Government of **Western Australia**
Child and Adolescent Health Service

TELETHON KIDS INSTITUTE

Child Health Research Symposium

Celebrating Innovation, Collaboration and Translation

Proudly presented by the
Child and Adolescent Health Service
and Telethon Kids Institute

Contents

Foreword

On behalf of the Child and Adolescent Health Service and Telethon Kids Institute, we are delighted to present the 2023 Child Health Research Symposium 'Celebrating Innovation, Collaboration and Translation'.

After a hiatus last year due to the pandemic, the event is set to return bigger and better than ever, showcasing exciting local projects taking place both within and beyond WA's flagship child health facility, including investigations from interstate and abroad.

Through plenary and breakout sessions, a poster and networking evening, workshop, and special awards presentation, we invite you to see and hear from new and emerging researchers along with established figures within their respective fields.

The 2023 symposium highlights significant efforts underway in the areas of Aboriginal health, adolescent mental health, and patients with complex care needs, whilst also capturing the breadth of research across the child health front.

The speaker line-up includes presenters from the medical, nursing and allied-health professions, as well as the population health and laboratory scientists reflecting the multidisciplinary nature of modern-day health care.

This is an opportunity to learn of important developments in child health and we thank all the researchers who are giving generously of their time and expertise to be part of this event.

We also acknowledge the critical role our researchers play in enhancing the lives of our patients and their families.

We trust you will enjoy the 2023 Child Health Research Symposium.

Valerie Jovanovic

Chief Executive
Child and Adolescent Health Service

Jonathan Carapetis

Director
Telethon Kids Institute

Acknowledgement of Country

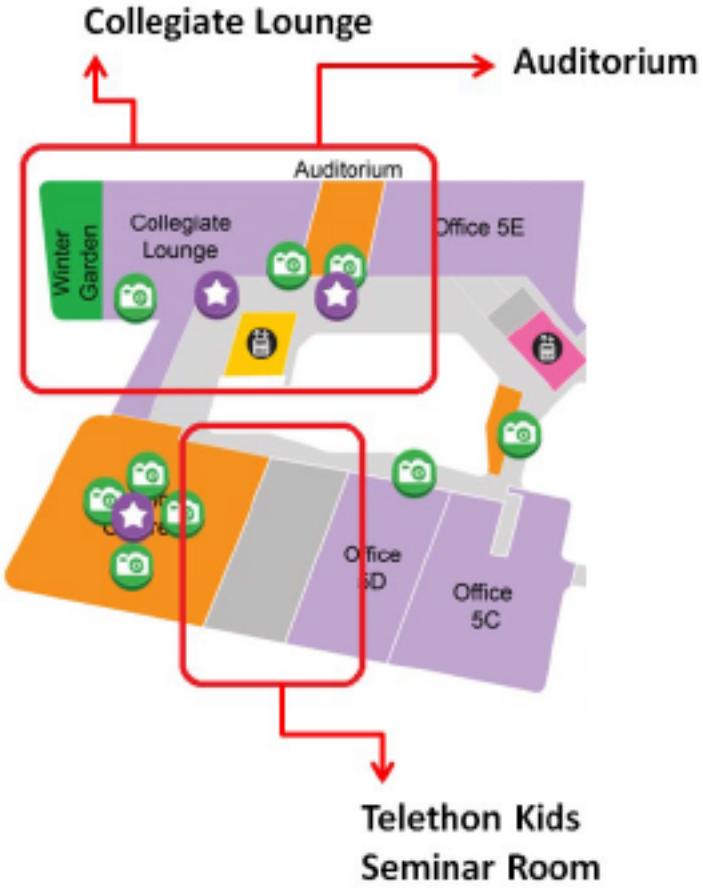
The Child and Adolescent Health Service and Telethon Kids Institute acknowledge the traditional custodians of the land on which this symposium is being held – the Whadjuk Noongar people (Whadjuk Noongar Country).

We acknowledge the wisdom of Aboriginal Elders both past and present, and pay respect to them and Aboriginal communities of today. We also acknowledge their continued connection to Country, ceremonies and identity, ensuring that Australia always was and always will be Aboriginal land.

Locations

- Level 5, Perth Children's Hospital
  - Auditorium
  - Collegiate Lounge
  - Telethon Kids Seminar Room
- Level 6, The Manda, Telethon Kids Institute

Map of Level 5, Perth Children's Hospital



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Perth Children's Hospital

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Child Health Research Symposium
Perth Children's Hospital
8-10 November 2023

SATELLITE SESSIONS

Wednesday, 8 November 2023

PCH Auditorium	
12:00-13:00	**Emerging Talent from the Wal-yan Respiratory Research Centre** **Chair: Prof Stephen Stick**
	Medical service usage data of children with cerebral palsy at greatest risk for RESPiratory hospital Admissions (RESP-ACT) *Dr Rachael Marpole, Perth Children's Hospital/Telethon Kids Institute*
	Exercise responses in preterm-born individuals: a systematic review with meta-analyses *Michael Beaven, Telethon Kids Institute/Curtin University*
	Preventing respiratory deterioration: a new class of airway repair therapeutics *Emma Catchpole, Telethon Kids Institute*
	First systematic review and meta-analysis of the risk magnitude of climate-change effects on child health *Lewis Weeda, University of Western Australia*
13:00-14:00	**Keynote Presentation** **Welcome and Chair: Marie Slater**
	From Hope to Healing: Empowering Families of Chronically Ill Children – A Journey of Research, Evidence, and Implementation *Prof Anne-Sylvie Ramelet, University of Lausanne*
14:00	**Nursing Session (plus via MS Teams: Click here to join the meeting)** **Chair: Nicky van Someren**
14:10	**Evidence-based Management of Infants with Bronchiolitis - Why is it so hard?** *Dr Sharon O'Brien, Perth Children's Hospital*
14:25	**Supporting detection of clinical deterioration in children with dark-coloured skin** *Chelsea Kelly, Perth Children's Hospital*
14:40	**An Integrative Review on Risk Factors for 48-hour Unplanned Paediatric Intensive Care Readmission** *Martina Barnwell, Perth Children's Hospital*
14:55	**FOOTPRINTS: Follow-On Outreach - Psychosocial Support for Acutely Bereaved Families in PICU** *Arielle Jolly, Perth Children's Hospital*
15:10	**Break**
	Chair: Sue Slack
15:20	**Cold Chain Management During Neonatal Transports** *Mary Kelly, Newborn Emergency Transport Service Western Australia/Perth Children's Hospital*
15:35	**Paediatric Invasive Device Utility and Harm: Multi-site , Point Prevalence Survey** *A/Prof Fenella Gill, CAHS/Curtin University*
15:50	**Establishing Australia's First Hospital-based Paediatric Sepsis Program and Embedding Consumer Involvement Throughout – a Summary so far…** *Natalie Middleton, Perth Children's Hospital*
16:05	**Giving Children a Voice to tell their own Experience of Health Care** *Dr Helen Nelson, CAHS*
16:20	**Safer Care for Children in Hospital** *Dr Eileen Boyle, Curtin University*
16:35	**Continuous Glucose Monitoring for Youth with Type 2 Diabetes - What have we learnt 12 months on?** *Mark Shah, Perth Children's Hospital*

TKI Seminar Room	
12:00-13:25	**CAMHS Session (plus via MS Teams: Click here to join the meeting)** **Welcome and Chair: Prof Helen Milroy**
	Re-identification with birth-registered sex: Audit of GDS referrals *Blake S. Cavve, Telethon Kids Institute/CAMHS/University of Western Australia*
	Transgender youth healthcare in Australia: Challenges, impact, coping and change *Alicia Sullivan, Curtin University*
	Assessing clinical risk: Parent and child reported suicidal and self-harm thoughts and behaviours at paediatric gender service initial assessment *Georgia Chaplyn, CAMHS*
	Therapeutic Crisis Intervention for Families: Caregiver Perceptions and Experiences *Sarah E. George, CAMHS/University of Western Australia*
	Associations between Parental Mental Health, Discipline Approaches and Adolescent Antisocial Behaviours *Leartluk Nuntavisit & Mark Porter, CAMHS*
	CAMHS Clinicians Use of Measurement *Angela Cream and Gordon Miles, CAMHS*
	Evaluation of the Mental Health benefits of a Cooking Group for Children *Rosemary Skinner, CAMHS*
	Non-invasive brain stimulation in a preclinical model of adolescent mood disorders *Jamie Beros, University of Western Australia/ Perron Institute for Neurological and Translational Science*
	A Trauma-Focused Program for Childhood and Adolescent Dissociation *Maryam Boutrus, Perth Children's Hospital/CAMHS/Telethon Kids Institute/University of Western Australia*
	Mentalizing Capacity of Adolescents with BPD Features following an MBT Treatment Program *Izza Hasslacher, CAMHS*
13:25-14:00	**Cultural Safety in Mental Health Research** *Prof Helen Milroy, CAMHS/University of Western Australia/Telethon Kids Institute*
	Break
14:30-17:00	**Workshop: Introducing TeleTrials** *Held by WA Country Health Service – TeleTrials Program* *Dr Wei-Sen Lam, Anita John, Nadine Herren, Katrina Orr and Narelle Mullan* **Limited spots available. Register your interest here**

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OFFICIAL OPENING OF THE CHILD HEALTH RESEARCH SYMPOSIUM	
Wednesday, 8 November 2023	
17:00 - 19:00	**PCH Collegiate Lounge**
	Evening Poster & Networking **Welcome to Country: Sandra Harben** **Conference Opening & Welcoming Address: Valerie Jovanovic (CEO, CAHS) & Prof Cath Elliott (Deputy Director, TKI)**

Thursday, 9 November 2023	
The Manda, Telethon Kids Institute	
7:00	**Breakfast Session (Plus via MS Teams: Click here to join the meeting)**
	The Kulunga Aboriginal Unit - *Cheryl Bridge, Telethon Kids Institute* **The Kimberley SToP Trial - From the surf to red dirt** - *Tracy McRae, Telethon Kids Institute*
8:10	**The Community Engagement program** - *Belinda Frank, Telethon Kids Institute* **The BRIDG Community Advisory Group** – *Dr Kelly Martinovich, Telethon Kids Institute*
PCH Auditorium	
9:00-10:15	**Plenary Session 1: COLLABORATION** **Chair: Prof Jane Pillow**
9:00	**Moorditj Skin Means Moorditj Health** *Dr Bernadette Ricciardo, University of Western Australia/Telethon Kids Institute/Fiona Stanley Hospital/Perth Children's Hospital and Jacinta Walton, Telethon Kids Institute*
9:15	**Move to Improve: Co-designing an exercise program for children with chronic conditions** *Hamsini Sivaramakrishnan, Telethon Kids Institute*
9:30	**General health outcomes for children with cerebral palsy after hip surgery** *Dr Katherine Langdon, Perth Children's Hospital*
9:45	**Discovery of the genes causing rare diseases in infants and children** *A/Prof Gina Ravenscroft, Harry Perkins Institute of Medical Research/University of Western Australia*
10:00	**Challenges and opportunities to building a vibrant research culture in allied health at Perth Children's Hospital** *Noula Gibson, Perth Children's Hospital*
10:15	**Morning Tea Break**
11:00-12:00	**Lightning Talks** **Chair: Dr Lynn Jensen**
	Identifying novel treatments for paediatric T-cell acute lymphoblastic leukaemia *Stephen Dymock, Telethon Kids Institute/University of Western Australia*
	Assessing somatosensory function in children following hand and upper limb burns *Emma Mill, Curtin University/Telethon Kids Institute*
	Australian Psychologists' Knowledge, Confidence and Practices in Fetal Alcohol Spectrum Disorder Diagnostic Assessment *Katherine Kerimofski, University of Western Australia*
	The Impact of Music Therapy in Paediatric Acquired Brain Injury Rehabilitation *Karen Twyford, Perth Children's Hospital/University of Western Australia*
	Dietary health of apartment residents in Australia *Joelie Mandzufas, University of Western Australia, Telethon Kids Institute*
	MicroRNA levels differ in airway epithelial cells from wheezing and non-wheezing children *Michelle Schwager, Curtin University/Telethon Kids Institute*
	Spectral flow cytometry to profile immune system alterations in paediatric, adolescent, and adult mice in health and childhood cancer *Jorren Kuster, Telethon Kids Institute/University of Western Australia*

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	Staphylococcus aureus Network Adaptive Platform – Paediatrics and Youths (SNAP-PY): A novel approach to including children in whole of life infectious diseases trials *Keerthi Anpalagan, University of Western Australia/Telethon Kids Institute*
	Evaluating the preclinical efficacy of novel agents for high-risk infant leukaemia *Taylor Ferguson, Telethon Kids Institute/Curtin University*
	Non-exclusive colostrum feeding is associated with increased risk of peanut sensitization in one year old infants *Maheshwar Bhasin, University of Western Australia/Telethon Kids Institute*
	Utility of Pharmacogenetic Testing for Youth Mental Health *Bradley Roberts, Perron Institute for Neurological and Translational Science/University of Western Australia*
	Understanding Children's Experiences of Parental Cancer *Rhea Felton, University of New South Wales*
12:00	**Lunch Break**
12:30 - 13:30	**Keynote Presentation** **Chair: Prof Tim Jones**
	Smoothing the path – implementing and sustaining integrated models of care for children with medical complexity *Prof Yvonne Zurynski, Macquarie University*
13:30	**Plenary Session 2: IMPLEMENTATION & TRANSLATION** **Chair: Prof Anne-Sylvie Ramelet**
	Smart Solutions for Comfort: Harnessing Evidence-Based ECDT for Pain, Sedation, Delirium and Withdrawal Management *Prof Anne-Sylvie Ramelet, University of Lausanne*
14:00	**Exploring the Social Attention and Communication Surveillance-Revised (SACS-R) tool to prospectively identify autism spectrum disorder (ASD) in preterm born children in Western Australia** *Dr Safiyyah Abdul Aziz, CAHS*
14:15	**Kids Voices: Children's perioperative experience of - A qualitative study** *Megan Dodd, Perth Children's Hospital/Telethon Kids Institute*
14:30	**Evaluation of the impact of site-adapted implementation interventions for reducing the use of low-value investigations and/or therapies for infants with bronchiolitis** *Prof Meredith Borland, Perth Children's Hospital/University of Western Australia*
14:45	**Parents' perspectives of barriers to early detection of cerebral palsy** *Sue-Anne Davidson, Perth Children's Hospital/Telethon Kids Institute/Curtin University*
15:00	**Pain in children with cerebral palsy following reconstructive hip surgery** *Matthew Haddon and Lucy Simmer, Perth Children's Hospital*
15:15	**Afternoon Tea Break**
15:30-17:00	**Plenary Session 3: INNOVATION** **Chair: Prof Peter Richmond**
15:30	**Maternal Prebiotic Supplementation Modifies Human Milk Immunological Composition linked to Allergy** *Patricia Macchiaverni, University of Western Australia/Telethon Kids Institute*
15:45	**Early life antibiotic exposure impacts infant pneumococcal vaccine responses** *Sonia McAlister, Telethon Kids Institute/University of Western Australia*
16:00	**Adapting a gross motor scale for children with CDKL5 deficiency disorder** *Dr Jacinta Saldaris, Telethon Kids Institute*
16:15	**Grow Baby Grow: Longitudinal Investigations Into Muscle Growth and Motor Development in Infants Born at Term, Preterm, and at Risk of Neurological Injury** *Sian Williams, Curtin University/University of Auckland*
16:30	**Microbiological surveillance of otitis media to inform vaccine policy and development** *A/Prof Lea-Ann Kirkham, Telethon Kids Institute/University of Western Australia and Jo Bayliss, Telethon Kids Institute*
16:45	**Wrist-Worn Oximetry: The accuracy and it's automated analysis for OSA screening in children** *Julie Nguyen, Perth Children's Hospital/Telethon Kids Institute*

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Friday, 10 November 2023	
The Manda, Telethon Kids Institute	
7:00	**Breakfast Session (Plus via MS Teams: Click here to join the meeting)**
	The ORIGINS Project: **A platform for research discovery** - *Prof Desiree Silva, Telethon Kids Institute* **The SYMBA Study: Promoting gut health with prebiotic fibre taken during pregnancy** – *A/Prof Debbie Palmer, Telethon Kids Institute* **The Early Moves Study: Investigating whether a baby's early movement can predict learning difficulties in** childhood - *Prof Jane Valentine, Telethon Kids Institute*
8:10	**The Biospecimens Service** - *Dr Chris Gorman, Telethon Kids Institute* **Health Care Worker Flu Study** – *Jo Harvey, Telethon Kids Institute*
PCH Auditorium	
	Plenary Session 4: IMPLEMENTATION & TRANSLATION **Chair: Mel Robinson & A/Prof Glenn Pearson**
9:00	**Moort Vax Waangkiny: Barriers to vaccination among Aboriginal children in Boorloo** *Carla Puca and Paige Wood-Kenney, Telethon Kids Institute*
9:15	**Discharge against medical advice in Western Australian Aboriginal children, 2002-2018** *Daniel Christensen, Edith Cowan University*
9:30	**Testing an Enhanced Influenza Vaccine schedule in Children undergoing Cancer Treatment** *Dr Sung Chiu, Telethon Kids Institute/Curtin University*
9:45	**Chronic Thrombocytopenia at an Australasian Tertiary Paediatric Hospital: Finding Molecular Clues** *Dr Yasheer Haripersad, Perth Children's Hospital/PathWest Laboratory Medicine WA*
10:00	**Study of Paediatric Appendicitis Scores and Management Strategies** *Dr Wei Hao Lee, Perth Children's Hospital*
10:15	**Outcomes of Neonates with Hypoxic-ischemic Encephalopathy Treated with Magnesium Sulfate: A Systematic Review with Meta-Analysis** *Dr Bhanu B Gowda, Perth Children's Hospital*
10:30	**Morning Tea Break**
10:45 - 12:00	**Plenary Session 5: INNOVATION** **Chair: Prof Nick Gottardo**
10:45	**Bioluminescence Platform to Identify Stroma-Mediated Chemoresistance in Leukaemia** *Rhiannon Panting, Telethon Kids Institute/Curtin University*
11:00	**Biomaterial-assisted delivery of immunotherapy reduces local recurrence of soft tissue sarcoma** *Dr Francois Rwandamuriye, Telethon Kids Institute*
11:15	**Boosting radiation effect in high risk medulloblastoma models using preclinical translational platform** *Dr Hetal Dholaria, Perth Children's Hospital/Telethon Kids Institute/University of Western Australia*
11:30	**What to Expect from AI for Radiation Dose Reduction in Pediatric Radiology?** *Dr Curtise K.C. Ng, Curtin University*
11:45	**The immunosuppressive microenvironment in a paediatric acute myeloid leukaemia model** *Hannah Smolders, Telethon Kids Institute*
12:00	**Lunch Break**
12:30 - 13:30	**Keynote Presentation** **Chair: Sylvia Lennon**
	Parental Discipline Strategies and Child Mental Health in the Age of Attachment and Trauma: The Case of Time Out *Prof Mark Dadds, Growing Minds Australia/University of Sydney*

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PCH Auditorium	
13:40 - 15:00	**Early Career Session** **Chair: Prof Meredith Borland**
	What do guidelines say about child health behaviour screening in primary healthcare? *Dimity Dutch, Flinders University*
	"We need teams": assessing mental health in youth with complex communication needs *Jacinta Pennacchia, University of Melbourne/Murdoch Children's Research Institute/Jonkoping University*
	Molecular Epidemiology of Superficial Streptococcus pyogenes Infections in the SToP Trial, Western Australia *Emma Pearson, University of Western Australia/Telethon Kids Institute*
	Prexasertib radiosensitises paediatric medulloblastoma cells by exploiting the DNA damage response pathway *Jacob Byrne, Telethon Kids Institute*
	Delivering a Brief Psychotherapeutic Intervention for Deliberate-Self Harm in a Paediatric Emergency Department: A Randomised Control Trial *Zamia Pedro, CAMHS/University of Western Australia/Telethon Kids Institute*
	Promotion of e-cigarettes on TikTok and regulatory considerations *Kahlia McCausland, Curtin University*
	A platform of evidence-based brief tools to measure dietary behaviours across childhood *Samantha Morgilo, Flinders University*

TKI Seminar Room	
13:30	**Community Nursing Session (plus via MS Teams: Click here to join the meeting)** **Welcome: Marie Slater and Chair: Terri Barrett**
13:35	**A Collaborative Study of Primary Caregiver Child Oral Health Literacy** *Dr Lesley Andrew and Dr Ruth Wallace, Edith Cowan University*
13:50	**Stories From the Summit** *Kathryn Zotti and Simon Windsor, Flinders University*
14:05	**Exploring Collaboration in an Interdisciplinary Meeting, Perceptions of Nursing Involvement** *Emma Jeffs, Royal Children's Hospital Melbourne/University of Melbourne/Women's and Children's Hospital Adelaide*
14:20	**Using Continuous Glucose Monitoring in Children at Risk of Developing Type 1 Diabetes** *Alison Roberts, Perth Children's Hospital/Telethon Kids Institute*
14:35	**Paediatric Nurse Practitioner Led Universal Health assessments and Developmental Screening Linking Education & Health for the Under 5s** *A/Prof Yvonne Parry, Flinders University*
14:50	**CAMHS Crisis Connect Intervention** *Isha Sharma and Sarah Macdonald, CAMHS*

15:00	**Afternoon Tea Break**

PCH Auditorium	
Early Career Session continued	
15:15-16:45	**Pilot Study of Springfusor Device to Deliver Anti-Fungal Prophylaxis in Paediatric Oncology** *Dr Melissa Hadassin, Perth Children's Hospital*
	Comparison of glycaemic control during and outside of school hours in primary school aged children with type 1 diabetes *Dr Stephen Paull, Perth Children's Hospital*
	The Wellbeing Project: A trauma-informed co-designed intervention to improve resilience post traumatic burn injury *Dr Alix Woolard, Telethon Kids Institute*
	Understanding cancer morbidity and mortality in Indigenous children *Jessica Buck, Telethon Kids Institute/University of Western Australia*
	Using the lessons of COVID-19 to strengthen the future capacity of health care systems *Carla Puca, Telethon Kids Institute*
	Colostrum - the missing link for successful food allergy prevention? *Savannah Machado, Telethon Kids Institute/University of Western Australia*
	Evaluating a wearable sensor-based system to measure posture and movements in children *Dr Charlotte Lund Rasmussen, Centre of Excellence for the Digital Child/Curtin University*
	Are maternal and child digital technology use related to child development? *Dr Amber Beynon, Centre of Excellence for the Digital Child/Curtin University*

TKI Seminar Room	
Community Nursing Session continued (plus via MS Teams: Click here to join the meeting)	
15:20	**Advancing Community Health Nursing Practice in Infant Mental Health** *Jodi Renshaw-Todd, Community Health*
15:35	**Immunogenicity, Safety and Effectiveness of a Pentavalent Meningococcal ABCWY Vaccine in Adolescents and Young Adults** *Christina Anthony, Telethon Kids Institute*
15:50	**Audit of Aboriginal and Torres Strait Islander people(s) Special Referral Process to Child Health Services** *A/Prof Michelle Gray, Edith Cowan University/Community Health and Pamela Saman, Community Health/Curtin University*
16:05	**Understanding Research Capacity and Culture of Nurses at the Child and Adolescent Health Service** *Margie Lane, CAHS and A/Prof Fenella Gill, CAHS/Curtin University*
16:20	**Exploring Clinical Outcomes for Children with Antibiotic Allergy Reviewed Under Antimicrobial Stewardship** *Annabelle Arnold, Perth Children's Hospital*
16:35	**Closing Remarks**

PCH Auditorium	
16:45-17:00	**Closing Address and Prizes Awarded: Prof Cath Elliott (Deputy Director, TKI) & Dr Simon Wood (EDMS, CAHS)**

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Keynote Speaker Biographies

Keynote speakers are internationally acknowledged guest speakers invited to share their work, expertise and insight in current key areas of Child Health Research.

Professor Anne-Sylvie Ramelet, RN, RSCN is Head of the PhD in nursing sciences programme at the Institute of Higher Education and Research in Healthcare, Faculty of Biology and Medicine at the University of Lausanne, Switzerland. She is also Nurse Consultant for Paediatric Nursing Research at the Department of woman, mother and child at the University Hospital of Lausanne - CHUV, Switzerland. Prior to her academic career, she worked as a registered nurse in neonatal, paediatric and adult intensive care for more than 15 years mainly in Australia, but also in Switzerland.

Her multidisciplinary research and teaching focuses on children's pain and comfort as well as family support in paediatric and neonatal critical care settings, and in general paediatrics. Using various research approaches, her work focuses on developing family support interventions to empower families whose children are critically ill and meet their specific needs.

Professor Yvonne Zurynski is Professor of Health Systems Sustainability at the Australian Institute of Health Innovation, Macquarie University. She leads the Sustainability Stream of research within the Centre of Health Resilience and Implementation Science at the AIHI. Her research is focused on conducting interdisciplinary health services research that makes a difference in the real world, with a focus on innovative models of integrated care using implementation science approaches and frame-works. Her research is highly translational and has informed clinical guidelines, the co-design and implementation of new models of care and informed national policy.

Professor Mark Dadds is Director of Growing Minds Australia, Australia's Clinical Trials Network in Child and Youth Mental Health, a Principal Research Fellow of the NHMRC, Professor of Psychology at the University of Sydney and Founding Co-Director of the Child Behaviour Research Clinic, which develops state-of-the-art treatments for children and adolescents with MH problems.

He has developed and directed several national intervention programs for children, youth, and their families, at risk for MH problems. His expertise and interests are in child and family MH, parenting/family processes, prevention and early intervention. He has been National President of the AACBT, Director of Research for the Abused Child Trust of Queensland, Professor of Parenting Research at the Institute of Psychiatry, Kings College London. He has been the recipient of several awards for his work in child and youth mental health including an Early Career Award from the Division of Scientific Affairs of the Australian Psychological Society, the Ian Matthew Campbell Award for Excellence in Clinical Psychology, Distinguished Career Award of the Australian Association of Cognitive and Behavioural Therapy, and in 2021, the APS President's Award for Distinguished Contributions to Psychology.

Mark has authored 4 books and over 280 papers on child and family psychology, and has given invited keynote addresses and skills training workshops to international audiences throughout the world. His innovative treatment methods were the subject of an ABC TV 3-part documentary for which he was awarded the Inaugural APS Award for Media Engagement with Science. In 2021 he established Australia's first Clinical Trials Network in Child and Youth Mental Health funded by the federal government and tasked with developing innovative methods for identifying and responding to early mental health problems in children.

Oral Presentation Abstracts

Abdul Aziz, Safiyyah

Exploring the Social Attention and Communication Surveillance-Revised (SACS-R) tool to prospectively identify autism spectrum disorder (ASD) in preterm born children in Western Australia

Plenary Session 2 – Implementation & Translation, 9 November 13:30-15:15

Abdul Aziz Safiyyah[1,2], Athalye-Jape Gayatri[1,2], Sherrard Stephanie[1,2], Sharp Mary[1,2]

[1]Neonatal Follow Up Programme, King Edward Memorial Hospital, Child and Adolescent Health Service, Perth, Western Australia, Australia; [2]Neonatology, King Edward Memorial Hospital, Child and Adolescent Health Service, Perth, Western Australia, Australia

Background and Aim: Preterm-born children have a three-fold higher incidence of autism than term-born. Whilst the Social Attention and Communication Surveillance-Revised (SACS-R) tool has excellent sensitivity and specificity for identifying children with autism between 11-30 months of age, there is no data for children born <32 weeks gestation. We aimed to describe the performance of the tool in preterm born children.

Methods: Children born preterm (<29 weeks at birth) were reviewed at corrected age of 24 months between 1st January 2022 to 31st December 2022. As part of our neonatal follow-up program, they underwent a Bayley-IV assessment. If during assessment a clinician suspected autism, a SACS-R (24-month) screening was completed. Children who scored 3 of 5 atypical key items (eye contact, pointing, use of gestures, showing, pretend play) were then assigned a high- likelihood of autism and referred for diagnostic assessment using standard pathways.

Results: Of 93 children [median gestation: 29 weeks; median corrected age: 24.3 (19-30) months] eligible for follow-up, 17 had the SACS-R completed following clinician suspicion. 12 of 17 children; classified as 'high-likelihood' now have a confirmed autism diagnosis, five are waitlisted. Median time from screening to confirmation was 8 months. Diagnostic accuracy was 71% for those at 'high-likelihood' of autism. Completing the SACS-R took 10 minutes and did not prolong clinic assessment.

Conclusion: The SACS-R tool seems to be promising for identifying autism in our cohort of very preterm-born children. Well-powered studies are needed to confirm diagnostic accuracy for routine implementation in preterm follow-up.

Andrew, Lesley & Wallace, Ruth

A Collaborative Study of Primary Caregiver Child Oral Health Literacy

Community Nursing Session, 10 November 13:30-16:30

Dr Lesley Andrew[1] & Dr Ruth Wallace[2]

[1]School of Nursing and Midwifery, Edith Cowan University; [2]School of Medical and health Sciences, Edith Cowan University

This presentation reports the findings of research with primary caregivers of children aged 0 to 5 years in Perth Metro and The Great Southern Region in 2022-2023. The study was a collaboration between researchers and health professional staff Edith Cowan University, The University of Western Australia and Great Southern Early Years Initiative, Central Great Southern.

The study aimed to understand primary caregivers' knowledge, perceptions and behaviours around child oral health promotion. Thirty-five primary caregivers answered a short survey and participated in a focus group (8 focus group sessions). The main findings point to confusion and conflicting advice around child oral health and barriers to dental service access for pre-school children.

Important findings include:

- 10 (30%) were not concerned about cavities occurring in their children's deciduous teeth as they would be replaced by permanent teeth.
- 9 (26%) believed cleaning deciduous teeth was not important for the same reason.
- 17 (50%) indicated energy drinks such as Red Bull were tooth safe
- 25 (72%) indicated they did not need to brush their teeth every day.
- The child Dental Benefit Schedule was not well understood or accessed.
- Primary caregivers reported conflicting advice on child oral health promotion between and across different health professionals.
- Accessibility of dentists varied, and was inhibited by geographical location, finances and lack of awareness of the importance of screening.

Investment in child oral health promotion training for health professionals to ensure consistent evidence-based oral health advice is provided, alongside resources to improve primary caregiver access to dental services is recommended.

Anpalagan, Keerthi

Staphylococcus aureus Network Adaptive Platform – Paediatrics and Youths (SNAP-PY): A novel approach to including children in whole of life infectious diseases trials

Lightning Talks, 9 November 11:00-12:00

Keerthi Anpalagan[1,2], Asha Bowen[1,2,3], Anita Campbell[1,2,3]

[1]University of Western Australia, School of Medicine, Perth, WA, Australia; [2]Telethon Kids Institute, Wesfarmers Centre of Vaccines and Infectious Disease, Perth, WA, Australia; [3]Perth Children's Hospital, Department of Infectious Disease, Perth, WA, Australia

Background: *Staphylococcus aureus* bloodstream (SAB) infection is a major public health problem and globally, fewer than 300 children with SAB have ever been enrolled in a randomized clinical trial (RCT). Consequently, there is minimal RCT evidence to guide SAB treatment in children, with doctors largely relying on experience and subjective opinion. The *Staphylococcus aureus* Network Adaptive Platform (SNAP) trial is a global trial aiming to answer multiple SAB management questions for patients of all ages (neonates to elderly). Enrolment of children in Australia and New Zealand has commenced, with expansion planned globally.

Aims: The SNAP trial aims to improve the treatment for SAB through the different domains within the trial.

Methods: At present there are three active domains within the SNAP trial answering questions about the optimal backbone antibiotic, timing of oral switch, and efficacy of adjunctive clindamycin concurrently. The primary endpoint, day-90 mortality, is fixed across all ages. To inform paediatricians, specific secondary endpoints have been constructed to capture paediatric outcomes.

Results: The SNAP trial is now the largest ever SAB trial in the world with 1177 randomised participants and >1000 registry participants (August 2023). The first child was recruited in August 2022 with >100 children and adolescents recruited across the SNAP registry and trial platform.

Conclusions: Inclusion of children in this all-ages, large, multi-site global trial, provides a novel proof of concept for whole of life comparative effectiveness trial in infectious diseases. The innovative SNAP will produce the highest quality evidence for SAB treatment in children.

Anthony, Christina

Immunogenicity, Safety and Effectiveness of a Pentavalent Meningococcal ABCWY Vaccine in Adolescents and Young Adults

Community Nursing Session, 10 November 13:30-16:30

Christina Anthony[1], Ushma Wadia[1,2], Peter Richmond[1,2]

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Introduction: Invasive meningococcal disease, a life-threatening condition, is caused by *Neisseria meningitidis*. Meningococcal B (4CMenB) and combined ACWY (MenACWY) vaccines are available. As part of a multicountry multicentre trial sponsored by GSK, we present the safety, immunogenicity, and effectiveness results of an investigational MenABCWY vaccine in protecting individuals against invasive meningococcal disease.

Methods: In this Phase III observer-blind randomised controlled clinical trial, 3651 healthy individuals aged 10-25 years were randomised 5:5:9:1 to receive 4CMenB (3 doses, 0-2-6 months), 4CMenB (2 doses, 0-6 months), investigational MenABCWY (2 doses, 0-6 months), or MenACWY-CRM (1 dose: 0 month; control). Vaccine effectiveness (serum bactericidal activity (SBA) against 110 MenB strains) and immunogenicity (4-fold rise in antibody titres from baseline) were assessed 1-month post-last dose. Participants were monitored for safety for 1 year.

Results: A greater proportion of MenABCWY recipients (82.6%) had SBA against MenB compared to MenACWY-CRM recipients (21.0%; control) (vaccine efficacy 77.9%, 95% CI: 76.6-79.2). Further testing on sera of 817 MenABCWY recipients found that 84.1% (95% CI: 81.4-86.5) killed ≥70% MenB strains. In comparison with 2 doses of 4CMenB, MenABCWY had non-inferior SBA (group difference -0.6%; 95% CI: -1.3-0.0) based on pre-defined criteria of >-5%. MenABCWY similarly produced a non-inferior immunological response against serotypes A, C, W, Y when compared to MenACWY-CRM.

Conclusion: The pentavalent MenABCWY vaccine is well tolerated and effective. With 2 doses given 6 months apart, MenABCWY is non-inferior to 2 4CMenB doses and 1 MenACWY-CRM dose in healthy 10–25-year-olds.

Arnold, Annabelle

Exploring Clinical Outcomes for Children with Antibiotic Allergy Reviewed Under Antimicrobial Stewardship

Community Nursing Session, 10 November 13:30-16:30

Annabelle Arnold[1,2], Linda Coventry[2,3], Mandie Foster[2,4], Michelle Trevenen[5], Michaela Lucas[1,6,7,8]

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Introduction: Increasing antimicrobial resistance and decreasing antimicrobial drug development means antimicrobial stewardship (AMS) is paramount in optimizing use of antimicrobials. Reported antibiotic allergies in children are increasing, creating a significant barrier to antimicrobial stewardship, with clinical and economic implications.
Method: A retrospective study in a paediatric tertiary hospital, capturing 1590 inpatient admissions reviewed under AMS between 2017-2019. Data collected included documented antibiotic allergy labels, antibiotic prescriptions, principal diagnosis, admitting specialty, hospital length of stay, intensive care admissions and hospital readmissions.
Results: Of 1590 paediatric patients reviewed (59% male), all were prescribed at least one antibiotic. Antibiotic allergy labels were recorded in 6.6% of patients; majority were beta-lactam labels (82%), mostly to unspecified penicillins. There was a statistically significant increase of antibiotic allergy with age (P<0.001); no gender effect was seen. Patients with beta-lactam allergy labels (AAL) received more quinolones (Ciprofloxacin P=0.008, Moxifloxacin P<0.001), lincosamides (Clindamycin P=0.001), aminoglycosides (Amikacin P=0.04), and Metronidazole (p=0.02), than patients without a beta-lactam allergy label. In contrast, children without an AAL received more penicillin (P=0.002). Children with any antibiotic allergy label also had longer hospital lengths of stay, median 5.0 days (IQR=4.0-11.0) versus 7.0 days (IQR=4.0-15.75) for those with an antibiotic allergy label.
Conclusion: This is the first study demonstrating the negative impact of antibiotic allergy labels on clinical outcomes in children, evidenced by longer lengths of hospital stays and greater utilisation of reserve antibiotics. Recent advances in the field of delabeling, early intervention in the context of antibiotic allergy labeling could improve clinical outcomes for children.

Barnwell, Martina

An Integrative Review on Risk Factors for 48-hour Unplanned Paediatric Intensive Care Readmission

Nursing Session, 8 November 14:00-17:00

Martina Barnwell and Huaqiong Zhou

Perth Children's Hospital and Curtin University

Background: Unplanned readmission to paediatric intensive care unit (PICU) is associated with increased morbidity/mortality, hospital length of stay (LOS), health service cost and recognised as a key performance indicator of quality of care delivery. There is limited research evidence on risk factors of unplanned PICU readmission and results were inconsistent across studies.

Aim: To collate and synthesise unplanned 48-hour PICU readmission prevalence and associated risk factors.

Methods: An integrative review was conducted, guided by the 5-stage framework. Seven electronic databases were searched (2013 – 30th June 2023). Studies published in English with full text accessibility and detailed methodologies were included. Prevalence and risk factors were extracted, synthesised, and presented narratively.

Results: Ten studies met the eligibility criteria and reported a varied readmission rate from 0.008% to 6.49%. Fifteen types of significant risk factors were extracted. Seven consistently cited risk factors were non-modifiable including age, weight, complex chronic conditions, admission source, unplanned admission, PICU LOS and use of positive pressure ventilation. Five consistently cited risk factors where modifiable, being discharge disposition, oxygen requirements, respiratory rate, heart rate and Glasgow Coma Score at discharge.

Conclusion: This review acknowledges the complexity of variables/confounding factors impacting on unplanned PICU readmission and the lack of standardisation in documentation of potential risk factors. Management of at risk patients includes senior bedside nursing and oversight of PICU outreach. Modifiable factors are suggestive of clinical instability and their suitability for discharge should be re-evaluated. Where unavoidable, increasing nurse-to-patient ratios in the ward setting are required to ensure patient safety.

Beaven, Michael

Exercise limitation following preterm birth: meta-analyses

Wal-yan Session, 8 November 12:00-13:00

Michael Beaven[1,2], Dr J Gibbons[1,2,3], Dr C Course[4] , Dr S Kotecha[4] , Dr T Hixson[4] , Prof A Maiorana[2,5], Dr M Zuidersma[3] , Prof S Kotecha[4] , Dr E Smith[1,2], A/Prof Shannon J Simpson[1,2]

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Background: Survivors of preterm birth (<37 weeks gestation) reportedly have low peak oxygen consumption ($\dot{V}O_2$peak), a known indicator of poor health outcomes. However, beyond $\dot{V}O_2$peak, little is known about reduced exercise capacity in this group.
Aims: We hypothesised that those born preterm (PT) would have impaired responses to exercise beyond VO2peak, and aimed to systematically review the literature to examine these differences.
Methods: Studies reporting cardiopulmonary exercise outcomes in those born PT, with full-term (FT) controls, were identified via PRISMA methods. $\dot{V}O_2$peak, $\dot{V}O_2$/work rate, respiratory exchange ratio (RER), minute ventilation ($\dot{V}E$), tidal volume (Vt), respiratory rate (fb), ventilatory equivalents for CO_2 ($\dot{V}E/\dot{V}CO_2$) and O_2, heart rate (HR), and VO_2/HR (O_2pulse) data were extracted. Meta-analyses were performed using the R packages meta and metafor. Data are presented as the standardised mean difference and 95% confidence interval [95%CI].
Results: 36 articles were included. In line with previous studies, the PT group had lower $\dot{V}O_2$peak compared to FT (-0.31 [-0.46, -0.18]). Further, PT had impaired ventilatory indices ($\dot{V}E$ -0.44 [-0.61, -0.27], Vt -0.45 [-0.77, -0.13]). Cardiac indices were also lower in those born PT relative to FT, showing reduced O_2pulse (-0.51 [-0.75, -0.26]), and HR (-0.21[-0.34, -0.07]) at peak exercise. No significant differences were seen with the remaining outcomes ($\dot{V}O_2$/work rate, RER, $\dot{V}E/\dot{V}CO_2$, and fb).
Conclusion: Respiratory and cardiac responses to exercise are impaired in those born preterm. Understanding the mechanisms driving reduced exercise capacity may be a key step to improving poor health outcomes for those born preterm.

Beros, Jamie

Non-invasive brain stimulation in a preclinical model of adolescent mood disorders

CAMHS Session, 8 November 12:00-13:25

Jamie Beros[1,3], Nhu Nguyen[1], Holly Dear, Alex Tang[1,2], Jennifer Rodger[1,3]

[1]School of Biological Sciences, University of Western Australia; [2]School of Biomedical Sciences, University of Western Australia; [3]Perron Institute for Neurological and Translational Science

Depression is one of the most prevalent mental health disorders experienced by young individuals and is increasing at an alarming rate, particularly since COVID-19. Approximately 50% of individuals do not respond to conventional pharmacological and psychological treatments, highlighting the need for effective treatments. Transcranial magnetic stimulation (TMS) is a non-invasive form of brain stimulation used to treat adults with treatment resistant depression and was recently added to the Medicare Benefits Schedule in 2021. Despite demonstrated efficacy in adults, TMS use in younger populations is underdeveloped and many outcomes such as long-term safety and underlying neurobiological mechanisms remain poorly characterised.

To address these concerns, our lab is investigating TMS in a preclinical mouse model of adolescent mood disorder to characterise brain and behavioural changes. Our study uses a prenatal stress model to induce neurobiological changes and anxiety and depression-like behaviours in offspring. When these mice reach adolescence, we administer TMS (10Hz frequency, 70mT) or sham stimulation to the pre-frontal cortex of awake freely moving mice using our designed miniature TMS coils for 3 minutes a day, for 5 consecutive days, for 4 weeks. Anxiety and depression-like behaviours are quantified using behavioural tests and assessed for protein markers of brain plasticity (i.e. brain derived neurotrophic factor). Experiments are nearing completion, but preliminary results suggest rTMS alleviates anxiety-like behaviours in prenatally stressed mice. Our results will provide important insight into the suitability and efficacy of TMS in adolescent populations and may help to expand the therapeutic reach of TMS to a larger population.

Beynon, Amber

Are maternal and child digital technology use related to child development?,

Early Career Session, 10 November 13:40-16:35

Amber Beynon[1,2], Leon Straker[1,2], Charlotte Lund Rasmussen[1,2], Sarah Stearne[1,2], Desiree Silva[3,4,5], Courtenay Harris[1,2], Juliana Zabatiero[1,2]

[1]Centre of Excellence for the Digital Child, [2]School of Allied Health, Curtin University, [3]Telethon Kids Institute, [4]Medical School, University of Western Australia, [5]Joondalup Health Campus

Most families regularly use technology, with three quarters of Australian young children regularly using mobile touch screen devices (MTSD). However, there is limited evidence on its potential influence on child development. This study aimed to describe maternal and child technology use and investigate its associations with child development.

Data from the ORIGINS Project participants, collected at 12-months of age, included maternal and child technology use (TechU-Q), sociodemographic factors (e.g. child sex, household income), maternal mental health (DASS-21), and child development (Ages and Stages Questionnaire). Linear regression was used for analyses.

Preliminary analyses showed mothers (n=1157) spent, on average (SD), 145 (99.7) minutes using a TV and 173 (43.2) minutes using MTSD, while children spent, 33 (56.5) minutes using a TV and 5 (14.6) minutes using MTSD daily. Higher amount of time spent using MTSD by mother and children was significantly associated with lower total Ages and Stage score. However, after adjusting the models for sociodemographic factors and maternal mental health, these were no longer significant. Higher maternal total DASS-21 scores were significantly associated with lower total Ages and Stage score.

Maternal and child technology use were not associated with child development at 12 months of age when sociodemographic factors and maternal mental health were considered. Maternal mental health continued to be associated with child development after adjusting for sociodemographic factors. Future exploration of longitudinal associations between parental and child technology use, other family factors, and child development are needed to support targeted guidance for families and professionals caring for children.

Bhasin, Maheshwar

Non-exclusive colostrum feeding is associated with increased risk of peanut sensitization in one year old infants

Lightning Talks, 9 November 11:00-12:00

Maheshwar Bhasin[1,2], Matthew Cooper[2], Patricia Macchiaverni[1,2], Ravisha Srinivas Jois[4], Desiree Silva[3,4,5,6], Valerie Verhasselt[1,2]

[1]Larsson-Rosenquist Foundation Centre for Immunology and breastfeeding, Medical School, University of Western Australia, Perth, Western Australia, Australia; [2]Telethon Kids Institute, Perth, WA, Australia; [3]The ORIGINS Project, Telethon Kids Institute, Perth, Western Australia, Australia; [4]Department of Paediatrics, Joondalup Health Campus, Perth, Western Australia, Australia; [5]School of Medical and Health Sciences, Edith Cowan University, Perth, Western Australia, Australia; [6]Medical School, University of Western Australia, Perth, Western Australia, Australia

Globally, one in every three infants receives formula supplementation within the first three days of life, which may deprive the infants of receiving full doses of colostrum (first milk produced by lactating mother). We hypothesize that non-exclusive colostrum feeding (NECF) will impact major infant health outcomes including allergy. Feeding practice data for 674 ORIGINS cohort (Western Australia) mother-term infant dyads were extracted from hospital records. Allergic sensitisation outcomes (at one year) were assessed using a skin prick test (SPT).

The prevalence of NECF was 46% (n= 309). A positive SPT for any allergen was observed in 10% (n=68) of the cohort. We found a 3-fold increase in the risk of peanut sensitization among NECF infants relative to exclusively colostrum-fed infants, [1.9% (n=13) v/s 0.9% (n =6), p 0.04; OR (95% CI): 2.69 (1.0 – 6.7)]. Despite not being statistically significant, higher prevalence of positive SPT results were also observed for NECF infants, compared to ECF, for any allergen [5.6% (n=38) v/s 4.4(n=30)], eggs [3.1% (n=21) v/s 2.5 (n=17)], cow's milk [1.4% (n=7) v/s 0.9 (n =6)], and cashew [0.7% (n=5) v/s 0.5 (n =4)].

Up to half of the infants in an Australian birth cohort were supplemented with formula milk in their first days of life, and these infants had higher rates of sensitization to peanut allergens. This observation may lead to a paradigm shift by promoting exclusive colostrum feeding for peanut allergy prevention.

Borland, Meredith

Evaluation of the impact of site-adapted implementation interventions for reducing the use of low-value investigations and/or therapies for infants with bronchiolitis

Plenary Session 2 – Implementation & Translation, 9 November 13:30-15:15

Prof Meredith L Borland AM MBBS FACEM[1,2] , Dr Sharon O'Brien BN, Paeds Cert PhD[1], A/Prof Emma Tavender PhD, MSc (Merit), BA (Hons)Clinical Sciences[3,4], Dr Libby Haskell PhD, MN, BHlthSc (Nursing)[5,6], Prof Franz E Babl MD MPH[3,4,7], Dr Rachel Schembri PhD, M(Biostat), M(Psych), BA(Hons)[3], Dr Ben Smedley MBBS MA(Cantab) FACEM[8], Dr Hugh Mitenko MD, CCFP, CCFP-EM (Canada)[9], Dr Tim Robertson MBBS[1], Dr Ashes Mukherjee MBBS FRCS FRCEM FACEM CFEU CCPU[10]; Prof Stuart R Dalziel MBChB FRACP PhD[5,6]

[1]Perth Children's Hospital, Western Australia, Australia; [2]School of Medicine, Divisions of Emergency Medicine and Paediatrics, University of Western Australia; [3]Murdoch Children's Research Institute, Victoria, Australia; [4]Departments of Paediatrics and Critical Care, The University of Melbourne, Victoria, Australia; [5]Starship Children's Hospital; [6]University of Auckland, Department of Paediatrics, Child and Youth Health, Auckland, New Zealand; [7]Royal Children's Hospital, Victoria, Australia; [8]Rockingham General Hospital, Western Australia; [9]Bunbury Regional Hospital, Western Australia; [10]Armadale Health Service, Western Australia

Objective: To evaluate the impact of locally adapted implementation interventions on bronchiolitis management through reduction in ineffective investigation and/or therapies within emergency departments (ED).
Design: Multi-centred, quality improvement study
Setting: Four hospitals providing paediatric emergency and inpatient care in Western Australia.
Interventions: Adapted implementation intervention package including trained local clinical leads, train the trainer workshops, promotional material, scripted staff education materials, and monthly audit and feedback reports.
Main Outcome Measures: Proportion of infants (<1 year) presenting to ED diagnosed with bronchiolitis who, in the first 24 hours, complied with guideline recommendations to not receive five investigations and/or therapies of minimal benefit, in comparison with pre-intervention.
Results: 457 infants in 2019 (pre-intervention) and 443 in 2021 (post-intervention) were included, with mean age 5.6 months (SD 3.2, 2019; SD 3.0, 2021). In 2019, compliance was 78.1% versus 85.6% in 2021, RD 7.4 (95%CI -0.6;15.5). The strongest evidence was reduced salbutamol use (compliance improvement: 88.6% to 95.7%, RD 7.1 95%CI (1.7;12.4).
Variation in compliance varied with two sites initially at 85% demonstrating minimal change while two sites initially at <80% demonstrating improvements (Hospital 2: 95 (78.5%) to 108 (90.8%) RD 12.2 95%CI (3.3;21.2); Hospital 3: 67 (62.6%) to 63 (76.8%) RD 14.2 95%CI (1.3;27.2).
Conclusion: Targeted site-adapted implementation interventions in four EDs resulted in improvement in compliance with guideline recommendations overall, particularly for those hospitals with initial low compliance. Further work on maximising benefit through guidance on how to adapt and effectively use interventions will enhance knowledge and implement sustainable practice change.

Boutrus, Maryam

A Trauma-Focused Program for Childhood and Adolescent Dissociation

CAMHS Session, 8 November 12:00-13:25

Dr Maryam Boutrus[1,2,3,4], Dr Alix Woolard[3,4], Ms Sophie Stuart[3,4], Dr Giulia Pace[2], Dr Pradeep Rao[2], Dr Darren Bingham[2], Dr Indijah Bullman[3], Ms Nicole Wickens[3], Professor Jeneva Ohan[4], Professor Helen Milroy[1,2,3,4]

[1]Perth Children's Hospital, [2]Child and Adolescent Mental Health Services, [3]Telethon Kids Institute, [4]University of Western Australia

Dissociation is a common response to trauma among young people. It allows children and adolescents to disconnect from distressing situations through the compartmentalisation of memory, identity, consciousness, and perception. Although protective at the time of trauma, continued dissociation leaves young people susceptible to psychopathology and neurological dysfunction, and therefore represents a serious health concern. Currently, Western Australia's Child and Adolescent Mental Health Services (CAMHS) do not screen for, or treat, dissociation. This research project therefore aims to implement a three-phase plan to understand the prevalence, presentation, and correlates of dissociation, educate CAMHS clinicians on trauma and dissociation, and promote the mental health and functioning of young people who present to CAMHS with dissociation following trauma.

In Phase One of the study, a screening procedure will be implemented through Touchstone, Pathways and the Complex Attention and Hyperactivity Disorders Services to determine the prevalence and presentation of dissociation. Phase Two focuses on developing an education program and clinician resource to enhance CAMHS clinicians' knowledge of dissociation. Co-design processes and in-depth interviews with young people (aged 12-18), their caregivers and clinicians will also be conducted to further current understandings and inform the development of an intervention. Finally, Phase Three includes piloting the co-designed intervention and rolling out the education program across participating CAMHS clinics.

This research project is a collaborative endeavour that holds promise for improving the identification, treatment, and support available to children and adolescents experiencing dissociation following trauma. By doing so, the study aims to enhance the mental health outcomes and overall well-being of young people.

Boyle, Eileen

Safer Care for Children in Hospital

Nursing Session, 8 November 14:00-17:00

Dr Eileen Boyle[1] Emeritus Professor, Gavin Leslie[1,2], Dr Pamela Laird[3], Dr Scott Stokes[4], Dr Jo Zhou[1], Dr Esther Adama[5], Professor Meredith Borland[6], Professor Judith Finn[1], Ms Tania Harris[7] ,Ms Melanie Robinson[6], Associate Professor Fenella Gill[1,6]

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Background: Delayed detection and response to paediatric patient deterioration result in severe adverse events or death. In Western Australia (WA) we developed the ESCALATION system, an evidence-based paediatric early warning system for early recognition and response to clinical deterioration inclusive of sepsis screening and integrated family involvement. The ESCALATION System was introduced in over 100 WA hospitals in 2022 and extended to pre-hospital emergency services in 2023. System fidelity, adoption, family engagement and effectiveness in predicting clinical deterioration remain unclear.

Aim: To optimise the ESCALATION System to support health professionals and families in the early detection and timely management of children with clinical deterioration.

Methods: Working in partnership with health professionals and families this project consists of 4 sub-studies. Sub-study-1 is a multimethod design to identify factors impacting implementation, normalisation, and integration of the ESCALATION system in WA Country Health Service hospitals. Substudy-2 is a mixed-method study to identify and address factors impacting health professional and family use of 'family concern' component at Perth Children's Hospital. Sub-study-3 is a co-design study to optimise how families of Aboriginal children raise concerns about their child's health condition at Perth Children's Hospital and two regional hospitals. Sub-study 4 is a pre-hospital paediatric cohort and in-hospital case-control study to determine optimal escalation of care thresholds and early warning score parameters independently associated with clinical deterioration or sepsis.

Expected outcomes: The study will (a) provide a comprehensive understanding of fidelity, adaptions, and family involvement (b) develop and test solutions to support optimal use (c) identify predictive performance of the ESCALATION System for detecting clinical deterioration and sepsis in children.

Buck, Jessica

Understanding cancer morbidity and mortality in Indigenous children

Early Career Session, 10 November 13:40-16:35

Jessica Lawler[1,2], Raelene Endersby[1,2], Rishi Kotecha[1,3], Hetal Dholaria[1,3], Nick Gottardo[1,3], Jessica Buck[1,3]

[1]Telethon Kids Cancer Centre, Telethon Kids Institute, [2]Centre for Child Health Research, University of Western Australia, [3]Department of Paediatric and Adolescent Oncology and Haematology, Perth Children's Hospital

Background: Aboriginal and Torres Strait Islander people have worse health outcomes in many areas, including cancer. Cancer outcomes in the paediatric population have not been comprehensively examined, however clinical experience suggests that some aspects such as treatment toxicities may differ.

Objective: This preliminary study sought to measure incidence and survival of paediatric cancer in Aboriginal patients.

Methods: A retrospective audit was carried out to identify records of patients presenting to the oncology department at the Perth Children's Hospital between 2000-2020 who identified as Aboriginal and/or Torres Strait Islander. Patient sex, diagnosis, age at diagnosis, and survival outcome were recorded.

Results 81 Aboriginal patients were identified, with 37 patients diagnosed with leukaemia (all types) with a median age at diagnosis of 5.3 years, and overall survival 89%. 23 patients were diagnosed with solid tumours, with a median age of 3.3 years, and overall survival 78%. 13 patients were diagnosed with brain tumours, with a median age of 4.1 years, and overall survival 38%. 8 patients were diagnosed with lymphoma, with a median age of 14.0 years, and overall survival 88%.

Conclusion: The incidence and survival of cancer in Aboriginal patients at PCH are broadly similar to the wider Australian population. Sufficient patients were identified for a full clinical case-control report to be completed in the future, including assessment of treatment-associated morbidity. Collaborative Australia-wide genomic studies looking at tumour drivers and pharmacogenomics in Aboriginal and Torres Strait Islander children are also planned.

Byrne, Jacob

Prexasertib radiosensitises paediatric medulloblastoma cells by exploiting the DNA damage response pathway

Early Career Session, 10 November 13:40-16:35

Jacob Byrne[2], Hilary Hii[2], [2]Hetal Dholaria [1,2,3], Jessica Buck [2,3], Brooke Carline [2], Mani Kuchibhotla[2], Jessica Lawler[2,3], Jacqueline Whitehouse[2,3], Martin Ebert[3], Terrance Johns[2,3], Meegan Howlett[2,3], Nick Gottardo[1,2,3] and Raelene Endersby[2,3]

[1]Department of Paediatric Oncology and Haematology, Perth Children's Hospital, Nedlands, WA, 6009; [2]Brain Tumour Research Programme, Telethon Kids Institute, Nedlands, WA, 6009; [3]University of Western Australia, Nedlands, WA 6009.

Brain tumours represent the deadliest childhood cancer in Australia. Despite treatment intensification, survival rates of children in high-risk subgroups of medulloblastoma (MB) have stagnated in the past three decades. While the survival benefit of craniospinal radiation (CSI) is well-established, it's use in current treatments protocols can cause debilitating toxicity and developmental complications that persist into adult life. In this context, there is an urgent need to identify novel radio-sensitising compounds, which offer unequivocal clinical benefit and minimal toxicity. Radiation induces DNA damage in cancer cells; however, DNA repair is facilitated via CHK1/2 kinases, which are key regulators of the DNA damage response (DDR) pathway. Therefore, exploiting this pathway with DDR inhibitors offers the potential to radio-sensitise tumour cells and abrogate DNA damage repair. Here, we utilise mouse models of group 3 (Gr3) MB, which are delivered craniospinal irradiation (CSI) to mimic clinical dosing. When used in combination with CSI, CHK1/2 inhibitor (CHKi, Prexasertib) significantly prolonged survival, compared to mice who received CSI alone. Using flow cytometry and western blotting, we demonstrate that prexasertib prevented post-radiation cell cycle arrest, prevented DNA repair, and increased apoptosis. Our exploration of intracellular actions of prexasertib across various time points offers the possibility of optimising a window for its incorporation into existing radiation protocols. Our study offers robust pre-clinical evidence describing the radio-sensitising effect of prexasertib in Gr3 MB, highlighting it as a strong candidate for clinical translation.

Catchpole, Emma

Preventing respiratory deterioration: a new class of airway repair therapeutics

Wal-yan Session, 8 November 12:00-13:00

Catchpole E[1], Ling K-M[1,2], Gwatimba A[1], Schofield C[1], McLean S[1], Ho J[1], Pui E[1], Karpievitch Y[1,3], Kicic A[1,2,4,5], Stick S[1,3,4,5], Baell J[6], Iosifidis T[1,2,3,4]

[1]Wal-yan Respiratory Research Centre, Telethon Kids Institute, Western Australia, [2]School of Population Health, Curtin University, Bentley, WA, Australia, [3]Medical School, The University of Western Australia, Nedlands, WA, Australia, [4]Centre for Cell Therapy and Regenerative Medicine, The University of Western Australia, Nedlands, WA, Australia, [5]Respiratory and Sleep Medicine, Perth Children's Hospital, Nedlands, WA, Australia, [6]Monash Institute of Pharmaceutical Sciences, Monash University, Parkville, VIC, Australia

Background and aim: Defective epithelial repair responses to early life respiratory insults impairs normal lung development and leads to lifelong respiratory diseases such as asthma and COPD. Asthma is one of the most common chronic conditions in Australia and is a primary contributor to respiratory-related paediatric hospital presentations. Current asthma treatments, such as anti-inflammatory corticosteroids, fail to enhance lung repair mechanisms or prevent the development of chronic lung disease. Our team has discovered a new class of airway repair enhancing drugs that are anticipated to reduce asthma exacerbations and hospitalisations. In this study, we aimed to assess the preclinical efficacy of our therapeutic candidates to enhance airway epithelial repair.

Methods: The screened drug list consisted of 122 small-molecule compounds, including 64 repurposed therapeutic compounds and known pathway inhibitors/activators, as well as 58 novel compounds (synthesised by Epichem and Galaru Pharmaceutical Ltd). We assessed scratch wound repair, cell viability by MTS and lactate dehydrogenase cytotoxicity assays of immortalised and primary airway epithelial cell cultures following compound treatment.

Results: Of the 122 compounds, there were 32 positive hits (i.e., accelerate wound repair) and four negative hits (i.e., delayed wound repair) relative to the DMSO vehicle control. Importantly, the positive hits included 12 novel compounds and showed no cytotoxic effects. Finally, seven novel compounds were found to have cytotoxic effects.

Conclusion: Using the drug screening approach, we identified existing and novel therapeutic compounds that accelerate airway epithelial cell repair that warrant further *in vitro* and *in vivo* investigation.

Cavve, Blake S

Re-identification with birth-registered sex: Audit of GDS referrals

CAMHS Session, 8 November 12:00-13:25

Blake S. Cavve[1, 2, 3], Xander Bickendorf[1], Jack Ball[1], Liz A. Saunders[1,2,3], Cati S. Thomas[1, 2], Penelope Strauss[1,3], Georgia Chaplyn[2], Larissa Marion[1,2], Aris Siafarikas[1,2,3,4], Uma Ganti[2,3], Aaron Wiggins[2], Ashleigh Lin*[1] & Julia K. Moore*[2, 3]

[1]Telethon Kids Institute, The University of Western Australia; [2]Gender Diversity Service, Child and Adolescent Health Service, Child and Adolescent Mental Health Service, Perth Children's Hospital; [3]University of Western Australia; [4]Department of Endocrinology and Diabetes, Perth Children's Hospital. *These authors contributed equally to the work.

Some young people who identify as trans and seek gender-affirming medical care later re-identify with their sex registered at birth. Despite recent media commentary, evidence regarding the frequency and characteristics of this experience is lacking. The objective of this study was to determine, in a paediatric gender clinic setting, the frequency of re-identification with birth-registered sex.

All referrals to the Child and Adolescent Health Service Gender Diversity Service at Perth Children's Hospital between 2014 and 2020 were identified. For all closed referrals, the reason for closure was determined by retrospective medical record audit (N = 548).

Patients who re-identified with their birth-registered sex comprised 5% of all referral closures. Re-identification mostly occurred during early stages of assessment. In total, two patients re-identified after short periods of gender-affirming medical treatment (one puberty suppression, one puberty suppression followed by gender-affirming hormones) – each less than one year. The effects of the treatments over the short time received would be predicted to be largely reversible. This corresponds to 1% of all patients who had initiated any medical treatment.

In this paediatric gender clinic sample, a small proportion of patients, and a very small proportion of those who initiated medical gender-affirming treatment, re-identified with their birth-registered sex during the study period. Longitudinal follow-up studies including qualitative self-report will be required to understand different pathways of gender identity experience. Clinical practice can be enhanced by regular check-ins with all patients regarding satisfaction with treatment or assessment, and their current needs and wishes regarding affirmation.

Chaplyn, Georgia

Assessing clinical risk: Parent and child reported suicidal and self-harm thoughts and behaviours at paediatric gender service initial assessment,

CAMHS Session, 8 November 12:00-13:25

Chaplyn, Georgia[1], Cavve, Blake S.[1,2,3], Saunders, Liz. A.[1,3,2], Bickendorf, Xander[2], Strauss, Penelope[2,3], Van Hall, Hans-Willem[1], Moore, Julie[1,3] & Lin, Ashleigh[2,3]

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Trans youth report high rates of adverse mental health outcomes including suicidal ideation, suicide attempts, and deliberate self-harm behaviours. For gender-affirming care providers, identifying risk for self-harm and suicidal ideation is a key component of mental health assessment. Clinical information about client's risk may be informed by clinical interviews, and targeted items in parent- and self-report psychometric measures. The degree to which these information sources are consistent, or provide unique insights, is currently unknown.

Methods: Items 18 and 91 of the Child Behaviour Checklist and Youth Self Report identify concerns regarding self-harm and suicide respectively. Item scores were extracted for 190 participants of the GENder identiTy Longitudinal Experience (GENTLE) Cohort comprised of clients from the Child and Adolescent Health Service Gender Diversity Service (GDS). Clinical notes from initial assessment at GDS were coded for reported histories of thoughts of self-harm, self-harm behaviours, suicidal ideation, and/or suicide attempts.

Results: Frequency of, and similarities between, parent and youth endorsement of targeted CBCL and YSR items will be presented and compared to thoughts of self-harm, self-harm behaviours, suicidal ideation, and/or suicide attempts disclosed in clinical interview. Differences on the basis of birth-registered sex will also be discussed.

Conclusion: Suicide and self-harm concerns reported in psychometric measures in combination with risk reported clinical interview are used to assess overall risk in paediatric gender clients. Results may have implications regarding the additive value of using both parent- and self-report measures when assessing risk in addition to clinical interview in mental health assessments.

Chiu, Sung

Testing an Enhanced Influenza Vaccine schedule in Children undergoing Cancer Treatment

Plenary Session 4 – Implementation & Translation, 10 November 9:00-10:30

Sung Chiu*[1,3], Eliska Furlong*[1,2], Elizabeth McKinnon[1], Annette Fox[4], Louise Carolan[4], Joyce Oommen[1], Daniel K Yeoh[2], Laurence C Cheung[1,3], Nicholas G Gottardo[1,2,3], Rishi S Kotecha[1,2,3].

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Background/ Motivation: Influenza causes significant morbidity and mortality in children undergoing treatment for cancer. However the ideal vaccination schedule for these high-risk patients is unknown.

Objective: To determine if an additional dose of inactivated influenza vaccine to the current recommended one-dose schedule in patients ≥9 years of age and the two-dose regimen in patients <9 years of age can improve response in children and adolescents who are being treated for cancer.

Approach/ Method: We performed a prospective open-labelled study and recruited patients between 6 months to 18 years of age undergoing treatment for cancer in Perth Children's Hospital from May 2020 to June 2022. Patients <9 years of age received 3 influenza vaccines separated by at least 4 weeks and those >9 received 2 vaccinations. Study subjects had blood samples collected prior to first vaccination and subsequent to each vaccination to measure vaccination response. Adverse effects were recorded by parental interview.

Findings/ Results: 62 patients were enrolled with 33 (53%) younger than 9 years. The majority of patients were male (71%) and were undergoing treatment for haematological cancers (65%). This group was highly immunosuppressed with 81% having baseline lymphopenia and 74% undergoing intensive chemotherapy. 65% had previous vaccinations. The addition dose of vaccination in this cohort resulted in increased seroconversion rates and a statistically significant increase in antibody titres to Influenza A strains. No serious adverse events were reported.

Conclusion: Additional dose of Influenza vaccine is efficacious in improving protection and should be considered in children undergoing treatment for cancer.

Christensen, Daniel

Discharge against medical advice in Western Australian Aboriginal children, 2002-2018

Plenary Session 4 – Implementation & Translation, 10 November 9:00-10:30

Daniel Christensen[1], Alison Gibberd[2,3], Bridgette McNamara[2,4], Sandra Eades[2], Carrington Shepherd[5,6,7], David B Preen[8], Daniel McAullay[1], Natalie Strobel[1]

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Discharge against medical advice (DAMA) is a priority for the health system as it can negatively impact patient well-being. However, little is known about the factors associated with DAMA in paediatric populations, particularly among Aboriginal children in Australia.

In this study, we examined the association between DAMA for hospital admissions and emergency department (ED) presentations, and: i) child, family, and episode of service characteristics, and ii) the odds of 30-day readmission/ re-presentation for Aboriginal children born in Western Australia between 2002 and 2013 who had one or more hospital admission (n = 16,931) or ED presentation (n = 26,546) before the age of 5. Associations were tested using multilevel mixed-effects logistic regression.

Admissions into regional and remote hospitals were more likely to DAMA than Perth metropolitan hospitals (aOR 7.38, 95% CI 5.27, 10.32), while ED presentations in regional and remote hospitals were less likely to DAMA than those in Perth metropolitan hospitals (aOR 0. 0.88, 95% CI 0. 83, 0.94). Emergency hospital admissions (aOR 6.18, 95% CI 3.03, 12.59) were more likely to DAMA than elective admissions from hospital waitlists. There was a modest association between hospital DAMA and 30-day readmission (aOR 1. 20, 95% CI 0.95, 1.51), but a 4% decrease in the odds for 30-day re-presentation following ED DAMA (aOR 0.96, 95% CI 0.92, 1.01).

The study identified several important determinants of DAMA, including admission status, triage status, and location. These findings could inform translational steps to decrease DAMA, particularly in regional and remote communities.

Cream, Angela & Miles, Gordon

CAMHS Clinicians Use of Measurement

CAMHS Session, 8 November 12:00-13:25

Angela Cream[1], Sarah E. George[1,2], Gordon Miles[1] and Helen Milroy[1,2,3]

[1]Child and Adolescent Mental Health Service (CAMHS), Perth, Western Australia; [2]School of Psychiatry, University of Western Australia, Perth, Western Australia; [3]Telethon Kids Institute, Perth, Western Australia

Background: Clinicians at the Child and Adolescent Mental Health Service (CAMHS) participate in mandated outcome measurement, though completion rates vary and mandated measures do not capture broader definitions of mental health (Taskforce, 2022). It is currently unclear what measures are used by CAMHS clinicians to assess mental health and to monitor treatment outcomes. Evidence suggests that outcome monitoring and feedback improves clinical outcomes though frequency of use varies in clinical practice (Boswell et al., 2013).

Aims*:* We therefore sought to (*i*) identify all tools used by CAMHS clinicians (*ii*) determine frequency of outcome and feedback use, and (*iii*) explore perceptions about nationally mandated measures.

Method: The current use of measurement-based care within CAMHS was explored via a web-based survey of all clinical CAMHS staff (GEKO Approval ID 47839).

Findings: Respondents (*n* = 92) represented all CAMHS directorates and disciplines. Measures were used by 74 (82%) for a total of 114 tests. Ten of the tests were used by three different disciplines or more. Most clinicians (67%) used at least one test as an outcome measure and 58% used testing as a tool for clinical decision making. Most did not rate the usefulness of the mandatory measures to their clinical practice higher than 5 of 10. Respondents also raised issues related to test availability, online access and workplace constraints.

Conclusion*:* Findings are consistent with some trends in the literature. These results are unique in representing all disciplines within the service and will contribute to the development of measurement guidelines within CAMHS.

Davidson, Sue-Anne

Parents' perspectives of barriers to early detection of cerebral palsy

Plenary Session 2 – Implementation & Translation, 9 November 13:30-15:15

Davidson, S.A.[1, 2, 3], Thornton, A.[1, 2, 4], Hersh, D.[3], Harris, C.[3], Elliott, C.[2, 3], Valentine, J.[1, 2, 3, 4]

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Background
High risk of cerebral palsy (CP) can now be detected at 12 weeks corrected gestational age (CGA) using standardised assessments, providing access to early intervention and parental support. However not all children at risk in Western Australia are referred within the recommended timeframe for early detection.

Aim
Explore the barriers and facilitators to accessing early detection and early intervention services from the Perth Children's Hospital Early Intervention service, from the perspective of parents of children at risk of CP.

Method
Qualitative reflexive thematic analysis of semi-structured interviews with parents of children not referred before six months CGA. Interviews were conducted face to face, via Microsoft Teams or by telephone, recorded and transcribed. NVivo 16 was used for data collation, which was coded by two authors. Consumers, researchers and clinicians acted as Critical Friends. Research design, data analysis and interpretation were done in collaboration with a Consumer Reference Group.

Results
Eight parents reported barriers to early detection and provided suggestions for improving access and the patient journey. Three themes were identified; poor communication by clinicians impacted understanding and access to care, the 'journey to a diagnosis' and 'learning the system'.

Conclusions
Despite persistent advocacy for access to care, parents experienced barriers which caused delays, confusion, and reduced their agency in the team caring for their child. Addressing barriers at the parent, clinician and health system levels may improve early access to care for children at risk of CP. Parents have innovative solutions to contribute which may improve early access.

Dholaria, Hetal

Boosting radiation effect in high risk medulloblastoma models using preclinical translational platform

Plenary Session 5: Innovation, 10 November 10:45-12:00

Hetal Dholaria[*] [1,2,3], Jessica Buck[*] [2,3], Hilary Hii[2], Brooke Carline [2], Jacob Bryne[2], Mani Kuchibhotla[2], Jessica Lawler[2,3], Gilbert Porter[3], Jacqueline Whitehouse[2,3], Martin Ebert[3], Stephanie Smith[4], Martine Roussel[4], Meegan Howlett [2,3], Nick Gottardo [1,2,3] and Raelene Endersby [2,3]

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*Authors have contributed equally to this project.

Despite treatment intensification, survival for high-risk subgroups of medulloblastoma (MB) such as MYC-amplified Group 3 (Gr3*myc*) and p53-mutant SHH (SHH-3*p53*mut) have remained dismal with overall survival around 40% and 20% respectively. Radiosensitisation with carboplatin evaluated in clinical trial showed some survival benefits in Gr3 MB patients. There is an urgent need to discover newer, non-chemo radiosensitisers with minimal toxicity and unequivocal benefit in these high-risk MB. Radiation is a potent inducer of DNA damage in cancer cells. CHK1/2, ATR, and WEE1 kinases are critical regulators of the DNA damage response (DDR) and inhibitors of these kinases, prexasertib, ceralasertib and adavosertib respectively, have been evaluated as radiosensitisers in adult tumours. Using small-animal radiotherapy platform to deliver craniospinal irradiation (CSI) to high-risk-MBbearing mice, we exploit radiosensitising abilities of these DDR inhibitors (DDRi). We evaluated three modalities of delivery of each DDRi with CSI in Gr3*myc* models- concurrently (prior to each fraction of CSI), as interphase therapy (after completion of cumulative dose of CSI) and as combination of concurrent followed by interphase therapy. The most effective of all was treatment with combination of concurrent followed by interphase use of DDRi improving survival by 3-4 times compared to treatment with CSI alone. Survival prolongation of 2-3 times was observed when DDRi was administered concurrently with CSI. Remarkably, concurrent use of prexasertib with CSI significantly improved survival in extremely fatal SHH-3*p53*mut models. With these updated results, we provide robust preclinical evidence for radiosensitising use of DDRi in paediatric high-risk MB and recommend swift clinical translation.

Dodd, Megan

Kids Voices: Children's perioperative experience of - A qualitative study

Plenary Session 2 – Implementation & Translation, 9 November 13:30-15:15

Dodd M[1,2], Bell E[1,2], Heath C[2,3], Bavich P[1], Sommerfield D[1,2,3], Sommerfield A[1,2,5], von Ungern-Sternberg B[1,2,3]

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Background and Aim: Anxiety surrounding the perioperative experience is highly prevalent for children and poor patient satisfaction is closely related to negative outcomes including post-operative complications and length of hospital stay. Given discrepancies between child and adult perceptions of the healthcare experience exist, it is imperative to seek guidance regarding quality improvement measures directly from paediatric patients. This project aimed to acquire knowledge from the child's perspective to improve perioperative care in both the emergency and elective surgical setting.

Methods: This qualitative project included children (4-16) who underwent emergency manipulation under anaesthesia, appendicectomy or elective tonsillectomy at Perth Children's Hospital. Over 150 children were interviewed post-operatively and qualitative content data analysis was performed regarding their perioperative experience.

Results: The predominant themes regarding the perioperative process included; fearful/apprehensive, perception of powerlessness and perception of trust and security. Regarding the perioperative environment, themes of both poor and positive adaptation of the care environment to the child's needs were noted. Negative experiences of apprehension and pain were more prevalent in those who underwent emergency surgery compared to elective, while more children reported not feeling adequately informed in the elective group. Overall, both emergency and elective patients reported a positive perioperative experience.

Conclusions: Direct feedback from children provided valuable insight into the perioperative experience, identifying targeted areas for improvement. Findings from these projects are of value to stakeholders in healthcare and are expected to inform strategies to optimise the quality of healthcare.

Dutch, Dimity

What do guidelines say about child health behaviour screening in primary healthcare?

Early Career Session, 10 November 13:40-16:35

Dimity Dutch[1], Lucinda Bell[1], Elizabeth Denney-Wilson[2] and Rebecca Golley[1]

[1]Caring Futures Institute, College of Nursing and Health Sciences, Flinders University, SA; [2]Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health, The University of Sydney, NSW

Background: The first five years of life are crucial for establishing positive health behaviours to support optimal growth, health and development. Current recommended practice in Primary Health Care (PHC) is growth monitoring as a proxy measure of health behaviours, however there are barriers to this approach. Screening for child health behaviours poses an innovative alternative approach, however it is unknown if this approach aligns with current practice guidelines.

Objectives: To identify and describe recommendations for health behaviour screening, growth monitoring, and health promotion in early childhood (birth-5 years) within current Australian national and state documents that guide PHC practice.

Methods: Documents were identified using Google advanced and targeted website searches. An iterative inductive and deductive content analysis and synthesis was conducted and contextualised using the 5W + H Framework.

Findings: 18 documents were included in the review. All documents recommended growth monitoring as well as brief interventions to improve child health behaviours (n = 18). Surprisingly, documents signalled the need to screen for child health behaviours (n = 10). However, recommendations were fragmented and provided limited guidance on how to comprehensively screen child health behaviours.

Conclusions: Child health behaviour screening offers an innovative approach to enhance routine PHC practice. Screening offers an alternative or complimentary approach to growth monitoring, enabling targeted counselling and support. There is a need to develop and incorporate practical health behaviour screening tools into PHC practice guidelines, as a strategy to support children's growth, health and development in the early years.

Dymock, Stephen

Identifying novel treatments for paediatric T-cell acute lymphoblastic leukaemia

Lightning Talks, 9 November 11:00-12:00

Stephen Dymock[1,2], Sung Chiu[1,3], Laurence Cheung[1,3], Rishi Kotecha[1,2,3]

[1]Leukaemia Translational Research Laboratory, Telethon Kids Cancer Centre, Telethon Kids Institute, Perth, WA, Australia; [2]School of Medicine, University of Western Australia, Perth, WA, Australia, [3]Curtin Medical School, Curtin University, Perth, WA, Australia

Acute lymphoblastic leukaemia (ALL) is a cancer characterised by the overproduction of immature white blood cells and represents the most common form of childhood cancer in Australia. T-cell acute lymphoblastic leukaemia (T-ALL) is an aggressive subtype of ALL and accounts for 15% of paediatric and 25% of adult ALL cases. The current standard of care involves multi-agent high-dose chemotherapy, however, chemotherapeutic intensity has been raised to the limit of tolerance with a high rate of treatment-related toxicity and adverse events. Although the introduction of risk-stratified therapy has substantially improved cure rates and the overall survival for children with T-ALL is approximately 80%, the prognosis of patients with refractory or relapsed T-ALL is dismal and these children often die of disease. Therefore, further improvements in outcome and a reduction of adverse effects will require novel therapeutic approaches, which my project will fundamentally seek to address. A comprehensive systematic review of the pre-clinical studies of childhood T-ALL will be performed to identify which drugs are the most promising to study. An extensive panel of unique patient-derived cell lines will be characterised and mouse models of childhood T-ALL established, using samples obtained from patients treated at Perth Children's Hospital. Next, an unbiased, large-scale drug screen will be performed using the cell lines and the best candidate novel agents will be further investigated in the mouse models. Ultimately, this project will provide a foundation for further pre-clinical and clinical studies to identify novel, safe and more effective treatments for childhood T-ALL.

Felton, Rhea

Understanding Children's Experiences of Parental Cancer

Lightning Talks, 9 November 11:00-12:00

Rhea Felton

UNSW Sydney, Faculty of Medicine and Health, School of Clinical Medicine

Each year in Australia more than 160,000 people are diagnosed with cancer. It is estimated that over 20,000 of those diagnosed are under the age of 50 years, many of whom are parenting children. When a parent is diagnosed with cancer, the whole family is impacted.

Health research focuses primarily on the patient's well-being and, to a minimum, on children and caregivers. The sparse research that has been conducted in this field exploring children living with a parent who has been diagnosed with cancer has traditionally come from parent-proxy or health professional reports. These studies have identified areas of adverse health outcomes including anxiety, depression and emotional stress in children. While this research has provided important insights into the psychological outcomes in children, less is known about the information and support needs children seek during their parents' cancer diagnosis.

Collaborating with young children (6 – 12 years), this project will involve a multi-stage, multi-method design. Through the use of arts-based methodology, children will be invited to share their lived experiences of parental cancer through a narrative inquiry framework. These child-led narratives will inform a co-design study with children and families to develop supportive psychosocial resources which will later be evaluated in feasibility study.

This overall program of research aims to develop a more nuanced understanding of children's experiences of parental cancer from a child-centric perspective

Ferguson, Taylor

Evaluating the preclinical efficacy of novel agents for high-risk infant leukaemia

Lightning Talks, 9 November 11:00-12:00

Taylor Ferguson[1,2], Joyce Oommen[1], Sajla Singh[1], Sung Chiu[1], Laurence C Cheung[1,2], Rishi S Kotecha[1,2,3]

[1]Leukaemia Translational Laboratory, Telethon Kids Cancer Centre, Telethon Kids Institute; [2]Curtin Medical School, Curtin University; [3]Department of Clinical Haematology, Oncology, Blood and Marrow Transplantation, Perth Children's Hospital

Extensive advances have been made over the last 50 years to improve outcomes for children with acute lymphoblastic leukaemia (ALL). Unfortunately, infants with ALL (iALL) harbouring the *KMT2A*-rearrangement (*KMT2A*-r) continue to experience poor prognosis and increased rates of relapse. Chemotherapeutics used to treat this disease can induce a range of long-term and short-term side effects such as increased risk of therapy-related mortality. Infants' inability to tolerate intensive chemotherapeutic regimens has resulted in dose-limiting. These limitations have highlighted the desperate need for novel therapies for these high-risk infant patients. Targeting molecular pathways that are essential for malignant cell survival have been an area of interest. Poly (ADP-ribose) polymerase's (PARP) play a key role in DNA repair and inhibiting PARP can prevent cancer cells from repairing from DNA damage. Aurora Kinase's (AURK) are essential for cell proliferation and inhibiting AURK can interrupt the oncogenic amplification of AURK overexpression in malignant cells. The overall aim of this project is to perform in-depth preclinical evaluations of these novel drugs in *KMT2A*-r iALL. The generation of half-maximum inhibitory concentrations (IC_{50}) *in vitro* will provide the rationale to move promising drugs forward into further testing. Before novel treatments such as these can be considered for clinical trials in humans, they must first be extensively evaluated *in vivo*. Moreover, the efficacy, safety and tolerability in murine models will inform the translatability of these agents as treatments for high-risk iALL patients with the aim to improve the overall survival rates of these high-risk infants.

George, Sarah E.

Therapeutic Crisis Intervention for Families: Caregiver Perceptions and Experiences

CAMHS Session, 8 November 12:00-13:25

Sarah E. George[1, 2], Chelsey Catchpole[1], Rosemary Skinner[1], Parma Barbaro[1], Nathan G. Adey[1], and Simon Davies[1]

[1]Child and Adolescent Mental Health Service (CAMHS), Perth, Western Australia;
[2]School of Psychiatry, University of Western Australia, Perth, Western Australia

Background*:* The Therapeutic Crisis Intervention for Families (TCI-F; Holden et al., 2012) program was developed to equip caregivers with the knowledge, skills, and confidence to deal with crisis situations involving their children. TCI-F has been disseminated globally and was implemented at the Child and Adolescent Mental Health Service in 2019, although there is an absence of published research.
Aims*:* We sought to (*i*) investigate whether TCI-F influenced perceptions that are empirically associated with behaviour implementation and (*ii*) understand experiences of program participation.
Method*:* This Quality Improvement project was approved by the Child and Adolescent Health Service (Approval ID: 40694). Caregivers who participated in TCI-F were invited to complete questionnaires about determinants of implementation behaviour before and after the program. Upon program completion, they were also invited to complete a questionnaire about their experiences.
Findings*:* Participants (*n* = 155) identified significant improvements in all determinants of implementation behaviour. Specifically, caregivers reported improved *knowledge* about implementing crisis-management strategies, confidence and *capability* in managing crisis, *beliefs* that implementation was part of their role and would be effective and beneficial, *intentions* to implement learned strategies, and a sense of being provided with sufficient *resources and support*. Additionally, participants reported high levels of satisfaction, hope for the future, improved coping, and overall well-being following TCI-F. Qualitative responses further supported these results.
Conclusion*:* Findings support the use of TCI-F and indicate that the program is a promising intervention for caregivers who are struggling to cope with the emotional difficulties of their children.

Gibson, Noula

Challenges and opportunities to building a vibrant research culture in allied health at Perth Children's Hospital

Plenary Session 1 - Collaboration, 9 November 9:00-10:30

Noula Gibson[1], Suzi Taylor[2], Angela Bonucchi[1], Kim Laird[1]

[1]Department of Physiotherapy, Perth Children's Hospital; [2]Chief Allied Health Office, Department of Health

Introduction: Building research capacity is a priority in health care as it benefits patient care, clinicians, organizations, and society more broadly. This study aimed to evaluate the research culture and capacity (RCC) of allied health professionals (AHPs) working at Perth Children's Hospital across two time points, before and after research facilitators were embedded in the organisation. The second aim was to determine if AHPs who had profession specific research coordinators reported greater research capacity than those that did not.

Method: This was across-sectional observational study. The RCC tool was administered to AHPs in 2019 and in 2022, to measure RCC across Organization, Team, and Individual levels, including barriers to and motivators for performing research. An RCC score between four and 6 is considered moderate, and greater than seven is high.

Results: Organisational level support dropped from 2019 to 2022 but was still within the adequate range (median, IQR) 2019 (6,3-8) vs 2022 (5,3-6). Team level support was inadequate in both 2019 and 2022 except for occupational therapy (7,4-8); and physiotherapy (8,7-8) who both had high RCC sores that were maintained in 2022. Motivators of research changed from 2019 to 2022, from more intrinsic (skill development, job satisfaction) to extrinsic (increased credibility, funding availability). Lack of time and/or clinical priorities were reported as barriers by 98% of respondent in both years.

Conclusions: Supporting already motivated AHPs individuals and teams to conduct research by research support person within each team, increased clinical backfill and quarantined time is likely to produce better outcomes for research capacity building investment.

Gill, Fenella

Paediatric Invasive Device Utility and Harm: Multi-site, Point Prevalence Survey

Nursing Session, 8 November 14:00-17:00

Mari Takashima[1,2], Victoria Gibson[1,2], Eloise Borello[3], Lily Galluzzo[1], Fenella J Gill[4,5], Fiona Newall[3,6], Sharon Kinney[3,6], Amanda J Ullman[1,2]

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Introduction: Invasive devices are widely used in hospitals, however their use comes with risk of harm, such as infection, mechanical damage and device dysfunction. Paediatric patients are especially vulnerable to invasive device-associated harm.
Aim: This study aimed to explore invasive device utility, prevalence, harm, and clinical practice across Australian paediatric health facilities.

Methods: In 2022, a multicentre, observational, rolling point prevalence survey was conducted across three Australian paediatric hospitals. Fifty-per-cent of inpatients were systemically sampled by random allocation on a single day in each facility, and audited for the utility of invasive devices, and insertion characteristics. Patients with devices were followed for up to three days for; device-related complications, dysfunctions, management and removal characteristics.

Results: Of 285 patients audited, 78.2% had an invasive device (total 412), with a median of 1 device per patient (maximum 13). Over half were vascular access devices (54.1%), with peripheral intravenous catheters being most prevalent (27.2%). The point-prevalence of all device complications on day 0 was 10.7%. The period-prevalence of all device complications was 27.7% and an incident rate of 12.12 (95% confidence interval: 10.28-14.29) per 100 device days. The period-prevalence of device failure throughout the audit period was 13.4%, and the incidence rate was 4.73 (95% confidence interval: 3.63-6.16) per 100 device days. Besides the ventricular assist device (n=1; 100% complication), the highest period prevalence of complications were urinary devices (35.0%). The most commonly occurring complication was bleeding and oozing from the insertion site in vascular access devices (8.1%).

Conclusion: There was a high prevalence of invasive devices, most commonly vascular access devices. Complications associated with devices were substantial. Device failure was also a concern.

Gowda, Bhanu B

Outcomes of Neonates with Hypoxic-ischemic Encephalopathy Treated with Magnesium Sulfate: A Systematic Review with Meta-Analysis

Plenary Session 4 – Implementation & Translation, 10 November 9:00-10:30

Bhanu B Gowda[1] MD, Chandra Rath[2,5] MD, Saravanan Muthusamy[3,4] FRACP, Lakshmi Nagarajan[1,5] FRACP, Shripada Rao[2,5] FRACP

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Objective: To assess magnesium sulfate (MgSO4) as a neuroprotective agent in hypoxic ischemic encephalopathy.

Study Design: For this systematic review, PubMed, EMBASE, Cochrane Library, EMCARE and MedNar were searched in November 2022 for randomized controlled trials (RCTs). Metaanalysis was conducted using Stata 16.0 and RevMan 5.3.

Results: Twenty RCTs with a total sample size of 1485) were included, of which 16 were from settings where therapeutic hypothermia (TH) was not offered. Regarding MgSO4 in settings where TH was not offered, only one study evaluated composite outcome of "death or disability" at ≥18 months and reported such poor outcome in 8 out of 14 control infants and 4 out of 8 in the MgSO4 group. MgSO4 was not associated with mortality (RR: 0.86, CI: 0.72-1.03, 13RCTs) or hypotension (RR:1.02, CI:0.88-1.18, 5RCTs). Thirteen studies reported that MgSO4 improved in-hospital outcomes, such as reduced seizure burden, and improved neurological status at discharge. MgSO4 reduced the risk of poor suck feeds (RR: 0.52, 95%CI: 0.40-0.68, 6RCTs) and abnormal EEG (RR: 0.64, CI: 0.45-0.93, 5RCTs). Certainty of Evidence (COE) was "moderate" for mortality and "low/very low" for other outcomes. For studies with MgSO4 as an adjunct to TH, none reported on "death or neurodevelopmental disability" at ≥18 months. MgSO4 was not associated with mortality (RR 0.65, CI: 0.34-1.27, 3RCTs) or hypotension (RR: 1.0, CI: 0.71-1.40, 3RCTs).

Conclusions: Evidence around long-term outcomes of MgSO4 when used with or without TH was scant. MgSO4 therapy may improve in-hospital neurological outcomes without affecting mortality in settings where TH is not offered. Well-designed RCTs for neuroprotection are needed, especially in low-resource settings.

Gray, Michelle & Saman, Pamela

Audit of Aboriginal and Torres Strait Islander people(s) Special Referral Process to Child Health Services

Community Nursing Session, 10 November 13:30-16:30

Michelle Gray[1,2] & Pamela Saman[1,3]

[1]Edith Cowan University; [2]Nursing Research, Child and Adolescent Health Services; [3]Curtin University

Background: Ideally collaboration between health service providers supports effective transfer of care for families with identified vulnerabilities. The Sustainable Health Review identified that transfer of care between maternity and child health services could be improved to prevent families falling through the cracks. The Special Referral to Child Health Form is used to notify child health nurses of infants and families experiencing physical, psychological, or social challenges during the perinatal period. Anecdotal evidence suggests there are issues with timing and completeness of this referral.

Method: Of the 2,254 births in September 2022, electronic records were reviewed for all clients who identified as Aboriginal / Torres Strait Islander peoples(s) across the Perth metropolitan area (n= 122); focusing on the Special Referral Form (if completed) to identify: comprehensiveness of the report details, date of receipt by the child health service, response time from receipt to initial contact with client, and the subsequent first home assessment.

Findings: Translation of this audit data revealed variations between the content of the Special Referral to Child Health Form and the first home assessment report.

Recommendations for practice: This presentation will address the conference themes of collaboration and translation of data to identify where the current transfer of care process is not working and identify where documentation could be improved to benefit clients with child health services.

Hadassin, Melissa

Pilot Study of Springfusor Device to Deliver Anti-Fungal Prophylaxis in Paediatric Oncology

Early Career Session, 10 November 13:40-16:35

Melissa Hadassin, Ariel Mace, Andrew Martin, Vaanitha Manickavasagar, Zoy Goff, Julie Vine, Vasant Chinnabhandar, Jocelyn Bell, Patricia Williams, Daniel Yeoh

Perth Children's Hospital (PCH) Ambulatory Care, PCH Pharmacy, PCH Oncology Department, PCH Infectious Diseases

Aims: To utilise a Springfusor device to deliver prophylactic intravenous anti-fungal medication (micafungin) for selected paediatric oncology patients in place of daily HiTH nurse administered infusion via pump over >1 hour. After suitable training, parents attach a pre-filled syringe to a Springfusor device to child's central venous access device (CVAD) daily, needing only three brief HiTH visits per week for clinical review and medication delivery. We aim to assess impact on clinical outcomes, service delivery and family satisfaction with this novel application of Springfusor use.

Methods: Pilot commenced 3rd July 2023. Prospective consent for data collection on clinical outcomes including length of stay, number of HiTH visits required, and complications including central-line associated bloodstream infections (CLABSI). Clinical outcomes will be benchmarked against current oncology patients on HiTH receiving standard intravenous anti-fungal prophylaxis via daily infusion. Parental satisfaction of the delivery method will be assessed with a Likert scale parental survey upon completion of course of intravenous fungal prophylaxis.

Results: Data collection for the first ten patients in the trial will be reported and is anticipated to reduce the number of HiTH visits required for this cohort by at least 50%. Pilot patients will be benchmarked against HiTH clinical registry outcomes of patients on daily intravenous micafungin for preceding 12 months and oncology inpatient CLABSI rate of 0.25-0.76 per 1000-line days in first quarter of 2023. Parental satisfaction for practice change will be reported.

Conclusions: We anticipate that the novel use of springfusor will allow increased patient and family flexibility to administer anti-fungal prophylaxis at a convenient time and avoid delays awaiting HITH daily visits, with increased service capacity, through reducing frequency and duration of home visits.

Haddon, Matthew & Simmer, Lucy

Pain in children with cerebral palsy following reconstructive hip surgery

Plenary Session 2 – Implementation & Translation, 9 November 13:30-15:15

Matthew Haddon, Lucy Simmer, Katherine Stannage, Liesel Burger, Noula Gibson, Nadine Smith, Anna Gubbay

Physiotherapy, Orthopaedic and Kids WA Departments – Perth Children's Hospital

Background: Cerebral palsy (CP) is the most common physical disability in childhood. Children with CP who use wheelchairs for mobility [Gross Motor Function Classification System (GMFCS) levels IV-V] may require reconstructive hip surgery for hip displacement. Post-operative pain can be significant and is complicated by co-occurring chronic pain, seizures, and respiratory disease. Little research has explored the post-operative pain experience of these children.

Methods: A mixed-methods retrospective audit on patients with CP (GMFCS levels IV-V) who underwent reconstructive hip surgery from March 2021-March 2022. This involved an audit of patient medical records, semi-structured interviews with caregivers at least six months after surgery, and survey of key staff members.

Results: Thirteen children with CP were included. The hospital length of stay, medications utilised, and a range of complications during admission were some of the information reported. Median time to return to pre-operative levels of pain and function was 3.75 months and 5.5 months, respectively. Pain described by parents during admission and upon discharge was high. Ten caregivers were interviewed and 16 staff responded to surveys, highlighting themes regarding their experiences and suggested improvements to service provision. Twelve multi-disciplinary recommendations were made based on this information to optimise the pain experiences for these children. Several recommendations have been implemented with further changes and subsequent re-evaluation of outcomes planned.

Conclusion: Post-operative pain is common in children with CP following reconstructive hip surgery and can persist for several months. A collaborative multi-disciplinary approach is necessary to optimise the peri-operative pain experience for these children.

Haripersad, Yasheer

Chronic Thrombocytopenia at an Australasian Tertiary Paediatric Hospital: Finding Molecular Clues

Plenary Session 4 – Implementation & Translation, 10 November 9:00-10:30

Haripersad YV[1,2], Carter TL[1-4]

[1]Perth Children's Hospital, [2]PathWest Laboratory Medicine WA, [3]Telethon Kids Cancer Centre, [4]The University of Western Australia

Background/ Motivation: Challenges in evaluating isolated chronic thrombocytopenia include the complexity and feasibility of traditional methods and differences in aetiology and the clinical course in paediatrics compared to adult practice. The advent of molecular evaluation with high throughout sequencing holds promise to accurately classify and appropriately individualise management.

Objective: To characterise our patients with thrombocytopenia, who completed molecular testing and to determine its effectiveness in our real-world cohort.

Approach/ Method: A retrospective audit of all patients with thrombocytopenia at our paediatric Hospital who completed molecular testing over a 36-month period were included. Pre-defined demographic, clinical, basic laboratory, and molecular testing results were evaluated.

Findings/ Results: 36 cases for evaluation were identified. After exclusion criteria, a causative likely/pathological mutation was detected in 38% (8/21) of children with isolated chronic thrombocytopenia. A further 2 unrelated cases that may represent a novel pathological phenotype with heterozygous pathological mutations in only single alleles were detected.

Conclusion: Molecular testing in thrombocytopenia is an innovative method that when properly selected is useful and can be translated to future improvements in routine Paediatric Haematology practice.

Hasslacher, Izza

Mentalizing Capacity of Adolescents with BPD Features following an MBT Treatment Program

CAMHS Session, 8 November 12:00-13:25

Izza Hasslacher[1], Giulia Pace[1], Ivan Salmin[1], Carl Fletcher[1], Georgia Brealey[2], Jemima Robinson-Lake[2], Matthew Ruggiero[2].

[1]Touchstone, Child and Adolescent Mental Health Service, Bentley, Western Australia, Australia; [2]Child and Adolescent Health Service, Bentley, Western Australia, Australia

Borderline personality disorder (BPD) is a severe mental disorder characterised by affective instability, high rates of comorbid mental disorders, high risk of repetitive self-harming, and extensive use of treatment, resulting in high cost to the health care system. Disorganisation of the attachment system is the key aspect of the psychopathology of BPD and individuals with disorganised attachment may show both marked deficits in mentalization, and a tendency for hypermentalization. Evidence suggests that key psychotherapies such as mentalization-based therapy (MBT) is found to have significant effects on BPD symptoms. The capacity to attribute mentalizing to others can be measured using the Movie for the Assessment of Social Cognition (MASC) and Five Minute Speech Sample (FMSS). Touchstone is a specialised service established in 2015, serving young people aged 12-17 experiencing symptoms of BPD. Patients experience an intensive MBT-based day therapy programme within the context of an adapted therapeutic community model for 6 months. Participant's mentalizing capacity was assessed using the MASC and the FMSS at two-time points; on pre-admission to the program and 6-months later at discharge from the program. Results found a statistically significant increase in mentalizing scores between pre- and post-program using the MASC, $t=4.52$, $p<.001$. This study found that there is a significant increase in mentalizing scores between the participants on the MASC prior to attending Touchstone programme and at discharge from the programme. This finding suggests an improvement in participants' mentalizing ability after attending the 6-month intensive MBT based treatment programme.

Jeffs, Emma

Exploring Collaboration in an Interdisciplinary Meeting, Perceptions of Nursing Involvement

Community Nursing Session, 10 November 13:30-16:30

Ms Emma Jeffs[1,2,3]; Prof Clare Delany[1,2]; Prof Fiona Newall[1,2]; A/Prof Sharon Kinney[1,2]

[1]Royal Children's Hospital Melbourne; [2]University of Melbourne; [3]Women's and Children's Hospital Adelaide

Local clinical department Morbidity and Mortality meetings (M&Ms) seek to improve patient care through discussing patient death and adverse events. Historically M&Ms are driven by doctors, but there is interest in including other professional groups in these important discussions. The involvement and collaboration of nurses in M&M has limited exploration in published literature.

Aim: To explore perceptions of nurse participation in M&Ms in paediatric acute care

Qualitative Case Study Methodology provided a framework to triangulate data from M&M observations (n=32) and semi-structured interviews with meeting attendees (n=44). These data were analysed using reflexive thematic analysis and themes related to nursing involvement and multidisciplinary collaboration were identified.

Three areas of beneficial nursing contribution to M&M were identified: 1) Nurses could present a more person-centred viewpoint because of their close and sustained relationship with the child and family. 2) Nurses could give context and bring richness to discussion, through describing experience of processes and systems from a different vantage point. 3) Demonstrating multidisciplinary cooperation in the meeting promoted a positive and collaborative workplace culture. There was also critique of nursing contribution in the meeting, with some doctors concerned that nurses may steer conversation from objective discussion of clinical facts to subjective analysis or emotional debrief.

These findings suggest a way to build on the strengths of nursing contribution in M&Ms, and address concerns. Reframing 'emotion' and 'subjectivity' as context building and person-centred allows nursing input to be valued and sought after, as clinicians establish real world understanding of issues in care.

Jolly, Arielle

FOOTPRINTS: Follow-On Outreach - Psychosocial Support for Acutely Bereaved Families in PICU

Nursing Session, 8 November 14:00-17:00

Arielle Jolly, Nick Williams, Simon Erickson, Fenella Gill, Jacqueline Reid, Jenipher Chumbes-Flores, Kelly Higgins, Leisa Wilson, Deborah Atkinson & Juliet King.

Perth Children's Hospital Paediatric Critical Care, Curtin University

Aim: The aim of this study is to design, implement and measure the effect of a novel bereavement service to follow-up families whose children have died acutely and unexpectedly in PICU.

Background: Through experience, feedback from recently bereaved families, and a review of existing services, we have identified a gap in evidence-based bereavement care and an opportunity to improve outcomes for grieving families. Unlike patients who have life-limiting conditions and those who die expected deaths, children who present acutely to PICU and subsequently die do not fall under the remit of the Palliative Care Team, and therefore their families do not receive structured bereavement follow-up. However, due to the rapid and traumatic nature of the child's death they have unique and significant grief factors putting their family members at high risk of PTSD, complicated grief, and poor family functioning.

Methodology: To develop and test a bereavement service designed for these families, we propose a two-phase project. Our target population includes any family of a child who unexpectedly dies in PICU excluding those already under the care of the Palliative Care Team. Phase One will consist of consumer focus groups to gather qualitative data about family experiences and to involve eligible bereaved families in the design of the acute bereavement service. Phase Two will be a mixed-methods, sequential cohort design involving the implementation and testing of the FOOTPRINTS Bereavement Service.

Significance: This project exemplars the CAHS symposium theme of Translation as the results will build a case for or against the establishment of an ongoing acute bereavement service.

Kelly, Chelsea

Supporting detection of clinical deterioration in children with dark-coloured skin

Nursing Session, 8 November 14:00-17:00

Chelsea Kelly[1,2] Emeritus Professor Gavin Leslie[1,3] Dr Pamela Laird[4] Dr Scott Stokes[5] Associate Professor Fenella Gill[1,2]

[1]School of Nursing Curtin University, Bentley WA 6102, [2]Perth Children's Hospital, Child and Adolescent Health Service, Nedlands, WA 6009, [3]Fiona Stanley Hospital, South Metropolitan Health Service, Murdoch WA 6150, [4]Telethon Kid Institute, Nedlands WA 6009, [5]Broome Hospital, WA Country Health Service, Broome WA 6725

Background: Observable signs of clinical deterioration in hospitalised children continue to be missed by health professionals. These signs may present differently in children who have dark-coloured skin. Recent research has established a lack of diverse skin representation in medical and nursing texts and education, but the effect of this on assessment skills is unclear. Whilst some literature exists on the clinical assessment considerations for patients with dark-coloured skin, there appears to be a deficit of research about the physical signs of clinical deterioration in children with dark-coloured skin.

Aim: To develop an evidence-based framework to support the detection of early signs of clinical deterioration in hospitalised children with dark-coloured skin.

Methods: The study will comprise of four components: 1) a scoping review, 2) focus groups and individual interviews with paediatric registered nurses and other expert health professionals to describe how clinical deterioration is identified in hospitalised children with dark-coloured skin and the perceived barriers and facilitators to detecting clinical deterioration, 3) individual interviews with carers of children with dark-coloured skin to identify how they notice changes in their child's condition that are indicative of deterioration in hospital, and 4) evidence synthesis to form an evidence-based framework.

Results: Preliminary findings from the scoping review indicate that available information on assessing children with dark-coloured skin is lacking, often limited to opinion pieces published more than 20 years ago.

Conclusion: Considering the apparent literature gap, there is need for investigation into improving assessment of clinical deterioration in children with dark-coloured skin.

Kelly, Mary

Cold Chain Management During Neonatal Transports

Nursing Session, 8 November 14:00-17:00

M. Kelly[1,2], J. Blacker[1,2], K. McDonald[1,2], K. Moon[2,3], J. W. Davis[1,2,4]

[1]Newborn Emergency Transport Service Western Australia, [2]Perth Children's Hospital, Child and Adolescent Health Service, Perth, WA, [3]Pharmacy Department, Perth Children's Hospital, Child and Adolescent Health Service, [4]School of Pediatrics, University of Western Australia.

Background: Maintaining the cold chain of medications during neonatal transports ensures medication stability and quality and minimises wastage.

Aim: To identify factors that may contribute to cold chain breaches during transport.

Methods: Data Libero CL loggers (ELPRO, Switzerland) were used to record storage temperatures of cold medications throughout neonatal transports and during storage in the automated drug machine fridge in the neonatal intensive care unit (NICU). Data from the loggers were downloaded and analyzed. There were 3 study phases: Phase 1 baseline: cold drugs stored in a 'freezer pouch' in the NICU fridge ready for transport. Phase 2: Trial of drugs outside cold pouch while stored in the NICU fridge, wrapped in single bubble foil and placed in a freezer pouch during transport): Phase 3: optimization (as per Phase 2 plus a second bubble foil layer). Average (high to low) temperatures were reported along with proportion (%) in temperature range (total number of days). All three groups' proportions were compared using Pearson's Chi-Squared test.

Results: Cold storage between transports and heat gain prevention were key targets for improvement: Phase 1 (baseline): Baseline temperature: 1.8 (17.3 to -5.9) °C; Phase 2 (single bubble wrap in freezer pouch): 6.4 (15.5 to -4.2)°C; Phase 3 (double bubble wrap when in freezer pouch): 5.8 (26.8 to -3.4) °C. Drugs in the range: 23% (20 days) vs 61% (17 days) vs 83% (35 days) ($p<0.0001$).

Conclusion: Temperature measurement of transport drugs that require cold storage is feasible but repeated monitoring and intervention are required.

Kerimofski, Katherine

Australian Psychologists' Knowledge, Confidence and Practices in Fetal Alcohol Spectrum Disorder Diagnostic Assessment

Lightning Talks, 9 November 11:00-12:00

Katherine Kerimofski, Kirsten Panton, Carmela Pestell

University of Western Australia

Fetal Alcohol Spectrum Disorder (FASD) is a neurodevelopmental disorder caused by prenatal alcohol exposure (PAE). There are many documented barriers to FASD diagnostic assessment, including a limited number of trained clinicians. This study aimed to establish baseline levels of Australian psychologists' knowledge and practices in FASD assessment. An online survey was completed by 106 Australian Psychologists, establishing demographics, knowledge about FASD, confidence in various aspects of FASD assessment and future training needs. Respondents reported a broad understanding of the FASD diagnostic term and potential harm of prenatal alcohol exposure (PAE), however most were not confident in their ability to conduct the psychometric assessments that form a diagnostic assessment of FASD, or ask about PAE. There was a significant positive correlation between the number of correct knowledge items and the confidence of psychologists in conducting FASD assessments. The clinical neuropsychologists demonstrated significantly greater knowledge and confidence in assessing for FASD and PAE compared to school, clinical and other psychologists. The majority of psychologists were more confident in their ability to apply the diagnostic criteria for other neurodevelopmental disorders. This was the first study surveying and comparing Australian psychologists' FASD knowledge. Recognition of FASD is growing in Australia, however, further work is required to improve clinicians' understanding of and confidence to complete FASD assessments in collaboration with a multidisciplinary team.

Kirkham, Lea-Ann

Microbiological surveillance of otitis media to inform vaccine policy and development

Plenary Session 3 – Innovation, 9 November 15:30-17:00

Elke Seppanen[1], Josephine Bayliss[1], Cristina Gamez[1], Danielle Headland[1], Shyan Vijayasekaran[2,3], Jafri Kuthubutheen[2,3], Hayley Herbert[2,3], Peter Friedland[3,4], Valerie Swift[1], Chis Brennan-Jones[1,5,6], Peter Richmond[1,3,7], Ruth Thornton[1,8] and Lea-Ann Kirkham[1,8]

[1]Wesfarmers Centre of Vaccines and Infectious Diseases, Telethon Kids Institute, The University of Western Australia, Perth, Western Australia; [2]Department of Otorhinolaryngology, Perth Children's Hospital, Perth, Western Australia; [3]School of Medicine, University of Western Australia, Perth, Western Australia; [4]Department of Otorhinolaryngology, Joondalup Health Campus, Perth, Western Australia; [5]School of Allied Health, Faculty of Health Sciences, Curtin University, Perth, Australia; [6]Department of Audiology, Perth Childrens Hospital, Perth, Western Australia: [7]Child Health Research Network, Perth Children's Hospital, Perth, Western Australia; [8]Centre for Child Health Research, University of Western Australia, Perth, Australia

Middle ear infection (otitis media) is the most common reason for antibiotic use and surgeries in children <5 years. With ~34,000 grommet surgeries conducted in Australia annually, treatment costs exceeding $500million/year, and wait-times for grommet surgery up to 2 years – strategies to reduce the rates of otitis media would significantly reduce hospital, and wider societal costs.

The microbiology of otitis media varies geographically and over time, with vaccines (i.e. pneumococcal conjugate vaccine [PCV]) having limited impact to date. In our previous microbiological surveillance of otitis media in 2007-2009, we identified nontypeable *Haemophilus influenzae* as the major pathogen (for which there are no vaccines), followed by non-vaccine types of the pneumococcus. With higher-valency pneumococcal conjugate vaccines now in use (PCV13) and on the horizon (PCV15+), it is likely that vaccine coverage will increase, but so will replacement disease from non-vaccine pneumococci and other species.

We are conducting the OMinWA study at Perth Children's Hospital and Joondalup Health Campus. This contemporary cross-sectional study of otitis media microbiology in children <5 years is from 2022-2024. We have recruited 113/400 children to date: 82/200 otitis-prone children undergoing grommet surgery, 31/200 non-otitis-prone children undergoing surgery for non-infectious reasons. Nasopharyngeal swabs, blood, saliva, and middle ear fluid (cases only, plus adenoids when undergoing grommets+adenoidectomy) are collected and stored for microbiological (and future immunological) analyses.

Understanding the contemporary microbiology of otitis media in each region is important to accurately inform national vaccine policy and provide evidence to support development of improved prevention and treatment options.

Kuster, Jorren

Spectral flow cytometry to profile immune system alterations in paediatric, adolescent, and adult mice in health and childhood cancer

Lightning Talks, 9 November 11:00-12:00

Jorren Kuster[1,2] Omar Elaskalani[1,2], Raelene Endersby[1,2], Joost Lesterhuis[1,2]

[1]Telethon Kids Institute, Perth WA, [2]Centre for Child Health Research, University of Western Australia, Perth WA

Most preclinical studies for childhood cancers rely on fully developed animal models. However, childhood cancers arise in developing tissues and in the context of a growing host. Adult animal models potentially disregard crucial differences in the immune system, which in children, is a mostly developing immune system. Increasing evidence shows the importance of the tumour-immune microenvironment on the development of cancer and its profound effect on therapeutic efficacy.

Spectral flow cytometry, an innovative cell analysis technology, is used to profile immune system alterations in paediatric, adolescent, and adult mice. This new technology allows for the analysis of up to approximately 45 parameters per single cell, achieving a deeper insight on different immune cell populations simultaneously. It will not only identify cell populations but also focusses on the general functional state of these cells.

Healthy tissue, relevant to the origin and/or location of several childhood cancers, will be examined for age-related changes in the immune cell phenotype in mice of different age. This will provide us with a general overview of major immune cell populations in normal development. Subsequently, paediatric, adolescent, and adult mice with childhood cancer will be evaluated for potential age-related immunological differences upon tumour growth and the effect on the tumour immune microenvironment. This work provides a baseline for future work into childhood-specific cancer immunotherapies. Moreover, the benefit of such work may go beyond the cancer field to benefit all researchers who uses mouse models to study childhood diseases.

Lane, Margie & Gill, Fenella

Understanding Research Capacity and Culture of Nurses at the Child and Adolescent Health Service,

Community Nursing Session, 10 November 13:30-16:30

Emeritus Professor Gavin Leslie[1], Associate Professor Fenella Gill[2,3], Dr Meredith Green[4], Isha Sharma[5], Elayne Downie[6], Margie Lane[2]

[1]SMHS Nursing & Midwifery Research Unit; [2]Nursing Research, CAHS; [3]Curtin University School of Nursing; [4]Community Health, CAHS; [5]CAMHS, CAHS; [6]Neonatology Services, CAHS

Background: Health services with a strong research culture report lower mortality rates, higher patient and staff satisfaction, and better organisational performance. A strong research culture, supportive infrastructure, collaboration, and individual competence are antecedents for research capacity. Measuring research capacity and culture (RCC) is important for understanding baseline research capabilities of a health service and assessing the effectiveness of capacity building interventions. The study was undertaken at two WA health services. This abstract reports on the Child and Adolescent Health Service (CAHS) findings.

Aim: To understand the perceived Nursing RCC at CAHS.

Methods: A cross-sectional survey of Level 2 -10 nurses at CAHS: Perth Children's Hospital, Community Health, Mental Health, and Neonatology between October – November 2022 using the validated RCC Survey Tool.

Results: A total of 202 nurses (16.4% response rate) completed the survey. Key workforce barriers to undertaking research included work roles taking priority and lack of research time (80 - 87%), staff shortages and lack of suitable backfill for research (53-65%), and lack of provisions to undertake research as part of their role (45%). Key skill barriers to research included inability to secure research funding (76%), writing an ethics application (72%), and writing publications in journals (67%). Key enablers to research included desire to develop research skills (69%), increased job satisfaction (62%), to identify problems that need changing (58%), and career advancement opportunities (52%).

Conclusion: The results identified opportunities to improve CAHS Nursing RCC. A series of recommendations were developed to build nursing research capacity, create a positive research culture, present clear nurse research pathways, and strengthen research resource support networks.

Langdon, Katherine

General health outcomes for children with cerebral palsy after hip surgery

Plenary Session 1 - Collaboration, 9 November 9:00-10:30

Katherine Langdon[1], Keerthi Anpalagan[2], Peter Jacoby[2], Katherine Stannage[3], Helen Leonard[2], Noula Gibson[4], Lakshmi Nagarajan[5], Kingsley Wong[2], Jenny Downs[2,6]

[1]Kids Rehab, Perth Children's Hospital, Perth, Australia; [2]Telethon Kids Institute, Centre for Child Health Research, The University of Western Australia, Perth, Australia; [3]Orthopaedics, Perth Children's Hospital, Perth Australia; [4]Physiotherapy, Perth Children's Hospital, Perth, Australia; [5]Neurology, Perth Children's Hospital; [6]Curtin School of Allied Health, Curtin University

Nearly 2% of children in Australia have intellectual disability. Children with severe developmental impairments have limited mobility which is detrimental to hip development. Hip surveillance informs the timely application of non-surgical and surgical managements to prevent or reduce deterioration of the hips. Complex hip surgeries have been associated with reduced pain and better quality of life. This study evaluated the associations between complex hip surgery and subsequent hospitalisations in children with intellectual disability. We conducted a retrospective cohort study using linked administrative, health, and disability data from Western Australia. Children born between 1983 and 2009 who underwent complex hip surgery by end 2014 were included (n=154). A self-controlled case series analysis using Poisson regression was used to estimate the age-adjusted effects of complex hip surgery on all-cause hospitalisations and when the principal diagnosis was lower respiratory tract infection (LRTI) or epilepsy, for periods following the individual's first major hip surgery, compared to the year before surgery. Age adjusted incidence of all-cause hospitalisations decreased after surgery (year 1: IRR, 0.87 [95% CI, 0.74-1.02]; year 6: IRR, 0.57 [95% CI, 0.46-0.72]). The incidence of hospitalisations for LRTI increased (year 1: IRR, 1.03 [95% CI, 0.72-1.51]; year 6: IRR, 2.08 [95% CI, 1.18-3.68]). The incidence of hospitalisations for epilepsy decreased (year 1: IRR 0.93 [95% CI, 0.57, 1.54]; year>6: IRR, 0.72 [95% CI, 0.34-1.55]) after surgery. Complex hip surgeries may protect the overall health but not respiratory health of children with intellectual disability. Fewer hospitalisations suggest benefits from better musculoskeletal alignment.

Lee, Wei Hao

Study of Paediatric Appendicitis Scores and Management Strategies

Plenary Session 4 – Implementation & Translation, 10 November 9:00-10:30

Dr Wei Hao Lee, Dr Sharon O'Brien, Prof Meredith Borland

Emergency Department, Perth Children's Hospital

Objective: Abdominal pain is a common paediatric presentation in the emergency department (ED), and acute appendicitis is the most common cause of abdominal pain requiring surgery. This study aims to review and compare various clinical prediction scores (CPSs) for paediatric appendicitis.

Methods: A quantitative prospective observational study of eligible patients aged 5 to 16 years with abdominal pain and clinician suspicion of appendicitis presenting to Perth Children's Hospital (PCH) ED from November 2022 to May 2023 was conducted. Patient demographics, history of presenting complaint, examination findings, investigations, clinician suspicion for appendicitis, management, and outcomes were recorded. The Area Under Receiver Operative Characteristic Curve (AUC) of various CPSs were calculated whenever possible and compared to clinician gestalt.

Results: There were 481 patients enrolled during the study period with 147 (30.6%) with appendicitis confirmed on histology. A majority of patients had bloods (349/481, 72.6%) and/or ultrasonography (280/481, 58.2%) in ED as part of their workup. The appendix was only visualised in 178 (63.6%) of ultrasounds performed. The AUC for Alvarado Score (n=380), Pediatric Appendictis Score (PAS) (n=316) and pediatric appendicitis risk calculator (pARC) (n=318) were 0.80, 0.79, and 0.90 respectively, and the AUC for clinician gestalt was 0.73 without bloods (n=233) and 0.88 with bloods (n=154).

Conclusion: The pARC had a higher predictive accuracy with an AUC of 0.90 than Alvarado, PAS, and clinician gestalt with or without bloods. The study underscores the potential value of pARC in aiding clinical decision-making and improving diagnostic accuracy for potential cases of paediatric appendicitis in the ED.

Macchiaverni, Patricia

Maternal Prebiotic Supplementation Modifies Human Milk Immunological Composition linked to Allergy

Plenary Session 3 – Innovation, 9 November 15:30-17:00

Divakara N[1,2], Saraswati C[2], Dempsey Z[2], Cooper M[2], Prescott S[2], Silva D[2], Palmer DJ[1,2], Verhasselt V[1,2], Macchiaverni P[1,2]

[1]School of Medicine, The University of Western Australia, Perth, WA, Australia; [2]Telethon Kids Institute, The University of Western Australia, Perth, WA, Australia

Background: Human milk is rich in immunomodulatory factors that shape the trajectory of infant immune responses. How to modulate the levels of these compounds to prevent allergy in children is unknown. We aim to determine whether maternal prebiotic supplementation modulates the levels of bioactive compounds in human milk that may promote immune regulation.

Methods: This human milk study is nested within the SYMBA, randomised controlled trial (ACTRN12615001075572) investigating the effects of maternal prebiotic (GOS/FOS) supplementation during pregnancy and lactation on child allergy risk. One hundred mother-infant dyads who received prebiotics (n=46) or placebo (n=54) were selected for this study based on the availability of 2-, 4-, and 6- months of lactation samples. We analysed the levels of 27 compounds (growth factors, cytokines, immunoglobulins, and allergens) that are expected to influence allergy risk.

Results: The levels of cytokines, growth factors, and allergens were variable among mothers. Only immunoglobulins (IgA, IgM, IgG1-4) were detected in the whole population at all time points. Prebiotic supplemented women were found to have decreased levels of TGF-β1 and sCD14 in human milk collected at 2 and 6 months, respectively. The frequency of samples with detectable IL-5, was increased at 4 and 6 months in the prebiotic group compared to control group.

Conclusion: This study demonstrates for the first time that consumption of GOS/FOS during pregnancy and lactation modifies milk composition. Further analysis will reveal any associations between the levels of these compounds in milk and allergy risk, providing evidence for better dietary recommendation for pregnant/lactating women.

Machado, Savannah

Colostrum - the missing link for successful food allergy prevention?

Early Career Session, 10 November 13:40-16:35

Savannah Machado[1,2], Nivedithaa Divakara[1,2] Akila Rekima[1,2], Valerie Verhasselt[1,2]

[1]Breastfeeding and Immunology Team, Telethon Kids Institute, Perth, WA, Australia; [2]School of Medicine, The University of Western Australia

Background: Food allergy prevention guidelines recommend introduction of allergenic foods in the infant diet between 4-6months of age, to promote immune tolerance. However, a significant number of children are unresponsive to this strategy. Colostrum is the first food of the newborn and rich in factors that have the potential to promote gut immunity development. We hypothesise that colostrum is critical for successful oral tolerance at weaning and food allergy prevention.

Method: We established a mouse model of colostrum deprivation, where pups were cross fostered at birth and either physiologically breastfed (CTRL) or breastfed by mothers at an advanced lactation stage. At weaning, pups received orally either 1mg egg antigen (OVA) or water everyday over the span of 5 days to induce oral tolerance. OVA food allergy was then induced to test the efficacy of oral tolerance.

Results: 90% of both Ctrl and colostrum-deprived mice showed diarrhea after food allergy induction to OVA. Whilst the introduction of OVA at weaning successfully inhibited the development of diarrhea in Ctrl mice, this approach was ineffective in colostrum-deprived mice, with 10% and 60% of mice experiencing diarrhea respectively. In contrast, OVA-specific IgE and mMCP-1 were profoundly decreased in both Ctrl and colostrum-deprived mice, compared to mice without oral tolerance induction.

Conclusions: Our data reveals that colostrum intake at birth might be required for food allergy prevention by early introduction of allergen in the diet. These findings may be especially important in the context of the widespread suboptimal colostrum feeding in newborns.

Mandzufas, Joelie

Dietary health of apartment residents in Australia

Lightning Talks, 9 November 11:00-12:00

Joelie Mandzufas[1,2], Siobhan Hickling[1], Sarah Foster [3], Gina Trapp [1,2]

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Apartment living is highly prevalent in many cities globally, and with the Australian population predicted to double in the next 50 years, high density living will become more common, particularly in our larger cities. However, there has been little research investigating residents' unhealthy food practices which may impact their risk of overweight and obesity and diet-related chronic diseases. Barriers to healthy eating may be found in apartment design features that make the carriage, storage and preparation of fresh food more difficult, and the surrounding neighbourhood food environment. It is essential to understand the barriers and enablers of healthy eating presented by different apartment design features and the surrounding community food environment, to inform future apartment building design guidelines and urban planning policies supporting apartment residents' dietary health. The purpose of this PhD project is to investigate the impact of apartment living on food practices and dietary intake in adults and children in Australia via a mixed-methods research design. The Household, Income and Labour Dynamics in Australia (HILDA) Survey and High Life Study data is being utilised to quantitatively examine the relationships between apartment design features and the surrounding food environment, and apartment dwellers' food practices and dietary intake. Findings from this phase will inform qualitative participatory photo mapping and elicitation interviews with Australians living in 'micro-apartments' (floorspace <37m^2) and families living in apartments. The project will result in tangible recommendations for apartment design, urban planning, and health promotion interventions, to safeguard the nutritional health of apartment residents.

Marpole, Rachael

Medical service usage data of children with cerebral palsy at greatest risk for RESPiratory hospital Admissions (RESP-ACT)

Wal-yan Session, 8 November 12:00-13:00

Dr Rachael Marpole[1,2] Dr Andrew Wilson[1,2] Julie Depiazzi[1] Dr Katherine Langdon[1,2] Lisa Moshovis[3] Dr Asha Bowen[1,2] Dr Marie Blackmore[2] Dr Noula Gibson[1,2]

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Introduction: Morbidity and mortality in children with severe cerebral palsy (CP) from respiratory illness is common. The true health costs of respiratory illness in CP is unknown as most reports only include tertiary hospital health usage.

Objective: To describe medical service use among children with CP at risk of respiratory illness over a 12-month period.

Methods: Medical usage data was collected for a feasibility randomised control trial of a complex multidisciplinary intervention to reduce respiratory hospital respiratory admissions of children with CP who have greatest respiratory illness risk (RESP-ACT). Twenty children with CP (10 control; 10 treatment), aged 0-12 years were followed up between January 2022 and July 2023. Medical usage data from any medical providers in the public or private sector was collected. Data was collected by a blinded assessor.

Results: Twelve-month data was available for 16 of the 20 enrolled participants. Total medical use of participants over the year for the treatment vs control groups were: GP visits 6vs57; emergency presentations 29vs54; respiratory admissions 1vs104 days; antibiotics for respiratory illness 55vs208 days.

Conclusion: Collecting medical usage data from tertiary and non-tertiary care was possible. There is widespread use of health services in this group. Children in the control group had higher unplanned medical utilisation. Understanding health service utilisation pattens will enable a targeted knowledge brokering strategy to the medical providers most likely to see children at risk of respiratory illness.

McAlister, Sonia

Early life antibiotic exposure impacts infant pneumococcal vaccine responses

Plenary Session 3 – Innovation, 9 November 15:30-17:00

Sonia McAlister[1,2], Michelle Clark[3-5], Feargal Ryan[6,7], Miriam Lynn[6,7], Mary Walker[3], Lynne Giles[8], Anita van den Biggelaar[1,2], Ruth Thornton[1,2], Peter Richmond[1,2,9], Helen Marshall[3-5,8] and David Lynn[6,7].

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Aim/Background: Antibiotic exposure in early life can lead to altered gut microbiota which may influence immune development and potentially impact vaccine responses. This study aimed to assess pneumococcal vaccine responses in infants with and without early antibiotic exposure.

Methods: 191 eligible term infants were grouped by reported antibiotic exposure at study visit 1, aged 6-8 weeks. This included n=80 unexposed controls and n=111 infants exposed to antibiotics. Children were vaccinated as per the National Immunisation Program, except the pneumococcal conjugate vaccine (PCV13) was administered at 2, 4 and 15-months of age. Serum-IgG against PCV13 serotypes were measured by multiplexed immunoassay at 6 weeks, 7-months and 15-months old. IgG geometric mean concentrations (GMCs) and proportions of children achieving antibodies levels associated with seroprotection against pneumococcal disease (IgG ≥ 0.35µg/ml) were compared between groups at each time-point.

Results: Generalised linear modelling highlighted a significant reduction in PCV-specific IgG GMC in antibiotic exposed infants compared to unexposed controls. This was significant for 6/13 serotypes at 7 months, and 7/13 vaccine serotypes at 15 months. At 7 months old, most infants (>79%) demonstrated seroprotection to each PCV13 serotype. However, antibiotic-exposed infants had reduced odds of maintaining IgG ≥0.35ug/ml for serotypes 6B, 9V, 14 and 19A compared to unexposed infants at 15-months.

Conclusion: Early life antibiotic exposure can influence infant vaccine responses and maintenance of immune-protection. Further investigations to understand the mechanisms and implications for susceptibility to breakthrough invasive pneumococcal disease are underway using blood and stool samples concurrently collected during this study.

McCausland, Kahlia

Promotion of e-cigarettes on TikTok and regulatory considerations

Early Career Session, 10 November 13:40-16:35

Jonine Jancey[1], Tama Leaver[2], Katharina Wolf[3], Becky Freeman[4], Kevin Chai[5], Stella Bialous[6], Marilyn Bromberg[7], Phoebe Adams[1], Meghan Mcleod[1], Renee Carey[5] and Kahlia McCausland[1]

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In 2017, 14% of Australian secondary school students reported ever-use of e-cigarettes. Use increased with age, from 4% of 12-year-olds to 21% of 17-year-olds, and boys (17%) were significantly more likely than girls (10%) to report ever-use. A 2021 survey conducted in NSW of teenagers aged 14–17 found that 32% of the sample had ever vaped and 16% had vaped in the past month.

TikTok is one of the fastest-growing social media platforms (1.2b global monthly active users) with 31% (9% male; 22% female) of Australian users aged 13-17 years old. Research demonstrates e-cigarettes are promoted on TikTok and there is evidence linking positive social media messaging with e-cigarette use among young people.

This research aims to understand how e-cigarettes are promoted on TikTok and provide insight into the effectiveness of TikTok's content policy.

Seven popular keywords were used to identify TikTok accounts and associated videos related to e-cigarettes. Eligible posts were subject to content analysis.

Collectively, the 264 videos received 2,470,373 views. The overwhelming majority of videos (98%) portrayed e-cigarettes positively. Half (50%) referred to vaping community or shared identity, and around 10% used humour or animations. A total of 69 posts (26%) clearly violated TikTok's content policy.

There is a need for evidence-informed and engaging anti-vaping content on platforms such as TikTok to counter or moderate the pro-vaping content. Stricter government regulation and sufficient enforcement of e-cigarette promotions is also needed to ensure that social media platforms do not promote these harmful products, particularly to young people.

Middleton, Natalie

Establishing Australia's First Hospital-based Paediatric Sepsis Program and Embedding Consumer Involvement Throughout – a Summary so far…

Nursing Session, 8 November 14:00-17:00

Natalie Middleton

Child and Adolescent Health Service

Sepsis, is a leading cause of childhood mortality worldwide and in Australia, disproportionately affects vulnerable groups including infants, Aboriginal and Torres Strait Islander children, and children with chronic and complex medical conditions. The impact of sepsis continues for years after an acute episode, with more than one in three children experiencing ongoing disability.

The CAHS Paediatric Sepsis Program launched in 2022 has developed innovative tools to recognise, manage and provide coordinated, time-critical, best-practice paediatric sepsis care. This enables the better identification of children with or at risk of sepsis within existing resources and escalation processes so to balance identifying sick patients while limiting over-triggering as much as possible.

The CAHS Sepsis Program Consumer Reference Group are consumers with lived experience of sepsis; they are passionate people who want to make a difference so that no other families will have to experience what they have gone through. The consumer group identified gaps with health translation and major challenges with the transition from hospital to home and accessing care and support post discharge. They are a powerful driving force for change within the CAHS organisation.

Through collaboration between healthcare professionals and consumers, we have established the one of the first paediatric sepsis care platforms in Australia and are now working to develop the first paediatric post-sepsis care platform to optimise functional outcomes, avoid rehospitalisation, and manage ongoing impacts post-sepsis and provide bereavement support.

Mill, Emma

Assessing long-term somatosensory function in children following hand and upper limb burns

Lightning Talks, 9 November 11:00-12:00

Emma Mill

Curtin University, Telethon Kids Institute, Child & Adolescent Health Service

Somatosensation refers to all aspects of touch and proprioception that contribute to a person's awareness of his or her body parts and the direct interface of these with objects and the environment.

Over 200 children are admitted to the Burns Unit at PCH every year. These children and their families frequently report somatosensory problems including persistent itch, pain and altered sensation. We know that burn injuries are painful & traumatic, interrupting sensory processing. We want to improve and restore the somatosensory function of our children ultimately, however currently we have no platform to use to comprehensively assess and define their somatosensory function.

The aims of my PhD are: 1. To improve understanding of the long-term somatosensory function of children following burn injuries. 2. To identify appropriate evidence-based assessments for use. 3. To describe the long-term somatosensory profile of 50 children at PCH more than one year following a hand or upper limb burn. 4.To determine if there is a relationship between grip strength and somatosensory function in our children.

Methods include doing a scoping review of the literature and conducting a prospective cross-sectional study assessing 50 children at one time-point using somatosensory assessments. The children will be one year or more following a hand or upper limb burn injury who are aged 6 to 16 years at the time of assessment.

Morgillo, Samantha

A platform of evidence-based brief tools to measure dietary behaviours across childhood

Early Career Session, 10 November 13:40-16:35

Lucinda K Bell[1], Samantha Morgillo[1], Rebecca K Golley[1]

[1]Caring Futures Institute, College of Nursing and Health Sciences, Flinders University, Bedford Park South Australia, Australia

Background: Quick and robust measurement of dietary intake in childhood is important for monitoring population trends and evaluating nutrition-promotion programs. Flinders Caring Futures Institute researchers and CRE-EPOCH collaborators have developed evidence-based brief tools that measure dietary intake and obesity-related behaviours across childhood (6mo to <20yrs).

Objective: To develop an innovative, user-friendly, online platform to facilitate the use of these tool(s) into research, practice and policy.

Methods: In 2021, an online platform of measurement tools (n=9), with data management and analytical protocols was developed, hosted on the Flinders webpage. Using a streamlined process (REDCap database), respondents reported demographic details, the tool(s) they would like access to and their intended use of the tool(s) via a request form. Respondents received the tool(s) via email and a 12-month follow up survey asking if and how the tools were implemented.

Results: As of August 2023, 82 respondents have made tool requests, totalling 364 individual tool requests across the 9 available tools, with intended use for research (n=51) and practice (n=37). Respondents were from six countries and held a range of practice, research, teaching, and/or policy positions across health care, university, government and non-government organisations. The follow up survey showed six (of 10) respondents utilised the tool(s) for community (n=3) or clinical research (n=2), and clinical practice (n=1).

Conclusion: The online platform supports the translation of evidence-based brief tools across research and practice, enabling routine and harmonised measurement of behaviours for evaluation of scaled-up early childhood obesity prevention programs and behaviour screening within healthcare settings.

Nelson, Helen

Giving Children a Voice to tell their own Experience of Health Care

Nursing Session, 8 November 14:00-17:00

Helen J. Nelson[1], Hayley Harrison[2], Katie McKenzie[3], Anne M. Williams[4,5], Girish Swaminathan[6], Evalotte Mörelius[7,8], Rohan Eshranghi [9]

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Background: The Australian Hospital Patient Experience Question Set (AHPEQS) is used to measure experience of care while in hospital. We adapted AHPEQS for the paediatric setting with parents, and parents asked for two surveys, one to be answered by parents and one for children. This meets with the right of children to be heard and taken seriously.

Aim: To understand the preferences of children and young people (aged 12-18 years) for reporting their own experience of health care. (CAHS HREC RGS04554)

Methods: A three-part study used content analysis of focus group discussions with children and young people, content validity of an adapted question set for children, and construct validity using confirmatory factor analysis.

Results: Children chose to adapt the AHPEQS by making minor changes to the wording of questions to reflect their experience of feeling empowered to participate in care. Content validity was demonstrated. Preliminary results for construct validity indicated a sound one-factor model: (n=138) RMSEA .046, CFI .996, TLI .995, composite reliability .948.

Discussion: Children and young people valued the experience of being asked to participate in survey design. Changes to language reflected children's experience of feeling safe, in contrast to an experience of feeling dismissed or overpowered by health service providers.

Conclusion: AHPEQS-Child is a reliable and valid measure of children's own experience of care when in hospital. The questions align with validated question sets for adults and for parents, providing a standard measure to assess where to make improvements.

Ng, Curtise K.C.

What to Expect from AI for Radiation Dose Reduction in Pediatric Radiology?

Plenary Session 5: Innovation, 10 November 10:45-12:00

Curtise K.C. Ng

Curtin Medical School, Curtin University, GPO Box U1987, Perth, WA 6845, Australia & Curtin Health Innovation Research Institute (CHIRI), Faculty of Health Sciences, Curtin University, GPO Box U1987, Perth, WA 6845, Australia

Medical imaging is a crucial element of modern healthcare. However, most of the medical imaging modalities use ionizing radiation for radiological examinations. As children are more susceptible to potential harmful effects of ionizing radiation, radiation dose reduction is particularly important in pediatric radiology. Recently, AI has been introduced into radiology for dose reduction. Literature has shown that the use of AI in radiology is able to further reduce the dose without sacrificing image quality. The purpose of this presentation is to systematically review applications of AI for radiation dose reduction in pediatric radiology and their performances. Literature search with use of electronic databases was conducted. Sixteen articles that met selection criteria were included. The commonest AI technique and architecture used for dose reduction in pediatric radiology was deep convolutional neural network (CNN). More than 80% of the included studies applied AI to reduce dose of pediatric abdomen, chest, head, neck, and pelvis computed tomography (CT), CT angiography, and dual-energy CT via deep learning image reconstruction. The vast majority of the studies reported that 36-70% dose reduction could be achieved without affecting diagnosis. Although promising outcomes are noted in most of the studies with use of commercial AI products based on deep CNN, comparable performances could be achieved by homegrown models as well. Nonetheless, the included studies only covered three imaging modalities including CT, positron emission tomography/magnetic resonance imaging and mobile radiography with small sample sizes. Further investigation of the value of AI for dose reduction in pediatric radiology is necessary.

Nguyen, Julie

Wrist-Worn Oximetry: The accuracy and it's automated analysis for OSA screening in children

Plenary Session 3 – Innovation, 9 November 15:30-17:00

Mon Ohn[1,2,3], Kathleen J Maddison[4,5], Julie Nguyen[1,3,6], Daisy Evans[3,6,7], Natasha Bear[8,9], R. Nazim Khan[3,10], Peter R Eastwood[11], Britta S. von Ungern-Sternberg[3,6,12], Andrew C Wilson[2,13], Jennifer H Walsh[4,5]

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Obstructive sleep apnoea (OSA) increases the perioperative adverse event risk in children. While polysomnography (PSG) remains the reference standard for OSA diagnosis, oximetry is a valuable screening tool. Visual analysis of desaturation clusters derived from a tabletop device using the McGill oximetry score is the traditional practice. However, automated analysis of wearable oximetry data could be an alternative. This study investigated the accuracy of wrist-worn oximetry with automated analysis as a preoperative OSA screening tool.

Children scheduled for elective adenotonsillectomy underwent concurrent overnight polysomnography and wrist-worn oximetry. Polysomnography determined the obstructive apnoea-hypopnea index (OAHI). Oximetry data were auto-analysed to determine 3% oxygen desaturation index (ODI3) and visually scored as per McGill criteria. A logistic regression model assessed the predictive performance of ODI3 for detecting the presence and severity of OSA after adjusting for covariates.

Seventy-six children (34 females), aged (mean±SD) 5.7±1.6 years were classified, based on polysomnography -derived OAHI, as no OSA (n=31), mild (n=31), and moderate-severe OSA (n=14). Oximetric ODI3 was identified as the sole predictor of moderate-severe OSA (OAHI≥5events/hr) (OR 1.38, 95%CI 1.15, 1.65, p=0.001). The best diagnostic performance was at ODI3=5events/hr: 78.6% sensitivity, 75.8% specificity (ROC AUC=0.857). ODI3 was also more sensitive than the McGill oximetry score in diagnosing moderate-severe OSA (78.6% by ODI3 vs 33.0% by McGill). However, the performance was suboptimal for any level of OSA (OAHI≥1event/hr): 75.6% sensitivity, 61.3% specificity (ROC-AUC=0.709).

Wrist-worn oximetry-derived automated ODI3 can reliably identify moderate-severe OSA in children undergoing adenotonsillectomy, thus, making it a feasible OSA screening tool preoperatively.

Nuntavisit, Leartluk & Porter, Mark

Associations between Parental Mental Health, Discipline Approaches and Adolescent Antisocial Behaviours

CAMHS Session, 8 November 12:00-13:25

Leartluk Nuntavisit & Mark Porter

Multisystemic Therapy Program Specialised Child and Adolescent Mental Health Service (CAMHS), Department of Health, Western Australia

Poor parental mental health is one of the risk factors for child emotional and behavioural problems because it reduces caregiver's ability to provide appropriate care for their child. This study aimed to measure changes in parenting factors and adolescent behaviours after Multisystemic Therapy (MST), and to explore the mediating role of discipline approaches on the relationship between parental mental health and adolescent behavioural problems. This retrospective study extracted data collected from 193 families engaged with the MST research program during 2014-2019. Data was collected at different time points (pre-treatment, post-treatment, 6- and 12-months follow-up). Most adolescents and parents exhibited positive changes following the MST intervention and these changes were maintained over the following 12 months. Results of the parallel multiple mediator model analysis confirmed mediating effects of discipline approaches on the relationship between parental mental health and adolescent's behavioural problems. The findings suggested that parental mental well-being significantly contributes to effectiveness of parenting, which resulted in positive changes in adolescent's behavioural problems. It is recommended caregiver's parental skills and any mental health issues are addressed during the intervention to enhance positive outcomes in adolescent behaviour.

O'Brien, Sharon

Evidence-based Management of Infants with Bronchiolitis - Why is it so hard?

Nursing Session, 8 November 14:00-17:00

Dr Sharon L. O'Brien[1,2] Dr Libby Haskell[3,4] Dr Emma J. Tavender[5,6] Dr Sally Wilson[2] Prof Meredith L. Borland[1,7] Prof Ed Oakley[5,6,8] Prof Stuart R. Dalziel[3,4] Ms Rachel Schembri[11] and Assoc Prof Fenella J. Gill[2,9,10]

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Aim: To determine prevalence and to explore factors influencing the use of high flow nasal cannula (HFNC) therapy for bronchiolitis within emergency departments (ED) and paediatric wards.

Method: Demographics and management was collected retrospectively for infants <12 months presenting with bronchiolitis to 26 hospitals between 1/5/2014 and 30/11/2017. Semi-structured interviews with nurses (7) and doctors (12) from ED and paediatric wards in four purposively selected Australian and New Zealand hospitals were conducted. Deductive content analysis was used to map key influencing factors for the use of HFNC therapy to the Theoretical Domains Framework.

Results: Data from 11,715 infants was analysed, with 3,392 (29.0%, 95%CI [28.1%, 29.8%]) receiving oxygen therapy; with 1,817 (53.6%, 95% CI [51.9%, 55.3%]) receiving HFNC. Oxygen therapy did not change over four bronchiolitis seasons (p=0.12), while the proportion receiving HFNC increased (2014, 336/2,587 [43.2%]; 2017, 609/3,720 [57.8%]; p=<0.001). Increases in hospital LOS (p<0.001) and ICU admissions (p<0.001) were associated with HFNC use.

Key factors identified included: clinicians' expectations based on the mechanisms of HFNC to prevent patient deterioration, improve work of breathing and oxygen levels; staff emotions (fear of deterioration and anxiety); and social/environmental influences. These factors, combined with readily available equipment for HFNC contributed to its initiation.

Conclusion: Use of HFNC therapy for infants with bronchiolitis increased over four years. Of those who received oxygen therapy, the majority received HFNC therapy without improvement in hospital LOS or ICU admissions. Individual/personal and contextual/environmental factors contributed to the increased use.

Panting, Rhiannon

Bioluminescence Platform to Identify Stroma-Mediated Chemoresistance in Leukaemia

Plenary Session 5: Innovation, 10 November 10:45-12:00

Rhiannon Panting[1,2,5], Rishi Kotecha[1,2,3,4,5], Laurence Cheung[1,2,5], Joyce Oommen[1]

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Background: The tumour microenvironment has been shown to support cancer progression and regulate responsiveness to drug treatment. In leukaemia, chemoresistance is often facilitated by stroma of the bone marrow microenvironment. However, traditional drug development often only utilises tumour cell monocultures to assess novel drug efficacy. Therefore, a better drug screening platform for leukaemia is needed.

Objective: We aimed to establish a high throughput bioluminescence screening platform which takes into account leukaemia-stroma interactions. Using this platform, we will determine whether stroma confer protection to BCR-ABL+ leukaemic cells when treated with conventional chemotherapeutics.

Method: To establish the bioluminescence platform, we selected two BCR-ABL+ leukaemic cell lines representing chronic myeloid leukaemia (CML) and B-cell acute lymphoblastic leukaemia (B-ALL), and transduced them with a luciferase reporter so that we can quantify the leukaemic cell activity in the presence or absence of stromal cells during the high-throughput drug screening.

Results: We showed that the presence of stromal cells did not alter the drug response of the BCR-ABL+ B-ALL cell line. In contrast, the presence of stromal cells attenuated the response of BCR-ABL+ CML cell line to daunorubicin, which belongs to the anthracycline class of chemotherapeutics. We further confirmed that the presence of stromal cells also attenuated response of this cell line to another two anthracyclines, doxorubicin and idarubicin.

Conclusion: Using our established bioluminescence platform, we identified that the stromal cells protect the CML cells from anthracycline treatment. This proof-of-concept study demonstrated the advantage of co-cultures in high throughput screening for leukaemia drug development.

Parry, Yvonne

Paediatric Nurse Practitioner Led Universal Health assessments and Developmental Screening Linking Education & Health for the Under 5s

Community Nursing Session, 10 November 13:30-16:30

Assoc Prof Yvonne Parry[1, 2], Dr Matthew Ankers[1, 2], Dr Nina Sivertsen[1, 2], Prof Eileen Willis[1, 2], Prof Annette Briley [1, 2], Dr Lauren Lines [1, 2], Dr Abdul AHAD[2],

[1]Flinders University, [2]Caring Futures Institute,

Children require timely, appropriate health and developmental screening, which links them to appropriate services, so they can achieve the best start in life. However, since the introduction of the Australian Early Development Census (AEDC) in 2009, the state of South Australia (SA) has demonstrated a slow, steady decline in childhood development status.

Our Paediatric Nurse Practitioner/Registered Nurse led universal health assessment and developmental screening initiatives for 1,056 children under 5s attending an Early Learning services across urban and rural SA. Nurse Practitioner/Registered Nurse (NP/RN) have attended Goodstart sites to conduct extensive health assessments and developmental screening (using the Brigance tool), which provides an in depth understanding of the health and developmental needs of children prior to school entry. Based on the results of the development and health screening, the NP/RNs provide educators and parents with easy-to-understand summaries, advice and activities to address identified needs, and provide direct referrals to connect families with health professionals. These activities facilitate early intervention strategies to maximise children's capacity to reach their full potential. The model of service delivery also provides for extensive direct referrals and referral follow up, thus closing the care loop for children. This community-based intervention is up-scalable, and capable of addressing the needs of a much greater number of children aged 0 to 5 years.

The quantitative data shows 52% of the children screened thus far require referral to acute and primary health care services consisting of: 61% to Speech Pathology, 46% to Occupational Therapy, 34% required Paediatric ENT specialist interventions.

Paull, Stephen

Comparison of glycaemic control during and outside of school hours in primary school aged children with type 1 diabetes

Early Career Session, 10 November 13:40-16:35

Stephen Paull[1], Adele Connor[1], Grant Smith[2], Katrina Ellis[1], Kathleen Irwine[1], Elizabeth Davis[1,2,3], Mary B Abraham[1,2,3], Craig Taplin[1,2,3]

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The impact of school time on glycaemic control in youth with Type 1 Diabetes (T1D) remains unknown. The aim of this study was to evaluate Time in Range 3.9 -10 mmol/l (TIR) during school hours in primary school children with T1D and to compare this with time outside school.

Continuous glucose monitor (CGM) data from primary school children (school years 1-6) with T1D > 1 year during WA school Term 3 and the following school holidays were analysed to determine the effects of school hours (defined as 0900-1500 hrs), weekdays and school term (18 July – 23 September 2022) on TIR, compared with after school hours, weekends, and school holidays (24 September – 9 October 2022).

252 children met criteria for analysis. 160 children attended schools with Level 3 skills training.

Mean±SD glucose during school hours was 9.6±1.7mmol/L. TIR between 0900-1500 was 58% on school days compared with 53.3% on school holidays (p 0.006). Time <3.9mmol/L and time >10.0mmol/L between 0900-1500 was significantly lower during school term than on school holidays (p0.012 and 0.013). TIR during school hours was 8.2% higher in children with CSII compared with injections (p<0.001). TIR during school hours was 4.4% lower than TIR between 1500-0900 on school days (p<0.0001).

In conclusion, in WA primary school aged children with T1D, glycaemic control is more optimal during the daytime on school days than on school holidays. This might be attributable to routines in school and during school terms and/or to Level 3 schools training provided to schools.

Pearson, Emma

Molecular Epidemiology of Superficial Streptococcus pyogenes Infections in the SToP Trial, Western Australia, "We need teams": assessing mental health in youth with complex communication needs

Early Career Session, 10 November 13:40-16:35

Emma Pearson[1,2], Hannah Thomas[1,2], Janessa Pickering[1,2], August Mikucki[2], Mark Davies[3], Andrew Hayes[3], Asha Bowen[1,2,4,5]

[1]University of Western Australia, School of Biomedical Science, Perth, WA, Australia, [2]Telethon Kids Institute, Wesfarmers Centre of Vaccines and Infectious Disease, Perth, WA, Australia, [3]The University of Melbourne, Department of Microbiology and Immunology at the Peter Doherty Institute for Infection and Immunity, Melbourne, VIC, Australia, [4]Perth Children's Hospital, Department of Infectious Disease, Perth, WA, Australia, [5]University of Western Australia, School of Medicine, Perth, WA, Australia

Background: Superficial Streptococcus pyogenes (S. pyogenes, Strep A) infections are linked to autoimmune complications such as Rheumatic Heart Disease (RHD). Aboriginal and Torres Strait Islander people living in remote Australian communities disproportionately bear the burden of these diseases. Understanding the molecular epidemiology of Strep A in high-burden settings is important to inform disease control and mitigation programs and advance vaccine development. Embedded in the See, Treat, Prevent Skin Sores and Scabies (SToP) Trial conducted in remote Western Australia, this project aimed to determine Strep A strain prevalence and antimicrobial resistance profiles in 9 communities from the Kimberley region.

Methods: In 2019, throat and skin swabs from children aged 5 to 15 years old during SToP Trial baseline data collection underwent microbiological culture, yielding 195 Strep A isolates (80 throat, 115 skin). In this project, DNA extraction and whole-genome sequencing was performed on all isolates. A bespoke bioinformatics pipeline was used to generate emm types, MLST types, and antimicrobial resistance profiles. Genetic data generated was analysed alongside meta- and clinical data collected through SToP Trial.

Results: This project is still underway. The results will provide up-to-date molecular epidemiological information for Strep A in remote Australia.

Conclusion: Findings from this project will define the epidemiology of Strep A infections in remote WA and serve as a baseline to evaluate the impact of the broader SToP Trial. Further understanding of Strep A epidemiology can inform the development of novel strategies to reduce the burden of Strep A diseases and eliminate RHD.

Pedro, Zamia

Delivering a Brief Psychotherapeutic Intervention for Deliberate-Self Harm in a Paediatric Emergency Department: A Randomised Control Trial

Early Career Session, 10 November 13:40-16:35

Zamia Pedro[1,2,3], Yulia Furlong[2], Colin Derrick[4], Ashleigh Lin[3] and Wai Chen[5,6]

[1]CAMHS, Child and Adolescent Health Service; [2]University of Western Australia; [3]Telethon Kids Institute; [4]Perth Children's Hospital, Child and Adolescent Health Service; CAHS; [5]Fiona Stanley Hospital, South Metropolitan Health Service ; [6]Curtin University.

Rates of presentation to emergency departments (ED's) for deliberate self-harm (DSH) in children and adolescents have risen alarmingly over the past 10 years and now represents a significant clinical challenge to health service providers both locally and internationally. Current clinical management in ED's has mixed outcomes. In many cases, psychosocial and risk assessments, including risk management plans, supports the circumvention of re-presentations. However, for a sizable minority (Summers et al., 2020) of cases, a pattern of recidivism is observed, representing a continuum of risk from single to multiple presentations (Asarnow et al., 2008). The randomized controlled trial component of the PCH EXPAAND project investigated the impact of extended assessment and the brief psychotherapeutic intervention, Therapeutic Assessment (Ougrin, 2011), on rates of re-presentation to ED's within a 6-month follow-up period. 178 participants aged 10-16 were allocated to one of three groups. Participants in the control group received current clinical management. Participants allocated to the two active treatment groups returned to the hospital for a single appointment within one -month of index presentation. They received either additional assessment, including screening for attentional and psychiatric conditions, or, additional assessment, plus the TA intervention. Results demonstrated that participants who received TA re-presented to the ED fewer times than participants in the other groups. However, this impact differed across severity of clinical presentation. Findings will be discussed within the context of ongoing challenges of responding to the complex and significant clinical needs of this highly vulnerable group in an acute mental health setting.

Pennacchia, Jacinta

"We need teams": assessing mental health in youth with complex communication needs

Early Career Session, 10 November 13:40-16:35

Jacinta Pennacchia[1,2,3], Christine Imms[1,4], Dave Coghill[1,2], Mats Granlund[3]

[1]Department of Paediatrics, University of Melbourne; [2]Neurodisability and Rehabilitation, Murdoch Children's Research Institute; [3]School of Health and Welfare, Jonkoping University; [4]Healthy Trajectories, Child and Youth Disability Research Hub, Melbourne Children's Campus

Young people with disability and complex communication needs (CCN) face barriers accessing services to address poor wellbeing and mental health problems, in part, due to workforce and system inadequacies and barriers. The National Mental Health Commission (2022) states that "the current mental health workforce does not have the capacity to deliver quality mental health services to diverse communities", highlighting a need for research into services addressing the mental health of people with CCN and workforce collaboration.

The study aims to understand the current practice and future needs of professionals involved in evaluating wellbeing and identifying mental health problems in 10–24-year-olds with CCN. The study uses mixed methods, including a cross-sectional survey and qualitative focus groups, to scope the current practice landscape and identify knowledge and experience gaps in the workforce. Analyses involve descriptive statistics (quantitative data) and interpretive description methods (qualitative data).

The study is ongoing and the following results are preliminary. Survey participants (n=97) come from more than 13 clinical backgrounds across allied health, disability, medicine, mental health, and education. Just 13.8% of participants use formal measures to identify mental health problems in young people with CCN. Preliminary analysis of focus group data (n=12 participants) indicates the workforce requires more training in alternative and augmentative communication, improved allocation of funding for services, and knowledge of translation to create care pathways.

Results suggest this is an interdisciplinary area of practice, and a collaborative approach to assessment is needed to address the mental health needs of this currently underserved population.

Puca, Carla

Using the lessons of COVID-19 to strengthen the future capacity of health care systems

Early Career Session, 10 November 13:40-16:35

Ms Carla Puca[1], A/Prof Katie Attwell[1,2], Prof Chris Blyth[1,2,3], Dr Samantha Carlson[1,2]

[1]Wesfarmers Centre of Vaccines and Infectious Diseases, Telethon Kids Institute; [2]University of Western Australia; [3]Perth Children's Hospital

Introduction: A strong health care system and workforce are essential for health services to function effectively, particularly during pandemic events when resources are limited. It is therefore imperative to understand the positive and negative experiences of health care workers (HCWs) during the COVID-19 pandemic to inform future pandemic preparedness plans.

Methods: In-depth interviews were conducted with 19 HCWs from publicly and privately operated health services in Western Australia (WA) between March – July 2021. These interviews explored the experiences and views of HCWs during the first 18 months of the pandemic in WA, in which there was very little community transmission of COVID-19 but preparations in place for an outbreak. Data were thematically analysed using NVivo 12.

Results: Many participants described the WA health system as being wholly unprepared to respond to a large COVID-19 outbreak. They referred to outbreaks overseas and interstate and greatly feared the moment it would occur in WA. Staff shortages, skills deficits, and insufficient access to resources, such as PPE, ventilators and ICU beds were identified as major concerns. This caused anxiety among participants about what it would mean for their patients, their workload, and their safety. Participants spoke positively about the role of telehealth during the pandemic; this service was not widely utilised prior to COVID-19, but has since been incorporated into health service pandemic plans and become more accepted by HCWs.

Conclusion: Understanding the experiences of HCWs during COVID-19 can enhance pandemic preparedness, leading to improved health service quality and delivery for future pandemics.

Puca, Carla & Wood-Kenney, Paige

Moort Vax Waangkiny: Barriers to vaccination among Aboriginal children in Boorloo

Plenary Session 4 – Implementation & Translation, 10 November 9:00-10:30

Ms Carla Puca[1], Ms Paige Wood-Kenney[1], Ms Valerie Swift[1], Ms Melanie Robinson[2], Ms Naomi Nelson[3], Dr Anastasia Phillips[1,3], Professor Chris Blyth[1,4,5], Dr Samantha Carlson[1]

[1]Wesfarmers Centre of Vaccines and Infectious Diseases, Telethon Kids Institute; [2]Child and Adolescent Health Service; [3]Metropolitan Communicable Disease Control; [4]University of Western Australia; [5]Perth Children's Hospital

Introduction: Rates of several vaccine preventable diseases (VPDs), and associated hospitalisation, are higher among Aboriginal children than non-Aboriginal children. Currently, Western Australia has among the lowest childhood vaccine coverage in the country, with particularly low uptake in Aboriginal children. Delayed vaccination is also more common in Aboriginal children, which is problematic as timeliness is considered the key to closing the gap in coverage. Moort Vax Waangkiny (the Noongar phrase for 'family vaccination yarn') aims to understand the barriers and drivers to routine vaccine uptake among Aboriginal children aged under five years in Boorloo (Perth).

Methods: This qualitative project involves in-depth interviews with 20 to 30 parents and carers of Aboriginal children in Boorloo, overdue for routine vaccines. The project follows the Tailoring Immunization Programs method, developed by the World Health Organization, to determine the barriers to vaccination, identifying central themes related to vaccine access, attitudes, and knowledge.

Results: Early data has identified numerous barriers including a general lack of awareness of when vaccines are due, ineffective reminder systems in place, difficulty interpreting available information about vaccines, and unclear recommendations received from health care providers.

Conclusion: By better understanding the barriers to Aboriginal childhood vaccination, we will be uniquely placed to develop programs to increase vaccine uptake and timeliness in this population. An increase in vaccine coverage and timeliness will optimise protection and is expected to decrease the burden of VPD in Aboriginal children in Boorloo.

Rasmussen, Charlotte Lund

Evaluating a wearable sensor-based system to measure posture and movements in children

Early Career Session, 10 November 13:40-16:35

Charlotte Lund Rasmussen[1,2], Amber Beynon[1,2], Sarah Stearne[1,2], Juliana Zabatiero[1,2], Leon Straker[1,2], Amity Campbell[1,2]

[1]Centre of Excellence for the Digital Child, [2]School of Allied Health, Curtin University

Background: The amount of time children spend in different postures and movements (PAMs), such as sitting, standing and running, is likely to impact their health and wellbeing. Robust measurements of children's PAMs are therefore required to better understand this relationship. Recent advances in wearable sensor technology enables the development of accurate and valid measurements. One project, MOTUS, has developed a wearable sensor-based system for PAM surveillance among adults, showing high validity. However, its validity to measure PAMs among children is unknown. Thus, this study aimed to evaluate the use of the MOTUS system to measure PAMs among children between 3-14 years old in a laboratory setting.

Method: Data from 48 children who attended one structured 1-hour data collection session at a Curtin University laboratory with their caregivers was used. The session was video recorded and thigh acceleration was measured using a SENS accelerometer. Data from the accelerometer were processed and classified into six PAMs using the MOTUS software. Human-coded video provided the gold standard to calculate sensitivity, specificity, and balanced accuracy.

Results: We observed high sensitivity, specificity and balanced accuracy for classifying lying, sitting, and standing, ranging between 72.4-98.2%. The lowest sensitivity and balanced accuracy were observed for classifying walking, running and stair climbing, ranging between 30.6-70.6% and 65.0-79.6%, respectively.

Conclusion: The MOTUS system showed high accuracy for detecting lying, sitting, standing, and running among children. However, the system could be improved for identifying more dynamic PAMs such as walking and stair climbing in this population.

Ravenscroft, Gina

Discovery of the genes causing rare diseases in infants and children

Plenary Session 1 - Collaboration, 9 November 9:00-10:30

Gianina Ravenscroft

Harry Perkins Institute of Medical Research, Centre for Medical Research, The University of Western Australia, Nedlands, WA, 6009.

Rare genetic diseases affect 1 in 17 individuals and disproportionately affect infants and young children, one third of rare disease patients will not reach their fifth birthday. Our research focuses on identifying variants and genes underlying rare diseases, in particular neuromuscular diseases that present early in life, from *in utero* findings of fetal akinesia through to childhood-onset disease. To date, we have identified >20 novel human disease genes, including genes associated with fetal akinesia and arthrogryposis (*GPR126, NUP88*), nemaline myopathy (*KLHL40, KLHL41, LMOD3*), congenital myopathies (*MYL1*, *SPEG*), ataxia (*NEMF*), peripheral neuropathies (*ATP1A1*), chronic intestinal pseudoobstruction, and sudden unexpected cardiac arrest in infancy (*PPA2*). In addition, we have expanded the phenotypes associated with known neuromuscular disease genes, including fetal akinesia arising due to variants in *BICD2*, *CACNA1S, CHRNB1, GMPPB, MYH3, SCN4A, STAC3, TOR1A, TTN*. To support these discoveries a range of functional genomic assays are deployed including RNA-seq, over-expression and cell-based assays, IHC of patient material and primary cells, studies of model organisms (yeast, fish, mice). Each of these discoveries is of immediate impact for the patients and their families as it enables a precise molecular diagnosis and facilitates IVF and preimplantation genetic diagnosis of embryos of prenatal genetic diagnosis for subsequent pregnancies. Crucial to the success of our research program is the close interaction between the research group, and our clinical colleagues including paediatric neurologists, geneticists, pathologists and the Neurogenetic Unit at PathWest. I will highlight key discoveries made over the past decade, with a focus on WA families.

Renshaw-Todd, Jodi

Advancing Community Health Nursing Practice in Infant Mental Health

Community Nursing Session, 10 November 13:30-16:30

Jodi Renshaw-Todd[1], Dr Tania Gavidia[1]

[1]Child and Adolescent Health Service, Perth, Western Australia.

Mental health problems can and do occur in infants, with evidence indicating a 9-14% prevalence of mental health disorders amongst children aged 0–5 years. In Australia, community health nurses have been recognised as well positioned to screen and identify the first signs of mental health difficulties in infancy. However, in WA their role in mental health promotion, screening, and prevention has received little attention, slowing the advancement of nursing practice in this area.

Child and Adolescent Health Service (CAHS) engages 98% of babies born in the Perth metropolitan area through their nurse-led universal child health program. In the absence of a State-wide Child Mental Health Strategy, the CAHS-Nursing Leadership Group trialed an innovative clinician-researcher collaborative approach to explore how to further incorporate infant mental health into existing practice.

A clinician-directed multi-phase multi-methods evaluation design was employed to determine how infant mental health could be integrated within the universal child health program. Phase one consisted of literature synthesis, quantitative survey, stakeholder interviews, and in-depth review of medical records. Phase two consisted of data interpretation, triangulation, and translation.

The project identified opportunities for strengthening current practice by re-framing and re-orienting the existing approach to child development screening. Recommendations include:

- Adopting a developmental relationship-based approach to allow the comprehensive promotion of infant mental health principles.
- Strengthening relationships with key referral partners to improve coordination across the WA health system.

In addition, our collaborative clinician-researcher approach has been paramount in translating research into clinical practice and our experiences will be presented.

Ricciardo, Bernadette & Walton, Jacinta

Moorditj Skin Means Moorditj Health

Plenary Session 1 - Collaboration, 9 November 9:00-10:30

Bernadette Ricciardo[1,2,3,4,5], Heather-Lynn Kessaris[4], Noel Nannup[3], Dale Tilbrook[3,7], Carol Michie[3], Brad Farrant[3], Jacinta Walton[2,3], Ainslie Poore[2,3], Richelle Douglas[6], Nadia Rind[6], Jodie Ingrey[7], Brenda Carter[7], Ingrid Amgarth-Duff[2,3], Hannah Thomas[2,3], Janessa Pickering[2,3], Alexandra Whelan[2,3], Prasad Kumarasinghe[1], Jonathan Carapetis[1,2,3,5], Roni Forrest, Natasha Kickett, Larissa Jones, Annette Garlett, Delys Walton, Sally Smith, Joanne Hill, Kristy Jetta, Asha C. Bowen[1,2,3,5]

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Background: Essential for overall health and wellbeing, little is known about skin health in urban-living Australian Aboriginal children.
Objective: To describe skin health and disease in urban-living Western Australian Aboriginal children to inform service provision, treatment recommendations and educational resources.
Methods: The Koolungar (children) Moorditj (strong) Healthy Skin project was co-designed through extensive consultation and cultural guidance from Noongar Elder co-researchers. In partnership with urban Aboriginal Community Controlled Health Organisations (ACCHOs), paediatric dermatology clinics were established and community skin screening weeks conducted with Aboriginal Health Practitioners (AHPs). Community Advisory Groups (CAGs) were created to provide local leadership and cultural guidance; and develop skin health promotion resources.
Results: Community skin screening weeks facilitated skin checks for nearly 250 children, with 30% receiving same-day treatment. Paediatric dermatology care was made accessible within ACCHOs, with involved AHPs received on-the-job training. CAG review and modification of clinical factsheets optimised readability, usability and acceptability for families. Project results have informed the second edition National Healthy Skin Guidelines and CAG-created moorditj skin messaging applied to community resources; including a parent factsheet and children's infographic. CAGs led development of "Moorditj Skin Means Moorditj Health" music video, and the first-ever eczema storybook for Aboriginal children, "Kaal Tackles Eczema".
Conclusion: Co-design with Aboriginal Elders, an Aboriginal clinical workforce, culturally-trained researchers and CAGs have led to improved dermatology service provision, treatment recommendations and educational resources. The moorditj skin resources empower children and their families to prevent, identify, and treat skin disease; to achieve moorditj skin and moorditj health.

Roberts, Alison

Using Continuous Glucose Monitoring in Children at Risk of Developing Type 1 Diabetes

Community Nursing Session, 10 November 13:30-16:30

Alison G Roberts[1,2], Alexandra S Tully[2], Sabrina K Binkowski[2]; Keely R Bebbington[2]; Elizabeth Davis [1-3], Jenny Couper[4-5], Maria Craig [6-9], Tony Huynh[11], John Wentworth[12-13], Georgia Soldatos[14-15], Mark Harris[11], Peter Colman[10], Megan Penno[4], Aveni Haynes[2]

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Objective: This pilot study aimed to describe parents' perspectives regarding the use of continuous glucose monitoring (CGM) in young children with persistent islet autoimmunity, who are followed longitudinally in the Australian Environmental Determinants of Islet Autoimmunity (ENDIA) pregnancy-childhood cohort study.

Research Design and Methods: As a sub-study of the ENDIA study, children with persistent islet autoimmunity, were invited to wear blinded (no real-time glucose values displayed) Dexcom G6 CGM for 14 consecutive days. Parents completed a phone interview at the end of the CGM monitoring period prior to receiving feedback regarding their Childs' glycaemic status. Open ended questions were used to explore the real-life experience from the parent perspective of their child's use of CGM. Interviews were audiotaped, transcribed, and analysed using thematic analysis to determine common themes.

Results: Nine interviews were conducted for a total of ten children who had a mean (SD) age of 5.6 (2.2) years and wore CGM consistently for 97% of the time over 14 days. Three main themes were identified from the interviews: (1) Information empowers and helps to reduce uncertainty, (2) The experience of using CGM within the family and (3) Involvement in research provides support and preparation for the unknown.

Conclusion: Parents reported a positive experience using blinded CGM in their young child. Parents felt empowered with gaining information on their child's glucose levels and patterns and felt well supported. This study provides valuable insight into the experience of using CGM in very young children without a diagnosis of type 1 diabetes.

Roberts, Bradley

Utility of Pharmacogenetic Testing for Youth Mental Health

Lightning Talks, 9 November 11:00-12:00

Bradley Roberts[1,2†], Zahra Cooper[1†], Stephanie Lu[3], Susanne Stanley[4], Bernadette T. Majda[5], Khan R. L. Collins[6], Lucy Gilkes[5], Jennifer Rodger[1,2], P. Anthony Akkari[1,7,8,9], Sean D. Hood[4,10]

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Pharmacogenetic (PGx) testing has the potential to individualise care, offering a more personalised treatment option, than the current 'trial-and-error' approach by evaluating individuals' genetic variability related to drug metabolism. Specifically, the use of PGx testing in psychiatry has shown promising evidence in improving drug efficacy, reducing toxicity, and minimising adverse drug reactions. Despite randomised controlled trials providing evidence-based support for its use, PGx testing remains uncommon in clinical practice. Our comprehensive review of the literature investigated the management of mental health conditions with PGx-guided treatment, with a strong focus on youth depression and anxiety. Our findings suggest that an informed knowledge of youth's specific PGx characteristics could be expected to enhance the treatment and recovery from mental illness. However, numerous barriers impeding the use of PGx testing in youth mental health were identified. As part of a broader project, our research team is currently investigating these barriers along with consumer perceptions on the use of PGx testing in the treatment of youth mental health disorders in primary care. This poster presents our preliminary results and emerging themes from focus groups and workshops with key stakeholders and consumers. Overall, this work addresses the gap in the literature around the current state of knowledge and capabilities of PGx testing in personalising medicine for the treatment of youth mental health. The results of this study will be used to co-design a clinical trial to investigate the incorporation of PGx testing to guide antidepressant therapy in young patients under 25 years of age.

Rwandamuriye, Francois

Biomaterial-assisted delivery of immunotherapy reduces local recurrence of soft tissue sarcoma

Plenary Session 5: Innovation, 10 November 10:45-12:00

Ben Wylie[1], PhD, Francois Rwandamuriye[1], PhD, Cameron Evans[2], PhD, Marck Norrett[2], PhD, Rachael Zemek[1], PhD, Swaminatha Iyer[2], PhD and Joost Lesterhuis[1], MD, PhD.

[1]Telethon Kids Institute, Nedlands, Western Australia, Australia, [2]University of Western Australia, Nedlands, Western Australia, Australia

Surgery is the main treatment option for many paediatric solid cancers, including soft tissue sarcoma. However, local relapse remains a leading cause of cancer-related mortality, with recurrent tumours often being more aggressive and therapy resistant. Adjuvant chemo- or radiotherapy increase survival in a limited population of patients but can be associated with severe treatment related toxicities. To address these issues, we developed a surgically optimised biomaterial hydrogel that could be loaded with immunotherapeutics for sustained local release and used this innovative technology to deliver intraoperative immunotherapy targeting residual tumour post-surgery.

We first determined the optimal dose and schedule for local immunotherapy in several preclinical models of cancer surgery. Next, we tuned the biophysical characteristics of the hydrogel to achieve a matching drug release kinetic. We studied the underlying immunological mechanisms of response to therapy using in vivo studies, flow cytometry and RNA sequencing. Finally, to aid in the clinical translation of our novel intraoperative therapy we assessed its safety and surgical feasibility in a Phase I trial of canine veterinary patients undergoing surgery to remove a soft tissue tumour.

Our preclinical data demonstrates that intra-operative immunotherapy can reduce the rate of recurrence following incomplete tumour resection and further sensitize tumours to follow up therapies, such as systemic immune checkpoint blockade. Twelve canine patients were treated with increasing doses of hydrogel-delivered intraoperative immunotherapy, without serious side effects, proving the safety and surgical feasibility of this innovative approach.

Saldaris, Jacinta

Adapting a gross motor scale for children with CDKL5 deficiency disorder

Plenary Session 3 – Innovation, 9 November 15:30-17:00

Jacinta Saldaris,[1] Peter Jacoby,[1] Helen Leonard,[1] Eric Marsh,[2] Scott Demarest,[3] Tim Benke,[3] Jenny Downs[1,4]

[1]Telethon Kids Institute, Centre for Child Health Research, The University of Western Australia, Perth, Australia; [2]Division of Neurology, Children's Hospital of Philadelphia, School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania, USA; [3]Children's Hospital Colorado, Paediatric Neurology, University of Colorado School of Medicine, Aurora, Colorado, USA; [4]Curtin School of Allied Health, Curtin University, Perth, Australia.

Background and Aim: CDKL5 deficiency disorder (CDD) is a rare genetically caused developmental epileptic encephalopathy (DEE) with early onset seizures, developmental delay and comorbidities. Clinical trials for novel therapeutics are imminent but a barrier for evaluation is the lack of fit-for-purpose outcome measures for this population. This study modified the Rett Syndrome Gross Motor Scale (RSGMS) for CDD and evaluated its psychometric properties.

Methods: The measure (CDD-Motor) included 17 items that described head and trunk control, sitting, transfers, standing and walking activities, each rated on a 4-point scale for level of assistance. 137 caregivers registered with the International CDKL5 Clinical Research Network uploaded motor videos taken at home to a protected server and were asked to complete a feedback questionnaire (n=70). Rasch (n=137), known groups (n=109), and intra- and inter-rater reliability analyses (n=50) were conducted.

Results: Child age ranged from 1.5-34.1 years. Scores indicated no floor or ceiling effects. There was good inter- and intra-rater reliability for all items. Rasch analysis demonstrated that the items encompassed a large range of performance difficulty, although there was some item redundancy at the upper end of the dimension and some disordered categories. One item, Prone Head Position, was a poor fit. Caregiver-reported acceptability was positive.

Conclusion: CDD-Motor appears to be a suitable remotely administered measure for the range of incremental gross motor skills in CDD. This study provides the foundation to propose the gross motor measures use in CDD and other DEEs. Longitudinal evaluation is planned.

Schwager, Michelle

MicroRNA levels differ in airway epithelial cells from wheezing and non-wheezing children

Lightning Talks, 9 November 11:00-12:00

Schwager MJ[1,2,3], Watkinson RL[2,4], Coleman LA[2,4], Troy NM[5], Prastanti F[2,6], Khoo S-K[2,6], Bochkov Y[7], Gern JE[7], Dye DE[3,8], Borland ML[4,9,10], Zhang G[1,3,5,11], Le Souëf PN[2,4], Kicic A[1,2,12], Laing IA[2,4,6], on behalf of WAERP[2,13]

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Background: A common cause of children presenting to hospital is viral-induced wheeze with rhinovirus. Rhinovirus species C (RVC) is associated with increased risk of future hospitalisation with respiratory symptoms, particularly in pre-school children. MicroRNAs are regulatory molecules of gene expression and early indicators of inflammation. Thus, utilising microRNAs as potential biomarkers for identifying children early who are susceptible to recurrent wheezing exacerbations is novel and innovative. We hypothesised that microRNA expression levels would be altered following RVC exposure in an airway epithelial cell (AEC) culture model generated from children with acute wheeze/asthma (AWA).

Research method: AECs from children with AWA and non-wheezing control children (NWC) were cultured (AWA n=10; NWC n=9) and challenged with RVC (AWA n=8; NWC n=7). The expression levels of seven microRNAs within AECs were quantified, and analysed for significant relationships between the AWA and NWC groups, and after RVC challenge.

Results: Median innate expression levels of miR-15b (0.27-fold, p=0.004), miR-23b (0.45-fold, p=0.035) and miR-26b (0.33-fold, p=0.044) were significantly diminished in AECs from children with AWA compared with NWC; whereas the innate expression levels of miR-21 (2.19-fold, p=0.017) were significantly upregulated in children with AWA. Additionally, in AECs from AWA, miR-15b expression trended downwards (fold change=0.65, p=0.055) after RVC challenge. There were no difference in expressions after RVC challenge for the other six microRNAs (p>0.195).

Conclusions: Innate expression levels of particular microRNAs were dysregulated in AECs from children with acute wheeze, and may play a role in their susceptibility to recurrent wheezing exacerbations, and potentially in RVC infection.

Shah, Mark

Continuous Glucose Monitoring for Youth with Type 2 Diabetes - What have we learnt 12 months on?

Nursing Session, 8 November 14:00-17:00

M. Shah[1], K. Nell[1], K. Irwine[1], B. Keating[1], J. Curran[1]

[1]Perth Children's Hospital, CAHS

Aim: The introduction of subsidised CGM for youth with type 1 diabetes resulted in rapid uptake and improvements in glycaemic control. Youth with type 2 diabetes (T2D) are ineligible for this subsidy and must continue with finger-prick glucose monitoring despite complex treatment, including insulin. The aim of this project was to provide access to CGM for youth with T2D.

Methods: Funding was obtained from Perth Children's Hospital Foundation, for patients to access at no cost, either intermittent scanned CGM (isCGM) or real-time CGM (rtCGM). Eligibility guidelines were established. Education was provided at CGM start followed by routine clinical care. A modified CGM satisfaction survey measured patient reported outcomes (PROs).

Results: Since start of this project 53 patients aged 9 – 17 years, used either isCGM (29) or rtCGM (24) for a mean 16 (2 - 52) and 18 (2 - 52) weeks respectively. Patients who used CGM for ≥ 3 months (*n =28*) mean [SD] HbA1c % was 9.9 [2.6] at baseline and 8.1 [2.2] (*p = < 0.01*) at 3 months. For users of ≥ 6 months (*n=19*), mean [SD] HbA1c % at baseline was 9.5 [2.3] and 7.7 [1.9] (*p = < 0.01*) at 6 months. Eleven families responded to the survey and reported positive exposure to CGM, including being easier than finger prick testing and not burdensome. Minor skin irritations were reported.

Conclusion: Youth with T2D responded positively to CGM, when offered at no cost. Uptake was higher than expected and real-world glycaemic data and PROs were favourable.

Sharma, Isha & Macdonald, Sarah

CAMHS Crisis Connect Intervention

Community Nursing Session, 10 November 13:30-16:30

Sharma, I; Macdonald, S.

CAMHS Crisis Connect, Child and Adolescent Mental Health Service (CAMHS)

Background and Aim: Complex Mental Health issues are the leading cause of burden of disease among young people. Research indicates almost one third of young people have an episode of mental illness in their life, needing urgent help. Despite these statistics, there is a lack of services providing timely mental health support to young people in times of crisis. The CCCI program adapted NSW Project Air Gold Card Clinic guidelines with the unique needs of WA in mind. The program aimed to reduce the risk of mental health deterioration or behavioural escalation among young people, decrease their number of crisis mental health admissions to the inpatient unit, and lower their number of representations to PCH ED.

Research method: Participants were offered prompt, time limited evidenced based psychological therapy over a period of two weeks to bridge the gap between acute and long- term mental health support. Participants were required to complete a self-reported pre and post program Strengths and Difficulties Questionnaires (SDQs) and their post discharge journey was examined.

Results: The results so far indicated a positive trend in patient and carer reported health outcomes with SDQ scores, reduced representation rates to PCH ED, reduced referrals to the inpatient ward in addition to reduced referrals to Community Child and Adolescent Mental Health Clinics with the offer of comprehensive mental health support with comorbid neurodiversity.

Future possibilities: Involvement of a peer support worker, introduction, and integration of the Therapeutic Crisis Intervention for Families (TCIF) specialist program.

Sivaramakrishnan, Hamsini

Move to Improve: Co-designing an exercise program for children with chronic conditions

Plenary Session 1 - Collaboration, 9 November 9:00-10:30

Prof Elizabeth Davis[1,2], Prof Jane Valentine[1,2], Prof Fiona Wood[1,2] , Dr Thomas Walwyn[1], Dr Amy Finlay-Jones[2], Dr Hamsini Sivaramakrishnan[2]

[1]Perth Children's Hospital, [2]Telethon Kids Institute

Chronic disease affects approximately 20% of Australian children and adolescents. Previous research has demonstrated high levels of co-occurrence between physical conditions and mental disorders. Modern care for chronic disease has a heavy focus on pharmacological and medical therapy but there is a gap in the knowledge of how best to prescribe exercise as an adjunctive therapy. Furthermore, the benefits of exercise for mental health and physical health are only just being recognised in children with chronic disease. While physical activity is shown to provide several physical and mental health benefits, it can be very difficult for children living with chronic disease to engage in physical exercise. Move to Improve aims to provide evidence on how to best incorporate exercise into routine clinical care for these children. This project adopts a co-design methodology, involving collaboration between researchers and consumers to develop solutions that meet consumers' needs. In the first step of this co-design process, we are conducting interviews with children and parents across four chronic condition groups: Type 1 diabetes; Cancer; Burns; and Cerebral Palsy. The interviews explore families' prior experience with exercise programs, what motivates them to engage in physical activity, and any actual or potential obstacles to physical activity engagement. Families will be invited to a series of co-design workshops to revisit interview findings, gather consumer input into the study design and inform implementation of a pilot exercise program trial. This research will provide evidence on how to best incorporate exercise into routine clinical care for these children.

Skinner, Rosemary

Evaluation of the Mental Health benefits of a Cooking Group for Children

CAMHS Session, 8 November 12:00-13:25

Rosemary Skinner[1], Brianna Zanetti[1], Isabella Shotch[1,2]

[1]Pathways Specialised Child and Adolescent Mental Health Service (CAMHS), Perth, Western Australia, [2]Acute Child and Adolescent Mental Health Service (CAMHS Perth), Western Australia

This pilot project will evaluate whether a therapeutic cooking group influences factors related to better mental health outcomes for children (6-12 years) with complex mental health presentations. Clients of Pathways Recovery Day Program (Specialised Child & Adolescent Mental Health Service), who attend the cooking group will be invited to complete a brief questionnaire interview with a clinician at completion of their treatment. Carers will also be asked about the children's cooking habits pre- and post the group. While cooking interventions are used in therapeutic settings for adults, evaluation on the effectiveness of cooking groups in developing skills and improving mental health outcomes for children is limited. Children who attend Pathways have weak executive functioning skills, poor self-awareness and are often challenging to engage in therapy. This cooking group is specifically structured to target skills such as flexible thinking, self-awareness, and problem solving, using mindfulness, routines, and sensory strategies. Preliminary quantitative research (N=6) indicated that children felt calm and happy when in the group, were confidant about their cooking skills, and liked 'experimenting' with ingredients in the group. Based on these findings a more specific, targeted evaluation form has been developed to better assess outcomes that impact on mental health such confidence, pride, mood, and behavioural activation. Quantifying beneficial outcomes is valuable, as the group is fun and engaging for children, and could be integrated into other CAMHS settings working with difficult to engage young people.

Smolders, Hannah

The immunosuppressive microenvironment in a paediatric acute myeloid leukaemia model

Plenary Session 5: Innovation, 10 November 10:45-12:00

Smolders H[1], Elaskalani O[1], Chua G[1], Oommen J[1], Truong J[1], Carey-Smith S[1,4], Simad H[1], Kotecha R[1,2,3,4], Cheung L[1,4], Malinge S[1,3]

[1]Telethon Kids Institute, Perth, WA, Australia, [2]Perth Childrens Hospital, Perth, WA, Australia, [3]The University of Western Australia, Perth, WA, Australia, [4]Curtin University, Perth, WA, Australia

The tumour microenvironment (TME) plays a pivotal role in leukemogenesis, colonisation of haematologic organs, and immune response. Weaponising the host immune system with immunotherapeutics has become an efficacious treatment strategy in several cancers and remains an attractive therapy for paediatric acute myeloid leukaemia (AML). However, efforts to implement such treatments into standard clinical practice for children with AML have proven difficult due to our limited understanding of the TME in a paediatric context. To address this, we developed a novel paediatric AML model by inoculating juvenile and adult mice with syngeneic murine cells containing the MLL-AF9 gene fusion. AML engraftment was found to be 10 times faster in neonates compared to adults, suggesting the presence of unique age-specific factors that drive proliferation. Using flow cytometry, we characterised the microenvironment at several time-points to better elucidate the features of the immune landscape that contribute to this rapid growth. Specifically, we found that the AML cells themselves express more CD163 at all time-points, suggesting an immunosuppressive phenotype that facilitates immune evasion and AML proliferation. The adaptive immune cell compartment (CD4+/CD8+ T cells, B cells) were found to be more naïve and less abundant in neonates, while the myeloid population was increased relative to adults specifically Ly6C^{hi} inflammatory monocytes. These data describe a more acutely immunosuppressive TME in early life, which highlights the importance of considering the unique host-dependent factors in childhood AML when developing novel immunotherapeutics for clinical translation.

Sullivan, Alicia

Transgender youth healthcare in Australia: Challenges, impact, coping and change

CAMHS Session, 8 November 12:00-13:25

Alicia Sullivan, Associate Professor Sam Winter, Dr David Lawrence, Dr Catriona Davis-McCabe

Curtin University, Australian Psychological Society

Transgender (trans) youth represent a particularly vulnerable minority, given they are not only navigating a transition to adulthood, yet also potentially making lifelong decisions about changes to their bodies. Trans youth experience high rates of mental health problems, self-harm, and suicide. To prevent and address such outcomes, healthcare for trans youth has focused on affirming the young person's gender identity and modifying bodies accordingly. However, several countries have recently cautioned against the practice of gender affirming health care (GAHC), naming the lack of evidence for long-term benefits, as well as potential side effects, and transition regret as reasons for this. Various political spokespeople in Australia have called for a national inquiry to investigate what the foundation of trans youth healthcare should be. To date, no national studies have examined lived experiences with trans youth healthcare, from the perspective of trans youth, caregivers of trans youth, and healthcare professionals working with trans youth in Australia. The current project is seeking to do this via nation-wide surveys and one-on-one semi-structured interviews, with a focus on beliefs and attitudes towards GAHC and/or alternatives (including exploratory therapy and gender identity conversion efforts). Topic areas to be covered include mental health and support, healthcare services accessed, level of satisfaction with healthcare providers, and experiences and beliefs regarding the different models of healthcare for trans youth. It is hoped that gaining a deeper understanding of the lived healthcare experiences for trans youth in Australia, will help inform the development of related policies and legislation.

Twyford, Karen

The Impact of Music Therapy in Paediatric Acquired Brain Injury Rehabilitation

Lightning Talks, 9 November 11:00-12:00

Karen Twyford

Occupational Therapy Department, Perth Children's Hospital & University of Western Australia

An acquired brain injury (ABI) can cause life changing damage to the brain, which in many cases requires extensive neurorehabilitation to support motor, cognition, communication, psychological, and social development. Music therapists are increasingly working within interprofessional paediatric neurorehabilitation teams, utilising individualised music interventions from an empirical base, across all treatment phases, to provide holistic care to children and adolescents with an ABI. Research over the last 20 years has demonstrated that there is increasing evidence for the effectiveness of music therapy within the area of adult neurorehabilitation, and particularly for those with an ABI, however paediatric-specific clinical studies are essential to guide clinical recommendations for this vulnerable population. This PhD program seeks to understand the impact of music therapy on functional outcomes in children and adolescents following an ABI, across the rehabilitation spectrum. This lightening presentation will detail the studies being completed, the collaborative nature of the research designs involving a variety of key stakeholders, as well as the intended plan for knowledge translation to disseminate research findings throughout the project. This research is significant because limited empirical evidence exists addressing the use of music therapy with this patient population, and therefore this study will significantly enhance the knowledge base in this area. It is also novel as it will identify phenomena regarding the way music therapy contributes to a paediatric interprofessional rehabilitation team across the spectrum of patient rehabilitation within a tertiary paediatric hospital setting.

Weeda, Lewis

First systematic review and meta-analysis of the risk magnitude of climate-change effects on child health

Wal-yan Session, 8 November 12:00-13:00

Lewis J. Z. Weeda[1], Corey J. A. Bradshaw[2,3], Melinda A. Judge[4,5], Chitra M. Saraswati[4], Peter N. Le Souëf[1,4]

[1]School of Medicine, University of Western Australia, Perth, Western Australia, [2]Global Ecology | Partuyarta Ngadluku Wardli Kuu, College of Science and Engineering, Flinders University, Adelaide, South Australia, [3]Australian Research Council Centre of Excellence for Australian Biodiversity and Heritage, EpicAustralia.org.au, [4]Telethon Kids Institute, Perth, Western Australia, [5]Department of Mathematics and Statistics, University of Western Australia, Perth, Western Australia

Background: Children are more vulnerable than adults to climate-related health threats, but reviews have been mainly descriptive and lack an assessment of the magnitude of health effects children face. Objectives: We reviewed epidemiologic studies to analyse various child health outcomes due to climate change and identify the relationships with the largest effect size.

Methods: We searched four large online databases for observational studies published up to 5 January 2023 following PRISMA guidelines. After evaluating each study individually and aggregating relevant qualitative and quantitative data, we standardised effect sizes and compared them among different groupings of climate variables and health outcomes.

Results: Of 1301 articles identified, 163 studies were eligible. The strongest relationship between climate change and child health was increasing risk (60% on average) of preterm birth from exposure to temperature extremes. Respiratory disease, mortality, and morbidity, among others, were also influenced by climate changes. The effects of different pollutants on health outcomes were considerably smaller compared to temperature effects, but with most (16/20 = 80%) pollutant studies indicating at least a weak effect. While most studies were in high-income regions, no geographical clustering emerged based on health outcome, climate variable, or risk level. Protective factors against climate-related child-health threats include: *(i)* economic stability and strength, *(ii)* access to quality healthcare, *(iii)* adequate infrastructure, and *(iv)* food security

Discussion: Anthropogenic climate change will worsen child disease rates, and our quantification of child health outcomes is essential to plan for mitigation that will improve the health of current and future generations.

Williams, Sian

Grow Baby Grow: Longitudinal Investigations Into Muscle Growth and Motor Development in Infants Born at Term, Preterm, and at Risk of Neurological Injury

Plenary Session 3 – Innovation, 9 November 15:30-17:00

Sian Williams[1,2], Susan Stott[3], Ali Mirjalili[4], Louise Pearce[4], Mathew Bell[3], A Mulqueeney[5], Malcolm Battin[5]

[1]School of Allied Health, Curtin University, Australia; [2]Liggins Institute, University of Auckland, New Zealand; [3]Department of Surgery, University of Auckland, New Zealand; [4]Department of Anatomy and Medical Imaging, University of Auckland, New Zealand; [4]Auckland Children's Physiotherapy, Auckland, New Zealand; [5]Newborn Services, Starship Child Health, Auckland District Health Board, New Zealand.

Background: Children with cerebral palsy are not born with musculoskeletal impairments, but show signs of delayed motor development, significant reductions in muscle volume and impaired function through early childhood. Cross-sectional studies indicate early separations of muscle growth around the age of independent ambulation, yet it is unknown if impaired muscle growth through infancy is linked to delayed motor development or associated neurological injury (NI). We aimed to quantify *in vivo* lower limb muscle growth and motor development in typically developing term-born infants, preterm infants, and infants with a high risk of NI (at risk of cerebral palsy) over the first year of life.

Methods: Infants born at term (≥37weeks gestational age (GA)), and Neonatal Intensive Care Unit (NICU) graduates (preterm and/or at risk of NI) were assessed at 3, 6 and 12-months of age (corrected age if preterm) using Magnetic Resonance Imaging and three-dimensional ultrasound (muscle volume), Peabody Developmental Motor Scales (motor development), the Hammersmith Infant Neurological Examination, and the General Movements Assessment. Muscle imaging protocols were assessed for reliability in acquisition and processing.

Results: Data from twenty-four term infants (37-42weeks GA) and thirty-seven NICU graduates (23-41weeks GA) indicate early reductions in rate of muscle growth in our NICU graduates prior to ambulation, and variability in growth between individual muscles. Intraclass correlations indicate infant imaging to have suitable intra and inter rater reliability.

Conclusions: Preliminary data suggest trajectories of muscle growth are reduced in NICU graduates even when corrected for prematurity, whereas motor skill acquisition is concordant with corrected age.

Woolard, Alix

The Wellbeing Project: A trauma-informed co-designed intervention to improve resilience post traumatic burn injury

Early Career Session, 10 November 13:40-16:35

Dr Alix Woolard, Nicole Wickens, Lisa McGivern, Prof Helen Milroy, Dr Lisa Martin, Prof Fiona Wood, Elmie Janse van Rensburg, Rigel Paciente

Telethon Kids Institute, University of Western Australia, Child and Adolescent Health Service, Child and Adolescent Mental Health Service, Fiona Wood Foundation

Background: A burn injury is traumatic for young children and is associated with a high incidence of long-term psychopathology amongst survivors. Advancements in medical treatments have led to better physical outcomes and reduced mortality and morbidity for paediatric burns patients, however, there are no programs that are available to support the psychosocial wellbeing of these children.

Objectives: This project aims to pilot and evaluate a co-designed trauma-focused intervention to support resilience and promote positive mental health in paediatric burn patients. We are currently collecting pilot data to evaluate the efficacy and feasibility of the intervention and to inform the design of future trauma-focussed interventions.

Methods: This pilot intervention will recruit twenty children aged between 6-17 years who have sustained an acute burn injury and their respective caregivers. Participants will have attended the Stan Perron Centre of Excellence for Childhood Burns at Perth Childrens Hospital. Participants attend six 45-minute weekly sessions that involve (1) building skills around psychoeducation, (2) managing emotional and (3) behavioural reactions, (4) bolstering coping skills, (5) problem solving and (6) preventing setbacks. The efficacy and feasibility of our intervention will be assessed through screening measures collected pre- and post-intervention (immediately, 6 months and 12 months) which will identify changes in a child's and caregiver perceptions of their strengths and difficulties, anxiety levels, post-traumatic stress symptoms, stress, and resilience.

Conclusion: The results of this study will lay the foundation for an evidence-based, trauma-informed approach to clinical care for paediatric burn survivors and their families in Western Australia.

Zotti, Kathryn & Windsor, Simon

Stories From the Summit

Community Nursing Session, 10 November 13:30-16:30

Kathryn Zotti & Simon Windsor

Southern Adelaide Local Health Network, Flinders University

There is a lack of clinical governance in clinical trials, how do traditionally siloed teams work within a quality management system to ensure safer care and higher quality researcher conduct in clinical trials.

The NCTGF is a strategic integration of Australian Commission on Safety and Quality Healthcare's Standards (2nd Ed, 2017) and Clinical Trial services. The implementation of the NCTGF is a significant reform for the clinical trials sector, providing a consistent nationwide approach to managing Australian clinical trials.

SALHN is a major metropolitan tertiary health service with over 8,500 staff across 21 sites. The Flinders Precinct, having a major child and paediatric focus, interfaces the health service, Flinders University, and the local medical research institutes complex. Research, teaching, and clinical practice are integrated to support improved patient and community outcomes.

To support the implementation of the NCTGF, SALHN's Research Hub developed the SALHN Clinical Trials Framework and introduced the role of the Nurse Consultant, Safety and Quality to support the implementation throughout SALHN.

The Nurse Consultant has experience in Clinical Governance as a Safety and Quality Consultant and has strong relationships with risk, safety and quality teams, clinical trials staff and established strong executive support.

SALHN ensured broad engagement across the organisation during implementation phase leading into accreditation assessment and will provide reflections of our post accreditation experiences.

This talk provides detailed insights into initiatives deployed and covers the four concepts that Australian health services should consider when undergoing an assessment:

1. Authority
2. Alignment
3. Embedding
4. Procurement

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