2026 IMPACT REPORT



Research role in miracle survival story

How Bubba fought back from sepsis

The KIDS RESEARCH INSTITUTE AUSTRALIA

DISCOVER • PREVENT • CURE


KIDS
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Cover photo: Bubba Kaio Rerekura, 5, and her mum, Charky Kaio Rerekura

Left photo: Four-year-old Aiyla Clark at Perth Children's Hospital during National Science Week 2026

Our special thanks to those who have contributed to this report, including the researchers and families whose stories we have shared.

The Kids Research Institute Australia acknowledges Aboriginal and Torres Strait Islander people as the Traditional Custodians of the land and waters of Australia. We also acknowledge the Nyoongar Wadjuk, Yawuru, Kariyarra and Kaurna Elders, their people and their land upon which the Institute is located and seek their wisdom in our work to improve the health and development of all children.

New impact unit driving purpose and delivering outcomes

When we launched our Research Reimagined strategic plan, we made a profound commitment to the community: to deliver more impactful research, faster, in the areas where it is needed most. As Director of Innovation and Impact, I see the passion behind this promise every single day.

For all of us at The Kids, producing world-class research is fundamental—but it is no longer the final goal. We know that generating data isn't enough to change a child's life. Real change happens when those scientific breakthroughs leave the lab and are actively translated into real-world policies, treatments, interventions and practices.

To make this happen, we have fundamentally shifted how we work. We are building the conditions for impact-driven science by asking our researchers to start with the end in mind.

To do this, our work starts with community. Only by understanding the challenges and strengths of the children and families we serve can our research have the greatest impact. By listening to what matters most to them, we ensure our research responds to real, lived needs.

Our work is grounded in an understanding of who will use the research, what changes it can influence, and how we can fast-track discoveries into the hands of clinicians, educators, and families.

We cannot do this alone. True, lasting change for our children and families requires a village. We are incredibly proud to work in partnership with clinicians, governments, industry, philanthropy, and community organisations.

This coordinated, organisation-wide commitment to embedding impact throughout the entire research lifecycle is what sets The Kids apart in the medical research sector. We aren't just hoping for impact at the end of a project; we are designing for it from the very beginning.

Part of that commitment also means being honest and rigorous about measuring the difference we make.

This year, we focused on defining our institute-wide 'story of change'. By clarifying exactly how our research translates into real-world benefits, we can better track our progress, learn from our challenges, and continually strengthen our outcomes.

Real impact is a journey that requires time, collaboration, and continuous learning. By pairing our world-class science with an uncompromising focus on translation, we are making sure that the knowledge we create here delivers tangible, brighter futures for children and families now, and for generations to come. Thank you for walking this path with us.



Jenna Palumbo
Director of Innovation and Impact

From the desk of the Executive Director

At The Kids Research Institute Australia, we know that children are not small adults. Their biology and the way their bodies respond to medical conditions and to treatment, is very different.

That is why at The Kids, all our energy and expertise is focused on the health and wellbeing of children and their families. The challenges they face are bigger, more complex and more urgent than ever before.

I am proud to showcase the impact our research has had on the lives of kids and young people throughout 2026. Our scientists have helped to inform the national immunisation program, cutting infant hospitalisations for respiratory syncytial virus (RSV), they are improving detection of Group A Streptococcal particularly in remote communities, transforming care for kids with type 1 diabetes and collaborating with key partners to diagnose and support children with rare and undiagnosed diseases, and their families.

Perhaps one of the most profound stories in our Impact Report 2026 is that of young 'Bubba', a Perth girl whose life literally hung in the balance for weeks after a simple cut to her finger at the playground became infected with an antibiotic-resistant bacterium.

That Bubba is alive is testament to the incredible efforts of our valued partners at Perth Children's Hospital – the doctors and nursing staff who worked around the clock for weeks to keep her alive - and to a new frontier in science which is staring down the growing threat of antimicrobial resistance. You can read her story on page 10.

The use of phage therapy as part of Bubba's remarkable recovery illustrates the critical importance of medical research and the investment in science to solve some of the biggest challenges to the health and wellbeing of kids.

At The Kids, our researchers dedicate their careers to protecting and supporting the most vulnerable members of our community.

They are searching for less toxic and more targeted cancer treatment. They are developing SpritzOM, a nasal vaccine targeting otitis media. They are working to identify children's developmental delays early, so appropriate support can be put in place to enable kids to thrive. And in all our research, the health of Aboriginal and Torres Strait Islander children is everyone's business.



Health equity for disadvantaged and vulnerable populations is an important focus at the Institute. Kids everywhere have the right to grow up healthy and happy.

That is why we rally the brightest minds around the biggest, most complex challenges facing children. And we work closely with the communities around them because we know the best solutions happen when world-class science works together with the community and the partners we are serving.

At The Kids, we won't stop until every single child, regardless of their background, gets the start in life that they deserve. Because getting it right early changes everything.

Professor Caroline Homer AO
Executive Director

OUR IMPACT

25
Clinical trials

61
Non-clinical trials

We submitted
370
grant applications

Awarded more than
$100 million
in research funding

Researchers received
$3.3 million
from the WA Child Health Research Fund

OUR REACH

2,454 mentions in the media

We had
2.02 million
views on our social media channels

78 school groups
participated in our schools program

Over
15,000 students, kids and families
visited our **Discovery Centre**
and attended **outreach events**

Collaborated with over
65 community partners and organisations

OUR PEOPLE

822
Employees

188
Students

82
Volunteers

373
Honoraries

Our work was cited in

260

policy documents from

31

countries

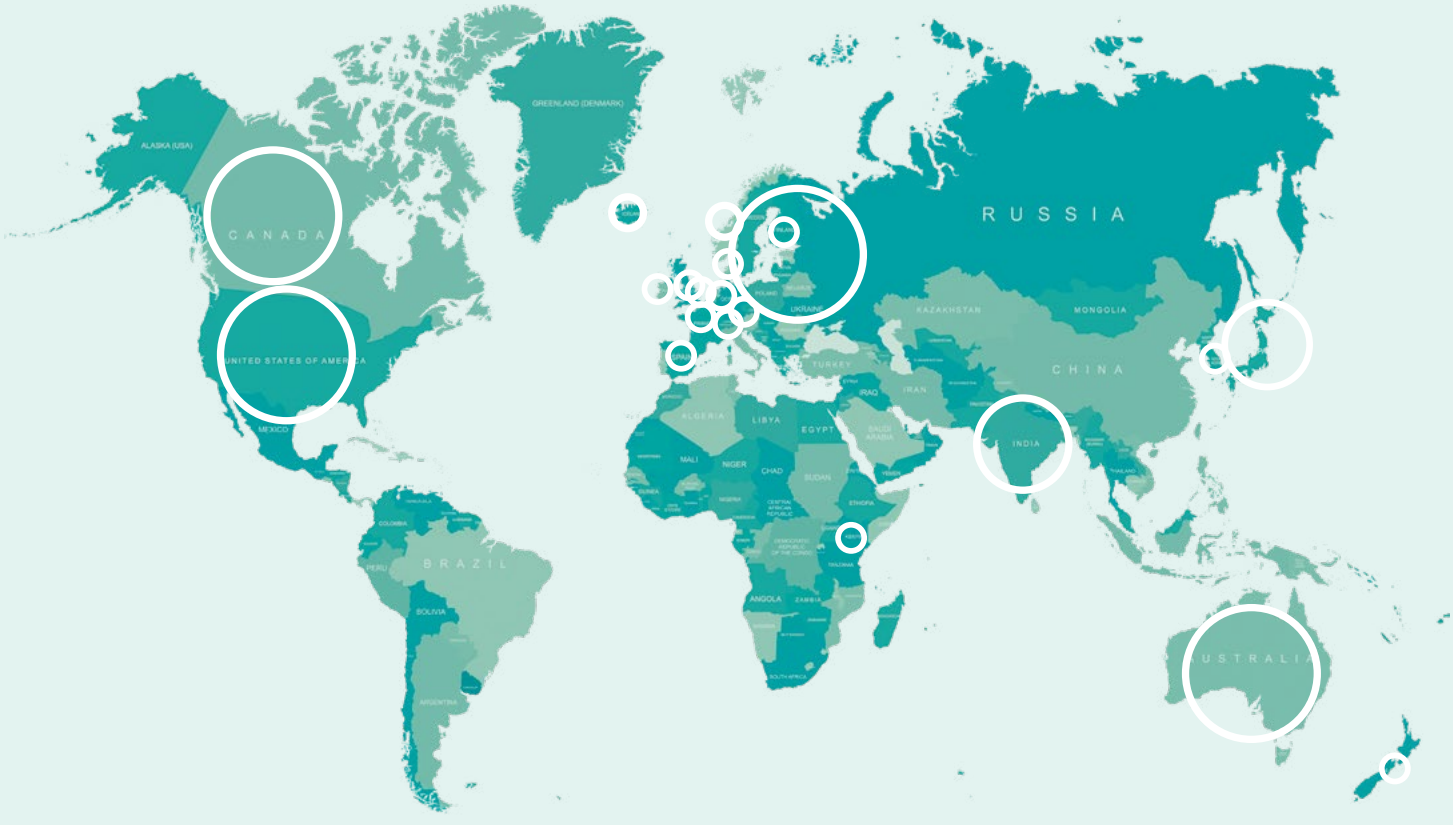
This includes

57 **policy documents published by Intergovernmental Organisations**

such as the World Health Organization, United Nations and World Bank

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TRANSLATING

Research that is put into policy or practice

Phage therapy, prayers and a Christmas miracle for beautiful Bubba



Bubba spent Christmas 2024 in hospital supported by her sisters and parents

A minor finger cut developed into life-threatening sepsis for Bubba Kaio Rerekura. Extraordinary efforts were undertaken by doctors to keep her alive, including the then three-year-old becoming the first child in Western Australia to receive phage therapy, an area of medical research targeting antibiotic resistant bugs.

In 2024, three-year-old Bubba Kaio Rerekura was the baby of her close-knit family, adored by her parents and three older sisters.

"She was chubby with piercing, beautiful dimples. Yeah, she was the queen of our family. She bossed all of us around," her mum, Mrs Charky Rerekura said.

Bubba loved fishing, camping, food and cuddles. But all that changed after a trip to the playground where she received a small cut to her finger. There were no immediate indications of anything sinister – but within days, she started complaining of a sore leg.

The pain progressed, a high fever set in, and Mrs Rerekura quickly took her to Midland Hospital, not knowing what the cause of the pain could be. They were soon rushed via ambulance to Perth Children's Hospital.

"It was hectic and so scary," Mrs Rerekura recalls. "I remember calling my husband and telling him something serious is happening. I hated the feeling of being in the ambulance with the lights on. Bubba was so scared, and for a mother to have to be strong in that moment, that was hard for me as well."

Bubba's condition quickly deteriorated. She was diagnosed with methicillin-resistant Staphylococcus aureus (MRSA) and her body was going into septic shock, with her organs shutting down.

"Not long after that, we were taken to a room and told we had five minutes to sign a medical treatment form because her heart was failing and her body wanted to die," Mrs Rerekura said.

"The next time we saw her, a few hours later, her chest was open and we could see her heart beating while a machine helped to pump her blood through her body to keep her alive – there are no words for how painful this was seeing our baby like this.

"I was wailing, screaming like, what is going on?"

Thanks to a Telethon-funded extracorporeal membrane oxygenation (ECMO) machine, Bubba received advanced life support that temporarily took over the functions of her heart and lungs during this life-threatening medical emergency.

Dr Anita Campbell, paediatrician at Perth Children's Hospital and an infectious diseases researcher at The Kids, said over several weeks, doctors performed numerous surgeries and therapies to try and get Bubba's infection under control.

"Sepsis is a life-threatening condition that occurs when the body's response to an infection causes damage to its own tissues and organs," Dr Campbell said.

"For children, severe sepsis can mean weeks or months in hospital, multiple surgical procedures, prolonged intravenous antibiotics and, in the most serious cases, life support.

"Antimicrobial resistance makes these infections difficult to treat and can limit our treatment options, prolong hospital stays, and increase the risk of poor outcomes."

After six weeks in a coma battling the deadly infection, Bubba's lungs were so damaged that the decision was made to completely remove her right lung. The muscle in her right leg was dying, and Mr and Mrs Rerekura were told on three occasions that Bubba's leg may need to be amputated.

Phage therapy option to try and save Bubba

Slowly running out of treatment options, Dr Campbell initiated and coordinated enrolling Bubba in a trial for phage therapy.

A medical treatment using bacteriophages - viruses that specifically infect and kill bacteria – phage therapy is still being developed but offers hope for patients with infections resistant to standard antibiotics.

Fearing that it may be one of their last options to save their daughter's life, Mrs Rerekura and her husband Thornton Rerekura signed up for the trial - and Bubba became the first child in WA to receive phage therapy.

"Accessing phage therapy is currently a complex process," Dr Campbell explained. "Unlike antibiotics, phages are highly specific to the bacteria they target.

"We were fortunate, however, to access an existing phage cocktail that tested susceptible to the *Staphylococcus aureus* bacteria through the STAMP study at Westmead Institute for Medical Research Laboratory led by Professor Jon Iredell."

The phage cocktail was urgently flown to WA as Dr Campbell navigated complex regulatory and approvals processes, to enable Bubba to receive the treatment.

Remarkably, within days of administering phage therapy, the sepsis infection started to clear.

"Without the phage therapy, the infection would have just eaten away at her good lung, and then she could have possibly died," Mrs Rerekura said. "She was moving her head. She was opening up her eyes. She could understand us. And that was the best feeling ever."

Dr Campbell acknowledged it was an incredible recovery, but notes Bubba was receiving multiple other treatments, surgeries, and world-class intensive care support at Perth Children's Hospital, supported by Telethon, at the same time.

"We were very encouraged by her progress following phage therapy, and her experience highlights why we urgently need more laboratory and clinical research to understand the contribution phage therapy can make to treating children with bacterial infections," she said.

Preparing for the future of phage therapy

As antibiotic resistance continues to rise, researchers are racing to find new ways to treat life-threatening bacterial infections.

By 2050, antimicrobial resistance (AMR) is predicted to become one of the leading causes of death worldwide, claiming up to 10 million lives each year. Traditional antibiotics are becoming less effective, while few new antibiotic classes have reached patients in recent decades.

At Phage WA, based at The Kids, researchers are developing another option. Bacteriophages, or phages, are naturally occurring viruses that infect and kill specific bacteria while leaving human cells unharmed.

Over the past several years, researchers at The Kids have built an extensive library of phages collected from the environment and screened for their therapeutic potential. While more than 2,500 phage samples have been identified, not all are suitable for use in patients.

Through detailed laboratory and genomic testing, the team has narrowed this collection to more than 250 highly characterised phage candidates considered suitable for therapeutic development. These candidates represent years of work to identify phages that are safe, effective and capable of targeting some of the most challenging drug-resistant bacteria.

The next challenge is translating those discoveries into medicines that can be manufactured to the rigorous standards required for patient use.

Working closely with Cell and Tissue Therapies WA (CTTWA), Phage WA researchers are helping develop the processes needed to manufacture phages under Good Manufacturing Practice (GMP) conditions. These practices are the internationally recognised standard used to produce medicines safely and consistently.

This work positions Western Australia at the forefront of phage therapy research and development.

"Rather than waiting for regulatory requirements to be established, we are proactively developing GMP-aligned manufacturing processes and quality systems that reflect emerging expectations from regulators around the world," said Dr Daniel Laucirica, Acting Assistant Team Head of Phage Manufacturing Facility.

By preparing now, the team is helping create a pathway from laboratory discovery to real-world patient access, ensuring promising phage therapies can move more quickly into clinical trials with the ultimate hope of routine care.

"Ultimately, it's about de-risking phage treatment and ensuring quality for the end user" , said Dr Laucirica.

Importantly, The Kids' role extends beyond discovery. Researchers are helping identify the best phages for treatment, informing future manufacturing, and preparing to study how patients respond to phage therapy once it is delivered.

By connecting phage discovery, manufacturing and clinical research, Phage WA is laying the foundations for a new generation of treatments against antibiotic-resistant infection and helping ensure patients have access to safe, high-quality phage therapies.

Despite the sepsis clearing, Bubba was not out of the woods. The huge amount of damage left behind in Bubba's body was proving impossible to overcome.

"Four days before Christmas, we were woken at 3am and told to spend as much time as we could with Bubba and to pray for a miracle because the doctors and nurses had done all that they could," Mrs Rerekura said.

The family set up a vigil by her bedside, bringing in the friends and family that make up their close community. They sung, danced and celebrated Bubba, willing her to improve and wake up.

"And on Christmas morning, her vitals were improving and she started making little movements. The doctors couldn't believe what they were witnessing - she was our Christmas miracle."

It took 65 days for Mr and Mrs Rerekura to be able to hold their little girl again, and three-and-a-half months before Bubba could be discharged from hospital.

The first night back home, Mrs Rerekura will never forget.

"As a family we all slept in the lounge together. Her sisters next to her. It was just so wholesome. It was just like - I got my girl home! She's healthy. She's with her sisters. She's here."



Bubba on the path to recovery

Long journey back to health

Bubba had 12 major surgeries, with most of them being life-threatening due to sepsis. She has multiple scars from her open chest procedure, her rib cut, her right lung removed, and half of her right calf muscle cut off.

"She had to learn to breathe on her own again, to walk, talk and eat again - it has been a tough journey, but we are so grateful and blessed that she is here with us today," Mrs Rerekura said.

Bubba – now aged five – shows no signs of letting the infection stop her. She does martial arts and is back to swimming, fishing and playing with her sisters.

Her mother said that their experience taught them that sepsis could happen to anyone, and the results could be catastrophic.

"I didn't know anything about sepsis prior to what happened to Bubba, so I think further research and awareness is really important, especially around providing clinicians with the ability to diagnose sepsis as early as possible – this could save other families from going through the heartbreak we experienced."

Mrs Rerekura is also a strident advocate for further investment and clinical trials to progress phage therapy in WA.

Associate Professor Anthony Kicic, Phage WA lead at The Kids, said the Institute and Royal Perth Hospital were developing Australia's only dedicated Good Manufacturing Practice (GMP) bacteriophage manufacturing facility for pharmaceutical use.

"For children like Bubba, the hope is that doctors will have more options when a serious bacterial infection is difficult to treat with antibiotics. Every child's situation is different, and phage therapy is not a promise of a cure, but with continued research and support, it could become an important part of the treatment toolkit," Associate Professor Kicic said.

Associate Professor Kicic has been supported by the Rothwell Family Foundation. CFWA and Conquer CF have also supported phage research.

Protecting little lungs: The research helping turn the tide on RSV

Respiratory syncytial virus (RSV) is a leading cause of hospitalisation in babies and young children, but more than two decades of research at The Kids is helping change the outlook for families.

From evaluating the effectiveness of Australia's national RSV Maternal and Infant Protection program to identifying gaps in protection and informing changes to immunisation policy, our researchers are helping shape how we protect babies against severe RSV disease.

Their work is already delivering measurable results, with new research showing significant reductions in RSV-related hospitalisations and helping ensure more babies receive protection when they need it most.

Turning research into real-world protection

The introduction of Australia's dual RSV immunisation program in February 2025 marked a major milestone in protecting babies against the virus. Offering free vaccination during pregnancy and the monoclonal antibody nirsevimab for eligible babies, the program builds on more than two decades of research, modelling and collaboration involving The Kids and its partners.

In one of the first major national evaluations of the program, researchers from The Kids, the National Centre for Immunisation Research and Surveillance and Monash University found RSV-associated hospitalisations fell by 43.8 per cent among babies under three months in its first year.



Mum Katrina Cygler with her one-year-old son Hugo Brown and Dr Ushma Wadia

The study, involving 13 hospitals across Australia, also found maternal vaccination was 80 per cent effective at preventing RSV hospitalisation, while nirsevimab was 90 per cent effective.

Together, the findings show how complementary immunisation strategies are reducing severe illness and helping spare families the distress of a hospital stay.

Strong protection from pregnancy through infancy

In August, our Vaccine Trials Group (VTG) provided further evidence of the protection offered by maternal RSV vaccination through the STREETON study.

The national study analysed 1,012 infants hospitalised with acute respiratory illness across nine Australian hospitals. It found maternal vaccination was 80.8 per cent effective against RSV-associated hospitalisation and 80.4 per cent effective against hospitalisation for severe RSV-related lower respiratory tract disease.

Protection remained high regardless of when the vaccine was administered within the recommended pregnancy window (from 28 weeks gestation) or whether it was given alongside other routine maternal vaccines.

The findings reinforce the role of maternal RSV vaccination in routine antenatal care, giving expectant parents and healthcare professionals confidence in its ability to protect babies from serious illness.

VTG Co-Head Dr Ushma Wadia, who led the research, said the findings demonstrated that Australia's RSV prevention program was delivering on its promise to protect young babies from serious illness.



Dr Ushma Wadia

"The findings give general practitioners, obstetricians, midwives and families confidence that we have an effective RSV prevention strategy to reduce the burden of severe RSV-related disease in our youngest babies," Dr Wadia said.

Research drives expanded protection for WA babies

Research at The Kids also helped shape an expansion of Western Australia's RSV immunisation program, providing additional protection for babies born outside the traditional RSV winter season.

Studies found spring and summer-born babies can experience their highest rates of RSV hospitalisation after six months of age, when protection from maternal vaccination has begun to wane.

In response, the Department of Health expanded its program in April 2026 to offer these babies an additional infant immunisation, regardless of whether their mother received the RSV vaccine during pregnancy.

The change demonstrates how our research is informing targeted immunisation strategies to protect babies as their risk of severe RSV disease changes with age.

A healthier start for more babies

As RSV continues to cause significant illness in young children, our researchers are generating the evidence needed to strengthen immunisation programs and improve protection. Their research is helping maximise the impact of existing prevention strategies, address gaps in protection and ensure all children have equitable access to effective protection, regardless of where they live or receive healthcare.

NEXT STEPS

Surveillance through PAEDS-FluCAN is ongoing and will inform future research to better understand how long protection from immunisation lasts and how the program performs over multiple RSV seasons.

FluCAN and PAEDS networks are funded by the Australian Department of Health, Disability and Aged Care.

Knowledge that nourishes communities

A simple question from Kimberley communities helped reshape an entire research program.

Originally focused on vitamin D, the project invited Aboriginal people to share knowledge about traditional foods, nutrition and life on Country. But community members wanted something more.

"Why just look for vitamin D? What other vitamins and nutrients are in traditional foods and why are they good for us?"

That question became a turning point.

Researchers listened, secured additional funding and expanded the scope of the work. What began as the *Bush Tucker, Safe Sun Exposure and Vitamin D project* evolved into *Connecting with Country for Healthy Eating*, a community-led project focused on understanding the nutritional value of traditional foods while preserving and strengthening cultural knowledge.

For John Jacky, Community Researcher at The Kids, the project is about much more than food.

"For our people, traditional food is much more than something to eat," explains Mr Jacky.

"Going out on Country, knowing the seasons, hunting, gathering and sharing food with family all contribute to good health. They strengthen culture, connection and wellbeing."

Across the West Kimberley, Elders, community members and researchers have worked together to document stories about traditional foods, seasonal harvesting practices and the connections between Country, culture and wellbeing. Through yarning, trips on Country and learning from Elders, knowledge that communities identified as important to preserve is being shared with future generations.

One of the strongest messages to emerge has been that health is deeply connected to Country.

Community members spoke about the importance of gathering food in season, taking only what is needed, sharing with others and maintaining strong connections to family, community and place. These stories highlighted that traditional foods support not only physical health, but also cultural, social and spiritual wellbeing.

Alongside this knowledge-sharing work, the project has generated valuable new evidence about traditional foods. More than 70 samples of fish, seafood, bush fruits and land animals from across the West Kimberley have been collected and analysed by the National Measurement Institute in Melbourne to better understand their nutritional composition. Findings from these analyses have been shared back with participating communities.

According to Chief Investigator Professor Lucinda Black from Deakin University, the project demonstrates the power of genuine partnership.

"One of the most important outcomes of this project has been seeing community shape the research itself," Professor Black said.



Bush fruits of the West Kimberley



Fishing spears on Karajarri Country

"That advice changed the direction of the overall research program and made the research stronger."

Importantly, communities have also determined how knowledge should be preserved and shared, ensuring the benefits of the project extend well beyond the life of the research.

Working alongside Elders, community members, schools, ranger groups and local organisations, the team co-created flipcharts that brought together stories about hunting, gathering, preparing and enjoying traditional foods, alongside information about the nutritional value of the foods and healthy eating.

On Bardi Jawi Country, local artists Samina Manado and Parker Yibarkin designed the artwork for sun shirts and hats, with guidance and support from Christ the King School principal and renowned graphic artist and designer Mrs Sharon Le Ray. The artwork tells stories of the six seasons, sustainable food gathering practices and the seven custodian



Left to right: Janine McNamara, Shannon Owen, Lucinda Black, John Jacky, Philomena Manado, Samina Manado, Vincent McKenzie

clans. A film was produced, featuring stories shared by Elders on Country, along with a photobook documenting the making of the film as part of the research process. A mural artwork was created by Samina Manado featuring traditional foods and seasonal knowledge.

On Karajarri Country, artwork was designed by community members and printed on sun shirts and hats, telling the stories of the six seasons and when to hunt and gather food sustainably. Sun shirts and hats, made with fabric that provides protection from the sun, were provided to community members and local rangers to encourage safe sun protection.

"A lot of this work is about making sure important knowledge remains strong," Mr Jacky said.

"Elders have shared stories about traditional foods and the right way to harvest, prepare and share them. Capturing those stories means future generations can continue learning from them."

Professor Black said the project was always about more than collecting data. It was important that communities could use the knowledge generated by the research.

NEXT STEPS

New community-driven resources, including a comic about goanna hunting and its cultural significance, drawn by local artist, Michael Jalaru Torres of Jalaru Photography, are currently being co-created.

Vincent McKenzie (Community member), John Jacky, and the research team, have been invited to showcase the project at the Nutrition Society of Australia Annual Scientific Meeting in Melbourne in December.

This research was funded by the National Health and Medical Research Council (GNT1184788) and the Medical Research Future Fund (MRF2024985). The community researcher program is supported by INPEX.

Rapid Strep A tests unlock missed infections, offers new way to prevent rheumatic fever

New research has revealed that point of care testing can significantly improve Strep A pharyngitis detection, unlocking a major chance to prevent rheumatic fever by identifying infection early.

The study, led by the Wesfarmers Centre of Vaccines and Infectious Diseases (WCVID) based at The Kids, found that rapid molecular testing identified substantially more Group A Streptococcal (Strep A) infections than traditional diagnostic pathways, which rely on symptom-based presentation and laboratory culture.

Published in *CMI Communications*, the research highlights a critical gap in current models of care – particularly in remote and resource-limited settings – where limited clinical access or delays in laboratory testing can result in missed or untreated infections.

To better understand how Strep A spreads and persists, researchers conducted repeated throat swabs in school-aged children in Western Australia's Kimberley region using both culture and rapid molecular point-of-care testing (POCT) to detect infections regardless of symptoms and track changes over time.

The findings revealed a highly dynamic pattern of infection, with children frequently moving between positive and negative results. Crucially, many infections detected through POCT would likely have been missed under standard clinical approaches because the children had low grade symptoms and were well enough to be at school. Relying on the patient to attend the clinic for assessment and report a sore throat without a checklist and rapid testing will miss these opportunities for prevention.

A substantial portion of Strep A infections were found in children who did not report a sore throat, reinforcing that symptom-based diagnosis alone cannot capture the true burden of disease or interrupt transmission.

Professor Asha Bowen, Head of WCVID's Healthy Skin and Acute Rheumatic Fever Prevention team, said the study provided one of the clearest pictures yet of how Strep A behaved in children at high risk of rheumatic fever.



Broome's St Mary's College student Danielle Genkinraj, with Dr Janessa Pickering



Dr Janessa Pickering (left) with Professor Asha Bowen

'Our study aimed to find out some of the missing pieces of information that doctors need to prevent rheumatic fever," Professor Bowen said. "We found that rapid Strep A tests worked well in schools, and that Strep A detection in throats is common in school-aged children. We were surprised to find out how many children were at school and not at the clinic with a Strep A sore throat.

"Their symptoms were not bad enough to bother them but could place them at silent risk of rheumatic fever, which can progress to rheumatic heart disease (RHD), a devastating condition we are working to prevent."

The findings are part of the Missing Piece Surveillance Study, which revealed that one in six children in the Kimberley had Strep A detected in their throat at any given time, with more than half experiencing no noticeable symptoms.

The results have informed START Strep A, a MRFF-funded national study led by Professor Bowen and Professor Rebecca Guy from The Kirby Institute at the University of New South Wales. START Strep A will evaluate the use of Strep A point of care testing across 30 remote clinics in Australia.

The Missing Piece Surveillance Study highlighted the value of working in partnership with regional and remote communities, schools and Aboriginal community controlled health organisations to deliver testing in ways that are accessible, culturally responsive and centred around families.

By bringing screening to schools, the approach supported the earlier identification of infections and complemented existing care.

Read more on page 21.

Combining health and wellbeing with the arts a boon for young creatives

The success of a program that helps arts organisations focus on young participants' social and emotional wellbeing (SEW) could see it extended beyond the sector.

The Healthway-funded SEW-Arts Project by researchers at The Kids has supported arts organisations to embed SEW into their programs for the past five years.

Organisations including the WA Youth Theatre Company, WA Opera, WA Ballet, WA Youth Orchestra, Spare Parts Puppet Theatre and CircusWA have participated in the project.

The reach has since extended beyond the State's leading arts bodies to include regional hubs, community-run sites, local councils and youth support services that use the arts to engage and support young people.

A framework, developed in consultation with industry, was passed on to participating organisations, who had the flexibility to adapt it for their environment.

Arts organisations have used the framework in different ways – one focussed on helping young people manage the pressure of performance while another used it to turn young people into mentors. Other organisations hired wellbeing coordinators to focus on social and emotional wellbeing.

Among the findings were that the project strengthened young people's social and emotional knowledge and skills through arts-based practice and built the confidence and capacity of practitioners to provide support. Importantly, it also created a scalable, evidence-informed model with application beyond the arts.

"In the beginning we very quickly found out that arts organisations were already thinking about SEW in a very intuitive way," Senior Research Fellow Dr Leanne Fried said.

"They recognised they were doing great things in that space but didn't know how to articulate it."

Project Coordinator Sarah Falconer said one of the findings was the organisations finally had the language to express what they were doing well.



Jack, 15, and Tycho, 14, participating in CircusWA

Opportunities for self-expression and emotion regulation, reframing mistakes as key parts of learning, providing autonomy and focusing on the process rather than the end product were just some of the wellbeing supports the organisations provided for young people. The framework helped organisations implement these supports with greater intentionality.

"In the initial stages, we were creating the momentum – we now feel like that's flipped – they've taken on the framework because they recognise the importance," Ms Falconer said.

"That's the change that you want to see."

NEXT STEPS

- The framework will be translated and expanded to more Healthway-backed programs.
- Participating arts organisations will be supported to evaluate how successfully SEW has been embedded into their programs.
- The SEW-Arts team will look to move into arts on prescription, supporting young people who have been hospitalised.

This project is funded by Healthway.

Study finds high number of Strep A infections undetected

An alarming number of Group A Streptococcal (Strep A) infections are going unnoticed throughout classrooms in Broome and Derby, according to a major study by The Kids Research Institute Australia.

Published in *PLOS Global Health*, the Missing Piece Surveillance Study found that one in six kids living in Western Australia's Kimberley region had Strep A detected at any one time in the throat or skin and, in more than half of cases, there were no noticeable symptoms.

Recurrent, untreated Strep A infections of the throat or skin can lead to acute rheumatic fever (ARF) and rheumatic heart disease (RHD) – life-threatening illnesses that disproportionately affect young Aboriginal and Torres Strait Islander people living in remote areas of Australia and can lead to a reduced life expectancy of around 40 years.

Professor Asha Bowen, Head of the Healthy Skin and ARF Prevention team at the Wesfarmers Centre of Vaccines and Infectious Diseases (WCVID), based at The Kids, said the study set out to learn more about the missing pieces in the prevention of ARF.



Teake Puertollano from St Mary's College in Broome was one of the participants in the Missing Piece study

"We wanted to know whether it was skin sores or sore throats, or both, that were resulting in ARF, and we were also interested in finding out what symptoms kids were experiencing, what types of Strep A were causing infections, and what the antibody responses were to the infections," Professor Bowen, who is also a Paediatric Infectious Disease Specialist at Perth Children's Hospital and Professor at The University of Western Australia's Medical School, said.

"Working in partnership with the Catholic Education Office of Western Australia, Broome Aboriginal Medical Service and Derby Aboriginal Health Service, we conducted weekly visits with 250 kids from St Mary's Primary School in Broome and Holy Rosary School in Derby over a three-year period to check for sore throats or skin sores.

"After analysing 1000 throat swabs, 200 skin swabs and 400 blood samples in our Perth laboratory, we discovered there were significantly more cases of Strep A circulating than first thought.

"Almost 30 per cent of children coming to school in the Kimberley reported one or more sore throat symptoms, using a sore throat checklist uniquely developed with Broome families for the Missing Piece Study, and around 15 per cent of kids had skin sores.

"The high rate of infection is certainly concerning, as we know when kids are at school, they pass Strep A around to each other, and we were also able to detect Strep A on some surfaces within the classroom.

"This information provides us with an important opportunity to intervene as there are many things we can do to prevent Strep A, including focusing on hygiene, ensuring children with sore throats are encouraged to go to the clinic for treatment and not sharing close spaces," Professor Bowen said.

Dr Janessa Pickering, lead author and Research Fellow at the WCVID, said the study highlighted that children with Strep A would most likely show no symptoms of infection.

"This is important as asymptomatic Strep A infections have been shown to be a key contributor to Strep A transmission and could be a vital missing link in the global conversation around RHD prevention," Dr Pickering said.

Mrs Shelley Kneebone, Chief Executive Officer at Derby Aboriginal Health Service, said she was very concerned by the number of kids who tested positive but didn't have symptoms.

This work was supported by The END RHD Centre for Research Excellence (National Health and Medical Research Council (NHMRC) of Australia and the Government of Western Australia (Western Australian Child Research Fund) Professors Asha Bowen and Jonathan Carapetis are supported by NHMRC Investigator Awards. Dr Janessa Pickering was supported by the NHMRC HOT NORTH CRE Early Career Fellowship and the Stan Perron Charitable Foundation Fellowship. This work was partly funded by the Maurice Wilkins Centre for Molecular Biodiscovery.

Digital research helping to encourage kids to walk and ride to school

A powerful new digital modelling tool is helping tackle an emerging challenge in children's health – the dramatic decline in walking and cycling to school.

Developed by researchers at The Kids and Curtin University, the NumbAT Web Platform allows urban planners, schools and families to visualise how neighbourhood infrastructure changes could shift school trips away from cars and towards active transport.

Using advanced geospatial modelling, the team has created an interactive simulation platform that shows how changes such as bike lanes, safer crossings and improved street connectivity could influence how families travel to school.

The project addresses a major public health concern. In Perth, the proportion of children walking or riding to school has fallen from around 75 per cent in the 1970s to about 20 per cent today, with most students now driven to school.

Professor Pete Gething, Head of the Child Health Analytics team at The Kids and a John Curtin Distinguished Professor at Curtin University, said the project provided a practical, evidence-based way to support healthier communities.

"We built a simulator that allows us to create scenario-based cases and ask: if we improve infrastructure around school environments, what change would we expect to see in how people travel to and from school?" Professor Gething said.

The research analysed travel patterns across hundreds of metropolitan public primary schools and found car travel now accounts for more than half of school trips.





Professor Pete Gething



However, the modelling also revealed significant opportunities to increase active travel through targeted infrastructure improvements.

"Even if you build bike lanes across the whole city, if families don't perceive them as safe enough, they won't use them."

A key finding of the study is that school travel behaviour varied significantly between neighbourhoods, highlighting the need for tailored, local solutions rather than one-size-fits-all policies.

"Every neighbourhood is different, which means blanket policies across a city don't always work," Professor Gething said.

"Different schools have different surrounding infrastructure, housing density and access routes, and those factors shape how families travel."

At the centre of the project is the NumbAT Web Platform, a publicly accessible digital tool that allows parents, schools, urban planners and policymakers to explore neighbourhood travel data and test infrastructure scenarios.

Users can visualise factors such as distance to school, route directness, intersections and traffic exposure, and simulate how improvements like bike lanes, safer crossings or traffic restrictions could influence school travel patterns.

Beyond supporting existing communities, the platform could also guide future housing developments by showing how neighbourhood design can encourage more children to walk or ride to school.

The 'Smart Walking and Cycling: Active Travel to School Simulator' research project was funded by a Healthway grant and was undertaken in collaboration with the WA Department of Transport and Major Infrastructure.

Left: Siblings Matthew, 11, Philippa, 7 and Bobby Parkinson,10 enjoy riding to school

Climate change predicted to cause more than 500,000 malaria deaths in Africa by 2050

Across Africa, decades of progress against malaria could be threatened by a new and growing challenge: a changing climate that damages the very systems keeping the disease under control.

New research led by The Kids and Curtin University has found that under a middle-of-the-road climate scenario, climate change could contribute to more than 500,000 additional malaria deaths and more than 100 million additional cases by 2050, including a devastating impact on children.

The study revealed that the greatest threat may not come from gradual changes in temperature and rainfall that affect mosquito and parasite behaviour, but from the increasing frequency and severity of extreme weather events such as floods and cyclones. These events could destroy homes, damage mosquito-control tools, disrupt health services and delay access to life-saving diagnosis and treatment.

Researchers estimate that, if unmitigated, the disruptive impacts of floods and cyclones could account for 79 per cent and 93 per cent of climate-driven increases in malaria cases and deaths respectively over the next 25 years, far outweighing the more commonly studied ecological effects of climate change on malaria transmission.

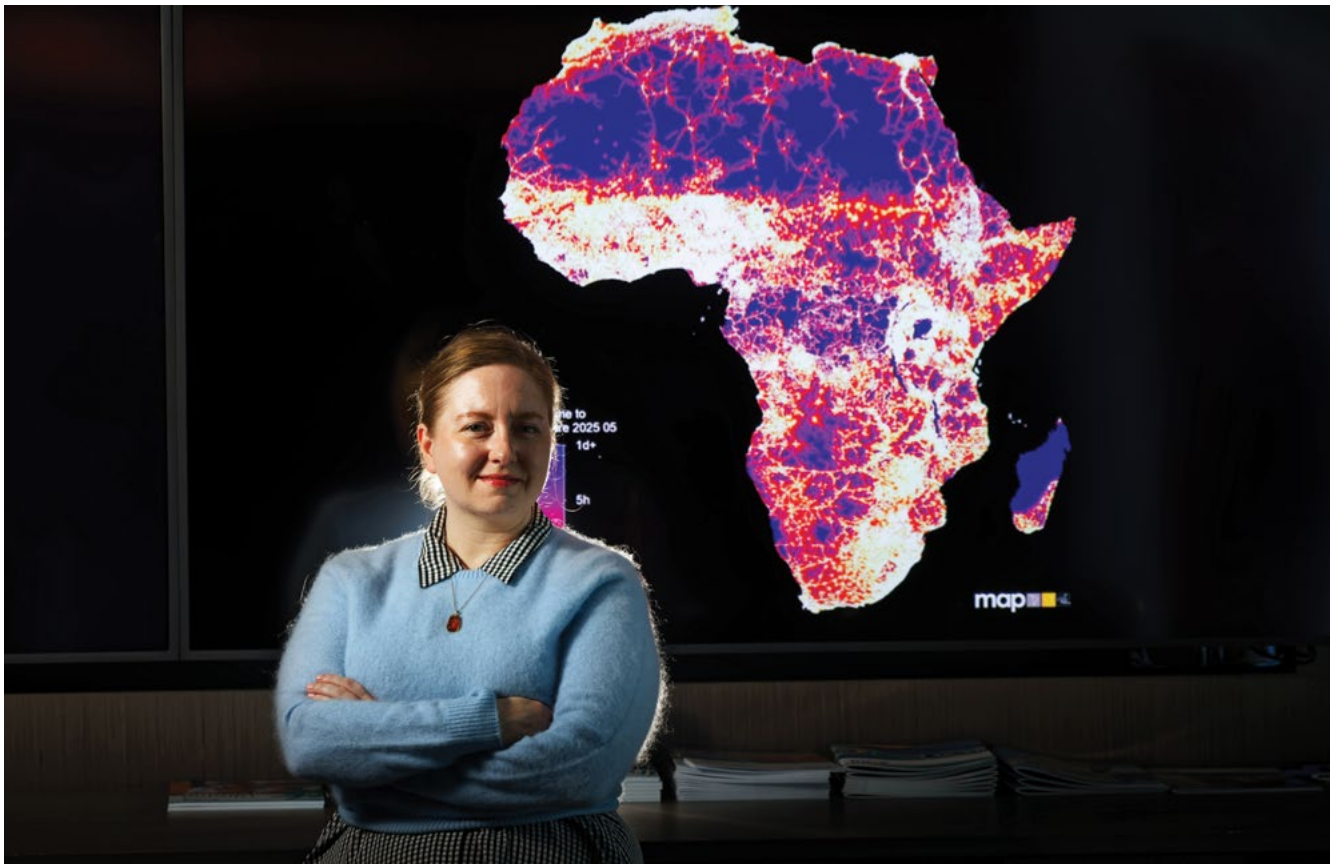


The world-first modelling study, published in *Nature*, analysed 25 years of data on climate, malaria burden, control interventions, socioeconomic indicators and extreme weather patterns across Africa. Using a statistical modelling framework linked to climate projections, researchers were able to quantify both the ecological effects of climate change and the disruptive impacts of increasingly frequent and severe extreme weather.

While rising temperatures and changing rainfall patterns do influence malaria transmission suitability, the study revealed projected changes in these ecological effects were relatively modest at the continental scale by the mid-2050s.

Across much of Africa, malaria transmission is already ecologically possible, but the current burden is kept far lower than it would otherwise be by housing improvements, mosquito control, and access to effective treatment.

This study showed the largest projected increases in malaria burden will not arise from small changes in suitability, but when floods and cyclones damaged homes, ruined bed nets, and interrupted access to timely diagnosis and treatment. If unmitigated, such disruptions could persist for months or even years after an extreme weather event, leading to increases in malaria burden.



Associate Professor Tasmin Symons

Lead author Associate Professor Tasmin Symons – a member of the Malaria Atlas Project (MAP), a research group based at The Kids, Curtin University and Ifakara Health Institute in Dar es Salaam in Tanzania – said the findings challenged prevailing assumptions about how climate change threatened malaria control.

"Most previous studies have focused on how climate change affects mosquitoes and parasites in isolation," Associate Professor Symons said.

"What we show here is that the greatest climate threat to malaria control in Africa comes from disruption, when extreme weather repeatedly damages the housing, health services, and interventions that suppress transmission.

"While changes in transmission ecology are real, they are comparatively small. When those changes are combined with repeated disruption to malaria control, the impacts become substantial, potentially resulting in more than 100 million additional cases and hundreds of thousands of additional deaths over the next 25 years."

Associate Professor Symons said the results underscored the need for climate-resilient malaria strategies, including stronger emergency preparedness, faster recovery of health services after disasters, and malaria control tools that are less vulnerable to climate shocks.

"If global ambitions for accelerated malaria reduction and eventual eradication are to remain achievable, climate resilience must be built directly into malaria policy and health system planning," she said.

This research was supported by funding from the Gates Foundation and a National Health and Medical Research Council Investigator Grant. It was conducted in collaboration with Boston Consulting Group.

Innovative new digital platform transforming diabetes care

Families across Western Australia are managing their type 1 diabetes (T1D) easier, thanks to a first-of-its-kind app developed at the Rio Tinto Children's Diabetes Centre based at The Kids and Perth Children's Hospital (PCH) .

The Patient Portal is the first of three portals that form part of the groundbreaking new DiabHQ platform. The DiabHQ Patient Portal, which has been described as a one-stop-shop for families' diabetes needs, has been co-designed with consumers and includes a range of functions to support diabetes management.



Danae Johnston and her son Jack Johnston (11) using the DiabHQ Patient Portal

Professor Liz Davis, Director of the Rio Tinto Children's Diabetes Centre and Head of the Diabetes and Endocrinology Department at PCH, said that living with T1D was exhausting and unrelenting for the child and family, but the new app would take some of the burden away.

"Diabetes generates an enormous amount of data, including readings from glucose sensors and insulin pumps, and this can be overwhelming," Professor Davis said.

The DiabHQ Patient Portal will help families to make sense of the data and make decisions that lead to the best outcome for their child. Our goal is for these families to live happy, healthy lives and reduce the stress and burden for them.

DiabHQ brings together different types of diabetes data and information including clinical records, pathology results, appointment details and survey results. As well as patients and families, clinicians and researchers will be able to access the digital platform through customised, interconnected portals that enable data-driven care and accelerated research and translation.

"By bringing this data together, clinicians will be able to understand the needs of their patients more effectively, and researchers will be able to recruit patients to trials and access de-identified data more quickly," explained Professor Davis.

Danae Johnston's son Jack (aged 11) was diagnosed with T1D three years ago. Danae said the diagnosis has been life changing for the family but believed the DiabHQ Patient Portal was a gamechanger in their journey.

Jack is one of thousands of Australian children living with T1D who needs regular insulin via injections or a pump to stay alive. His glucose levels need to be closely monitored to maintain them within a safe range. Everyday Jack and his family have to carefully manage his diabetes to reduce his risk of both short- and long-term complications.

"Having the Patient Portal app means we have access to diabetes resources and all the information that we need in one place. We can view Jack's health data, manage his appointments, learn about new technologies and receive alerts about research opportunities. It allows us to connect with clinicians and researchers," Danae said.

"Ultimately it's easing the burden for us and improving the mental health, physical health and quality of life for our children."



The DiabHQ app on the phone

NEXT STEPS

- The DiabHQ team has been awarded a second round of funding from the Stan Perron Charitable Foundation to expand the DiabHQ digital platform. It will further strengthen self-management through features such as mental health tracking, personalised learning pathways, advanced data visualisation, and integration with wearable devices and continuous glucose monitoring systems.
- The team will also begin co-design of the Clinician and Researcher Portals to create a shared data platform that connects patients, clinicians, and researchers. This will accelerate research and translation, enable data-driven care, and continue to empower families in their diabetes management.

This groundbreaking new project is made possible thanks to the generous support of The Stan Perron Charitable Foundation and Rio Tinto.



GAME CHANGING

Research that changes the way we think

Simple SMS 'nudge' a powerful prompt to parents for timely vaccinations

A clinical trial has found that sending a text message 'nudge' was effective at reminding parents of upcoming vaccinations, and it could change the way reminders are delivered to improve health behaviours.

Throughout 2021 to 2024, 10,000 families participated in the AuTOMATIC trial – thought to be the most automated clinical trial ever conducted.

Researchers at The Kids partnered with 20 general practice clinics across Australia to see if simple text message reminders could be an effective tool for prompting parents to book in for their child's vaccinations.

Professor Tom Snelling, Head of Infectious Disease Implementation Research at The Kids, and Head of Health and Clinical Analytics at The University of Sydney, said that about 20 per cent of Australian children are late in receiving critical vaccinations.

"Previous research has shown us that parents are very supportive of vaccination and are most likely to complete the schedule on time through to 12 months old, but by 18 months and four years, many children begin to fall behind," Professor Snelling said.

"We understand that family lives are very busy, so we wanted to see if a simple text message could increase the number of children receiving their vaccinations on time."

More than 20,000 text messages were sent to Australian parents as part of the AuTOMATIC trial with researchers evaluating the effectiveness of sending the reminders at a variety of time periods before and after vaccinations were due, as well as different types of message content.

All text reminders were successful in increasing timely vaccination rates compared to no text reminder.

"A unique aspect of this study was that every single element was designed to be digitally automated, from sending the SMS reminders right through to the data analysis – making this a simple, effective and low-cost strategy that could be easily implemented at GP clinics," Professor Snelling said.

"The SMS reminders came directly from the GP clinics, and I believe this played an important role in the successful outcome as parents respond positively to a trusted, credible source of information.

"These results also suggest potential for using SMS reminders to improve health behaviours for other GP-led public health programs, like reminding people to undergo blood pressure checks or cancer screening," he said.

Mrs Catherine Hughes, Honorary Community Co-Researcher at The Kids and Executive Director of the Immunisation Foundation of Australia, said many parents are unaware of the importance of vaccinating their children on time.

"Australia's National Immunisation Program has been expertly designed to ensure children receive maximum protection at the exact time they need it most, so delaying scheduled immunisations by weeks or months can leave a child at serious risk of life-threatening diseases," Mrs Hughes said.

"This is more important than ever in the current global situation, where vaccine hesitancy is growing and many countries around the world are losing their measles-free status - Australian toddlers receive full protection against measles at their 18-month immunisations so it is essential they receive it on time.

"In the future, I would like to see this strategy used to 'nudge' parents into accessing the flu vaccine, not just for their children but for themselves as well – this would go a long way in tackling the dangerously low uptake rates we are currently seeing," Mrs Hughes said.

This research is part of the Wesfarmers Centre of Vaccines and Infectious Diseases at The Kids and was supported by the Ramaciotti Foundation.



Mother of two, Felicity Bond, appreciates the SMS vaccination reminder

NEXT STEPS

This research has been used to help inform several state and health district-based vaccination reminder programs, including WA and the NSW Digital Baby Book.

The research team is planning AuTOMATIC 2.0 which will aim to test the infrastructure and approach for other immunisations – such as the flu vaccine - and for health prevention communication strategies.

Early warning on impact of climate change on the human body

Rising carbon dioxide (CO_2) levels are being detected within the human body, with new research warning a key blood marker for the gas could near its healthy limit within decades if current trends continue. The findings are especially relevant for children and adolescents, whose developing bodies will experience the longest cumulative exposure to rising atmospheric CO_2.

In a study published in *Air Quality, Atmosphere and Health,* researchers from The Kids, Curtin University and The Australian National University (ANU) analysed more than two decades of U.S. population data and found steady shifts in blood chemistry that closely track the rise in atmospheric CO_2.

Using data from the U.S. National Health and Nutrition Examination Survey, the team examined blood results from around 7,000 people every two years between 1999 and 2020.

Average levels of serum bicarbonate – a marker closely linked to carbon dioxide in the body – have risen by approximately seven per cent since 1999. Over the same period, average calcium and phosphorus levels have declined.

These changes mirror the rise in atmospheric CO_2, which has increased from about 369 parts per million (ppm) in 2000 to more than 420 ppm today.

Author, Associate Professor Alexander Larcombe, said the findings suggest the human body may already be compensating for a changing atmosphere.

"What we're seeing is a gradual shift in blood chemistry that mirrors the rise in atmospheric carbon dioxide which is driving climate change," Associate Professor Larcombe said.

Bicarbonate plays a central role in maintaining the body's acid–base balance. When CO_2 levels rise, the body retains more bicarbonate to stabilise blood pH. Over time, however, sustained compensation may carry physiological consequences.

"If current trends continue, modelling indicates average bicarbonate levels could approach the upper limit of today's accepted healthy range within 50 years," Associate Professor Larcombe said.

"Calcium and phosphorus levels could also reach the lower end of their healthy ranges later this century."

Humans evolved in an atmosphere containing roughly 280–300 ppm of CO_2. The average annual increase over the past decade has been about 2.6 ppm per year, with 2024 recording a 3.5 ppm rise.

Fellow author Dr Phil Bierwirth, a retired environmental geoscientist who is affiliated with the ANU Emeritus Faculty, said while the study does not prove direct causation, the consistent, population-wide trends are difficult to ignore.

"I actually think that what we are seeing is because our bodies are not adapting," Dr Bierwirth said.

"It appears we are adapted to a range of CO_2 in the air that may now have been surpassed.

"The normal range maintains a delicate balance between how much CO_2 is in the air, our blood pH, our breathing rate and bicarbonate levels in the blood.

"As CO_2 in the air is now higher than humans have ever experienced, it appears to be building up in our bodies. Maybe we can never adapt such that it is vitally important to limit atmospheric levels of CO_2."

The researchers say the findings point to an emerging dimension of climate risk, one that extends beyond heat waves, extreme weather and sea-level rise.

Rather than viewing rising CO_2 solely as an environmental issue, Associate Professor Larcombe says it may also need to be considered a long-term public health variable requiring ongoing monitoring.

"We're not saying people are suddenly going to become unwell when we cross a certain threshold," he said.

"But this suggests there may be gradual physiological changes occurring at a population level, and that's something we should be monitoring as part of future climate change policy."

The study calls for atmospheric composition and population biomarkers to be tracked alongside traditional climate indicators to better understand how gradual environmental change may influence human biology over decades.

Reducing CO_2 emissions remains critical to limiting global warming. The findings suggest emission



Associate Professor Alexander Larcome

reduction may also be important for safeguarding long-term human health, and that the potential physiological effects of rising CO_2 should form part of future climate policy discussions.

Associate Professor Larcombe is part of the Wal-yan Respiratory Research Centre, a partnership between The Kids, Perth Children's Hospital and Perth Children's Hospital Foundation.

Tracking the impact of early treatment in young children with cystic fibrosis

For decades, cystic fibrosis (CF) meant a life shaped by daily treatments, frequent hospitalisations, and an uncertain future. The arrival of CFTR modulators has changed that picture dramatically, and researchers at the Wal-yan Respiratory Research Centre, based at The Kids, now want to understand the bigger picture.

Rather than managing the downstream effects of the disease, CFTR modulators correct the underlying protein defect that causes CF in the first place, helping lung cells to function more normally.

Clinical trial results have been remarkable. But what are the long-term effects for children who start modulators at a very young age?

That is the question driving the TIME-CF study.

"Early modulator therapy from the really young ages has the potential to prevent lung disease entirely. We want to understand what that really looks like in practice," lead researcher and Co-Head of the Respiratory Centre's Foundations of Lung Disease team, Associate Professor Kathryn Ramsey, said.

TIME-CF is a longitudinal study following all children with CF, aged two to six, attending Perth Children's Hospital. Children are seen every three to six months, with the team collecting data on lung function, symptoms, quality of life, treatment adherence, and infection history.

Josephine Flannelly is mum to Lucy, 4, and Jonah,7, who are both enrolled in the TIME-CF study.

"We are a family with more than one kid who has CF. It looks like kids with the same gene type and same family can still have different outcomes, and I think it's important to know what is driving this," Ms Flannelly said.

In the pre-modulator era, lung function tests identified abnormal results in 60-70 per cent of preschool children with CF. In the TIME-CF cohort, that figure has dropped to around 25 per cent. For many children, early treatment is helping to maintain healthy lung function, although some are still experiencing impairments.

Understanding what drives outcomes will help clinicians tailor care more precisely and could mean fewer hospital visits for children who are responding well.

"What we learn from the TIME-CF study will help doctors care for children with CF, optimising both lung health and overall quality of life," Associate Professor Ramsey said.

With almost no published data on the real-world effects of starting modulators from such a young age, this is one of the first studies of its kind globally.



Lucy and Jonah Flannelly are participants in the TIME-CF study

Aboriginal Elders partner with The Kids to deliver 'deeply human' impact

A decade long program of research co-designed and led by Aboriginal Elders and the Aboriginal community of Perth has helped address three priority areas of child protection and removal, early childhood education and care, and housing and homelessness.

The unique Ngulluk Koolunga Ngulluk Koort (Our Children, Our Heart) program has advocated better cultural connection for Aboriginal kids in out-of-home care, increased the recognition, accreditation and funding for Aboriginal Community Controlled Housing Organisations to support children and families, and piloted an Elder- and community-led and staffed pre-kindergarten program for Aboriginal children and families (funded by Lotterywest).

The Kids' former Executive Director, Professor Jonathan Carapetis, said the success of the project was its commitment to work with the Aboriginal community and not just for them.

"The 130 Elder co-researchers who have worked alongside our NKNK researchers have helped to change the way we all do research," Professor Carapetis said. "Their contribution ensured this work was not just academic; it was deeply human and urgently needed."

The Kids' Director of First Nations Health and Equity, Associate Professor Glenn Pearson, said the Institute's commitment to Aboriginal community engagement in research was non-negotiable.

"The NKNK project was a sector-leading approach to how research is undertaken in true partnership with Aboriginal communities," Associate Professor Pearson said. "It spearheaded this research model, and we have recently seen our Aboriginal Research Standards, which enshrine research partnerships with Indigenous communities, adopted as gold standard by the National Health and Medical Research Council."

NKNK began in 2016 as a five year project funded by National Health and Medical Research Council to improve outcomes for young Aboriginal children and their families.

Project team lead and Co-Head of The Kids Aboriginal Health and Wellbeing team, Associate Professor Brad Farrant said an inaugural meeting about the research was attended by 51 Elders from across the Perth metropolitan area and they gave unanimous support for the intended work.

"Consultation with the Elders identified the three priority areas of focus," Associate Professor Farrant said. "A second meeting of 60 Elders a year later endorsed the progress of the project and reinforced to the team the need to ensure all findings were translated into policies and services to improve outcomes for families.

"In all, more than 130 Elders have been engaged in the program across its life. As part of NAIDOC Week in 2019, the Institute acknowledged the work of the Elder Co-Researchers by appointing them to the role of Honorary Research Associates.

"This was the first time the Institute had appointed Elders to such a role and illustrated the success of NKNK."

Associate Professor Farrant said other achievements of the project were the Aboriginal Elder co-designed framework for raising strong and solid Koolunga (children), legal work to challenge the legality of evicting children into homelessness, and the establishment of child protection principles.

The NKNK Elders are continuing their association and close collaboration with The Kids through their involvement in the recently established Elders' Network Forum.



Associate Professor Jonathan Carapetis, Carol Mitchie, Aunty Charmaine Pell, Aunty Doris Hill, Hon. Ken Wyatt, Uncle Albert McNamara, Associate Professor Glenn Pearson and Larissa Jones



PhD candidate James Gibbons with Theme Head Strong Beginnings, Associate Professor Shannon Simpson

Looking beyond the NICU: Understanding lung health after preterm birth

A child born preterm may leave the neonatal intensive care unit after a few weeks or months, but their health journey doesn't always end there.

Research from The Kids is revealing how the effects of preterm birth can influence lung health well into adulthood, reshaping how clinicians and researchers understand respiratory outcomes across the lifespan.

Led by Associate Professor Shannon Simpson, Theme Head Strong Beginnings and Co-Head of the Foundations of Lung Disease team, with clinician and PhD candidate James Gibbons, the work is advancing understanding of prematurity-associated lung disease and has already contributed to the establishment of dedicated preterm lung clinics at Perth Children's Hospital and Sir Charles Gairdner Hospital.

"We've known that many babies born preterm face respiratory challenges early in life, but we're now developing a much clearer picture of how those challenges can evolve over time," Associate Professor Simpson said.

"Lung health after preterm birth isn't the same for everyone. Different people follow different pathways, and understanding those pathways is critical if we're going to provide the right care at the right time."

Reviewing international collaborations and long-term studies tracking individuals from childhood into adulthood, the Foundations of Lung Disease team has shown that lung function can follow very different trajectories. While some people maintain relatively stable respiratory health, others experience a gradual decline over time.

The research has also identified groups at greater risk of progressive airway obstruction and future respiratory disease, creating opportunities for earlier monitoring and intervention. The findings suggest respiratory care should extend beyond those with a history of severe neonatal lung disease to consider the broader population born preterm.

This growing body of evidence has had a direct impact on patient care. Over the past year, dedicated preterm lung disease clinics have been established at both Perth Children's Hospital and Sir Charles Gairdner Hospital, providing specialised services for children and adults living with the long-term respiratory effects of preterm birth.

"Historically, many patients have not been followed up in paediatric or adult services because there wasn't a clear recognition of prematurity-associated lung disease as a lifelong condition," Associate Professor Simpson said.

"These clinics provide an opportunity to bring together expertise and deliver more coordinated care."

The team's work is also driving international collaboration. In September 2025, the first international conference dedicated to preterm lung disease was held in Rotterdam in the Netherlands, bringing together researchers, healthcare professionals and people with lived experience from around the world.

To accelerate discovery, researchers have also established a global data-sharing platform that enables researchers to collaborate across countries and institutions, strengthening efforts to better understand the condition and improve outcomes.

"Solving the biggest issues facing kids and families isn't something any one individual or organisation can do alone," Associate Professor Simpson said.

"By collaborating internationally and sharing data, we can answer important questions much faster and ultimately improve outcomes for people born preterm across their entire lives."

Measuring the moments that matter



Professor Jenny Downs with Maisie Hart, 7, who lives with Developmental and Epileptic Encephalopathy

For children living with Developmental and Epileptic Encephalopathies (DEEs), progress is measured in small steps.

One more word. One more step. One more obstacle overcome. One more possibility. One more smile.

These seemingly small gains can transform a child's independence, quality of life and connection with the world, yet traditional assessment tools often fail to recognise them.

At The Kids, Professor Jenny Downs and the Child Disability team are changing that.

The team's internationally recognised measurement research is helping prepare the rare disease community for the new era of precision medicine.

"Advances in genomics are accelerating the development of disease-modifying therapies; there are new treatments where it is hoped that the child's symptoms will be substantially improved," Professor Downs said.

"For these trials, we need better ways to determine whether these groundbreaking treatments are making a meaningful difference."

For many children with DEEs, existing clinical measures are simply too broad. They capture milestones, but miss the "inchstones" – the small, meaningful improvements that are extremely important to children and their families.

Professor Downs is the Science Lead for the international Inchstone Project, bringing together researchers, clinicians and patient advocates to develop outcome measures capable of detecting these subtle but significant changes. Since 2021, the collaboration has been building the tools needed to support future clinical trials and, ultimately, better care.

The Child Disability team has already developed and validated four evidence-based measures spanning communication, gross motor skills, hand function and quality of life.

The Communication Inventory Disability – Observer Reported (CID-OR), designed to measure what families consistently identify as their highest priority: their child's communication. Meanwhile, their gross motor and hand function measures, adapted from the team's pioneering Rett syndrome research, are a part of clinical trials study designs for several rare genetic conditions.

Perhaps the broadest impact has come through the Quality of Life Inventory – Disability (QI-Disability). Developed in partnership with families, the tool recognises quality of life as the outcome that matters most.

"Parents have explained that quality of life is the most important outcome for their child and that everyone involved with the child's care should support the child to achieve their best quality of life," Professor Downs said.

Today, QI-Disability is used in 26 countries across six continents, informing clinical care, research and international clinical trials, to help that vision to become a reality.

While each DEE is individually rare, together these conditions affect thousands of children and families worldwide. By ensuring every meaningful improvement can be measured, Professor Downs and her team are helping ensure future therapies can be accurately evaluated, approved and then delivered to the children who need them most.

Because when every inchstone counts, measuring them changes lives.



Maisie Hart, 7, (left) with her mum Bronwen Hart and sister Tessa, 5

COLLABORATING

For greater impact



Nine-year-old Violet receiving the FluMist ahead of the flu season in 2026

Needle-free flu vaccine delivers encouraging first-year results in WA

For children who dread needles, having an alternative to a traditional flu injection could make all the difference when it comes to getting their annual vaccination.

The introduction of FluMist, Australia's first needle-free influenza vaccine for children, delivered as a simple nasal spray, has given Western Australian families a new way to protect their children against influenza, with early results showing encouraging improvements in vaccination coverage.

In its first year, influenza vaccination coverage among WA children aged 2-5 years increased from 19.2 per cent in 2025 to 28.5 per cent in 2026. Among children aged 6-11 years, coverage rose from 15.7 per cent to 20.3 per cent, reaching its highest level since 2020.

Professor Chris Blyth, Head of the Wesfarmers Centre of Vaccines and Infectious Diseases at The Kids Research Institute Australia, said the results highlighted the potential of offering families an alternative to traditional flu injections.

"This is the highest uptake observed since 2020 and a clear sign that an alternative way of administering the vaccines makes a significant difference," Professor Blyth said.

"When asked, four out of five parents preferred FluMist and nearly half of those vaccinated this year did not receive an influenza vaccine in 2025."

Behind the introduction of FluMist is years of research and advocacy by The Kids researchers and public health leaders, who played an important role in supporting the vaccine's registration and introduction in Australia.

Our Vaccine Trials Group played a key role in recruiting participants for clinical trials that contributed to its registration. However, despite this research, a southern hemisphere product was not manufactured until 2026.

Recognising the potential to make influenza vaccination more accessible and appealing to families, The Kids teamed up with the WA Department of Health and Child and Adolescent Health Service (CAHS) to actively promote FluMist ahead of the 2026 winter season.

The program was progressively expanded to reach more children and adolescents, with the nasal spray offering an alternative for families looking to avoid the anxiety that can accompany injections.

The introduction came at an important time for childhood immunisation. Despite a record-breaking influenza season in 2025, fewer than one in five WA children aged five and under received a flu vaccine, with uptake even lower among primary school-aged children.



Professor Chris Blyth

"Each year, we see many hundreds of children hospitalised with influenza and hear heartbreaking stories of young children dying from influenza," Professor Blyth said.

"We know from regular consultation with parents and immunisation providers that fear of needles can be a significant barrier to vaccination. Introducing FluMist was an important step towards addressing that barrier and giving families another way to protect their children."

Building on first-year results

The benefits of improving childhood influenza vaccination extend well beyond individual protection. Research modelling led by The Kids has shown that increasing influenza vaccination among primary school-aged children by just 10-20 per cent could reduce flu cases across all age groups by up to 30 per cent.

This is particularly important because school-aged children can play a significant role in spreading influenza to more vulnerable members of the community, including infants and older people.

Our researchers are continuing to evaluate the FluMist program, gathering community insights and parental and provider perspectives while assessing how effectively the nasal vaccine prevents influenza-associated hospitalisations in children.

The findings will help inform future strategies to improve childhood influenza vaccination coverage, including potential pilot school vaccination programs.

By combining research, community engagement and strong partnerships with the health sector, The Kids is helping turn new approaches to immunisation into practical opportunities to improve children's health.

FluMist's encouraging first-year results provide a strong foundation to build on as researchers and health partners look towards future influenza seasons.

Publication trifecta puts Perth rare disease researchers at centre of global innovation

One in 12 people. $7 trillion a year. Ninety-five per cent without treatment. The leading cause of death among children.

For many families, the rare disease journey begins the same way. A child develops symptoms no one can explain. Referrals follow – one specialist, then another. Months pass. Sometimes years. On average, patients wait more than four years for a diagnosis. Many never receive one.

More than 300 million people worldwide live with a rare disease. The global economic cost exceeds $7 trillion annually; that's more than the GDP of Japan and Germany combined. Around 95 per cent of rare conditions still have no approved treatment, and nearly 70 per cent present in childhood.

Yet rare disease research has become a powerful engine of medical innovation. Gene therapies, mRNA vaccines, precision oncology and accelerated regulatory pathways all have roots in rare disease contexts before being applied more broadly.

That impact is now being recognised on the global stage. In February, researchers from The Kids, Perth Children's Hospital and The University of Western Australia contributed to three major international publications, collectively reinforcing rare diseases as a critical, community-wide health priority.

Across *Nature, The Lancet*, and the World Economic Forum, Perth-based researchers are helping reshape how rare diseases are diagnosed, understood and prioritised.

Together, the publications – spanning clinical communication, artificial intelligence and health economics – signal a broader shift: rare diseases are not a niche concern, but central to the future of healthcare systems worldwide.

AI shows promise in ending diagnostic delays

In a *Nature* News & Views article, Associate Professor Timo Lassmann from The Kids' Translational Intelligence team examined DeepRare, an AI system capable of diagnosing rare diseases more accurately than experienced physicians using conventional tools.

The system integrates symptom extraction, literature searches, case matching and genetic analysis. Tested across more than 6,400 cases, it achieved diagnostic accuracy comparable to specialist clinicians.

For families facing years of uncertainty, the implications are significant. Beyond improved accuracy, the system offers transparency, with medical experts validating its reasoning in 95 per cent of cases, helping build trust in how diagnoses are reached.

Rethinking how clinicians communicate

In a *Lancet* paper, Medical Director of the Rare Care Centre at Perth Children's Hospital Professor Gareth Baynam called for a fundamental shift in how clinicians communicate with patients and families.

For parents already overwhelmed by a diagnosis they have never heard of, language matters. The way a condition is explained can shape how families understand their child's future.

The paper argues that empathetic, culturally safe communication is not just a "soft skill" but a clinical necessity and a "therapeutic imperative."

His paper highlighted how genetic inheritance has been explained to Aboriginal Australian communities using the concept of Songlines – oral maps that encode knowledge, law and ancestry across generations – to make complex science more accessible and meaningful.

The economic case for change

A World Economic Forum white paper, co-authored by Professor Baynam, set out the economic case for prioritising rare diseases.

It identified five strategies to strengthen rare disease data systems and highlights the cost of delay. A 2022 study found that diagnostic delays across just seven rare conditions led to avoidable costs of up to US$517,000 per patient. The Rare Care Centre was identified as a global exemplar for improved health and wellbeing that also generates a 5:1 return on investment. Reducing suffering, saving money for the benefit of everyone.

Behind each figure is a family covering costs, missing work and waiting for answers. Scaled across more than 7,000 recognised conditions, the cumulative burden reaches into the trillions.

Transforming rare disease care through collaboration

For Western Australian children and families living with the uncertainty of a rare or undiagnosed disease, the search for answers is becoming faster, more connected and more hopeful.

That transformation is being driven by the Rare Care Comprehensive Centre (RCCC), made possible through one of the largest philanthropic investments in Western Australia's history. The Stan Perron Charitable Foundation has committed a landmark $221.1 million over the next decade, alongside $25 million from Perth Children's Hospital Foundation and $3 million from The University of Western Australia, to establish the Centre.

Bringing together clinicians, researchers and cross-sector partners, the RCCC is accelerating diagnosis, advancing new treatments and delivering more coordinated care for children and families facing some of medicine's most complex conditions.

Rare and undiagnosed diseases are the leading cause of childhood mortality, responsible for six in 10 childhood deaths. Through the RCCC, scientists from The Kids are helping change that reality by contributing to four of the Centre's five flagship programs: diagnosis, treatment, models of care and artificial intelligence.

At The Kids, researchers are contributing expertise across the rare disease journey—from improving diagnosis and developing new treatments to strengthening care and support for children and families.

Professor Jenny Downs, Head of the Child Disability team, is leading work to strengthen clinical trial readiness and improve health outcomes through better outcome measurement, health literacy support and more coordinated models of care.

A team led by Associate Professor Timo Lassmann, Head of the Precision Health theme, is harnessing artificial intelligence to improve diagnostic accuracy, identify personalised treatment pathways and unlock insights from complex health data.

Complementing these efforts, Dr Vanessa Fear, Head of The Kids' Translational Genetics team, is addressing two of the greatest challenges facing rare disease families: achieving faster diagnoses and identifying new therapeutic approaches that can improve outcomes.

Professor Aleksandra Filipovska, the Louis Landau Chair in Child Health Research at The University of Western Australia and The Kids, is using advanced omics technologies and pioneering gene therapy approaches to improve diagnosis and expand treatment options for children living with mitochondrial and metabolic diseases.

The RCCC brings together multiple government sectors, the Child and Adolescent Health Service, The University of Western Australia, Curtin University, The Kids, Harry Perkins Institute of Medical Research, Murdoch University and the Perron Institute for Neurological and Translational Science, alongside community organisations in a unified, integrated approach driven by the voices of children and families.



Dr Vanessa Fear and Associate Professor Timo Lassmann are among The Kids researchers involved in the Rare Care Comprehensive Centre

Research shaped by community, strengthened by partnership

When the National Health and Medical Research Council (NHMRC) and the Consumers Health Forum of Australia released its updated *2026 Statement on Consumer and Community Involvement in Health and Medical Research* in May, it reinforced an important principle: the best health research is built in partnership with the people and communities it aims to serve.



Community members have helped to shape more meaningful research at The Kids Research Institute Australia

For The Kids, the Statement affirmed an approach that has been embedded in our work for decades.

Executive Director Professor Caroline Homer AO said the national guidance reflected what the Institute had long experienced in practice.

"We've seen firsthand that when community voices lead, the outcomes are more meaningful and more likely to create real change," Professor Homer said.

"Over the past 35 years, The Kids has built deep and enduring partnerships across Western Australia, working with advocates in chronic disease, disability, Aboriginal and Torres Strait Islander health, infectious disease and more. Community input, expertise and lived experience are essential to our work tackling the biggest health challenges kids face today."

The Kids' Community Engagement Team led the national consultation that informed the development of the Statement, coordinating 25 roundtables across Australia bringing together 497 consumers, community representatives, researchers, clinicians, policymakers, funders and Aboriginal and Torres Strait Islander leaders.

The Kids was also proud to see its Aboriginal and Torres Strait Islander Research Standards recognised as an official supporting resource for the Statement under Principle 1: Involving consumers and communities across all stages and types of research. This recognition reflects the Institute's ongoing leadership in fostering culturally responsive, community-led research practices.

Senior Manager Community Engagement Belinda Frank said The Kids' contribution to the NHMRC Statement was another example of the Institute's leadership in the space.

"We are committed to embedding community voices at every level of the organisation – from the earliest stages of research planning through to translation and impact – to deliver research that is more inclusive, relevant and capable of creating lasting change for children, families and communities."

Scan to discover current opportunities to be involved in our research.

Participate in The Kids Research Institute Australia research



App helps families identify skin infections

Aboriginal families across Western Australia are being equipped with the knowledge to take early action against potentially life-threatening skin infections thanks to the launch of a Strong Skin phone app.

Developed by Aboriginal community members and researchers from the Healthy Skin team at the Wesfarmers Centre of Vaccines and Infectious Diseases (WCVID), based at The Kids Research Institute Australia, the app provides parents and carers with easy-to-use tools to help recognise skin infections like impetigo and scabies and learn where to go for urgent treatment.

As part of the SToP (See, Treat, Prevent) Trial, researchers spoke to more than 120 community members and service providers about health challenges and potential solutions. A skin health app emerged as the most requested resource.

Dr Hannah Thomas, lead researcher for the project and Adjunct Lecturer in UWA's School of Biomedical Sciences, said the Strong Skin app was co-designed by families, healthcare workers and researchers to ensure it reflected the needs and experiences of the communities it was intended to support.

"The app allows parents and carers to browse a gallery of real skin images to help identify common infections, upload photos to compare against known skin conditions, and use location services to find a local health clinic or service," Dr Thomas said.

"Following a formal diagnosis, families can also create personalised skin care plans with reminder prompts to support ongoing treatment."

Leah 'Nangali' Wearne, a Warnman woman from Bunbury, said the Strong Skin app supported families to take early action and make informed decisions about their children's skin health.

"What makes this app special is that it was designed with families, meaning it reflects our voices and real life. I hope it gives families the knowledge and confidence to act early and look after our children's health in our own way," Ms Wearne said.

This project is funded by Healthway and the NHMRC.

Hundreds of WA families find support through the Inklings Program



Mum Eleanor Kenny, Inklings Specialist Samantha Rivers, Inklings General Manager Gemma Upson and Johnny Kenny, 2

A three-year pilot program has helped hundreds of Western Australian families better understand their baby's unique ways of communicating, strengthening connections during a critical stage of early development.

Delivered by The Kids, and supported by the National Disability Insurance Agency, the Inklings Program supports families of babies aged 6–18 months who show early differences in how they communicate and connect with others.

Using video observation and guided reflection with trained practitioners, the Inklings Program helps caregivers recognise the small moments that build connection and understand their baby's individual communication style.

The Kenny family is one of many families who have benefited.

Before joining the Inklings Program, Eleanor Kenny often wondered whether her son Johnny noticed she was there.

"Before, when he wasn't engaging with me, it was really hard emotionally. It sometimes felt like he didn't care whether I was there or not - but he did. He was just showing it differently," Mrs Kenny said.

After recommendations from health professionals, Mrs Kenny enrolled Johnny in the program when he was 16 months old.

Reviewing filmed interactions with her practitioner became a turning point. When Johnny walked away from an activity before returning, she assumed the interaction had finished. Together, they discovered he was still engaged and processing the moment.

"Once I understood that, I stopped interrupting the play and just stayed there waiting for him," Mrs Kenny said. "That changed everything."

"I've been able to take what I learnt through the Inklings Program into all the other therapies, and even the other practitioners have learnt from understanding how Johnny processes and engages," she said.

General Manager Inklings, Gemma Upson, said the pilot showed the importance of providing families with timely, evidence-informed support during the earliest stages of development.

"Every family knows their baby best. The Inklings Program gives caregivers practical strategies to recognise their baby's communication, respond sensitively and strengthen their connection," Ms Upson said.

"By supporting caregivers to understand and respond to their baby's unique communication style, we can help create stronger relationships and more opportunities for babies to thrive."

A comprehensive evaluation of the pilot is underway by the NDIA and La Trobe University, with the experiences and insights of families helping to shape future approaches to support and inform the ongoing development of the Inklings Program.

Families and health professionals can find out more about the current referral process by visiting the Inklings website: www.inklings.org.au

815 Families referred

Locations:

- **Metro = 80%**
- **Regional = 14.3%**
- **Remote = 5.7%**

Caregivers born in a non-English speaking country:

- **Primary caregivers = 17%**
- **Secondary caregivers = 10%**

Main language spoken at home is not English:

- **Primary caregiver = 14%**
- **Secondary caregiver = 9%**
- **Aboriginal Families = 7%**

NEXT STEPS

Building on the success and findings of the Inklings Program pilot, the Inklings team is expanding how they support babies, caregivers and the professionals who work with them.

Current initiatives include:

- Completing the roll-out of the South Australia Inklings Program, with more opportunities to support families across Australia.
- Growing Tiny Moments Playgroup to help caregivers build strong, responsive relationships through play and everyday interactions.
- Enhancing the Learning Hub with evidence-informed training and practical resources for professionals supporting babies and families.

Building better places for kids to play and thrive

Bringing together researchers, communities, educators and policymakers, the PLAYCE Cohort Study is transforming how we design environments and systems that support children to move and play more.

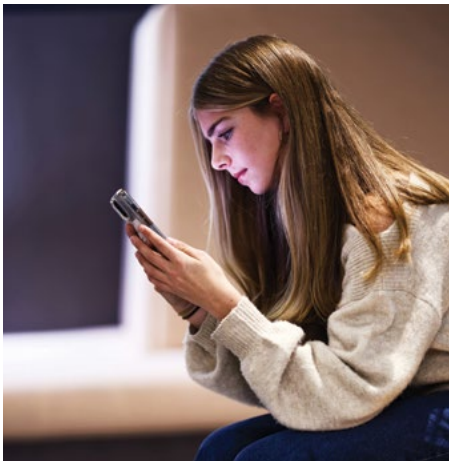
For more than a decade, the PLAY Spaces and Environments for Children's Physical Activity (PLAYCE) Cohort Study has followed more than 2,000 Western Australian children from toddlerhood into adolescence, uncovering how the places children live, learn and play shape their physical activity, sedentary behaviour, screen use, development and wellbeing. The findings are reshaping how we approach child wellbeing in the early years.

Eleven years ago, armed with movement-measuring "superhero belts" – toddlers across Perth ate, slept and played at Early Childhood Education and Care (ECEC) and at home for a week.

When ECEC services and parents found out that only one in four children met all recommended movement guidelines, they wanted to know – what can we do? And Play Active was born.

Play Active turns evidence into action providing clear, practical guidance to ECEC services to ensure children get enough energetic play every day and to meet and exceed ECEC National Quality Standards for children's health and wellbeing.

"Together, we are on a mission to make sure all children and families can live, work, and play in environments that support their mental and physical health."



14-year-old Isla Jambu participating in the Youth Advisory Group

Shaped by a dedicated Partner Advisory Group of leaders from across government, health, education, research and the early childhood sector, this group has ensured the program remains practical, and responsive to the needs of services, families and communities.

The Kids' Head, Child Physical Activity, Professor Hayley Christian AM, said the cohort study was the largest of its kind in the world.

"Thanks to the contributions of all our partners, and the children involved, this research is leading guidelines, policy briefs, reports and real-world programs to make sure every child gets an active, happy, and healthy start to life," Professor Christian said.

As the PLAYCE toddlers have grown, so have their opinions and ideas. An exciting addition to the team has been the Youth Advisory Group, helping design Wave 5 of the cohort study.

"Every time we meet with our advisory groups, we learn something new. Their guidance makes sure we deliver research with real impact."

The PLAYCE Cohort Study is supported by Healthway, The WA Future Health Research and Innovation Fund, NHMRC and the Australian Research Council.



Professor Hayley Christian with members of the Youth Advisory Group

Rural upbringing helps shape researcher's work

Growing up in rural QLD, NSW and WA postdoctoral researcher Jack Farrugia bounced between regional centres yet rarely saw a service that felt right for him.

Now leading the first phase of the Optimise+ project, he is putting lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQA+) community-controlled organisations (CCOs) under the microscope.

"Growing up without any of this, I had no idea as a teenager these services even existed," Dr Farrugia said.

"Coming to Perth and becoming more involved in this space, knowing that they were providing support meant a lot to me."

Although LGBTQA+ people experience substantially higher rates of mental ill health and suicidality, they also access support from mainstream services at lower rates than the general population as they often feel unsafe.

Which is where the LGBTQA+ CCOs come in, playing a similar role to Aboriginal CCOs in reaching people who might not otherwise seek help from a mainstream service.



Dr Jack Farrugia

"I've seen first-hand how impactful and valuable these organisations are," Dr Farrugia said. "They are run on goodwill by members of the community – to me it feels important that members of this community are able to feel safe when accessing services."

The first step in the research was to survey and interview senior leadership across the sector, getting a clearer picture of how LGBTQA+ CCOs operate and why the community often trusts them more than mainstream services.

"This is the first time we've had an evidence base of the organisations talking about what they do – how their approaches are unique. From there, we unpacked the qualitative data in more detail to uncover why and how these services are often preferred."

And the results all pointed in the same direction – while the primary function of a service may have been therapeutic or peer support, it was the extracurricular activities that ingratiated them in their community.

"It's all the other things – events, health promotion. We know that if queer people living regionally are experiencing isolation for instance, having a CCO go out and host an event will really build community for that person," Dr Farrugia said.

"By doing that they can promote their services as well – it becomes a warm referral entry point. It was really good to see them recognising they had to have the footprint in the locations and address unique needs in the community."

Another key finding in the survey was the importance of integrating lived experience into CCOs.

But this existence became a double-edged sword – the majority of organisations surveyed emphasised their responsibility as advocates for their consumers. Meanwhile, funding does not reflect this perceived role.

"There's huge burnout among staff because of the combination of having to fulfil these extra roles, including advocacy, in an environment of broader political issues affecting LGBTQA+ people," Dr Farrugia said.

NEXT STEPS

Future steps in the project will examine what safeguards are in place to protect clients amid the blurring of boundaries between professional and lived experience and to define what LGBTQA+ lived experience looks like in practice

"Ultimately, we want to know what the special sauce is – what makes a unique LGBTQA+ CCO?" Dr Farrugia said.

"Once we know that, we can develop a model of care for LGBTQA+ people by looking at these organisations, strengthening them, and also supporting mainstream services to be more inclusive."

This research is funded by the Medical Research Future Fund partners, La Trobe University and LGBTQA+ Health Australia.

Bright tomorrows start today

Through research, we know that babies' brains are built ready to learn. During the first few years of life more than one million neural connections are formed every second, with positive interactions and play strengthening these connections.

The Bright Tomorrows parenting app is a one-stop shop for tips and ideas to engage a young child's growing brain. It has over a thousand activities to help parents take an active role in their child's early learning and development, and understand why the little moments matter.

Thanks to the support of a Healthway Healthy Communities Grant, the app has introduced two new programs to further support families: *Nurturing Minds* and *Fuel and Flourish.*



Dr Theresa Nguyen and her daughter Cici

Meeting a critical need in the early years

By age five, 90 per cent of a child's brain has reached adult size and foundational neural connections have already been formed. Unfortunately, we know that some of our children are not developmentally on track to start school ready to learn.

That's why The Kids - in partnership with Minderoo Foundation - developed the Bright Tomorrow's app to encourage parents and carers of children aged 0-5 to transform everyday moments into learning opportunities. It translates research into simple daily activities that build lifelong skills.

Nurturing young minds and healthy habits

Professor Ben Jackson, Theme Head, Wellbeing and Mental Health, said the app had been updated in response to evolving research and ongoing community feedback.

He said the content had been expanded with a range of new resources with Emerging Minds Australia and Foodbank WA to address two critical foundations of child development – mental health and healthy nutrition.

"Thanks to the support of Healthway we can deliver practical, evidence-based activities and information straight into the hands of parents whenever they need it," Professor Jackson said.

Nurturing Minds **- developed in partnership with Emerging Minds - focuses on supporting early childhood mental health through life's ups and downs. The program includes 30 engaging activities called "moments" accompanied by practical parent tips to help build emotional wellbeing and self-efficacy.**

Fuel and Flourish **- in partnership with Foodbank WA - emphasises positive feeding habits and food literacy. It features 20 interactive moments and tips designed to help families create enjoyable and healthy mealtime experiences.**

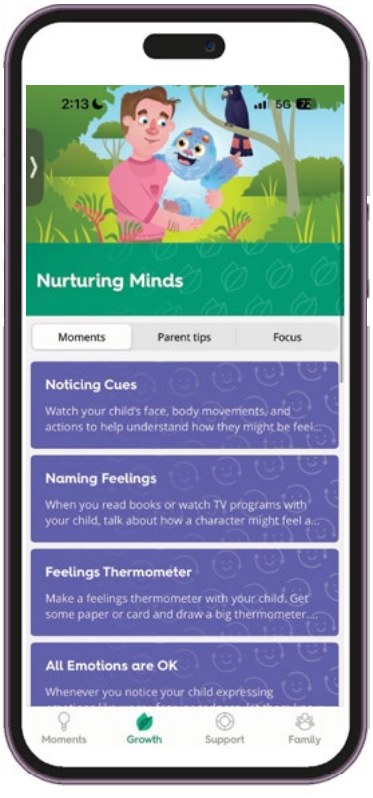
Mum and general practitioner Dr Theresa Nguyen said she trusted Bright Tomorrows to deliver reliable, research-backed support in one place.

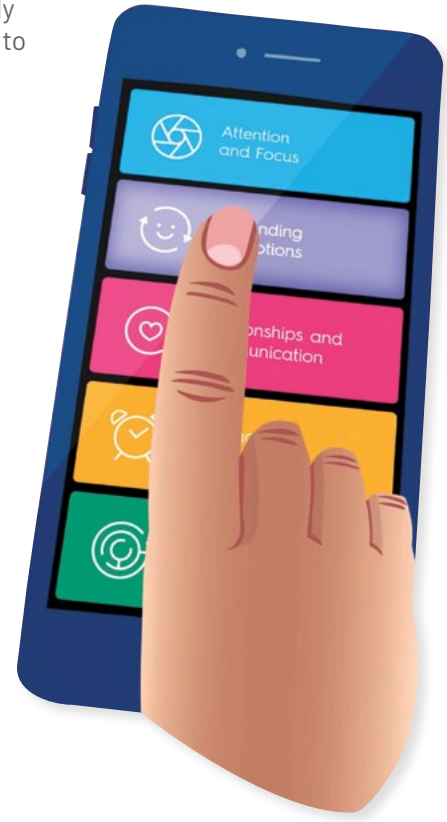
"I think as a new parent it can be quite overwhelming with all the new information available on the internet. What I love about the Bright Tomorrows app is that everything is in the one app," Dr Nguyen said.

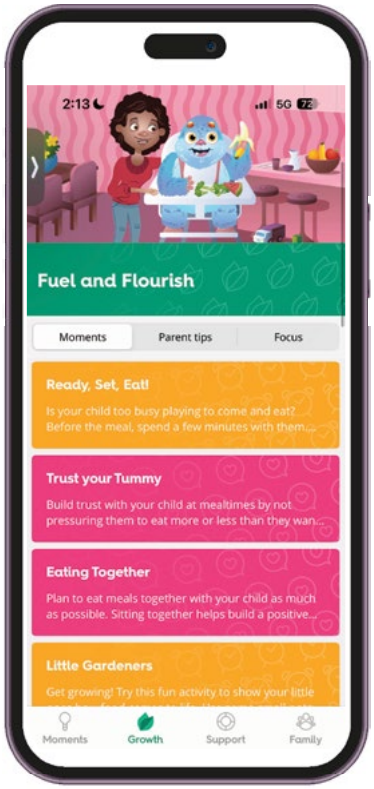
"As a GP I recommend the app to parents that I see in the clinic because it's got a lot of evidence-based information about early learning, development, nutrition and how to nurture positive mental health."



The **Bright Tomorrows app** is free to download on the App Store and Google Play. It has been downloaded more than 88,629 times since being launched in October 2019 in partnership with the Vroom, Raising Children Network and Better Beginnings at the State Library of WA.







This research has been supported by a Healthway Healthway Communities grant.

Training program to improve health care for LGBTQA+ community

Training modules for tertiary students are set to transform healthcare for LGBTQA+ people nationwide.

Despite evidence that lesbian, gay, bisexual, transgender, queer, and asexual (LGBTQA+) people have a higher prevalence of chronic diseases and are more likely to have mental health difficulties than the general population, they are also less likely to engage in preventative health checks.

Out of fear of stigma and past negative experiences like abuse, discrimination and gatekeeping, one in three LGBTQA+ people hide their sexuality or gender identity when accessing face-to-face healthcare.

Health professionals also commonly cite a lack of training giving them limited confidence and competence in supporting LGBTQA+ individuals.

To bridge this gap, a three-hour online training program developed by The Kids' Youth Mental Health team, is being piloted with UWA students at the School of Medicine and School of Psychological Sciences, with plans to expand the pilot to other universities in WA.

Ultimately, training will be rolled out across Australia, with adaptions to be developed for other trainee health professionals such as nurses and allied health professionals.



Project Coordinator Holly Moss (sitting) with Head of Youth Mental Health Associate Professor Yael Perry

The *Community in Practice* training leans heavily on the experiences of LGBTQA+ people that have faced stigma when accessing healthcare.

"Lived experience is crucial in this context because, to put it simply, doctors and psychologists work with people," Project Coordinator Holly Moss said.

"Experiences of healthcare are nuanced, they're complex. Without including those voices, it would be disingenuous to the people we are trying to help."

"The drivers of poor mental and physical health are oftentimes preventable and while there is a perception there has been progress for the LGBTQA+ community, this hasn't necessarily translated into more positive and effective healthcare outcomes."

"This training explicitly highlights the very reasons why students choose to go into these professions, and that is to help people, and to help all people."

The training was developed after an audit of medical and psychology programs, under the direction of Youth Mental Health Head Associate Professor Yael Perry. Findings confirmed there was no consistent approach by tertiary programs to educating students on LGBTQA+ inclusive practice.

The audit, completed in mid-2024, was the first in Australia to scrutinise professional psychology tertiary programs and provided updated data on medical training. While it found an increase over time in LGBTQA+ content in curricula, there was substantial variation in this content's delivery, duration and scope.

"It also identified that curricula are overcrowded and program facilitators lack the time to embed this content, despite wanting to do so," Ms Moss added.

Crucially, one of the perceived barriers identified was the cost associated with providing lived experience voices in training.

Following the audit, the Community in Practice was co-designed with students, professionals, and LGBTQA+ people with lived experience, before working with e-learning designer Hungry Minds to create interactive and engaging modules.

"Other training programs have followed a similar format in terms of delivering content digitally. It's current, it's evidence-based, and it's cheaper and easier than bringing in external providers," Ms Moss said.

"We have significant interest."

COLLABORATORS

School of Psychological Science, The University of Western Australia Medical School, University of Wollongong; Living Proud; TransFolk of WA; Australian Medical Student Association (AMSA) Queer; Australian Psychological Society.

This project was funded by Healthway.

Study to delve into health of primary school-aged children



Poonam Pannu and her daughter Xara Bhogan, aged 7

A longitudinal study following 10,000 Perth northern suburbs babies and families is expanding into the middle primary school years to unlock more insights into kids' health.

The ORIGINS expansion follows concerning 2024 statistics showing 28 per cent of parents of five-to-nine-year-olds reported concerns about their child's emotions, behaviour, concentration, or their ability to get along with others.

The middle primary school years are a pivotal stage in child development, offering a unique window to understand how children's health, learning and wellbeing are unfolding - and where early intervention can make the greatest difference.

ORIGINS is establishing a cross-sectional cohort of Year 3 students from six schools in low socioeconomic communities across Perth's north. The study will capture a comprehensive snapshot of children's physical health, cognitive development, mental wellbeing, learning, lifestyle behaviours and social connectedness.

Co-Director, Professor Desiree Silva, said extending ORIGINS research into a primary school setting provided an important opportunity to examine children's development through one of their most influential environments – their classroom.

"Children's health, wellbeing, learning, and developmental outcomes are all interconnected," Professor Silva said. "Understanding these factors during the middle primary school years is critical for reducing inequity, supporting schools, and setting children's health and wellbeing on an upward trajectory."

Over the course of one school day, ORIGINS researchers will visit a classroom and undertake a range of measurements and assessments, including:

- A wearable device that will measure children's sleep and physical activity for seven days
- A survey measuring children's quality of life, alongside a questionnaire assessing their emotional wellbeing
- An assessment measuring oral language and reading skills
- A survey asking questions about the children's friendships and how well they get along with other children

The cohort expansion has been co-designed alongside an advisory group of individuals across the education, health, and community sectors, who agreed it was important for this expansion to focus on classrooms in disadvantaged areas.

"Disadvantaged children, that is, children who experience food insecurity, housing instability, family violence, or lack of access to basic materials like clothing or internet, are more likely to experience education disengagement and poorer long-term outcomes," Professor Silva said.

"If we don't understand where children are struggling during the primary school years, we risk missing a critical opportunity to intervene. By building a clear picture of their health, wellbeing and development, we can design evidence-based interventions that address the complex challenges disadvantaged children face, while supporting families and schools to help every child reach their potential."

ORIGINS is following 10,000 families from pregnancy throughout childhood, providing a wealth of data and biological samples enabling researchers to conduct cost-effective, accelerated research into early interventions and targeted supports to increase family flourishing.

To maximise the global impact of this research, ORIGINS is aligning its primary school assessments with internationally recognised cohorts, Generation Victoria (GenV) at Murdoch Children's Research Institute, and Born in Bradford's Better Start in the United Kingdom.

This harmonised approach will allow researchers to compare child health and development across countries, validate findings in different populations, and answer questions such as:

- Are educational inequalities wider or narrower under different health and education systems?
- How do neighbourhood characteristics, like exposure to pollutants or access to green and blue space, influence children's health and development across countries?
- Do patterns of childhood obesity differ between Australia and the UK?

The data collected through this cohort will further enhance ORIGINS' world-leading research platform, building on its existing Databank of more than 30 million data points and Biobank of over 450,000 biological samples. Together, these resources will strengthen WA's capacity to lead research into school readiness, child development and family health.

"Primary schools are uniquely positioned to provide insights into children's social, emotional, behavioural, cognitive, and physical development during the middle childhood years," Professor Silva said.



Professor Desiree Silva

This cohort expansion was made possible by core funding from the Stan Perron Charitable Foundation.

Study reveals record rates of ear disease among PNG children

The first ever comprehensive study to estimate the prevalence of otitis media (OM) in Papua New Guinea (PNG) has revealed some of the world's highest rates of childhood middle ear disease.

Published in the *Lancet Regional Health – Western Pacific*, researchers found almost 75 per cent of children aged 15 or under were suffering from OM, or middle ear infections, and this jumped to a staggering 86 per cent for kids under three years.

Conducted in a partnership between the Wesfarmers Centre of Vaccines and Infectious Diseases, based at The Kids, and the PNG Institute of Medical Research (PNGIMR), the study involved checking the ears of almost 500 children living in Goroka town and the surrounding areas in the Eastern Highlands Province of PNG.

Dr Tamara Veselinovic, Clinical Research Fellow at the Wesfarmers Centre, said the results came as a shock to the research team and demonstrate the dire need for greater service provision around ear and hearing health.

"Children don't receive routine ear checks – the health clinic staff aren't equipped with the tools and training to perform them, and there aren't any audiologists in PNG," Dr Veselinovic said.

"As part of the study, staff were trained to take videos of the ears and upload them for audiologists in Perth to confirm the diagnosis made by nurses in PNG and, if necessary, advise on clinical management.

"In addition to record rates of OM, we found that 11.3 per cent of study participants had 'runny' ears, where the ear drum had burst and was leaking fluid – a rate almost three times higher than the World Health Organization's (WHO) four per cent threshold before declaring it an actionable public health emergency.

"Many of the participants attended the clinic due to being unwell, but we also checked the ears of their siblings and babies receiving their immunisations, and we found high rates of ear disease in both sick and healthy children," Dr Veselinovic said.

Dr Celestine Aho, Honorary Research Associate at the Wesfarmers Centre and Head of the Infection and Immunity Unit at PNGIMR, said some parents in the clinic thought runny ears were like having a runny nose when you have a cold – they thought it was 'normal' yet their child was living with a perforated ear drum and significant, potentially permanent, hearing loss.

"OM-related hearing loss also has long-term effects on cognitive and language development, education, and social and emotional well-being, so enhanced screening and intervention capabilities are urgently required to address this unchecked public health crisis," Dr Aho said.

"We are currently following up this work by conducting a similar study on school-aged kids living in the same region – we believe this will provide further evidence to government policy makers on the desperate need for ear health programs to be developed nation-wide in PNG."

Dr Aho was the inaugural recipient of the Deborah Lehmann Research Award, funded by the Wesfarmers Centre, which supports paediatric infectious disease research in Australia and the Pacific region.

"Our partnership between the PNGIMR and the Wesfarmers Centre has been incredibly valuable. By uniting local expertise, cultural knowledge, and clinical experience with specialist technical expertise and diagnostic support from Perth, we were able to deliver a more comprehensive strategy for documenting ear disease," Dr Aho said.

"This collaborative, two-way approach ensures our research is both scientifically rigorous and grounded in community realities, which ultimately strengthens its impact for children and families across the country."

Accelerating better treatments for children with Down syndrome and leukaemia

Children with Down syndrome (DS) are around 20 times more likely to develop leukaemia than other children. Yet the treatments that cure many young patients can be particularly difficult for them to tolerate, often leading to serious side effects, treatment complications and an increased risk of relapse.

Through Blood Cancer United, an international collaboration, researchers are working to change this by uncovering why children with DS have worse outcomes and by developing safer, more effective therapies tailored specifically to these vulnerable children.

This ambitious international collaboration has brought together 13 leading experts across five countries and four continents to better understand the biology of leukaemia in children with DS and identify safer treatment approaches. The research program spans four interconnected projects, investigating everything from the earliest stages of disease development through to the discovery and testing of new therapies.

One of these projects is co-led by Dr Sébastien Malinge Team Lead, Translational Genomics in Leukaemia, at The Kids, part of the WA Comprehensive Kids Cancer Centre. Their focus is to uncover why children with DS develop hard to treat leukaemia and identify new vulnerabilities that could lead to new treatment options.

Two years into the program, the team has achieved a major milestone by developing the world's largest collection of preclinical models for DS-leukaemia. This unique research pipeline includes three world-first laboratory grown cancer models and thirteen animal models, providing an unprecedented platform to study the disease and rapidly evaluate potential treatments.

Using these models, researchers have screened more than 7,000 drugs in search of new therapies that could improve outcomes for children with DS-leukaemia. This large-scale effort identified more than 100 promising candidates. By analysing the vulnerabilities of cancer cells and matching them with medicines designed to target those weaknesses, the team narrowed the field to the 10 most promising medicine-and-target combinations.

The next phase is already underway. Three of these treatment strategies are already demonstrating encouraging results in cellular models. Two have progressed towards animal studies in preclinical settings and a third is currently being evaluated.

Ultimately, the goal is to combine these new approaches with existing therapies to improve treatment effectiveness while reducing toxicity. By advancing the most promising candidates towards clinical trials, this collaboration is laying the foundation for more targeted and less harmful treatment options for children with Down syndrome who develop leukaemia worldwide.



Cancer researcher Dr Sébastien Malinge

This research has been funded by the Blood Cancer United SCOR (Specialized Center of Research) Program.

IN THE PIPELINE

Research that is in the pipeline towards translation

From concept to clinic: the Spritz-OM journey

A nasal spray designed to prevent middle ear infections in children is set to enter world-first clinical trials, marking a major milestone in a journey that began more than a decade ago.

Spritz-OM uses 'friendly bacteria' to guard the ear from infection and has the potential to reduce the global burden of childhood otitis media (OM), which affects more than 400 million children each year.

For Professor Peter Richmond and Associate Professor Lea-Ann Kirkham, co-inventors of Spritz-OM who conduct their research through the Wesfarmers Centre of Vaccines and Infectious Diseases at The Kids, reaching this stage represents the culmination of more than a decade of research, persistence and a shared determination to tackle a major health challenge for children.

Associate Professor Kirkham's passion for reducing the burden of ear infections began after she arrived in Australia from Scotland and learnt about the profound, long-term impact of OM on Aboriginal and Torres Strait Islander children. Professor Richmond's commitment was shaped by his early medical training in the Kimberley.

The Spritz-OM concept began to crystallise in 2015, building on research conducted by Associate Professor Kirkham, Professor Richmond and their respective research teams between 2007 and 2009.

"We were running a study comparing the bacteria living in the noses of children who experienced frequent ear infections versus those who rarely, or never, did. We were developing a test to better identify the main pathogen that causes OM, and there was this pesky 'friendly' species of bacteria that was



Associate Professor Lea-Ann Kirkham and Professor Peter Richmond with the Spritz OM nasal spray

making the test tricky. Then we noticed the presence of this friendly bacterium in the noses of children who weren't getting sick," Associate Professor Kirkham said.

Working with colleagues in the Northern Territory and Papua New Guinea, where children experience extremely high rates of ear infections, they noticed a striking absence of the 'friendly' bacterium.

"This was the turning point, leading us to ask a simple but powerful question: what if this bacterium is actually protective for the ear in the same way probiotics work in the gut?" Associate Professor Kirkham said.

"We knew that for bacteria to cause ear infections, they first must live in the nose and then travel up the Eustachian tube to infect the middle ear. The true light-bulb moment came when we asked: What if we could put the friendly bacterium up the nose and stop the nasty bacteria before they ever get a chance to cause an ear infection?"

"We had human nasal cells growing in the lab, so we decided to test the theory directly, exposing the cells to the friendly bacterium and then challenging them with the pathogenic one – and it worked!

"This finding meant we could potentially eliminate OM caused by non-typeable *Haemophilus influenzae*, which would significantly reduce infections and prevent medical visits, antibiotic prescriptions, hearing loss and speech delays, and long hospital wait lists for grommet surgery.

"Further work by our team demonstrated that a spray containing the protective bacteria was safe and effective in preventing ear infections in mice, paving the way for securing patents on this discovery."



NEXT STEPS

- The team is preparing for the Phase 1 study in healthy adults to demonstrate safety
- Phase 2 studies will follow, involving children and eventually expanding to larger cohorts of participants across multiple countries.
- The team is working to see Spritz-OM licensed and available to patients within the next decade.

The team has since navigated the complex path from discovery to commercialisation. They have now secured funding for clinical-grade manufacturing and clinical trials. Together, they co-founded spin-out biotech company, Oto Medicines, to accelerate the development of Spritz-OM.

This year, Oto Medicines won the 2026 Emerging Innovation Award at the WA Innovator of the Year Awards, underscoring the recognition of both the spin-out company's groundbreaking work and the transformative potential of Spritz-OM.

"It is very exciting to reach this major milestone and begin clinical trials. This endeavour has always had a firm focus on translating good science into something that genuinely changes outcomes for children," Professor Richmond, Head of The Kids' Vaccine Trials Group, said.

"In the next five to ten years, we hope to see Spritz-OM progressing to being available on the market and having a real-world impact on improving the lives of children and their families."

This work has been supported by the Stan Perron Charitable Foundation, Brandon Biocatalyst CUREator, NHMRC, CSIRO and the WA Child Health Research Fund.

A game-changing approach to autism support

A new research project is aiming to transform assessment and communication supports for autistic children.

Researchers at CliniKids, The Kids' first integrated clinical research service, are in the second year of a five year potentially game-changing program, called COMPASS.

Three in five autistic children currently reach school age in Western Australia unable to communicate easily. This places stress on kids and their families, as well as significantly impacting their education and posing challenges for teachers.

CliniKids' bold research project, COMPASS - short for COMmunication through Personalised ASsessment and Support - aims to have all autistic kids in Western Australia able to communicate effectively by school entry.

Professor Andrew Whitehouse, The Kids Deputy Director (Research), Angela Wright Bennett Professor of Autism Research, and Director of CliniKids, said there is a clear need in the community for individualised support pathways for each unique autistic child.

"There is no single therapy that is effective in supporting the communication development of all autistic children, and there is currently little understanding about how to ensure each autistic child receives the most effective therapy for their specific needs," Professor Whitehouse said.

CliniKids client Vicky Stephens is a teacher and mum of three - Helena, 10, Alice, 7, and Charles, 4. Helena and Charles are autistic and have communication differences that impact the family's daily lives.

"Helena also has slow processing speed and this impacts on her communication. It takes her longer to respond to others and if they are not aware, this can be mistaken for lack of understanding or attention," Ms Stephens said.

"Charles struggles to use social greetings with those he doesn't know well. He often repeats words or phrases from his sisters, TV and books. He can be quite rigid when speaking and is extremely upset by interruptions, not getting the response he wants, or not being heard.

"It can be frustrating as a parent - and more so as an autistic kid I'm sure - to see supports offered that are just cookie cutter autism supports. This ends up wasting everyone's time and money," Ms Stephens said.

Through COMPASS, CliniKids researchers are developing a world-first computerised assessment tool (CAT) to map each autistic child's unique clinical profile.

"This research program will address this urgent issue by, first, using new computerised adaptive testing to develop a new method of communication assessment, and second, acquiring knowledge about which clinical support is most effective in reducing communication disability for each individual autistic child," Professor Whitehouse said.

"COMPASS focuses on communication, but it is the whole of the child and family we will be supporting. When we help kids communicate, every aspect of their life becomes easier."

Latest ABS data estimates **290,900 autistic Australians**, up 41.8 per cent since 2018.

Two in three autistic children experience major challenges with communication.

Three in five autistic children reaching school age are unable to talk or communicate easily.

The COMPASS research program has been guided by consultation with the autism community. This has included a collaboration between CliniKids and Autism Association Australia to deliver the 2026 National Parent and Carer Survey, which collected responses from over 1,000 parents and carers of autistic children across Australia.

CliniKids Senior Principal Research Fellow Professor David Trembath is leading the program, alongside Professor Whitehouse. Professor Trembath said the long-term vision was for COMPASS to deliver a streamlined way of assessing and supporting children's development across health, education and disability systems.

"COMPASS will provide a more accessible, efficient, and personalised assessment approach, reducing time spent on waitlists and appointment costs for families," Professor Trembath said.

"This bold program is the first step towards transformational change for WA, using science to



Mum Vicky Stephens with children Alice, 7, Charles, 4 and Helena, 10

develop and validate a new approach that will improve the efficiency and effectiveness of clinical practice."

Ms Stephens believed that the individualised assessments and tailored communication supports being developed through COMPASS would benefit families like hers and the wider community.

"This would mean my kids don't start school on the back foot. The support this would provide to the child and family would be huge."

COMPASS is made possible thanks to support from the Stan Perron Charitable Foundation, the Channel 7 Telethon Trust and The JEM Foundation.

NEXT STEPS

- The National Parent & Carer Survey Report will be released in January 2027.
- The CAT will be tested in clinics in 2027.
- A clinical trial in 2028 will test whether COMPASS is more effective in reducing communication disability compared to current practice.
- It is expected that CAT will be available for use in clinics across WA by early 2030.
- Following the WA rollout, it is hoped that COMPASS can be extended across Australia.
- The long-term vision is for COMPASS to be available not only to autistic kids, but to all children with communication challenges.

Research to explore link between life experiences and pregnancy outcomes

Could the experiences we have as children affect the health of the next generation? ORIGINS researchers are exploring how adverse early life experiences affect pregnancy, birth and child development - and how earlier support can help change the story for future generations.

The team, led by ORIGINS Senior Research Fellow, Dr Kristjana Einarsdottir, will be surveying 3,000 mothers within the 10,000-strong ORIGINS cohort on their Adverse Childhood Experiences as well as their positive experiences.

"In Australia, 41 per cent of women reported to have experienced a form of childhood adversity, with the most reported category being psychological abuse," Dr Einarsdottir said.

Adverse Childhood Experiences, known as ACEs, are commonly divided into three categories:

- Emotional, physical, or sexual abuse
- Emotional or physical neglect
- Household dysfunction, including family violence, substance abuse, poor mental health, parental separation, or incarceration.

Research has shown a strong relationship between living through ACEs and increased risk factors for leading causes of death in adults, including heart disease, obesity, alcoholism, severe mental health disorders, and drug abuse.

"Often, negative childhood experiences can contribute to an intergenerational cycle of disadvantage," Dr Einarsdottir said, "with children of parents who have experienced ACEs often presenting with social, emotional or behavioural difficulties later in life, as their parents did before them."

For pregnant women, ACEs can cause increased maternal stress which can lead to pregnancy complications and potentially impact the health and development of the expectant child.

By understanding how Adverse Childhood Experiences influence pregnancy, birth, infant and child outcomes, ORIGINS researchers hope to strengthen the evidence needed to improve antenatal screening and ensure women at greater risk receive targeted care and support earlier in pregnancy.

"Earlier identification means earlier support. By integrating universal antenatal screening, we can identify mothers who have experienced childhood trauma and connect them with targeted mental health support throughout pregnancy and into their child's early years, helping improve outcomes for both mothers and their children," Dr Einarsdottir said.

Positive childhood experiences can help protect against the effects of ACEs, however little research has explored how these protective factors influence pregnancy, birth and child outcomes for mothers who have experienced past trauma.

"The more positive, safe and supportive a person's childhood is, the less likely they are to experience the long-term physical and mental health challenges associated with ACEs."



Dr Kristjana Einarsdottir

Research also suggests that strong social support can help reduce stress during pregnancy by improving coping skills and supporting maternal mental wellbeing.

For women affected by ACEs, connecting with the right support groups and services could be life-changing for both mother and child.

"The perinatal period is the earliest window in which negative outcomes may be transmitted to the next generation," Dr Einarsdottir said. "It is crucial our research informs universal antenatal screening for maternal ACEs which could transform prenatal care, provide opportunities for early intervention and support, and work to end the cycle of disadvantage."

Adverse Childhood Experiences (ACEs) is a nested sub-project within ORIGINS, Australia's largest longitudinal interventional birth cohort study of its kind run in partnership with The Kids and Joondalup Health Campus.

ORIGINS is following 10,000 families from pregnancy throughout childhood, providing a wealth of data and biological samples enabling researchers to conduct cost-effective, accelerated research into early interventions and targeted supports to increase family flourishing.



Chloe Whalan, 8, and Dr Sarah Whalan

This research is supported by funding from the Women and Infants Research Foundation. Led by The Kids, collaborators include Joondalup Health Campus, Curtin University, The University of Notre Dame Australia, King Edward Memorial Hospital.

ORIGINS develops pioneering framework on early childhood flourishing

Researchers at The Kids are tackling the challenge of technology-facilitated abuse towards girls and women in rural and regional communities by amplifying the voices of boys and young men.

The Flourishing Child sub-project within ORIGINS has screened more than 11,000 scientific papers as part of the project, alongside a new measurement and intervention tool to identify where kids need the most support in their early years.

Physical and mental health concerns are rising globally, with anxiety diagnoses in Australia increasing from 4.4 per cent to 7.6 per cent among children and adolescents from 2008 to 2013.

ORIGINS Co-Director and Chief Investigator of The Flourishing Child, Dr Jackie Davis, said while healthcare systems excel at identifying and treating illness, far less attention has been given to fostering the conditions that help children flourish from the very beginning of life.

"When we think about children's health, we often focus on the absence of disease or adversity. Instead, we should also be measuring the presence of the positive attributes that help children flourish, such as feeling safe and loved, engaging in learning and play, and developing resilience and self-regulation," Dr Davis said.

The Flourishing Child Framework





Left to right: Dr Jackie Davis, Dr Zenobia Talati, Kasie Jackson, Heath Griffin, 6, Lucy Griffin, 3, Elly Griffin, Jack Kennare and Ellen Meagher

While flourishing is a well-established concept in adult health and wellbeing, there is little consensus in the scientific literature on what it means for young children, particularly those under five years of age.

After screening 11,177 scientific papers and consulting extensively with families, consumers and key stakeholders, The Flourishing Child team developed an evidence-based, community-informed framework for early childhood flourishing.

The unique framework underpins a new intervention tool that will help identify where children need support to bloom from the earliest years.

"This framework highlights the need for robust, evidence-based programs across healthcare, education and community services that support children and families in the areas where they need it most," Dr Davis said.

To put this into practice, The Flourishing Child team are trialling a Flourishing Check to be completed by parents and carers to identify where their child may need extra support.

Parents are then provided access to the novel Pathway Tool, which directs them to services and resources tailored to their child's needs.

"For example, a first-time mother completes the Flourishing Check to better understand her child's development. The assessment identifies an opportunity to strengthen the child's Love and Connection domain, and the accompanying Pathway Tool connects her with relevant local services, such as a mothers' group. By joining the group, she builds social connections, reduces isolation and strengthens her child's sense of belonging within the community," Dr Davis said.

With the first phase of the trial set to conclude in early 2027, The Flourishing Child team is seeking funding to launch the next phase, expanding trials of the Flourishing Check and Pathway Tool across Western Australia.

This sub-project was funded by MRFF. It's led by The Kids and partnered with Ngala, Goodstart Early Learning, Playgroup WA, Ishar Multicultural Womens Health Services, The Fathering Project, and Data Divers.

Giving voice to regional boys and young men to prevent online abuse

Researchers at The Kids are tackling the challenge of technology-based abuse in regional communities by amplifying the voices of boys and young men.



Senior Research Fellow Dr Vincent Mancini

Head of the Human Development and Community Wellbeing team Professor Francis Mitrou and Senior Research Fellow Dr Vincent Mancini are leading a new project that seeks to understand how boys and young men can help create safer online environments for girls and young women.

Professor Mitrou said listening to boys and young men directly was a vital part of the study.

"Although some men may perpetrate these behaviours, we also know that the perspectives of boys and young men who care about the safety of girls and women in their communities will be important in helping to stamp out these behaviours," Professor Mitrou said.

He explained that boys often face peer pressure to engage in harmful or misogynistic online behaviours. By providing safe and constructive spaces for them to share their perspectives, the research aims to foster positive peer leadership and encourage respectful digital cultures, particularly in regional communities where boys and young men may play a central role in shaping attitudes.

Dr Mancini said the project also carried a strong practical focus, with the potential to influence real-world change in policy, education, and service delivery.

"It's our hope the findings will guide more effective government policies, education programs, and family support services in regional Australia by centring youth – especially boys and young men – as key voices in understanding and preventing tech-based abuse," Dr Mancini said.

"The research will also help highlight gaps in current responses and help shape accessible, locally relevant solutions for rural communities."

The project's first phase has now been completed across three WA regional communities representing farming (Narrogin), mining (Kalgoorlie) and fishing (Esperance), with interviews conducted in each location.

The interviews focused on listening to boys and young men to better understand their views on online abuse and the support they need. The insights gathered will inform the second phase, which will focus on strengthening the Beacon app by adding new, relevant content and resources informed by the experiences of boys and young men. Developed by The Kids and supported by Dolly's Dream, the cyber safety app already supports more than 30,000 parents and caregivers across Australia with trusted online safety advice.

Professor Mitrou and Dr Mancini's work adds to a growing body of research showing that young women are disproportionately affected by gendered online abuse, and that regional communities face additional challenges such as limited support services, lack of anonymity and poor digital connectivity.

By focusing on boys and young men, the project takes an innovative approach to developing solutions grounded in lived experience, with the potential to create lasting change in regional communities.

This important work has been made possible thanks to a grant from the Australian Government's eSafety Commissioner Preventing Tech-based Abuse of Women Grants Program.

New hope for children living with type 1 diabetes

A new era in type 1 diabetes (T1D) care is providing hope for WA children living with the condition thanks to several clinical trials being offered through the early stage and newly diagnosed T1D clinics.



Clinical Nurse Charly Keough, Brax Bentley (14), Oakley Atcheson (6) and Dr Sarah Black, photo courtesy The West Australian

Researchers from the Rio Tinto Children's Diabetes Centre based at The Kids and Perth Children's Hospital (PCH) are facilitating access to national and international immunotherapy trials for children living with early-stage T1D in WA.

T1D is one of the most common chronic conditions in children. In Western Australia, there are more than 1300 children living with T1D and about 150 children are diagnosed every year.

Dr Sarah Black, an early Clinician Researcher at The Kids and a Paediatric Endocrinologist at PCH, said research advances in the field – such as T1D screening programs – meant children could now be identified early in their T1D journey, before they had any symptoms or signs and before they needed insulin treatment.

One of the clinical trials is an immunotherapy drug that works to delay the onset of diabetes and is also hoped to slow the decline of those recently diagnosed with the condition.

The treatment is being trialled in children across the globe, but this is the first time it has been available to kids in WA.

Brax Bentley, who was diagnosed with T1D in early February, was one of the first children in Australia to trial the new immunotherapy drug.

The 14-year-old takes the medicine daily for a year to see if it will help preserve his insulin-producing beta cells.

"It's exciting. Hopefully I'll see the benefits it might have in preserving my beta cells, which may mean taking less insulin as I get older," he said.

"I also want to be part of the trial so we can help other families living with T1D. If this is successful, other kids can hopefully take it from the beginning of their T1D diagnosis."

Six-year-old Oakley Atcheson currently has multiple T1D related antibodies, meaning he is likely to develop the chronic condition.

It is hoped medicines like this could delay the onset of his diabetes.

His dad Matthew Atcheson, who lives with diabetes, said the treatment could be life-changing for his son.

"The treatments now are night and day compared to what my dad went through when he was diagnosed and even the last 10 years since I was diagnosed, the opportunities we've got now are very good," he said.

"Every year we can delay diabetes is massive especially for kids and in those teenage years."

NEXT STEPS

- Our goal is that every child at risk of T1D in WA is given the choice to participate in a trial that gives them a chance to stay well for longer.

The early-stage type 1 diabetes clinic has been supported by Channel 7 Telethon, Breakthrough T1D and Rio Tinto.

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