Abstracts

MRI SCANNING OF CHILDREN IN RURAL AUSTRALIA USING ORAL SEDATION

Abdulla C1, Hegazy P1
1 Rockhampton Hospital, QLD health, Rockhampton, Queensland, Australia

Better diagnosis and safety has made MRI, the radiological investigation of choice in many medical conditions. The need to remain still and the long time needed limits its use in children. General anaesthesia and intravenous sedation has been used to overcome these difficulties.

To-date most of the studies on MRI sedation in children has come from anaesthetists in tertiary units. Busy imaging department, with easy access to anaesthetists favoured General Anaesthesia in cities with facilities. The aim of this study is to bring MRI scanning within the reach of rural and indigenous Australian children. Oral chloral hydrate in selected infants and children less than 6 years is trialled to assess the efficacy of this method of sedation for MRI scanning.

Chloral hydrate 75 mg/kg was given 45 minutes before the procedure to children below 6 years; younger babies, older children and those with other complication were excluded from this study. MRI scan between 2013 and 2014 in a private and public hospital in Rockhampton were compared in this study. Consultant paediatrician provided hands on care throughout the scan in the private hospital. And registrar or consultant in the public hospital.

Under oral chloral sedation 23 out of 24 children had successful MRI in the private hospital and 36 out of 44 in the public hospital. There were no major unwanted side effects observed.

This study concludes chloral hydrate sedation is safe, effective and successful in selected patients less than 6 years. This can reduce the trauma to children, parental difficulties and save resources. Implement oral MRI sedation policy in rural regional centre can reduce the barriers in urban/rural medical care in Australia.

References:

PERFORMANCE OF A PREDICTIVE ALGORITHM IN SENSOR-AUGMENTED PUMP THERAPY IN THE PREVENTION OF HYPOGLYCAEMIA IN PATIENTS WITH TYPE 1 DIABETES

Abraham M1, deBock M2, Davey R1, O'Grady M1, Ly T1,2, Paramalingam N1,2, Ambler G1, Fairchild J1, O'Connel M1, Cameron P3, King B3, Davis E1,2, Jones T1,2
1 Princess Margaret Hospital, Perth, Australia
2 Telethon Kids Institute, UWA, Perth, Australia
3 The Children's Hospital at Westmead, Sydney, Australia
4 Women and Children's Hospital, Adelaide, Australia
5 Royal Children’s Hospital, Melbourne, Australia
6 John Hunter Children's Hospital, Newcastle, Australia

Hypoglycaemia is an important barrier to the improvement of glycaemic control in Type 1 diabetes (T1D) patients. The Predictive Low Glucose Management (PLGM) system has the potential to reduce hypoglycaemia by suspending basal insulin infusion before the occurrence of hypoglycaemia.

The aim of this in-clinic study was to determine performance of the PLGM system when hypoglycaemia was induced by (a) moderate-intensity exercise, (b) subcutaneous insulin bolus and (c) increased overnight basal rate in T1D patients. The PLGM system suspended basal insulin infusion when the sensor glucose was predicted to be 4.4 mmol/L in 30 minutes. The primary outcome was the need for hypoglycaemia treatment with PLGM off and on.

Participants performed 30–60 minutes of moderate-intensity exercise or were administered a subcutaneous insulin bolus following a glucose stabilisation period on basal continuous insulin infusion. In participants, studied with increased overnight basal rates, hypoglycaemia was induced by increasing basal rates by 180%. They were randomised and studied on 2 separate days; with PLGM off and PLGM on. On both days, participants were observed until plasma glucose dropped to 2.8 mmol/L or were symptomatic.

Results:
A) Moderate-intensity exercise (n = 8): 6 participants required hypoglycaemia treatment with PLGM off and 3 participants required treatment with PLGM on (p = 0.01).
B) SC insulin bolus (n = 28): 24 participants required hypoglycaemia treatment with PLGM off and 5 participants required treatment with PLGM on (p < 0.001).
C) Overnight increased basal rates (n = 6): 6 participants required treatment with PLGM off and 1 participant required treatment with PLGM on (p = 0.002).

There was no post pump suspend hyperglycaemia in each of the three groups (p > 0.05).

Sensor-augmented pump therapy with the PLGM system is likely to be effective in reducing the risk of hypoglycaemia. The system appears to be more effective when hypoglycaemia is induced by insulin bolus and increased overnight basal rates than with exercise.

ESTABLISHING SAFE AND EFFECTIVE PAEDIATRIC MINIMALLY INVASIVE SURGERY IN A REGIONAL CENTRE

Amarasena L1, Fenton E1, Ee M1, Jones N1
1 Paediatric Surgery Department, Royal Hobart Hospital, Hobart, Tasmania, Australia

Background and Aim: Techniques for minimally invasive surgery (MIS) in children have developed greatly since the pioneering efforts of 30 years ago. It is generally accepted that MIS confers many advantages to paediatric patients over traditional ‘open’ techniques including less pain, faster recovery, shorter hospital stay, and reduced risk of adhesive complications. While most tertiary paediatric centres in Australia and New Zealand commonly offer MIS to children, we believe that some smaller paediatric centres, particularly regional centres, do not.

Tasmania is a state with a level two paediatric centre, as well as regional paediatric centres, providing care to 95,500 children. [1] The Royal Hobart Hospital paediatric surgery department expanded to three surgeons in 2011, two of whom provide MIS.

Our aim is to describe our experience with introducing MIS for children in a regional hospital.

Method: This retrospective observational audit was conducted at a single paediatric centre. The audit included the first 174 paediatric patients aged between 0 and 15 years to undergo MIS between April 2011 and September 2013 at the tertiary hospital. There were no exclusion criteria. Demographic data and MIS procedure data were recorded by the paediatric surgeons on a database. Direct complications of MIS were collated from the operating record and hospital discharge summary. This data was then retrospectively analysed by the audit staff.

Results: Demographic data showed that 59.2 % of study participants were male and participants were aged between 3 days and 15 years. Laparoscopic appendectomy was the most frequent indication for MIS. There were no intra-operative or post-operative complications directly related to MIS. Six patients (3.4%) had their MIS procedure converted to open techniques intra-operatively.

Conclusions: We have introduced a wide-ranging MIS service for our paediatric population in a safe and effective manner. We hope to share this experience with our colleagues, and build on the service in the future.

References:

THE IMAGINED FUTURE: WHITHER ABORIGINAL ADOLESCENTS?

Boulton J1,2
1 Telethon Kids Institute, Perth, WA
2 University of Newcastle. NSW

Imagining one’s future occupies much of an adolescent’s daydreaming. As adults, let alone doctors, we cannot share these imaginations, even of our own children and certainly not from the Aboriginal universe. Could knowing them...
help us understand the origin of the differences in outcome measures for health and well-being such as educational attainment, mental health and incarceration, and the ten-fold higher risk of death in the Aboriginal child and youth population in comparison with mainstream society? Could it mean that their dreams evaporate when children understand the gulf between their micro-society and the requirements for joining the post-modern global economy, or does this represent the outcomes of a deep conflict between Western and Aboriginal parenting practices?

A summary of selected morbidity and all-cause mortality (of which half is from inflicted trauma and suicide) will show the extent of the discrepancy for measures of health and well-being for adolescents in remote Aboriginal Australia and mainstream society. Narratives of adolescent girls’ ideas, dreams and family tragedies in the Kununurra Midnight Prowlers will illustrate the barriers to engagement in mainstream education, economic, and social life. The argument that an immaturity of internal self-regulation is at the foundation of this causal pathway will be critically analysed with respect to the socio-political origins of the deficits in parenting and social boundaries that lead to these health and behavioural outcomes. Vygotsky’s ‘zone of proximal development’ will be applied in reference to the barriers experienced to learning within mentoring relationships. This will be balanced by examples of creative strategies that support adolescents in the Educational and Justice systems through working in partnership with Aboriginal cultural leaders. Vignettes will illustrate narrative practice as a means to map the effects of the legacy of colonisation on teenagers’ imagined futures; specifically skills in scaffolding conversations with teenagers will be examined.

TRUSTWORTHINESS OF APPS FOR MATERNAL AND CHILD HEALTH: ASSESSING TECHNICAL PERFORMANCE AND EVIDENCE BASED CONTENT

Scott K1, Gome G2, Richards D2, Caldwell P1,3

1University of Sydney, Sydney, NSW
2Macquarie University, Sydney, NSW
3The Children’s Hospital at Westmead, Sydney, NSW

Background: Mobile technologies, such as smartphones and tablet computers with their capability to run software applications (apps), have become important tools for promoting and implementing healthcare. However, there is little independent regulation or guidance for the development and publication of health apps, and for consumers to determine the trustworthiness of health apps. Increasingly health apps are used in maternal and child health.

Method: This project aims to evaluate the technical performance, involvement of health professionals and inclusion of evidence based content in free maternal and child health apps.

Method: The top 10 free maternal and child health apps from two major app stores (Google and Apple) were assessed. Assessment included health professional involvement and evidence-based medical content as well as functional requirements (based on the Institute of Electrical and Electronics Engineers standard for Software Requirements Specifications) and the non-functional requirements: usability and security.

Results: There was great variation in the quality of content, functionality and security of the maternal and child health apps examined. Only four apps were developed with the involvement of health professionals and four provided information from evidence-based medical content. Only four were fully functional, two were fully usable and three adequately implemented security mechanisms to guarantee privacy of user data. Two of the apps were inoperative.

Conclusions: These results suggest a need for app developers to improve the trustworthiness of their apps by increasing the involvement of health professionals and providing evidence based contents. They also need to improve the technical performance and security of their apps. Consumers and health care providers also need to be aware of how the content, functionality and security of health apps can be assessed.

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Key: √ = yes, X = no, √ / X = partly, ? = unknown

INVESTIGATION AND MANAGEMENT OF HEADACHE AND MIGRAINE IN CHILDREN AND ADOLESCENTS

Calvert S1

1Lady Cilento Children’s Hospital, South Brisbane, QLD

Background and Aims: Paediatric headache is the most frequent neurological symptom and is the cause of one of the most common neurological presentations to paediatric emergency departments. By the age of 3, headache occurs in 3–8% of children rising to 37–51% in 7 year olds. The prevalence of migraine in adolescents is 6.3%.

Paediatric migraine is under-recognised, under diagnosed and undertreated in the paediatric population.

The treatment of paediatric migraine is two-pronged: firstly to stop the acute attack with a quick response and return to normal activity, secondly to prevent frequent headaches, reducing the number and minimising the impact.

The aim of this talk is to outline the initial evaluation of paediatric headache and how to differentiate between primary and secondary headaches. The role of neuroimaging will be discussed. Treatment of acute migraine will be discussed with particular reference to the use of triptans. The role of preventative therapy will be discussed, in particular when to start and what agent to use.

Medication overuse or analgesic rebound headaches will be covered and how they can be avoided.

References:
FAMILIES with increasing use of HFNC. The majority are managed with non-invasive ventilation, admitted with bronchiolitis, but more common in infants with co-morbidities. Admission to ICU is an uncommon occurrence in infants.

Conclusion: Of 3884 infants identified, 3589 charts were available for analysis. Of 204 (5.7%) infants with bronchiolitis admitted to ICU, 162 (79.4%) received ventilation support. Of those 133 (82.1%) received non-invasive ventilation (High Flow Nasal Cannula [HFNC] or Continuous Positive Airway Pressure [CPAP]), seven (4.3%) received invasive ventilation (endotracheal intubation) and 21 (13.0%) received a combination of ventilation modes.

Infants with comorbidities such as chronic lung disease (OR 1.6 [95% CI 1.0–2.6]), congenital heart disease (OR 2.3 [95% CI 1.5–3.5]), neurological disease (OR 2.2 [95% CI 1.2–4.1]) or prematurity (OR 1.5 [95% CI 1.0–2.1]) were more likely to be admitted to ICU. Respiratory Syncytial Virus (RSV) positivity did not increase the likelihood of being admitted to ICU (OR 1.1 [95% CI 0.8–1.4]).

HFNC use changed from 13/33 (24.5% [95% CI 13.7–38.3]) patient episodes in 39 infants who required ventilation support in 2009 to 39/91 (42.9% [95% CI 32.5–51.3]) patient episodes in 64 infants who required ventilation support in 2011.

Conclusion: Admission to ICU is an uncommon occurrence in infants admitted with bronchiolitis, but more common in infants with co-morbidities and prematurity. The majority are managed with non-invasive ventilation, with increasing use of HFNC.

## THE AUSTRALIAN STUDY OF CHILD HEALTH IN SAME-SEX FAMILIES

**Crouch S**

1. The Jack Brockhoff Child Health and Wellbeing Program, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, VIC, Australia

**Background:** There are an increasing number of children in Australia growing up with same-sex attracted parents, and these families often encounter stigma. To date no research has considered the health and wellbeing of Australian children in this context, while international work is limited by small sample sizes and a focus on lesbian parents. This research aimed to understand the health and wellbeing of children with same-sex attracted parents in a contemporary Australian society.

**Method:** Any family with at least one parent who self identified as same-sex attracted with children under 18 years of age was eligible to participate. Recruitment was through convenience sampling techniques. The mixed methods study captured quantitative survey data from parents and adolescents as well as qualitative data from family interviews. Gold standard survey instruments were used to compare child health to population normative data using mixed effects multiple linear regression models when appropriate. Thematic analysis was employed to synthesise the qualitative data, which built on the quantitative work.

**Results:** There were few overall differences in child health and wellbeing in same-sex parent families from both parent and adolescent reports when compared to population normative data. In key family process areas of family cohesion and family activities children with same-sex attracted parents scored significantly higher (p < 0.05). Across both surveys however, psychosocial measures were negatively associated with increased stigma. Themes relating to family construct, gender, discrimination and the ‘Establishment’ emerged from family interviews. These themes were informed by heteronormative conflict which itself was tempered by resilience building strategies.

**Conclusions:** Family, stigma, and resilience in a heteronormative world all play vital roles in the development of child health in same-sex parent families. Understanding the interplay of these domains is important to ensure that health services and population programmes facilitate the ongoing positive development of children with same-sex attracted parents.

## MEASURING USE AND COST OF HEALTH SECTOR IN A POPULATION OF PATIENTS WITH A GENETIC METABOLIC DISORDER

**Dalkeith T**, **Deverell M**, **Elliott E**, **Leonard H**, **Christodoulou J** & **Zurynski Y**

1. Australian Paediatric Surveillance Unit, Sydney, NSW, Australia
2. Discipline of Paediatrics and Child Health, Sydney Medical School, The University of Sydney, Sydney, NSW
3. Sydney Children’s Hospital Network, Sydney, NSW, Australia
4. Telethon Kids Institute, Perth, WA, Australia
5. The University of Western Australia, WA, Australia

**Background and Aim:** Rare diseases are chronic, complex and have significant impacts on the patient, their family and on health services. Few studies in Australia have analysed the use and cost of health services associated with rare diseases. We aimed to describe the burden and cost of rare genetic metabolic disorders on the Sydney Children’s Hospital Network (Westmead) (SCHN).

**Methods:** A cohort of children aged ≤18 years from the Genetic Metabolic Disorders Service (GMDS), from July 2004 to June 2013 was identified. During the study period the GMDS treated children with 125 different rare genetic metabolic disorders. A dataset describing service use and associated costs for children in the GMDS was provided by the Management Support Analysis Unit at CHW. This dataset included occasions of service including admissions, outpatient and emergency department presentations.

**Results:** During the study period there were 791 patients engaged with the GMDS (434 males; 357 females). Of the 791 patients, 385 were admitted. These 385 patients accounted for a total of 3,036 admissions. 272 patients presented to emergency (total of 1,571 presentations); 716 patients accounted for 17,254 outpatient encounters. There were 50 deaths during the eight years, 21 of which occurred during an admission to CHW. The average number of admissions per year was 338; average length of stay was 3.2 days (range 1–180). The average cost per admission was $7,668, and the total cost for this whole cohort of patients over the eight years was $23,281,396 (~$3 million/annum) for admissions alone.

**Conclusion:** Our results show that children living with rare diseases such as genetic metabolic disorders use health services frequently resulting in a significant health cost burden on tertiary hospital services. Our unique data indicate the need for training and resources to be provided for coordinated management for children with chronic complex disorders.

## EFFECTIVENESS OF THE ADVANCED PAEDIATRIC LIFE SUPPORT COURSE IN A DEVELOPING COUNTRY: SRI LANKAN PERSPECTIVE

**Rodrigo R**, **Fernando S**, **Manjula A**, **Samarakoon W**, **Siroomi M** & **de Silva S**

1. University of Kelaniya, Ragama, Sri Lanka
2. Lady Ridgeway Hospital for Children, Colombo, Sri Lanka

**Background and Aim:** Overall paediatric health statistics in Sri Lanka are satisfactory for a developing country. However response to emergencies is suboptimal. In response, the Sri Lanka College of Paediatricians initiated the Advanced Paediatric Life Support Course (APLS) in collaboration with an Australian and New Zealand APLS team in 2010. This study assessed effectiveness of the APLS course in changing participants’ perception of their ability to manage paediatric emergencies.

**Method:** Data were collected by a self-administered anonymous questionnaire which inquired about the perception of skills and abilities before and after the course. The questionnaires were distributed among participants at the end of five APLS courses held in 2011/2012. Self-assessments were
graduated on a scale of 1–7 where ‘1’ indicated very low abilities and ‘7’ very high abilities. The individual questions were categorised to the domains leadership, team work, communication, decision making, clinical assessment and practical skills during analysis.

Results: Response rate to the questionnaire was 84% (84/100). Out of the participants who specified their fields 26% (18/69) were in Anaesthesia while 23% (16/69) were in Paediatrics. Perception of skills and abilities in all domains showed an increase in scores with the mean rise being 2.3, 2.3, 2.2, 2.4, 2.7 and 2.6 in leadership, team work, communication, decision making, clinical assessment and practical skills respectively. The pre-course scores for each of these domains were 3.7, 4.2, 3.9, 3.6, 3.4 and 3.5 respectively.

Conclusions: APLS course has been effective in improving participants’ perception of their ability to manage paediatric emergencies.

OUTCOME OF PRIMARY FOCAL SEGMENTAL GLOMERULOSCLEROSIS IN AUSTRALIAN AND NEW ZEALAND PAEDIATRIC RENAL TRANSPLANT RECIPIENTS

Francis A1,2, Trnka P1,2, Burke JR1,2, Clayton P1,2, McTaggart SJ1,2
1Queensland Child and Adolescent Renal Service, Lady Cilento Children’s Hospital, Brisbane, Australia
2University of Queensland, Brisbane, Australia

Background and Aims: Focal segmental glomerulosclerosis (FSGS) can reoccur after renal transplantation. Prior studies suggest increased risk of disease recurrence with the use of living kidney donors, but this has not been well described in the paediatric transplant population. We aimed to determine the effect of graft source on recurrence and graft outcomes in children with primary FSGS transplanted in Australia and New Zealand.

Methods: Using data from the Australian and New Zealand Dialysis and Transplantation Registry (1992–2011), we compared recurrence rates and graft loss between living and deceased donor kidney transplant recipients. Statistical analysis was done using Kaplan–Meier analysis and Chi squared test.

Results: In total, 72 children with FSGS were transplanted between 1992 and 2011. 25 of 72 children developed recurrent FSGS (35%). There was no significant difference in recurrence rate based on donor source (RR for DD 1.18; 95% CI 0.62–2.24; p = 0.61). Children were more likely to develop recurrent disease than adults (35% versus 7.5%; RR 4.6; 95% CI 3.05–6.93; p < 0.0001). 17% of all grafts were lost to recurrent FSGS, with no significant difference based on donor source (RR for DD 2.48; 95% CI: 0.87–7.82; p = 0.088). Median graft survival in patients with recurrent FSGS was significantly shorter than those with no recurrence (2.3 versus >10 years; p = 0.001). DD grafts had worse outcomes, with 5-year graft survival of 42% for DD grafts versus 80% for LD grafts (RR 1.93; 95% CI: 1.15–3.22; p = 0.01). Graft survival was worse in children with FSGS compared to other causes of renal failure with 5-year graft survival of 66% in the FSGS group and 93% in the non-FSGS group (RR 1.52, 95% CI: 1.24–1.87; p = 0.0001).

Conclusions: Children with FSGS do significantly better with a LD transplant and are at increased risk of recurrence than the adult population. We propose LD transplantation should not be avoided in children with FSGS.
Abstracts

Method: Hearing Ear Health and Language Services (HEALS) was a 2013 NSW Health funded programme that sought to provide ENT surgery and speech pathology intervention for Aboriginal children. HEALS resulted from the findings of a longstanding Aboriginal cohort study (SEARCH: the Study of Environment on Aboriginal Resilience and Child Health). HEALS used existing SEARCH relationships with five Aboriginal Community Controlled Health Services: Aboriginal Medical Service Western Sydney, Awabakal (Newcastle), Illawarra Aboriginal Medical Service (Wollongong), Rivmed (Wagga Wagga), and Tharawal (Sydney). The funding timeframe was extraordinarily short (funds arrived in March and had to be spent by June). HEALS employed Aboriginal project officers in most participating sites to facilitate the logistics of finding children, arranging appointments, and invoicing HEALS.

Results: In 2013, HEALS enabled ENT surgery for 94 children and speech pathology interventions (between 1 and 28 half-hour sessions) for 271 children, totalling 3008 sessions. As some children accessed both ENT and speech pathology, the total number of children accessing services was 353. Due to the overwhelming success of HEALS 2013, NSW Health decided to refund HEALS in 2014. In 2014, 99 children accessed ENT surgery and 268 accessed speech pathology intervention, totalling 2529 sessions.

Conclusions: HEALS demonstrated the ability to deliver over 5,700 services to over 700 children in very tight timeframes. This was possible because of strong, longstanding relationships established by a research study and the highly effective and efficient operations of the Aboriginal Community Controlled Health Sector. HEALS provides a model for translating research findings into service delivery: “No research without service”.

THE RIGHTS OF THE CHILD AT END OF LIFE
Herbert A1,2
1 Paediatric Palliative Care Service, Lady Cilento Children’s Hospital, Children’s Health Queensland Hospital and Health Service, Brisbane, Queensland, Australia
2 School of Medicine, University of Queensland, Brisbane, Queensland, Australia

Human rights extend across the age span and include the right to life, liberty, equality, and freedom of thought. In this context it has been argued that all humans have a right to pain management and quality palliative care at the end of life. The World Health Organisation has defined palliative care as “an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.” Importantly palliative care affirms life and regards dying as a normal process and intends to neither hasten nor postpone death. There are issues and rights that are unique and pertain to children receiving palliative care. The “Convention on the Rights of the Child” which has been ratified by the United Nations includes 54 articles that outline the various rights of the child. These form a helpful basis in determining the rights of the child at the end of life. Most importantly children have the right to good quality health care (article 24) which would include palliative care when required. There are legal, ethical and clinical imperatives that become apparent when determining what is “best paediatric care” for a child whose underlying medical condition can no longer be cured, particularly when they enter into an end of life phase of care. These principles can be best presented using illustrative case studies looking at the child’s wishes about their treatment and care within the context of their age, development, family, culture and community. Charters listing the rights of dying children have been recently developed and provide a useful tool for professionals striving to deliver optimal palliative care.

References:

COMPONENTS AND PRINCIPLES OF A PAEDIATRIC PALLIATIVE CARE CONSULTATION: RESULTS OF A DELPHI STUDY
Bradford N1, Herbert A1, Mott C2, Armfield N1, Young J1, Smith A1
1 Centre for Online Health, University of Queensland, Brisbane, Queensland, Australia
2 Paediatric Palliative Care Service, Children’s Health Queensland Hospital and Health Service, Brisbane, Queensland, Australia

Background and Aim: Paediatric palliative care is a distinct specialty that requires input from paediatric and palliative medicine specialists to provide comprehensive high-quality care. Consultations undertaken early in a child’s illness trajectory, when end-of-life care is not anticipated to be required, enables relationships to be established and may enhance the quality of care provided. The aim of this study was to define the optimal components of an early paediatric palliative care consultation.

Method: Consensus of an expert group was sought in a five-round Delphi study. Based on the literature and existing standards for specialist palliative care, components of an early paediatric palliative care consultation were derived. In rounds 2 and 3, experts from around Australia and New Zealand participated in online surveys to review and prioritise the components and principles. Consensus of survey items was determined by defined criteria. A flowchart was developed in the fourth round and the final round involved review and refinement of the flowchart by the expert group.

Results: Nineteen experts participated and prioritised 34 components and principles in the first survey round, and 36 statements in the second survey round. There was consensus from all participants that the first priority of a consultation was to establish rapport with the family, and examples of how to achieve this were defined. Other components of a consultation included: establishing the family’s understanding of palliative care; symptom management; an emergency plan; discussion of choices for location of care, and a management plan. Components considered suitable to defer to later consultation, or appropriate to address if initiated by family members, included: spiritual or religious issues; discussion around resuscitation and life-sustaining therapies; end-of-life care; and the dying process.

Conclusion: We have provided the first published framework from expert consensus that defines the components and principles of an early paediatric palliative care consultation. This framework will provide guidance for clinical practice as well as being useful for education and research in this area.

IMPROVING THE CLINICAL ASSESSMENT OF ACUTE PRESENTATIONS OF CHILD MALTREATMENT USING A QUALITY AND CHILD RIGHTS FRAMEWORK
Hotton P1, Raman S1, Isaacs R1, Dunn C1
1 South Western Sydney Local Health District, Liverpool Hospital, Liverpool, NSW 2170, Australia

Background: There is a strong evidence-base for medical examination in the assessment of child maltreatment (CM). South Western Sydney (SWS) has a large metropolitan population with many vulnerable sub-groups. There is little known about the health and social outcomes for children following assessment for acute CM.

Objectives: We aimed to describe acute presentations of CM in SWS over a two year period (2013 to 2014), identify health and social outcomes for children following medical assessment and determine if the cases that are assessed fulfil established minimal standards for clinical assessment of CM in SWS.

Methods: We gathered available data from the acute child protection database and hospital records, on all children <16 years referred for assessment between January 2013 and October 2014. We performed simple descriptive analysis on the data. We measured the assessment, report writing and follow-up against established criteria for minimum standards for acute CM assessments and a child rights framework.

Findings: In the time period, 192 children were referred for acute assessment. Most (72%) were female, 146 (76%) referrals were for sexual abuse, 37 (19%) known for physical abuse, the rest were for neglect. A minority (10%) were referred by doctors; most were referred by child protection services. Twenty-five cases were found to be not suspicious for maltreatment; the rest had medical findings and health concerns. Most assessments were multi-disciplinary and protocol-based; half were not able to be followed up, a-third were performed after-hours.
Conclusions: This audit provides valuable information on acute CM presentations and identifies strengths and weaknesses in current assessment processes.

DEVELOPMENTAL DISABILITY IN REFUGEE CHILDREN AND YOUTH IN SOUTH WESTERN SYDNEY: DOUBLE JEOPARDY

Hotton P1, Brown T1, Raman S1, Hurwitz R1, Smith M1
1South Western Sydney Local Health District, Liverpool Hospital, Liverpool, NSW 2170, Australia

Background: International studies have documented significant health problems in refugee children and youth resettling in western countries. Less described is the burden of disability in this population. Ancedotal reports suggest increasing numbers of refugees presenting with significant disability in Sydney.

Objectives: Our aims were to identify the health, social and service needs of refugee children and youth presenting with disability in South Western Sydney (SWS).

Methods: Clinical data were collated on children and youth attending refugee specific clinics in SWS between 2010 and 2014, with a focus on those with a disability. An illustrative case study is described of a 17 year old profoundly disabled refugee youth who required prolonged hospitalisation to manage health and related settlement needs.

Findings: A total of 137 children were seen in paediatric refugee clinics in SWS in the period. The mean age was 7.3 years, 60% were male, and the majority were of Middle-Eastern origin. The proportion of children with developmental disability went from an average of 12% in 2010 to 2013, to 37% in 2014; significantly more presentations with severe to profound disability were seen in 2014. Immigration policy changes occurred in 2012, possibly accounting for this rise. The case study demonstrates the challenges for health, disability, education and welfare services in coordinating care.

Conclusions: Developmental disability and co-morbid chronic health conditions appear to be emerging issues in newly arriving refugee families. Better planning and coordination by health and welfare professionals will better assist refugee families as they deal with compounded settlement stress.

EBOLA AND OTHER INFECTIONS

Isaacs D1
1Children’s Hospital at Westmead and University of Sydney

Ebola is a viral haemorrhagic fever thought to originate from fruit bats and capable of spreading from human to human. So far the latest outbreak has caused an estimated 15,000 cases and 5,000 deaths in Africa. Transmission is preventable if thorough infection control practices are followed. The world has been gripped by Ebola paranoia, but probably only because American health care workers have been infected. The industrialised world’s response to Ebola and other recent emerging infectious diseases, such as severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), avian influenza and H1N1 pandemic influenza, has parallels with the West’s approach to terrorist threats. In this paper, I will discuss proportionality of response and alternatives such as preventative strategies.

PROFILE OF PATIENTS REFERRED WITH BEHAVIOURAL-DEVELOPMENTAL PROBLEMS IN AN OUTER METROPOLITAN PAEDIATRICS UNIT: A RETROSPECTIVE REVIEW OF OUTPATIENT CATEGORY 3 WAITING LIST

Kapoor V1, Cheah Y1
1Department of Paediatrics, Redland Hospital, Cleveland, QLD

Background and Aim: Behavioural and developmental problems are common reasons for referral to the paediatrics units across Australia. These patients are often triaged as category 3 patients with long waiting lists. A retrospective review of all outpatient referrals in category 3 waiting list was undertaken in an outer metropolitan paediatrics centre with an objective to understand the profile of these patients, do needs analysis and to propose improved models of care.

Methods: All referrals in the category 3 waiting list as of November 2014 were accessed from the outpatients’ clinic register and data were entered into a Microsoft Excel 2010 spreadsheet. STATA 13.1 software was used for statistical analyses.

Results: 213 referrals in the category 3 waiting list were analysed. Male to female (M: F) ratio was 2.6:1 with median and interquartile range (IQR) of 7 yrs (5, 9.7). Non-specific behavioural problems (46 %; M: F 2.9:1) were the single most common reason for referral followed by categories of possible attention deficit hyperactivity disorder (ADHD) (36%, M: F 2.8:1), possible autism (14%, M: F 4:1), learning problems (13.6%, M: F 2.2:1) and speech problems (7.9%, M: F 4.7:1). Isolated non-specific behavioural problems presented at significantly earlier median age of 6.2 yrs (IQR: 4.3, 8.8) compared to ADHD 9 yrs (IQR: 5.6, 10.3; p = 0.01) and compared to learning problems 8.7 yrs (IQR: 6.9, 10.9; p = 0.0002).

Conclusion: Referrals for non-specific behavioural problems formed the single largest cohort in category 3 waiting list with age of presentation significantly earlier than other diagnostic groups. Community programmes should target children under 5 years for best impact. Designated referral pathways with community support programmes for general practitioners would significantly decrease the load on paediatric outpatient services.

MOST ACROSSHORNTLY HEPATITIS B INFECTED CHILDREN ARE REFUGEES: A DESCRIPTIVE STUDY IN A TERTIARY CHILDREN’S HOSPITAL

Koirala A1, Cherian S1, Snelling T1
1Princess Margaret Hospital, Perth, WA

Background: One third of the global population is estimated to have been infected with the hepatitis B virus (HBV). Children of refugee background originate from countries of moderate to high HBV endemicity and are at a higher risk of perinatal or early childhood horizontal infection. Those that are perinatally infected have a higher risk of progression to chronic hepatitis B and HBV related deaths. We aim to evaluate the ethnic origin of the paediatric chronic hepatitis B population seen at a tertiary paediatric hospital and their disease progression during their childhood and adolescence years.

Method: We conducted a chart review of children aged 0–18 who had a positive hepatitis B surface antigen positive over a six year period (2006–2013). Sixty one percent were male and the mean age was 10.8 years (range 0.6 to 16 years).

Results: Eighty three patients were identified to have HBV carriage. Interim results show seventy five (90%) were of refugee background. One patient was co-infected with HIV and none with hepatitis C. Most children were born in Burma (17), Thailand (11), Liberia (10), Sierra Leone (10), Sudan (10), Australia (7) and others (18). Most children were in the immunotolerant stage with no intervention needed. One patient was co-infected with HIV and none with Hepatitis C. Nine children were ordered liver biopsies and 1 HBV positive/HIV negative received anti-retroviral treatment. Loss to follow up was high: forty three children had at least one clinic non-attendance and 37 children being lost to follow up.

Conclusion: The burden of paediatric HBV carriage exists within the refugee population. There is a high loss to follow up and poor transition to adult services. Although short term complications are rare, given the high risk of long term complications in adulthood, it is important to monitor this cohort longitudinally. Better recall systems to overcome language, socioeconomic and cultural barriers need to be utilised.

MENTAL HEALTH NEEDS OF CHILDREN IN OUT-OF-HOME-CARE

Lok L1, Tsioumi D1
1Sydney Children’s Hospital, Sydney, NSW, Australia

Background: The prevalence of Mental Health Problems (MHP) detected in pre-school children in Out-of-Home-Care (OOHC) is 60%. (Reams, R. (1999). Infant Mental Health Journal, 20, 166–174). However, literature specifically addressing the Mental Health needs of preschool aged children in OOHC in Australia is limited.

Aim: The objectives of this study were to identify the types and number of MHP experienced by preschool children aged 0–6 years who were in OOHC; and to evaluate the relationship between risk factors and the number of MHP.

Methods: A retrospective review of OOHC clinic reports for clinics held between July 2011 and June 2012. Children who were 6 years of age and...
under were included in this study. Associations between MHP and the risk factors examined were: age at entry into care, number and types of placements; and the number of parental risk factors, including parental Mental Health issues, drugs and alcohol use and domestic violence.

Results: The OOHCC clinic reports for 92 children were reviewed. The most common MHP were in the Attachment and Behavioural categories. Age at entry into care and the number of placements were significantly associated with the number of MHP. There was an 18% increased rate of MHP for each additional year of age at entry into care. There was a 15% increased rate of MHP for each additional placement. There were no statistically significant associations between the gender of the child, age at assessment, placement type, the number of restorations to parental care and the number of parental risk factors with the number of MHP.

Conclusion: This study confirms that young children in OOHCC have high rates of MHP. Age at entry into care and the number of placements are the most significant contributing factors for the number of MHP.

TEMPORAL CHANGE IN PLASMA CLUB CELL SECRETORY PROTEIN AND SURFACTANT PROTEIN-D IN VERY PRETERM INFANTS ACROSS THE NEONATAL PERIOD

Martinoello K1, Andersen C1, Stark M2

1Women’s and Children’s Hospital, Adelaide, Australia
2The Robinson Institute, University of Adelaide, Adelaide, Australia

Background: Plasma club cell secretory protein (CCSP) and surfactant protein D (SP-D) are proposed biomarkers of neonatal lung injury, reflecting damage to the blood-air barrier. The aim of the current study was to examine the inter-relationship between these substances in very preterm infants at risk of developing chronic lung disease (CLD) across the neonatal period.

Method: Blood was collected within 48 hours of birth and on days 14 and 28 of life in infants <33 weeks gestation (n = 22). Plasma CCSP and SP-D were measured by ELISA.

Results: Enrolled infants had a mean (SD) gestation of 289 (11) days and birth weight of 1104 (353) grams. Six infants were diagnosed with CLD. While baseline SP-D was higher in infants exposed to a completed course of antenatal betamethasone (p = 0.05), no difference for CCSP was seen. CCSP increased from baseline to D28 (p = 0.016). No effect of time was observed for SP-D. At baseline a negative correlation was observed between CCSP and SP-D (p = 0.02). Conversely, by day 28, a positive correlation was observed (p = 0.03). In those infants diagnosed with CLD, baseline SP-D was higher (p = 0.03).

Conclusions: At present we have a limited ability to predict risk of CLD in preterm infants. Disruption of the blood-air barrier and increased pulmonary epithelial permeability are important pathophysiological processes in neonatal lung injury. Therefore, plasma CCSP and SP-D may represent useful circulating biomarkers in the detection of infants at greatest risk of developing CLD enabling earlier intervention with significant short and longer-term health benefits.

DO WE REALLY NEED ANOTHER PAEDIATRIC DOSING BOOK?

Craig S1, McAdam C2, Lynn D1, Oberender P1, Pellegrini J1, Barnett M1, Macht P1, McCaffum P3, Meadows S1, Stirling C1, Moulden A1 & Young B1

1Monash Children’s Hospital, Melbourne, Victoria, Australia

Background and Aims: The need for paediatric resuscitation occurs infrequently in a variety of settings such that practitioners encounter it rarely, so it is highly stressful. Paediatric medications are calculated by weight, necessitating rapid calculations and resulting in potential for critical dosing errors. This poster will describe the collaborative work undertaken to produce a weight based paediatric resuscitation resource that can be readily implemented in a variety of settings and its initial evaluation.

Method: Normal vital signs, estimated equipment sizes and resuscitation algorithms were incorporated into the book. An initial evaluation of the book was conducted using a web-based survey tool (SurveyMonkey®) distributed to staff in our health service. Both multiple choice and free text responses were enabled.

Results: There were 44 respondents, with 28 nursing staff and 16 medical staff. Most (70%) respondents worked in the ED, while 17% worked in intensive care / theatre, and 13% on the paediatric wards. Most had used it in the care of a critically ill child whilst others used it in a simulation or during teaching. Since book sales have increased and it has been used in diverse settings, wider survey responses will be presented in this poster.

The format recommended by most users was a laminated book on the resuscitation trolley in preference to a mobile phone or computer based resource.

Conclusion: Despite ubiquitous handheld computers and universal internet access in healthcare, there is a clear demand for a well-designed, hardcopy dosing guide in paediatric resuscitation.

MEASURING WHAT MATTERS TO PATIENTS AND FAMILIES – THE IMPACT OF ATTENDING PAEDIATRIC SERVICES

McAdam C2, Tuohy A1, Bergman P1, Willemsen E1, Stinson J1, Winderlich J1, Little J1, Renton S1, Kosmarikas H1, Edwards R1

1Monash Children’s Hospital, Monash Health – Melbourne, Victoria, Australia
2Monash University. Clayton, Victoria, Australia

Background and Aims: Children with chronic illness have many encounters with health professionals that have an impact on their own lives and their family members. Service delivery is often reviewed in terms of waiting lists, mortality and morbidity measures and cost of service provision. In an attempt to better evaluate the impact of innovative models of care, we sought to design resources to measure costs and consequences that were readily understood and relevant to our patient population.

Method: A group of committed leaders and consumers met regularly to:

- Conduct focus groups with children and parents attending our services to identify what matters to them in accessing our health service.
- Review the literature around consumer measures of healthcare service.

Develop a generic survey to measure the relevant impacts of attending a health service for families.

Results: While multiple themes emerged in the focus groups, most centred around missed opportunities at work and school, the cost of parking and food, combined with significant disruption to the whole family when attending the hospital.

We developed a survey to administer to those attending appointments or admissions to ensure standardised feedback to departments on how their service delivery impacts the lives of their patients. It was piloted and revised to overcome ambiguity and ensure meaningful responses. Time to complete the survey on paper or electronically will be determined.

Conclusion: We developed an evaluation tool assessing outcomes relevant to paediatric patients with chronic illness. This can now be used to measure the implications for our patients of changes in service delivery over time. We hope this will spur innovative and integrated models of care that ensure optimal medical outcomes do not come at enormous cost to our families.

POLITICS AND PAEDIATRICS. BREAKING CONNECTIONS, CREATING BOUNDARIES

McDonald A1

1Campbelltown Hospital, Tharawal AMS, NSW

Despite the fact that political decisions shape the life and health of every Australian, politics and politicians are often relatively unknown to many doctors.

Dr McDonald was the member for Macquarie Fields in the NSW Parliament from 2007–2015, the only doctor in the NSW Parliament. He was parliamentary secretary for health from 2008 to 2011, and shadow health Minister from 2007–2015, the only doctor in the NSW Parliament. During this time he continued to practise as an honorary consultant paediatrician in both the public Hospital system and Tharawal Aboriginal medical service, as well as continuing to teach medical students and registrars. He left politics to return to medicine at the 2015 election.

There are many things he has seen and learnt which may help doctors negotiate political issues.

How are political meetings run? How are political decisions made? How is legislation organised and promoted? How are the AMA and RACP viewed by...
political insiders? How do elected representatives deal with bureaucrats? How to (and how not to) deal with the media? What makes a good (and not so good) leader? What are politicians really like? What do politicians know about indigenous health and disadvantage? Why did the 2013 Euthanasia Legislation fail? Do the corridors of power really smell of disinfectant?

The modern political system, from an insider.

NEWBORN SCREENING UPDATE
McGill JJ, Wood N, Monin J

1Lady Cilento Children’s Hospital, Brisbane, QLD
2Pathology Queensland, Royal Brisbane Women’s Hospital, Brisbane, QLD
3Mater Pathology, Mater Hospitals, Brisbane, QLD

Newborn screening has operated successfully in Australia for 50 yrs. Initial screening was for phenylketonuria, hypothyroidism, galactosaemia, cystic fibrosis, and more recently expanded screening for disorders of fatty acid oxidation, amino acid disorders and organic acidaemias.

Within Australia, the newborn screening programmes are funded by state and territory governments and differ slightly between the states. New Zealand has a national newborn screening programme funded by the New Zealand Ministry of Health. The HGSA-RACP Division of Paediatrics Joint Subcommittee on Newborn Screening, a body consisting of experienced scientists and clinicians, has provided guidance for newborn screening in Australasia.

Although the principles of screening, as published by Wilson and Jungner in 19681, are still relevant, these principles have recently been challenged particularly with respect to considering the value of genetic knowledge as a benefit for the family.

Currently all Australasian laboratories screen for ≥25 disorders; but there are many others disorders which are being promoted by interested professional or consumer organisations for inclusion in the newborn screening panel. These disorders include congenital adrenal hyperplasia, severe combined immunodeficiency, Fragile X, lysosomal storage diseases, adrenoleukodystrophy, Duchenne muscular dystrophy and alpha-1 antitrypsin deficiency.

In 2014 the Standing Committee on Screening established the Newborn Bloodspot Screening Working Group (NBSWG) to develop a national policy framework for newborn screening in Australia. National programmes in New Zealand, USA, UK, Canada and Netherlands are being examined as possible models.

An important role of the NBSWG is to develop an evidence-based decision making framework for assessing conditions for addition to or removal from the newborn screening panel. The NBSWG is consulting a wide range of professional and consumer groups to help develop this national policy.


USE OF MELATONIN IN A TERTIARY CHILDREN’S HOSPITAL: A 10 YEAR REVIEW
Monin J, Wood N

1The Children’s Hospital at Westmead, Sydney, NSW
2University of Sydney, Sydney, NSW

Background/Objective: There have been several previous studies and reviews examining the benefit of melatonin therapy in children. These have mostly shown significant but modest improvements in sleep. Anecdotally the use of melatonin has significantly increased recently. Despite this the use of melatonin remains unapproved for children in Australia. The aim of our study was to describe the clinical and epidemiological profile of children prescribed melatonin in a tertiary paediatric hospital with a view to inform prescribing practices.

Methods: A retrospective medical record review of children (n = 516) who received melatonin at a tertiary children’s hospital during a ten year period. Information collected includes diagnoses, dosage, duration of therapy, other medications and prescribers.

Results: During the study period, the number of children commencing melatonin increased each year from 19 (3.7% of total) in 2004 to 113 (21.9%) in 2013. The most common diagnoses among the study population were of developmental delay and/or intellectual disability (46.5%), followed by seizure disorder (37.4%). Autism Spectrum Disorder and Attention Deficit Hyperactivity Disorder were present in 10.3% and 10.5% of patients respectively. A small number (n = 83, 16.1%) of the children had previous polysomnography with 60 (72.3%) of them having positive findings (obstructive sleep apnoea, respiratory failure). The most common prescriber group overall were neurologists (26.2%) with neurologists and general paediatricians having the most significant increase in prescription number during the 10 years. New prescribers that emerged included neonatologists, oncologists and neurosurgeons. Most children (83.5%) were taking at least one medication in addition to melatonin with 33.9% taking at least one other sedative medication.

Conclusions: Melatonin use has significantly increased during the last 5 years. The large variability in patients, diagnoses and dosages is consistent with previous community based surveys. This information further supports the need for guidelines for the use of melatonin in children.

ABORIGINAL CHILD HEALTH INDICATORS IN A COHORT OF URBAN ABORIGINAL INFANTS RECEIVING A SUSTAINED NURSE HOME VISITING INTERVENTION IN LIVERPOOL, BANKSTOWN, FAIRFIELD LGAS AND THE INNER WEST
Noble J, Young T, Pollack J, Eastwood J

1Community Paediatrics, Sydney Local Health District (SLHD) Community Health Services, Sydney, NSW, Australia

Aim: The aims were firstly to evaluate the effect of sustained nurse home visiting (SHNV) intervention on health and developmental outcomes in the first year of life of urban Aboriginal children, as part of a programme in disadvantaged local government areas (LGAs) in Sydney, and secondly to present a descriptive analysis on demographics, health and developmental outcomes and compare them with Indigenous and Australian population norms.

Methods: The New Directions (ND) programme is a model of care, based in Central and South Western Local Health Districts (LHDS), consisting of health promotion, SHNV, and regular paediatric assessments, for Aboriginal mothers and babies. Children on the programme were offered health and developmental assessments at 12 months of age. Data collected from these assessments were analysed using descriptive statistics (proportions and means) and were compared to a comparative Indigenous study cohort (Gudaga study) and population level data using Z-scores, the student t-tests and one sample t-tests (as appropriate).

Results: The prevalence of maternal smoking in ND mothers (31%) was comparable to that seen in Indigenous females but was higher than the Australian female population (which included Indigenous and non-Indigenous females) (p < 0.001). The prevalence of ND mothers breastfeeding at hospital discharge (59.1%) and at 6–8 week (35.3%) was significantly lower compared to Indigenous mothers (p < 0.001) and the Australian female populations (p < 0.001). Immunisations were up-to-date in 81% at 12 months, which was lower than the immunisation coverage rate of 91.5% for all Australian children (p < 0.05).

ND infants were lighter at birth, and gradually became heavier than the Center for Disease Control and Prevention (CDC) comparison by 12 months old.

Interestingly, ND infants’ development at 12 months of age were mostly comparable to all Griffiths Mental Development Scales – Extended Revisied (GMDS) subquotient means, and were higher in communication (p < 0.001), fine motor (p < 0.05) and overall quotient (p < 0.05) compared with infants in the Gudaga study.

Conclusion: This was a pilot evaluation which raised many issues. Further research is required to establish if the positive findings were a result of the SNHV intervention. It also highlights the areas where further improvements could be made to optimise child health indicators to close the gap for the Aboriginal children in the areas serviced.

Reference:
Abstracts

ANTENATAL DEPRESSIVE SYMPTOMS – MATERNAL VULNERABILITIES AND BIRTH, INFANT AND POSTNATAL OUTCOMES
Noble J¹, Jones JM², Hendry A³, Eastwood J¹,²
¹Community Paediatrics, Sydney Local Health District (SLHD) Community Health Services, Sydney, NSW, Australia
²Child and Family Health Nursing, SLHD Community Health Services, Liverpool, NSW, Australia
³Early Years Research Group, Ingham Institute for Applied Medical Research, Sydney, NSW, Australia

Background and Aim: Current cut-off for probable antenatal depression on the Edinburgh Depression Scale (EDS) are scores 13 or more. This project aims to explore the maternal vulnerabilities, birth and infant outcomes for pregnant women with antenatal depressive symptoms (EDS score 10 to 12) to indicate the need for more support for this “at risk” group.

Methods: Routinely collected clinical data from all mothers, and infants born in 2012 and 2013, who reside in Sydney LHDS were sourced from electronic medical records and analysed using SPSS to look for the prevalence and odds of known maternal vulnerabilities, birth, infant and postnatal outcomes. Different antenatal EDS score groupings. EDS score of 13 and above are grouped as probable depression, whilst EDS score of 10 to 12 are grouped as depressive symptoms. Scores less than 10 are grouped as low depression risk.

Results: Compared to women with low depression risk, vulnerabilities identified as having higher prevalence and odds in women with antenatal depressive symptoms and probable depression were living in a low SEIFA suburb, non-English speaking background, without partner, unsupportive partner, domestic violence in the past year, nature of child care, smoking during pregnancy. Intrapartum and postnatal outcomes of higher prevalence and odds in women with antenatal depressive symptoms and probable depression were birthing via Caesarean section, no early skin to skin contact at delivery and postnatal depression.

Conclusion: These results show that women with antenatal depressive symptoms have vulnerabilities and poor birth, infant and postnatal outcomes as those with probable depression. Further research needs to be conducted to define a validated category of EDS scores between 10–12 so the needs of this group of women is addressed and they are supported by appropriate referral pathway and services.

ARE THEY REALLY “LOW RISK”? NON-INDIGENOUS AUSTRALIAN PREGNANT WOMEN AGED 20 YEARS AND OVER, LIVING IN HIGH SEIFA SUBURBS, SPEAKING ENGLISH AS THEIR FIRST LANGUAGE
Noble J¹, Hendry A¹, Jones JM², Eastwood J²,³
¹Community Paediatrics, Sydney Local Health District (SLHD) Community Health Services, Sydney, NSW, Australia
²Community Paediatrics, Sydney Local Health District (SLHD) Community Health Services, Sydney, NSW, Australia
³Early Years Research Group, Ingham Institute for Applied Medical Research, Sydney, NSW, Australia

Background and Aim: Many studies focus on high risk pregnant women, including teenage, Aboriginal and Torres Strait Islander, cultural and linguistically diverse, non-Australians and those living in low socio-economic indexes for area (SEIFA) suburbs. Women not belonging to any of these group are typically considered “low risk”. This study aims to compare the prevalence of maternal vulnerabilities, intrapartum and postnatal outcomes in this group of women to a high risk group to ascertain whether they really are low risk.

Method: Routinely collected clinical data from all mothers with infants born in 2012 in the public system, who reside in SLHD were sourced from electronic medical records and analysed using SPSS. Data on pregnant women who fulfilled the criteria for “low risk” were extracted and the prevalence calculated for known maternal vulnerabilities, antenatal and postnatal depressive symptoms and probable depression, and intrapartum and postnatal outcomes. These were compared to the prevalence of these indicators in the high risk group.

Results: Antenatally, there were no differences in women’s intention to not breastfeed between the low and high risk groups. The percentage of alcohol intake during pregnancy in the low risk group was nearly twice that of the high risk group (p < 0.05). The percentages of no breast milk feeds at early postnatal home visit, women without partners, domestic violence, fear of their partner, and probable postnatal depression were also similar between the low and high risk groups.

Conclusion: This study highlights significant levels of certain vulnerabilities which may contribute to suboptimal maternal and infant outcomes in the low risk group. This emphasises that risk assessment of a pregnant women should be conducted by case and should not be prejudiced by favourable demographic characteristics alone, and that support for these women should continue postnatally given the similar propensities for postnatal depression.

PHYSICAL PUNISHMENT OF CHILDREN: TIME WE TOOK A STAND
O’Callaghan M¹
¹University of Queensland, St Lucia, QLD

Background and Aims: A marked increased survival of very preterm infants (<32weeks) has occurred since the 1970’s. This has been accompanied by an increased prevalence of neurodevelopmental, mental health, physical and social problems, especially in the more premature infants. This paper takes an emphasis on infant development and the perspective of the community following introduction of legislation in New Zealand. Legislation by itself will have little effect unless accompanied by support for parents to use more effective, less harmful forms of discipline.

Community attitudes towards child discipline are slowly changing in favour of less harmful methods. As a respected group in the community, paediatricians can play an important role by capitalising on this changing sentiment. We should take a firm stand against physical punishment combining this stand with support for parents in their sometimes difficult roles.

CONSEQUENCES OF PREMATURITY
O’Callaghan M¹
¹University of Queensland, St Lucia, QLD

Background and Aims: A marked increased survival of very preterm infants (<32weeks) has occurred since the 1970’s. This has been accompanied by an increased prevalence of neurodevelopmental, mental health, physical and social problems, especially in the more premature infants. This paper takes an emphasis on the perspectives of the community following introduction of legislation in New Zealand. Legislation by itself will have little effect unless accompanied by support for parents to use more effective, less harmful forms of discipline.

Results: Although only a small minority of infants (<25 weeks) survive and are disability free, the majority of premature infants develop normally and appear well adjusted and successful adults. Cerebral Palsy risk, overall approximately 10% <32 weeks, is higher at lower gestation though still mildly increased in the near term infants. Vision and hearing impairments affect a minority of infants. Developmental Co-ordination Disorder affects up to 50% of the preterm infants. IQ is 8.4 points lower above 32 weeks and 11.4 points lower above 32 weeks) has occurred since the 1970’s. This has been accompanied by an increased prevalence of neurodevelopmental, mental health, physical and social problems, especially in the more premature infants. This paper takes an emphasis on infant development. Brain imaging studies have contributed substantially to understanding pathogenic pathways and early identification. Family stress from the younger premature infant is common, while family adversity maybe prejudicial to normal child development. Tension may exist between screening, early intervention and risk of overdiagnosis.

Conclusions: Though remarkable gains have occurred, prevention, causal pathways, how best to identify and intervene to support children and families and later adult outcomes require further study.

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THE TRANSITIONING OF YOUNG PEOPLE WITH INTELLECTUAL DISABILITY FROM PEDIATRIC TO ADULT HEALTH CARE. LESSONS LEARNT FROM AN INTELLECTUAL DISABILITY PILOT

Ong O1

1Wollongong Hospital, Wollongong, NSW

In recent years, it has been increasingly acknowledged that transitioning from pediatric to adult health care services is challenging for young people with intellectual disability (YP with ID). This is primarily due to several factors: YP with ID may not have the capacity to recognise early signs and seek help for health problems in the adult health system which is heavily reliant on self-report and advocacy; increased need for ongoing health surveillance due to increased risk of health conditions in the ID population which is not adequately supported in our current primary health care setting; lack of training in ID health for adult medicine trainees; lack of experienced clinicians in ID health especially in the transition age group; lack of specific transitional care services/ transitional care coordinators across the state and a lack of mainstream adult health services that are willing to accommodate the needs of the YP with ID. These challenges exist within the climate of change in disability service systems and funding initiatives which will continue for years to come. This presentation will focus on the development of a specialist pediatric and transitional care ID health service within the Liverpool, Fairfield and Bankstown LGAs, in bridging gaps within mainstream health services. The framework and core principles of service development, is based on a human rights perspective as the foundation for the development of clinical services, resource development, capacity building and interagency collaborations. Case studies will be used to illustrate the complexity of transitional care, success elements and pitfalls will be outlined.

DIAGNOSTIC DELAYS AND HEAVY SERVICE USE IN CHILDHOOD INTERSTITIAL LUNG DISEASE

Hime N1,2, Zurynski Y1,2, Fitzgerald D3, Selvadurai H3, Phu A1,2, Deverell M1,2, Robinson P4, Elliott E5, Jaffe A1

1Australian Paediatric Surveillance Unit, Kids Research Institute, Sydney NSW
2Discipline of Paediatrics and Child Health, Sydney Medical School
3The Sydney Children’s Hospitals Network (Randwick and Westmead), Sydney, NSW

Background and Aim: Childhood interstitial lung disease (chILD) is a group of rare chronic and complex disorders with variable lung pathology associated with poor gas exchange. There has been no systematic review of published chILD research. We aimed to describe chILD classification systems, epidemiology, morbidity, treatments, outcomes, and the impact of chILD on families via systematic review. In addition we aimed to assess the need for early diagnosis and treatment.

Methods: A systematic literature search for original studies on chILD was undertaken in the major biomedical databases to the end of December 2013. Epidemiological studies, case series and studies describing classification systems were included. A retrospective medical audit of children ages 0–15 years at tertiary paediatric hospitals in The Sydney Children’s Hospitals Network (Randwick and Westmead) from 2004 to 2013 was conducted.

Results: The literature search yielded 37 publications that met study criteria. Four different chILD classification systems have been proposed in the past decade. The incidence of chILD is estimated at 0.13–16.2 cases/100,000 children/year. Morbidity and outcomes were highly variable and not systematically reported. From our audit of 560 medical records of immune competent children from SCHN, 15 cases were identified. In developed countries, the median mortality was 13% (6–19%). Time from first hospital presentation to a chILD diagnosis ranged from 9 days to 44 months. There were 79 admissions, 10% were to the intensive care unit.

Conclusions: The heterogeneity of chILD disorders, different determinations of what constitutes a chILD disorder and, a paucity of large epidemiological studies precludes consolidation of results across studies. At SCHN chILD is associated with delayed diagnosis, high health service usage, and high mortality. Consensus on chILD classification and treatment is urgently needed.

NON-CYSTIC FIBROSIS BRONCHIECTASIS IN CHILDREN: A 10 YEAR REVIEW OF MEDICAL RECORDS

Phu A1,2, Deverell M1,2, Wu V1,2, Zurynski Y1,2, Robinson P3, Selvadurai H3, Elliott E2,3, Fitzgerald D3

1Australian Paediatric Surveillance Unit, Kids Research Institute, Sydney NSW
2Discipline of Paediatrics and Child Health, Sydney Medical School
3The Sydney Children’s Hospitals Network (Randwick and Westmead), Sydney, NSW

Background and Aim: Non-cystic fibrosis bronchiectasis (NCFB) is a chronic and complex disease involving the destruction of the bronchi airway. It has many causes, often misdiagnosed and coexists with other chronic respiratory diseases. We aim to describe the impact of NCFB health service use in a paediatric tertiary hospital, which has not previously been described.

Methods: We performed a retrospective audit of all children (<15 years of age) treated for NCFB at The Sydney Children’s Hospitals Network (Westmead) from January 2003 to December 2012. Demographics, clinical presentation, diagnoses, disease profile, treatment, health service usage and outcome were reviewed.

Results: 64 children were treated for NCFB: all were diagnosed by high resolution computed tomography (median age was 8.6 years). All patients had an underlying chronic condition. The most common were: asthma (26.5%), immune deficiency (22%), epilepsy (22%), gastro-oesophageal reflux (13%) and cerebral palsy (11%). Prior to diagnosis there were 267 clinical presentations and 53% had reported a history of lower respiratory tract infections. Previous diagnoses included: bronchiolitis (9%), bronchopneumonia (9%), pneumonia (9%), bronchitis (5%) and recurrent chest infections (14%).

Symptoms/signs on presentation included: cough (70%), crackles (42%), purulent sputum (41%), digital clubbing (28%) and wheezing (23%). Following diagnosis of NCFB there were 735 clinical presentations (630 outpatient visits, 96 hospitalisations (average length of stay was 8.0 days) and 8 emergency department presentations). 15% of hospitalisation involved admissions to the Intensive Care Unit. 64% had good clinical progress, 11% had poor outcome, 5% had died and 20% had no further follow up at last known outcome (~4.7 years (range 0.4–15 years) from diagnosis). Treatments include oral, nebulised, or intravenous antibiotic therapy and chest physiotherapy.

Conclusions: This series demonstrates the broad spectrum of NCFB, the need for early diagnosis and treatment.

PERIPHERALLY INSERTED CENTRAL CATHETERS (PICC): THE TWO YEAR EXPERIENCE AT A TERTIARY CHILDREN’S HOSPITAL. A REVIEW OF COMPLICATIONS AND THEIR RISK FACTORS

Pitta T1, Katf H1, Hannah D1

1Sydney Children’s Hospital, Randwick, New South Wales, Australia

Aim: A peripherally inserted central catheter (PICC) is useful and increasingly common for venous access. However, only limited data is available on complications of PICCs in paediatric patients and the risk factors for these. Following a number of catastrophic complications, the objective of this study was to review the rate of all PICC complications, and their risk factors.

Method: A retrospective audit was conducted at Sydney Children’s Hospital, Randwick, using medical records of all patients from zero to 18 years in whom a PICC was inserted between January 2011 and December 2012. Data was collected relating to all aspects of the patient and their PICC, including demographics, the PICC, its insertion and management. Statistical analysis, including exploratory data analysis and estimation of a logistic regression model, was performed.

Results: Of the 238 PICCs successfully inserted, 57.1% developed one or more complications. No deaths were reported, but 33.1% of the complications required removal of the PICC. The common complication types were occlusion (45.0%), site abnormality (11.1%), and malfunction (10.6%). Statistically significant risk factors associated with developing any complication included admission diagnosis (especially gut or neurosurgery), length of hospital stay, background medical condition, colonisation, taking medications, reason for PICC insertion (especially central access and intravenous antibiotics), tip location, infusates (mainly total parenteral nutrition), and dressing change frequency. There were also a number of protective factors (cancer, absence of positive culture, a continuous circuit, and management at home).

Conclusions: Our analysis identified numerous factors, some of which have not previously been recognised, that altered the probability of developing a
HISTOLOGICAL FINDINGS IN PROTOCOL BIOPSIES FOLLOWING PEDIATRIC LIVER TRANSPLANTATION: LOW INCIDENCE OF ABNORMALITIES WITH PROMINENTLY TACROLIMUS MONOTHERAPY AT FIVE YEARS

Sheikh A©, Evans H.M©

1Paediatric Gastroenterology & Hepatology, Starship Children’s Health, Auckland, New Zealand

Background: Histological abnormalities are increasingly reported in protocol biopsies after liver transplantation (LT). These changes may be progressive & represent a form of rejection. Liver biochemistry is often initially normal. Our LT programme began in 2002, utilising tacrolimus and low-dose steroids for the first year. Patients undergo a protocol biopsy at one year post LT prior to stopping steroids, then at five years and every 5 years thereafter. Target tacrolimus levels are 5–8 g/L and 3–5 g/L after 3 and 12 months respectively.

Method: Between 2002 and 2009, 51 children underwent LT; 50 and 49 patients survived for 1 and 5 years respectively, 40 underwent a protocol biopsy at 1 yr, and 43 (20 male; median age at LT 2.3 years; median time post LT 5.1 years) at 5 years. 3 had transferred to adult services; 1 was re-transplanted for graft failure; 1 moved overseas & 1 is awaiting biopsy. Most patients (30/43) were on tacrolimus monotherapy at 5 years.

<table>
<thead>
<tr>
<th>Histology</th>
<th>Percentage</th>
<th>Median ALT iu/L</th>
<th>Median trough tacrolimus g/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year biopsies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>72.5</td>
<td>26</td>
<td>6.9</td>
</tr>
<tr>
<td>Immune hepatitis</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Acute rejection</td>
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<td>456.5</td>
<td>7.6</td>
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<tr>
<td>Steatosis</td>
<td>7.5</td>
<td>23</td>
<td>7.4</td>
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<tr>
<td>Fibrosis</td>
<td>2.5</td>
<td>30</td>
<td>3.9</td>
</tr>
<tr>
<td>Other</td>
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<td>132</td>
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<td>5 year biopsies</td>
<td></td>
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</tr>
<tr>
<td>Normal</td>
<td>68</td>
<td>22</td>
<td>5.8</td>
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<tr>
<td>Immune hepatitis</td>
<td>5</td>
<td>23.5</td>
<td>6.6</td>
</tr>
<tr>
<td>Rejection</td>
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<tr>
<td>Other</td>
<td>5</td>
<td>97.5</td>
<td>10.3</td>
</tr>
</tbody>
</table>
Conclusion: With an immune suppression regimen of tacrolimus and low-dose steroids for 1 year followed by tacrolimus monotherapy thereafter, the majority of protocol liver biopsies were normal. No progressive changes were observed at 5 years. Compared to other LT programmes, we have reduced rates of chronic allograft hepatitis, steatosis and fibrosis at 5 years. Further evaluation is required on the potential long-term adverse effects of corticosteroid use on linear growth and bone mineral density.

FURTHER DEVELOPMENTS IN TRAINING IN CHILD PROTECTION

Smith A1
1Royal Children’s Hospital, Parkville VIC

How can RACP evaluate a trainee’s ability or competency to protect children? Who determines minimal practice standards in Child Protection? Who can adequately supervise advanced training in child protection? What exactly ARE the differences between child protection training programmes for General Paediatricians and CCH specialists and why do they vary so much between regions? Who is best placed to evaluate a trainee’s clinical work in child protection?

Prior to the development of the CCH Child Protection pilot “alternative pathway for advanced training in Child Protection”, all advanced trainees in Community Child Health were required to complete three months of full time training in child protection. Most advanced trainees rotated through tertiary-hospital child protection units in order to obtain this training. The SAC in CCH was mindful of the fact that advanced trainees require differing levels of expertise and competency in recognising children’s vulnerability to harm as well as actual harms that occur as a result of child abuse and neglect.

Anne will discuss the current in-balance between CCH and General Paediatric trainees’ need for training in child protection and the limited capacity of Australian and New Zealand tertiary level child protection units to provide a “one size fits all” model of comprehensive apprenticeship-style training.

After inviting open discussion about the pros and cons of options for training pathways in child protection, Anne will present a draft framework for evaluation of competencies in child protection that includes a “case-based discussion” evaluation tool for your consideration and debate.

COMPLEX ADOLESCENT HEALTH REQUIRES A DEDICATED AND INTEGRATED MULTIDISCIPLINARY MANAGEMENT MODEL

Sonawane R1,2, Payne D1, Guiaia E3
1Dept. of Paediatric and Adolescent Medicine, Princess Margaret Hospital Perth, WA
2Dept. of General Paediatrics and Neonatology, Mildura Base Hospital, VIC
3Dept. of Paediatric Consultation Liaison, Princess Margaret Hospital, Perth, WA

Background: There is an emerging group of adolescents with chronic and disabling conditions including developmental and psychiatric disorders requiring a multidisciplinary management approach. We provide a very comprehensive service between Adolescent Medicine and the Mental Health Teams based on the fact that, we have two extensive frameworks, Adolescent Health Team and Consultation Liaison Team.

The two teams work in close liaison to provide a model of working together in an area of complexity where the boundaries between disciplines are blurred.

The group of young people eligible for care under our team

Age range: 13-18 years

Conditions:
- Adolescents with chronic symptoms with associated mental, behavioural, emotional difficulties
- Complex family dynamics
- Developmental disorders
- School non-attendance
- Social isolation

Strengths of our Service:
- Close liaison between the two teams to provide a complex service close to a MDT model which is not possible with a busy acute medical assessment model.
- As a Paediatric trainee, an exposure to these disciplines broadens the spectrum of our insight into the psychosocial aspects of Adolescent with complex health problems. These skills can be implemented in any specialty of medicine.

Limitations of the Service: Constraints due to two different frameworks and limited resources restricting the level of amalgamation needed for a complete MDT model.

Conclusions: We advocate for the need for a more comprehensive and integrated MDT model within Adolescent Medicine with a focus on management of adolescents with complex health care needs.

References:

PERCEIVED KNOWLEDGE, PARTICIPATION AND RESPONSIBILITY OF YOUNG ADULTS WITH PHENYLKETONURIA IN MANAGING THEIR DIET

Sonawane R1,2, Avihu Boneh1,3
1Department of Pediatrics, Mildura Base Hospital, Victoria
2Department of Metabolic Medicine, Royal Children’s Hospital, Victoria
3University of Melbourne, Victoria

Background: The increasing number of young patients with chronic disease1 who reach adulthood requires health professionals to prepare these patients for transition to adult life. Phenylketonuria (PKU) is an inherited metabolic disorder treated by a special diet to prevent neurological complications2. As children with PKU grow into adulthood, they are expected to take increasing responsibility in managing their special diet.

Objectives: We aimed to explore 1) the perception of our patients with PKU regarding their understanding and knowledge of the principles of their diet and their participation and responsibility taking in managing their diet, and 2) Parents’ and clinic dietitians’ assessments of the patients’ understanding, knowledge and participation in the management of their diets.

Methods: Patients with PKU (8 y–18 y of age), who attend the Metabolic Clinic at RCH-Melbourne, their parents, and the treating dietitians, filled questionnaires designed to assess the patients’ perception of their diet, their participation and their responsibility in managing their diet.
Abstracts

Results: All teenage patients had good understanding and knowledge of the principles of the diet, as perceived by them and confirmed by their parents and dietitians. There was an increasing trend of participation and responsibility taking in preparing the diet, but barriers (“I don’t want”, “too difficult”, “forgetting”) were noted.

Conclusion: In our cohort, there was a gradual transition from dependence on carers in managing the diet (age 8–11 y) to independence (age 16–18 y) but barriers to self-management exist.

Recommendations: A multidisciplinary model of age-appropriate education and repeated assessments of self-management skills and psychosocial barriers may facilitate a process of patients’ independence and responsibility in managing their treatment.

References:

AN HOLISTIC APPROACH TO AGE ESTIMATION IN REFUGEE CHILDREN
Sypek S1, Benson J1, Spanner K1, Williams J2
1Women’s and Children’s Hospital, North Adelaide, SA
2Migrant Health Service, Adelaide, SA

Background: Many refugee children arriving in Australia have an inaccurately documented date of birth (DOB). A medical assessment of a child’s age is often requested when there is concern that their documented DOB is incorrect. There is no international consensus on the appropriate method to assess age, often radiological approaches are used. We investigated the accuracy of a holistic age assessment tool currently in use at a metropolitan migrant health service.

Methods: A holistic age assessment tool that combines medical and non-medical approaches was used to estimate the ages of 60 refugee children (aged 5–17 years) with a known DOB. The tool used four components to assess age: an oral narrative, developmental assessment, anthropometric measures and pubertal assessment. Assessors were blinded to the true age of the child. Correlation coefficients for the actual and estimated age were calculated for the tool overall and individual components.

Results: The correlation coefficient between the actual and estimated age from the AAT was very strong at 0.9802 (males 0.9748, females 0.9876). The oral narrative component of the tool performed best (0.9603). Overall, 86.7% of age estimates were within one year of the true age. The range of differences was –1.43 to 3.92 years with a standard deviation of 0.77 years (9.24 months).

Conclusions: The AAT is a holistic, simple and safe instrument that can be used to estimate age in refugee children with results comparable to medically based methods currently used. This study supports the use of a thorough patient history and clinical assessment to estimate age rather than relying on radiological studies.

CHILD AND ADOLESCENT TRANS* MEDICINE
Telfer M1, Stathis S2, Feldman D1
1Royal Children’s Hospital, Parkville, VIC
2Children’s Health Queensland, Hospital and Health Service

Background and Aim(s): Children and adolescents with Gender Dysphoria experience marked distress that accompanies the incongruence between their experienced or expressed gender and their assigned gender based on biological sexual characteristics. The number of children, young people and families seeking care has grown rapidly over the last five years, requiring Australian health systems to develop services to meet demand, and for Australian health professionals to further develop their skills and knowledge in the growing area of trans* medicine. We aim to provide an overview of trans* medicine and provide evidence for current approaches to support and treatment.

Method: We will describe trends in the presentation of trans* children and young people to an Australian paediatric multidisciplinary service, reflecting a worldwide increase in presentations and increased societal awareness of trans* issues locally. We will present current mental health perspectives in the support and understanding of young trans* individuals and families, and provide an overview of medical treatment options available. This will be discussed within the legal and ethical framework and the challenges facing Australian health professionals working in this growing area of medicine.

Results and Conclusion: The experience of three clinicians working within mental health and medical services in two Australian States will be used to inform current issues in trans* medicine, and reflect on possible avenues for future development. Growing interest and understanding of trans* medicine among Australian health care professionals is likely to lead to improved outcomes for young trans* individuals.

SPECIFIC BEHAVIOUR PROBLEMS IN CHILDREN WITH FASD IN REMOTE AUSTRALIAN ABORIGINAL COMMUNITIES: IMPLICATIONS FOR INTERVENTION
Tsang TW1,2, Carmichael Olson H1, Latimer J3, Fitzpatrick J3,4, Hand M5,6, Oscar6, Carter M5, Elliott E3,4,5,8
1Discipline of Paediatrics & Child Health, Sydney Medical School, The University of Sydney c/o The Lililwan Project, The Children’s Hospital at Westmead, NSW 2145, Australia
2The George Institute for Global Health, Sydney Medical School, The University of Sydney, Sydney, NSW 2050, Australia
3Department of Psychiatry & Behavioral Sciences, University of Washington School of Medicine, Seattle Children's Research Institute, Seattle, WA 98121, USA
4The Telethon Institute of Child Health Research, West Perth, WA 6872, Australia
5Fitzroy Valley District High School, Fitzroy Crossing, WA 6765, Australia
6Marninwarntikura Women’s Resource Centre, Fitzroy Crossing, WA 6765, Australia
7Nindarringi Cultural Health Services, Fitzroy Crossing, WA 6765, Australia
8The Sydney Children’s Hospital Networks (Westmead), Westmead NSW 2145, Australia; 9 The Australian Paediatric Surveillance Unit, Kids’ Research Institute, Westmead NSW 2145, Australia.

Background/Aims: Fetal alcohol spectrum disorders (FASD) are associated with problematic behaviours, but little is known about the behavioural challenges of remote Australian Aboriginal children. Behaviour was investigated in remote Australian Aboriginal children assessed for the Lililwan Project. We hypothesised that behaviour would be poorer in children with FASD compared to those without FASD.

Methods: Children (n = 108) were assessed using the parent/carer-rated Child Behavior Checklist (CBCL), and teacher-rated Teacher Report Form (TRF). Proportions scoring within “Normal/Borderline/Clinical” ranges were determined. Chi-square and Mann-Whitney U tests were used to compare scores and frequencies of Critical Items (highly concerning specific behaviours) for FASD versus Non-FASD groups.

Results: Participants were aged 7.4–9.8 years, and 21 had an FASD. Ninety-seven parents/careers completed the CBCL, and 106 teachers completed the TRF. Academic performance was the most common “Clinical” problem (73%); TRF scores were lower in the FASD group on 13 scales encompassing Attention, Academic performance, Adaptive functioning, Social, Thought, Post-traumatic stress and Total problems, and Sluggish cognitive tempo (p < 0.001). More FASD children had scores in the “Clinical” range in 9 of 26 TRF scales (p < 0.012). Of the Critical Items, speaking about suicide was more frequent in the FASD (14.3%) than Non-FASD group (1.2%; p = 0.036). “Attacks” (aggressive behaviour) was the most prevalent Critical Item endorsed by teachers (FASD: 38.1%; Non-FASD: 17.6%; p = 0.07).

Conclusion: In the first investigation of the behavioural profile of remote Australian Aboriginal children, FASD was associated with greater impairment. Academic performance was alarmingly poor, with 73% scoring in the “Borderline/Clinical” ranges (<16th percentile). Support is urgently needed to help teachers manage the behavioural challenges in children with FASD, as this is access to adequate mental health services.
EXPLORING INFANT FEEDING PRACTICES IN CAMPBELLTOWN, SINGAPORE, AND HO CHI MINH CITY

Leow TY1, Ung A1, An Y1, Nguyen T1, Qian S1, Maddgil P1, Whitehall J1,2
1University of Western Sydney, Sydney, NSW, Australia
2Campbelltown Hospital, Sydney, NSW, Australia

Background and Aim(s): Infant feeding practices in the first few years of life are known to influence the child’s long-term health. Studies have associated obesity and other diseases with early childhood feeding practices (Shahid K et al, 2010, Int J Obst, 34, 1475–9). The rising prevalence of obesity is a problem in most developed countries, especially Australia. Our aim is to examine and compare infant feeding practices in Campbelltown, NSW, Singapore, and Ho Chi Minh City, Vietnam (HCM).

Method: Consenting parents and carers (aged ≥18 years old) of at least one child (≥5 years old) were recruited from three paediatric clinics in Campbelltown, Singapore, and HCM. Participants completed an infant feeding practices questionnaire regarding breastfeeding, beverage and solid initiation in addition to the parent’s ethnicity, age and educational level. Data was analysed quantitatively using SPSS.

Result(s): 287 participants were recruited across the three sites, Campbelltown (n = 108), from Singapore (n = 91), and HCM (n = 84). The majority of participants were female [n = 246, 85.7%] compared to males (n = 27, 12.9%). Similar ratios existed between boys and girls: 150 (52.3%) and 133 (46.3%) respectively. A large percentage of children [82.6% (n = 237)] were breastfed. However, only 81.0% (n = 192) were exclusively breastfed – of which, only 52.1% (n = 100) were exclusively breastfed for five months or more, and within each region, Campbelltown (n = 35, 32.4%), Singapore (n = 47, 91.7%), and HCM (n = 18, 21.4%), with chi square sig. P < 0.05.

Conclusion(s): There was statistical significance in the difference between the time of exclusive breastfeeding as well as the age of introduction of solid food between the locations. This information may assist in developing interventions in children aged <14 years and is relevant to paediatric practice. With increased immigration from prevalent countries, paediatricians have a role in caring and preventing FGMC. We aimed to describe the knowledge, attitudes and clinical experience of Australian paediatricians related to FGMC.

Conclusions: These novel data show that a significant minority of Australian paediatricians have clinical experience with FGMC in children resident in Australia. Only a fifth were aware of the WHO defined FGMC types. Paediatricians called for educational programmes and improved dissemination of national policies to address knowledge gaps and to guide practice.

CHILDE DEVELOPMENT AND SETTLEMENT: A LONGITUDINAL STUDY OF REFUGEE CHILDREN

Zwi K1,2, Woodland L3, Woolfenden S1,2, Williams K1,5, Rungan S1, Allen C1
1Sydney Children’s Hospital Network, Sydney, NSW, Australia
2University of New South Wales, Sydney, NSW, Australia
3South Eastern Sydney Local Health District, Sydney, NSW, Australia
4Royal Children’s Hospital, Melbourne, Victoria, Australia
5University of Melbourne, Melbourne, Victoria, Australia

Background: Longitudinal study of refugee children aiming to (1) describe the health conditions of refugee children on arrival; (2) assess psychological wellbeing, development and early settlement factors at one and two years post arrival; and (3) identify risk and protective factors that contribute to health outcomes.

Method: 61 refugee children (6 mths–16 yrs) who settled in the Illawarra were recruited. Physical health examinations and pathology testing was conducted by GPs on arrival. At one and two years post-arrival, children were assessed for development (6 mths–5 yrs) [Australian Developmental Screening Tool (ADST)]; psychological wellbeing (4 yrs+6 yrs) [Strengths and
Difficulties Questionnaire (SDQ)]; and settlement factors impacting on the family. Results were compared with Australian norms. Correlations were tested using parametric and non-parametric techniques and multiple regression analysis was used to identify risk and protective factors.

Results: Retention rate over a two-year period was high (97%) with the cohort being representative of the population settling in the Illawarra. A high prevalence of nutritional deficiencies, parasitic infections and under-immunisation were detected. Compared with Australian-born children, delayed language development was more common. The SDQ highlighted concerns in emotional symptoms and peer relationships. Families continued to experience significant stressors at one and two years post-arrival. Potential risk and protective factors are currently being analysed.

Conclusions: It is feasible to maintain contact in longitudinal studies with refugee children and families. Measures employed were acceptable to families and practical in identifying children requiring further assessment. Longitudinal research is useful to inform policy and ongoing service delivery although larger studies are required to make definitive conclusions.