program's senior mental health clinician and Adjunct Fellow, Dr Daniel Wilson, said the registry enabled comprehensive tracking of a young person's progress across treatment, including the complexities that often accompany eating disorders.

"It measures physical changes alongside broader health and mental health comorbidities, helping us understand how all factors contributing to the young person's wellbeing evolve during treatment," Dr Wilson said.

"Family context and parental wellbeing are also important considerations, particularly as many treatment approaches rely on active involvement from parents or caregivers."

Insights from the registry have informed clinical practice, strengthening existing therapies and guiding the development of new initiatives such as Strong Foundations.

Spreading the word

The work of Children's Health Queensland researchers is contributing to better care, and health and wellbeing outcomes for children across Australia and internationally.



805 articles and book chapters published



2,750 mentions across academic, online and social media platforms



424 news items across 20 countries



2,196 social media mentions

Designed for parents of young people awaiting outpatient care, the evidence-informed program provides weekly education sessions, specialist medical management and support through the Eating Disorder Program community clinic.

The experience of 197 young people and 304 caregivers who participated in the program were analysed, revealing significant improvements in parents' confidence in supporting their child with an eating disorder, along with modest but meaningful improvements in the young person's health.

"Our goal with Strong Foundations was to help parents build their understanding of eating disorders and feel more confident in how to support their child prior to starting more intensive treatments," Dr Wilson said.

"It was encouraging to see parents report greater confidence, and to observe improvements in the young people as well, even though they were not the primary focus of this program."

Together, this research and the programs it has informed are helping families access support earlier, while enabling clinicians to guide young people toward treatment pathways with the greatest likelihood of success.



This research was supported by a Queensland Health Clinical Research Fellowship and partnerships with The University of Queensland, Griffith University and the University of Southern Queensland.

Pre-Treatment Specialist Interventions Improve Parents' Self-Efficacy and Their Children's Eating Disorder Symptomology Before Commencing Outpatient Treatment. European Eating Disorders Review 36, 6 (2025). <https://doi.org/10.1002/erv.3211>



113 staff members with higher degrees



88 staff supervised 99 higher degree students



432 conference presentations delivered to national and international audiences



29 research fellowships received

Leading journals published in

- *Nature*
- *New England Journal of Medicine*
- *Nature Communications*
- *Nature Genetics*
- *JAMA Pediatrics*
- *The Lancet Respiratory Medicine*
- *BMJ Open*
- *Medical Journal of Australia*

Full publication list is available online at [2025 CHQ staff publications](#)

Mary McConnel Career Boost Program for Women in Paediatric Research

Empowering female researchers to turn their decisions into impact

In 2025, four Children's Health Queensland researchers were named recipients of the Mary McConnel Career Boost Program for Women in Paediatric Research.

The recipients, Associate Professor Jasneek Chawla, Dr Trisha Soosay Raj, Tricia Kleidon and Kristen Storey, are focused on the areas of sleep-disordered breathing in children with neurodisability, learning practices in paediatric oncology, peripheral intravenous catheters and vein health, and negative pressure wound therapy in burns treatment, respectively.

The Mary McConnel program grants support the advancement women in research at Children's Health Queensland, helping to translate evidence into better outcomes for Queensland children and young people.

The program, delivered by the Children's Hospital Foundation with funding support from fashion brand DISSH, offers support and financial aid for female researchers to progress research in their respective areas.

While progress is ongoing, women still only represent around 20 per cent of senior academics across Australian universities and research institutes, highlighting the importance of this targeted program.

Unlike traditional grant models, the Mary McConnel Career Boost Program offers recipients up to \$50,000 to use where it will have the greatest impact, whether that be dedicated research time, childcare or professional development.

Since launching on International Women's Day in 2018, the program has awarded more than \$1.5 million to 32 researchers – covering diverse areas such as immunotherapy, chronic kidney disease, cerebral palsy, palliative care and infectious disease.

The Mary McConnel Career Boost Program honours the legacy of Mary McConnel, a pioneering advocate for children's healthcare who founded Queensland's first paediatric hospital in 1878, setting a lasting foundation for innovation and excellence in care.

Meet this year's recipients



Associate Professor Jasneek Chawla

A/Prof Chawla has worked at Children's Health Queensland since the Queensland Children's Hospital opened in November 2014. She is a paediatric respiratory and sleep specialist who is dedicated to improving treatment for sleep-disordered breathing in children with neurodisability. As an early-career researcher, A/Prof Chawla's work aims to co-design and evaluate a tailored behavioural program to support the use of non-invasive ventilation, improving adherence and health outcomes. In 2025, she also became the first paediatric clinician to be elected as president of the Australasian Sleep Association.



Dr Trisha Soosay Raj

Dr Soosay Raj is a paediatric oncologist and bone marrow transplant physician at the Queensland Children's Hospital, joining the team in 2019. As a novice researcher, Dr Soosay Raj is committed to improving learning practices in paediatric oncology across the Pacific region. Her research explores how healthcare professionals learn while delivering care to young oncology patients in diverse settings, with the goal of enhancing both workforce capability and patient outcomes. Dr Soosay Raj presented this research at the AMEE Conference in Austria and the SIOP Conference in USA in 2026.



Tricia Kleidon

Ms Kleidon is a nurse practitioner at the Queensland Children's Hospital and a Research Fellow at The University of Queensland. As a novice researcher, she is dedicated to exploring practice variation and outcomes of peripheral intravenous catheters and vein health across rural and tertiary paediatric healthcare. Her research hopes to improve paediatric vascular access, reduce needle-related trauma, improve first-attempt success, and enhance patient safety.



Kristen Storey

Ms Storey is a clinical nurse consultant in burns at the Queensland Children's Hospital. As a novice researcher, she is exploring the use of negative pressure wound therapy in acute paediatric burns. Her research aims to improve wound care outcomes and identify barriers to broader implementation of negative pressure wound therapy, supporting clinicians to deliver best-practice care.

Awards and prizes

The impact of the work of Children's Health Queensland researchers was recognised with a variety of awards and honours in 2025.



Conjoint Professor, Paul Robinson

Pediatrics Mid-Career Outstanding Contributions Award American Thoracic Society

Conjoint Prof Robinson was recognised for his research on the evolution, detection and monitoring of early lung disease across paediatric conditions. More recently, his work has expanded to identifying early-life risk factors and developing interventions to prevent or mitigate disease progression.



Professor James Scott

Clarivate Highly Cited Researcher

Prof Scott has been recognised as a 2025 Clarivate Highly Cited Researcher, placing him in the top one per cent of researchers worldwide by citation impact.

This marks his fourth consecutive year receiving the honour (2022–2025), highlighting the sustained influence and excellence of his work. Across his career, his research has been cited more than 70,000 times, demonstrating its global reach and significant contribution to advancing child and youth mental health.



Dr Tatiane Yanes

Tall Poppy Science Award The University of Queensland

Dr Yanes is a clinician-researcher at the Queensland Children's Hospital and at the Integrating Genomics into Medicine group. She was recognised for her research supporting families undergoing genetic testing and adapting to their diagnosis through clinically informed research.



Dr Carly Luke

Mac Keith Press Promising Career Research Award American Academy for Cerebral Palsy and Developmental Medicine

Dr Luke received this award for the best paper titled 'Decoding early infant Neuromotor Behaviour on the Motor Optimality Score-revised and Hammersmith Infant Neurological Examination to determine high likelihood of autism at 12 months'.



Associate Professor Jasneek Chawla

Excellence Award for Research
Children’s Health Queensland

Tall Poppy Science Award
The University of Queensland

The Children’s Health Queensland Excellence Awards are annual honours recognising individuals and teams who demonstrate outstanding dedication to paediatric healthcare, research, and wellbeing. A/Prof Chawla was recognised for her impactful leadership and research in paediatric sleep and respiratory medicine, improving care and outcomes for children with neurodisability and their families.

A/Prof Chawla also received The University of Queensland Tall Poppy Science Award for researching the relationship between sleep and long-term cognitive and behavioural outcomes in children with a neurodisability, particularly Down Syndrome.



Gabrielle Neep and Anita Garret

Best overall presentation

Australia and New Zealand Paediatric Imaging Conference

Ms Neep and Ms Garret received this recognition for their work implementing the first paediatric MRI velopharyngeal (MRVP) protocol in Australasia. This non-invasive, radiation-free scan assesses how the soft palate and throat work during speech to support diagnosis and surgical planning for children with cleft palate and related speech issues.



Associate Professor Alexandra De Young

Dignan Stephens Award
Children’s Health Queensland

Clinical Research Fellowship
Queensland Health

A/Prof De Young was recognised with the Dignan Stephens Award for her outstanding contribution to improving clinical practice and health outcomes for infants and children impacted by trauma, including injury, serious illness and disaster events. Through her Clinical Research Fellowship, she has led innovative research that has advanced understanding of children’s psychological responses to trauma and helped translate evidence into better care and support for children and families.

Are you interested in research at or with Children’s Health Queensland?

Email CHQ-Research@health.qld.gov.au or call 07 3069 7230 to learn more about how you can be involved in delivering impact for Queensland children and young people.

Committees and governance

Children's Health Queensland Research Committee

The Children's Health Queensland (CHQ) Research Committee is the research sub-committee of the CHQ Hospital and Health Board. It is responsible for setting the strategic direction for research at and with CHQ and ensuring compliance with key national and state legislation and regulations. The committee enables effective partnerships with academic and industry to support research that drives clinical excellence for Queensland children and young people.

Members

Prof Simon Denny, Chair, CHQ Board Member
Heather Watson, Chair CHQ Board
Cheryl Herbert, CHQ Board Member

Attendees

Adj Prof Frank Tracey, Health Service Chief Executive, CHQ
A/Prof Steven McTaggart, Executive Director Medical Services, CHQ
A/Prof Leanne Johnston, Executive Director Allied Health, CHQ
A/Prof Andy Moore, Director Clinical and Biomedical Research
Lyndsey Rice, CEO Children's Hospital Foundation
Prof Craig Munns, Director Children's Health Research Centre, Faculty of Medicine, UQ
Dayna Williamson, Senior Manager Research Services and Partnerships

Children's Health Queensland Research Executive Committee

The Research Executive Committee was established in 2025 to provide oversight and leadership to the strategic direction and operations of research at CHQ. It also supports the positioning of CHQ as a leader and partner in paediatric research in Australia and globally as well as to enable the growth of CHQ-led and informed research for Queensland children.

Members

A/Prof Steven McTaggart Chair, Executive Director Medical Services
A/Prof Andy Moore, Director of Research
A/Prof Rebecca Doyle, Chair CHQ HREC
Adrian Clutterbuck, Executive Director Strategy, Planning and Innovation
Prof Leanne Johnstone, Executive Director Allied Health
Callan Battley, Executive Director Nursing Services
Dominic Tait, Executive Director Clinical Services (concluded June 2025)
Brendan Hoad, Chief Operating Officer (Commenced June 2025)
Dominic Santin, Senior Director Finance
Dayna Williamson, Senior Manager Research Services and Partnerships

Children's Health Queensland Research Integrated Operations Committee

The Research Integrated Operations Committee was established in 2025 to oversee the review of current research operations and objectives to provide strategic and operational advice to the CHQ Research Executive Committee. It also provides input into the revision, creation, development and governance of research operations and strategic research objectives.

Members

A/Prof Andy Moore (Chair)
A/Prof Alex De Young
Prof Amanda Ullman
Daniel Pocock
Deborah Sinclair
Prof Honey Heussler
Prof James Scott
A/Prof Jasneek Chawla
Dr Jeanne Marshall
Prof Leanne Sakzewski
Linda Thorburn
Dr Melinda White
Melissa Culka
Dr Natalie Phillips
Dr Sonya Stacey
Dr Tristan Reddan
Dr Helen Petsy (consumer rep)
Dr Alyce Taylor Brown (ex-officio)
Amanda James (ex-officio)

Human Research Ethics Committee

Children's Health Queensland's Human Research Ethics Committee (HREC) reviews the ethical and scientific validity of proposed research within the Children's Health Queensland Hospital and Health Service and in partner agencies across Australia.

The HREC is certified with the National Health and Medical Research Council to conduct paediatric clinical trials (Phases I to IV), involving drugs and devices, interventional research, other health and medical research, mental health, justice health and paediatric population health research.

Members

A/Prof Rebeca Doyle, Chair

Michelle Bond

Dr Helen Buntain

Michelle Carr

Dennis Conlon

Aimee Crawford

Peter Foster

Bobbie Gadsden

Michelle Guerrero

Graham Hyde OAM PHF

Dr Paul Lee-Archer

Prof Craig McBride

Natalie Oaten

Prof Helen Petsky

Dr Sainath Raman

Dr Katie Rasmussen

Reverend Robert Rogers

Ann-Maree Russo

Nathan Rye

Sonya Stacey

Mari Takashima

Administrative staff

Amanda Smith, Ethics Co-ordinator

Ashleigh Fielding, Support Officer

Jennifer Nguyen, Support Officer





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The best care for every Queensland child.