Government of Western Australia
Child and Adolescent Health Service

Perth Children's Hospital Foundation

The KIDS RESEARCH INSTITUTE AUSTRALIA



2026

Child Health Research Symposium - Abstract Booklet

Empowering Futures: Advancing Child Health

9-13 November

Wandju wandju, nidja

Acknowledgement of Country

The Child and Adolescent Health Service (CAHS) acknowledges the Whadjuk and Binjareb people of the Noongar Nation as the Traditional Custodians of the land, sea and waters on which we work and live. We pay our respects to the Elders past and present.

Aboriginal people, as the First Peoples, have cared for this land for at least 65,000 years. We recognise and value their continuing cultural and spiritual connections to this land. CAHS acknowledges the diversity of Aboriginal people from across Western Australia who access the health services provided within CAHS.

CAHS recognises that the colonisation of this Country has come at a great cost to Aboriginal peoples and communities and the continued effects of colonisation impact on health and wellbeing today. We pay tribute to the strength, resilience, and courage of Aboriginal people who have survived the devastation of the recent past, to stand strong and proud today.

CAHS is committed to working towards a better future, where all cultures are respected and valued, and Aboriginal people take their rightful place as the First Australians.

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Tuesday Abstracts - 10 November

Aboriginal Torres Strait Islander Health

Partnering with communities to improve health outcomes, cultural safety and health equity for Aboriginal children and families.

Community-led approaches to addressing headlice among WA children

Amgarth-Duff, Ingrid
The Kids Research Institute, University of Western Australia

Background: Head lice infestation is common in childhood yet remains a neglected area of research and health promotion. We identified a substantial burden of head lice in both remote (~50%) and urban (18%) Aboriginal children in WA. Beyond itch and discomfort, families described stigma, school absenteeism, treatment burden and financial costs. Through the Koolungar Moorditj Healthy Skin Project, Aboriginal families identified head lice as a priority requiring improved treatment options and culturally relevant resources.
Methods: Guided by community priorities and Aboriginal governance, two complementary initiatives emerged. A Delphi study was conducted to identify outcomes that matter most to families to inform a future clinical trial of oral head lice treatment. Building on the successful co-design of Kaal Tackles Eczema-Australia's first culturally relevant children's eczema storybook - a head lice storybook is being co-developed with Aboriginal community members. The storybook aims to support head lice identification, treatment and prevention and reduce stigma through community-led storytelling.
Results: Families prioritised outcomes beyond eradication alone, including symptom relief, recurrence, affordability and ability to practically follow treatment recommendations. Community also identified a lack of culturally relevant educational resources and expressed a desire for co-designed, strengths-based materials informed by community knowledge that support children and families to confidently manage head lice.
Conclusion: Head lice remain an important but under-recognised child health concern in urban and remote WA. We demonstrate how community-identified priorities can drive research and knowledge translation through practical, strengths-based and community-led approaches to improving child health and wellbeing.

Embedding Aboriginal governance and cultural accountability in clinical trials

Garlett, Brooke
The Kids Research Institute

Clinical trials involving Aboriginal and Torres Strait Islander peoples must move beyond consultation towards governance models that embed cultural accountability across the research lifecycle. Persistent historical and structural inequities contribute to mistrust and underrepresentation in research. Addressing these challenges requires Aboriginal leadership, Indigenous Data Sovereignty, and culturally safe approaches embedded in clinical trials from the outset. The Staphylococcus aureus Network Adaptive Platform (SNAP) trial provides an established example of these approaches, while the Invasive Streptococcus A: Antibiotic prophylaxis for Contact management (ISAAC) trial demonstrates how Aboriginal governance can be intentionally embedded during trial start-up. To examine how Aboriginal governance,

Indigenous Data Sovereignty, and cultural accountability can be integrated into clinical trials, using the SNAP Cultural Information Hub and the early-phase development of the ISAAC trial. The SNAP Cultural Advisory Committee development of the Hub, decision-support platform culturally informed recruitment, consent, communication, engagement. Building principles, ISAAC trial embedding Aboriginal governance from inception through dedicated Aboriginal leadership, establishment of Cultural Advisory Committee, co-development of study materials and governance pathways, and integration of Indigenous Data Sovereignty protocols. As national trial ISAAC positions governance and community partnership as foundational trial infrastructure. SNAP demonstrates how Aboriginal governance strengthens culturally safe trial delivery. In ISAAC, these approaches are operationalised prospectively, shaping trial design, workforce capability, governance structures, and decision-making processes from the outset. Embedding Aboriginal governance before trial inception is critical to ethical research. ISAAC illustrates a proactive model where funding leadership, cultural safety, and data sovereignty are foundational, not retrospective, to clinical trial excellence.

Improving chronic wet cough care for Aboriginal children across Australia

Lau, Gloria
Child and Adolescent Health Service, University of Western Australia, The Kids Research Institute Australia

Background: Chronic wet cough (CWC), common among Australian Aboriginal children, is associated with impaired quality-of-life and poorer future health outcomes e.g. bronchiectasis. Early recognition and optimal management are crucial. We aimed to determine how APPLE (“Aboriginal Partnerships for Paediatric Lung health Excellence”), a program to facilitate detection and management of CWC, should be tailored for diverse primary care settings and communities, before evaluating its efficacy.
Methods: An Aboriginal co-led participatory action research and implementation study was conducted in eight communities across three Australian states and territories. Barriers and enablers to APPLE implementation were explored through interviews with carers of Aboriginal children and healthcare providers. Thematic analysis informed local tailoring prior to implementation. The primary outcome measure was parent-proxy cough-specific quality of life (PC-QoL), assessed 6-weeks to 3-months after presentation with CWC in a 6-month period pre- and post-implementation.
Findings: Between May 2021 and July 2023, 167 carers and 83 healthcare providers participated in interviews. Tailoring-to-context of APPLE was considered essential, with minor, locally achievable changes. Following implementation, there was improved health seeking by families, better clinician proficiency, and improved PC-QoL scores of 1.7 points (95% CI 0.87–2.50; $p<0.001$), exceeding the minimal clinically important difference threshold of 0.9.
Interpretation: Tailoring APPLE to diverse Aboriginal community contexts was essential for community engagement and effective in improving CWC outcomes. APPLE provides a model for improving detection and management of CWC and possibly other childhood conditions that could improve child health trajectories and advance health equity for Aboriginal children and families.

The Staphylococcus Aureus Network Adaptive Platform (SNAP) trial: Cultural perspectives

Pigliafiori, Lisa Maree
Child and Adolescent Health Service, The Kids Research Institute, University of Melbourne, Wesfarmers Centre for Vaccines and Infectious Disease - Perth Children's Hospital

Recruiting and retaining First Nations peoples in clinical research is challenging due to historical, cultural, social, and structural barriers that have contributed to mistrust and limited participation. This is critical as SAB infections disproportionately affect First Nations communities, with rates estimated to be five to six

times higher among Aboriginal and Torres Strait Islander peoples in Australia and Māori and Pasifika peoples in New Zealand. The Cultural Information Hub (CIH) webpage provides a curated space that simplifies navigation of existing intranet resources and offers SNAP specific tools to strengthen the cultural accountability of trial investigators and project staff. The SNAP Trial Aboriginal & Torres Strait Islander Cultural Advisory Committee recommended developing the CIH as a decision support tool to guide respectful engagement with Australian First Nations peoples. Reflecting traditions of oral storytelling & art, the hub features artwork by an Aboriginal graphic designer and includes First Nations flags with appropriate permissions. The CIH embeds cultural knowledge into trial activities, supporting staff in recruitment, consent, and communication ensuring research processes are culturally responsive and aligned with community expectations. The CIH enhances researchers' understanding of culturally grounded approaches to clinical trial recruitment by providing accessible information on community values, health beliefs, communication preferences, and historical contexts shaping First Nations experiences with research.

This model demonstrates how culturally informed digital tools can strengthen recruitment, uphold ethical research practices, and improve representation of First Nations peoples in clinical trials. The CIH has launched and will continue to evolve, offering potential scalability across research infrastructures globally.

Skin health in hospitalised children at Perth Children's Hospital

Ricciardo, Bernadette
Child and Adolescent Health Service, South Metropolitan Health Service, The Kids Research Institute, University of Western Australia, Wesfarmers Centre for Vaccines and Infectious Diseases, The Kids Research Institute Australia, Nedlands, Western Australia, Australia

Purpose: Skin conditions are common among Aboriginal children and young people in Western Australia and contribute to significant health inequities. Untreated bacterial skin infections can lead to invasive infection, rheumatic heart disease and chronic kidney disease. Previous studies suggest these conditions are frequently under-recognised in hospital settings. This study will determine the baseline prevalence of clinician-documented dermatological disorders among children admitted to Perth Children's Hospital (PCH) and compare findings between Aboriginal and non-Aboriginal children.

Methods: A retrospective audit of digital medical records will be undertaken for 0–18-year-olds admitted to wards 1B and 2A at PCH during February 2025. Data extracted from routinely collected inpatient records will include demographics, admission details, documented dermatological disorders, treatments, referrals, complications and discharge documentation. Dermatological disorders will be classified into broad diagnostic categories. Prevalence will be summarised descriptively, and comparisons between Aboriginal and non-Aboriginal groups will use logistic regression and appropriate tests for categorical data (HREC 1466).

Preliminary results: We will present audit findings. Approximately 410 admissions are expected, including around 60 Aboriginal children and young people. We anticipate documented dermatological disorders will be relatively uncommon overall because of under-recognition, but more frequent among Aboriginal children due to the well-established community prevalence of skin infections for Aboriginal children.

Conclusions: This audit will provide baseline data on the recognition and management of skin conditions in hospitalised children at PCH. Findings will inform the Moorditj Marp (Strong Skin) – SHARE Initiative and future models to improve equitable skin health outcomes for Aboriginal children and young people.

Children's and young people’s drawings from a Healthy Lifestyle Check

Smith, Stephanie
Child and Adolescent Health Service, Curtin University, The Kids Research Institute

Background: Children’s and young people’s artwork offers an underutilised way of understanding their experiences of healthcare. This study was conducted within the Healthy Lifestyle Program for children and young people above a healthy weight and their families in Boorloo/Perth, Western Australia. During the child's/young person’s Healthy Lifestyle Check, they were invited to draw what being healthy meant to them, or another topic of their choice. This study explored children's and young people’s drawings.
Methods: Participation in the artwork activity varied across timepoints; some completed drawings at baseline, others at follow-up, and some at both timepoints. All available consented drawings were included in the analysis. Some drawings included text from the children/young people. Drawings and text were analysed using qualitative content analysis.
Findings: Across drawings, health was represented as multi-dimensional, categorised by physical activity, food, family relationships, and everyday environments. Many images emphasised movement (e.g., sport, play) and depicted outdoor spaces, suggesting that health is situated within their daily lives rather than as an isolated clinical concept. However, not all drawings were explicitly health-related, with some reflecting personal interests, imaginative content, highlighting the child-led nature of the activity.
Conclusion: Children’s and young people’s drawings generated during the Healthy Lifestyle Check offers a child- young person-centred lens for understanding how health and wellbeing are experienced and expressed. Variation in participation across timepoints reflects the flexible, voluntary nature of the activity. Incorporating creative methods enriches the understanding of children’s and young people’s perspectives and supports more inclusive approaches to health programs and research.

Making health feedback meaningful: Tailored medical letters for children, young people and families

Smith, Stephanie
Child and Adolescent Health Service, Curtin University, The Kids Research Institute

Background: Traditional medical correspondence prioritises clinician-to-clinician communication. Evidence from NZ’s Whānau Pakari healthy lifestyle program found that clinical letters can be perceived by families as disempowering and recommended personalised letters, including children’s artwork. This study was conducted within the Healthy Lifestyle Program for children, young people above a healthy weight and their families in Boorloo/Perth, WA. Following the child/young person's initial Healthy Lifestyle Check with their caregiver, where children/young people were invited to create artwork, they received tailored letters alongside the medical letter to the referrer. Implementing the NZ program’s recommendations, this study explored participants' perspectives on tailored, child- and caregiver-friendly letters.
Methods: Five focus groups were conducted between May-October 2025 with children/young people and caregivers participating in the program at two timepoints (8-12 weeks and 6 months). Focus groups were audio-recorded and transcribed verbatim. Data was analysed using framework analysis.
Findings: Twenty-six participants took part (9 children, 4 young people, 13 caregivers). Two themes were identified. Supported and seen through personalised communication, participants valued the letters as a meaningful component of the Healthy Lifestyle Check. The inclusion of children’s/young people’s artwork contributed to feelings of recognition and support, providing a recap of discussions with the clinician. Challenges to engagement highlighted variation in recall of receiving and reading the letters, suggesting letters may be missed or overlooked.
Conclusion: Personalised letters were well-received as an early engagement and relational feedback tool,

promoting connection and a sense of being valued. The findings support inclusive approaches to healthcare communication and recommendations are provided.

Otitis media and chronic respiratory disease in remote Indigenous children

Wedderburn, Isaac
Child and Adolescent Health Service, Curtin University, The Kids Research Institute

Background: The burden of otitis media (OM) and chronic respiratory disease, (protracted bacterial bronchitis (PBB), chronic suppurative lung disease (CSLD), bronchiectasis), in early childhood is disproportionately high in Australian Indigenous children, however little is known about any association. We aimed to determine the burden any associated risk factors in Indigenous children <19years.
Methods: A whole-population cross-sectional community study of Indigenous children <19-years in four remote communities in Kimberley, Western Australia. Children underwent ear and respiratory screening, between April–August 2024 with follow-up via medical record audit until December 2025 to establish a final diagnosis.
Results: We recruited 365 of 422 (86.5%) children, median-age (IQR) 8.9-years (5.2, 12.0). Ear screening was completed in 278 children, identifying 121 (43.5%) with OM, with the highest prevalence (71.0%) in children aged <5-years. Eighty-one (22.2%) children had chronic respiratory disease, and the burden of CSLD/bronchiectasis and restrictive spirometry increased with increased age (p<0.001). There was no correlation between overall OM and PBB (p=0.2). OM was associated with children living in communities with unsealed roads (prevalence odds ratio [POR]; 2.2, 95%CI 1.4,3.7) and childhood smoking was associated with CSLD/bronchiectasis (POR=6.2, 95%CI 2.3, 15.8).
Conclusion: Prevalence of OM was high, with highest burden in children aged <5-years. The burden of chronic respiratory diseases remains high, with the burden of more severe disease, i.e., CSLD/bronchiectasis increasing with increased age. There was no relationship between all OM subtypes and PBB. There is an urgent need for strategies to prevent and limit disease burden and progression in this priority population.

Plenary 1:
Sepsis, Infection and Antimicrobial Management

Improving prevention, treatment and long-term outcomes in paediatric sepsis and serious bacterial infections

Balanced fluid or 0.9% saline in children treated for septic shock

Borland, Meredith
Child and Adolescent Health Service, University of Western Australia, Paediatric Research in Emergency Departments International Collaborative

Background: Whether treatment with balanced crystalloid fluid leads to better outcomes than 0.9% saline in children treated for septic shock is debated.
Methods: In this pragmatic clinical trial conducted at 47 emergency departments in five countries, including Perth Children's Hospital, patients (2 months to <18 years of age) with suspected septic shock and abnormal perfusion were randomly assigned to receive fluid resuscitation with either balanced fluid (BF) or 0.9% saline (SAL) for up to 48 hours. The primary outcome was a major adverse kidney event at 30 days after enrolment or hospital discharge, whichever occurred first.
Results: Of 9041 enrolled patients, 4235 in BF group and 4247 in SAL group respectively, were analysed. A primary-outcome event occurred in 137 patients (3.4%) receiving BF and in 124 (3.0%) receiving SAL (difference, 0.4 percentage points; 95% confidence interval [CI], −0.5 to 1.3; risk ratio, 1.10;95% CI, 0.88 to 1.40; P=0.85). The median number of hospital-free days during 28 days after enrollment was 23 (interquartile range, 19 to 25) in both groups.
Hyperchloremia occurred in 868 patients (31.4%) in BF and in 1383 (49.0%) in SAL; hypernatremia in 52 (1.8%) and 89 (3.1%), respectively; and hyperlactatemia in 260 (19.8%) and 228 (16.7%). No differences in other safety outcomes or adverse events were seen.
Conclusions: Among children treated for septic shock, no significant difference was seen in the incidence of death, new renal-replacement therapy, or persistent kidney dysfunction when fluid resuscitation was administered with balanced fluid as compared with 0.9% saline.

Adjunctive clindamycin in S. aureus bacteraemia: Paediatric SNAP results

Bowen, Asha
Child and Adolescent Health Service, The Kids Research Institute, University of Western Australia

Background: Adjunctive clindamycin inhibits Staphylococcus aureus toxin production in vitro, animal studies, and has shown a promising efficacy signal in observational studies and a small pilot trial.
Methods: We conducted the adaptive platform, open label, randomised controlled S. aureus Network Adaptive Platform (SNAP) trial in which children and adults were enrolled simultaneously within the same trial and treatment domain. Participants were assigned to adjunctive clindamycin for 5 days (intervention) or no clindamycin (control). Clindamycin was administered intravenously 15mg/kg/dose (maximum dose 600mg) or orally 10mg/kg/dose (maximum dose 450mg) q8h. Analysis used a Bayesian logistic regression model. The primary outcome was 90-day all-cause mortality. The pre-specified secondary paediatric composite endpoint included 90-day mortality, microbiological treatment failure, new foci or hospitalisation beyond 30 days.

Results: Between 2022 and 2025, 4,108 participants (3,921 adults and 187 children) were enrolled across 118 sites in 9 countries; 19 sites in 4 countries recruited paediatric participants. The 90-day all-cause mortality in adults was 16.9% (327/1940) with clindamycin and 15.2% (277/1822) with no clindamycin (aOR 1.15, 95% CrI 0.95–1.39, posterior probability of superiority 0.0745); and in paediatrics was 0% in both groups (0/82 vs 0/89; aOR 1.11, 95% CrI 0.33–3.29). Clostridioides difficile-associated diarrhoea occurred in 1.9% of both groups, with 1 case in children. The secondary composite paediatric endpoint was met in 13/74 (17.6%) with clindamycin and 18/85 (21.2%) with no clindamycin (aOR: 0.93, 95% CrI: 0.41–2.03).
Conclusions: In the largest S. aureus bacteraemia trial conducted to date, adjunctive clindamycin did not reduce 90-day mortality; paediatric outcomes were consistent with the overall trial.

Let's yarn about sepsis

Campbell, Anita
Child and Adolescent Health Service, University of WA, TKRI

Background: Aboriginal and Torres Strait Islander children have a disproportionately high burden of sepsis and poorer critical care outcomes than non-Aboriginal children. However, little is known about the lived experiences of Aboriginal families affected by sepsis.
Methods: This mixed-methods study aims to identify opportunities to improve sepsis recognition, awareness, prevention and care for Aboriginal children and families. Aboriginal children aged ≤18 years admitted to Perth Children's Hospital (PCH) with sepsis between October 2022 and July 2025 were included. PCH is Western Australia's quaternary paediatric referral centre, serving a geographically vast population. Part one comprises a retrospective matched case-control study using data from the PCH Sepsis Registry to evaluate care and outcomes benchmarked against national sepsis care standards. Part two involves qualitative yarning with Aboriginal families to explore their experiences of sepsis and healthcare services.
Results: Aboriginal children represented 13% of sepsis admissions despite comprising only 3.3% of Western Australia's population. Compared with non-Aboriginal children, they were substantially more likely to reside in rural and remote locations, experience severe disease, require paediatric intensive care admission, and have longer hospital stays.
Conclusions: Quantitative findings demonstrate a significant inequity in the burden and severity of paediatric sepsis among Aboriginal children. Effective prevention, treatment and recovery depend on strong partnerships between families and healthcare services. Ongoing qualitative analysis will identify barriers and gaps in care, informing the co-design of culturally secure educational resources and models of care aimed at improving sepsis outcomes for Aboriginal children and families.

Characterising paediatric post-sepsis outcomes: SENTINEL study

Middleton, Natalie
Child and Adolescent Health Service, Curtin University, Telethon Fellowship

Introduction: Post sepsis morbidity in children is increasingly recognised, yet most evidence derives from critically ill populations. Outcomes among children managed outside paediatric intensive care units (PICUs) remain under studied. We aimed to characterise parent reported post sepsis outcomes at 3-months.
Methods: We conducted a secondary analysis of children (≤17 years) enrolled in the multicentre SENTINEL study (April 2021 to December 2023), recruited from 12 emergency departments in Australia and New Zealand. Families completed a researcher designed survey approximately 90 days post presentation. Quantitative demographic and outcome data were analysed descriptively. Free text responses underwent content analysis, mapped to Post Intensive Care Syndrome paediatric (PICS p) domains (physical, emotional, cognitive, social).

Results: Of 3,200 respondents, 331 (10.3%) reported ongoing concerns; 297 provided free text responses. Children and their families with concerns had higher illness severity, including greater PICU admission (21.5% vs. 14.1%) and longer hospital stay. Despite this, most children with concerns did not require PICU admission. Physical sequelae were most common, particularly gastrointestinal symptoms (19.9%) and recurrent infections (17.2%). Emotional impacts included child anxiety (15.2%) and mental health concerns (12.2%). Parental anxiety (4.4%) and concern about deleterious antibiotic effects (6.1%) were also reported. Social impacts and cognitive concerns were less frequent. Age related differences were evident across domains.
Conclusion: At 3-months, post sepsis morbidity affected children across all PICS p domains, including those not critically ill at presentation. Findings highlight heterogeneous, age dependent recovery trajectories and the need for structured, multidisciplinary, family centred follow up for all children recovering from sepsis.

Nursing Concurrent Session

Evaluation of a PCH Paediatric Post-Sepsis Care Pilot Program

Middleton, Natalie
Child and Adolescent Health Service, Curtin University, Telethon Fellowship

Introduction: The PCH Post-Sepsis Care Pilot Program was implemented in March 2025 to support children recovering from sepsis and their families. Co-designed with clinicians and consumers, the program provides discharge education, individualised care planning, nurse-led care coordination, and virtual follow-up at 3, 6, and 12 months.
Objectives: To evaluate the impact of the PCH Post-Sepsis Care Pilot Program on child and family outcomes, healthcare utilisation, and service delivery.
Methods: Mixed-methods evaluation of a prospective cohort (n=101) and a comparison cohort admitted prior to implementation who completed follow-up at 12 months only (n=33). Quantitative outcomes included Paediatric Quality of Life Inventory (PedsQL™), co-design measures, healthcare utilisation, referral patterns, and implementation outcomes. Qualitative evaluation comprised semi-structured interviews with 12 parents from metropolitan and rural WA and was analysed thematically.
Results: Participants had a median age of 4 years; 70% resided in metropolitan areas and 30% in rural and remote WA. Approximately half required Paediatric Intensive Care Unit admission, while General Paediatrics was the primary treating team for 50% of referrals, with the remainder managed across diverse medical and surgical specialties. Quantitative analyses are ongoing. Three themes were identified: Life Has Changed (Child); Navigating Lasting Impacts (Family); and Being Seen, Heard, and Supported. Findings highlighted ongoing physical, emotional, cognitive, educational, and family impacts following sepsis and the value of accessible follow-up, care coordination, education, and reassurance.
Conclusion: Recovery from paediatric sepsis often extends beyond hospital discharge. Structured follow-up may help identify ongoing needs and inform future models of care.

The comfort of home: Neurodivergent eExperiences of HiTH remote monitoring

Newman, Brooke
Child and Adolescent Health Service

Background: Neurodivergent children and families often experience significant distress and overwhelm in traditional hospital-based inpatient settings. The Hospital in the Home (HiTH) Remote Monitoring (RM) service may provide an innovative model of inpatient-level care in the home by utilising remote vital sign monitoring, telehealth consultations, and home visits. Understanding neurodivergent families' experiences is important for developing equitable and family-centered healthcare models.
Aim: To understand the experiences of neurodivergent children and families who received care through the HiTH-RM service to inform further qualitative research and service development.
Methods: Families of children admitted to the HiTH-RM service between April 2025 and April 2026 were invited to complete an anonymous, voluntary post-discharge survey comprising multiple-choice, Likert-scale, and free-text items. Free-text comments from families identifying themselves or their child as neurodiverse were analysed using Bohm's five-step approach. Two researchers independently coded responses, then reviewed codes to reach consensus and collaboratively develop themes through an iterative process.
Results: From 302 surveys, 27 respondents (8.9%) identified themselves or their child as neurodivergent. Feedback was predominantly positive, with key themes including reduced stress and overwhelm, improved engagement with treatment, enhanced rest and recovery, and increased caregiver confidence. A small

number reported technical issues (e.g. connectivity and sensor faults) and usability concerns, including notification frequency and survey design.
Conclusion: The HiTH-RM service provided a valuable and equitable model of inpatient care for neurodivergent families, with reported clinical and psychosocial benefits. Future research will use focus groups to further explore emerging themes and inform service development.

Better support, quicker recovery: A qualitative analysis of family experience

Nichols, Jess
Child and Adolescent Health Service

Background: Hospital in the Home (HiTH) Remote Monitoring (RM) is an innovative service enabling paediatric inpatients to complete their acute admission at home using wearable monitoring devices. The service was co-designed with consumers to support family-centred care, which was central to the service goals. During a 12-month pilot, caregiver feedback for patients managed on HiTH RM was elicited via voluntary, anonymous online surveys. Descriptive analysis of multiple-choice questions has indicated broad acceptability to families. However, qualitative analysis of unstructured feedback may offer richer insights into the experiences of children and their families.
Aim: To explore the experiences of families who participated in the HiTH-RM pilot to inform service improvement and areas for future qualitative research.
Methods: The Bohm five-step approach to qualitative content analysis was utilised to explore unstructured feedback from surveys collected over April 2025 – April 2026. Codes were applied independently by two researchers, and themes were developed through iterative rounds of discussion and consensus.
Results: 302 surveys were collected with 284 (94%) providing unstructured feedback across one or more of three domains: overall service experience, care capacity and usability of technology. Themes centred on positive engagement with staff, feelings of empowerment and comfort at home, perceived improvement in recovery and wellbeing, benefits for the whole family, technical challenges and opportunities, and expectations exceeded.
Conclusion: Families responded positively to care provided remotely, reporting benefits extending beyond clinical outcomes to broader family wellbeing. These findings will guide service evolution to meet health service priorities.

Understanding attendance at 1- and 2-year child health checks

Sewell, Dallas
Child and Adolescent Health Service

Background: Timely child health checks support early intervention and can positively influence a child's developmental trajectory. In Western Australia, CACH nurses provide five free checks between birth and two years, yet attendance declines markedly at the 1- and 2-year checks, reducing opportunities for early identification and support. While psychosocial adversity is recognised as a potential barrier to engagement, there is limited evidence examining clinically documented adversity within child health services.
Aim: To examine the association between clinically documented psychosocial adversity and attendance at the 1- and 2-year child health checks, and whether maternal mental health modified this relationship.
Methods: This retrospective cohort study analysed de-identified Child Development Information System data for 25,493 children born in metropolitan Perth between September 2021 and August 2022. Attendance was categorised as full, partial, or no attendance. Associations between documented psychosocial adversity and attendance were examined using adjusted regression models. Stratified analyses assessed differences by Edinburgh Postnatal Depression Scale (EPDS) scores.
Results: Overall, 22% of children had full attendance, 27% partial attendance, and 51% non-attendance.

Unexpectedly, documented psychosocial adversity was associated with lower odds of non-attendance (aOR=0.88, 95% CI 0.81–0.94). However, among mothers with elevated postnatal EPDS scores (≥13), psychosocial adversity was associated with increased odds of incomplete attendance (aOR=1.53, 95% CI 1.21–1.94).
Conclusion: Recognised psychosocial adversity may increase service visibility and opportunities for targeted support, strengthening engagement. However, mothers experiencing psychological distress may represent a critical point where additional support is needed to maintain engagement and promote equitable access to developmental screening.

Improving care of children with FH: Integrated NP–Led Model of Care

Weidinger, Jemma
Child and Adolescent Health Service

Background and aim: Familial hypercholesterolaemia (FH) is a common genetic disorder that causes elevated levels of low-density lipoprotein-cholesterol (LDL-C) from birth and untreated, can lead to premature atherosclerotic cardiovascular disease (ASCVD). FH is an easily detected and treatable paediatric disorder and ASCVD is preventable. National guidelines recommend children with FH commence statin therapy from 8 years, to achieve goal LDL-C <4.0 mmol/L before 10 years and <3.5 mmol/L from 10-18 years. Many children with FH remain undetected and inadequately treated. FH in Kids established Australia's first nurse practitioner (NP)-led paediatric FH program, to improve the detection and management of children with FH across WA.
Methods 1:. Retrospective audit of all children <18 years with a diagnosis of FH and enrolled in the PCH FH Registry. We compared the proportion who achieved goal LDL-C level before introduction of the NP role in 2023, with those who achieved goal LDL-C after NP introduction in 2024 and 2025.
Methods 2: We surveyed families (n=30) on their patient reported experience measures
Results 1: Among children with FH who were eligible for treatment, the proportion achieving goal LDL-C increased from 36% in 2023 to nearly 70% in 2025 (Table 1).
Results 2:.100% rated as excellent/very good: i/ overall FH management, ii/ personalised FH management plan; and 97% rated as excellent/very good: iii/ knowledge about FH, iv/ confidence managing their child's FH.
Conclusion: The introduction of a paediatric FH NP was associated with an increased proportion of children achieving their LDL C goal. Families reported high levels of FH health literacy and confidence managing their child's condition.

Characteristics of PARROT EWS 24 hours before unplanned PICU admission

Zhou, Huaqiong
Child and Adolescent Health Service, Curtin University

Introduction: Identifiable physiological deterioration often occurs ≥24 hours before unplanned ICU admission. An ESCALATION System incorporating the PARROT was implemented across all WA Healthcare facilities from April 2021. The PARROT consists of 5 age-specific observation and response charts (10-weighted and 1-unweighted components) for a maximum EWS of 24. Scores prompt an increasingly urgent 5-level escalation pathway.
Objectives: To examine EWS and components in the 24 hours to time decision made for ICU admission (1-Oct-2021 to 30-Sep-2024) at PCH.
Methods: A retrospective review of PARROT charts included children (>30-day to <16-year) on ED/inpatient units who experienced unplanned ICU admissions. Excluded were children admitted to ICU within 60 minutes of ED presentation, or with "Do-Not-Resuscitate" directives or admitted as high-risk for

monitoring/intervention. EWS were extracted and descriptively analysed.
Results: 679 ICU admissions (368 from ED, 311 from inpatient units) involved 641 hospitalisations for 578 children (aged 5.0±4.9 years). 68 children (12%) experienced ≥2 ICU admissions. There were 40 (24 hours prior), 213 (the worst), and 53 (decision made for ICU admission) EWS requiring immediate emergency response (no score calculated). The remaining calculated EWS increased from 24 hours prior (3.3±2.8) to the worst score (6.6±3.3) and decreased by the time of decision made for ICU admission (4.9±3.3). Length of ICU stay was 3.5±6.5 days. In-patient mortality rate per children was 1.03% (n=6).
Conclusion: The trajectory of physiological deterioration in the 24 hours preceding ICU admission clinically supports the use of the ESCALATION System and warrants further examination of predictors for unplanned ICU admission.

CAMHS Concurrent Session

Understanding Neurodivergent Children's Experiences in Crisis Mental Health

Boutrus, Maryam
Child and Adolescent Health Service, The Kids Research Institute

Neurodivergent children and adolescents, including those with autism and ADHD, represent a substantial proportion of mental health-related presentations to the Perth Children's Hospital Emergency Department (ED). While current acute mental health crisis services, such as CAMHS Crisis Connect and the Acute Crisis Response Team, have been effective in reducing ED admissions overall, it remains unclear how well these services meet the needs of neurodivergent children. Previous research indicates that, compared to their neurotypical peers, these children often face longer inpatient stays, increased use of restrictive interventions, and poorer long-term outcomes. As such, there is a need to better understand how they are supported within existing services and to identify areas for improvement in current models of care. Using a two-part explanatory sequential mixed-methods design, this study aims to determine whether neurodivergent children within WA crisis services differ in access, service use, and clinical outcomes, and whether neurodivergent status influences service trajectories. The first phase involves a retrospective audit of routinely collected clinical data, followed by surveys and interviews with young people, families, and clinicians to explore lived experiences of care. Ultimately, the findings will inform improvements to crisis care, with the goal of reducing avoidable ED presentations and readmissions, and improving safety, engagement, and longer-term outcomes for neurodivergent youth.

Safety planning in CAMHS: A mixed-methods study of use and clinician perspectives

Boutrus, Maryam
Child and Adolescent Health Service, The Kids Research Institute

Emergency Departments (EDs) have increasingly become the first point of contact for many children and young people (CYP) experiencing acute mental health crises. In response, the Western Australian Child and Adolescent Mental Health Service (WA CAMHS) has developed and implemented a range of specialised services within and outside the ED to facilitate timely access to care. Clinical staff within these services frequently encounter CYP in acute distress, including suicidal ideation or risk of harm to self or others. In these situations, clinicians must undertake timely assessment, triage, and brief intervention to support the young person's wellbeing and determine the appropriate intensity of care. Risk assessment and safety planning are essential components of this process. This mixed-methods study aims to strengthen safety planning and risk assessment practices within CAMHS Crisis Connect (CCC) and the Emergency Department (ED). Through a clinical audit and staff surveys and interviews, it will evaluate how safety plans are used, how closely current practice aligns with best-practice standards, and how clinicians experience and perceive the process. The findings will highlight key gaps and opportunities for improvement, informing targeted training, policy updates, and service enhancements to ensure consistent, collaborative, and effective safety planning across crisis care settings, ultimately supporting safer and more consistent care for young people in crisis.

Teachers' trauma-informed education and training: A scoping review

Carton, Ella
The Kids Research Institute, University of Western Australia, Child and Adolescent Health Service, Curtin University, Royal Australian College of General Practitioners (RACGP)

There is increasing global awareness of the prevalence of events which may be experienced as traumatic for children. Experiencing trauma can adversely impact a child's wellbeing, education, and social and health outcomes. Given children spend much of their time in school, it is necessary that teachers have the knowledge and skills to effectively support their students who are impacted by trauma. To better understand teachers' knowledge and skills base regarding trauma-informed practice (TIP), a synthesis of current evidence was needed concerning how teachers' perceive their TIP education and training. This scoping review synthesised studies regarding teachers' experiences and perceptions about the impact of TIP education and training.
The scoping review was conducted in accordance with the JBI methodology for scoping reviews, informed by Arksey and O'Malley's five-step methodological framework. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis for Scoping Reviews (PRISMA-ScR) checklist was followed. Keywords and index terms were identified by the research team, and searches were conducted on relevant and reputable databases (Embase, Psychinfo, MEDLINE, and ERIC).
Thirty-eight studies were included in this review. Subsequent thematic analysis identified three main themes related to teachers' experiences and perceptions about the impact of TIP education and training: 1) teachers requiring more TIP knowledge and skills; 2) the impact of TIP education and training; and, 3) the policy, community and institutional barriers to TIP. The findings underscore the importance of teachers' TIP education and training and the need for addressing the barriers to TIP at the wider school and system-level.

A co-produced youth friendly resource improves expectations of Child and Adolescents

Dondzilo, Laura
Child and Adolescent Health Service, University of Western Australia

Youth mental health services are experiencing increasing demand globally and yet low levels of engagement and attendance at appointments remain persistent challenges. From the perspective of a young person referred to a mental health service, negative expectations about the service may contribute to poor engagement and non-attendance. An Australian Child and Adolescent Mental Health Service (CAMHS) recently developed a novel youth-friendly resource – 'inforeels' – to enable viewers to form realistic expectations of the client journey throughout CAMHS. This resource was co-produced with young people, including those with past experience of CAMHS, and consist of short attention-grabbing videos designed to mimic social media reels. The present study aimed to evaluate the effectiveness of the inforeels in promoting more positive expectations amongst young people aged 12-17. Participants completed an online survey which involved watching the inforeels and completing a brief expectancy measure pre- and post-exposure to the inforeels. Results revealed significantly improved expectations relating to intended actions and most anticipated care experiences. No significant changes were observed for expectations relating to anticipated emotional responses or relationships with CAMHS staff. It is possible that the inforeels served to normalise, rather than reduce, emotional responses. Further research is needed to determine factors underpinning expectancy change and whether these changes predict subsequent engagement with services.

Enhancing prenatal alcohol exposure assessment for Australian psychologists

Kerimofski, Katherine
University of Western Australia

Despite the well-established link between prenatal alcohol exposure (PAE) and disruption to neurodevelopment, including the development of Fetal Alcohol Spectrum Disorder (FASD; Bower et al. 2016; DeJong et al. 2019), Australian psychologists were not confident in their ability to assess PAE and reported not wanting to shame the biological mother and not knowing how, as the main reasons for not asking about PAE during clinical interviews (Kerimofski et al; 2024). The majority of these psychologists were largely unaware of clinical guidelines, as well as state and federal government recommendations to screen for PAE in assessments (FASD Model of Care, Department of Health, State of WA 2010; National FASD Strategic Action Plan 2018-2028, Department of Health 2018; Kerimofski et al; 2024).
An online training for Australian psychologists was developed with input from consumers from NOFASD Australia. The training focused on the impact of PAE, historical and current PAE guidelines and completing PAE assessments in a clinical interview, including using the AUDIT-C (Bush et al., 1998). Reducing stigma was a key goal of the training, given previous studies indicated stigma as the main concern of psychologists avoiding asking about PAE assessment, in addition to a lack of knowledge (Kerimofski et al., 2024 and 2025). This talk explores the outcomes of the training with psychologists, including changes in knowledge and attitudes towards PAE assessment, as well as future training directions.

Dissociation in adolescents: A scoping review of phenomenology and overlap

Milkins, Bronwyn
The Kids Research Institute, University of Western Australia, Curtin University

Background: Dissociative disorders are under-recognised and under-treated in adolescents. Current diagnostic frameworks largely reflect downward extensions of adult conceptualisations and may not adequately account for developmental differences in younger populations, risking the obscuring of adolescent-specific symptom patterns and contributing to missed diagnosis and delayed intervention.
Objective: This scoping review systematically examined how dissociation in adolescents is described in the academic literature, and identified similarities and differences between adolescent and adult dissociative presentations mapped against DSM and ICD diagnostic criteria.
Inclusion criteria: Eligible sources included peer-reviewed case studies, case series, and qualitative studies providing symptom-level descriptions of dissociation in adolescents aged 13 to 17 years, as well as non-fictionalised case material from books and doctoral theses. Participants were required to have a formal diagnosis of a dissociative disorder, or a disorder with dissociative features, under any DSM or ICD edition, with sufficient individual-level symptom detail for extraction.
Methods: A systematic search was conducted across Embase, MEDLINE, PsycINFO, Scopus, and PTSDpubs, with grey literature sourced from ProQuest Dissertations and Theses Global. Data were analysed using directed qualitative content analysis, combining deductive coding against DSM and ICD criteria with inductive coding to capture symptom presentations beyond existing frameworks.
Anticipated findings: Results will be presented at this conference. We anticipate adolescent dissociative presentations will demonstrate meaningful overlap with adult diagnostic criteria, whilst also exhibiting developmentally distinct features - particularly around identity formation, emotional regulation, and interpersonal functioning - with implications for recognition, early intervention, and treatment adaptation.

Supporting families accessing hospital care: Exploring hospital experiences

Zaffino, Amanda
The Kids Research Institute

Hundreds of thousands of children in Australia access hospital care every year. Many of these children have experienced trauma prior to attending the hospital, and it is well documented that hospitalisation itself can be distressing. In Australia, up to 42% of children experience a traumatic event before the age of 18, and hospital care can further contribute to stress through pain, invasive procedures, and perceived threats to safety. Around 20% of children and 10–40% of parents develop trauma-related stress responses, which may disrupt emotional wellbeing, sleep, and treatment adherence, and can lead to healthcare avoidance. These risks highlight the need for paediatric hospitals to prioritise emotional safety alongside physical care. Trauma-informed care (TIC) provides a framework to reduce distress and prevent re-traumatisation through principles including safety, trust, collaboration, empowerment, peer support, and cultural humility. However, there is limited understanding of how TIC is experienced by children and families. This qualitative, co-designed study aims to explore how care is experienced and provided in paediatric hospitals across Western Australia, and the degree to which the care aligns with TIC principles. It will involve semi-structured interviews with 20 children aged 4–11, 20 adolescents aged 12–17, 20 parents and carers, and 35 hospital staff. Interviews will examine lived experiences of care, perceptions of TIC, and barriers and enablers to TIC implementation. Data will be analysed using deductive and inductive approaches. Preliminary findings will be presented and discussed. This study will inform future TIC guideline development for paediatric hospitals.

Plenary 2:
Respiratory Health, Prevention and Acute Care

Improving respiratory health, infection prevention and outcomes in acute paediatric illness

Intranasal live attenuated influenza vaccine: attitudes, coverage & impact

Blyth, Chris
Child and Adolescent Health Service, The Kids Research Institute, University of Western Australia, PathWest Laboratory Medicine

Background: Children experience the highest rates of influenza infection and hospitalisation and contribute substantially to community transmission. An injectable influenza vaccine (IIV) is funded through the National Immunisation Program (NIP) for children aged 6 months to <5 years, and Western Australia (WA) additionally funds IIV for children aged 5 to 11 years. Despite these programs, influenza vaccine coverage has remained low. In response, WA, Queensland, New South Wales and South Australia introduced state-funded intranasal live attenuated influenza vaccine (LAIV) programs in 2026.
Methods: A mixed-methods evaluation of the WA LAIV program was undertaken in 2026, incorporating parental and provider surveys, in-depth parental interviews, analyses of state and national vaccine utilisation data, and vaccine effectiveness assessments.
Preliminary results: Among parents attending immunisation clinics, 81% preferred an intranasal vaccine. The most commonly cited reasons were reduced distress and avoidance of needles. Among children receiving LAIV, 93% of parents and/or children reported no/minimal distress and 99% reported no/minimal pain. Overall, 86% of parents indicated they would be comfortable with their child receiving LAIV at school or childcare. As of 22 June 2026, influenza vaccine coverage in WA was 22% among children aged 2–4 years and 17% among those aged 5–11 years, compared with 16% and 13%, respectively, at the same time in 2025. Vaccine effectiveness analyses are ongoing.
Conclusions: Positive feedback from parents and children and improved coverage highlight the contribution that LAIV programs can provide. Strategies to improve coverage including school-based programs must be urgently prioritised.

TcCO2 monitoring in children having tubeless upper airway procedures

Crole, Daniel
Child and Adolescent Health Service, The Kids Research Institute, University of Texas Southwestern Medical Center, University of Western Australia, University of Queensland

Background: Tight control of arterial carbon dioxide (PaCO2) is important for cell integrity and therefore internal physiology. In tubeless airway procedures, exhaled carbon dioxide is not feasible due to absence of exhaled gas monitoring. An alternative surrogate method for monitoring is transcutaneous carbon dioxide (TcCO2) which is minimally invasive with strong correlation to PaCO2. Our replication and extension of a recent study on paediatric hypercapnia aimed to assess the relationship and incidence of hypercapnia with procedural events.

Methods: This is a sub-analysis of the Hamster trial, including participants aged 0-16 years who underwent tubeless upper airway surgery. Radiometer TCM5 monitors were used to assess TcCO2 intraoperatively. The primary outcome was the occurrence of hypercapnia (TcCO2 > 50mmHg). Secondary outcomes included severe hypercapnia (TcCO2 > 90mmHg), temporal relation of procedural events with TcCO2, and the incidence of perioperative respiratory adverse events (PRAE).
Results: A total of 494 participants were assessed with intraoperative monitoring.The median [interquartile range] age was 1.7 years [0.8-4.4], and 39% of participants were female. Hypercapnia was observed in 85% overall (91% in cases >5yrs) and severe hypercapnia in 8.9% overall (12% in cases >5yrs). Hypoxia was the most frequently observed PRAE at 4% during the surgery and 15% during the intraoperative period.
Conclusions: The incidence and severity of hypercapnia during tubeless upper airway procedures increases with age, especially after 5 years of age. Our next steps are to include mixed-effects regression models and additional monitoring study populations.

An RCT improving outcomes for children with Otitis media with effusion

Robinson, Teagan
The Kids Research Institute

Introduction: Otitis media with effusion (OME) affects approximately one in two Aboriginal children in metropolitan Western Australia (WA) by six months of age and one in four non-Aboriginal children during the first three years of life, often resulting in conductive hearing loss and adverse speech, language, learning, and developmental outcomes. Ventilation tube insertion (VTI), a common treatment for persistent OME, imposes substantial costs on tertiary healthcare services. This adaptive randomised-controlled trial (RCT) evaluates primary care-based interventions that may promote OME resolution, including the ‘Blow, Breathe, Cough’ (BBC) intervention. Interim efficacy results and planned adaptive trial expansions will be presented.
Methods: This parallel-group, 1:1, outcome assessor-blinded adaptive RCT compares OME resolution among children aged 2-7 years recruited from Perth Children's Hospital and a south-metropolitan Aboriginal child health community site who complete BBC plus hand hygiene, (intervention) or hand hygiene alone (control). A new intervention arm evaluating the Earflo medical device is anticipated to commence later in 2026.
Results: The primary outcome is OME resolution from enrolment to 4–6-week follow-up, defined as a transition from Type B tympanometry to Type A or C1, or from Type C2 to Type A. Interim analysis results from the first 100 participants will be available at the time of presentation.
Conclusion: If effective, BBC and future trial interventions may provide evidence-based, low-risk management options for OME that can be implemented in primary care settings, reducing healthcare costs, burden of OME on tertiary services, and improving long-term hearing, speech, language, and quality-of-life outcomes for affected children.

Impact and effectiveness of Australia's RSV immunisation program

Blyth, Chris
Child and Adolescent Health Service, South Metropolitan Health Service, The Kids Research Institute, University of Western Australia

Background: Australia introduced a hybrid Respiratory Syncytial Virus (RSV) Maternal and Infant Protection Program (RSV-MIPP) in 2025, using National Immunisation Program-funded RSV vaccine for pregnant people from 28 weeks' gestation and jurisdiction-funded nirsevimab. We estimated effectiveness and assessed impact of the RSV-MIPP program across a participating surveillance network.

Methods: From April 2024 and November 2025, hospitalised children with RSV-associated acute respiratory infection (ARI; cases) and contemporaneous RSV-negative controls were recruited. Immunisation effectiveness was estimated using a test-negative design with multivariable regression, adjusted for prespecified covariates, and calculated as (1−adjusted odds ratio)×100% with 95% confidence intervals (CIs). Impact was assessed as the 2024–2025 change in the cumulative number of RSV hospitalisations during epidemiological weeks 14–48, excluding hospitals in two states with comprehensive 2024 nirsevimab programs, and stratified by age group.
Findings: Overall effectiveness against RSV-associated ARI hospitalisation in the RSV-MIPP newborn cohort (born from 17 February) was 82·6% (95% CI: 70·6,89·7). Effectiveness estimates for maternal vaccination and nirsevimab were 81.5% (68.4, 89.2) and 89·6% (73·6, 95·9) respectively. Nirsevimab effectiveness in the catch-up cohort (born 1st October 2024 to 16th February 2025) was 89·6% (66·4, 96·8). The program's impact was associated with 43·8%, 20·1% and 8·5% reduction in hospitalisations in infants aged 0 to <3months, 3 to <6months and 6 to 12months respectively.
Interpretation: This is the first southern hemisphere estimates of a hybrid RSV prevention program demonstrated high effectiveness against RSV hospitalisation over a single season. At the symposium, we will provide early insights into effectiveness of the hybrid program in 2026.

Six-year outcomes in Indigenous children following early respiratory disease

Wedderburn, Isaac
Child and Adolescent Health Service, Curtin University, The Kids Research Institute

Background: Protracted bacterial bronchitis (PBB), chronic suppurative lung disease (CSLD) and bronchiectasis are parts of a disease spectrum characterised by chronic wet cough (CWC). Untreated PBB can develop into CSLD/bronchiectasis. Community-based data are limited, and longitudinal studies of children with CWC/PBB may provide insights into risks of developing CSLD/bronchiectasis and associations with lung function, particularly in priority populations. Our aim was to characterise the six-year respiratory outcomes of young Indigenous children with CWC/PBB, and risk factors associated with chronic respiratory disease.
Method: In a whole-population observational community-based cohort study in four-remote Western Australian communities, we undertook respiratory screening of Indigenous children aged <eight-years. The children were followed-up six-years later. Results: Of the 203 children recruited in 2018-2019, 191 (94.1%) were re-screened in 2024, where 33/191(17.3%) had a chronic respiratory condition; their median forced expiratory volume in-one-second and forced vital capacity z-scores were significantly lower than their healthy peers, mean-difference (MD) was -0.78(95%CI -1.30, -0.30), and -1.30(95%CI -1.90, -0.77) respectively. Of the 26 children with CWC in 2018-2019, nine (34.6%) had CSLD/bronchiectasis six-years later, with the risk of CSLD/bronchiectasis being 28.6(95%CI 6.6, 124.9) times higher than those without CWC. Previous acute lower respiratory tract infection (ALRI) hospitalisation was associated with CSLD/bronchiectasis (prevalence odds ratio=7.8, 95%CI 2.1, 41.6).
Conclusion: In this first whole-community longitudinal study of remote-based Indigenous children, there was high prevalence of chronic respiratory disease with corresponding low lung function. CWC in the first eight-years of life and previous ALRI-related hospitalisation were associated with significantly increased risk of CSLD/bronchiectasis.

Overnight monitoring in children post-tonsillectomy: GAP trial analysis

Yang, Amanda
Child and Adolescent Health Service, The Kids Research Institute, Department of Anaesthesia and Pain Medicine Perth Children's Hospital

Introduction: Tonsillectomy is a common paediatric procedure associated with significant postoperative pain. A current challenge in the standard postoperative analgesic regimen, is that the use of opioids may increase the risk of respiratory complications, particularly in children with sleep-disordered breathing (the main indication for tonsillectomy at PCH). Gabapentin has potential as an opioid-sparing adjunct, while providing analgesia. However, there is limited evidence for its use in children. This study aims to assess the safety profile of gabapentin using overnight monitoring.
Methods: This analysis was conducted within the GAP double blinded RCT, which included children aged 4-16 years undergoing elective tonsillectomy. Overnight monitoring was conducted on children on the first post-operative night and included continuous pulse oximetry (Nonin WristOx) and transcutaneous carbon dioxide monitoring (Sentec). The oxygen desaturation index (ODI3), time spent with oxygen saturation <90%, and maximum, mean and baseline transcutaneous CO2 levels were analysed.
Results: Continuous pulse oximetry was completed in 75 patients (41 gabapentin, 34 placebo) CO2 was completed in 65 participants (37 gabapentin, 28 placebo). Baseline demographics, perioperative opioid exposure and STBUR scores (Snoring, Trouble Breathing, and Un-Refreshed) were similar between groups. No statistically significant difference was observed between the intervention groups in ODI3, time spent with oxygen <90% or maximum, mean and baseline transcutaneous CO2 levels.
Conclusion: Gabapentin was not associated with increased overnight respiratory complications following tonsillectomy in children. This suggests gabapentin may be implemented in post-tonsillectomy analgesic regimes without causing significant respiratory complications in the immediate postoperative period.

Wednesday Abstracts - 11 November

Early Career Innovation and Translational Research

Ph-like acute Lymphoblastic Leukaemia diagnosis by Imaging Flow Cytometry

Aluner, Andrea
University of Western Australia

Aim: Philadelphia chromosome-like acute lymphoblastic leukaemia (Ph-like ALL) is a high-risk paediatric B-ALL subtype with high relapse rates and poor survival outcomes. Most cases involve the P2RY8-CRLF2 rearrangement, leading to the overexpression of the cytokine receptor-like factor 2 (CRLF2) and thymic stromal lymphopoietin receptor (TSLPR). Diagnosis remains challenging due to the lack of defining features and the need to perform multiple tests (morphology, flow cytometry, FISH, and RT-PCR). This study aimed to determine whether integrating phenotypic expression of TSLPR and P2RY8-CRLF2 rearrangement using imaging flow cytometry could improve diagnostic specificity for Ph-like ALL.
Method: Bone marrow samples (n=10) from paediatric B-ALL patients at diagnosis were analysed. Cells were stained with CD34-BV421, CD10-BB700, and CD19-AF647 to detect the leukaemia, and TSLPR-BV510 and CD3-SBB765 (control). DNA was denatured and hybridised with a CRLF2 break-apart FISH probe (CRLF2-FITC; P2RY8-ROX), followed by nuclei counterstaining. Cells were acquired on the Cytek Amnis ImageStreamX Mark II and analysed using IDEAS software.
Results: The test turnaround time was 48 hours with 10,000 – 50,000 cells acquired. Control CD3-positive T-lymphocytes showed normal overlapping CRLF2-FITC/P2RY8-ROX signals and were TSLPR-negative. In four ALL cases, leukaemic CD19+ (CD34/CD10) precursor B-cells exhibited P2RY8-CRLF2 rearrangement (split signals) and were TSLPR-positive. The remaining six cases showed profiles consistent with control T-cells.
Conclusion: Imaging flow cytometry detected P2RY8-CRLF2 rearrangements with concordant TSLPR expression in confirmed Ph-like ALL cases. This is the first method that combines TSLPR immunophenotyping and FISH, potentially providing a rapid, streamlined identification of Ph-like ALL to guide therapy and enable earlier relapse prevention.

Moving through treatment: Physiotherapy for children with ALL

Connell, Eloise
Child and Adolescent Health Service, Little Big Steps

Acute Lymphoblastic Leukaemia (ALL) is the most common childhood cancer, and its treatment often reduces children's ability to participate in physical activity (PA), contributing to physical deconditioning. In 2023, the Little Big Steps foundation funded physiotherapy services at Perth Children's Hospital to deliver personalised, family-centred interventions aimed at improving gross motor skills and supporting safe PA engagement during treatment.
This study aims to evaluate the impact of physiotherapy education and interventions on functional outcomes in children with ALL and to identify factors influencing the delivery of patient-centred physiotherapy care. A sequential mixed-methods cross-sectional design will be used. Part 1 involves a retrospective audit of children aged 0–18 diagnosed with ALL between 2021 and 2025, examining baseline PA levels, timing and frequency of physiotherapy input, chemotherapy-related side effects, and barriers to

PA. Part 2 is a prospective investigation involving parents, children over 10 years, and healthcare professionals, using three tailored surveys and the Paediatric Quality of Life Cancer Module. Part 1 preliminary data reveals earlier physiotherapy engagement, increased frequency of intervention in the post-funding cohort. We anticipate Part 2 to show associations between early education and tailored interventions with improved PA participation and family and patient satisfaction of the service provided. Findings will inform future physiotherapy protocols and service delivery models.

Birthplace & mother's own milk feeding outcomes in transported HIE infants

Gencel-Augusto, Jelica
Child and Adolescent Health Service, University of Western Australia, UWA Centre for Human Lactation Research and Translation, Crawley, Australia

Background: In Western Australia (WA), newborns with moderate-to-severe hypoxic-ischemic encephalopathy (HIE) are transported by the Newborn Emergency Transport Service (NETSWA) to tertiary NICUs in Perth for therapeutic hypothermia (TH). Maternal-infant separation is common during this critical period for initiation of Mother's Own Milk (MOM) production. Moreover, feeding is withheld during treatment (~84h). We examined whether MOM-feeding outcomes were influenced by birthplace in transported infants with HIE.
Methods: Infants transported 2018-2025 were identified from the institutional neonatology database. Exclusions were death <7days, TH<72h, and congenital disorders. Outcomes were MOM-feeding at first feed (FF), tertiary NICU discharge, and 4 months. Birthplace was classified as metropolitan, regional or remote (Modified Monash Model). Groups were compared using Fisher's exact/Chi-square and multivariate logistic regression examined factors associated with MOM-feeding at 4 months. Results: 151 infants were identified, 32 excluded, and 119 analysed (metro 78[65%], regional 27[23%], remote 14[12%]; p<0.0001]. MOM at FF across areas was similar (65/78[83%],26/27[96%],11/14[79%]; p=0.34). At discharge, any MOM was less common among regional infants (21/27[78%]; p=0.017) than metropolitan (74/78[95%]) or remote (14/14[100%]), whereas full-MOM was similar across metropolitan, regional, and remote infants (41/78[53%], 13/27[48%], 8/14[57%]; p=0.10). Infants discharged to another hospital received less full-MOM than those discharged home (13/42[31%] vs 49/77[64%]; p<0.001). Infants receiving any MOM at discharge were ~6 times more likely to receive MOM at 4 months (OR 5.96, 95%CI 2.38-14.91,p<0.001).
Conclusion: In transported HIE infants who underwent TH, any MOM-feeding at 4 months is strongly associated with any MOM-feeding at NICU discharge rather than birthplace.

Mother's own milk feeding outcomes by HIE severity in transported infants

Gencel-Augusto, Jelica
University of Western Australia, UWA Centre for Human Lactation Research and Translation, Newborn Emergency Transport Service (NETS WA)

Background: In Western Australia (WA), newborns with moderate-to-severe hypoxic-ischemic encephalopathy (HIE) are transported by the Newborn Emergency Transport Service (NETSWA) to tertiary NICUs in Perth for therapeutic hypothermia (TH). Maternal-infant separation is common during this critical period for initiation of Mother's Own Milk (MOM) production. Moreover, feeding is withheld during treatment (~84h). We examined whether MOM-feeding outcomes were influenced by HIE severity in transported infants.
Methods: Infants transported 2018-2025 were identified from the institutional neonatology database. Exclusions were death <7days, TH<72h, and congenital disorders. Outcomes were MOM-feeding at first feed (FF), tertiary NICU discharge, and 4 months. Groups were compared by HIE severity (moderate vs severe) using Fisher's exact/Chi-square and multivariate logistic regression examined factors associated

with MOM-feeding at 4 months (odds ratios [OR], 95%CI). Results: Of 151 identified infants, 119 were included. Moderate HIE was more prevalent (119[90%] vs12[10%]). FF was earlier for moderate than severe HIE (4[3.8-4.2] vs 5.9[4.8-6.6] days; p<0.001]. Most infants received MOM as FF regardless of HIE severity (91/107[85%] vs 11/12[92%]; p=1.00). Regardless of HIE severity, most infants received some MOM at discharge (99/107[93%] vs 10/12[83%], p=0.27], while only half received full-MOM (56/107[52%] vs 6/12[50%], p=0.46). In multivariable analysis, HIE severity (OR 1.6, 95% CI 0.8-3.3), time to first feed (OR 0.85 per day, 95%CI 0.65-1.10), and birthplace were not associated with MOM-feeding at 4 months.
Conclusion: Feeding in HIE is impacted the most at the beginning of life. However, HIE severity does not appear to influence MOM-feeding rates at discharge and at 4 months.

Betaine improves protein tolerance in Homocystinuria: A WA experience

Gulati, Pratima
Child and Adolescent Health Service, South Metropolitan Health Service

Background/Aim: Western Australia (WA) has the highest prevalence of paediatric patients with classical homocystinuria (HCU) due to cystathionine beta-synthase (CBS) deficiency. We aimed to describe management of paediatric patients with HCU at Perth Children's Hospital (PCH) and evaluate whether the introduction of betaine was associated with changes in natural protein tolerance and biochemical control.
Methods: We retrospectively reviewed all paediatric patients diagnosed with HCU since 2004, living in WA. Data included CBS gene variant, pyridoxine responsiveness, age at betaine initiation, proportion of total homocysteine (tHcy) levels within target range (<100 µmol/L), frequency of dried blood spot (DBS) monitoring, natural/total protein tolerance, and clinical/dietary outcomes. Descriptive analysis was performed.
Results: Seven patients (age range: 3months-18years) were included. All patients were identified by Newborn Screening (NBS) and confirmatory genetic tests. All were prescribed methionine-free supplements in the neonatal period. Seventy-one percent (n=5) were prescribed betaine- Age of initiation 2-8 years. Introduction of betaine resulted in an increase of natural protein by average 35%, enabling dietary liberalisation. Natural protein tolerance ranged from 5.1–15 g/day (total protein 1–2.2 g/kg/day). All patients received regular tHcy level monitoring via DBS (weekly to bimonthly). DBS correlated well with plasma tHcy (±10%). tHcy levels were consistently within treatment range (<100 µmol/L) 71% of patients (n=5).
Conclusion: In this single-centre cohort, betaine introduction was associated with a ~35% increase in natural protein tolerance and sustained biochemical control in most patients. Structured DBS monitoring was feasible and showed acceptable agreement with plasma tHcy. Larger multicentre data are needed.

Reducing respiratory disease in children with cerebral palsy

Marpole, Rachael
University of Western Australia

Background: Cerebral palsy (CP) is a heterogeneous group of motor disorders, with a prevalence of 1.4 per 1,000 live births. Respiratory disease is the leading cause of morbidity and mortality in this population, accounting for over 50% of deaths. Despite this, mortality rates have remained largely unchanged over the past four decades.
Aim: To: (1) systematically review antibiotic use in acute respiratory illness in children with neurodisability; and (2) develop and assess a novel model of care (RESP-ACT). A systematic review of antibiotic therapy identified nine low-quality studies (>5000 participants). Regimens covering anaerobic and gram-positive organisms were associated with shorter hospital stays, while broader-spectrum antibiotics were often required, particularly in more severe cases or when Pseudomonas aeruginosa was suspected.
Method: A mixed-methods pilot randomised controlled trial evaluated RESP-ACT, an individualised,

multidisciplinary intervention targeting modifiable risk factors. Twenty children aged 0–12 years were followed for 12 months. Feasibility outcomes demonstrated high recruitment, retention, and acceptability, with 73% complete data capture and 89% completion of fortnightly surveys. Caregivers and clinicians strongly supported implementation. The intervention group showed a 72% reduction in hospital length of stay and substantially lower annual healthcare costs compared to usual care (AUD 43,156 vs AUD 177,297), primarily due to reduced respiratory admissions.
Conclusion: RESP-ACT is a feasible and potentially cost-effective model of care that may reduce respiratory morbidity and healthcare utilisation in children with CP. These findings support progression to a large multi-centre randomised controlled trial to inform future clinical care pathways.

Evaluating risk in a Paediatric hospital in the home service

Mayers, Deborah
Child and Adolescent Health Service, Curtin University

Background: Risk and Response processes represent a significant challenge in paediatric healthcare management, particularly within Perth Children's Hospital (PCH) Hospital in the Home (HITH). Understanding whether the current processes meet the needs of HITH clinicians, and if they are confident in feeling safe entering family homes is essential. Our aim is to survey current HITH clinicians to understand their current level of knowledge and confidence in risk and response process.
Methods: The first step in a multi-method project, is to establish current risk assessment and response process. Secondly, HITH staff survey including both qualitative and quantitative data to evaluate knowledge and confidence in home risk assessment and response process and their experiences.
Results: The first phase is currently underway, with documentation of the baseline risk assessment and response process for evaluation as well as a literature review to inform future working groups. This is occurring concurrently with formal submission to CAHS Ethics Committee (HREC) for approval. Following successful approvals, participant recruitment for the clinician survey is projected to commence mid-July 2026. Data collection and analysis of the survey is anticipated to be completed by October 2026.
Conclusion: The project establishes a rigorous methodology for the first steps in reviewing and redesigning risk processes within PCH HITH. Data collection has yet to commence, with the anticipated survey outcomes building on baseline understanding of the risk assessment, inform future improvements of the risk assessment and response process which is known to be used not only by HITH, but other areas across CAHS.

The first line of support: Nurses enhancing parent-infant relationships

Renshaw-Todd, Jodi
Child and Adolescent Health Service, University of Western Australia

Early parent-infant relationships play a critical role in brain development and can influence children's health, wellbeing, and developmental outcomes across the lifespan. When parents experience difficulty in recognising and responding sensitively to their infant's cues, the development of secure and nurturing relationships may be affected. Evidence-based interventions providing structured programs to support parent-infant communication, attunement, and attachment have been successfully implemented internationally; however, such programs are not routinely integrated into universal services in Western Australia. This study explored nurses' perceptions of introducing a parent-infant relationship support program into the Child and Adolescent Community Health service (CACH).
A qualitative study design was used to explore nurses' views. Participants were registered nurses working in child health roles with at least 12 months' experience. Data were collected via online semi-structured focus groups and transcribed verbatim. Reflexive thematic analysis was undertaken following Braun and

Clarke's 6-step approach.
Twenty-two nurses participated in three focus groups (median age of 47 years), with the majority (n = 17) having over 10 years' experience in child health nursing. Preliminary findings show several interrelated patterns relating to nurses' readiness and acceptance of delivering an intervention to support parent-infant relationships. Nurses expressed passionate support for introducing the program and building workforce capacity, while emphasising the need for training, consistency in practice, a structured framework, and consideration of workload and accessibility constraints.
Findings will inform a feasibility study evaluating the implementation of a parent-infant relationship intervention within the universal child health service.

Changes in perioperative respiratory events at PCH – comparing two cohorts

Taplin, Anwen
Child and Adolescent Health Service, The Kids Research Institute, University of Western Australia

Perioperative respiratory adverse events (PRAE) cause more than three quarters of all critical events in paediatric anaesthesia. A 2008 study including over 9,000 patients at Princess Margaret Hospital determined key demographic, surgical and anaesthetic risk factors for PRAE in children undergoing general anaesthesia. One key finding from this study showed respiratory sensitivity, measured by symptoms including a recent cold or flu, or a history of wheezing and asthma, was linked to a higher incidence of PRAE. Two recent studies conducted in 2022 and 2024 by the same research team collected similar risk factor information for over 12,000 patients. This secondary analysis compared the incidence of risk factors and PRAE between cohorts. We found a decreased incidence of PRAE in children undergoing general anaesthesia, with 14% in 2022-2024, compared to 11% in 2007-2008. The incidence of respiratory sensitivity decreased (35% to 21% of patients), even though, at the same time complexity of patients increased. Risk factors for PRAE, however, remained the same: a positive respiratory history, a younger age, ear, nose, and throat surgeries, midazolam premedication, and inhalation induction. A greater awareness of the risks associated with different airway management and anaesthetic decisions are the likely drivers of an uptake of safer management methods since the original study. This has further reduced the risk of PRAE in patients from the newer cohorts with the incidence of major PRAE (bronchospasm, laryngospasm) reducing from 5% to 2%.

Ngangk Ngabala Ngoonda (Sun Safety): Community-led approach to sun safety

Walton, Jacinta
The Kids Research Institute, University of Western Australia

Purpose: Aboriginal Australians experience inequities in skin cancer outcomes. Mainstream sun safety campaigns centre fair-skinned populations and Western biomedical framings of risk, limiting relevance and engagement for Aboriginal communities. Strengthening culturally grounded health literacy is critical to supporting informed decision-making and early care-seeking.
Methods: Guided by Aboriginal governance and community leadership, this study adopts a strengths-based, mixed-methods approach. Aboriginal and Torres Strait Islander children and young people shared their knowledge, attitudes, and experiences of sun exposure and skin cancer through a survey incorporating Likert-scale, multiple-choice, and free-text responses. Survey findings informed community co-design workshops to develop a culturally relevant campaign.
Preliminary results: Survey findings provide critical new evidence, revealing both strengths in existing knowledge and key gaps in sun protection behaviours, risk perception, and access to relevant information. Young people emphasised the importance of relatable messaging, representation, and culturally safe communication.

Conclusions: We have co-designed, culturally grounded sun safety and skin cancer awareness campaign – addressing a critical gap in existing health promotion efforts. Led by Aboriginal voices and priorities, the campaign strengthens knowledge, supports protective behaviours, and aims to improve long-term skin health outcomes. This work demonstrates the central role of Aboriginal governance and genuine co-design in delivering effective, equitable health research and promotion initiatives.

HDR Lightning Talks

Emerging Research, Innovation & Improving Child Health Outcomes

Mucus hyperconcentration and abnormal rheology in paediatric bronchiectasis

Bourke, Crystal
Child and Adolescent Health Service, The Kids Research Institute, University of Western Australia, The Kids Research Institute

Introduction: Mucus hyperconcentration and altered rheological properties have been described in adults with bronchiectasis, however these properties have not been characterised in children. We aimed to measure mucus concentrations and biophysical properties in children with bronchiectasis and explore relationships with immune cells, aetiology, age, respiratory symptoms and lung function.
Method: Induced sputum was collected prospectively from children with bronchiectasis (n=38; mean age 11.2, SD 3.4 years; 53% male) and healthy children (n=15, 11.1, SD 5.0 yrs; 53% male). Mucus concentration (%solids) was determined by dry-to-wet ratio. Elastic and viscous moduli were measured using cone and plate rheology. Total immune cell concentration was quantified by trypan blue counts. Symptom data (Bronchiectasis Exacerbation and Symptom Tool), spirometry and multiple breath washout were also collected.
Results: Children with bronchiectasis had higher mucus concentrations (1.24, IQR 1.03 vs 0.81, IQR 0.40; Wilcoxon rank-sum; p=0.008) and more abnormal rheology (elastic modulus 1.43, IQR 2.46 vs 0.70, IQR 1.12; p=0.049) compared to healthy children. In children with bronchiectasis, mucus concentration correlated with elastic modulus (Spearman rs=0.41, p=0.002), viscous modulus (rs=0.44, p=0.001), and immune cell concentration (rs= 0.88, p<0.001). Mucus concentration was heterogenous across aetiology, correlated with age (rs=0.57, p<0.001) and respiratory symptoms (rs=0.36, p=0.03) but not lung function outcomes (lung clearance index z-score: rs=0.23, p=0.17; FEV1 z-scores: rs=0.23, p=0.19) in children with bronchiectasis.
Conclusion: Mucus is hyperconcentrated in children with bronchiectasis and correlates with inflammation and burden of symptoms. Patient-reported symptoms may help to identify children who could benefit most from mucus-targeted therapies.

Identifying phenotypes of prematurity-associated lung disease

Bradshaw, Tiffany
The Kids Research Institute, Curtin University, Dalhousie University

Background: Prematurity associated lung disease (PLD) is complex and heterogenous. A multidimensional model to determine lung disease phenotypes has been proposed as a first step in optimising diagnosis and management of PLD.
Aim: To identify phenotypes of PLD using physiological measurements.
Methods: Topological data analysis was applied to physiological measurements from adolescents born ≤32 weeks gestation in Western Australia (1997-2003) to identify groups sharing similar characteristics. Models were developed in males and females separately, using FEV1, FVC, FEV1/FVC, DLCO, FRC/TLC and % change FEV1 post-bronchodilator. Differences between groups was described using lung function data, CT imaging and clinical history.
Results: Five phenotypes were identified. Group 1 (“healthiest”) had the best pulmonary function outcomes. Group 2 (“at-risk”) had small lung volumes, a preserved FEV1/FVC, and no bronchodilator

response (BDR). Group 3 (“mild obstruction”), group 4 (“moderate obstruction”) and group 5 (“severe obstruction”) had gradually worsening measures of airflow obstruction, decreasing lung volumes and increasing BDR.
Total CT abnormality score was largest in the severe obstruction group and lowest in the healthiest group, followed by the at-risk, mild and moderate obstruction groups.
Participants in the severe obstruction group were born earliest and had the worst neonatal outcomes. The at-risk group had similar neonatal characteristics, but less early-life respiratory hospital admissions and smoke exposure. Conversely, the healthiest group were older at birth, had higher birthweight z-scores and had spent less time on respiratory support.
Conclusion: Physiological data can be used to differentiate PLD phenotypes which may inform personalized treatments and interventions to prevent the progression of lung disease.

Enhancing RECELL autologous cell suspension for enhanced wound healing

Da Silva Campos, Beatriz
University of Western Australia

Introduction: Burn injuries are among the most common forms of trauma worldwide. While autologous split-thickness skin grafting (STSG) remains the gold standard treatment for full-thickness burns, donor skin availability can limit its use. RECELL is an alternative treatment that generates an autologous cell suspension from a small skin sample for intraoperative application. Although RECELL reduces donor site requirements, scarring remains a significant clinical challenge. Peptide amphiphiles (PAs) are biocompatible, biodegradable biomaterials that self-assemble into extracellular matrix (ECM)-like structures and can be functionalised with bioactive peptides to promote tissue repair.
Methods: We hypothesised that incorporating PAs into RECELL cell suspensions would improve wound healing by providing an ECM-like scaffold and activating regenerative pathways. The effects of PAs were assessed in vitro using proliferation, migration, collagen production, and LIVE/DEAD™ viability assays. In vivo efficacy was evaluated in a porcine excision wound model at one week and two months post-injury. Tissue morphology and collagen organisation were assessed using haematoxylin and eosin (H&E) and PicroSirius Red (PSR) staining. Immunofluorescence was performed for CD31 and αSMA to assess vascularisation and vessel maturity.
Results: PAs did not negatively affect cell proliferation and showed potential to enhance wound healing. In vivo, PAs remained detectable within wounds at one week but were no longer present at two months, indicating biodegradation. Functionalisation with QHREDGS appeared to provide additional regenerative benefits compared with non-functionalised controls, including improved rete ridge formation.
Conclusions: Incorporating PAs into RECELL cell suspensions may enhance wound healing and improve regenerative outcomes.

Using indirect calorimetry to optimise nutrition in critically ill children

Farrell, Tamara
Child and Adolescent Health Service, Curtin University, The Kids Research Institute

Background: Childhood critical illness often leads to profound metabolic disturbances, muscle wasting, and malnutrition, negatively impacting recovery and long-term outcomes. Despite the critical role of nutrition in paediatric intensive care (PICU), accurately determining energy requirements remains challenging. Current practice relies on predictive equations, which are often imprecise, particularly for mechanically ventilated patients, resulting in nutritional prescriptions that fail to meet individual needs. Indirect calorimetry (IC) is the gold-standard method for measuring energy expenditure, but its feasibility in PICU is unclear.

PhD Aim: This research project seeks to advance precision nutrition in PICU through implementation and evaluation of personalised nutrition strategies. IC, combined with multimodal body composition assessment tools (skeletal muscle ultrasound and bio-impedance analysis) to track longitudinal changes in nutritional status, will be evaluated to determine feasibility and the impact of nutrition delivery on outcomes.
Methods: A mixed-methods design conducted in the Perth Children's Hospital PICU. Study 1 is a prospective observational cohort assessing IC feasibility, the relationship between measured energy expenditure, nutrition delivery, and patient outcomes. Study 2 is a qualitative study using semi-structured interviews and focus groups with key stakeholders (clinicians and families) to identify barriers and facilitators to implementing gold-standard technology and feeding practices in PICU.
Expected Outcomes: This world-first evaluation of IC in critically ill children will provide evidence to guide nutrition targets and enhanced feeding protocols, with clear implementation strategies. Findings will fill critical knowledge gaps, supporting precision nutrition approaches, informing clinical guidelines, and ultimately improving outcomes for critically ill children.

Pressure injuries in the Neonatal Intensive Care Unit: Nurse questionnaire

Fleming, Rachael
Child and Adolescent Health Service, Curtin University

Background: Infants born prematurely are at risk of developing pressure injuries due to their immature skin structure. Supporting respiratory failure with medical devices such as Nasal Continuous Positive Airway Pressure increases risk of injury. A nursing knowledge practice gap has been identified in relation to pressure care and skin related injury.
Aim: To examine nurses' opinions on factors influencing evidence-based practice for pressure injury prevention in the King Edward Memorial Hospital NICU
Methods: A questionnaire was developed following a literature review examining barriers and facilitators to evidence-based practice for NICU nurses. The 26-item questionnaire was structured using the Theoretical Domains Framework (TDF), with 5-point Likert type responses (strongly disagree to strongly agree). Questionnaire clarity, content validity and internal consistency was assessed by a panel of 6 experts, resulting in refinements. The final questionnaire was distributed to nurses working in the NICU in February 2026. Data were analysed descriptively.
Results: There were 98 responses (29% response rate). 56.5% respondents were Registered Nurses, 12% were Neonatal Trained Nurses, 20.7% were Clinical Nurses and 10.9% were Senior Registered Nurses. The TDF domains with the highest mean responses were Skills (mean 4.53, SD □0.56), Intentions (mean 4.65, SD □0.48) and Goals (mean 4.78, SD□ 0.41). The domains most influenced by years of experience include Skills and Memory, Decision and attention processes.
Conclusion: The domains identified factors influencing pressure injury care in the NICU. Findings will be synthesised to inform an intervention to support nurses providing evidence-based pressure injury care in the NICU.

Family sleep health assemblage: reconceptualising maternal sleep & health

Hoffmann-Dumienski, Kamila
Victoria University of Wellington

Background: Severe sleep disruption in early parenthood is a recognised risk to maternal mental health, with consequences for relationships, parenting, and child outcomes - though these appear mediated by family and structural conditions rather than from maternal sleep alone. Dominant responses nonetheless treat sleep as an individual variable to be modified, with the family remaining the context for individual sleep rather than a configuration through which that sleep is produced.

Aim: This doctoral research develops a family sleep health assemblage framework: a relational account of sleep, rest and wellbeing in family life, built through critical engagement with how sleep is addressed in research and advice, with mothers' accounts of desirable support, and with families' everyday lives. Methods. Four connected studies: a scoping review of what sleep advice targets and where it places responsibility; an arts-based collage workshop with mothers on desirable sleep support; a family digital-diary and interview study; and a closing consultation with families and practitioners.
Findings: Initial findings show that sleep support in early parenthood is directed primarily at the individual mother, holding her responsible for infant sleep through behaviour-change interventions and safe-sleep messaging. The collage workshop suggests such uniform, infant-focused advice does not meet the dynamic, evolving needs of families' nights. Discussion. These accounts point toward family-centred, culturally responsive care that recognises maternal expertise and treats infant safety and maternal wellbeing as inseparable. In practice, this means advice tailored to families' needs, offered through open, non-judgemental communication with providers, complementing risk messaging to support safer, sustainable sleep and SUDI prevention.

Framework to assess deterioration in children with dark-coloured skin

Kelly, Chelsea
Curtin University, Child and Adolescent Health Service, South Metropolitan Health Service, Wal-yan Respiratory Research Centre, Telethon Kids Institute, University of Western Australia, WA Country Health Service, University of Notre Dame Australia

Introduction: Observable signs of clinical deterioration may present differently in children with dark-coloured skin, with potential for missed or delayed recognition of deterioration. The multicultural Australian population features diverse skin colours, including many children with dark-coloured skin.
Objectives: To develop a framework to support assessment of clinical deterioration in children with dark-coloured skin.
Methods: Our multi-method study was informed by a consumer and community advisory group. The study comprised four phases: 1) scoping review of published literature, 2) focus groups and individual interviews with clinicians 3) interviews with parents of Aboriginal children, recently hospitalised, 4) a framework analysis to develop a consensus-driven assessment framework grounded in a clinical reasoning model. Results: Of the 37 documents identified, most were low-quality. Focus groups and individual interviews were conducted with 99 clinicians and 20 parents. Clinicians reported challenges and approaches to assessing clinical deterioration in children with dark-coloured skin. Parents highlighted behavioural and breathing changes, with alternative descriptions of skin signs, including colour and quality changes, that deviated from typical light-coloured skin representations. Framework development involved mapping key findings to three pertinent stages of the Clinical Reasoning Cycle: notice, collect cues, and process information and included skin-colour-sensitive considerations to improve early recognition of deterioration in children with dark skin.
Conclusion(s): This is the first known skin-colour-sensitive framework for assessing clinical deterioration, integrating literature, and clinician and parent perspectives. The framework offers a practical approach to improving clinical deterioration recognition in children with dark-coloured skin, with potential to inform clinical practice, policy and education.

Lived experience workforce integration at CAMHS: Staff perspectives survey

Nakshbandi, Roje
Child and Adolescent Health Service, Curtin University

Contemporary mental health service models recognise the importance of embedding Lived Experience workers within multidisciplinary teams as a core component of recovery-oriented care. CAMHS has been expanding its Lived Experience workforce in recent years, in line with recommendations from the Ministerial Taskforce into Public Mental Health Services for Infants, Children and Adolescents. Despite growing recognition of the value of Lived Experience work, persistent challenges remain in effectively embedding Lived Experience roles within services, including lack of role clarity, negative staff attitudes, and insufficient supervision and professional development. There is limited understanding of how these challenges come up within youth mental health services. This project aimed to examine the attitudes and experiences of both Lived Experience and non- Lived Experience CAMHS staff towards the Lived Experience workforce, and to identify the organisational factors that support or hinder effective Lived Experience integration. An online survey was distributed to CAMHS staff across services, gathering responses from approximately 110 participants including Lived Experience workers and non-Lived Experience clinical and administrative staff. Survey items assessed attitudes towards Lived Experience work, perceived benefits and barriers to embedding Lived Experience roles, and organisational and supervisory factors. Data from the survey is currently being analysed and will be available to report at the time of the symposium.
This project represents one of the first evaluations of Lived Experience workforce integration within CAMHS. Findings will inform recommendations for the continued development and embedding of the CAMHS Lived Experience workforce, with implications for youth mental health services more broadly.

Nutrition in autistic preschoolers: Insights from families & care providers

Tay, Siu Min
Child and Adolescent Health Service, Edith Cowan University, The Kids Research Institute

Introduction: Autistic children commonly experience feeding-related challenges that may impact their nutrition. Currently, there is limited research exploring nutrition experiences during the preschool years. This study aims to explore perspectives from caregivers, early childhood education and care staff and health professionals to understand their experiences.
Method: Five focus groups and fourteen semi-structured interviews were conducted with caregivers, early childhood education and care staff and health professionals with experience of caring for autistic children under 6 years old. Interviews explored participants' experiences with feeding behaviours, accessing nutrition-related supports and their views on how to best to support nutrition. Interviews were coded and analysed thematically using Framework Analysis.
Findings: Five interrelated themes were identified: (1) Autonomy and predictability preferences influence eating behaviours; (2) Interconnected biopsychosocial pathways influence nutrition-related challenges; (3) Fragmented systems and inequitable supports limit nutrition-related care; (4) Families, early childhood education and care staff and health professionals develop adaptive practices; and (5) Tailored, neuro-affirming and collaborative approaches shape future supports.
Conclusion: Our findings demonstrated the complex and interconnected biopsychosocial factors shaping eating and nutrition in autistic preschool children. Our study also identified important gaps in current support systems across health and early childhood education and care settings. Our study highlighted innovative adaptive strategies implemented by families, early childhood and care staff and health professionals to address these challenges. These insights highlighted the need for future neuro-affirming autism-tailored nutrition approaches that are multidisciplinary and collaboratively delivered across health services and education sectors to better support children and their families.

Music therapy in Paediatric burn care: A pilot program evaluation

Twyford, Karen
Child and Adolescent Health Service

Background: This study describes a pilot music therapy program in the Burns Department at Perth Children's Hospital (PCH), delivered by a Masters-level music therapy student. A quality improvement (GEKO) project evaluated the program through caregiver and staff feedback. Paediatric burn injuries are associated with significant pain, anxiety, and emotional distress, impacting children and their families during hospitalisation.
Method: Music therapy was delivered to paediatric patients and caregivers from August to October 2025 across Burns Clinic (outpatients) and Ward 1B (inpatients). Interventions included individualised live music, familiar song recreation, improvisation and active music engagement, tailored to each child's needs. Sessions in the Burns Clinic were delivered before and during burn care procedures (e.g., dressing changes). Inpatient sessions included collaboration with allied health staff. Music therapy aimed to provide a supportive sensory stimulus to reduce stress, anxiety, and perceived pain. Caregivers and staff completed an online survey via QR code to evaluate feasibility and perceived impact.
Results: Twelve caregivers and eight staff responded to the survey, reporting predominantly positive experiences. Caregivers reported that music therapy helped reduce anxiety, ease distress, and provide distraction during painful or stressful procedures such as dressing changes. Staff noted improved patient cooperation, enhanced therapeutic engagement, and a calmer clinical environment.
Discussion: These findings suggest that music therapy is a feasible, acceptable and valuable adjunct in paediatric burn care at at PCH. Integration of music therapy may enhance procedural care and support holistic, patient- and family-centred outcomes in this setting.

Plenary 3: Healthcare Innovation, Monitoring & Quality Improvement

Advancing paediatric care through innovative monitoring, antimicrobial stewardship, digital health and patient-centred service delivery

Standardised Treatment and Monitoring Protocol (STAMP) study

Campbell, Anita
Child and Adolescent Health Service, University of Western Australia, The Kids Research Institute

Background: The Standardised Treatment and Monitoring of Phage Therapy (STAMP) study is a national prospective protocol designed to standardise the administration, monitoring and evaluation of bacteriophage therapy in adults and children with severe bacterial infections. STAMP aims to assess safety, feasibility and clinical outcomes while generating evidence to support future implementation of phage therapy.
Case: A previously healthy 3-year-old girl presented with severe disseminated MRSA sepsis following a minor injury. Her illness rapidly progressed to septic shock, compartment syndrome, osteomyelitis, deep vein thrombosis, necrotising pneumonia and multi-organ failure requiring prolonged intensive care support, repeated surgical debridements, thrombectomy, pneumonectomy and ECMO. Despite optimised antimicrobial therapy and source control, ongoing clinical deterioration prompted consideration of adjunctive phage therapy.
Intervention: Through the STAMP study framework, MRSA isolates underwent phage susceptibility testing, demonstrating activity of a phage cocktail comprising SA02 and Phage K. Intravenous phage therapy commenced on day 13 of admission and continued for two weeks, followed by topical and nebulised phage administration. Standardised STAMP monitoring included clinical outcomes, safety surveillance and laboratory assessment.
Outcome: Phage therapy was well tolerated with no significant adverse events attributable to treatment. Following a prolonged critical illness, the child survived and demonstrated progressive recovery during inpatient rehabilitation.
Conclusion: This case demonstrates the feasibility of recruiting critically ill paediatric patients into the STAMP program and highlights the potential role of adjunctive phage therapy in severe disseminated MRSA infection. Ongoing data collection through STAMP will help inform future clinical trials and treatment pathways.

Clinical utility of assessing for new confusion in the paediatric ESCALATION

Gill, Fenella
Child and Adolescent Health Service, Curtin University

Background: Onset of new confusion can be an early indicator of clinical deterioration. With limited guidance for monitoring onset of new confusion in Australian paediatric hospital contexts a WA consensus development process was undertaken to address the gap. A variable of “new confusion” (>1year) or “changing behaviour” (<12 months) was added to the WA paediatric ESCALATION System in 2025.

Aim: Determine the clinical utility of new confusion assessment in the ESCALATION system at Perth Children's Hospital.
Methods: Audits were undertaken to understand prevalence, frequency of escalation of care and patient outcomes. Data sources were; discharge clinical coding hospital acquired complication of delirium, Emergency Department Information System, STARS handover records, a point prevalence audit. A health professional survey explored nurses 'and doctors' experiences using the new variable. Data were analysed descriptively.
Results: Fifteen cases of new confusion and one case of changing behaviour were identified. Four cases were admitted to PICU. For 6 (37.5%) cases new confusion was documented on the PARROT. For 9 cases family concern was documented on the PARROT. There were 264 survey responses (212 nurses, 52 doctors). Most agreed/strongly agreed the new variable was clear and easy to use and did not delay care. Only 25% reported they had used the new variable.
Conclusion: Onset of new confusion or changing behaviour is infrequent yet important to monitor for and detect early. Appropriate documentation for all cases may have expediated escalation of care. Health professionals viewed the new variable as a positive addition to the ESCALATION System.

FOOTPRINTS is feasible: piloting a novel PICU bereavement intervention

Jolly, Arielle
Child and Adolescent Health Service

Background: Evidence-based interventions to improve bereavement outcomes for families are needed, particularly interventions focused on sudden and unexpected paediatric death. The FOOTPRINTS service was designed by bereaved families and clinicians to fill this recognised practice gap, providing personalised bereavement follow-up from the paediatric intensive care unit (PICU) for families who were not already supported by palliative care services.
Aim: To investigate the feasibility of implementing the FOOTPRINTS service intervention in a clinical trial.
Methods: The intervention consists of an adaptable program of in-person and telephone bereavement follow-up support, delivered over 13 months by a paediatric intensive care nurse and critical care social worker. The FOOTPRINTS service was piloted over six months at Perth Children's Hospital in 2025 – 2026 as part of an implementation-effectiveness trial, to be run across five Australian sites. Site-specific feasibility assessment included a predetermined sample size of five families, measuring reach (proportion of intended participants participating in the intervention), recruitment (proportion of intervention recipients who consented to complete the study measures), and adaptation (components of the intervention that required modification from the original design).
Results: Of eight families screened, five were eligible, and all five were enrolled. Eight family members from the five families were receiving the intervention at the time of assessment. All consented to contact and participated in telephone and in-person follow up. Minor intervention refinements were required to processes for enrolment after hours, and psychological safety planning.
Conclusion: The FOOTPRINTS service intervention was feasible, with a high recruitment rate and few adaptations required.

Feasibility of a Paediatric HiTH-remote monitoring service

Moore, Simon
Child and Adolescent Health Service

Background: Integrating virtual care into established paediatric Hospital in the Home HiTH services aims to reduce hospital capacity pressures and improve access to safe inpatient-level care at home. In April 2025, Child and Adolescent Health Service (CAHS) piloted a new model of care for children nearing

discharge who required ongoing clinical and physiological monitoring. The model includes twice-daily monitoring (heart rate, oxygen saturation and temperature), caregiver surveys, telehealth consultations, in-person reviews and 24/7 telephone support.
Aims: To assess the feasibility and acceptability of a novel HiTH-Remote Monitoring (RM) service for children, families and health professionals, the cost-effectiveness for CAHS and cost-savings for families.
Methods: Feasibility was assessed using the APEASE criteria framework (acceptability, practicality, effectiveness, affordability, safety and equity) with clinical, demographic and costing data collected for all patients. Caregiver and clinician experiences was captured via electronic survey, using multichoice and free-text responses. Data were analysed descriptively and using content analysis.
Results: 710 patients were managed on HiTH-RM during the 12-month pilot, accounting for 1,253 substituted in-hospital bed-days. Survey responses were obtained from 303 caregivers and 67 clinicians. Caregiver satisfaction with care quality and overall experience was high (98%). Clinicians identified benefits of reduced in-hospital length of stay (LOS). Service-level cost-effectiveness was realised through increased in-hospital bed-capacity and patient flow, while families reported reduced out-of-pocket costs and earlier return to work.
Conclusions: The HiTH-RM service was highly acceptable to caregivers and clinicians and expands safe home management of acute medical conditions, offering a cost-effective solution to reduce hospital bed pressure.

Implementation of the DiabHQ patient portal at Perth Children's Hospital

Rojas Wood, Erica
Child and Adolescent Health Service, The Kids Research Institute

Aims: The DiabHQ Patient Portal is a mobile application developed to support Western Australian families living with Type 1 Diabetes (T1D), offering features including appointment management, data visualisation (HbA1c trends, growth charts, pathology results), and educational resources. Co-designed with consumers and clinicians, DiabHQ aims to address an unmet need for accessible, integrated digital support in paediatric T1D care.
Methods: A mixed-methods pilot study recruited 28 caregivers to assess the acceptability, usability, and perceived impact of DiabHQ on T1D management. Usability was measured using the System Usability Scale (SUS) and qualitative interviews were conducted to explore caregiver experience and feature utilisation. During the pilot, changes were made to the onboarding design and process to optimise app uptake. Post-launch user engagement is being evaluated using BigQuery app analytic data and survey data.
Results: The Pilot returned a mean SUS score of 82.5 falling within the 'excellent' usability range. Emerging themes from the preliminary qualitative analysis indicate that users find benefit in the ability to save important information related to T1D management, accessing critical T1D management information when required, manage appointments, and track their health data. Officially launched in November 2025, DiabHQ now has more than 500 users.
Conclusion: Pilot results demonstrate strong usability and benefits for DiabHQ users, addressing a gap in digital health support for WA families living with T1D. Ongoing evaluation will provide insights into how DiabHQ is being used across families of children and adolescents living with T1D.

Reliability of POCUS to monitor muscle wasting in ventilated children

Weiss, Hannah
Child and Adolescent Health Service, PCH Foundation, Stan Perron, Telethon Trust

Background: Muscle wasting is common in critically ill children and is associated with adverse outcomes. Early identification and monitoring of muscle wasting are important to guide clinical management, including nutritional and rehabilitation strategies. Point-of-care ultrasound (POCUS) offers a non-invasive, bedside method to assess longitudinal changes in quadriceps femoris (QF) muscle thickness. However, before it can be used confidently in clinical practice, its measurement reliability must be established.
Objectives: To evaluate the intra- and inter-rater reliability of POCUS to measure QF thickness in critically ill children.
Methods: A pilot observational reliability study of mechanically ventilated children <18-years with expected length-of-stay >3 days underwent QF muscle ultrasound measurements. Measurements were performed with the Logiq S8 device and 3-12 MHz linear probe, using a standardised protocol. Measurements were obtained at locations ½ and ⅔ of the distance from the anterior superior iliac spine to the patella (four per location). Intra- and inter-rater reliability was assessed between two dietitians and an interventional radiologist in five-participants. Reliability was quantified using intraclass correlation coefficient (ICC). Acceptable reliability thresholds were: ICC ≥0.75 (good), ≥0.81 (very good), ≥0.90 (excellent). Results: Overall inter-rater reliability was excellent (ICC=0.991). Coefficient of variation was <5%. Intra-rater reliability was excellent for all raters, with ICCs of 0.997, 0.990 and 0.995 respectively.
Conclusions: POCUS shows promise as a reliable bedside tool for assessing QF muscle thickness in critically ill children. Reliable measurement of muscle mass provides a useful outcome measure to inform future studies investigating muscle wasting and nutritional interventions in PCC.

Allied Health Concurrent Session:

Project DigiSafe the impact on families with Type 1 Diabetes

Browne-Cooper, Kirsty
Child and Adolescent Health Service

Project DigiSafe The impact on families with Type 1 Diabetes requiring a mobile phone as a medical device in the management of Type 1 Diabetes
Background/Aims: Advances in diabetes technology, including continuous glucose monitoring (CGM) and insulin pump therapy, now require many children with Type 1 Diabetes (T1D) to use a mobile phone as a medical device. This early access to mobile phones contrasts with typical parental strategies to delay phone ownership and limit screen time. The project aimed to explore the impact of this requirement on families and patients, assess current practices at Perth Children's Hospital (PCH), and identify opportunities to improve digital safety support.
Method: Four groups were surveyed: parents of children newly diagnosed with T1D, patients aged 8–17 years, staff from the PCH Endocrinology and Diabetes team, and national social work and psychology clinicians. Parent data were collected via a Redcap survey (n=26/241, 10%); patient interviews were conducted in outpatient clinics (n=14). Staff completed an online survey (n=23/70), and national professionals provided input during a SWAP meeting (n=12).
Results: Sixty-one percent of parents and 78% of patients reported that a mobile phone was provided earlier than planned. Thirty percent of parents identified increased screen time as a negative impact, while 86% of patients reported physical or practical challenges associated with keeping the phone within 6 metres. Sleep disturbance was noted by 60% of patients. Staff reported inconsistent approaches to supporting digital safety; 97% expressed interest in further training.
Discussion: Findings highlight significant emotional, developmental and practical challenges, reinforcing the need for consistent digital safety support for families managing T1D.

Evaluation of Oncology music therapy service at Perth Children's Hospital

Del Borrello, Tara
Child and Adolescent Health Service

Background: Music therapy has been integrated within the care of children with cancer at Perth Children's Hospital for over 20 years, providing a nonpharmacological approach to symptom management, psychosocial wellbeing, and rehabilitation. Despite longstanding integration and ongoing multidisciplinary advocacy, variability persists in staff and family understanding of music therapy; therefore, as part of ongoing service development, understanding these perspectives is critical to optimising utilisation, access, and integration within care pathways.
Aim: To evaluate patient, family and staff perceptions of the oncology music therapy service at Perth Children's Hospital and identify opportunities for service improvement and increased referral pathways.
Methods: A quality improvement project was undertaken on the Oncology ward at Perth Children's Hospital using two purpose-designed 12-item surveys, targeting patients/families and clinical staff. Surveys incorporated Likert-scale and open-ended questions to capture both quantitative and qualitative data. Surveys were adapted, with permission, from an existing survey developed by Queensland Children's Cancer Centre and distributed via QR code to maximise accessibility. Family surveys explored perceived value and impact, while staff surveys examined awareness, understanding, referral practices, and perceived role within care pathways. Responses were collated and analysed using REDCap, with descriptive statistics and thematic analysis.

Result: Thirty-nine responses were received (22 family; 17 staff). Families reported music therapy as beneficial for emotional regulation, coping, and positive hospital experiences. Qualitative feedback highlighted engagement and normalisation. Staff responses demonstrated variable understanding, including differences in referral rationale and perceived scope.
Conclusion: This evaluation demonstrates strong perceived value among patients and families. Improved staff awareness and understanding may enhance referral pathways and access to music therapy.

Feasibility of implementing Move to Improve at Perth Children's Hospital

George, Annie
Child and Adolescent Health Service

Background: Chronic health conditions comprise a major proportion of childhood disease burden worldwide. Despite strong evidence for its benefits, physical activity is rarely integrated within paediatric health settings and underutilised as part of routine care. This study aimed to evaluate the feasibility of implementing an 8-week physical activity intervention (Move to Improve, M2I) at Perth Children's Hospital.
Methods: A single-arm, pragmatic feasibility trial was conducted. Children aged between 5-17 years diagnosed with cancer, cerebral palsy, post-burn injury, or type 1 diabetes were eligible to participate. M2I was delivered by a multi-disciplinary allied health team in hospital and community settings. The RE-AIM framework was used to assess reach, effectiveness, adoption, implementation, and maintenance. Data were analysed using descriptive statistics and thematic analysis.
Results: Of the 118 children enrolled to date (52% females; 11.55 ± 3.17 y), 98 have completed. Participants were referred from Oncology (40%), Endocrinology (26%), Kids Rehab (23%), and Burns (11%). Participants attended 97% of weekly sessions and no adverse events were reported. 86% of parents reported M2I had helped their child move more, and 78% would recommend M2I to other families. Clinicians perceived family and community engagement as requirements to sustain program outcomes and delivery.
Conclusions: Preliminary data suggests implementing M2I is feasible, with considerations related to maintenance. The intervention is acceptable to children, families, and clinicians. Expansion of M2I across all medical departments is planned for 2026. This model of care may act as a blueprint for incorporating physical activity within paediatric healthcare settings nationally and internationally.

Family sleep health assemblage: reconceptualising maternal sleep and wellbeing

Hoffmann-Dumienski, Kamila
Victoria University of Wellington (New Zealand)

Background: Severe sleep disruption in early parenthood is a recognised risk to maternal mental health, with consequences for relationships, parenting, and child outcomes - though these appear mediated by family and structural conditions rather than from maternal sleep alone. Dominant responses nonetheless treat sleep as an individual variable to be modified, with the family remaining the context for individual sleep rather than a configuration through which that sleep is produced.
Aim: This doctoral research develops a family sleep health assemblage framework: a relational account of sleep, rest and wellbeing in family life, built through critical engagement with how sleep is addressed in research and advice, with mothers' accounts of desirable support, and with families' everyday lives.
Methods. Four connected studies: a scoping review of what sleep advice targets and where it places responsibility; an arts-based collage workshop with mothers on desirable sleep support; a family digital-diary and interview study; and a closing consultation with families and practitioners.
Findings: Initial findings show that sleep support in early parenthood is directed primarily at the individual mother, holding her responsible for infant sleep through behaviour-change interventions and safe-sleep

messaging. The collage workshop suggests such uniform, infant-focused advice does not meet the dynamic, evolving needs of families' nights.
Discussion: These accounts point toward family-centred, culturally responsive care that recognises maternal expertise and treats infant safety and maternal wellbeing as inseparable. In practice, this means advice tailored to families' needs, offered through open, non-judgemental communication with providers, complementing risk messaging to support safer, sustainable sleep and SUDI prevention.

Evaluating missing micronutrient bloodwork in orally fed children with CP

Kelly, Melissa
Child and Adolescent Health Service

Background: Appropriate oral nutritional intake and management for children with Cerebral Palsy (CP), is highly complex and critical for growth and development. Micronutrient deficiencies are common for this population when nutritional supplementation is not being received leading to poor nutritional status and detrimentally impacting development.
Aim: To evaluate compliance with annual micronutrient bloodwork monitoring for orally fed children with CP who attend a Rehab Combine Mobility Clinic (RMC), to determine if micronutrient deficiencies are being identified.
Methods: A retrospective audit completed over the month of October 2025, for orally fed children with CP that attended RMC clinics 1,2,3,4 & 6 under paediatric rehabilitation medicine at PCH between the 3 months of June, July, August 2025, for the medical management of botox injections. RMC 5 was excluded as there was a dietitian present within this clinic over this 3-month period. Clinical manager, DMR and My Health record were used to identify mode of feeding, dietetic input and nutritional bloodwork taken within 1 year prior to the clinic appointment or by 30/09/2025.
Data Analysis: Total of 158 patients included in data analysis. Bloodwork included: FBC, electrolytes, total protein, albumin, copper, selenium, zinc, Vitamins A,C,D,E, B12, Ca, Mg, Phos, Iron Studies, Folate.
Results: Less than 50% of children had their micronutrient bloodwork completed. The micronutrients of copper, selenium, zinc and vitamins A, C, E were of the lowest.
Discussion: Incomplete micronutrient bloodwork prevents timely and appropriate micronutrient supplementation and/or referral to dietetics for recommendations on achieving nutritional requirements within limitations of oral diet.

Functional disorders education program for parents: survey results

Kerwin, Peter
Child and Adolescent Health Service

Background: Evidence suggests that engagement of parents in understanding, and acceptance of their child’s Functional Disorder (FD) diagnosis is associated with better recovery outcomes. However, parents frequently report inconsistent information, stigma, and limited opportunities for meaningful engagement with clinicians. A co-designed education program offers an opportunity to address these gaps by providing clear, consistent information and strengthening partnerships between families and healthcare providers.
Aim: To co-design a group-based education program for parents of adolescents receiving care for FD within Adolescent Medicine, informed by an initial parent survey.
Methods: This quality improvement project uses a co-design approach in collaboration with the Consumer Engagement team. A survey, developed with parent input, explores experiences, understanding, and learning needs. Parents of adolescents diagnosed and treated for FD within the past five years (estimated n=75) are invited to participate via text message. The survey collects quantitative and qualitative data. Interested parents are then invited to participate in two focus groups to co-develop program content and

identify relevant outcome measures.
Findings: Survey data will identify key knowledge gaps, priority topics, and preferred formats to guide focus group content and subsequent program design.
Conclusions: An initial parent survey provided rich data on current processes of providing a diagnosis for a FD in Adolescent Medicine from the parent perspective. This will then inform a co-designed parent education program that hopes to improve access to consistent information and enhance parent understanding, ultimately strengthening trust and collaboration between families and clinicians.

Building a National Paediatric Rehab Robotics Registry

Prigmore, Dan
Child and Adolescent Health Service

The rapid integration of robotic-assisted technologies into paediatric rehabilitation presents opportunities to advance a child's recovery, yet a lack of coordinated, real-world data limits evidence-informed practice. The Kids Rehab Robotics National (KiRRoN) Registry has been established to address this gap through a collaborative, multicentre approach to data collection across Australian paediatric services.
Led by Perth Children's Hospital in partnership with The Children's Hospital at Westmead, the registry captures standardised data on patient demographics, clinical indications, therapy utilisation and outcomes associated with robotic-assisted interventions. Central to the registry is its role in enabling national benchmarking, supporting equitable access to emerging technologies, and facilitating data-driven service planning. Early implementation has focused on establishing consistent data definitions, integrating registry workflows into clinical practice and ensuring feasibility within busy tertiary environments. By generating multicentre evidence, the KiRRoN Registry aims to empower clinicians and health services to optimise patient selection, refine models of care and improve clinical outcomes. It is advancing child health by strengthening the evidence base underpinning innovative rehabilitation technologies and supporting a cohesive national approach to paediatric robotics.

ZeroG to move free: Empowering mobility for children through robotics

Prigmore, Dan
Child and Adolescent Health Service

The implementation of robotic dynamic body-weight support devices such as ZeroG in paediatric rehabilitation offers significant potential to improve mobility outcomes, yet evidence guiding service delivery, clinician capability and equitable access remains limited. This work describes the feasibility and implementation of a ZeroG program within a tertiary paediatric hospital, under a "no additional cost" model to support equitable access. A structured triage framework was developed to guide patient selection, alongside a standardised service delivery model integrating ZeroG within existing rehabilitation pathways. In parallel, a clinical competency framework was established to support therapists in delivering intervention grounded in motor learning principles, optimising task specificity, dosage and feedback. Early data capture includes patient demographics, diagnostic groups, therapy intensity and outcomes such as functional mobility, goal attainment and patient-reported experience. Preliminary findings demonstrate successful integration into clinical workflows, with ongoing refinement of session structure, patient selection and interdisciplinary coordination. This work demonstrates how integrated service design, clinician capability development and innovation can advance child health and empower futures through equitable access to intensive, task-specific rehabilitation.

From intervention to impact: A realist inquiry into music therapy for Paediatrics

Twyford, Karen
Child and Adolescent Health Service, University of Western Australia

Introduction: Music therapy is increasingly recognised as effective in adult neurorehabilitation, particularly following acquired brain injury (ABI). However, in paediatric settings, there is limited understanding of the causal mechanisms through which music therapy produces functional outcomes. This study addresses this gap by using realist inquiry to examine what works, for whom, and in what contexts within paediatric neurorehabilitation.
Methods: This research comprises a realist literature review and a realist evaluation. Program theories are developed and iteratively refined to explain how intervention processes, contextual factors, and stakeholder interactions influence outcomes. To inform and test these theories, we are engaging key stakeholders, including children and adolescents with ABI, their families, and health professionals, through surveys and focus groups in Australia and internationally.
Results: Preliminary analysis suggests that music therapy outcomes arise from complex interactions between therapeutic processes, patient engagement, and clinical context. Anticipated findings include the identification of key mechanisms underpinning improvements in communication, motor function, and psychosocial wellbeing. Early insights also indicate that integration within interprofessional teams is a critical contextual factor shaping effectiveness.
Conclusion: This study will generate refined program theories and a conceptual framework explaining how music therapy contributes to functional outcomes in paediatric ABI. By moving beyond outcome-focused evidence, this research provides deeper insight into causal pathways, supporting the design of more targeted and context-sensitive interventions within paediatric neurorehabilitation settings.

Evaluation of nutrition screening at Perth Children's Hospital

van der Wilk, Melanie
Child and Adolescent Health Service

This quality improvement project evaluated nutrition screening practices for paediatric inpatients at Perth Children's Hospital, with a focus on compliance, identification of nutritional risk, and effectiveness of current screening tools.
Data were collected over one week in October 2025, including 203 admissions, with 164 patients eligible for screening using the Paediatric Nutrition Screening Tool (PNST).
Overall completion of nutrition screening was 69%, below the expected 100% standard, with notable variation across wards (48–97%). Among completed screenings, 14% of patients were identified as at nutritional risk; however, no patients were referred to Dietetics via the screening process, and 50% of at-risk patients received no dietetic intervention during admission.
Additional screening of infants using the iNEWS tool identified 12% as at risk, slightly lower than published benchmarks, and demonstrated discrepancies with the PNST, particularly related to objective weight measures.
Assessment of nutritional status using anthropometry showed that 8–10% of inpatients were malnourished and 13% were stunted. Critically, only 36% of malnourished patients were identified through the PNST, falling well below the benchmark of 89%.
Key barriers identified included incomplete screening, lack of awareness of nurse-initiated referrals, and limitations within the PNST tool. The project recommends targeted staff education, streamlined referral pathways, potential revisions to the screening tool, and ongoing auditing.
Findings: Overall, findings highlight significant gaps in identifying and managing nutrition risk of paediatric inpatients, underscoring the need for system-level improvements.

Thursday Abstracts - 12 November

Plenary 4: Developmental, Population and Lifecourse Outcomes

Understanding developmental, reproductive and chronic disease outcomes across the paediatric and adolescent lifespan

Cause-specific subfertility and caesarean section after fertility treatment

Einarsdottir, Kristjana
The Kids Research Institute

Background: This study examined the association between fertility treatment and the risk of pre-labour CS and early term birth (37-38 weeks) among subfertile women.
Methods: Data were obtained from 3,043 singleton births within the ORIGINS birth cohort in Perth, Western Australia, including 757 subfertile women. Crude and adjusted risk ratios (RRs) and 95% confidence intervals (CIs) for pre-labour CS and early term birth (37-38 weeks) were estimated using modified Poisson regression, with analyses stratified by cause of subfertility, including male factor infertility, endometriosis and polyendocrine metabolic ovarian syndrome (PMOS).
Results: Pre-labour CS was the most common mode of delivery across all fertility treatment groups and was most frequent among pregnancies conceived using ICSI, IVF, and IUI. Subfertile women who received fertility treatment were more likely to undergo pre-labour CS (43.7% vs 32.4%, p<0.001) (ARR 1.21, 95% CI 1.00-1.47) and to give birth at 37-38 weeks (46.2% vs 36.7%, ARR 1.22, 95% CI 1.02-1.46) than untreated subfertile women. After stratification, the strongest associations were observed for PMOS (pre-labour CS: ARR:1.68, 95% CI:0.97-2.88, early term birth: ARR:1.46, 95% CI:0.95-2.22), although they were not statistically significant. No increased risks of pre-labour CS were observed among couples with male-factor infertility despite ICSI being the predominant treatment modality in this group.
Conclusions: This study suggested that the increased risk of pre-labour CS and early term birth associated with fertility treatment was mostly due to the underlying cause of subfertility, especially PMOS, than to the treatment modality itself.

Untangling the web: A network analysis of Adolescent Functional Disorders

Keane, Carol
Child and Adolescent Health Service, Charles Darwin University, NT

Functional symptoms are genuine physical symptoms (e.g., abnormal movements, fatigue, pain) that occur without an identifiable pathology, such as injury, infection, or neoplasm. In their 2024 review, Kozlowska and Scher conceptualised paediatric FND as a disruption of typical brain–body functioning arising from complex interactions among biological, psychological, and social processes. Despite growing research, the interrelationships between these psychosocial and neurobiological processes remain only partially understood, and recent authors have emphasised the need to map this complexity more comprehensively

(Pinto et al., 2023). To address this, a network analysis approach was leveraged as a means of identifying and presenting the "complexity of the interplay between somatic and psychological symptoms" (Doppenberg-Smit et al., 2023, p. 1199). This network analysis was conducted using routinely collected health data from patients experiencing functional symptoms at Perth Children's Hospital. Analysis of this model allowed for quantitative identification of: 1) related biopsychosocial factors, 2) statistically meaningful patterns within the relationships between biopsychosocial factors, 3) the factors most influential and connected across the network, 4) clustering of factors and 5) factors that act as 'bridges' within the network and across clusters. Results confirmed that there is a complex and interrelated web of biopsychosocial factors underlying functional symptoms. Specifically, it appeared that psychological distress, social conflict, physical health concerns, and socioeconomic disadvantage were common experiences. These findings support the conceptualisation that functional symptoms are caused and maintained by related psychosocial and neurobiological processes, and that interventions targeting isolated factors will be ineffective.

Paediatric Familial Hypercholesterolaemia in Australia: a Real-World Registry

Martin, Andrew
Child and Adolescent Health Service, University of Western Australia

Objective: To describe the characteristics, detection, and management of children and adolescents with familial hypercholesterolaemia (FH) enrolled in the Australian National FH Registry. Design: Cross-sectional registry analysis. Setting: Seventeen specialist lipid clinics across Australia. Patients: Three hundred and forty-one children and adolescents under 18 years of age with FH, enrolled between February 2015 and March 2026. Interventions: None, observational study. Main Outcome Measures: Age at enrolment, mode of FH detection, uptake of genetic testing, lipid-lowering therapy patterns, attainment of low-density lipoprotein-cholesterol (LDL-C) goals, and testing of lipoprotein(a) [Lp(a)].
Results: The mean age at enrolment was 11.8 years; 51.6% were male and 54.3% were index cases. Only 53.7% had undergone genetic testing. The mean untreated LDL-C was 6.5 mmol/L. At follow-up, 85.4% were on lipid-lowering therapy, with 91.7% on a moderate- or high-intensity statin, but only 15.1% were receiving combination therapy with ezetimibe. The mean treated LDL-C was 3.9 mmol/L and only 51.4% achieved the guideline-recommended goal. Predictors of goal attainment included a lower pre-treatment LDL-C and use of lipid-lowering therapy. Lp(a) was tested in only 34% of children.
Conclusions: This study reveals five critical gaps in the care of Australian children with FH: late diagnosis after the recommended age to commence therapy; non-attainment of LDL-C goals despite treatment; under-utilisation of genetic testing; infrequent cascade screening; and infrequent testing of Lp(a). Addressing these gaps demands a coordinated multi-level response, including a universal childhood FH screening programme coupled with state-based cascade testing hubs, and rigorous implementation of evidence-based paediatric guidelines.

Developmental outcomes at 2 years of age in neonates following major surgery

Tan, Jason
Child and Adolescent Health Service

Background: Infants undergoing major neonatal surgery are increasingly recognised as a high-risk group for neurodevelopmental impairment, yet contemporary Australian outcome data are limited. This study evaluates 2-year developmental outcomes in infants exposed to major surgery.
Methods: All neonates requiring major cardiac or non-cardiac surgery between January 2015 and July 2023 were invited to participate. Development at 24 months was assessed using the Bayley Scales of Infant Development, Third Edition (BSID-III).
Results: Of 410 eligible neonates, 235 (57%) were assessed at a mean age of 23.4±1.3 months. BSID-III

assessment could not be completed in 15 children due to behavioural concerns or non-participation. Language domain showed the greatest vulnerability, with 14/106 (13%) in the non-cardiac group and 16/96 (15%) in the cardiac group scoring more than 2 standard deviations (SD) below the mean (overall 30/202, 16%). Cognitive delay more than 2 SD below mean, occurred in 7% of non-cardiac and 11% of cardiac groups, while motor delay was seen in 5% and 9%, respectively. Socioemotional delay was less frequent and seen in 8% of the non-cardiac and 4% of the cardiac groups. Mean scores across all domains remained within the normal range. Cerebral palsy (GMFCS ≥2) was identified in 18/410 (4%).
Conclusion: Infants undergoing major neonatal surgery remain at increased risk of developmental delay at 2 years, particularly in language domains. Infants that have cardiac surgery are at the highest risk. These findings support the need for routine, population-based developmental surveillance and early intervention in this high-risk group.

Accuracy of the general movement assessment for neurodevelopmental outcomes

Valentine, Jane
Child and Adolescent Health Service, Curtin University, The Kids Research Institute

Background: General Movement Assessment (GMA) is a scalable tool recommended for the early detection of cerebral palsy (CP), in high-risk clinical settings, however its performance in the general population remains unknown. The study aimed to determine the accuracy of GMA for early identification of CP, autism spectrum disorder (ASD), and global developmental delay (GDD), at 2 years in a population-based cohort.
Methods: Early Moves is a prospective cohort study comprising infants recruited from two Perth birthing hospitals from 2019-2023. Parent-recorded GMA videos at 1-4 months were assessed by trained clinicians. All outcomes were assessed at age 2 years. CP outcomes were collected through parent-report of diagnosis verified by database linkage. ASD diagnoses were determined by two-clinician consensus using gold-standard assessments for children at elevated risk on ASD screening. GDD was defined as standard score <70 on two or more Bayley-4 domains.
Results: Outcome data was available for 1952 children. Four children (0.2%) had CP, 22 (1.1%) had ASD and 50 (3.2%) had GDD. GMA demonstrated acceptable diagnostic accuracy for CP (AUC 0.67-0.87), but poor accuracy for ASD (AUC 0.50–0.60) and GDD (AUC 0.51-0.59). Fidgety movements showed the best predictive value with 75% sensitivity and 99.6% specificity for detection of CP. In the absence of CP, fidgety movements had low sensitivity (2.0% and 0%) and high specificity (99.6% and 99.5%) for ASD and GDD respectively.
Conclusions: GMA shows acceptable diagnostic accuracy for CP in the general population, consistent with findings in high-risk settings, but limited accuracy for ASD and GDD.

Plenary 5: Emerging Research, Rare Conditions & Translational Science

Novel discoveries, rare diseases and translational research with future clinical impact

Integration of research & innovation with rare disease care & systems change

Baynham, Gareth
Child and Adolescent Health Service, Curtin University, University of Western Australia

The Rare Care Comprehensive Centre includes the WA Rare and Undiagnosed Disease Research and Innovation Consortium with five Flagships. The Centre is fully integrated between Flagships, the cross-sector care services offered at CAHS and WACHS, and Advocacy work to improve systems. We will present how the integrated design aims to deliver innovation and impact for children and families across the patient journey, addressing the common questions families have at each stage. Each of the Flagships will be described – what research has shown to date, what will be investigated in the coming 10 years, how children & families will continue to be central to all that we do. Discovery-Enabled Diagnostics: Identifying and understanding the genetic and functional differences in children with rare and undiagnosed diseases so that…Access to Treatments & Trials: They can be referred to the relevant trials and treatments can be sourced, repurposed, or rapidly developed to help them… Model of Care & Pathways: Researching and applying the best ways to inform, care for and connect children and families to all forms of support they need, including diagnosis, treatment, mental, social, cultural Awareness – Systems & Community: Defining the levers and changes that can improve the ecosystem for children and families, and how to put them into action AI to Unlock Rare Diseases: Testing and applying AI to all stages of rare care to improve and accelerate defining, connecting, and solving for health and well-being challenges children and families face.

ATR inhibition overrides radiation-induced G2 arrest to drive post-mitotic

Byrne, Jacob
The Kids Research Institute

Background: Survival outcomes for children with high-risk medulloblastoma remain poor, and existing treatments are inadequate. Ionizing radiation (IR) is a critical therapeutic component but is associated with debilitating late effects. High-throughput drug screening has identified DNA damage response kinases as promising therapeutic targets, with ATR inhibitor elimusertib demonstrating radiosensitizing activity in preclinical models. Defining the mechanistic basis of ATR inhibitor–mediated radiosensitization is essential for informing scheduling strategies and the safe advancement of this combination into clinical evaluation.
Aim: To determine how ATR inhibition alters cell-cycle progression and DNA damage responses following irradiation in medulloblastoma.
Methods: Medulloblastoma cells were treated with ATR inhibitors ceralasertib, elimusertib and IR. Cell-cycle kinetics and checkpoint integrity were examined using FUCCI live-cell time lapse imaging and flow cytometry to quantify S-phase arrest, mitotic entry, and apoptosis. DNA damage response signaling and

apoptotic markers were evaluated by western blotting. Results: ATR inhibitors and IR exhibited robust synergy across wide dose ranges. FUCCI imaging revealed that IR induced a sustained G2 arrest (42.5h vs 15.8h in controls), with most cell death occurring prior to, and not after, mitosis. In contrast, elimusertib abrogated the IR-induced G2 checkpoint (12.2h), promoting premature mitosis and resulting in substantial post-mitotic death in G1. Western blot analysis demonstrated suppression of ATR signaling, increased DNA damage accumulation, and elevated apoptotic marker expression.
Conclusions: Taken together, these data indicate that ATR inhibition converts radiation-induced checkpoint arrest into a lethal mitotic transition, providing a mechanistic basis for its potent radiosensitizing activity and rationale for clinical evaluation.

Acute kidney injury (AKI) in infants with necrotising enterocolitis

Cleary, Brian
Child and Adolescent Health Service, Department of Neonatology, Rotunda Hospital, Dublin, Ireland

Background: Necrotising enterocolitis (NEC) is a leading cause of morbidity and mortality in preterm infants. Acute kidney injury (AKI) is increasingly recognised as a common complication in this population, yet its relationship with NEC remains under-characterised. We sought to evaluate the incidence of AKI in infants with NEC and examine its association with NEC severity (using Bell staging) in a tertiary neonatal intensive care unit (NICU).
Methods: A retrospective 1:2 case–control study was conducted in a single tertiary NICU between October 2018 and October 2023. Forty-nine preterm infants diagnosed with NEC were matched to 100 controls based on birth weight, gestational age, and gender. AKI was defined using modified neonatal KDIGO criteria, incorporating both serum creatinine and urine output.
Results: AKI was identified in 25 of 149 infants (16.8%), with an incidence among those with NEC of 30.6% compared to controls (10%). NEC exposure was associated with increased odds of AKI in our cohort when controlling for patent ductus arteriosus (PDA), birth weight, gentamicin and ibuprofen receipt, with an adjusted odds ratio (OR) of 3.6. Among NEC cases, AKI onset occurred a median of two days after diagnosis. No association was found between Bell stage and AKI incidence, albeit with a small sample size. Mortality in the NEC-AKI group was 60%, compared to 20.6% in NEC infants without AKI.
Conclusions: NEC is associated with increased risk of AKI in preterm infants, when controlling for birth weight, gestational age PDA, ibuprofen and gentamicin exposure. Bell stage was not associated with AKI incidence.

Harnessing the power of adipose tissue to promote skin regeneration

Joy, Treesa
Fiona Wood Foundation, University of Western Australia

Burn injuries remain a significant clinical challenge, particularly in deep and full-thickness wounds, where delayed healing, excessive scarring, and long-term functional impairment are common. Although cell-based therapies can reduce donor site morbidity and support wound repair, their effectiveness in full-thickness injuries is limited when used alone due to insufficient cell density. We hypothesise that combining autologous adipose-derived stem cells (ADSCs) or stromal vascular fraction (SVF) with non-cultured autologous skin cells can enhance tissue regeneration and reduce fibrosis. Therefore, improved combinatorial approaches are needed to restore dermal architecture and minimise fibrosis. Adipose tissue was processed using the ReCell kit to isolate SVF and ADSCs. The isolated cells were characterised using flow cytometry with established surface markers including CD90, CD105 and CD73. The multipotent capacity of ADSCs was confirmed through tri-lineage differentiation into adipogenic, osteogenic, and chondrogenic lineages. Planned in vitro studies will evaluate the effects of ADSCs and SVF on skin cell

populations, focusing on extracellular matrix (ECM) remodelling and cell migration. In vivo experiments will be conducted to assess the effects of ADSCs/SVF on porcine wounds in combination with ReCell. SVF and ADSCs were successfully isolated using the ReCell kit and demonstrated characteristic surface marker expression profiles. ADSCs retained their ability to differentiate into adipogenic, osteogenic, and chondrogenic lineages, confirming their stem cell properties as evidenced by histological staining Combining adipose-derived cells with autologous skin cells may enhance wound healing outcomes in full-thickness burn injuries, supporting future translational applications in regenerative medicine.

RIME, SJS and TEN in children: 10-year retrospective study

Shah, Mudra
Child and Adolescent Health Service

Abstract Background/objectives: Reactive infectious mucocutaneous eruption (RIME) is increasingly recognised as a distinct entity from Stevens-Johnson Syndrome (SJS) and toxic epidermal necrolysis (TEN). We aimed to describe the clinical characteristics, management and outcomes of children presenting with severe mucocutaneous eruptions at a tertiary paediatric centre.
Methods: We performed a retrospective cohort study of children diagnosed with RIME, SJS or TEN between August 2015 and August 2025. Demographic, clinical, treatment and outcome data were extracted from medical records. Cases were reviewed and reclassified where appropriate according to contemporary diagnostic criteria.
Results: Thirty-two children were included. Following specialist review, two cases initially diagnosed as infection-triggered SJS were reclassified as RIME. Twenty-six patients (81.3%) were diagnosed with RIME and six (18.7%) with drug-induced SJS; no patients met criteria for TEN. Patients with SJS had significantly greater body surface area affected by rash (p=0.013) and epidermal detachment (p=0.023) than patients with RIME. Prodromal symptoms were more common in RIME than SJS (88.5% vs 33.3%, p=0.003). Patients with SJS were more likely to require paediatric intensive care admission (33.3% vs 7.7%, p=0.048). Median follow up was 2 months (IQR 0-11). Long-term sequelae occurred following both RIME and SJS.
Conclusions: RIME was substantially more common than drug-induced SJS in our cohort. Despite less extensive cutaneous involvement, clinically significant sequelae occurred following both conditions, highlighting the importance of long-term follow up. Multicentre registries are needed to strengthen the evidence base for paediatric severe mucocutaneous disease.

Early outcomes of move to improve for children with chronic conditions

Willis, Claire
The Kids Research Institute, University of Western Australia

Background: Physical activity improves physical and psychosocial outcomes for children with a range of chronic health conditions. However, coordinated, tertiary-based physical activity intervention services for children are yet to exist in Australia. This study aimed to evaluate Move to Improve (M2I), a goal-directed physical activity intervention for children with chronic health conditions.
Methods: A single-arm, pragmatic feasibility trial was conducted. Children aged 5-17 years diagnosed with cancer, cerebral palsy, post-burn injury, or type 1 diabetes were eligible to participate. M2I included 8 weeks (8 hours) of physical activity support, delivered by a multidisciplinary allied health team in the hospital and community. Primary outcomes were assessed at baseline and immediately post-intervention, including physical activity goal attainment (Canadian Occupational Performance Measure, COPM) and quality of life (Pediatric Quality of Life Inventory, PedsQL). Linear mixed-effects models evaluated changes in outcome variables, with differences between timepoints computed from estimated marginal means.

Results: To date, 123 participants aged 5-17 years enrolled in M2I. High adherence was observed for all participants (97% session attendance). Compared with baseline, model-estimated mean differences immediately post-intervention showed significant improvements in COPM performance and satisfaction (+2.60, 95% CI 2.0 to 3.2, $p<0.01$), and PedsQL total scores for caregiver- (+4.7, 95% CI 1.6 to 7.8, $p<0.01$) and child-report (+3.0, 95% CI 0.4 to 5.6, $p<0.05$).
Conclusion: Preliminary data suggest M2I may support children with chronic conditions to achieve their physical activity goals and improve health-related quality of life. M2I may act as a blueprint for incorporating physical activity within paediatric healthcare settings.

Posters

Developing a 'Virtual Care' service: The role of simulation-based learning

Aguero, Christel
Child and Adolescent Health Service, 1Hospital in the Home Remote Monitoring, 2Perth Children's Hospital (PCH) Ambulatory Care, 3Department of General Paediatrics PCH, 4The Kids Research Institute of Australia/University of Western Australia (UWA), 5Senior Lecturer Discipline of Paediatrics, (UWA), 6High-Fidelity Simulation Education, PCH

Aim: Virtual Models of Care (VMoC), incorporating telehealth consultations and technology-assisted physiological monitoring, are increasingly implemented to deliver inpatient-level healthcare beyond traditional hospital settings. Following consultations with Hospital in The Home (HiTH) colleagues, a knowledge gap regarding the role of Simulation-Based Learning (SBL) in developing VMoC services was identified. This study describes the role and impact of SBL in implementing a new Paediatric HiTH Remote Monitoring (HiTH-RM) service using a VMoC at Perth Children's Hospital (PCH).
Method: HiTH-RM staff, including nursing and medical personnel, completed SBL training during induction, designed to replicate the VMoC environment using PCH's high-fidelity simulation suite. Participants provided subjective feedback on their SBL experience via pre-post qualitative, semi-structured surveys (30 data points, using a 5-point Likert scale and free-text format) to assess SBL's value in supporting the HiTH-RM service. Data is being collected over six months during the service's implementation using REDCap and analysed via thematic analysis.
Results: During HiTH-RM service development (2024–2025), five staff members completed SBL training, with three providing subjective feedback. Preliminary analysis indicates improved staff confidence in virtual care, enhanced knowledge of virtual patient assessment skills, and increased proficiency in navigating virtual tools. Data collection remains ongoing.
Conclusions: During HiTH-RM service development, SBL was utilised to test service effectiveness. Clinicians who participated in SBL rated it highly for skill development, supporting its ongoing role in future VMoC training.

Portable Monitor Improves Neonatal Facemask Venilation for Non-Specialists

Akhtar, Unmber
University of Western Australia

Background: Neonatal resuscitation is frequently provided by non-specialist clinicians with limited experience in facemask ventilation. This skill depends on good mask seal without leak, appropriate breath volume and rate. The Juno Monitor (ResusRight, NSW, Australia) is a handheld device providing real-time feedback on these variables. This study assessed whether adding the Juno to conventional training improved breath delivery during simulated resuscitation in non-specialists.
Methods: Prospective, blinded, superiority randomised controlled trial recruited from the Neonatal Stabilisation and Transport Readiness (NeoSTARS) courses in Perth Children's Hospital, Port Hedland and Geraldton, Western Australia in 2025. Participants were block randomised and stratified by occupation, to standard training with a T-piece resuscitator on a preterm mannequin (control) or the same plus Juno feedback (intervention). Primary outcome: a ≥10% improvement in the proportion of inflations with leak <30% from pre- to post-training. Tidal volume (mL) and percentage change were also compared. Results: Sixty-seven participants were recruited (Juno n=33; standard n=34): 26 doctors and 41 midwives/nurses. The primary outcome was similar in Juno vs Standard groups (35.5% vs. 39.4%; OR 1.18, 95% CI 0.43–3.30; p=0.70). Across all inflations (n=2498), <30% leak increased from 64.7% to 75.3% in Juno vs 59.9%

to 49.7% in the Standard group (OR 7.06, 95% CI 1.51–33.2; p=0.013). Tidal volume was lower in the Juno group before and after compared to standard (-0.75 mL (4.2%) vs -0.2 mL (1.1%); p>0.05).
Conclusion: Juno feedback improved mask leak at the inflation level and breath delivery by non-specialist clinicians in simulated settings.

Exploring the mechanisms of keloid recurrence

Alkresheh, Rozan
Fiona Wood Foundation, University of Western Australia, 1School of Molecular Sciences, University of Western Australia, 2Burn Injury Research Unit, School of Biomedical Sciences, University of Western Australia, 3ARC Training Centre for Next-Gen Technologies in Biomedical Analysis, University of Western Australia, 5Fiona Wood Foundation, Murdoch

While most studies have focused on keloids in adults, understanding the pathology behind keloid recurrence in adults and translating that into paediatrics is valuable to address the gap in our current knowledge regarding keloid related studies in children. Skin tissue recurrent keloid samples were excised from two different body sites of the same patient and compared to another recurrent keloid from a different donor and two normal skin tissue samples. Single-cell RNA sequencing (scRNA-seq) and library preparation of the samples was performed following standard protocols. Raw sequencing reads were processed for quality control before normalization, clustering, annotations and integration. In this study we report a conserved cellular composition of recurrent keloid samples from different body sites. Differential gene expression was observed in a few gene sets and their associated biological processes in the T cell cluster originating from shoulder body site, indicative of body-site specific differences in keloid phenotype. There were differences identified in the abundance of neutrophiles in diseased samples compared to normal skin, however further investigation and larger sample sizes are needed to confirm these trends. In addition, normal fibroblasts showed a variable response to conditioned media from primary verses recurrent keloid fibroblasts, indicating distinct signalling effects associated with primary and recurrent keloid. Understanding the differences between primary and recurrent keloid and their underling mechanisms is crucial for developing better therapeutic choices and prevention strategies to reduce the burden of keloid recurrence.

Self-Reported tools measuring parents' mental health in the NICU: A systematic review

Aydon, Laurene
Child and Adolescent Health Service, Curtin University

Background: The mental health of parents of babies in the Neonatal Intensive Care (NICU) is of central importance for the long- term outcomes of child and the family. Yet currently there is no systematic review to identify psychometric evaluation measures for use with parents in this setting.
Research question: What psychosocial assessment tools have been tested for quality when assessing emotional distress in parents with babies admitted to the NICU?
Eligibility Criteria: PICO framework: P = parents (mothers' fathers' partners' caregivers'). I = becoming and/or being a parent of a baby admitted to the neonatal intensive care unit. C = parental emotion and distress. O = identification of self-reported emotional stress and or distress.
Data Sources: Data bases: Medline/ PUBMED, Psych INFO, JBI, Cochrane, SCOPUS, CINAHL.
Methods: Publications meeting the inclusion criteria will use the Covidence for Unified Management, Assessment and Review of Information. Titles, abstracts, full text reviews will be reviewed by two independent reviewers; a third will review conflicts. Included and excluded studies will be reported using a PRISMA flow diagram. Quantitative and mixed methods designs will be included. Qualitative studies, short reports, brief communications, reviews will be excluded. Data extraction includes details surrounding measures of quality in each publication, with data procedures following the Consensus-based Standards for

the selection of Health Measurement Instruments (COSMIN). Key measures assessing the standards of quality will use the JBI risk of Bias checklist.
Progress Title and abstract screening commenced May 2026. PROSPERO registration: CRD 42022349633

Monitoring Youth Suicide Risk: Do Hospitalisation and Mortality Trends Tell

Azimi, Somayyeh
North Metropolitan Health Service, School of Health and Clinical Sciences, University of Western Australia, Perth

Background: Self-harm hospitalisations are commonly used as indicators of severe psychological distress and suicide risk1-3. However, declining hospitalisation rates may not reflect improvements in outcomes if mortality trends move in different directions. This study examined trends in self-harm hospitalisation and suicide mortality among Australian youth and their implications for mental health surveillance and service planning.
Methods: National self-harm hospitalisation data from the Australian Institute of Health and Welfare2 and suicide mortality data from Australian Bureau of Statistics4 were analysed for young people aged <25 years across Australia. Joinpoint regression was used to estimate annual percentage changes (APCs) in hospitalisation and mortality rates. The relationship between fatal and non-fatal self-harm outcomes was examined using hospitalisation-to-death ratios and comparative trend analyses.
Results: Self-harm hospitalisation rates declined across most jurisdictions during the most recent study period. In contrast, suicide mortality trends varied substantially between jurisdictions and sex. The most concerning pattern was observed among young females in Western Australia, where self-harm hospitalisation rates declined significantly (APC −22.76%) while suicide mortality increased (APC +15.58%). This pattern resulted in a marked reduction in the hospitalisation-to-death ratio, suggesting hospital-treated self-harm became less common relative to suicide deaths. Similar patterns were less evident elsewhere.
Conclusion: Declining self-harm hospitalisation rates do not necessarily indicate lower suicide risk among young people. The findings suggest that reliance on hospital-based indicators alone may underestimate emerging risks, particularly among young females in WA. Integrating mortality, hospitalisation and other service data may strengthen mental health surveillance and support targeted youth suicide prevention strategies.

Lived experiences of paediatric SJS/TEN, RIME survivors and caregivers

Baird, Kate
Child and Adolescent Health Service

Background: Stevens–Johnson syndrome (SJS), toxic epidermal necrolysis (TEN), and reactive infectious mucocutaneous eruption (RIME) are severe mucocutaneous conditions requiring prolonged hospitalisation and multidisciplinary care. While long-term outcomes in adults with SJS/TEN are described, little is known about paediatric survivors and their caregivers, particularly following RIME.
Objectives: To explore the lived experiences of children and adolescents with SJS/TEN or RIME, and their caregivers, focusing on acute illness, recovery, long-term sequelae, and post-discharge healthcare needs.
Methods: An interpretive qualitative descriptive study was conducted with paediatric and young adult survivors diagnosed with SJS/TEN or RIME, and their caregivers. Participants were purposively sampled from a retrospective cohort at a tertiary paediatric centre. Semi-structured interviews were undertaken, and transcripts were analysed inductively using Braun and Clarke's thematic analysis.
Results: Seventeen participants (nine female; median age at diagnosis 11.6 years) were included, comprising cases of SJS (n=3) and RIME (n=14). Four key themes emerged: (1) severe acute illness experiences characterised by intense pain and invasive treatment; (2) parental experiences of dismissal,

uncertainty, and responsibility during care; (3) persistent psychological sequelae including fear and hypervigilance; and (4) long-term impacts on children and families, including ongoing healthcare needs, educational disruption, and physical and emotional consequences.
Conclusions: SJS/TEN and RIME have significant and enduring impacts on children and caregivers beyond the acute illness phase. Ongoing psychological distress, functional impairment, and healthcare needs were reported across both conditions. Findings challenge assumptions that RIME has uniformly favourable outcomes and highlight the need for long-term multidisciplinary follow-up and psychological support for affected families.

Ketotic hypoglycaemia in spinal muscular atrophy

Balfas, Tania
Child and Adolescent Health Service

Background: Improved survival in spinal muscular atrophy (SMA) following the introduction of disease-modifying therapies has generated new phenotypes and previously under-recognised metabolic complications. Children with SMA are susceptible to ketotic hypoglycaemia (KH) due to impaired β-oxidation and reduced gluconeogenesis, occurring independently of triggering factors.
Methods: A retrospective cohort review was conducted on six patients with SMA Type 1 and 2 diagnosed with KH at Perth Children's Hospital. Medical records were reviewed to capture SMA subtype, SMN copy numbers, disease-modifying therapy, age of onset, precipitating factors, treatment strategies, anthropometry, and nutritional profiling.
Results: Initial KH episodes occurred between 2–6 years of age, with index cases presenting at 5–6 years. Recognition of index cases led to increased clinical awareness and earlier detection in subsequent patients. Hypoglycaemia was documented in 85% of the cohort (glucose 0.6–3.3 mmol/L) and hyperketosis in 100% (3.3–5.8 mmol/L). Precipitating factors included reduced oral intake (100%), viral illness with vomiting (85%), and increased physical activity (33%). Sixty percent were PEG-fed and 50% demonstrated a declining weight centile prior to their first KH episode. Management was individualised, incorporating oral nutritional support, nasogastric tube feeding, overnight PEG feeds, and structured unwell day plans.
Conclusion: KH is an emerging and clinically significant complication in children with SMA receiving disease-modifying therapies. We propose a screening and management protocol commencing from age 2, incorporating structured unwell day plans and innovative monitoring tools including bioelectrical impedance analysis and muscle ultrasound for early detection.

Altered resting-state functional connectivity in children with ADHD and trauma

Bhoyroo, Ranila
Child and Adolescent Health Service, The Kids Research Institute, University of Western Australia

Attention-deficit/hyperactivity disorder (ADHD) and childhood trauma are independently associated with atypical neurodevelopment and frequently co-occur. However, the neural mechanisms through which trauma contributes to heterogeneity in ADHD remain poorly understood. This study investigated the independent and combined effects of ADHD and trauma exposure on resting-state functional connectivity in children and adolescents. Participants were 123 children and adolescents (69 ADHD, 54 neurotypical; 5–18 years) from the Healthy Brain Network. Trauma exposure was assessed using the Adverse Childhood Experiences Parent-report questionnaire. Functional connectivity multivoxel pattern analysis was used to identify brain regions demonstrating altered connectivity associated with ADHD, trauma exposure, and ADHD × trauma interaction effects. Significant clusters were subsequently examined using seed-to-voxel connectivity analyses. Preliminary analyses identified distinct connectivity profiles associated with ADHD, trauma, and their interaction. ADHD was characterised by altered connectivity within frontoparietal network

(FPN) and default-mode network (DMN) ($p<0.001$), with reduced connectivity to other DMN regions and increased connectivity to visual network (VN) regions. Trauma exposure was associated with altered connectivity centred on the DMN ($p=0.002$) and showed increased connectivity with limbic systems and VN and reduced connectivity with salience network (SN) regions. In contrast, ADHD × trauma interaction effects were centred on the VN ($p<0.001$) and were associated with increased connectivity to DMN, SN, FPN and sensorimotor networks. Taken together, ADHD, trauma exposure and their co-occurrence are associated with partially distinct large-scale brain network alterations. Trauma may contribute unique neurobiological signatures in ADHD, highlighting the importance of considering trauma history when investigating mechanisms underlying ADHD heterogeneity.

A mobile app to assess pain in children who cannot self-report it

Blackmore, Marie
The Kids Research Institute, University of Western Australia

Background: The Lancet Child & Adolescent Health Commission set four goals for paediatric pain, one of which is to make pain visible. In children with cerebral palsy (CP), pain is notoriously invisible, under-identified, and under-treated. Our team are currently developing a mobile app to assess pain in children with difficulty reporting it, based on the PainChek® mobile app for adults. This study explored the perspectives of potential end-users on the potential applications of such an app, its value, and the adaptations needed for children with CP.
Methods: A convenience sample of 35 participants included parents of children with a disability with difficulty reporting pain, clinicians with an interest in pain assessment in children with disability, and adults with CP with lived experience of pain. A purpose-designed interview schedule was developed with open-ended and probing questions. Before the interview, each participant was enabled to download the PainChek® mobile app version for adults. Interviews continued until saturation occurred. Interviews were video-recorded and transcribed in MS Teams or Zoom, and analysed in NVivo.
Results: Participants supported the value of the PainChek® app being adapted for children with CP, and cited a wide range of potential users and contexts. Recommended adaptations included the need to ensure the app is able to distinguish pain from movement disorders, an individualized baseline, and pain behaviours individualized to each child.
Conclusions: The results support the value of developing such an app for children with CP, but indicate the need for significant adaptions to ensure its accuracy and usefulness.

A 9.5-Year retrospective comparative study of head injury referrals

Bock, Erin
Child and Adolescent Health Service

Objective: To review head injury cases referred to an Australian hospital-based Child Protection Team (CPT) and compare social, clinical, and radiological characteristics of children diagnosed with abusive head trauma (AHT) versus non-abusive head trauma following CPT assessment.
Method: Retrospective comparative study of children aged <5 years with skull fracture and/or intracranial injury referred to the CPT (July 2015–December 2024). The primary objective was to determine the proportion diagnosed with AHT and compare with published data. Secondary objectives were: (1) comparison of demographic, social, clinical, ophthalmological, and radiological features between AHT and non-abusive cases; and (2) description of neurological outcomes, length of stay, and mortality in AHT.
Results: Among 237 children, diagnoses were AHT (58, 24.5%), accidental (112, 47.3%), indeterminate (39, 16.5%), medical (15, 6.3%), and birth-related (13, 5.5%). Forensic indicators of maltreatment were present in 38%. AHT was associated with prematurity, Aboriginal and Torres Strait Islander status,

socioeconomic disadvantage, and absence of the biological father in the home. AHT cases more often had unexplained injury mechanisms, neurological abnormalities, and retinal haemorrhages. Neuroimaging findings were heterogeneous but strongly associated with subdural haemorrhage, hypoxic–ischaemic encephalopathy, cerebral oedema, and absence of skull fracture. Median length of stay for AHT was 6.9 days; most had persistent neurological abnormality at discharge, and mortality was 11.9%.
Conclusion: The proportion of AHT was consistent with published literature, though lower than New Zealand reports. Clinical and radiological features aligned with existing evidence. Further research is needed to clarify links between social risk factors and AHT vulnerability.

Hip displacement and scoliosis in children with ABI: Risk audit

Boettcher-Hunt, Errolyn
Child and Adolescent Health Service

Aim: To investigate hip displacement and scoliosis in children with post-neonatal acquired brain injury (PNN-ABI) to help inform surveillance pathways.
Method: Retrospective audit of 101 children with motor disorder following PNN-ABI sustained 2006-2023. Hip displacement and scoliosis were assessed using radiographic data. Participants were grouped by age at injury, aetiology, Gross Motor Function Classification System (GMFCS), motor type and topography. Descriptive statistics explored frequency patterns.
Results: In 96 children with pelvic radiographs, hip displacement occurred in 55.3% with PNN cerebral palsy (CP), 36.0% with ABI between >2 and ≤5 years of age, and 0% with ABI after age 5. Earliest hip displacement and dislocation occurred at 2- and 10-months respectively. Highest risk was in children with diffuse brain injury and GMFCS IV–V. Scoliograms were available for 34 children. Scoliosis (Cobb angle >10°) was identified in 22.7% across all-age-at injury groups, aetiologies and GMFCS levels. Severe scoliosis (Cobb angle ≥40%) occurred only in GMFCS IV–V.
Interpretation: Hip surveillance is essential for children with motor disorder following PNN-ABI before age 5; earlier monitoring is recommended for those at GMFCS IV–V following diffuse brain injury. Clinical spine surveillance is recommended across all aetiologies and ages-at-injury.

Professionals' perspectives on perinatal child protection processes & power

Burrow, Sam
University of Western Australia

Objectives: Globally and locally, inequalities and intersecting forms of adversity influence family health and wellbeing and increase the likelihood of babies being removed by statutory child protection systems (CPSs). A qualitative study was conducted in Perth, Western Australia to explore health, welfare, and legal professionals' perspectives regarding parents' experiences of child protection processes in the perinatal period (from conception to one year following birth). This poster presentation will outline structural and individual forms of power described in perinatal child protection processes. It will offer insights for practitioners and policymakers seeking to understand power imbalances and dynamics, avoid institutionally based trauma, promote healing, and help reduce infant removals.
Methods: Qualitative Description was utilised to explore professionals' perspectives of perinatal child protection processes. Health, welfare, and legal professionals from metropolitan-based government and non-government support services were recruited purposively. In total, 68 professionals participated in seven face-to-face interviews and 11 focus groups. Data were collected using a semi-structured interview schedule, and Framework Analysis was utilised to identify themes participants considered important.
Results: Professionals' perspectives of perinatal child protection processes and power have been captured in five themes: 1) Family adversity and the statutory CPS 2) Exercising statutory power 3) Dialogue,

deficits, and delays 4) Advocacy and agency 5) Promising processes.
Conclusion: An enhanced understanding of power imbalances and dynamics, coupled with strengths-based approaches that recognise and respect the agency and resistance of parents, and the advocacy of professionals that work with them, will contribute to emerging guidance regarding structurally-informed perinatal practice.

Humidification practices in infants born less than 27 weeks' gestation

Campbell, Cindy
Child and Adolescent Health Service

Background: Infants less than 27 weeks have immature skin. Exposure to incubator humidity influences trans epidermal water loss, electrolyte balance and skin maturation. Variation in incubator humidity management for extreme preterm infants was identified in clinical practice.
Aim: This study aims to assess alignment between documented incubator humidity settings and neonatal clinical guidelines during the first 2 weeks after birth.
Method: Forty infants born at 22–27 weeks' gestation in 2025 were randomly selected. Daily incubator humidity settings recorded over the first 14 days of life were extracted from observation charts, along with gestational age, skin condition scores, daily fluid requirements, peak sodium levels, temperature range, and duration of humidification.
Results: Data analysis is ongoing and will be completed prior to the symposium. Descriptive statistics will be used. Analysis will describe incubator humidity practices in extremely preterm infants and assess alignment with clinical guidelines, including percentage adherence and completeness of documentation. Associations between guideline adherence and clinical outcomes (hypernatremia, skin integrity, and duration of humidification) will be explored. Additional analyses will examine weaning practices, timing of humidity discontinuation, and factors contributing to variation in practice.
Conclusion: The findings will be used to inform guideline review, support staff education and ensure humidity management practices are both practical and effective in achieving optimal outcomes for extremely premature infants.

ECHIDNA Study – Exploring children's healthcare improvement for infection treatment

Campbell, Anita
Child and Adolescent Health Service, University of Western Australia, The Kids Research Institute

Intravenous (IV) cannulation is the most common painful hospital procedure in children and frequently fails, contributing to distress, treatment delays and escalation to invasive vascular access. Subcutaneous (SC) administration of antibiotics offers a practical alternative to IV administration and can avoid IV access and reduce line-related complications, and adult studies of SC β-lactam antibiotic administration have demonstrated favourable pharmacokinetics and tolerability, however paediatric data are lacking. ECHIDNA is a prospective, randomised, open-label, two-period crossover phase 2a trial conducted at Perth Children's Hospital. Children <18 years receiving guideline-based treatment with ceftriaxone, cefazolin or meropenem are enrolled into three antibiotic cohorts (total n=60). Participants receive doses via alternating routes over consecutive 48-hour periods. Subcutaneous doses are administered using a SC cannula in accordance with institutional guidelines. Low-volume capillary blood samples are collected at post-dose timepoints tailored to drug half-life. The primary outcome is absolute bioavailability, expressed as the ratio of area under the concentration–time curve for SC versus IV administration. Secondary outcomes include population pharmacokinetic parameters and pharmacodynamic target attainment; treatment-related adverse events (local site reactions and catheter complications); clinical outcomes (treatment delays, route

changes, 30-day readmission); and health-system costs and acceptability, assessed using validated paediatric pain tools and qualitative interviews. ECHIDNA will generate the first paediatric pharmacokinetic, safety and acceptability data for subcutaneous β-lactam antibiotics in infection treatment. Findings may inform dosing guidance and support future, less invasive, child-centred models of care for children with infections.

The ImmunEYES Project

Campbell, Anita
Child and Adolescent Health Service, University of Western Australia, The Kids Research Institute

Delayed and incomplete immunisation remains common among hospitalised children, particularly those with complex medical conditions and eligibility for additional medically at-risk vaccines. Identifying under-immunised children and generating catch-up vaccination plans is labour-intensive, requiring substantial clinician time and limiting service reach. The ImmunEYES Project is a quantitative observational evaluation conducted at Perth Children's Hospital to assess the feasibility and utility of automated bulk immunisation status review and catch-up plan generation using Australian Immunisation Register (AIR) data and International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) codes. The project will evaluate both inpatient and outpatient populations at PCH aged 0–18 years. Automated catch-up plans generated through the ImmunEYES tool will be compared with the current manual process undertaken by immunisation nurses. The study will assess feasibility outcomes including time required to generate plans, frequency of manual modifications, and identification of children requiring catch-up vaccination. Clinical and demographic characteristics associated with under-immunisation will be examined. Vaccination uptake will be measured at discharge or outpatient review and at 1- and 6-month follow-up intervals. Parent acceptability will be evaluated using a structured survey. Approximately 2,000–5,000 patient records are expected to be included during the study period. Findings will provide evidence regarding the effectiveness, efficiency, and acceptability of automated immunisation catch-up planning in a tertiary paediatric setting. The project has the potential to improve vaccination coverage, streamline service delivery, and support targeted bulk immunisation interventions for medically vulnerable children.

Redesigning Paediatric diabetes care: Data driven clinical optimisation

Clapin, Helen
The Kids Research Institute

Background: Paediatric type 1 diabetes care is traditionally provided on a quarterly basis with access to a multi-disciplinary team. Opportunities exist, however, to use a data-driven approach to improve access for those with higher clinical need and provide more personalised care. The Precision Care and Clinical Optimisation project aims to develop a new model of care leveraging the DiabHQ digital platform to enable stratified, needs-based care.
Methods: This ongoing project integrates data modelling, digital enablement, and co-design of alternative models of care. A time-and-motion study (2,916 minutes across 14 sessions and eight roles) quantified current clinical processes and identified potential workflow improvement opportunities. In parallel, patient clustering, simulation modelling and co-design sessions with clinicians and families are exploring care pathways based on clinical need rather than routine scheduling.
Results: Clinical staff spend less than one-third of their time in direct patient care, with the majority consumed by documentation, coordination and navigating disconnected systems. Patients can spend up to half of their clinic time waiting. A cluster analysis approach has identified distinct patient groups with different clinical needs, providing a foundation for stratified care and more precise allocation of clinical

resources.
Discussion: Initial insights highlight opportunities to improve care through workflow redesign and stratified care models, with DiabHQ as a core enabler. Ongoing work will evaluate the feasibility, impact, and economic implications of transitioning to a dynamic, data-driven care model. This project demonstrates potential to improve efficiency, equity and patient experience in paediatric diabetes, with broader applicability to chronic disease management.

Expansion of the move to improve physical activity program at PCH

Davey, Emily
Child and Adolescent Health Service, The Kids Research Institute

Background: Move to Improve (M2I) supports children and adolescents with chronic health conditions to increase their participation in physical activity. This is a four-phase project that included a co-design phase and pilot trial for children with cancer, cerebral palsy, post-burn injury, and type 1 diabetes. The third phase of M2I aims to scale-up the program to medical departments across PCH.
Methods: Expansion planning was informed by the Practical planning for Implementation and Scale-up (PRACTIS) guide. This included engaging with key stakeholders across PCH, presenting to clinical teams at Department meetings, and identifying appropriate patient cohorts for referral. A cross-sectional online survey was distributed to explore and characterise clinician perspectives on physical activity and factors influencing the implementation of M2I. Survey data were analysed using descriptive statistics.
Results: All departments accepted invites to learn more about M2I. Presentations were delivered at department meetings, and forty-seven clinicians (74% medical) working across 9 departments completed the survey. 98% agreed or strongly agreed that physical activity could meaningfully improve patient health outcomes, and 91% reported that M2I would be valuable for their patients. Clinicians identified patient-facing resources (79%), clear referral pathways (79%), and dedicated staff as M2I champions (60%) as supportive for implementation.
Conclusion: The role of physical activity in routine patient care is recognised and supported by clinicians across PCH. M2I was perceived as a valuable service, with implementation strategies identified to support expansion across departments. In 2026, 16 medical departments at PCH will participate in the scale up phase.

Representativeness of the ORIGINS birth cohort participants to WA

Davis, Jackie
The Kids Research Institute

Background: There is increasing recognition that cohort populations are systematically selective, raising important questions about how findings should be interpreted and generalised. We used the ORIGINS birth cohort as a contemporary case study to examine these issues.
Methods: We analysed 8,498 births from the ORIGINS birth cohort (2017–2023) and compared key demographic, socioeconomic, pregnancy, and birth characteristics with population-level data from Western Australia (WA) and Australia sourced from linked perinatal records, the Australian Institute of Health and Welfare and the 2021 Australian Census. Descriptive comparisons were undertaken using proportions.
Results: The ORIGINS cohort was more socioeconomically advantaged than the broader WA and Australian populations, with higher levels of education and employment and lower representation of families living in disadvantaged areas. Aboriginal and Torres Strait Islander mothers were substantially underrepresented (0.7% vs 5.9% in WA and 5.1% nationally), and health-related behaviours such as smoking during pregnancy were less common (3.4% vs 7.6% and 8.9%, respectively). Rates of gestational diabetes were lower (9.6% vs 12.4% in WA and 15.4% nationally), while caesarean section rates were

higher (49.9% vs 39.0% in WA and 37.3% nationally). Despite these differences, key birth outcomes, including low birth weight and preterm birth, were broadly comparable across populations.
Conclusions: The ORIGINS cohort exhibits the expected patterns of selection seen in contemporary birth cohorts, with overrepresentation of more advantaged and health-conscious participants. While such differences may limit direct population-level inference, they do not necessarily compromise the validity of internal associations.

Are lower HbA1c targets achievable without increasing hypoglycaemia burden?

Delaney, Peter
The Kids Research Institute

Diabetes technologies have transformed management, with automated insulin delivery (AID) systems improving glycaemia with no increase in hypoglycaemia metrics. This supported reduced glycated haemoglobin (HbA1c) targets from <7.0% to <6.5%. It remains uncertain whether lower HbA1c increases hypoglycaemia burden. A subset of a hypoglycaemia survey cohort were included. Children 2–18 years with type 1 diabetes were categorised into two groups: HbA1c <6.5% and HbA1c 6.5–7.0%. Clinical data were obtained from the WACDD, while CGM metrics from device-specific platforms. Hypoglycaemia burden was assessed using frequency (level 1 [<3.9 mmol/L] and level 2 [<3.0 mmol/L] hypoglycaemia for ≥15 minutes), duration (% time below range), severe hypoglycaemia and impaired awareness of hypoglycaemia (IAH; modified Clarke; ≥12 years only). Standard statistical methods applied. P <0.05 was considered significant. Data from 142 participants were analysed (median[IQR] age 14.5[13.0–16.0] years, diabetes duration 9.99[6.3-12.6] years, 39% females, 99% CGM, 50% AID). Eighty (56.3%) participants had HbA1c <6.5%, while 62 (43.7%) had HbA1c 6.5–7.0%. No differences in the rates of level 1 (RR:1.09[95%CI:0.74,1.61]; P=0.660) or level 2 (0.90[0.55,1.45]; P=0.657) hypoglycaemia were found between groups, nor in TBR <3.9 mmol/L (2.13[0.83,5.46]; P=0.113) or <3.0 mmol/L (1.26[0.85,1.85]; P=0.243). No severe hypoglycaemia events were recorded in this cohort. IAH was reported in 22.9% and 14.3% with HbA1c <6.5% and 6.5-7.0% respectively (P=0.223). Achieving HbA1c <6.5% was not associated with increased hypoglycaemia burden in this contemporary paediatric cohort, which supports lower targets in technology-supported diabetes care. Further analysis is required to investigate the relationship between HbA1c and hypoglycaemia.

Self-reported vs CGM-derived hypoglycaemia in children with type 1 diabetes

Delaney, Peter
The Kids Research Institute

Increasing use of diabetes technologies, particularly continuous glucose monitoring (CGM), has likely altered the perception of hypoglycaemia. This study compared self-reported and CGM-derived hypoglycaemia rates and examined associations with glycaemia. Children (≥12 years) and parents of children (<12 years) with type 1 diabetes completed a survey on perceived hypoglycaemia frequency. Perception was categorised as infrequent (<1-2 episodes/week), almost daily (3-4 episodes/week), or daily (at least once daily). Clinical data were obtained from WACDD, and CGM metrics from device-specific platforms. CGM-based hypoglycaemic events were defined as level 1 (<3.9 mmol/L) and level 2 (<3.0 mmol/L) for ≥15 minutes. Standard statistical methods applied, with P<0.05 considered significant. Among 280 participants (median[IQR] age 13.3[9.6-15.5] years), 98% used CGM and 73% relied on CGM to detect hypoglycaemia. Overall, 53.0% reported infrequent hypoglycaemia, 30.8% almost daily episodes, and 16.1% daily episodes. Those reporting infrequent episodes had higher HbA1c (7.4[6.5-8.4]%) than almost daily (6.9[6.4-7.4]%;P<0.01) and daily (6.9[6.4-7.5]%;P=0.019) episodes. Weekly rates of level 1 and level 2 hypoglycaemia events were 4.39[1.70-7.74] and 0.37[0.08-1.38] in children <12 years, and

2.38[0.85-4.35] and 0.34[0.00-0.81] in children ≥12 years respectively. Higher weekly rates of level 1 hypoglycaemia were associated with lower HbA1c (RR:0.93[95%CI:0.88,0.99];P=0.034); this was not observed with level 2 hypoglycaemia (RR:1.06[95%CI:0.92,1.23];P=0.386). Participants reporting infrequent hypoglycaemia had fewer level 1 CGM-based hypoglycaemic events/week (2.24[0.70-3.93]) than those reporting almost daily (4.33[1.73-7.22];P<0.001) or daily (5.31[2.47-7.22];P<0.001). Hypoglycaemia remains a common occurrence in children with type 1 diabetes. Self-reported rates of hypoglycaemia align with CGM-based metrics, suggesting perception of hypoglycaemia is predominantly based on CGM.

Trends and indications for caesarean section in the ORIGINS birth cohort

Einarsdottir, Kristjana
The Kids Research Institute

Objective: The aim of this study was to describe the CS rates and the clinical indications for pre-labour CS in the ORIGINS birth cohort.
Methods: This study analysed data from the ORIGINS birth cohort, a large birth cohort in Western Australia, including 9,473 births occurring at Joondalup Health Campus between 2016 and 2024. Rates of CS and pre-labour CS were compared across study periods (2016–2020 and 2021–2024) and by facility type (public vs private). Poisson regression was used to assess the change in CS rates across study periods, adjusted for maternal demographic and pregnancy characteristics.
Results: Overall CS rates were 50.4% for the study cohort. They increased from 48.2% in 2016-2020 to 52.3% in 2021-2024 (ARR:1.10, 95% CIs: 1.06-1.14) and were 46.2% in public facilities and 62.0% in private facilities. Pre-labour CS rates increased from 31.4% to 36.2% (ARR:1.15, 95% CIs: 1.10-1.23) and were 28.5% in public facilities and 49.1% in private facilities. Previous caesarean section was the most common indication for pre-labour CS and increased in prevalence across study periods (50% to 53.2%). Pre-labour CS performed at maternal request also increased (10.8% to 15.3%) and was more common in private hospital facilities (public: 10.8%, private: 17.7%).
Conclusions: CS rates in the ORIGINS birth cohort appeared to be higher than in the broader Western Australian birthing population. Pre-labour CS contributed substantially to rising CS rates in this cohort and was particularly common in private settings.

Understanding child health and wellbeing in Western Australia through a Population Health survey

El-Zaemey, Sonia
Epidemiology Directorate, Public & Aboriginal Health Division Department of Health

Background: The Health and Wellbeing Surveillance System is a population health survey conducted by the Epidemiology Directorate, Western Australia Department of Health. Running since 2002, the survey includes a dedicated child component covering children aged 0 to 15 years, with information collected from parents and carers.
Aims: This presentation aims to describe the child survey, outline how the data is collected, present key findings on child health and wellbeing in Western Australia, and demonstrate how the data is used to inform health policy and planning.
Methods: The child survey uses a random sample of households across Western Australia. Parents and carers are asked about their child's physical health, mental health, diet, physical activity, sleep, and use of health services. Data is collected through telephone interviews and online responses, allowing a broad reach across the population. Results are reported on annual basis, allowing trends to be tracked over time.
Results: Survey findings reveal important trends in child health in Western Australia. For example, the use of mental health services among children has risen sharply, from 3.5% in 2005 to 12.5% in 2024. In 2024,

one in ten children (10.1%) were considered obese, and only 10.9% of children were meeting the recommended daily vegetable consumption guidelines. These are just some of the findings the survey tracks across a wide range of child health topics over time.
Conclusions: The Health and Wellbeing Surveillance System child survey is a valuable but not fully utilised resource. Greater awareness among researchers and health professionals could lead to better use of the data, stronger collaboration, and more informed policy, planning and service delivery.

Safe yarning cards: An evaluation of acceptability and usefulness

English, Michael
The Kids Research Institute, University of Western Australia

Aboriginal and Torres Strait Islander peoples and cultures have thrived for over 60,000 years. Despite this, the ongoing impacts of colonisation and systemic discrimination continue to influence experiences within mainstream mental health services. Cultural safety is critical to improving social and emotional wellbeing outcomes for Aboriginal and Torres Strait Islander peoples. This presentation builds on a broader research project exploring the experiences of Aboriginal and Torres Strait Islander children and families accessing mental health services, and what is required to create culturally safe care. Guided by Aboriginal Participatory Action Research methods, the project involved yarns with Aboriginal and Torres Strait Islander young people, carers, clinicians, and cultural knowledge holders in Boorloo (Perth, Western Australia). These yarns centred Aboriginal ways of knowing, being, and doing and informed the co-design of the Safe Yarning Cards. Following dissemination of the cards, an evaluation survey was conducted to examine their acceptability and usefulness for supporting conversations about mental health and wellbeing. The survey was distributed to recipients of the cards, including Aboriginal and non-Aboriginal professionals working across mental health, social and emotional wellbeing, health, education, and child and family services, as well as students and trainees preparing for work in these sectors. Acceptability was assessed using an adaptation of the Theoretical Framework of Acceptability. Findings will inform the broader implementation of the Safe Yarning Cards and demonstrate the value of embedding Aboriginal voices and knowledge systems in the development of culturally safe resources for mental health and wellbeing practice.

Leading for impact to reduce communicable disease in low-resource settings

Enkel, Stephanie
The Kids Research Institute, University of Western Australia

Many child health programs in low resource settings are technically sound yet fail to achieve sustained reach and impact in low-resource settings. We hypothesise that this reflects implementation challenges shaped by leadership, trust, local decision-making and broader health system constraints that are rarely examined directly. Led through a collaboration between The Kids Research Institute Australia, the University of Western Australia, Princeton University, the World Bank and health system partners, this study will investigate how leadership and community engagement influence delivery of communicable disease-focused child health programmes in systems under pressure, with a focus on prevention-oriented interventions targeting high-burden infectious diseases. A desk-based review will synthesise implementation science, leadership development and health systems literature to identify how leadership is conceptualised, supported and measured in low-resource settings. Approximately 30 key informant interviews will then be undertaken with programme implementers, policymakers, community members and leadership programme alumni across selected case sites, including settings transitioning from donor dependency. Data will be analysed thematically to examine how formal governance, adaptive leadership, relational trust and community-led problem-solving shape programme delivery. The study is designed to

move beyond narrow assessments of programme fidelity to better understand the values, relationships and enabling conditions that support effective and equitable implementation. Findings will inform a practical, values-based leadership framework and co-designed tools for implementers and policymakers seeking to strengthen communicable disease prevention and child health delivery in low-resource settings.

Screening for sleep apnoea–testing the upper airway collapsibility model

Evans, Daisy
Child and Adolescent Health Service, The Kids Research Institute, University of Western Australia

In paediatric tonsillectomy, clinicians need to able to identify patients with obstructive sleep apnoea (OSA), which could lead to anaesthesia complications. We previously reported that upper airway pharyngeal closing pressure (PCLOSE) measured immediately before surgery while a child was anaesthetised could predict moderate-severe OSA with 100% sensitivity and 65% specificity. It is important to validate clinical prediction models in independent datasets other than those in which they were developed. Here, we evaluate the performance of the PCLOSE model to predict the presence of moderate-severe obstructive sleep apnoea in a new independent dataset. Validity in one dataset does not imply universal validity; prediction models should be repeatedly tested over time and in different clinical contexts. Clinical prediction models can be assessed for performance (ability to correctly predict the defined outcome) and calibration (how closely predicted probabilities of the outcome from the model match the observed probabilities of the outcome). If the model is found to be mis-calibrated, it can be updated; this is preferable to developing a whole new model from scratch, as it incorporates the information from previous data as well as that from the new independent test dataset. We illustrate how a clinical prediction model can be tested and updated, using our previously published PCLOSE model as an example. We evaluate its predictive performance and calibration in an independent dataset, and then develop an updated model incorporating these new data to improve performance and enhance its accuracy and applicability in real-world settings.

Genetic aetiologies and risk factors for regressive autism and childhood disintegrative disorder

Fairthorne, Jenny
Monash University, Queensland University of Technology

Autism spectrum disorder (autism) is diagnosed by deficits in communication, and restricted, repetitive behaviours or interests. About a third of children appear to develop normally but subsequently regress and become autistic. This condition is termed regressive autism (RA) and the associated regression, autistic regression. Children undergoing autistic regression after two years can be diagnosed with childhood disintegrative disorder (CDD). This review aims to summarize genetic aetiologies and risk factors for RA and CDD. We searched four databases for papers published from 2010-2024 and retained 32. Nearly 90 genetic variants, along with epigenetic involvement, immune dysfunction and toxicant exposures related to autistic regression. Recurring comorbidities included inflammatory bowel disease, fever and mitochondrial disease. The increasing prevalence of autism means that RA is no longer rare and CDD is more common, emphasizing a crucial need for associated research. Benefits might be improved outcomes for affected families, reduced prevalence and reduced financial burdens for families and governments

Understanding and optimising surgical utilisation of HiTH

Fitzgerald, Eanna
Child and Adolescent Health Service

Background: Hospital in the Home (HiTH) is a model of healthcare which provides hospital level care for patients in their own homes rather than as a hospital inpatient. The advantages of HiTH include but are not limited to; shorter inpatient stay, reduced risk of healthcare associated infections and improved patient comfort while recovering in their own home. Additionally, the hospital benefits from fewer hospital bed days, with reduced costs, increased bed availability and optimized hospital flow. Although the Hospital in the Home service offers several advantages for both patients and hospitals, previous literature has reported underutilisation of HiTH by surgical specialties.
Objective: This audit aims to examine the current use of HiTH by surgical patients at Perth Children's Hospital and understand the interventions being utilised. We anticipate this information will guide future service and policy development to expand access to HiTH care for surgical patients.
Methods: Retrospective audit examining patient demographics, surgical diagnosis. HiTH interventions, inpatient course, length of stay and outcomes. All patients admitted to HiTH under a surgical team between 01/06/24 - 01/06/26 will be included.
Results: Results pending at time of abstract submission.
Conclusion: This audit will provide us with an improved understanding of the current utilisation of HiTH by surgical specialties. This knowledge will enable us to optimise our pathways and facilitate increased access to HiTH services for surgical patients.

Time-dependent mortality prediction using the neonatal SOFA score in very preterm neonates

Fleming, Rachael
Child and Adolescent Health Service, Curtin University

Background: Neonatal sepsis remains a major global cause of morbidity and mortality. While the Sequential Organ Failure Assessment (SOFA) score is widely used to define and risk-stratify sepsis in adults, its application in neonates is limited. To address this gap, the neonatal SOFA (nSOFA) score was developed to predict sepsis mortality and to support a consensus definition of neonatal sepsis associated with life-threatening organ dysfunction.
Methods: We conducted a retrospective, single-center study of very preterm neonates born before 29 weeks of gestational age who were enrolled in a LOS interventional randomized controlled trial between December 2016 and February 2024. nSOFA scores were calculated at suspected LOS onset (0 h) and at 12 h and 24 h after the initial evaluation. Mortality served as the primary outcome.
Results: A total of 190 neonates with 285 episodes of suspected LOS onset were included. We identified 47 episodes of confirmed late-onset sepsis and 56 episodes of probable late-onset sepsis. Among neonates with confirmed late-onset sepsis, nSOFA scores differed significantly between survivors and non-survivors at 12 h and 24 h, but not at initial evaluation (0 h). The discriminatory performance of nSOFA for mortality prediction was highest at 12 h.
Conclusion: In this study, the prognostic value of the nSOFA score was time-dependent, with the strongest mortality discrimination observed at 12 h after initial evaluation in very preterm neonates with confirmed late-onset sepsis. These findings support the role of the nSOFA score as a dynamic risk stratification tool in neonatal late onset sepsis.

Rethinking paediatric home sleep study eligibility: Audit insights

Forrest, Yahya
Child and Adolescent Health Service

Background: Ambulatory home sleep tests (HST) are routinely used at Perth Children's Hospital (PCH) as a more accessible alternative to polysomnography. While oximetry remains a common screening tool, its limitations in detecting mild obstructive sleep apnoea (OSA) have increased interest in broader HST use. Current criteria typically restrict HST to children >6 years without significant comorbidities. This audit evaluated HST performance, feasibility, and reliability at PCH and explored whether eligibility could be extended. We hypothesised HST would be feasible across a broader paediatric population.
Methods: Retrospective audit of 142 HSTs (June 2018–June 2019). Data included demographics, referral source, study validity (≥4 hours sleep), and outcomes. Descriptive analysis was performed (SPSS).
Results: Participants were aged 3-17 years (mean 9.7; 65% male); 27% were <6 years. Sixty-seven percent had comorbidities. Valid studies were achieved in 92% (131/142), with minimal technical errors. All studies in children <6 years were valid; all 11 invalid studies occurred in older children. Referrals were mainly for snoring (87%), largely from general paediatricians (50%). Diagnoses included mild OSA (63%), moderate (19%), severe (4%), increased upper airway resistance (5%), and no sleep-disordered breathing (8%), yielding an 86% diagnostic rate.
Conclusion: HST is feasible and reliable across a diverse paediatric cohort, including younger children and those with comorbidities. Findings support expanding eligibility criteria to improve access and reduce waitlist and diagnostic delays. Future Directions: Further evaluation of HST as a first-line test versus oximetry is warranted.

FDV screening in a tertiary paediatric ED: A pilot study

Friedland, Aharon
Child and Adolescent Health Service

Introduction: Family and domestic violence (FDV) is a major preventable public-health issue. ACEM recommends universal screening to improve detection, which is supported by staff and caregivers. However, FDV remains under-recognised in emergency departments (EDs). Paediatric EDs are unique screening locations, as caregivers may feel safer disclosing concern when seeking care for their children.
Objectives: Evaluate screening effectiveness, feasibility, barriers and staff perspectives. • Improve detection and timely intervention for FDV among female caregivers.
Methods: Six-week pilot evaluation in a tertiary paediatric ED. Staff received training and implemented an FDV screening tool adapted for paediatric settings. Female caregivers of children aged 0-2 years were screened alone in private, using a verbal questionnaire and intervention pathway. Staff surveys evaluated feasibility, acceptability, and implementation barriers.
Results: Of 8,500 attendances, 2,300 were aged 0-2-years; 229 screening episodes were completed. Positive screens occurred in 32/229 (14%), of which 26/32 (80%) received resources, 6/32 (20%) were referred to social work and 3/32 (9%) required admission for safety. FDV social-work referral rates increased from 0.74/1000/year pre-implementation (55/74,469) to 21.83/1000/year with screening (5/229). Staff feedback was very positive: 158 (98%) deemed it important; 168 (93%) reported in took <5-minutes; and 141 (78%) found it easy to perform. Barriers included staff discomfort (42%) and limited privacy (47%).
Conclusion: This study demonstrated FDV screening is feasible, acceptable to staff and facilitates timely crucial interventions in ED. Detection doubled, and social work referrals increased almost 30-fold compared to pre-implementation. These findings support FDV screening as a critical public health intervention.

Uveitis screening in juvenile idiopathic arthritis

Gall, Alannah
Child and Adolescent Health Service

Background: The uveitis phenotype seen in JIA is usually asymptomatic bilateral chronic anterior uveitis and is associated with significant lifelong complications included visual loss, cataracts, glaucoma and band keratopathy. Successful screening programs focus on early and regular screening to identify patients uveitis early to prevent further complications or visual deterioration.
Methods: An audit of uveitis screening was completed over the 3 month period from May - August 2026 of all patients reviewed in the Perth Children's Hospital Rheumatology Clinics with Juvenile Idiopathic Arthritis (JIA). The episodes of uveitis screening for each of these patients were retrospectively reviewed and compared against the benchmark. The benchmark used was the 2006 BSPAR/RCOpth Guidelines for Screening for Uveitis in Juvenile Idiopathic Arthritis.
Results: Preliminary results of the audit demonstrate we are not meeting this benchmark and there is scope for service improvement based on these outcomes.

Combined healthy lifestyle behaviours and cardiometabolic health outcomes: An umbrella review of systematic reviews and meta-analyses

Getahun, Genanew Kassie
Edith Cowan University

Globally, nearly 75% of all deaths are due to Non-Communicable Disease (NCDs) and around 50% of NCDs deaths are attributable to Cardio-Metabolic Disease (CMDs). The leading drivers of CMDs are unhealthy lifestyle behaviours and genetic susceptibility. Emerging evidence highlight that combined healthy lifestyles have the capacity of counterbalancing genetic susceptibility. However, the available findings are based majorly on European populations which brings an ascertainment bias that reduce the predictive accuracy of Polygenic Risk Scores (PRS) for non-European populations. Therefore, This study will comprehensively investigate how childhood lifestyle behavior patterns influence adult cardio-metabolic risk and determine whether healthy childhood lifestyles can offset genetic susceptibility to adverse cardio-metabolic outcomes. A secondary data analysis will be carried out using the Raine study Western Australia birth cohort. Childhood healthy lifestyle behaviors will be combined using cumulative average repeated score involving healthy nutrition, screen time, physical exercise, and sleep quality. The relationship between childhood combined lifestyle scores and adult CMDs will be examined using multivariable mixed-effects regression model. Moreover, independent weighted polygenic risk score will be computed for hypertension, body mass index, and type 2 diabetes to assess high genetic risk to CMDs. The study will offer valuable insights for a shift from single-behavior interventions toward integrated lifestyle strategies for CMDs prevention. The findings will also inform risk stratification, guide personalized prevention efforts, and strengthen evidence-based public health and clinical recommendations to reduce the global burden of CMDs.

Temporal microbial dynamics of healing burns in paediatric patients

Ghori, Noor Ul Huda
The Kids Research Institute, University of Western Australia

Introduction: Burn injuries remain a major health burden in Western Australia, particularly among children under five years of age. Although advances in burn care have improved survival, many children experience delayed healing and long-term scarring, resulting in functional impairment and repeated surgical interventions. While the skin microbiome has been studied in the context of wound infection, emerging

evidence suggests that commensal microorganisms also contribute to immune regulation, inflammation, and tissue repair. However, little is known about how the skin microbiome changes and recovers following paediatric burn injury. This study aimed to characterise longitudinal microbiome dynamics during burn wound healing and evaluate the effect of coconut oil treatment on microbial recovery. We conducted a longitudinal microbiome study involving 41 paediatric burn patients (20 control, 21 coconut oil treatment). Samples were collected from wounds, contralateral skin, donor sites, and donor contralateral sites at healing and 2, 4, 8, and 12 weeks post-healing, generating 332 samples. Bacterial community dynamics were characterised using full-length 16S rRNA gene sequencing.
Results: Burn injury significantly altered the skin microbiome, with wound sites characterised by increased relative abundance of Staphylococcus epidermidis and Cutibacterium acnes. Longitudinal analysis demonstrated that wound microbiome remained distinct from paired uninjured skin throughout the follow-up period and did not converge by 12 weeks post-healing. No significant differences in overall microbiome composition or diversity were observed between the coconut oil and control groups.
Conclusion: This study provides one of the first longitudinal characterisations of microbiome dynamics following paediatric burn healing.

ORIGINS: A longitudinal research platform for empowering futures and advancing child health

Gibson, Lisa
The Kids Research Institute

Background/Aims: ORIGINS is the largest longitudinal birth cohort study in Australia, following 10,000 infants from the prenatal period to investigate the early determinants of health, development, and wellbeing. The study seeks to identify early-life exposures that shape trajectories across multiple domains including physical, cognitive, and psychosocial, and to understand how these influence outcomes across the life course for children, families, and future generations. ORIGINS provides a unique platform to examine how structural and environmental factors in critical developmental periods affect later health, development, and social functioning.
Methods: In addition to observational assessments, ORIGINS serves as a framework for nested intervention studies aimed at improving modifiable aspects of the early-life environment. These interventions target nutrition, physical activity, microbial diversity, environmental pollutants, exposure to green and blue spaces, language development, mental wellbeing, and weight gain. By integrating longitudinal observational data with experimental sub-projects, ORIGINS enables the identification of early predictors of later outcomes and the testing of interventions during sensitive life course windows.
Results: To date, ORIGINS has recruited over 10,000 families (>23,000 participants), collected more than 20 million data points, and banked over 400,000 biological samples. Assessments include 2,800 one-year checks, 1,800 three-year checks, and ~1,000 five-year checks, alongside integration and harmonisation of more than 51 nested sub-projects. This comprehensive dataset allows for cross-domain and cross-life-stage analyses, supporting insights into trajectories of health and development and the intergenerational transmission of risk and resilience.
Conclusion: ORIGINS demonstrates how a large-scale, flexible research platform can generate rich longitudinal data to understand structure and change during critical developmental periods, supporting evidence-based interventions to improve outcomes across generations.

Co-designing culturally aware research with Aboriginal communities

Greenly, Amy
The Kids Research Institute

Background: Antimicrobial resistance (AMR) is an escalating global health challenge. In Western Australia (WA), Aboriginal children experience a high prevalence of chronic bacterial infections, including skin and respiratory conditions, alongside increasing antibiotic resistance. Bacteriophages (phages) are naturally occurring viruses found in soil and water that selectively target bacteria, offering an alternative to antibiotics. However, there is limited research exploring Aboriginal community perspectives on infections, treatment approaches, or how connections to Country and local knowledge can inform phage discovery and application.
Aim: The Phage on Country project aims to partner with Aboriginal communities in the Goldfields region to co-design a culturally safe and respectful research framework. It seeks to explore community perspectives on phage discovery and therapy, while identifying opportunities to integrate Aboriginal knowledge systems into AMR research and innovation.
Methods: Guided by The Kids - Aboriginal Torres Strait Islander Research Standards and the fundamental principles of co-design, reciprocity, and respect, the project will engage Elders, community organisations, and local interest holders through yarning sessions and collaborative workshops. With permission, environmental sampling of waterways and other community-approved sites will then investigate the existence of phages in the Goldfields region. Community input will then inform both research processes and the development of culturally appropriate educational resources.
Expected Outcomes: This initiative will strengthen partnerships between researchers and Aboriginal communities and establish a scalable framework for culturally responsive engagement nationally. It will also promote Aboriginal-led participation in precision medicine research, demonstrating the value of integrating Aboriginal cultural knowledge with scientific innovation to address AMR.

Light-cured silver fluorides in hypomineralised permanent molars

Halane, Mo
Child and Adolescent Health Service, University of Western Australia

Background: Molar incisor hypomineralisation is a developmental enamel defect affecting permanent molars. Affected teeth often have porous enamel, hypersensitivity and increased risk of post-eruptive breakdown. Severe deterioration may contribute to pain-related dental presentations, hospital-based care and treatment under general anaesthesia. Silver diamine fluoride and aqueous silver fluoride may help stabilise compromised tooth structure, while adjunctive light curing may alter silver precipitation and mineral uptake.
Aim: To investigate whether silver fluoride treatment changes the diagnostic and mineral-density characteristics of hypomineralised permanent molars, and whether adjunctive light curing provides additional benefit.
Methods: This Phase 1 ex vivo laboratory study will use extracted hypomineralised permanent molars, with non-hypomineralised permanent molars included as controls where available. Teeth will be photographed, clinically classified and assessed at baseline using DIAGNOcam, DIAGNOdent and micro-computed tomography. Specimens will be allocated to silver diamine fluoride or aqueous silver fluoride, with or without immediate light-emitting diode curing. DIAGNOdent readings will be recorded in triplicate at standardised sites. DIAGNOcam images will document lesion appearance and optical changes. Micro-computed tomography will assess lesion characteristics and tissue mineral density using standardised regions of interest and hydroxyapatite phantom calibration. Pre- and post-treatment changes will be compared according to lesion status, topical agent and curing condition.

Expected outcomes: This study will determine whether silver fluoride treatment produces measurable changes in fluorescence, near-infrared transillumination appearance and micro-computed tomography-derived mineral density, and whether light curing enhances these effects.
Conclusion: Findings will provide laboratory evidence to guide future clinical evaluation of minimally invasive approaches that may help stabilise hypomineralised permanent molars

Clinical outcomes and health service impact of home Nasogastri

Hanly, Gabrielle
Other

The aim of the study is to consider the number of children that may have been appropriate for NGT hydration at home prior to the policy and then rates of referral after policy introduction. This data will offer information about the full extent of patients that could benefit from NGT hydration at home, and the characteristics of these patients. It will help estimate the impact of the possible bed/admission day savings. The post implementation data will offer information about uptake of the policy and help guide further education or other efforts to increase uptake.
Objectives: The study aims to identfiy patients receiving in hospital NGT rehydration for acute illness prior to policy introduction that would have been suitable for HITH NGT rehydration as per the policy inclusion and exclusion criteria. Data on the median in hospital length of stay, NGT re-insertion rates and readmission rates for these patients will be collected, as well as the volume and type of rehydration fluid received. Similar data will be collected in the 6 months after policy implementation to gather information on rates of referral of appropriate patients.
Methods: The study will be a retrospective pre-post implementation audit comparing outcomes at two time points to evaluate he impact of the NGT HiTH policy being published 17th February 2026 at PCH. 50 patients meeting the inclusion/exclusion criteria pre policy and 50 post policy will be included. To our knowledge, similar data has not be collected by our Australian HITH colleagues and we hope this study results in service improvement.

Incidence, timing and reporting of reactions to intravenous immunoglobulin

Hurford, Ashleigh
Child and Adolescent Health Service

Introduction: Intravenous immunoglobulin (IVIg) is commonly used in paediatric practice for a range of immunological, neurological and haematological conditions. Adverse reactions may occur during or after infusion. This study aimed to determine the incidence, timing and reporting accuracy of adverse reactions to IVIg in a tertiary paediatric centre.
Method: A retrospective chart review was conducted of all IVIg infusions administered at Perth Children's Hospital between April 2022 and April 2024. Of 205 patients receiving regular IVIg infusions, 158 were included after excluding oncology and transplant-related patients. Adverse reactions occurring during or after infusion were identified through medical record review and comparison with formal adverse event reports.
Results: A total of 158 patients receiving regular IVIg infusions were reviewed. Adverse reactions occurred in 25 patients (15.8%). Immediate and delayed reactions occurred with similar frequency. 52% (13/25) of IVIg reactions occurred after Privigen AU. Only 13/25 reactions (52%) had been formally reported, with the remaining 12 identified through retrospective chart review.
Conclusion: Approximately one in six patients receiving IVIg infusions was associated with an adverse reaction. Delayed reactions occurred as frequently as immediate reactions. Nearly half of these events were not formally reported, suggesting substantial under-reporting of IVIg-related adverse events. Improved

surveillance and reporting of both immediate and delayed reactions may provide a more accurate estimate of IVIg safety.

Care close to home: Participant experiences of a healthy lifestyle program

Iwanowski, Kate
Child and Adolescent Health Service, Curtin University, The Kids Research Institute

Childhood obesity is a health issue which continues into adulthood with adverse health consequences. Interventions to address obesity have been shown to be effective, thus scaling interventions to benefit more individuals is a current priority. Perspectives of intervention recipients should be included when adapting programs for scale. This study aimed to understand participant experiences after 6 months of participation in a healthy lifestyle program in Perth, Western Australia, scaled-out from Aotearoa/New Zealand. This interpretivist, qualitative study examined experiences of children, young people and caregivers aged 4-16 living with obesity, after 6-months of participation in a healthy lifestyle program. Children (n=6) and caregivers (n=7) participated in 3 focus groups to explore experiences of the program. Focus groups were recorded, transcribed verbatim and analysed using framework analysis.
Results: Participant experiences identified 3 themes with subthemes: Participant experience and satisfaction, program inclusivity and building healthy family habits. Participants described their overall experience of the program, favouring hands-on activities and care closer to home. The care provided was described as flexible, inclusive, safe and respectful. Health checks were a vehicle for goal setting and evaluating progress and program staff were viewed as 'partners' in supporting parental behaviour change messaging, rather than 'experts'. Participants described how program elements enabled healthy lifestyle change and the overall complexities of making such changes.
Conclusion: Flexible, respectful family-centred care is critical in childhood obesity interventions. Development and adaptations in collaboration with recipients are required to deliver programs at scale. Future considerations include supporting participants with neurodiversity to support increasing prevalence.

Closing the autism diagnostic gap in very preterm infants through early surveillance

Jape, Gayatri
Child and Adolescent Health Service, School of Medicine, University of Western Australia, Curtin University

Background: Preterm birth is associated with an increased likelihood of autism spectrum disorder (ASD). We demonstrated that Social Attention and Communication Surveillance Revised (SACS R) tool was feasible and acceptable in neonatal follow up (NNFU) settings.
Aims: To evaluate the clinical utility of SACS R screening at 12 months corrected age in very preterm (VP, gestation<32 weeks) infants and describe referral patterns and diagnostic outcomes at two years corrected age.
Methods: 216 VP infants attending the NNFU Clinic (Sep 2024- May 2026) at King Edward Memorial Hospital at 12 months corrected age, underwent SACS R assessment. A subset who scored 'high likelihood' (HL) for ASD on screening were referred for early intervention (EI). Infants were followed for uptake of EI, 2 year SACS-R scores, and referral for ASD diagnosis.
Results: Of 216 infants, 17 (7.9%; 14 male and 3 female) were identified as HL for ASD and referred for EI. Median (IQR) gestation and birth weight of the referred group were 27 (25.5–28.5) weeks and 965 (742.5–1314.5) grams respectively. Most families (13/17; 76.5%) completed EI (one declined, three in progress). Among those with 2 year outcomes (n=8), seven continued to be classified as HL and one scored as 'low likelihood' (LL) on 24-month SACS-R. ASD was confirmed in seven children, including one initially classified as LL on 12-month SACS-R.
Conclusions: Early ASD screening in VP infants identified a high-risk subgroup with strong follow-up

engagement and high diagnostic concordance, supporting its clinical utility while highlighting need for ongoing surveillance.

Anti-CD40 effect on T-cell engager activity in paediatric B-cell acute lymphoblastic leukaemia

Jelaca, Claire
Curtin University, The Kids Research Institute

Background: B-cell acute lymphoblastic leukaemia (B-ALL) is the most common cancer in children. Immunotherapy, for example, the use of bispecific T cell engager (TCE) blinatumomab has improved treatment outcomes, however, some children with leukaemia do not benefit. Therefore, a new treatment strategy is needed. In context of B-ALL tumour microenvironments (TME), we hypothesise that anti-CD40 will enhance TCE immunotherapy in high-risk leukaemia by reprogramming macrophages toward a pro-inflammatory phenotype.
Aims: 1. Determine whether anti-CD40 and TCE combination therapy reduces leukaemia burden in paediatric B-ALL 2. Determine whether this combination therapy increases survival in a paediatric B-ALL mouse model 3. Identify the impact of combination therapy on paediatric B-ALL immune landscape.
Methods: Paediatric mouse platform C57BL/6J pups, established by The Kids Cancer Centre, will be inoculated with mCherry+ B-ALL leukaemia cells (Day 0). Anti-CD40 (5 mg/kg), CD19xCD3 TCE (1 mg/kg) or IgG2a isotype antibody (5 mg/kg) control are to be administered via intraperitoneal injection (IP). TCE will be a single dose on Day 9 of experiment. Anti-CD40 will be administered in 2 doses: Day 6 and Day 8 of experiment. Spleen and bone marrow from pups will be collected post-treatment (Day 12-14) after euthanasia. Flow cytometry will be used to determine the leukaemia burden in bone marrow and spleen, and abundance of MHCIIhi TAMs in control or treatment conditions.
Conclusions: Outcomes for children with high-risk B-ALL remain suboptimal. Age-dependent changes in the TME complicate treatment responses, necessitating tailored immunotherapy. This study explores preclinically whether anti-CD40 with TCE therapy improves outcomes.

BEAGLE: Barriers and enablers for pain medication compliance after tonsillectomy and tonsillotomy

Khan, Munaaf
Child and Adolescent Health Service, East Metropolitan Health Service

Tonsillectomy and tonsillotomy are two of the most common paediatric surgical procedures, however, recovery at home places considerable demands on parents to manage their child’s recovery including adequate pain relief. This qualitative study aimed to explore parents' experiences of caring for their children at home following tonsil surgery. Semi-structured interviews were conducted with 25 parents of children who had undergone tonsillectomy or tonsillotomy 1-3 weeks post-discharge. Interviews explored parents' experiences with pain management, medication compliance and access to information and supports. Data was analysed using thematic analysis guided by the Framework Method. Findings revealed five key themes: (1) barriers to pain management, (2) enablers of pain management, (3) pain-severity, (4) parental experience and (5) advice and recommendations. Parents commonly identified pain during swallowing, poor medication palatability and medication volume as key barriers. Concerns about opioid harm were also frequently reported. Enablers included parental confidence in a clear pain management plan, combined use of prescribed medications and strategies such as disguising medications and non-pharmacological approaches including cold foods. Pain was most severe between days three and seven, worse at night and often surpassed parental expectations. Parents recommended electronic reminders alongside paper-based tools, persistence in medication administration and greater emotional support throughout recovery. These

findings highlight some challenges parents face following tonsil surgery and emphasise the need for continued improvement of hospital education on flexible pain management planning and resources. Improving parent preparedness may enhance recovery experiences for both children and their families and inform future discharge planning and patient education practices.

Towards tailoring therapies for leukaemia in children with Down Syndrome

Liu, Qi
The Kids Research Institute, University of Western Australia

Children with Down Syndrome (DS) has significantly increased risk of developing acute lymphoblastic leukaemia (DS-ALL), and experience poorer treatment outcomes, characterised by higher risk of relapse and life-threatening side-effects compared to other children. Our study aims to develop a novel model of DS-ALL to investigate the impact of trisomic microenvironment on leukaemogenesis, leukaemia maintenance and patient's response to the standard-of-care treatment and immunotherapies. To do so, we generated an age-appropriate and genetic-appropriate murine model by implanting our unique PER-M224 DS-ALL cell line into immunocompetent 1-day-old pup and >12 weeks-old adult Ts1Rhr mice, and their littermate wild-type controls. Survival comparison between different age groups revealed that pups exhibited marked rapid leukaemia growth and shorter latency compared to adults, irrespective of genotypes. Immune profiling using multispectral flow cytometry identified that both trisomic and non-trisomic pups exhibited comparable abundance of T cells and NK cells, regardless of leukaemia burdens. Overall, while this world-first model did not highlight the role of trisomy 21 in leukaemia growth, this unique DS-ALL model provides a useful platform to study the interactions between leukaemia cells and paediatric trisomic environment, and will enable the assessment of standard-of-care treatments and novel target therapies in a true preclinical setting, to ultimately improve long-term outcomes for children with DS-ALL.

Paediatric hand burns and their association with length of stay

Madge, Lachlan
North Metropolitan Health Service, University of Western Australia

Hand burns are a key criterion for immediate referral to tertiary burn centres in Australia, New Zealand, and internationally, yet few studies have examined how paediatric burn epidemiology, surgical management, and length of stay (LOS) differ according to the extent of hand involvement. The objective of this study was to describe and compare the demographic profiles, burn injury characteristics, and clinical management between three groups: children with (1) burns involving only the hands, (2) burns involving the hands and other sites, and (3) burns not involving the hands who were admitted to the paediatric Burns Service of Western Australia (BSWA) over a 10-year period. This cross-sectional study included all burn admissions to the state paediatric burn unit between July 2012 and June 2022. Descriptive statistics and univariate regression used to compare groups. A multivariate log-linear regression model was used to assess the independent association between hand involvement and length of hospital stay, adjusting for identified confounders. Children with burns isolated to the hands were younger, had a smaller percentage of total body surface area (%TBSA), were more likely to have sustained contact or friction burns, and were more likely to undergo skin grafting procedures compared to those with burns involving the hands and other sites, and those with burns not involving the hands. Despite these differences, hand involvement was not identified as an independent predictor of initial LOS. Paediatric patients with hand burns did not have longer initial hospital admissions than those without hand involvement.

CTCA in adolescents with severe heterozygous familial hypercholesterolaemia

Martin, Andrew
Child and Adolescent Health Service

Background and aim: Familial Hypercholesterolaemia (FH) is the most common and serious cause of inherited high cholesterol. When undetected and untreated, the cumulative lifetime exposure to elevated LDL-cholesterol (LDL-C) leads to premature atherosclerotic cardiovascular disease (ASCVD). In adults with FH, computed tomography coronary angiography (CTCA) allows detection of subclinical atherosclerosis (including non-calcified plaque) and guides intensity of lipid-lowering therapy. In children and adolescents with homozygous FH, CTCA is recommended to assess ASCVD burden. However, the role of CTCA in adolescents with heterozygous FH (HeFH) is unknown. We aimed to determine if adolescents with severe HeFH show evidence of subclinical atherosclerosis on CTCA.
Methods: Four asymptomatic adolescents with genetically confirmed HeFH plus additional ASCVD risk factors enrolled in the PCH FH Registry underwent CTCA with photon-counting CT, enabling ultra-high spatial resolution and lower radiation exposure. Lifetime cumulative LDL-C exposure was calculated.
Results: One adolescent aged 16 years with severe HeFH, type 1 diabetes, elevated Lp(a) (201 nmol/L) and a strong family history of premature ASCVD demonstrated subclinical aortic root atherosclerosis. This led to intensification of his lipid-lowering therapy, with a proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitor. None of the adolescents had evidence of coronary atherosclerosis on CTCA.
Conclusion: Although three adolescents with severe HeFH and additional ASCVD risk factors had normal CTCA findings, the adolescent at greatest risk demonstrated subclinical atherosclerosis. This finding directly changed his clinical management, highlighting the potential value of targeted CTCA screening in the very highest-risk young patients.

Can we avoid pre-medications in paediatric oncology patients?

McLean, Rebecca
Child and Adolescent Health Service

Aim: To review and align current practice with evidence-based practices of not administering pre-medications to patients who have previously experienced a mild allergic transfusion reaction.
Method: A six-month trial period was undertaken where no pre-medications were administered to patients who had experienced a previous mild allergic transfusion reaction. Inclusion criteria: Red Blood Cell (RBC) and Platelet transfusions with or without a previously reported mild allergic transfusion reaction. Exclusion criteria: Any other type of blood product transfusion; Previously reported anaphylactic / anaphylactoid transfusion reactions; IVIg; Granulocytes transfusions.
Results: The trial ran for six months, across all wards and day treatment units of the hospital. During this time there were eleven reported transfusion reactions, with six of these being mild allergic reactions. All 6 allergic reactions were to platelets. Two different patients reported mild allergic transfusion reactions on two occasions, however no pre-medication was administered. Both patients received blood products after the previous reported reaction with no further reactions reported. No patient received a pre-medication prior to the reported reaction or for subsequent transfusions during the trial period.
Conclusion: The trial was well received with no reported issues from departments during the trial. No risks to patient outcomes were identified from withholding pre-medications. This practice will now be embedded into routine policy and procedures. In addition, both patients and parents preferred not to have drugs that induced drowsiness and caused longer time spent in the same day care clinic.

How many blood tests are too much in a small child?

McLean, Rebecca
Child and Adolescent Health Service

Aim: To assess compliance with the ward-based blood draw policy for patients weighing less than 10kg and 20kg.
Method: Oncology / Haematology patients weighing less than 10kg were identified, and blood sample volumes were monitored for a two-week period. Transfusion data were obtained from the Transfusion Medicine Unit (TMU). Patients weighing 10-20kg were audited for benchmarking purposes.
Results: Ten patients were audited over two weeks: five weighing less than 10kg and five weighing 10-20kg. A total of 126 blood sampling days were reviewed. In patients weighing less than 10kg, weights ranged from 3.74-9.1kg (median 8.03kg) with 1-8 blood draws per day and total daily volumes of 3-78mL removed (median 3mL). 0.13-10.71% of patients blood volume (median 1.67%) were removed per day. Haemoglobin ranged from 24-129 g/L and platelet counts from 2-425 x1012/L. Patients received a total of 1669mL Red Blood Cells (RBC), 1805mL Platelets and 160mL FFP. In patients weighing 10-20kg, weights ranged from 11.6-19.35kg (median 17kg), with 1-5 daily blood draws and total volumes 9-80mL removed. 0.8%-6.4% patients' blood volume (median 2.06%) were removed per day. Haemoglobin ranged 37-153 g/L and platelets 2-203 x1012/L. Patients in this cohort received blood 2481mL RBC and 2915 Platelets.
Conclusion: Blood sampling in patients weighing less than 10kg was largely compliant with the Guideline, with most draws using a 3mL discard volume. Despite compliance, some patients had up to 10% blood volume removed in 1 day. Medical and nursing staff need to consider frequency of blood tests, especially in those younger patients.

Intraventricular haemorrhage, rather than late-onset sepsis classification

McLeish, Emily
The Kids Research Institute, Murdoch University

Background: Neonatal late-onset sepsis (LOS) and intraventricular haemorrhage (IVH) are major contributors to adverse neurodevelopmental outcomes in extremely preterm infants. While LOS is associated with impaired neurodevelopment, its relationship with structural brain injury at term-equivalent age remains unclear. We used qualitative and quantitative MRI approaches to examine the relative contributions of LOS classification and IVH severity to regional brain development.
Methods: A total of 119 extremely preterm infants (mean gestational age 25.7 weeks) underwent structural MRI at term-equivalent age (mean postmenstrual age 39.3 weeks). Brain injury was assessed using Kidokoro scoring and M-CRIB volumetric segmentation. Associations with LOS classification (no LOS, possible LOS, confirmed LOS) and IVH severity were evaluated using regression models adjusted for gestational age, postmenstrual age, birth weight, and sex. Regional volumetric analyses additionally adjusted for total brain volume.
Results: Brain injury was common, with 79% of infants demonstrating any Kidokoro abnormality and 32% exhibiting moderate-to-severe injury. No Kidokoro score or M-CRIB regional volume differed significantly across LOS groups after adjustment for clinical covariates. In contrast, increasing IVH severity was associated with enlarged choroid plexus volume and reduced thalamic and cerebellar volumes; these associations remained significant after Bonferroni correction and after adjustment for total brain volume, gestational age, sex, PMA, and postmenstrual age.
Conclusions: Conventional LOS classification did not stratify structural brain injury severity in this cohort. In contrast, IVH severity was associated with selective thalamic, cerebellar, and choroid plexus abnormalities independent of overall brain size, highlighting region-specific vulnerability following haemorrhagic brain injury in extremely preterm infants.

The platform trial In COVID-19 priming and BOOsting (PICOBOO): The immunogenicity and reactiogenicity

McLeod, Charlie
Child and Adolescent Health Service, Curtin University, The Kids Research Institute

Background: PICOBOO is a randomised, adaptive trial assessing the immunogenicity and reactogenicity of licensed COVID-19 booster vaccines in immunocompetent individuals aged ≥12 years. This analysis reports results for nine licensed booster vaccines in adults across predefined strata defined by age and primary COVID-19 vaccine schedule.
Methods: From March 2023 to September 2024, otherwise healthy participants were enrolled at sites in Perth, Adelaide and Launceston and had one or more booster vaccine doses randomised. Anti-spike immunoglobulin (Ig) was measured in all participants at days 7, 28, 84 (or 180) and also at D365 in adults after booster vaccination, and neutralisation responses in a predefined subset. Reactogenicity, adverse events, post-randomisation SARS-CoV-2 infections, hospitalisation and time away from work, school or usual activities were recorded. Participants were followed until day 720.
Results: 586 adults contributed data for 1,050 booster-doses; 335 (57%), 96 (16%), 97 (17%) and 58 (10%) were randomised once, twice, three or four times, respectively. All booster vaccines increased humoral immunity, with immunoglobulin and neutralisation (ND50) antibody concentrations increased at day 28 and waned to pre-booster levels by day 365. Local and systemic reactions occurred following 786 (75%) and 798 (76%) booster doses, with 9 (1%) and 49 (5%) of these severe, respectively. Findings will be discussed in the context of policy decisions made during the pandemic and the benefits and limitations of adaptive designs for vaccine research.
Conclusion: All vaccines elicited strong humoral responses with acceptable reactogenicity, supporting the transition to boosters with greater specificity for circulating subvariants.

Helping adolescents cope with trauma: development of an innovative resource

Milkins, Bronwyn
The Kids Research Institute, University of Western Australia, Curtin University

Background: Approximately one in two people will experience a traumatic event or maltreatment before adulthood. Common post-traumatic symptoms include intrusive memories, hypervigilance to threat, emotional dysregulation, and dissociative experiences such as feeling disconnected from one's body or surroundings. These symptoms can be distressing, easily triggered, and may interfere with adolescents' ability to engage in everyday activities and therapeutic interventions. Supporting young people to manage these symptoms in adaptive ways may reduce distress and improve engagement in treatment.
Objective: This project aimed to develop an innovative resource to support young people aged 10 years and older, their caregivers, and clinicians to increase knowledge and use of adaptive coping strategies for managing trauma-related symptoms in real time. The resulting resource was a physical deck of 72 coping cards.
Development Process: This presentation will describe the co-design journey underpinning the development of the coping cards, including interviews with young people attending CAMHS, focus groups with CAMHS clinicians, feedback from adults with lived experience, and collaboration with Commercialisation and Marketing teams at The Kids Research Institute Australia. The presentation will outline the iterative development process, from initial concept development to refinement of the resource, and discuss opportunities and challenges encountered during implementation.
Implications: Developing innovative mental health resources requires sustained investment in co-design and meaningful partnerships with non-research teams. Lessons learned from the development of the

coping card resource may assist clinicians and researchers seeking to create practical, accessible resources for young people experiencing mental health difficulties.

Relationship between in-utero and early life peripheral iron deficiency and developmental delays

Morandini, Hugo
Child and Adolescent Health Service

Iron deficiency (ID) is the most common nutritional deficiency worldwide affecting people of all ages. Pregnant women and young children are particularly vulnerable to peripheral ID due to high metabolic requirements and rapid developmental growth. Evidence from epidemiological studies has shown that children with early life ID may be more likely to display developmental delays, including poorer executive functions and delayed motor development. To date, no study has investigated if children who experienced early life ID display lower brain iron content, which may increase the risk of neurodevelopmental disorders. In addition, the relationship between brain iron content and developmental delay in cognitive and motor domains in children remains unknown.
Aims: 1)To investigate if children who experienced early life (i.e. at 28 weeks gestation and 3 year old) iron deficiency (ID) exhibit lower brain iron content compared to children without early life ID. 2) To investigate the relationship between brain iron content and symptoms of inattention, impulsivity and hyperactivity in children with early life ID.
Methods: The present pilot-study will follow a cross-sectional observational design. Neuroimaging data in children will be collected using magnetic resonance imaging (MRI). Quantitative susceptibility mapping (QSM) technique will be used to estimate brain iron content in children. Compared to other MRI-iron sensitive techniques, QSM is able to disentangle the local magnetic field from non-local magnetic sources and to separate paramagnetic substances (i.e., non-heme iron) from diamagnetic substances. For each participant, behavioural scores will be extracted from the ORIGINS databank. In addition, CADDRA questionnaires will be administered to all participants.

Red cell distribution width as an obstructive sleep apnoea (OSA) biomarker

Nguyen, Julie
Child and Adolescent Health Service, The Kids Research Institute, University of Western Australia

Obstructive sleep apnoea (OSA) occurs in 1-5% of children, with adenotonsillar hypertrophy being the leading cause in young children. Polysomnography (PSG) remains the gold standard for diagnosis and severity assessment; however, access is limited, highlighting the need for simple, low-cost screening tools for perioperative risk stratification. Red cell distribution width (RDW), a routine complete blood count marker associated with inflammation and hypoxic stress, has been identified as a potential biomarker in adults with OSA but its role in paediatric OSA remains uncertain. This study aimed to evaluate the association between RDW and paediatric OSA. This sub-study of a prospective observational trial included participants aged 1-8 years undergoing elective adenotonsillectomy. Participants underwent preoperative PSG, with OSA severity classified using the obstructive apnoea-hypopnoea index (OAHI). Venus blood samples were collected at induction of anaesthesia and analysed for complete blood count and RDW. Sixty-one participants with evaluable preoperative sleep studies and RDW measurements were included. Of these, 32 (52%) had no OSA, 18 (30%) mild OSA, and 11 (18%) had moderate-severe OSA. All children with moderate-severe OSA had RDW values above 12, while children with no or mild OSA had RDW values spread across the full range. RDW did not significantly predict moderate-severe OSA (OR 2.1 95% CI 0.97-4.71, p=0.061) and this association remained unchanged after adjustment for covariates. RDW was not

significantly associated with paediatric OSA severity in this cohort. History, examination, and screening oximetry remain a practical, cost-effective approach for preoperative stratification when PSG is unavailable.

Does gender-affirming care moderate the dysphoria–NSSI relationship?

Obern, Sarah
Curtin University, The Kids Institute

Among trans youth, gender dysphoria severity is associated with non-suicidal self-injury (NSSI), while access to gender-affirming medical care is associated with reductions in both. This cross-sectional study aimed to explore whether access to gender-affirming medical care moderates the relationship between gender dysphoria and NSSI such that it is significantly weaker. Participants (n = 664) were an international cohort of self-identified trans youth aged 14–25 years (Mage = 20.00, SD = 2.96), who had accessed or wished to access gender-affirming medical care. Data was collected using an online survey, including measures of gender dysphoria, level of access to gender-affirming medical care, and NSSI history and frequency. The moderating role of gender-affirming medical care was examined using logistic regression, with past year NSSI frequency as the outcome variable. Analysis of variance revealed that gender dysphoria severity and NSSI frequency differed by care status, with significant associations between severity and frequency among those planning to access gender-affirming medical care in the future. Whilst interaction effects within the model were non-significant, univariate main-effect analysis revealed clear group differences in gender dysphoria and NSSI frequency for those who had accessed gender-affirming medical care and those who planned to access care in the future. The results indicate that access to gender-affirming medical care may attenuate the strength of the association between gender dysphoria and self-injury in trans youth. Our findings contribute to the growing body of literature demonstrating the importance of access to gender-affirming medical care in improving the psychological wellbeing of trans youth.

First-night sleep disturbance after adenotonsillectomy in children

Ohn, Mon
Child and Adolescent Health Service, University of Western Australia, The Research Institute Australia

Background: Paediatric adenotonsillectomy is increasingly performed as a day case procedure, supported by consensus guidelines emphasising early postoperative clinical stability. However, the first postoperative night, a period of potential physiological vulnerability, has not been systematically evaluated using objective sleep and respiratory measurements.
Aim: To characterise early postoperative sleep and respiratory recovery using paired pre and first-night postoperative polysomnography in children undergoing adenotonsillectomy.
Methods: In this prospective observational study, children aged 1–8 years undergoing adenotonsillectomy underwent standard attended laboratory PSG pre operatively and ambulatory PSG on the first postoperative night while admitted to the ward. Polysomnographic outcomes included sleep architecture, arousal index, obstructive apnoea–hypopnoea index (OAHI), and oxygenation parameters. Perioperative respiratory adverse events (PRAE) and opioid exposure were prospectively recorded. Paired pre and postoperative PSG data were analysed.
Results: Fifty-seven children were recruited; 53 had complete paired PSG data. Median OAHI improved from 1.8 [0.7–4.5] pre operatively to 0.5 [0.1–1.7] events/hr postoperatively. Despite improved obstructive indices, the first postoperative night showed marked sleep disruption, including reduced total sleep time, lower sleep efficiency, and increased wake after sleep onset. Twenty-nine PRAE were recorded, most commonly airway obstruction and desaturation, often requiring intervention. Supplemental oxygen was required overnight in 17% of children. Higher opioid exposure was associated with a lower arousal index

but not with OAHI.
Conclusions: Although adenotonsillectomy improves obstructive indices early, the first postoperative night remains characterised by disrupted sleep and residual physiological vulnerability not captured by routine observation, supporting a more individualised approach to postoperative care and discharge planning.

Maternal RSVpreF vaccine effectiveness against infant RSV hospitalisation

Ong, Madeline
The Kids Research Institute

Background: In February 2025, Australia introduced maternal RSVpreF vaccination for all pregnant individuals ≥28 weeks' gestation as a year-round strategy to prevent respiratory syncytial virus (RSV) disease in infants.
Methods: We conducted a retrospective test-negative case-control vaccine effectiveness (VE) study across nine hospitals in Australia from March 2025-February 2026, including infants aged ≤6 months hospitalised with acute respiratory illness (ARI) and tested for RSV. Logistic regression with confounder adjustment was used to calculate VE as (1-adjusted odds ratio)×100%.
Results: Among 1,012 infants hospitalised with ARI, 655 had lower respiratory tract disease (LRTD). VE against RSV-LRTD hospitalisation was 77.8% (95% CI: 66.4–85.3), with the highest VE observed at earlier age intervals (≤3 months: 80.2%, ≤2 months: 86.3%). VE was consistent with overlapping 95% confidence intervals when stratified by timing of vaccination, including gestational age at vaccination (28-<32 weeks: 72.1%; 32-<34 weeks: 85.4%; ≥34 weeks: 79.0%), days from vaccination to delivery (14-<42 days: 74.2%; ≥42 days: 78.4%), and administration with other vaccines in pregnancy (simultaneous or sequential ≤2 weeks apart: 76.8%; sequential >2 weeks: 79.6%). VE was similar by RSV subtype (RSV-A: 89.4%; RSV-B: 87.4%). Comparable VE was observed for RSV-ARI (80.8%) and severe RSV-LRTD (80.4%) hospitalisation overall and by subgroups.
Conclusion: Maternal RSVpreF vaccination provided strong protection against RSV-associated hospitalisation in infants aged ≤6 months during the first year of implementation in Australia, supporting the current maternal immunisation recommendation of vaccination from ≥28 weeks' gestation. VE was robust overall and across disease severity, infant age, vaccination timing, and RSV subtype.

Medical child abuse experience at WA tertiary paediatric hospital

Page, Elizabeth
Child and Adolescent Health Service

Medical child abuse (MCA), also known as fabricated or induced illness in a child (FIIC), is a clinical situation involving harm to a child because of unnecessary and harmful or potentially harmful medical care due to the actions of the parents/caregivers. These actions may include exaggeration, fabrication or induction of symptoms. It is a challenging clinical situation for health professionals to encounter and is felt to be under-recognised and reported. There is a lack of data on the prevalence and clinical features of MCA in Australia. Perth Children's Hospital (PCH) is the sole tertiary paediatric hospital in Western Australia (WA), and the PCH Child Protection Unit (CPU) is the only specialised, hospital-based service in WA providing services for children when there is a concern that a child has suffered from child abuse or neglect. A retrospective cohort study will review all cases referred to the PCH CPU with concerns for MCA in the last 11 years. Data analysed will provide information on the prevalence of MCA in WA, the presenting concerns in MCA cases, the potentially unnecessary investigations and treatments children are exposed to, the period between initial presentation and concern for MCA being raised, the type of evidence available for MCA, and the potential and/or actual harms experienced by children who suffer from MCA. This will fill gaps

in knowledge regarding the prevalence and features of MCA investigated in Australia to enable early identification and prevent harm being inflicted via unnecessary testing and treatment.

Optimising paediatric eczema Care: Management & HiTH utilisation

Pal, Arijeet
Child and Adolescent Health Service

Background: Eczema is the most common childhood skin disorder in Australia, frequently leading to acute exacerbations and secondary bacterial or viral infections. Severe cases require intensive inpatient therapies such as wet wrap therapy, intravenous antimicrobials, and dedicated caregiver education. Managing these medically stable patients via the Hospital in the Home (HiTH) service can alleviate hospital bed pressure while allowing children to recover comfortably in their own homes. However, referral processes and barriers to utilising this service have not previously been assessed.
Aims: This clinical audit evaluates the management pathways, identifies barriers to HiTH utilisation, and assesses prescriber compliance with compliance with local steroid and antimicrobial guidelines at Perth Children's Hospital.
Methodology: This retrospective study assesses referral patterns and clinical barriers over a 12-month period in 2025, using review of electronic patient medical records.
Results: Final data analysis is currently underway.
Conclusion: The upcoming findings will identify systemic barriers to service utilisation. Ultimately, this research will guide future clinical education and referral criteria adaptations to optimise ambulatory paediatric care, reduce the burden of in-hospital admissions, and get families home sooner.

Early prediction of necrotizing enterocolitis in preterm with risk score

Panchal, Harshad
Child and Adolescent Health Service

Background and Aim: Early prediction of necrotising enterocolitis (NEC) in preterm infants is critical given its substantial health and socioeconomic burden. The Check NEC score (CNS) is a clinical risk score to predict NEC, incorporating markers of systemic illness, feeding intolerance and hemodynamic instability. We aimed to assess CNS utility for monitoring clinical course of preterm infants before they developed NEC.
Methods: This retrospective data analysis (Jan-Dec 2025) involved calculation of CNS in very preterm infants (VP; gestation <32 weeks) at 72 hours before confirmed NEC ≥Stage II diagnosis. Data included CRIB-2 scores, gestation, SGA status, sex, antenatal steroid exposure, sepsis, hemodynamic instability etc.
Results: Nine of 262 VP infants (3.4%) with median (range) gestation 28.4 (22.2-31.6) weeks and birth weight 1105 (360-2269) g were diagnosed with NEC ≥stage II. NEC was diagnosed at a median postnatal age of 35 days (range 4–56 days), with severe disease predominating (Stage 3: 8/9). CNS ranged from 6 to 12 during the 72-hour period before diagnosis of NEC ≥Stage II. Higher score (≥11), indicating progressive deterioration preceding NEC ≥stage II was observed in infants with concurrent risk factors. During the same 72-hour period, 5/9 (56%) had suspected or proven sepsis, and 3/9 (33%) had either feeding intolerance, packed red cell transfusion, or required inotropic support.
Conclusion: Monitoring CNS and clinical status has potential for predicting NEC ≥ Stage II development 72 hours before diagnosis of the illness. Larger prospective studies are required to validate the predictive thresholds and clinical applicability of CNS

You want to transfuse what cells? Granulocyte transfusions in neutropenic patients

Patterson, Brett
Child and Adolescent Health Service, Co-Author Tina Carter, Carly George, Rebecca McClean

Granulocyte transfusions have been used (rarely) for decades in patients with severe neutropenia: proven or highly suspected fungal or bacterial infections unresponsive to appropriate anti-microbial therapy, receiving maximal doses of granulocyte stimulating factor, on active treatment in remission and where neutrophil recovery is expected in the near future (weeks). There are no randomised studies and few clinical reports in the literature. Granulocyte infusions can be provided from a single donor (usually family member) or as pooled granulocytes (available through Life Blood). Their implementation is often: urgent, difficult to arrange, associated with complications, expensive and perhaps not successful. The aim of this study is to review our experience over a period of 10 years: looking at the patient diagnosis, the type of infusion, complications and their outcomes. A review of the current paediatric granulocyte infusion literature with diagnosis, indications, infusion type, complications and outcomes.

The impact of parental sense of competence on child screen time

Peplinski, Joe
Child and Adolescent Health Service, WA Country Health Service, Curtin University, The Kids Research Institute, University of Western Australia, Stan Perron Charitable Institute, Government of Western Australia - Department of Health, RACP, WA Future Health Research and Innovation Fund, Joondalup Health Campus

Introduction: Digital technology use is integral to modern life and most children under 2 years are exposed to screens regularly. Multiple factors may affect the amount of screen time children have within complex family dynamics. Parental sense of competence (PSOC) is part of the family context and could help explain variations in young children's screen exposure.
Methods: This sub-project within the ORIGINS cohort is an observational study measuring associations between questionnaire-based parent-reported sense of competence in their parenting abilities at 1 year post-birth and child screen time (across multiple device types) at 1 year and 2 years post-birth. Among 1416 children with non-zero screen time, an adjusted multivariate linear regression model was fitted to log-transformed minutes of screen time per day.
Results: Among parents of 2-year old children with non-zero screen time, increased PSOC was associated with reduced child screen time for mobile phones ($\exp(\beta) = 0.959$, 95% CI: 0.931–0.986, p=0.004), television ($\exp(\beta) = 0.987$, 95% CI: 0.975–0.999, p=0.040) and total screen time ($\exp(\beta) = 0.984$, 95% CI: 0.972–0.997, p=0.013). The association between PSOC and tablet/e-reader screen time ($\exp(\beta) = 0.981$, 95% CI: 0.954–1.008, p=0.165) was not statistically significant. There was no significant association between PSOC and whether children had zero or non-zero screen time.
Conclusion: A higher level of parental sense of competence is associated with reduced screen time in children under 2 years old. Understanding potentially modifiable causes of screen time is important in understanding it as part of the family context.

The effect of extreme heat on fetal physiology in late gestation

Powell, Hayley
University of Western Australia

Background: Rising frequency of extreme heat events, including heatwaves, present challenges for human health. Prenatal heat exposure may have lasting consequences by programming postnatal health. However, the physiological responses to extreme heat and mechanisms underlying increased vulnerability during pregnancy remain unclear.

Methods: Fourteen singleton-pregnant ewes underwent recovery instrumentation surgery at ~129d (86%) gestation. Ewes were exposed to control (~22°C, ambient humidity; n=9) or heat conditions (50% humidity, 40°C daytime, 28°C nighttime; n=5) from 135–138d gestation (late preterm) to increase maternal core temperature by 1.0°C. Biotelemetry sensors recorded continuous fetal heart rate, blood pressure, temperature, and activity. Fetal arterial blood was sampled twice daily. Ewes and fetuses were humanely killed at 139d gestation and tissues sampled. Statistical analysis included Welch's t-test and mixed-effects modelling.
Results: Exposure to heat elevated daytime fetal temperature ($p<0.001$) and was associated with lower fetal blood glucose (mean difference=-0.49mmol/L, 95% CI [-0.79,-0.19], $p<0.0001$) and three-fold higher fetal activity counts (mean difference=412, 95% CI [347,476], $p<0.0001$) compared to controls. Total white cell count ($p=0.050$) and lymphocyte count ($p=0.044$) were markedly lower in heat-exposed fetuses at post-mortem.
Conclusions: We established a novel ovine model of prenatal heatwave exposure that incorporates continuous real-time measurement of fetal physiological responses. Preliminary analyses indicate that heatwave exposure induces fetal hyperthermia and responses consistent with thermal stress including impaired immune function and glucose availability. This study will provide new insights into the biological vulnerability of the late-gestation fetus to extreme environmental heat. Funded by Wellcome Trust

Long-term gastrointestinal and psychosocial outcomes following NEC

Pusparina, Wijayati
Child and Adolescent Health Service

Background: Necrotising enterocolitis (NEC) is a severe complication of prematurity, yet long-term outcomes beyond infancy remain incompletely characterised, particularly regarding gastrointestinal function and patient-reported quality of life.
Methods: We conducted a cross-sectional study of 157 preterm-born children (76 NEC cases, 81 controls) assessed at a median age of 12 years. Groups were matched for gestational age and key perinatal and socio-demographic variables. Outcomes included neurodevelopmental comorbidities, gastrointestinal quality of life (GIQLI), generic health-related quality of life (PedsQL), parental QoL and a detailed survey of NEC-related long-term morbidity and healthcare experience in a subset of cases (n = 23).
Results: Baseline characteristics and rates of major neurodevelopmental comorbidity were comparable between groups. NEC cases demonstrated poorer gastrointestinal quality of life (median GIQLI 33.0 vs 37.0; $p = 0.036$), driven by increased abdominal pain ($p = 0.025$) and trends toward other gastrointestinal symptoms. In contrast, global health-related QoL did not differ between groups ($p = 0.571$). Item-level analysis suggested subtle psychosocial differences, with trends toward lower self-esteem, poorer self-rated health, and reduced expectations of future health in cases. Among surveyed NEC survivors, 21.1% reported ongoing complications and 42.1% required further surgery following neonatal discharge, despite relatively low perceived impact on overall QoL. Parent-reported data highlighted gaps in long-term information provision and care continuity.
Conclusions: NEC survivors experience persistent gastrointestinal morbidity and ongoing healthcare needs into later childhood, despite preserved global QoL. Disease-specific measures and patient-centred follow-up are essential to accurately capture the long-term burden of NEC and guide post treatment follow-up care.

PCH's compliance with the 2023 ANZCHOG immune thrombocytopaenia guidelines

Quail, Domenic
Child and Adolescent Health Service

Background: Immune thrombocytopaenia (ITP) is a common cause of thrombocytopaenia in children. Prior to 2023, no consensus guidelines were specifically developed to guide the management of paediatric newly diagnosed ITP (NDITP) in Australia and New Zealand, resulting in variability in clinical practice.
Aim: To evaluate compliance with the 2023 ANZCHOG-endorsed paediatric NDITP guidelines at Perth Children's Hospital (PCH) and to identify areas for quality improvement.
Methods: Emergency department data from PCH over a 12-month period commencing in July 2024 were screened to identify patients presenting with thrombocytopaenia. Cases of NDITP were subsequently identified, and medical records were reviewed to assess compliance with the consensus guidelines.
Results: Data collection is ongoing. Results will be presented at the symposium and will focus on overall compliance, as well as adherence to individual guideline recommendations.
Conclusion: This study is currently in the data collection phase. Final results will be presented at the symposium and are expected to inform targeted quality improvement initiatives.

Clinical presentation and natural history of citrin deficiency in Western Australia

Roche, Kate
Child and Adolescent Health Service

Citrin deficiency is a rare inherited metabolic disorder. This autosomal recessive disorder results from pathogenic variants in the SLC25A13 gene. It manifests in several clinical presentations, most recognisable being neonatal intrahepatic cholestasis caused by citrin deficiency (NICCD), failure to thrive, liver dysfunction, hyperammonaemia and behavioural abnormalities. There is often a dietary preference for nutrition high in protein and fat, while some patients naturally avoid high-cardohydrate foods. There is a lack of clinical awareness of citrin deficiency outside of East Asian centres. Prompt recognition of metabolic disorders such as citrin deficiency are clinically relevant and lead to better patient outcomes. This is the first comprehensive review conducted within the paediatric population of Western Australia and local data suggests that incidence of citrin deficiency is high in comparison to interstate and international centres. It aims to describe the experience of all patients in Western Australia with a confirmed diagnosis of citrin deficiency within or recently transitioned from the paediatric service. This is a retrospective observational study presented as a case series. The biochemical and genetic basis of citrin deficiency will be summarised and the clinical presentation, natural history, investigation, management and outcomes of the patients in the Western Australia will be described.

Paediatric functional disorder transition pathway: From hospital to the home

Ross, Chelsea
Child and Adolescent Health Service

Background: The Functional Disorders (FD) Transition Home Support Pathway was developed in conjunction with the expansion of Allied Health professional roles within Hospital in the Home (HITH) commencing in November 2025 at Perth Children's Hospital (PCH). The aim of this project is to evaluate the admission outcomes for children with a FD transitioning home with the HITH service.
Method: A mixed method design will be used to assess implementation of the pathway through a RE-AIM framework. A retrospective audit of admission outcome measures including unplanned readmission within 28 days of discharge, length of stay (LOS) on HITH, discharge destination and safe access to the patient's home will be evaluated. Semi-structured phone interviews with families, will enhance understanding of lived

experience and opportunities for improvement. Ethical approval is currently being sought in conjunction with the HITH PROJECT HREC application.
Results: At present six female adolescent patients have completed the pathway, with three referred from adolescent medicine, two from general paediatrics and one from neurology. Preliminary results demonstrate six (100%) patients avoided an unplanned readmission, four or more hospital substitution days, variable discharge destinations and all patients safely accessing their home. Interim responses from participants have demonstrated value in the new pathway. Data collection and analysis completion anticipated in quarter one FY27.
Conclusion: Evaluation of the value and outcomes of newly implemented HITH models of care are essential in the context of very limited published research on the integration of allied health into HITH and specifically the impact on children and families.

Insights from our spiny relatives: using spiny mice fibroblasts as a blueprint

Russell, Erica Heather
University of Western, Australia Fiona Wood Foundation

Objectives: Scarring results in severe physiological deficit, with the skin never regaining full function, but are also known to cause significant psychosocial damage. The spiny mouse is an emerging regenerative model, as they can regenerate their skin and internal organs (incl. heart, spinal cord, muscle) with no scar, even into adulthood. Due to it's relatively close phylogeny to humans compared to other regenerative vertebrates, it poses unprecedented potential for application to ameliorate human scarring and fibrosis to improve patient outcomes. Emerging evidence in human dermal fibroblasts suggests that there are distinct functional subpopulations of fibroblasts with discrete roles in orchestrating wound repair. For this reason, we turn to the spiny mouse to investigating and elucidate potentially regenerative subpopulations and act as a blueprint to drive human dermal fibroblast towards a more regenerative phenotype.
Methods: Single cell RNA sequencing analysis, Flow cytometry and Immunocytochemistry of cultured spiny dermal fibroblasts was performed to characterise the cels.
Results: RNAseq has revealed extensive heterogeneity. Spiny dermal fibroblasts also appear to maintain plasticity beyond the fibroblast identity spontaneously differentiating down several lineages, becoming neuron-like, chondrocyte-like and keratinocyte-like cells. This was validated using flow cytometry, and immunocytochemistry. This mechanism appears to be orchestrated by a dedifferentiation-like response where in certain conditions cells return to a more progenitor like state upregulating several progenitor/ stem markers.
Conclusion: Understanding key phenotypes of the spiny mouse fibroblasts that support regeneration and the pathways that orchestrate this will help understand how to drive human skin from wound repair to regeneration.

Neurodevelopmental, behavioural & educational needs in WA refugee children

Sahih, Monica
Child and Adolescent Health Service

Background: Children from refugee-like backgrounds experience disproportionate risk of developmental, educational, neurodevelopmental, behavioural and disability (DENBD) concerns. Pre-arrival experiences and limited health access overseas and in Australia may influence presentation, diagnosis and intervention. We aimed to quantify the burden and complexity of DENBD in a Western Australian paediatric refugee cohort.
Methods: A retrospective audit of new patients presenting to a tertiary paediatric refugee health service between January 1 2020 and July 31 2023 was undertaken (Ethics approval #RGS00006520).

Standardised multidisciplinary data included demographic profiles, Refugee Adverse Childhood Experiences (RACE), and educational, neurobehavioural, developmental and disability diagnoses.
Results: Interim analyses of 300 children are reported (50.8% of 591 new patients). Mean age was 7.7 years (range 0–18). Protracted transit journeys were experienced by 52% (n=156/300), 93.3% required interpreters, 23% of mothers (n=69) and 13.3% of fathers (n=40) were illiterate, and median RACE score was 3 (range 1–9). DENBD concerns were identified in 71%. Developmental concerns were present in 15.7% (n=47/300), predominantly speech and language concerns in the primary language (87.2%, n=41/47), with global developmental delay in 6.4% (n=3/47). Interrupted education was identified in 54.3% (n=163/300), neurobehavioural concerns in 5.3% (n=16/300; Autism Spectrum Disorder n=3), and physical disability in 6.7% (n=20/300; vision impairment n=10, hearing impairment n=4).
Conclusion: This cohort demonstrated substantial and overlapping DENBD burden, with many diagnoses or severity levels not identified before comprehensive paediatric review. The WA tertiary multidisciplinary refugee health model supported timely comprehensive assessment, diagnosis, intervention and onward referral to specialist health, education and national disability services.

Improving care through family consultation in NETS WA

Sgherza, Tanika
The Kids Research Institute

The Newborn Emergency Transport Service of Western Australia (NETS WA) is responsible for attending to and transferring ~ 1300 infants in WA from their place of birth to specialised hospitals in Perth. Transferring preterm and sick babies to intensive care often requires the separation of mother and baby. Delivering care in a trauma informed way during transport—minimising parental distress—is essential for infant and family outcomes. Parent experience of transport remains is understudied. We aimed to improve the transfer of babies by NETS WA by considering better support for parents and enhancing infants' recovery and long-term outcomes. We sought to understand parents' experiences with NETS WA and how the team can improve the service, based on perspectives of parents and staff. Using a mixed-methods approach, we aim to recruit 12-15 NETS staff and 12-15 parents (whose infant has been transferred in the past 2 years) from June to October 2026. Participants will be asked to complete an online survey and interview with a researcher. Participants will be asked about their experiences of transport and what could be improved for families. Survey responses will be descriptively quantified (means, standard deviations, rating ranges), while interviews will undergo reflexive thematic analysis. Preliminary themes will be identified and reported. Findings will directly inform co designed, parent centred recommendations for NETS WA to reduce parental distress and support parent–infant connection during and after transfer. This work will provide a practical, scalable framework for embedding trauma informed, family centred care into neonatal transport services, with relevance beyond WA.

Predicting post-tonsillectomy pain trajectories using STBUR scores

Shang, Yufei
Child and Adolescent Health Service, The Kids Research Institute

Tonsillectomy is one of the most common childhood surgical procedures, and postoperative pain can significantly affect recovery, oral intake and healthcare use. Some children recover quickly, while others experience more severe or prolonged pain. Canadian research published in 2025 proposed that post-tonsillectomy pain and analgesic use may be associated with the severity of sleep-disordered breathing. The STBUR (Snoring, Trouble Breathing and Un-Refreshed waking) questionnaire is a validated screening tool for sleep-disordered breathing symptoms in children. Our research team has conducted four double-blinded randomised controlled trials aimed at improving pain management after tonsillectomy: BEE, GAP,

CHIMP and MATES. Across these studies, preoperative STBUR data and longitudinal postoperative pain data were collected. These are similar variables to those used in the Canadian study. We therefore pooled data from 897 children recruited across the four trials to determine whether the association reported in the Canadian study can also be observed in our larger sample. Using trajectory modelling over postoperative days 1–10 similar to the Canadian study, we identified three postoperative pain trajectory groups: mild, moderate and severe pain. Higher STBUR scores were associated with lower odds of belonging to the mild pain group relative to the severe pain group (OR = 0.804, 95% CI: 0.715–0.903, $p < 0.01$). We also aim to extend the analysis by including all 14 postoperative days and trialling models with and without splines. Improved identification of high-risk pain trajectories may help guide postoperative analgesia and recovery care plans for children undergoing tonsillectomy.

Paediatric, tonsillectomy, perioperative, positioning, adverse events

Shang, Yufei
Child and Adolescent Health Service, The Kids Research Institute

Perioperative respiratory adverse events (PRAE) are a leading cause of perioperative morbidity and mortality in children undergoing general anaesthesia. Patient positioning has well-established physiological effects and may influence the occurrence of PRAE. POSSUM was a prospective, observational cluster-randomised trial conducted at Perth Children's Hospital, investigating whether 30-degree head-elevated positioning compared with no head elevation affected PRAE in children undergoing general anaesthesia. In the overall trial, 1935 children were included, with no difference in overall PRAE incidence between the two groups. However, children managed with an endotracheal tube showed a lower incidence of PRAE when head-elevated positioning was used. Children undergoing tonsil-related surgery may represent a clinically important subgroup due to their airway-related surgical area. Therefore, we conducted a subgroup analysis to determine if head positioning affected postoperative PRAE (PRAE occurring from emergence to post-anaesthesia care unit discharge) in children undergoing tonsillectomy, tonsillotomy and/or adenoidectomy. A total of 161 children were included: 80 in the flat group and 81 in the head-elevated group. Baseline age, sex, BMI and ASA status were similar between groups. Airway obstruction was the most common postoperative PRAE and no cases of bronchospasm or pulmonary aspiration were reported. Postoperative PRAE occurred more often in the flat group (15%) than the head-elevated group (7.4%); however, statistical modelling did not provide strong evidence that assigned positioning was associated with postoperative PRAE. As this was an exploratory analysis, these findings should be confirmed in a future definitive study, particularly given the simplicity and no-cost nature of the intervention.

Antenatal corticosteroids suppress circadian rhythms in fetal organ mass

Smith, Harrison
The Kids Research Institute, University of Western Australia

Background: Cortisol is a central component of the circadian rhythm in many mammals. A morning cortisol peak stabilises the cellular circadian clocks that are essential to normal tissue function. Betamethasone is a synthetic analogue of cortisol used for fetal lung maturation in anticipated preterm birth. However, betamethasone is not routinely aligned to the endogenous cortisol rhythm. We hypothesised that administering betamethasone out of phase with the maternal cortisol rhythm would disrupt rhythmicity in fetal tissues.
Methods: Twin pregnant Merino ewes (n=54) managed in cycled light (12:12) were randomised to receive two doses of betamethasone (n=36) or saline (n=18) commencing 36-60 h prior to surgical delivery at 109-111d gestation (term=150 d). Injections were given either in-phase (07:00, ZT0) or out-of-phase (19:00, ZT12) with the maternal cortisol rhythm. Fetal lambs were delivered and killed humanely for tissue harvest

at 4-hourly intervals.
Results: Relative fetal spleen ($p<0.001$), liver ($p=0.001$), and lung ($p=0.037$) mass exhibited circadian rhythmicity in the control group, as determined by cosinor analysis. Neither of the betamethasone-exposed groups displayed significant rhythmicity in relative fetal organ weight.
Conclusions: At a gross physiological level, both in-phase and out-of-phase betamethasone appear to suppress the circadian rhythm in fetal tissues. Further investigation of cellular and transcriptomic responses will determine whether optimising treatment timing can minimise adverse effects in offspring.

Australian children, young adults, parents and clinician ideas for paediatric chronic pain management

Sommerfield, Aine
Child and Adolescent Health Service, The Kids Research Institute, University of Western Australia, The Institute for Paediatric Perioperative Excellence

Chronic pain is defined as pain of any type that persists for longer than 3 months. Paediatric chronic pain poses a significant problem, affecting up to 25-30% of children and adolescents worldwide, with about 1 in 20 severely disabled. Chronic pain affects a child's quality of life and can be associated with higher rates of depression, anxiety, feeling of helplessness and lack of autonomy compared to healthy children. We are conducting an Australia-wide consumer prioritisation project lead by researchers and pain clinicians at PCH to identify the consumer priorities for children and young people living with chronic pain for research and clinical care. We are using a modified James Lind Alliance methodology. Here we report on the first stage where we partnered with children, young people, and parents/carers as well as clinicians working in chronic pain to gather their ideas for what should be considered. By anonymous online surveys accessible across Australia, we gathered 43 ideas from 16 children aged 6-16 years, 539 ideas from 224 young people aged 17 to 25 years, 205 ideas from 73 parents/carers and 53 ideas from 19 clinicians including doctors, OT, physiotherapists, a psychologist and a music therapist. The next steps will be the collation of the group ideas and preparation of longlists in conjunction with consumers. From there we will undertake interim prioritisation surveys and prioritisation consensus workshops to identify the top 10 priorities for each group. These will be used to guide research and clinical care delivery.

Frequency of skin breaks in the NICU: A retrospective study

Starkey, Charlotte
Child and Adolescent Health Service, King Edward Memorial Hospital, The Kids Research Institute Australia

Background: Infants admitted to the NICU are subjected to frequent blood sampling for routine care. Skin breaking procedures are painful and may be associated with increased infection risk. The number of skin breaks for blood sampling is not routinely recorded and the neonatal exposure unknown. This data will allow us to review our blood sampling practice which may influence change to our current policy.
Methods: Cross-sectional audit of 120 NICU infants from 2024 (20 infants per gestational group, 22+6-41+0). Skin breaks were identified from patients' electronic records, with each blood test counted as one break; samples within 20 minutes were grouped as one event. UAC insertion counted as one initial break, with additional breaks recorded after removal.
Results: The more immature gestational age groups were associated with a higher overall number of skin breaks. However, infants in the 22+6–24+6 gestational group had a lower average daily number of skin breaks during the first four days of life, primarily due to the higher prevalence of UACs in this group.
Conclusion: The number of skin breaks for blood sampling inversely correlated with maturity, and the highest number of skin breaks observed was in the 25+0–27+6 gestational group. The use of a UAC was associated with an overall reduction in skin breaks. Re-evaluating the criteria for UAC use in this group may

help further minimise skin breaks, alongside increasing awareness of the frequency of skin breaks and emphasising the clinical necessity of blood tests. A confirmatory prospective study is ongoing.

Kids as co-researchers: Child-led survey design in heat-health research

Suann, Brittany
Child and Adolescent Health Service, University of Western Australia

Background: Extreme heat is an established and growing driver of paediatric morbidity in Western Australia, yet clinical and public health responses remain largely informed by adult perspectives and caregiver proxy reports. Children are rarely involved in designing the research that affects them, despite evidence that children can act as effective co-researchers and enhance research quality and relevance.
Aim: To describe the co-design process used to develop and validate a child-designed survey on heat and health, guided by the principles of youth participatory action research (YPAR), and to reflect on lessons learned from involving children as genuine research partners within a hospital setting.
Method: A focus group of 2-3 children, as well as input from the CAHS Youth Advisory Council, worked collaboratively with the research team to design and review a draft pictographic survey instrument.
Results: A novel pictographic survey instrument co-designed by children (consumers) to assess child experiences of heat and health.
Conclusion: Involving children directly in survey co-design can produce meaningful, concrete changes to research methodology that adult-only design would likely have missed. This process demonstrates that genuine child-led co-design is both feasible and valuable within a hospital research setting, and offers a transferable model for future child-centred health research.

An expert driven risk prediction tool for perioperative adverse events

Taplin, Anwen
Child and Adolescent Health Service, The Kids Research Institute, University of Western Australia

About 5% of Australian children undergo general anaesthesia every year and one in seven experience at least one perioperative respiratory adverse events (PRAE). Although most can be resolved with limited effects, some lead to long-lasting harm. Previous research has shown the current risk prediction tools for PRAE perform relatively poorly on data from over 12,000 patients collected at Perth Children's Hospital (PCH). All currently available tools had poor to moderate predictive ability achieving an area under the receiver operator characteristic curve of less than 0.65. We aimed to create a better risk prediction tool by incorporating expert clinical opinions of the pathways causing PRAE into a Bayesian risk prediction tool. The expert elicitation process has involved extensive discussions with anaesthetists to understand the causal pathways involved, and to explore the decisions made both before and during anaesthesia to reduce a child's risk. The Bayesian network model was then updated using data from a large cohort of over 12,000 PCH patients undergoing general anaesthesia collected over 2022 and 2024. The predictive ability of our final Bayesian Network model will be tested using a new independent dataset of over 3000 patients collected at PCH in 2025. Any improvements will be made to the model and if it shows promising predictive power, we will convert the model into a useable, clinically interpretable and simple-to-use tool using feedback from clinicians across Australia. This will improve overall patient outcomes by optimising care and guiding patient flow between tertiary and lower acuity care settings.

Glyceryl trinitrate for increasing radial artery diameter: A neonatal RCT

Wagh, Deepika
Child and Adolescent Health Service, University of Western Australia

Background: We evaluated the efficacy of topical Glyceryl trinitrate (GTN) in increasing the radial artery diameter (RAD) in neonates.
Methods: This single-centre randomised controlled trial was conducted in the tertiary neonatal intensive care unit (NICU) in Western Australia from August 2023 to July 2024. Hemodynamically stable neonates (gestation >34 weeks) admitted to the NICU were included. Neonates were randomised to GTN patch application for 30 min or 45 min or 60 min or placebo group. Primary outcome was change in ipsilateral RAD from baseline to post-intervention. Secondary outcomes were the absolute and percentage change from baseline in RAD in both limbs and safety (hypotension and methemoglobinemia).
Results: Mean RAD at baseline in ipsilateral limb in the anteroposterior view (AP) was [0.87 (SD 0.09), 0.89 (0.14), 0.86 (0.11) and 0.86 (0.12) mm, respectively,in the placebo, 30 min, 45 min and 60 min GTN groups; p value on ANOVA = 0.80]. Post-intervention, there was notable increase in AP-RAD in all the three GTN patch groups [1.20 (0.17), 1.16 (0.15), 1.16 (0.15)] Vs 0.93 (0.11) in placebo (p value < 0.001). Similar increase in RAD was noted in the transverse view at 30, 45 and 60 minutes. Post-GTN RAD did not increase with longer duration of application (p > 0.5). Post-intervention, there were no statistically significant differences between the groups in heart rate, blood pressure, oxygen saturation and methaemoglobin levels.
Conclusion: Topical application of GTN increased RAD without clinically significant hypotension and methemoglobinemia in stable neonates. However, potential systemic effects warrant caution and further evaluation in critically ill infants

Neonatal peripheral arterial cannulation: An Australian and New Zealand survey

Wagh, Deepika
Child and Adolescent Health Service, University of Western Australia

Background: Peripheral arterial lines (PAL) play a critical role in the management of critically unwell neonates. Given the limited data in the field, we aimed to explore current clinical practices and challenges related to neonatal PAL insertion in Australia and New Zealand.
Methods: This electronic survey (1/1/2025 -30/6/2025) involved neonatologists and paediatric intensivists in Australia and New Zealand. The self-administered survey questions (n=26) covered unit policies, procedural challenges, complications and considerations for using topical glyceryl trinitrate (GTN) and other adjuncts to improve PAL insertion success. Descriptive statistics were used to report the results.
Results: A total of 183 physicians (Neonatologists:167, Paediatric intensivists:15, 1 incomplete) responded to the survey. 62% reported having a unit guideline. The procedure is predominantly performed by a consultant or fellow, using 24-gauge cannula. Common indications were hemodynamic monitoring (99.5%) and sampling (89.1%). The median (IQR) first-attempt success rate was 70% (60 to 80). Common adjuncts to improve success included transilluminator (86%) and ultrasound (29%). Use of ultrasound was inversely proportional to the years of experience. Bleeding, hematoma and ischemia were the most frequently reported complications. Topical GTN use was uncommon (2.2%) with perceived uncertainty around its utility.
Conclusions: PAL insertion is a common procedure in neonates with considerable variation in practice and success rates. Our findings highlight the need for standardised guidelines and further research evaluating use of adjuncts like topical GTN and ultrasound to optimise safety and success of PAL.

Comorbidity prevalence in paediatric cochlear implant recipients

Wainwright, Emily
WA Country Health Service Previously: Notre Dame University Fremantle

Cochlear implants provide children with congenital or acquired sensorineural hearing loss with an opportunity for speech and language development. Children receiving cochlear implants often present with additional health conditions, which can influence perioperative management, rehabilitation, and long-term outcomes. Understanding the prevalence and types of comorbidities is essential for optimising care. Although previous studies have shown that a significant proportion of children requiring cochlear implants have additional comorbidities, few have undertaken a detailed analysis of cochlear implant recipient comorbidities into diagnostic categories, to provide a comprehensive picture of the needs and challenges of this unique study population. A retrospective review of medical records for all children (≤18 years) who underwent cochlear implantation at Perth Children's Hospital (n = 226) was conducted. Comorbidities were further categorised using ICD-11 codes. Over half of participants recorded at least one comorbidity, with one third having multiple comorbidities. The largest single group of comorbidities was mental, behavioural and developmental disorders with 23.9% of participants recording a comorbidity in this category, followed by diseases of the nervous system (19%) and developmental anomalies (17%). These findings highlight the need for implant centres to take into consideration additional needs and challenges, and underscore the importance of multidisciplinary assessment and rehabilitation planning to support optimal speech and hearing outcomes in this population.

The importance of Aboriginal staff in Aboriginal health research

Walton, Jacinta
The Kids Research Institute, University of Western Australia, Wesfarmers Centre for Vaccines and Infectious Diseases

Aboriginal and Torres Strait Islander peoples are the first scientists of Australia, holding advanced systems of knowledge developed over thousands of years, sustained through strong oral traditions of observation, experimentation, and research. Aboriginal project staff are essential in leading co-design, engagement and collaborative partnerships across research. Their leadership is central to improving health outcomes for Aboriginal children and families, aligning with Closing the Gap and the 4 Priority Reforms. This presentation will outline key approaches to building and sustaining cultural safety in research workplaces. It will highlight strategies that prioritise genuine two-way learning between Aboriginal and non-Aboriginal research staff, including 'On Country' cultural training, development of strong Aboriginal-led governance processes, and the meaningful involvement of community members at every stage of the research process – from ideation to translation and \pathways to impact. Resources developed by the Healthy Skin Team using this model will be shared as examples of research impact. In the Staphylococcus aureus Network Adaptive Platform (SNAP) Trial, a gap in researcher training was identified, leading to the development of the Cultural Information Hub designed to support researchers' knowledge, attitudes and behaviours and to prioritise Aboriginal cultural safety in the trial. Co-design approaches to health promotion are demonstrated through the Moorditj Marp (Strong Skin) project, using the Kaal Tackles Eczema case study. Finally, the importance of Aboriginal governance in clinical trials will be explored using the ISAAC Trial as an example. All Initiatives discussed are Aboriginal and Torres Strait Islander project staff-led, and this work will be presented.

Child protection findings for simple isolated skull fractures

Woods, Aisling
Child and Adolescent Health Service

Objective: Isolated skull fractures (ISFs) in young children are a common reason for referral to hospital-based child protection teams for forensic medical assessment. The purpose of this study was to describe the injury opinion of simple ISFs determined by a child protection team, and to assess the utility of skeletal survey and ophthalmology examination in forming the injury opinion.
Method: A retrospective study was performed for children under two years referred to the child protection team at a tertiary children's hospital with a simple ISF between July 2015 and December 2024. The primary outcome was the injury opinion determined by the child protection team: accidental, indeterminate, or inflicted. Secondary outcomes included the rate and positive yield of skeletal survey and ophthalmology examination.
Results: Of the 81 children referred with a simple ISF, 4 (5%) were considered inflicted, 30 (37%) indeterminate, and 47 (58%) accidental. History with statutory child protection services (p-value 0.042) and additional suspicious cutaneous injuries (p-value <0.001) were significantly associated with inflicted injury. A skeletal survey was obtained for 43 children (53%). Four skeletal surveys identified additional injuries, giving a positive yield of 9%. Ophthalmology examination was performed for 38 children (47%), and none had retinal haemorrhages.
Conclusion: ISFs in young children are rarely determined to be inflicted injuries. In cases of inflicted ISF, there are additional clinical factors prompting concern (age under 6 months, history with child protection services, or additional suspicious cutaneous injuries). Skeletal survey rarely added additional information, and ophthalmology examination never added additional information.

Understanding the delivery of an ASO therapy for Epidermolysis Bullosa

Worth, Linley
Fiona Wood Foundation, University of Western Australia

Recessive dystrophic epidermolysis bullosa (RDEB) is the most severe form of a painful, rare genetic disorder resulting in easily blistered and broken skin, which has no cure. RDEB is caused by mutations in COL7A1, causing a collagen VII deficit between the epidermis and dermis in the skin, allowing these layers to easily separate and form open wounds. Current treatments are limited and treat symptoms rather than the underlying cause of the disease. A promising treatment option for RDEB involves targeting COL7A1 with antisense oligonucleotides (ASOs). ASOs of varying chemistries have been designed to restore functional collagen VII production in RDEB patients with mutations in exon 73 by inducing exon-skipping. This study investigated delivery of the ASOs to both skin cells in vitro and a simulated ex vivo delivery method. Using high resolution confocal microscopy, the ASO in dermal fibroblasts was observed to enter the cell within 15 min and the nucleus by 30 min with high splicing efficiency. To develop a new method of ASO delivery to patients, a novel protocol of lipid transfection in a commercially available Autologous Skin Cell Suspension (ASCS) product was tested. This ASCS is used intraoperatively to treat wounds, and has potential in treating genetic skin disorders. High efficiency of ASO transfection in the ASCS has been achieved in surgically relevant time points, allowing potential clinical application. By understanding ASO delivery to RDEB patients, development of a treatment that addresses the cause of RDEB becomes one step closer, allowing patients' better quality of life.

Investigating the acute immune response to burn injury.

Zekovic-Bosnjak, Mia
Child and Adolescent Health Service, South Metropolitan Health Service, Fiona Wood Foundation, University of Western Australia

Introduction: Burn injury triggers a complex and prolonged immune response that can extend well beyond the wound itself, yet this is often overlooked in patients with non-severe (<20% total body surface area) burns. A dysregulated immune response can delay wound healing, damage surrounding healthy skin, and increase the severity of scarring. The local immune environment within injured skin remains poorly understood.
Objective: To investigate how non-severe burn injury affects both tissue-resident and circulating immune cells during the acute wound phase, focusing on two innate immune populations: neutrophils and mucosal-associated invariant T-cells (MAIT), which have been recognised to play a role in wound healing by providing antimicrobial defence.
Methods and Results: Using samples from our Western Australian adult burn injury biobank, tissue and blood will be collected during the acute phase (0-7 days post-injury) and compared with healthy control samples. Using cutting edge technology, immune cells will be extracted from burn tissue and characterised by flow cytometry (Aurora, Cytek). Functional assays, including reactive oxygen species production and migration capacity, will also provide insight into how these cells behave following injury. Comparison with blood samples will provide insight into how systemic changes relate to the observations described in the skin.
Conclusion: While adult samples are the primary focus, through our strong integration with Perth Children's Hospital (PCH), we anticipate opportunities to extend this study by using paediatric samples from the PCH burns biobank. This work aims to support earlier identification of patients at-risk of immune dysfunction and the development of personalised treatments.

The lived experience of clinical empathy for Australian medical professionals

Zhang, Jenny
Child and Adolescent Health Service, University of Western Australia

Introduction: There is limited published research on doctors' perspectives of clinical empathy in their practice and throughout the medical career stages. This study sought to explore the experiences of clinical empathy and expectations of effective emotional communication among Australian doctors throughout their career stages.
Methods: Interpretative phenomenological analysis (IPA) was employed to report on findings from in-depth interviews with 11 practicing doctors from various training levels and specialties.
Results: The major themes reveal insight into the complexities of how doctors experience clinical empathy throughout the medical career stages. The four major themes were: The evolution of medical education, Moving from doctor-centred to patient-centred care, Not being able to give enough and the Influence of cumulative experience.
Discussion: This study reveals insight into the revolutionary shift towards more empathic patient-centred medical practice and clinical education over the last 30 years. Exploration of doctors' experiences across career stages acknowledges their foundational learning experience, adaptation of empathic communication to different clinical settings with different stakes, and influence of cumulative life and career experience. Despite its challenges of empathic pain and structural factors, clinical empathy was found to play a restorative role for doctors in overcoming these challenges and enhancing meaningful fulfilment in their careers.