



Children's Health Queensland Research Strategy 2018–2025



Children's Health Queensland vision and values

Our vision

Leading life-changing care for children and young people – for a healthier tomorrow.

Our commitment

To offer the best: safe, expert, accessible child and family-centred care for children and young people.

Our values

Respect: teamwork, listening, support
'We listen to others'

Integrity: trust, honesty, accountability
'We do the right thing'

Care: compassion, safety, excellence
'We look after each other'

Imagination: creativity, innovation, research
'We dream big'



Message from the Chief Executive and Board Chair



Improving the health of all children is achievable. Children's Health Queensland Hospital and Health Service is committed to collaborating with strategic partners across government, health, social services, education, research, private and non-government organisations to develop, share knowledge and translate knowledge into practice.

Research plays a vital role in protecting and promoting the health and wellbeing of Queensland's children. Our research will be undertaken across the life-course and address the risk and protective factors associated with long-term health outcomes for children and their families, as well as our life-saving treatments.

With the ongoing support of our various research and clinical partners, the Children's Hospital Foundation and our dedicated partnerships under the auspices of the Centre for Children's Health Research, including The University of Queensland and Queensland University of Technology, Children's Health Queensland research will influence and drive investment in health care by influencing and informing the commissioning of future services. Sustainability and value-based care with significant clinical outcomes for our children and families is a key focus.

Children's Health Queensland will continue to support and develop researchers as we strive for excellence and drive this work through three strong research themes:

- Prevention and early detection
- Better care
- Health services and systems research.

We are committed to embedding research in everything we do to promote the health and wellbeing of children. Whilst our presence and focus is here in Queensland, the impact of our research will benefit children globally.

Fionnagh Dougan

Chief Executive

David Gow

Board Chair

Children's Health Queensland Hospital and Health Service

“Our research will benefit children globally”

Children's Health Queensland Research Strategy 2018-2025

Children's Health Queensland (CHQ) is committed to leading a research agenda which is informed by the clinical needs of Queensland children and their families. By focusing our research on primary and secondary preventative health measures, better care and improving health service delivery, we will improve the health outcomes of children and young people.

Our research aim

To inform the development of a statewide integrated, sustainable children's healthcare system that is responsive to contemporary need and driven by research, evidence and innovation.

Our research vision

To positively change the trajectory of the life of every child throughout Queensland.

Our research mission

In partnership, deliver statewide paediatric translational research that drives evidence based care, and service improvement and innovation for children, young people and their families.

In developing this strategy, we have identified three themes to encompass research at CHQ: prevention and early detection, better care and health services and systems research.

We will work with our research partners to:

- develop a dynamic research culture
- build capability and capacity where research is embedded into service delivery
- continue to develop existing research strengths
- be future focused around emerging health needs and research related to supporting them
- facilitate emerging research groups
- foster the development of future researchers.

Current research strengths

- Burns and trauma
- Cardiology and cardiac surgery
- Cerebral palsy and rehabilitation
- Child health research
- Diabetes and endocrinology
- Emergency medicine
- Infectious diseases
- Intensive care
- Mental health
- Neurology and neurodevelopmental paediatrics
- Obesity and metabolism
- Oncology
- Respiratory medicine

Our partners



The Children's Health Queensland Research Strategy 2018-2025 supports the goals of the following strategy documents:

1. Children's Health Queensland Strategic Plan 2016-2020
2. Children's Health Queensland Integrated Care Strategy 2018-2022
3. Children's Health Queensland Health and Wellbeing Services Plan 2018-2028
4. The University of Queensland Child Health Research Strategy 2017
5. Statewide Plan for Children and Young People's Health Services 2018-2028

Message from our Research Directors

Children's Health Queensland Hospital and Health Service enjoys an outstanding reputation for the delivery of world-class, family-centred care to Queensland children and young people. In addition, we are a leading provider of undergraduate and post-graduate medical, nursing and allied health education. With our research strategy, we strive to embed a focus on research into the delivery of care and education at CHQ.

Research underpins advances in our understanding of health, disease and injury, and improves outcomes for children through better care and preventative strategies. Our research seeks to improve the way health services are delivered to communities across Queensland, in order to optimise the quality and sustainability of public healthcare.

Research at CHQ will focus on three central themes:

- Prevention and early detection
- Better care
- Health services and systems research.

Our themes are intentionally broad, with the aim of encompassing our existing areas of research strength, whilst providing the flexibility for growth in emerging areas of research expertise. Importantly, we aim to build research capacity and capability at CHQ, by nurturing the next generation of multidisciplinary research leaders. Our research is informed by the clinical needs of children and their families, and led by CHQ clinicians. To deliver on our research strategy, we will build on our existing relationships with academic, industry and philanthropic partners.

In developing this Research Strategy, we have been inspired by the breadth, quality and impact of past and ongoing research at CHQ. The commitment of staff and our partner institutions to improving outcomes for children and young people gives us immense pride and optimism for the future as we aim to advance child health research excellence in Queensland.

Dr Robyn Littlewood
Director
Health Services Research

Dr Andy Moore
Director
Clinical and Biomedical Research

To progress a child and family centred focussed Children's Health Queensland research agenda, we will incorporate the child and family centred care into research programs and activities and participate in the development of a framework for the involvement of consumers in research, fully supporting the NHMRC guidelines.



Building our research leaders and culture

We will foster a talent pipeline of outstanding researchers to deliver an inspirational and innovative research agenda in Children's Health Queensland by prioritising and developing our people and growing our workforce.

Supporting and mentoring clinicians to engage in research, empowering early and mid-career researchers to achieve even greater outcomes and catapulting our expert researchers to the world stage will be an ongoing focus. Clinical research education and training in research skills for staff and students, and world-class professional development opportunities will become embedded in the CHQ culture. In this way, research participation will be an expectation rather than an aspiration.

International capability, reputation and recognition requires training, opportunity and engagement in research activities of significant scale. Powering up the capability, scope and impact can only be achieved with collaborations – building these platforms in concert with our partners.

Strongly aligned with and supporting our integrated care strategic agenda through driving true and meaningful partnerships, CHQ will be recognised as a true research leader. Our current research experts will continue to make global impacts whilst mentoring the development of our next research leaders. Research will be a part of everything we do at CHQ.

To build our research leaders and research culture, we aim to:

- Elevate the CHQ research profile.
- Support development and career progression of early and mid career researchers.
- Support outstanding research and translation into real world impact.
- Encourage clinician researchers to lead by:
 - seeking relevant higher tertiary qualifications
 - influencing and implementing interprofessional programs and activities
 - fostering mentoring relationships
 - supporting research students and coordinating higher degree students in partner universities.

We will develop a dynamic and innovative research culture across a range of partnerships:

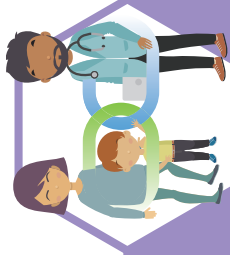
- Children's Hospital Foundation including development of the Children's Health Research Alliance (CHRA).
- Research institutes across Queensland, particularly those within the Brisbane Diamantina Health Partners (BDHP) Advanced Health Research and Translation Centre.
- National and International Research Institutes.
- Cross government sector partners.
- Partner with Health Innovation, Investment and Research Office (HIIRO) to progress the Knowledge Translation Partnership (KTP) with Shanghai Children's Hospital.
- Establish strong links with the National Health and Medical Research Council (NHMRC) and Medical Research Future Fund (MRFF).
- Have a linked hospital and community/population health research function that informs service model across the care continuum.
- Queensland Child and Youth Clinical Network (QCYCN).



Children's Health Queensland Research Strategy 2018-2025



Prevention and early detection



Better care



Health services and systems research

Building our research leaders, profile and culture

Consumer and community involvement in health and medical research



Objectives

Prevent disease and create healthcare for the future – building Queensland generations

- Create an integrated population and clinical dataset enabling identification of emerging trends, needs and outcomes.
- Develop research capacity in population health research to inform child and youth health policy, service planning and innovative and responsive service models.
- Build and progress a strong genomic child health research agenda.
- Support and improve immunisation rates universally.



Actions

Take our child health research and health services expertise to the world

- Develop and embed relationships between CHQ research and CHQ clinicians to translate research into service delivery.
- Implement a research governance framework and supporting structures.
- Increase clinical trials and interventional clinical research across CHQ.
- Build an evidence based approach to test efficacy and effectiveness of current and new interventions.



Current programs

- Data program including ieMR
- Genomics
- Immunisation
- Infectious diseases
- Neurodevelopmental disorders
- Trauma
- Cerebral Palsy early detection – Queensland Early Detection and Intervention Network (QEDIN)



Outcomes

- Implement a data function to support clinicians and clinician researchers to interpret data to translate into contemporary programs and models of care which can be evaluated.
- Establish functional and complementary research initiatives to maximise early intervention in the context of universal health service provision.
- Establish a strong population health research agenda.

Rapidly translate our research into better health outcomes using contemporary approaches including health economics, biostatistics and evaluation techniques

- Grow funding, investment and collaboration in child and youth health system research in Queensland.
- Ensure that a research based evaluation framework is developed.
- Establish a research reporting function to capture and report on all CHQ and other research related metrics to inform planning.
- Develop a health economics and business centre to support resources to deliver value-based care.

- Translation – child health research
- Data
- Evaluation and policy
- Interprofessional Education (IPE) – training and capacity building
- Child and youth mental health
- Population health and integrated care

- Develop a CHQ research business centre.
- Develop and deploy a health services and systems research action plan progressing the six areas of focus.
- Develop an evaluation framework that could be applied across services.

Meet some of our researchers

Professor Stewart Trost

Professor Stewart Trost is a Professor of Child Health in the School of Exercise and Nutrition Sciences and Director of the Queensland University of Technology (QUT) Institute of Health and Biomedical Innovation (IBHI) at CHQ's Centre for Children's Health Research (CCHR). QUT is one of CHQ's primary academic partners at CCHR. Professor Trost leads the QUT Children's Physical Activity Research Group at CCHR. Over the last 20 years, he has made significant research contributions in many areas of child health research – physical and psychosocial health benefits of therapeutic exercise in children with chronic health conditions; early life prevention of childhood obesity; eHealth and mHealth platforms for delivering therapeutic exercise programs; sensor enabled measurement of physical activity and sedentary behaviour in children and adolescents; community-based interventions to increase physical activity of children and adolescents; and relationships between sport, physical activity and other health behaviours.



Professor Karen Moritz

Professor Karen Moritz is a National Health and Medical Research Council Senior Research Fellow and Director of the Child Health Research Centre (CHRC), University of Queensland (UQ). UQ is one of CHQ's primary academic partners at CCHR. Professor Moritz leads the 'Developmental Programming' team that examines how maternal health during pregnancy can impact on the health of children and adolescents. Her team aims to understand how prenatal perturbations contribute to an increased risk of developing some chronic diseases. Her work has identified that kidney development can be impaired during pregnancy by maternal stress, alcohol consumption or a poorly functioning placenta. Currently she is examining how this impacts on childhood growth and development including blood pressure, kidney function and risk of obesity.



Dr Helen Irving

Dr Helen Irving is the Clinical Lead of the Centre for Children's Health Ethics and Law CHQ and Associate Professor UQ, Faculty of Medicine. Her clinical role is Pre-Eminent Specialist Paediatric and Adolescent Oncology and Medical Lead for the Queensland Paediatric Haematology, Oncology and Palliative Care Network. Dr Irving is the Principal Investigator at CHQ for the Children's Oncology Group (COG) - the world's largest clinical collaborative group for childhood cancer comprising over 200 hospitals in the US, Canada, Australia, New Zealand and other international sites. Under Dr Irving's leadership, CHQ has grown to be one of the top 10 COG sites for clinical trial enrolment with CHQ patients having access to cutting-edge cancer treatment.



Professor Claire Wainwright

Professor Claire Wainwright is a paediatric respiratory physician and Co-Lead for cystic fibrosis services at CHQ in Brisbane which manages around 450 children with cystic fibrosis across Queensland and northern NSW. She is a Professor of paediatrics and child health at the University of Queensland and research interests include clinical trials, development of lung disease in cystic fibrosis, airway microbiology, and patient reported outcomes in cystic fibrosis.



Associate Professor Karen Barlow

Associate Professor Karen Barlow is an academic paediatric neurologist, clinical researcher, and specialist in acquired brain injury in children and adolescence. Associate Professor Barlow has extensive clinical research experience, devising and overseeing paediatric clinical trials internationally. She moved to the CHRC, UQ in October 2017 and joined the Queensland Paediatric Rehabilitation Service and Queensland Cerebral Palsy and Rehabilitation Research Centre, taking up the Paul Hopkins Chair of Paediatric Rehabilitation, to facilitate research into improving the health outcomes of children with acquired brain injury. Her research focuses on the neurobiological signatures and treatment of subtle neurological dysfunction in mild traumatic brain injury and concussion, especially behavioural and cognitive impairments found in post-concussion syndrome.



Research themes



Prevention and early detection

Prevent disease and create health care for the future – building Queensland generations.

This theme is based on the guiding principle that good health is the right of every child and young person. Research focusing on primary and secondary prevention of injury and illness is central to this theme. In addition this theme will have a strong focus on the social determinants of health.

Improving the health of all Queensland children aged birth to 5 years is achievable. This work will focus on domains including physical activity, child development including social and emotional wellbeing, nutrition and growth, family health, injury prevention, sun safety, oral health and immunisation.

We will influence and drive investment in population research, Queensland child health policy and the patient safety agenda, and the commissioning of future services, ensuring sustainable, contemporary and efficient service planning. The development, implementation and evaluation of innovative service models is a key area of priority.

We plan to partner with Queensland Health's Preventive Health Branch, and national/international paediatric exemplar organisations to share knowledge and prevention strategies nationally.

The principles guiding this work include:

- The first five years last a lifetime.
- Investing in the early years of life maximise return on the dollar spent on health care over the life-course.
- Good health is the right of every child and young person in Queensland and should be prioritised.
- Services provided in the early years should be integrated and collaborative throughout health and other government sectors.
- Identification of gaps and inconsistencies within the system will be targeted and solutions to resolve them will be prioritised.

The first 1,000 days is the period from conception to the end of a child's second year. Outcomes in this period are significantly influenced by genetic, epigenetic, and environmental factors. Improving the conditions including social determinants under which families are raising young children requires priority and commitment to innovation including implementation of interdisciplinary research and its translation to practice.

Creating an integrated population and clinical dataset will be a staged priority, achieved by consolidating publicly available data (AEDC, SEIFA, ABS) and maternal and infant health data in addition to interfacing with the electronic medical record (ieMR). The anticipated digitisation of a nationally consistent infant and child health record will be another enabler in designing service models and addressing health needs in a proportionate way.

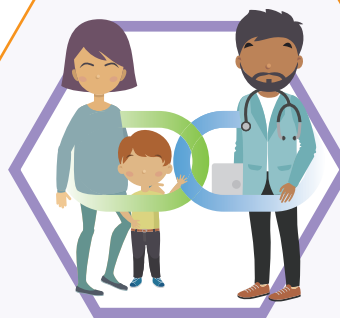
Meet some of our researchers

Associate Professor Honey Heussler

Associate Professor Helen (Honey) Heussler FRACP DM is a Developmental and Behavioural Paediatrician at CHQ as well as Sleep Paediatrician with training in Community Child Health. She has worked in Victoria and the UK for many years. She has research interests that range from working with basic science to clinical trials in Sleep Medicine and Neurodevelopmental disorders, and population level outcomes for children. She is an Associate Professor at the CHRC, UQ and the elected Chair of the International Society for the Study of Behavioural Phenotypes.



Research themes



Better care

Take our child health research and health services expertise to the world.

Children’s Health Queensland leadership in clinical and translational research will give Queensland children and young people access to the best-possible care and improve health outcomes. Central to this theme are clinical trials, developed, led and delivered by CHQ clinicians. Clinical trials improve outcomes for patients through access to novel therapeutics and treatment approaches. In addition, this research theme includes translational research aimed at developing improved diagnostic methods, as well as strategies to prevent complications of injury and illness.

A focus and commitment to supporting the development of dedicated clinical research management functions within each division across CHQ remains a priority.

This is expected to increase capacity and capability needed within CHQ to strengthen and progress translational research informing all levels of service delivery.

In addition, we will foster the development of the next generation of clinical researchers through clinical research fellowships, embedded within clinical services, these clinical research staff will have the protected research time needed for success, whilst remaining an integral part of the broader care team.

Meet some of our researchers

Associate Professor Julia Clark

Associate Professor Julia Clark is a Paediatric Infectious Disease Specialist, is Director of Infectious Diseases, Immunology/Allergy and Rheumatology Services Group at CHQ. She also leads the Queensland Paediatric Infectious Diseases (QPID) research laboratory at CCHR. Research interests include optimising antimicrobial use and treatment, early detection of infection and developing laboratory testing, particularly focusing on the immunocompromised child as well as viral and mycobacterial infections. She is enthusiastic about fostering and developing collaborative networks for paediatric infection related clinical research.



Dr Mark Harris

Dr Mark Harris, head of endocrine research at CHQ, is strongly committed to developing research participation within the endocrine department and more broadly across paediatrics. His primary research focus involves preservation of beta cell function in children with Type 1 diabetes (T1D). If successful, this strategy has the potential to prevent T1D occurring in children at high risk of developing one of the most common diseases in childhood. In order to achieve this he has established strong research collaborations with Professor Ranjeny Thomas at the UQ Diamantina Institute, industry partnerships, and other researchers throughout Australia. He is a co-investigator on a number of multi-centre T1D research projects, including novel immunotherapy approaches to preserve beta cell function in T1D.



Research themes



Health services and systems research

Rapidly translate our child health research into better health outcomes using contemporary approaches including health economics, biostatistics, evaluation techniques and consumer and community involvement

Health services and systems research is a multi-disciplinary research activity to improve health services for patients. Achieving this requires collaboration and consistency across many dimensions: better quality care (including care that is effective, timely and appropriate), more accessible care, more equal distribution of health gains from health services, safer care, and improved efficiency, both allocative and technical, in the provision of health care.

The rapid translation of research findings into clinical practice is key to improving health outcomes for children and their families. Our commitment to health services research will not only ensure the health care of Queensland children is evidence informed, but will also focus on how the delivery of health care can be improved within the context of a public health system, both in hospitals and the community.

Development and implementation of an evidence-based evaluation framework for health service innovation to assess and prioritise redesign and improvement investments will be key to the success to this work. This will be driven by the coordination and connection of high quality but separate data sets across Queensland, including newborn screening data, hearing data, medical screening, and ieMR data sets. The creation of a commercial business centre providing evaluation, project management and data functions will be prioritised.

Children's Health Queensland's health service research agenda is based on contemporary thinking, evidence and best practice which in turn informs and shapes the delivery of health care across the continuum (primary, secondary, tertiary, quaternary) and related services provided to children, young people and their families across Queensland.

Our health services research subthemes will include evaluation, data and integrated care, mental health and wellbeing. Consumer engagement strategies will ensure consumers inform research priorities and are engaged in every step of the research process.

Meet some of our researchers

Queensland Children's Tumour Bank

The Queensland Children's Tumour Bank (QCTB), led by Dr Andy Moore, is one of Australia's leading paediatric cancer biobanks. The facility aims to assist as many quality scientific projects as possible, both large and small, in order to increase knowledge about childhood cancer and improve outcomes for patients. The bank is located in the CCHR building at CHQ. This close proximity to the hospital operating theatres and Pathology Queensland, enables samples to be obtained rapidly after surgery. The specialised processing and cryo-preservation of fresh tumour samples maintains sample viability, enabling functional research to be performed. The QCTB has close ties with other tumour and tissue banks through the Australian and New Zealand Children's Haematology Oncology Group and is a member of the Brain Cancer Biobanking Australia consortium. The QCTB is supported by the Children's Hospital Foundation, and has contributed samples to a number of global collaborations, resulting in new insights into the biology of childhood cancer and the identification of novel treatment approaches.



Growing Good Habits team

Growing Good Habits is a CHQ-based initiative in collaboration with the Queensland Child and Youth Clinical Network, Clinical Excellence Division, Preventive Health Branch and UQ. The Growing Good Habits team facilitates multisite paediatric weight management clinics. Their goal is to improve the nutrition, health and wellbeing of overweight and obese children through integrated care. The team is dedicated to embedding outcomes focussed research within all their initiatives and have already demonstrated strong outcomes with children and families statewide.



Meet some of our researchers

Professor Christel Middeldorp

Professor Christel Middeldorp has a conjoint appointment with the CHRC, UQ and Child and Youth Mental Health Service (CYMHS) CHQ. She is also affiliated to the department of Biological Psychology, Vrije Universiteit Amsterdam, Netherlands. Her research interests involve the role of genetic and other familial influences on the development and persistence of psychopathology across the lifespan. She is the Principal Investigator of the Behavior and Cognition working group of the EAGLE consortium (EARly Genetics and Lifecourse Epidemiology). EAGLE aims to identify genetic variants underlying the development and persistence of childhood psychopathology by using data from population based longitudinal child and adolescent cohorts from over the world. She further investigates associations between parental and offspring psychopathology and the development of these associations over time in a clinical cohort consisting of families with children treated at outpatient psychiatric services, who are followed longitudinally.



Professor Roy Kimble

Professor Roy Kimble is a paediatric surgeon at CHQ and Professor of Paediatrics at UQ. He established the Children's Burns and Trauma Research Group in 1999. The goal is to prevent children from sustaining traumatic injuries such as burns and to provide the best evidence-base for their treatment. The research aims to:

- identify ways to decrease the number of children with burns and traumatic injuries, and to implement these changes
- provide scientific evidence for existing treatments and develop novel wound healing treatments for better care of children suffering from burns; and improve the lives of all children suffering from burns or trauma.



Dr Andreas Schibler

Dr Schibler is an Intensive Care Specialist at CHQ and the visionary leader behind the Paediatric Critical Care Research Group. The group's research is multidisciplinary, interests include respiratory support in intensive care and anaesthesia, cardiopulmonary interaction, extra corporeal life support systems, follow-up of neurodevelopment post-PICU, sedation and delirium, genomics, severe infections, and traumatic brain injuries. Dr Schibler's research career spans two decades, having worked collaboratively with a number of distinguished research groups in and around Europe and Australia. Dr Schibler's research work has been presented at numerous national and international conferences, both as a presenter and as an invited speaker. Dr Schibler also supervises a number of postgraduate research students and continues to encourage and inspire the next generation of keen clinical researchers.



Dr Christopher Carty

Dr Christopher Carty has a scientific background in orthopaedic biomechanics and is the Clinical Research Manager in the Department of Orthopaedics at CHQ. He is also a Clinical Motion Analysis Consultant in the Queensland Children's Motion Analysis Services and a Mid-Career Advance Queensland Innovation Fellow at Griffith University. He works in collaboration with allied health and medical professionals in the Queensland Paediatric Rehabilitation Service and the Department of Orthopaedics to lead the development of research priorities and to provide research capacity building for staff. His research contributions to medical research and clinical service delivery have focused on the application of engineering principles in the clinical management of patients with movement disorders across the lifespan.



Associate Professor Jason Acworth

Associate Professor Jason Acworth established the Paediatric Emergency Research Unit (PERU) at CHQ, a participating centre in the Paediatric Research in Emergency Departments International Collaborative (PREDICT) Research Network. This collaborative research group supports large multi-centre projects, including randomised control trials. The PERU team chairs the Research Advisory Group in Emergency to facilitate the successful implementation of research projects within the Emergency Department and other departments. Research in Emergency is informed by clinical need, focusing on problems such as the need for imaging in children with suspected head or cervical spine injuries, and use of novel therapies for convulsive status epilepticus and acute respiratory failure.





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