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Award Winning Abstract

RUE WRIGHT MEMORIAL AWARD

SLIGHT/MILD SENSORINEURAL HEARING LOSS IN PRIMARY SCHOOL CHILDREN: POPULATION STUDY

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Introduction: The literature suggests important developmental sequelae of slight/mild sensorineural hearing loss (SNHL), but these conclusions are mainly drawn from clinic samples or population studies with low response rates. We aimed to determine prevalence and impacts of slight/mild SNHL in primary school children.
Method: *Design and participants:* Cross-sectional cluster sample survey of 6581 children (85% response; 3367 Grade 1, 3214 Grade 5) in 89 schools in Melbourne, Australia. *Measures:* All children underwent audiometric testing under sound-proof conditions. Slight/mild SNHL was defined as low-frequency pure tone average (LPTA) across 0.5, 1, 2 kHz and/or high-frequency PTA (HPTA) across 3, 4, 6 kHz of 16–40 dB HL in the better ear, with air-bone conduction gaps <10 dB. Parents reported children's health related quality of life (HRQoL) and behaviour. Each child with slight/mild SNHL, matched to two normally-hearing children (LPTA and HPTA ≤15 dB HL in both ears), completed standardized assessments. Whole-sample comparisons were adjusted for school, grade level and sex, and matched-sample comparisons for non-verbal IQ.
Results: 55 children (0.88%; 95% CI 0.66, 1.12) had slight/mild SNHL. Children with and without SNHL scored similarly on language (mean 97.2 vs 99.7; 95% CI –6.3, 2.8) reading (101.1 vs 102.8; –6.1, 4.2), behaviour (8.4 vs 7.0; –2.9, 2.6) or parent- and child-reported child HRQoL scores (77.6 vs 80.0; –5.8, 1.6, and 76.1 vs 77.0; –5.1, 3.6), but phonological short-term memory was poorer (91.0 vs 102.8, –16.8, –6.1).
Conclusions: Prevalence of slight/mild SNHL was lower than reported in previous studies. There was no strong evidence that slight/mild SNHL adversely affects language, reading, behaviour or HRQoL.

PRSANZ RESEARCH AWARD

SELF-REPORT OF SEXUALLY ABUSIVE BEHAVIOUR BY NEW ZEALAND ADOLESCENTS: FINDINGS FROM A NATIONAL SCHOOL-BASED YOUTH HEALTH SURVEY

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Introduction: Accurate data on the prevalence of abusive sexual behaviour and its associated risk factors are important in developing policy and services to address this concerning problem. However population based data on the perpetration of abusive sexual behaviour by adolescents is sparse. This study reports the epidemiology of sexually abusive behaviour by adolescents and their experiences of witnessing and victimisation of violence compared to adolescents who do not have a history of sexual abusive behaviour.
Method: In 2001, a comprehensive anonymous self-report youth survey (Youth2000) collected data from 9,567 randomly selected young people who attended secondary school in New Zealand. Included in the questionnaire were specific violence related items.
Results: More than 1 in 20 adolescents reported they had been or may have been sexually abusive to another person (205, 2.3% and 325, 3.6% respectively). Adolescents who report perpetrating sexually abusive behaviour are much more likely than those who deny perpetrating sexually abusive behaviour to have witnessed verbal or physical abuse by adults of other adults or other children in their own homes. Likewise adolescents who report perpetrating sexually abusive behaviour are much more likely than those who deny perpetrating sexually abusive behaviour to report having been physically harmed by another person in the last 12 months (47.7% vs 29.7%; $p < 0.001$), being bullied at least weekly at school (16.1% vs 6.7%; $p < 0.001$) or ever having been the victim of sexually abusive behaviour (51.0% vs 21.4%; $p < 0.001$).
Conclusion: A small but concerning number of adolescents report perpetrating sexually abusive behaviour. Adolescents who report perpetrating sexually abusive behaviour are much more like than those without a history of perpetrating sexually abusive behaviour to report being a witness or a victim of all other types of inter-personal violence. These findings support other work that highlights a significant association between exposure to violence in childhood and adolescence and the later development of violence perpetration behaviours. Greater efforts need to be taken to address violence prevention in families, schools and communities.

BLACKWELL PUBLISHING NEW INVESTIGATOR AWARD

SEX AND DRUGS IN POPULAR MOVIES: WHAT IS THE PUBLIC HEALTH MESSAGE?

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Introduction: The top 200 movies at the worldwide box office have grossed in excess of $70 billion US dollars and with new technologies are becoming ever more accessible to audiences. Adolescents spend between 3 to 6 hours every day watching various forms of media entertainment, yet little is known about the content of these media. We analysed the portrayal of sex and drug use in the most popular movies of the last 20 years.
Methods: We used the Internet Movie Database list of the top 200 movies of all time. Films released or set prior to the HIV era (pre 1983), animated, not about humans or G/PG rated, were excluded. Films were reviewed by teams of observers using a data extraction sheet tested for inter-rater reliability. Sexual activity, sexually transmitted disease (STD) prevention, birth control measures, drug use and any consequences were recorded.
Results: There were 53 sex episodes in 28 (32%) of the 87 movies reviewed. There was only one suggestion of condom use, which was the only reference to any form of birth control. There were no depictions of important consequences of unprotected sex such as unwanted pregnancies, HIV or other STDs. Movies with cannabis (8%) and other non-injected illicit drugs (7%) were less common than those with alcohol intoxication (32%) and tobacco use (68%) but tended to portray their use positively and without negative consequences. There were no episodes of injected drug use.
Conclusions: Sex depictions in popular movies of the last two decades lacked safe sex messages. Drug use, though infrequent, tended to be depicted positively. The social norm being presented is concerning given the HIV and illicit drug pandemics.

BEST POSTER PRIZE

THE USEFULNESS OF THE SLEEP DISTURBANCE SCALE FOR CHILDREN (BRUNI) AS A PREDICTOR OF PHYSIOLOGICAL PROBLEMS DURING SLEEP IN DUCHENNE MUSCULAR DYSTROPHY

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Objective: To examine the clinical usefulness of the Sleep Disturbance Scale for Children (SDSC) (1) as a predictor of sleep hypoventilation in boys with Duchenne muscular dystrophy (DMD).
Introduction: The SDSC has been developed to identify children with symptoms of sleep disturbance but not yet validated for use in patients with neuromuscular disease.

Sleep-disordered breathing is a well-recognised complication in patients with DMD leading often to respiratory failure and death (2–4). Assisted ventilation can slow respiratory failure (5–6), however the optimal time to offer it is not defined (7–9). If the SDSC was able to separately identify sleep hypoventilation in clinically asymptomatic boys with DMD and avoid the need for polysomnography it would represent an advance in the management.

Methods: Boys attending the Neuromuscular Clinic at Sydney Children's Hospital had the SDSC administered as part of routine evaluation. The SDSC identifies six areas of sleep disturbance including sleep-disordered breathing. A number of boys with high and low t-scores for sleep-disordered breathing were selected and underwent polysomnographic studies, spirometry and readministration of the SDSC during an admission to the Sleep Unit at Sydney Children's Hospital.

Results: We performed a linear regression analysis of variance using the mixed and obstructive apnoea index (MOAHI) from the polysomnograph as our dependant variable, taking into account age and BMI. We looked at the MOAHI against each of the six sleep disturbances, FEV1 and FVC. Using this form of analysis there was no statistically significant correlation between the SDSC and MOAHI.

Conclusions: We conclude that the SDSC is not a clinically useful predictor of sleep hypoventilation in boys with Duchenne Muscular Dystrophy and should not replace polysomnography and spirometry as a means of monitoring respiratory progress.

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Paediatrics & Child Health Divisional Abstracts and Posters: 2006

FIFTEEN-MONTH OUTCOMES OF A PRIMARY CARE INTERVENTION FOR CHILDHOOD OVERWEIGHT/MILD OBESITY: RANDOMISED CONTROLLED TRIAL

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Introduction: A primary care approach to childhood obesity could supplement community prevention and tertiary management strategies, but must be shown to effectively reduce child BMI and not lead to unintended harm. We report 15 month results of the LEAP general practitioner (GP) trial that aimed to reduce body mass index (BMI) gain in overweight/mildly obese children.

Method Design: Randomised controlled trial (RCT) nested within a baseline cross-sectional BMI survey. *Setting:* 28 general practices, Melbourne, Australia. *Participants:* 1) BMI survey: 2112 children visiting their GP April-Dec 2002; 2) RCT: overweight/mildly obese (BMI z-score <3.0) children aged 5 yr 0 mth–9 yr 11 mth (82 intervention, 81 control). *Intervention:* Four standard GP consultations over 12 weeks employing brief solution-focused techniques, targeting change in nutrition, physical activity and sedentary behaviour, and supported by purpose-designed family materials. *Main outcome measures:* Primary: BMI at 15 months, adjusted for baseline. Secondary: Parent-reported child nutrition, physical activity and health status, adjusted for baseline; child-reported health status, body satisfaction, and appearance/self-worth.

Results: Attrition was 10%. Compared with controls, at fifteen months intervention children had no mean difference in BMI (0.0, 95% CI –0.5, 0.5; $p = 1.00$) but had improved nutrition scores (1.6, 95% CI 0.9, 2.3; $p < 0.001$) and a trend to increased daily physical activity (0.2, 95% CI –0.0, 0.3; $p = 0.08$). Health status and body image were equivalent.

Conclusions: This intervention did not result in a sustained reduction in child BMI. Reasons might include an ineffective intervention, insufficient intensity, or inability of GPs to acquire effective skills through the brief training offered. Efficacy must be demonstrated before primary care approaches to childhood obesity are widely offered.

EFFECT OF A BRIEF COMMUNITY-DELIVERED INTERVENTION ON INFANT SLEEP PROBLEMS AND MATERNAL HEALTH: A CLUSTER RANDOMISED TRIAL

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Introduction: Infant sleep problems are an important cause of depression in mothers. We hypothesised that a community-delivered intervention targeting established infant sleep problems would improve infant sleep and maternal wellbeing.

Methods Design: Cluster randomised controlled trial. Setting: 49 Maternal and Child Health (MCH) centres in Melbourne, Australia. Participants: 739 mothers of 4-month infants recruited at "well-child" appointments at the MCH centres (October-November 2003). Trial participants consisted of the 328 mothers who reported an infant sleep problem at 7 months. Intervention: Behavioural strategies delivered over 1–3 individual structured MCH consultations, versus usual care. Main outcome measures: Maternal report of infant sleep problem, depression symptoms (Edinburgh Postnatal Depression Scale (EPDS)), and SF-12 mental health scores when infants were 10 and 12 months old.

Results: Prevalence of infant sleep problems was lower in the intervention group at 10 months (56.4% versus 68.0%; adjusted OR 0.59 (95% CI: 0.36 to 0.96); $p = 0.03$) and 12 months (39.3% versus 54.8%; NNT 6.5; adjusted OR 0.47 (0.29 to 0.77); $p = 0.002$), as were EPDS

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scores at 10 months (adjusted mean diff. –1.4 (–2.3 to –0.4); p = 0.007) and 12 months (–1.6 (–2.5 to –0.6); p = 0.001). SF-12 mental health scores were higher indicating better health (adjusted mean diff 3.7 (1.5 to 5.8); p = 0.001 (10 months) and 3.7 (1.5 to 5.9); p = 0.001 (12 months)).
Conclusions: A brief behavioural intervention not only improves the target condition (infant sleep) but has substantial effects on mothers' mental health.

DIFFERENCES IN CHILDREN'S DEVELOPMENT ACROSS AUSTRALIA: RESULTS FROM THE AUSTRALIAN EARLY DEVELOPMENT INDEX (AEDI) PROJECT

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Introduction: There is increasing recognition that local community involvement and accountability are important factors in improving outcomes for young children. The AEDI aims to measure and compare the health and development of populations of children across Australia to help communities assess how well they are doing in supporting young children and their families.
Methods: The AEDI, originally developed in Canada and modified slightly for use in Australia, is a population measure of development based on a checklist completed by children's teachers during the first year of formal schooling. It consists of over 100 questions measuring five developmental domains: language and cognitive skills; emotional maturity; physical health and well-being; communication skills and general knowledge; and, social competence. Data on children in their first year of school are aggregated, analysed and reported for each suburb or postcode across each domain.
Results: In 2004 and 2005 the AEDI was completed by 1,037 teachers for 18,619 children in 27 communities across Australia. The average age of the children was 6 years (SD 0.46). Overall there were 22.7% of children with one or more developmental vulnerabilities and 10.9% with two or more. There was considerable variability across developmental domains with the lowest mean scores in the communication and general knowledge domain (7.94, SD 2.46) and the highest in the physical health and wellbeing domain (8.88, SD 1.40). Although across the whole population traditional demographic markers such as socio-economic status, ethnic background and indigenous status were all powerful predictors of developmental vulnerability across domains, these markers do not fully explain within community variability.
Conclusions: This is the largest single database of children's development in Australia. In this population significant proportions of children are developmentally at risk; however within communities the developmental variability suggests local risk and protective factors play an important role in making a difference to outcomes for children.

CARDIOVASCULAR RISK FACTORS IN ABORIGINAL AND NON-ABORIGINAL CHILDREN

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Introduction: Being socially disadvantaged and/or Aboriginal are known risk factors for chronic disease, including cardiovascular disease, and mediated by low birth weight, obesity, insulin resistance, hypertension and albuminuria. There are currently no population-based comparative studies in racially and socio-economically diverse children looking at the prevalence of risk factors for chronic disease.
Method: Aboriginal and non-Aboriginal children were enrolled from primary schools in urban, coastal, rural and remote areas of NSW. Consenting children were tested for height, weight, blood pressure and albuminuria by dipstick albumin : creatinine (ACR). Birth weight was also recorded. Remoteness of locality and socio-economic status (SES) were measured using the Accessibility and Remoteness Index of Australia (ARIA) and Socio-Economic Indexes For Areas (SEIFA). All children are currently being re-tested a further two times over four years.
Results: 1250 (55%) Aboriginal and 1016 (45%) non-Aboriginal children were enrolled from 37 NSW primary schools. The prevalence of obesity (BMI ≥2SD) was 7.1%, hypertension (systolic or diastolic blood pressure ≥90th centile) was 3.0% and 1.9% respectively, low birth weight (birth weight <2500 g) was 8.2%, and albuminuria (ACR ≥ 3.4 mg/mmol) was 7.3%. Aboriginal children were no more likely to have these abnormalities than non-Aboriginal children. After adjustment for clustering and confounding using regression techniques, significant risk factors for obesity were older age group, non-urban location and higher SES (all p < 0.03). Significant risk factors for hypertension were female gender, older age group, non-urban location, higher SES and increasing height, weight and BMI SD (all p < 0.01). Significant risk factors for albuminuria were female gender and older age group (both p < 0.01). Low birth weight and Aboriginal status were not predictors of obese, hypertensive or albuminuric children.
Conclusion: In these primary-school aged children, current overweight, rather than low birth weight, and environmental health determinants are more important predictors of cardiovascular risk than being Aboriginal.

PAEDIATRICIANS DO MENTAL HEALTH! A COMPARISON OF DEVELOPMENTAL/BEHAVIOURAL AND MENTAL HEALTH REFERRALS IN A PAEDIATRIC HOSPITAL

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Introduction: Australian paediatricians are being referred many children with severe and complex behavioural presentations. We hypothesised that in a paediatric teaching hospital the burden of emotional-behavioural symptoms of children seen in a developmental/behavioural paediatric clinic (DBP) would be similar to that of children seen in the hospital's community mental health out-patient service (MH).
Method: The Strengths and Difficulties Questionnaire (SDQ) was completed by parents of consecutive children seen in both the DBP and the MH services of a paediatric teaching hospital over a 6 month period. The Self-Report version was completed by patients aged over 11 years. Data were compared both continuously and categorically, for total scores and subscale scores.
Results: For patients aged 4–11 years, the total score was higher for the MH, (n = 137, mean 20.4, SD 6.5) than the DBP, (n = 229, mean 16.6, SD 6.7) sample (p < .001). There was no difference in the Hyperactivity scale (MH 6.4[2.7]; DBP 6.5[2.6], p = .62). 79% of MH patients had Total scores in the abnormal range, compared with 50% of DBP patients (p < .001). For patients aged 11–17 years, there was no difference between the groups in the total score (MH n = 146, 19.4[7.7]; DBP n = 99, 19.3[7.2], p = .92), and only one sub-scale was different, (Emotional, higher in MH). 62% of MH patients had Total scores in the abnormal range, compared with 69% of DBP patients (p = .29). On the Self-Report there was no difference in the total score (MH n = 140, 17.5[6.8]; DBP n = 52, 15.7[6.3], p = .11), and again only one sub-scale was different, (Emotional, higher in MH). 39% of MH patients had Total scores in the abnormal range, compared with 29% of DBP patients (p = .21).
Conclusions: Children referred to a tertiary DBP clinic have a comparable burden of emotional-behavioural symptoms to those referred to a MH service. The complexity and severity of DBP patients need to be taken into account in public hospital service planning.

THE STATE OF TRANSITION CARE FOR YOUNG PEOPLE WITH CHRONIC ILLNESS IN NSW

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Introduction: Effective transition of young people with chronic illness from specialist paediatric to specialist adult care is essential, as ineffective transition may have significant health consequences. Little evidence exists on which to base best practice in transition and best practice will vary with specific illness. The GMCT Transition Care Program was charged with the review of and recommendations for transition in chronic illness in NSW. The first step was to obtain data on the current status of transition care.
Method: In 2004/2005 data were collected via face to face interview with more than 200 paediatricians (primarily from the three tertiary paediatric hospitals in NSW) and adult physicians; non-structured and standardised survey format.
Results: Diabetes, other endocrine disease, general neurology, spina bifida, gastroenterology and cystic fibrosis were the conditions with the greatest number of patients awaiting transition (excluding asthma and developmental disability which often access non-specialist care; and mental health as not part of the GMCT brief). Paediatric services acknowledged the importance of transition. However the majority kept no electronic databases, less than 20% had specific transition programs, most started the transition process just prior to transfer and few had formal contacts with the adult services to which they transitioned their patients. Adult services generally varied in their availability for and interest in the care of young people, who were 'diluted' in the adult service.
Conclusion: This is the first study to our knowledge that describes the state of transition in Australia. The process of transition requires systemic and systematic change in order to best serve the health of young people with chronic illness.

CHRONIC ILLNESS READMISSION PROGRAMME (CHIRP©)

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Introduction: CHIRP© is a fully evaluated and streamlined computerised information system providing a smooth and fast transition from home to urgent medical care and/or inpatient admission for children with chronic illness. CHIRP© expedites and personalises what can be a laborious, stressful time to the parents, the child and the immediate health carers who may be unfamiliar with the case or condition.
Aim: To create with families control, efficient and quality care, in circumstances of medical emergencies and readmission to hospital. To

1. Ensure chronically ill children and families receive the best possible individualised medical attention.
2. Minimise time between Emergency Department and admission to the Children's ward.
3. Provide accurate Information and Treatments to any Health provider contact between parents and their GP, emergency or paediatric staff.

Methods: The CHIRP Passport is a small laminated card (USB Flashcards are in development) identifying the child and recording the child's photo, doctors, diagnosis, past history, family history, allergies, present and emergency treatments. It is carried by the parent or child, presented to medical staff wherever they travel around the world, and regularly updated. The CHIRP passport information is completed in partnership with the parents, the child and their paediatrician encouraging active involvement of families in the treatment process. An ongoing 3 year evaluation of the programme has been conducted consisting of before & after surveys.
Results

- Dramatic & significant ($p < .05$) decreased EMD waiting times
- Significant ($p < .05$) increase in parents' level of:
  - Comfort in hospital environment
  - Involvement in decision making of their child's care
  - Confidence in how they care for their child
- Parents commonly felt an improvement in:
  - Medical care given to child
  - Their emotional wellbeing
  - Staff attitude to both themselves and their child
  - Ability to explain their child's condition and individual needs

Conclusion: CHIRP© has enhanced efficiencies, quality, communication & trust b/w families & healthcare workers.

YOUNG PEOPLE WITH MENTAL HEALTH PROBLEMS PRESENTING TO PAEDIATRIC EMERGENCY DEPARTMENT (PED), A PROSPECTIVE AUDIT OF THE PROVIDED PSYCHIATRIC CARE

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Introduction: Young people with mental health problems (MHP) presenting to PED represent a significant challenge to their families, Mental Health Service (MHS) and PED team. It is essential to engage them and their families with various services and provide them with "comprehensive assessment and management".[1] There is little information in the current literature about this important issue and its management in PED.
Method: A prospective audit of young people presenting to PED with mental health problems was undertaken by the Department of Psychological Medicine and PED at the Women's and Children's Hospital, SA, over a 6 month period between September 2003 and March 2004. Outcomes assessed included: presentation frequency, demographics, psychological characteristics, triage category, waiting time, psychiatric assessment, disposal and follow up. These outcomes were evaluated against contemporary published guidelines and specific key performance indicators.[2]
Results: There were 457 patients with MHP representing 2.4% of all PED presentations over 6 months. The majority 64.7% were female, 89.1% aged 12–17 years, 76.3% came in after hours, 80.8% were triaged as ≥ category 3 and 52.9% seen within expected triage time. Psychosocial & behavioural problems represented 34.5%, suicide, deliberate self harm & poisoning 27.4% and diagnosed mental disorders 22.5%. The initial psychiatric assessment was provided by PED staff in the majority of cases, 348 (76.1%), while 109 (23.8%) were primarily seen by MHS. Subsequently, 279(61%) of all presentations had MHS involvement whilst in the PED & the remaining 38.9% were solely managed by PED staff. Of all presentations, the majority 292(63.1%) were discharged home with only 165(36.1%) admitted to hospital. Of those managed by MHS team and discharged home, 95.7% had documented follow up plans and 59.5% had GPs letter sent as compared to 60.7% and 7.8% respectively for those managed solely by PED team. Of concern, of all those reviewed by both teams and discharged home, 48(16.4%) had no documented follow up plans.
Conclusion: Mental health disorders represent a small but important & challenging share of PED work load. Although the majority are adequately assessed & managed, a significant percentage is inadequately assessed or discharged without follow up. In order to improve and optimize the management of young people with MHP there needs to be adequate psychiatric training and education to all PED staff.

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AN "EVIDENCE-BASED IMPLEMENTATION STRATEGY" THAT IMPROVES THE EVIDENCE-BASED CARE OF PAEDIATRIC ASTHMA IN A RURAL EMERGENCY DEPARTMENT

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Objective: To determine if an Evidenced Based Implementation (EBI) could lead to the successful implementation of evidenced based care for children presenting with asthma to a rural referral hospital.
Design: A pre-intervention audit of current practice was conducted followed by an EBI strategy to improve compliance with current

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asthma guidelines. The factors identified in need of improvement and included the documentation of severity of asthma attacks, low usage of spirometry in acute asthma, the use of metered dose inhalers (MDI) with spacing devices for medication delivery, the over use of ipratropium for mild asthma, the under utilization of corticosteroids, the low utilization of written short term asthma management plans (STAMPs), over use of antibiotics for acute asthma, and possible over use of chest x-rays.

Methods: The pre-intervention audit was conducted from April 1-June 30 2004, the evidenced implementation (EBI) occurred in August 2004 with follow up data collected from September 1–November 30, 2004.

Results: There were 61 presentations of paediatric asthma in the pre-intervention audit and 67 presentations post with no significant differences between the two groups. Following the EBI there were significant increases in the assessment of asthma severity (34% to 93%, $p < 0.01$), use of spirometry (34% to 85%, $p < 0.01$), use of spacers (8% to 57%, $p < 0.01$), a reduction in the use of ipatropium bromide (29% to 2%, $p < 0.01$) and in the use of STAMPs (18% to 84%, $p < 0.01$). There was no change in the use of steroids (68% to 64%, $p = 0.6$), salbutamol (84% to 79%, $p = 0.5$), antibiotics (15% to 8%, $p = 0.2$) and chest x-rays (10% to 12%, $p = 0.7$).

Conclusions: This study demonstrates that an EBI strategy can alter physician behavior in a rural referral hospital.

YOUNG PEOPLE WITH MENTAL HEALTH PROBLEMS PRESENTING TO THE PAEDIATRIC EMERGENCY DEPARTMENT (PED), A PROJECT TO IMPROVE WRITTEN COMMUNICATIONS WITH THEIR GENERAL PRACTITIONERS (GPS)

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Introduction: Epidemiological studies in Australia have identified that only a minority of young people with mental health disorders receive professional mental health care and that the GP was the service most frequently attended by them.[1] Studies have identified hospital discharge summaries and ED-GPs letters as an important element in providing continuity of care for patients leaving hospital for community-based care.[2]

Method: A two staged audit was undertaken between the Department of Psychological Medicine & PED at Women's & Children's Hospital, SA. Prospective data was collected over a 6 month period from September 2003 to March 2004, and compared with retrospective data for the same period of the previous year. We monitored the implementation of a method to improve written communications between PED & GPs for all Mental Health Presentations (MHP) to the PED. All Mental Health Service (MHS) professionals were trained to utilize *HASS ED Patient information system* ® to send GP letters for all patients they assess at PED. The main outcome was the number of GP letters written for all patients managed by MHS, whether discharged home or admitted to the hospital. Patients managed solely by PED staff were used as control.

Results: There were 457 patients with MHP representing 2.4% of all PED presentations over 6 months. The majority 279(61%) were managed by MHS team and the remaining 178(38.9%) were solely managed by PED staff. Of the former group, 148(53%) had GP letters as compared to 9(5.0%) of the latter. Comparing the total number of GP letters written by both MHS and PED teams, 157(34.3%) GP letters were written during study period as compared with 8(1.6%) letters written during the same period of the previous year. This represents a 74-fold increase in PED-GP letters completion rate for those managed by MHS and 20-fold increase for those managed by both MHS & PED teams.

Conclusion: The study has led to a significant increase in written communications between PED and the GPs of young people with mental health problems. Regular auditing and ongoing education are vital to sustain this outcome.

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PAEDIATRIC RAPID REVIEW CLINIC: AN INNOVATIVE MODEL OF CARE KEEPING CHILDREN OUT OF HOSPITAL

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Introduction: The Rapid Review Clinic is an innovative model of ambulatory care aiming to avert admissions and Emergency Department (ED) presentations through more responsive and timely provision of specialist care. The model was developed following literature review, analysis of local data and extensive consultation with staff, GPs and consumers.

Methods: The clinic is an acute outpatient service run by paediatricians seven mornings per week within the ED. Only acute medical problems can be referred, appointments cannot be booked more than one week ahead and no long-term follow up is available.

Prospective evaluation was undertaken using designated referral forms, audit forms completed following each consultation, and consumer and staff satisfaction surveys.

Results: In the first 10 months, 1127 patients were seen. Data was available for 1102. Referrers indicated that without the clinic availability 14% of patients would have been admitted to hospital. A wide range of diagnoses were seen, the most common being viral illness and rash. Almost half the patients were discharged to their GP and a small number (5%) were admitted to hospital. A number of patients cancelled (8%), however the failure to attend rate was low (10%). The most common reason for non-attendance was that the patient was better. Surveys indicated a high level of satisfaction with the service.

Conclusion: The Rapid Review Clinic is an innovative model of ambulatory care that is responsive to the acute nature of many childhood illnesses providing senior consultant input in a timely and efficient way. It has the potential to decrease hospital admissions whilst maintaining high quality clinical care and is well accepted by parents and staff.

ACCURACY OF PARENTAL REPORT OF PNEUMOCOCCAL VACCINATION

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Introduction: An effective pneumococcal vaccine is now available for young children. Clinicians assessing immunisation status without written vaccination records must rely on parental report but little is known about how well parents remember their child receiving pneumococcal vaccine. Thus, we sought to determine the accuracy of parentally reported pneumococcal vaccination.

Method: This cross-sectional study was part of a prospective cohort study of 20,000 children attending the emergency department (ED) at The Children's Hospital at Westmead with a febrile illness (FEVER). We evaluated the accuracy of parental report in ED versus actual pneumococcal vaccination in a random sample of 620 children who visited ED during 2005 and were under two years at triage. Vaccination status was confirmed by telephone interviews of parents and general practitioner records.

Results: The mean age for eligible children was 11.7 months (SD 6.5). There were 368 (59%) boys and 452 (73%) children whose family spoke English at home. Parents of 127 (24%) children were unsure whether their child had received any pneumococcal vaccine before visiting ED. Pneumococcal vaccination was verified for 530 (85%) children. Sensitivity of parental report of pneumococcal vaccination in ED was 0.72 (95%CI 0.67, 0.77) and specificity 0.75 (95%CI 0.67, 0.83). Agreement between parental report and confirmed pneumococcal vaccination was 55% (95%CI 51, 59) with kappa 0.25 (95%CI 0.19, 0.31).

Agreement did not vary by age at triage, ethnicity, ED visit time or triage category.
Conclusion: Many parents do not accurately recall their child's pneumococcal vaccinations. Consequently, clinicians may need to access provider or vaccine registry records, especially if they consider pneumococcal immunisation status when making management decisions.

CARDIOVASCULAR RESPONSES OF SLEEPING NEONATES TO HEAD-UP TILT

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Introduction: Little is known about the development of blood pressure reflexes in early infancy.
Aim: To compare blood pressure (BP) and heart rate (HR) responses of healthy term and preterm babies to head-up tilt.
Subjects: Eleven term babies (GA 39 ± 1 weeks, aged 3 ± 0.8 days), and 10 preterm babies (GA 31 ± 1 weeks, aged 36 ± 1 days i.e. 36 ± 1 weeks corrected). Four preterm babies were re-studied at term (64 ± 9 days, 41 ± 2 weeks corrected).
Methods: Infants slept on a purpose-built table. BP was measured continuously using a wrist cuff (Finometer®). Replicate, 1 min head-up tilts to 60° were administered during quiet sleep. BP and HR were expressed as relative changes from baseline (= 30 s preceding tilt). Haemodynamic profiles were compared using ANOVA.
Results: We analysed 37 term tilts, 29 preterm tilts at 36 weeks, and 8 preterm tilts at 40 weeks. Tilting elicited a slight, gradual increase in BP and a rapid, marked increase in HR from term infants. Preterm infants exhibited a rapid, sustained increase in BP, but no significant increase in HR at 36 weeks. BP and HR responses of preterm babies at 36 and 40 weeks were comparable.
Conclusions: We found that (i) the term baby response to tilt is similar to the adult response, but differs from the response of healthy infants born very preterm; (2) at term equivalent age, preterm babies exhibit a persistently 'immature' response to tilt. We conclude that preterm birth alters / delays normal development of a crucial, blood pressure stabilising reflex.

OVERWEIGHT, OBESITY AND GIRTH OF AUSTRALIAN PRESCHOOLERS: PREVALENCE AND SOCIOECONOMIC CORRELATES

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Introduction: To determine the prevalence of overweight and obesity in Australian 4–5 year-old children; to report percentiles for waist circumference in Australian 4–5 year-old children; and to investigate associations between socioeconomic characteristics and (a) overweight/obesity and (b) waist circumference.
Method Design: Cross-sectional population survey. *Setting:* Wave 1 (2004) of the Longitudinal Study of Australian Children. *Participants:* Nationally-representative sample of 4,983 4–5 year-old children (2537 boys, 2,446 girls; mean age 56.9 months (SD 2.64, range 51–67)). *Outcome measures:* Prevalence of overweight and obesity (International Obesity TaskForce definitions) and waist circumference percentiles (5^{th}, 10^{th}, 50^{th}, 75^{th}, 90^{th} and 95^{th}).
Results: 15.2% of Australian preschoolers are estimated to be overweight and 5.5% obese. In univariate analyses, variables associated with higher odds of being in a heavier weight category were: female sex; language other than English; indigenous status; lower maternal education; lower family income; poorer disadvantage quintile (a composite postcode-of-residence variable); and less skilled parent occupation. In a multivariable regression model, language other than English (particularly for boys), indigenous status, and lower disadvantage quintile were the clearest independent predictors of higher weight status, with children in the lowest quintile of social disadvantage having 68% higher odds (95% CI 0.52, 0.88) of being in a heavier weight category compared to those in the highest quintile. Waist circumference was not strongly related to any socioeconomic variable, and median values were similar for boys (48.5 cm) and girls (48.0 cm).
Conclusions: This first nationally-representative survey confirms high rates of overweight and obesity in preschoolers throughout Australia. The recent emergence of a strong socio-demographic gradient should bring new urgency to public health measures to combat the obesity epidemic.

AZITHROMYCIN VERSUS AMOXYCILLIN FOR ACUTE OTITIS MEDIA IN ABORIGINAL CHILDREN (AATAAC): A DOUBLE BLIND RANDOMISED CONTROLLED TRIAL

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Introduction: Australian Aboriginal children have unacceptably severe otitis media and adherence with antibiotic treatment is poor. More effective treatments of acute otitis media (AOM) are needed. Our aim was to determine the clinical effectiveness of a single dose of azithromycin compared with a standard treatment course of amoxycillin.
Method: We randomized 320 Aboriginal children from 16 rural and remote communities with AOM to either azithromycin 30 mg/kg as a single dose (n = 165) or amoxycilllin 50 mg/kg/day bd (n = 155). Each child received an azithromycin placebo or an amoxicillin placebo to ensure blinding of families, care-givers, and outcome assessors (double dummy method). The primary outcome was failure to cure AOM. Children lost to follow up were assumed to have persistent disease.
Results: We followed up 305 of 320 children (96%). Overall, 173/305 (56%) of these children had persistent signs of AOM. Single-dose azithromycin did not reduce (or increase) the risk of clinical failure (98/165 [59%] versus 90/155 [58%], risk difference 1% 95% CI –9, 12). Analysis limited to the available data did not change the results (90/157 versus 83/148). Azithromycin did reduce the risk of nasopharyngeal carriage with pneumococci (42/156 [27%] versus 92/146 [63%], risk difference –36%, 95% CI –47, –26; $p < 0.0001$); penicillin non-susceptible pneumococci (20/156 [13%] versus 48/146 [33%], risk difference –20%, 95% CI –29, –11; $p < 0.0001$) and *H. influenzae* (85/156 [54%] versus 124/146 [85%], risk difference –30%, 95% CI –40, –21; $p < 0.0001$), but increased risk of carriage with azithromycin resistant pneumococci (14/156 [9%] versus 5/146 [3%], risk difference 6%, 95% CI 0.2, 11; $p = 0.058$).
Conclusion: Azithromycin was not more effective than standard treatment with amoxycillin but may reduce persistent pneumococcal disease and *H. influenzae* disease. Close follow up and longer courses of antibiotics are necessary in this high-risk population. Weekly azithromycin in children needing longer courses of antibiotics should be evaluated.

FETAL ALCOHOL SYNDROME AND ALCOHOL USE IN PREGNANCY: A SURVEY OF PAEDIATRICIANS' KNOWLEDGE, ATTITUDE AND PRACTICE

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Introduction: Birth prevalence data suggest lower rates of FAS in Australia than overseas. Paediatricians play an important role in diagnosing and managing FAS. Early diagnosis increases opportunities for early intervention and prevention. We aimed to measure paediatricians' knowledge, attitudes and practices regarding FAS and alcohol use during pregnancy.
Method: A questionnaire was sent to all 186 clinicians practising paediatrics in Western Australia (123 consultants and 63 FRACP trainees) and 132(73.7%) responded.
Results: All four essential diagnostic features of FAS were identified by 18.9% paediatricians. Approximately half had previously diagnosed FAS; 91.7% had seen children diagnosed by others; 76.5% had suspected but not diagnosed FAS; 12.1% had been convinced of but not recorded the diagnosis; and 31.8% had referred children for diagnostic confirmation. Although 79.6% agreed early diagnosis might be advantageous, ~70% felt diagnosis might be stigmatising and 36.4% felt parents may resist referral for assessment. Only 4.5% felt very prepared to deal with FAS. Most wanted educational materials for themselves (69.7%) and carers (71.2%). Only 23.3% routinely asked about alcohol use during pregnancy and 4.2% routinely provided information on consequences of alcohol use. 11% had read and 9.1% provided advice consistent with NHMRC pregnancy guidelines on alcohol consumption. Most agreed avoiding binge drinking might reduce FAS rates but only 43.9% believed women should abstain during pregnancy.
Conclusion: Paediatricians want educational materials about FAS and alcohol in pregnancy for themselves and families. Lack of knowledge about FAS may limit opportunities for early diagnosis, early intervention and prevention.

RESPONSES OF ENDOGENOUS NEURAL PROGENITOR CELLS IN A MODEL OF POST-TRAUMATIC SYRINGOMYELIA

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Introduction: It was traditionally believed that after development the CNS lacked significant regenerative capacity. Recent studies have demonstrated endogenous neural stem cells (NSCs) reside in adult CNS and are activated on injury. NSCs have not been examined in post-traumatic syringomyelia (PTS), a condition causing significant morbidity after spinal cord injury.
Method: We examined the proliferation and phenotypic fate of NSCs in a model of PTS. PTS was induced in adult rats by injection of quisqualic acid and subarachnoid kaolin at C7/C8. BrdU was administered IP for 12 days prior to sacrifice to label dividing cells and animals studied up to 12 weeks post-lesion. Spinal cord sections were analysed for expression of BrdU, nestin and a panel of oligodendrocytic (NG2, MBP), astrocytic (GFAP) and neuronal (NST, NCAM) markers by double-labeling immunohistochemistry. An Apotome device was used for 3-D reconstruction and videomicroscopy.
Results: Newly-generated cells identified by BrdU labeling were demonstrated in significantly greater numbers in the PTS group than controls. 70% of BrdU +ve cells were in white matter, 29% in grey and <1% surrounding the central canal. A significant proportion of BrdU +ve cells co-expressed the immature oligodendrocyte marker, NG2, with cells expressing astrocytic markers also evident. We found an upregulation of expression of nestin in BrdU -ve cells with predominantly astrocytic morphology, surrounding the syrinx cavity as well as distantly.
Conclusion: Our data indicate that endogenous NSCs respond to PTS predominantly by production of new glia and existing spinal cord cells dynamically upregulate immature markers, such as nestin. These studies raise the potential of using the spinal cord's endogenous regenerative capacity therapeutically.

ORDERING OF RENAL TRACT IMAGING BY PAEDIATRICIANS AFTER URINARY TRACT INFECTION (UTI) IN CHILDREN

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Aims: To describe and analyse the reported ordering practices of paediatricians for renal tract imaging of children following UTI.
Method: A piloted self administered survey of a random sample of 354 general paediatricians in Australia. The survey included 12 clinical scenarios varying with age, gender and fever. Respondents indicated their probability of ordering a renal ultrasound, micturating cystourethrogram (MCU) and dimercaptosuccinic acid scan (DMSA) from 0 to 100%. A sensitivity analysis was done using a threshold of ≥50% to dichotomise paediatrician responses into order or not order each test. Medians and the range of likelihoods were compared across scenarios.
Results: Response rate was 74.6% (264/354). Across all scenarios of age, gender and presence of fever, the median probability of ordering an ultrasound was 100%. For children aged 2 months, likelihood of ordering an MCU was 100%, with little variability, but was 70% for 3 year olds with fever (45% without fever), and about 5% for 6 year olds (irrespective of fever). Median likelihood of ordering a DMSA was 80% at 2 months, 60% at 3 years and 20% at 6 years (40%, 15%, 5% without fever, respectively). Interquartile ranges were very wide for all DMSA probabilities. Analysing the data using dichotomised responses did not alter study results. Child gender did not influence ordering practices.
Conclusions: Renal tract imaging practice across paediatricians shows consistent, almost 100% use of the least invasive modality, ultrasound, but considerable variation in the reported ordering of the more invasive tests MCU and DMSA. Doctors order these tests more in younger children and when fever is present.

CPAP USE FOR RESPIRATORY DISTRESS IN AUSTRALIAN SPECIAL CARE NURSERIES (SCNS)

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Introduction: Continuous positive airways pressure (CPAP) is an increasingly popular treatment for neonatal respiratory distress. Randomised trials of CPAP's efficacy have studied preterm babies predominantly cared for in Neonatal Intensive Care Units (NICUs). Anecdotally, there has been increasing predisposition towards the use of CPAP in Australian SCNs despite the absence of evidence of its efficacy in that clinical context.
This study seeks to identify the number of SCNs already using CPAP, and the number considering its use in the next two years, and to describe the characteristics of these hospitals.
Method: All Australian hospitals with; ≥200 registered deliveries in the year 2002, a special care nursery, and at least one paediatrician were eligible. (n = 176) Separate questionnaires were sent to the Nurse Unit Manager and the Paediatrician responsible for the SCN in late 2004.
Results: Of 157 eligible SCNs, 143 (91%) responded. Of these, 24 (17%) were already using CPAP with a further 45 (32%) considering its use in the next two years (2005–2006). Use of CPAP was significantly more likely; in Queensland compared with other states, in hospitals with paediatric registrar availability, and with the use of transport by air when up-transfer is required. ($p < 0.05$) Considering using CPAP was significantly associated with increasing numbers of births and with paediatric registrar availability. ($p < 0.01$)
Conclusion: 48% of SCN are already or considering using CPAP in the next 2 years demonstrating a strong predisposition for the use of CPAP in SCN despite the lack of evidence for its benefits or risks there. A randomised controlled trial is currently underway to evaluate its use in 5 NSW and 1 QLD SCN.

A 10 YEAR AUDIT OF MANAGEMENT AND OUTCOME OF PIERRE ROBIN SEQUENCE IN WESTERN AUSTRALIA

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Objective: To determine the clinical presentation, management and outcome of infants with Pierre Robin Sequence (PRS) in Western Australia, in order to develop a protocol for management and follow up.

Methods: Charts of infants diagnosed with PRS at Princess Margaret Hospital between 1995–2005 were reviewed to ensure each infant met diagnostic criteria. Demographic, clinical information, investigations, morbidity and mortality, were assessed. Cases were classified into three groups: isolated, syndromic or associated with anomalies.
Results: The prevalence of PRS was 1 : 2400. 62 patients were identified: 36(58%) isolated, 16(26%) syndromic and 10(16%) associated.
In 31(86%) with isolated PRS, prone positioning was effective, whilst 7(44%) syndromic and 4(40%) associated PRS, required additional respiratory support. Polysomnography was utilised to guide management in 18(30%). Maximum severity of obstructive sleep apnea (OSA) occurred late (median age 38.5 days). Apnea monitoring was performed in 29(49%) following discharge: no abnormal events were reported. Supplemental nasogastric feeds were more prolonged in syndromic and associated anomalies groups. They also had lower Z scores (weight for age), but all groups had a significant drop off in growth during the first year ($p < 0.001$).
Moderate to severe speech difficulties occurred in all groups; less so in the PRS group. Neurodevelopmental assessment was inconsistent. No developmental delay was reported in the PRS group, but significant delay in 6(38%) of syndromic and 3(30%) of associated PRS children. Three deaths occurred, unrelated to the PRS.
Conclusions: Diagnosis & categorization of PRS can be difficult. Infants with isolated PRS had lower morbidity and mortality. Infants in all groups had poor growth during the first twelve months. OSA is usually maximal at 6 weeks. Infants should be closely monitored to assess morbidity, particularly growth, hearing and speech.

PRONE VERSUS SUPINE POSITION IN MECHANICALLY VENTILATED CHILDREN

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Background: We have previously shown that prone ventilation improves survival (1,2). That study had both neonates and older children. As the mortality in neonates is different from that of older children, we did this prospective study to look at older children in a fresh randomized controlled trial.
Material & Methods: 57 children were randomized with 28 receiving prone ventilation and 29 supine ventilation All children had severity of illness assessed using PRISM score prior to ventilation. The Mean Airway Pressure (MAP) required was tracked.
Results: The initial PRISM score was comparable in the two groups. The MAP used in prone children was significantly lower. Mortality was significantly lower in the prone group (21.7% against 52.9% [SE of difference 95% CI 0.12(–0.51 to –0.05)]. The difference was seen more in children with higher PRISM scores suggesting that the more sick children benefit more from prone ventilation.
Conclusion: Prone ventilation reduces mortality. Children who are more sick at admission (high PRISM score) are more likely to be helped by prone ventilation.

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TRANSFER THRESHOLDS IN BABIES WITH RESPIRATORY DISTRESS

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Introduction: Around 2,500 babies/year require assisted ventilation for Respiratory Distress Syndrome. In NSW alone, about 180 babies/year are transferred from Special Care Nurseries (SCNs) to Neonatal Intensive Care Nurseries (NICUs) for respiratory distress. This study aims to identify factors that are important in a decision to transfer, thresholds for transfer and to identify differences that may exist between SCNs and NICUs.
Method: All Australian hospitals with; ≥200 registered deliveries, a SCN or NICU, and at least one paediatrician were surveyed in 2004. The paediatrician responsible for the nursery completed the questionnaire. A level of importance had to be circled for specific factors that might be important in a transfer decision. Thresholds for pH, CO2 and Oxygen levels at which transfer should be definitely arranged were indicated for three hypothetical cases representative of babies with respiratory distress commonly seen in a SCN.
Results: 15/19 (79%) NICUs and 118/157 (75%) SCNs responded. NICUs are statistically significantly more likely to regard "Medical Staff Experience", "Nursing Staff Experience" and "Time to Nearest NICU" as extremely important compared with SCNs. ($p < 0.05$).
Significant differences, (The Kaplan-Meier Log Rank Test $P < 0.05$), exist between NICUs and SCNs for the oxygen threshold at which paediatricians would "Definitely Transfer" for all three of the cases. SCNs are significantly less likely to transfer babies with pH of <7.25 compared to NICUs. There was no difference between the centres for CO2 level.
Conclusion: NICUs and SCNs place different emphasis on the level of importance of some factors important in deciding to transfer. Oxygen thresholds at which NICUs believe babies should be definitely transferred are significantly lower compared to SCNs and pH levels significantly higher.

OVERWEIGHT AND OBESITY IN CHILDREN AND ADOLESCENTS WITH INTELLECTUAL DISABILITY

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Introduction: Overweight in childhood/adolescence is associated with significant morbidity. Children with intellectual disability often have one or more of risk factors for obesity (e.g. physical inactivity, certain medical conditions and medications, physical disability). There are no data on the prevalence of obesity/overweight in children with intellectual disability. The aim of the study was to determine the prevalence of overweight and obesity in children and adolescents with intellectual disability attending a metropolitan disability services unit.
Method: This retrospective chart review study included 98 children (67 male) aged between 2 to 18 years who had attended the unit over a one year period and for whom full anthropometric data were available. Data on weight, height, age, sex, severity of intellectual disability and the presence of additional medical conditions were collected from medical and psychological records. BMI (kg/m^2) was calculated and overweight and obesity defined using standard international criteria.
Results: 24% were overweight and a further 15% were obese, values which were significantly higher ($p < 0.0001$) than the prevalence of overweight & obesity in the last nationally representative survey of Australian children, the 1995 National Nutrition Survey (15% overweight and 5% obese). There was no significant influence of sex, age or severity of intellectual disability on the prevalence of overweight or obesity.
Conclusions: The prevalence of obesity and overweight was higher in children with intellectual disability than in the general population. Studies with larger sample sizes are required to assess the possible predisposing factors for the overweight and obesity in this population.

OVERWEIGHT IN MEDICAL PAEDIATRIC INPATIENTS: DETECTION AND PARENT EXPECTATIONS

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Introduction: The National Health and Medical Research Council 2003 guidelines for childhood overweight and obesity recommend 6-monthly Body Mass Index (BMI) surveillance of all children. There is little evidence that this occurs in general practice or hospitals, or of the benefits or harms of such screening. Understanding views of

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parents of overweight children is an important component of establishing harm or benefit. The aims of this cross-sectional survey were 1) to determine prevalence and detection of overweight/obesity amongst inpatients and 2) to explore parent expectations regarding detection and management of overweight/obesity.
Method: Eligible participants were children aged 2–12 years admitted under a general paediatric unit. Parents reported on their child's current weight status and concerns about their child's weight. Children were weighed and measured and BMI calculated. Parents of overweight children then reported their expectations about detection and management of childhood overweight. Admission paperwork was reviewed for documentation of height, weight, BMI and, where relevant, discussion about overweight.
Results: 11.7% of 102 children (75% response) were overweight or obese. All children had weight, 2% had height, and none had BMI documented. Of 12 parents of overweight children, 7 described their child's weight as healthy, and 5 were not concerned about their child's weight. 8 of 12 parents believed BMI should always be calculated during admission. All parents thought the hospital should act if a child was found to be overweight.
Conclusion: Prevalence of overweight was lower than expected. No patient had documentation of overweight. Parents favoured routine measurement, detection and subsequent discussion of the issue. If paediatric hospitals are to address the issue of childhood overweight with their inpatients, major practice changes are required.

THE MANAGEMENT OF CHILDHOOD OBESITY – A SURVEY OF GENERAL PRACTITIONERS IN SOUTH WEST SYDNEY

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Introduction: Nearly a quarter of Australian children and young people are overweight or obese[(1)]. This "epidemic of obesity", plus the long-term health implications means that the prevention of childhood overweight/obesity is a major public health issue. General Practitioners are the front line for the prevention and management of childhood obesity. This study describes the management of childhood obesity by General Practitioners (GPs) and their awareness of current National Health and Medical Research Council (NHMRC) guidelines.
Method: A cross sectional survey of all members of the Liverpool division of General Practice (located in south west suburbs of Sydney, Australia).
Results: Of 137 questionnaires sent, 85 were returned (62%). Less than a third (28%) of GPs used the NHMRC guidelines in their practice and only 9.5% used BMI charts to correctly diagnose childhood obesity. Although the majority prescribed the correct interventions, there was much variability in complications screening. Most GPs screened for type two diabetes (70%) and psychosocial problems (75%). However screening for other complications fatty liver (30%) and hypercholesterolamia (55%) was much less. Nearly all GPs felt that childhood obesity was a significant issue and wanted further training in this area. GPs also identified a number of barriers to treating childhood obesity, including parental denial.
Conclusion: There is a lack of awareness amongst General Practitioners of NHMRC guidelines for treating childhood overweight/obesity. Although General Practitioners are motivated to learn more about the treatment of childhood obesity, they are hampered by barriers such as parental denial, and lack of training.

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THE MANAGEMENT OF OTITIS MEDIA IN INDIGENOUS AND NON-INDIGENOUS AUSTRALIAN CHILDREN: AN ANALYSIS OF GENERAL PRACTICE ENCOUNTERS

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Introduction: Otitis media (OM) is one of the most common problems encountered by primary health care physicians. Australian Indigenous children are one of the most vulnerable populations but little is known about the management of OM in Australian general practice. We used the BEACH (Bettering the Evaluation and Care of Health) data to describe the current management approaches to OM used by Australian general practitioners and to determine whether the child's Indigenous status altered management.
Method: General practitioners averaging over 1500 Medicare claims per year were eligible for participation in the BEACH surveys conducted annually since 1998. Respondents recorded data from 100 consecutive encounters including self-reporting of Indigenous status, reasons for encounter, problems managed, referrals and treatments. Results have been adjusted for the cluster sample design.
Results: From 1998 to 2004, 6872 practitioners recorded 105,270 encounters with children under eighteen years, including 2557 (2.5%) with Indigenous children. Ear problems were the fifth most common reason for presentation for Indigenous and non-Indigenous children and ear problems were the fourth and fifth most common problems managed respectively. Antibiotics were prescribed in 73.6% and 75.6% of Indigenous and Non-Indigenous OM encounters (not significant). The most frequent antibiotic used was Amoxycillin. ENT surgeon referral was not significantly more common for Indigenous children (5.6% vs. 3.4%). Audiology referral was uncommon for both Indigenous and Non-Indigenous children (1.6% vs. 1.1%) although chronicity and severity were unknown.
Conclusion: A large burden of childhood OM was encountered by Australian general practitioners. Indigenous status did not significantly affect management decisions. Referral of children with OM for hearing assessment was lower than expected.

PUBLIC HEALTH IMPACTS OF RARE DISEASE SURVEILLANCE BY THE APSU

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Introduction: The Australian Paediatric Surveillance Unit (APSU) facilitates surveillance studies that address knowledge gaps and produce evidence that directly impacts on the health of Australian children. APSU data are used by clinicians, researchers, policymakers and industry.
Method: APSU is an active, national surveillance system. Each month ≥1100 child health specialists contribute cases of rare conditions and provide de-identified data on demographics, clinical features and short term outcome.
Results: Data from 40 studies in 12 years have impacted on public health by:

- Supporting new public health policy (eg. safe packaging of complementary medicines; changes to national immunisation recommendations – pertussis vaccination for young adults to prevent infant infection).
- Providing timely information on emerging or poorly recognised diseases (eg. HIV/AIDS, Hepatitis C, fetal alcohol syndrome).
- Quantifying and addressing preventable public health problems (eg. documenting frequency and causative Shiga-toxin producing *E.Coli* for haemolytic uremic syndrome and informing new guidelines for production of fermented meats).
- Facilitating genetic epidemiological studies (eg. determining genotype and genotype/phenotype correlates for Rett syndrome).
- Contributing to Australia's international obligations (monitoring acute flaccid paralysis to comply with WHO requirements for "polio-free certification").
- Documenting, informing clinical practice (treatment of nephrotic syndrome).
- Identifying safety hazards (eg. rare seatbelt injuries; near drowning).
- Documenting child mental health problems (eg. anorexia nervosa <13 years; conversion disorder; Munchausen Syndrome; dementia).

Conclusion: APSU studies have had considerable public health impact by providing evidence to support clinical practice, policy, and education for carers, health professionals and the general public.

HEALTH NEEDS OF CHILDREN IN OUT OF HOME CARE

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Introduction: Children in out of home care are known to be a vulnerable group of the population. It is well described that they have high, unrecognized and unmet health needs. The combination of exposure to abuse and neglect and a background of social disadvantage place them at significant risk for poor health. This affects physical, developmental and emotional health. Children in out of home care in NSW have not been receiving an internationally recommended comprehensive health service.
Method: The Child Protection Unit at Sydney Children's Hospital established the Health Screening Clinic for Children in Out of Home Care in 2005, in collaboration with the Department of Community Services. Working within a multidisciplinary framework, we offer these children a comprehensive physical, developmental and emotional health screen. Recommendations are made for ongoing health care.
Results: Results collected to date indicate that the children we see have significant health problems. Approximately 80 children have been seen. 1/2 had incomplete immunizations, 1/3 visual problems, 1/3 dental problems, 1/3 hearing loss, 2/3 of under 5yrs had developmental difficulties. There have been significant behavioural problems and significant medical problems identified. Health outcomes as a result of being seen in the clinic are yet to be evaluated.
Conclusion: The health patterns found in the children seen in the clinic are comparable to those described in the literature and confirm that children in out of home care have high and often unmet health needs. Once the evaluation of the clinic is complete, we expect to show that the health outcomes for children in out of home care are improved as a result of this service.
Note – results will be updated for the presentation

EARLY INFANT CRY AND SLEEP PROBLEMS: IMPACT ON PARENTAL WELLBEING AND PARENT-ENDORSED STRATEGIES FOR MANAGEMENT

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Introduction: Early infant sleep and crying problems are common and impact adversely on maternal mental health. Their impact on paternal mental health is unknown. No single approach to managing such problems has been consistently proven. Parents may be able to identify useful strategies, which could then inform the content of a prevention/early intervention approach to such behaviour problems.
This study examines the impact of infant behaviour problems on maternal and paternal mental health and determines which aspects of a paediatric consultation parents find useful.
Methods Design: Pre-post intervention questionnaire. *Setting*: Paediatric outpatient clinic at the Royal Children's Hospital, Melbourne. *Participants*: 71 mothers and 60 fathers of infants aged 2 weeks to 7 months recruited from July 2004 to April 2005. *Main outcome measures*: Maternal and paternal wellbeing (Edinburgh Postnatal Depression Scale (EPDS)), parent report of infant behaviour problems, usefulness of consultation advice.
Results: Three weeks post consultation, 30% fewer mothers reported an EPDS score ≥12 (45% pre versus 15% post clinic) whilst 11% fewer fathers reported an EPDS score ≥9 (30% pre versus 19% post clinic). Fewer parents reported that their infant's behaviour was still a problem (64% of mothers and 55% of fathers). Most parents (% or more) rated exclusion of medical causes and information about normal sleep/crying and settling techniques as useful.
Conclusion: Problem infant behaviours impact adversely on maternal and paternal mental health and a paediatric consultation to manage such behaviours is associated with short-term improvement in parent mental health. An intervention/prevention approach to infant behaviour problems should include information about normal infant sleep and crying patterns, and settling techniques, and exclusion of medical causes.

SYSTEMATIC REVIEW OF CHILDHOOD RESIDENTIAL MOBILITY AND HEALTH OUTCOMES

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Introduction: Moving residence is a common childhood experience. 27% of NZ children (0–14 yrs) moved in one year (Census 2001), and some moved more frequently. The causes for moving are not evenly distributed across the population, including: poverty, housing tenure, parental employment, family disruption, and single parenting. Residential change may be considered as an independent factor. The hypothesis examined is that childhood residential mobility has an adverse effect on health outcomes expressed through the life course. Theoretical models considered include: individual life event and stress effects, family-level dynamics, and neighbourhood-level interactions.
Method: A systematic search of mainstream databases and grey literature was performed to identify primary research defining residential mobility as an independent variable, and in which health outcomes were described and objectively measured. Studies were excluded, which investigated international relocation, migration for asylum, or only educational outcomes. Structured assessment by two reviewers used criteria assessing quality, and in particular, potential for bias in the study designs.
Results: 22 studies met inclusion criteria. Outcomes identified in association with residential mobility included: higher levels of behavioural and emotional problems; increased teenage pregnancy; accelerated initiation of drug abuse; adolescent depression; reduced continuity of health care. In sensitivity analysis, lower grade quality studies were less likely to demonstrate a significant effect. Heterogeneity precluded meta-analysis.
Conclusion: Residential mobility interacts at neighbourhood, family and individual levels in cumulative and compounding ways with significance for the well-being of children. High frequency residential change is potentially a useful marker for clinical risk of behavioural and emotional problems. Evidence supports the reorientation of health services to effectively engage residentially mobile children. Impact of housing and economic policies should be considered in light of this evidence.

TEENAGE PREGNANCY INTENTION, CONTRACEPTIVE USE AND REPEAT PREGNANCY

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Background: It is well-recognised that unplanned and unwanted pregnancies are associated with poorer outcomes. However, there is controversy over whether poorer physical and psycho-social outcomes in teenage mothers and their children can in part, be attributed to the unplanned nature of these conceptions.
Aims: To explore the relationship between teenage pregnancy intention, contraceptive use and repeat pregnancy.
Methods: Pregnant teenagers under 18 years are being recruited consecutively from a large metropolitan obstetric hospital to a longitudinal study. Participants completed a confidential questionnaire during the mid antenatal period, at 6 weeks, 3, 9 and 12 months postpartum, which included standardized measures of pregnancy intention, sexual activity and contraceptive use.
Results: To date, 135 subjects have been recruited and data have been analysed for 80. Median age at recruitment was 17 years, with 13 the youngest. Only 40 (61%) were in a relationship with the father. The majority (75%, n = 60/80) reported that they did not intend to

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become pregnant, with 51 (66%) stating mixed feelings, unhappiness or not wanting a baby in the month they became pregnant. Despite this, 63/80 (77%) reported not using contraception at the time of conception. Furthermore, only 25 (32%) had ever spoken to a doctor about contraception. At 6 weeks postpartum, most sexually active teenagers were not using contraception. Contraceptive use was boosted significantly at 3 months, after the one follow-up clinic visit. However, by 12 months, 33% (n = 6) were pregnant again.

	<6 Weeks (n = 73)	≤3 Months (n = 66)	≤9 Months (n = 31)	≤1 Year (n = 18)
Sexually active	36 (49%)	42 (64%)	27 (87%)	14 (77%)
Sexually active/ using contraception	6 (17%)	40 (95%)	21 (78%)	9 (67%)
No intention to fall pregnant	68 (93%)	50 (76%)	19 (61%)	12 (66%)

Conclusion: Reported rates of contraceptive use are much lower than the national average, despite low intentions for pregnancy. Contraceptive use does not directly reflect these pregnancy intentions. Contraceptive use rose sharply after education and intervention by clinic staff, and then dropped off over the subsequent 12 months. Not surprisingly, several repeat pregnancies occurred during this time. More effective primary and secondary pregnancy prevention strategies are indicated in this high-risk population.

SCHOOL-BASED EDUCATION PROGRAMMES FOR PREVENTION OF CHILD SEXUAL ABUSE: A SYSTEMATIC REVIEW

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Introduction: Education programmes to prevent child sexual abuse have been included in school curricula, but must be evaluated to determine beneficial and harmful outcomes.
Objectives: To determine if:
1. school based programmes are effective in improving knowledge about sexual abuse and self-protective behaviours;
2. learned knowledge is retained over time;
3. participation produces any harms;
4. disclosure of sexual abuse increases following participation;
5. programme type (active or passive involvement) or setting (primary or secondary school) affects knowledge.

Methods: Electronic search of Cochrane Controlled Trial Register (CCTR), MEDLINE, EMBASE, PsychINFO, CINAHL, Sociofile and Dissertation Abstracts for RCT or quasi-RCTs of school-based interventions to prevent child sexual assault with normal curricula, another or no intervention as control. Participants were under 18 years of age. At least one standardised outcome was required. Meta-analysis was not possible due to use of diverse outcome measures and unit of analysis errors in cluster randomised trials.
Results: Fourteen trials used a variety of interventions and outcome measures of initial knowledge and retention of knowledge at 3–12 months. Increased knowledge of child sexual abuse and preventative behaviours was reported, but unit of analysis errors may have resulted in increased treatment effects. Few harms were reported.
Conclusions: Methodological weaknesses make reports of significant improvements in knowledge measures unreliable. It is likely that these interventions will be most useful as part of wider community initiatives promoting child safety. Future studies must address study design, in particular unit of analysis errors. Retention of knowledge should be measured beyond 3–12 months. Further investigation of the best forms of presentation and optimal age at program delivery is required. Any research should take into account the potential harms of the intervention.

NON TUBERCULOUS MYCOBACTERIAL INFECTION: A NATIONAL SURVEILLANCE STUDY

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Objectives: The incidence and natural history of non-tuberculous mycobacterial (NTM) infections in Australian children is unknown. We estimated the incidence and describe the disease spectrum, risk factors, diagnostic practices, management and outcomes.
Methods: Between July 2004 and December 2005, clinicians on the Australian Paediatric Surveillance Unit's mailing list (n = 1100) were asked to notify children presenting with NTM infection. Clinicians were requested to complete structured questionnaires.
Results: The questionnaire response rate was 80%. Of 90 notifications, 44 were included (15 confirmed, 29 probable infections). Twenty-eight notifications were excluded (11 diagnosed before the study date, 8 failed to meet diagnostic criteria, 9 duplicated/incorrect notifications). The median age was 2.9 years (1.1–14.2 years). Cystic fibrosis (5/44, 11%) and immunosuppression (2/44, 5%) were the most frequent predisposing conditions. Lymphadenopathy was present in 31/44 (70%). Pulmonary (6/44, 14%) and disseminated infection (1/44, 2%) occurred infrequently. Biopsy was performed in 37/44(84%). Skin tests were infrequently performed. The organism was isolated in 27 cases: *Mycobacterium avium-intracellulare* and *M. abscessus* were most frequently isolated. Surgery was performed in 33/44 (75%) with 19/44 (43%) prescribed antimicrobials. Marked heterogeneity was observed in the antimicrobials and course prescribed. Follow-up data was available in 30/44 (68%). Four cases with lymphadenopathy required re-excision. Two cases with pulmonary infection required re-treatment.
Conclusions: The incidence of NTM infection in Australian children is 0.74 cases/100,000 (95% CI; 0.54–0.99 cases/100,000) occurring most frequently in young children without predisposing conditions. Lymphadenopathy is the most frequent presentation. There is significant variation in therapies given. Recurrence occurs in 20%.

EXPERIENCE WITH THE ROLLOUT OF AUSTRALIA'S FIRST STATEWIDE PROTOCOL FOR THE USE OF INTRANASAL MIDAZOLAM TO CONTROL PROLONGED SEIZURES IN CHILDREN IN THE COMMUNITY

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Introduction: Prolonged seizures in children become harder to control the longer they persist, with the potential to develop into status epilepticus, a medical emergency. To manage prolonged seizures, a protocol for parents, education staff and carers to administer intranasal midazolam (INM) has been developed and subsequently rolled out in South Australia.
Method: Protocol development:
1. Seizure management training package, delivered in a one hour session by first aid agencies.
2. Guidelines for using INM for prolonged seizures. Staff require first aid and seizure management training. If the child has never had midazolam, a test dose as an outpatient minimises the risk of adverse effects. INM 0.2–0.3 mg/kg dropped directly into the nose from a plastic ampoule, avoiding using syringes. Clear medical order, single dose packaging.

Additional training provided to volunteers administering INM
Provision of resources for carers of each child ordered INM.
Evaluation of parent administration, carer and education staff training.
Results: Staff in over 200 child care centres, preschools and schools statewide received training to use INM. On follow up survey, all were positive about using INM. Questionnaires were distributed to 127 parents, with 65 of 73 respondents reporting administering INM. Seizure control was 90%, increasing to 93% with increased INM dose.

Parents reported fewer emergency department attendances, with only one minor adverse event.
Conclusion: South Australia has developed, implemented and evaluated Australia's first statewide protocol for the use of INM. The use of INM offers a safe and effective means of managing prolonged seizures in the community, and reduces the need for emergency department attendance.

RISK FACTORS FOR PERSISTENT DAYTIME INCONTINENCE AND NOCTURNAL ENURESIS IN CHILDREN: A POPULATION BASED COHORT STUDY

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Introduction: Although urinary incontinence in children is common and a serious health problem both socially and emotionally during primary school, most studies evaluating risk factors for urinary incontinence in the past are cross sectional in design. Little is known about how this condition changes over time.
Methods: The study population consisted of 2855 children (males 53%, mean age 7.3 years, range 4.5 to 12.8 years) from the first 4 years of primary school in Sydney who consented to take part in the 1 year study. A validated questionnaire (average kappa = 0.75) was administered to parents at baseline and at every 3 months to monitor the progress of the participants.
Results: 17% had persistent daytime urinary incontinence (DUI) and 18% had persistent nocturnal enuresis (NE) at 1 year. Multivariate logistic regression analysis adjusted for age showed female gender (OR 1.9, 95% CI 1.5 to 2.4), UTI (OR 1.4, 95% CI 1.1 to 1.7), encopresis (OR 2.5, 95% CI 1.8 to 3.4), social concerns (OR 1.9, 95% CI 1.3 to 2.8) and micturating habits being significantly associated with DUI. Male gender (OR 1.9, 95% CI 1.6 to 2.4), encopresis (OR 1.6, 95% CI 1.2 to 2.2), emotional stressors (OR 1.6, 95% CI 1.2 to 2.3), and micturating habits were significantly associated with NE after adjusting for age.
Conclusion: 1 in 6 children will have persistent urinary incontinence during the day and night in primary school. Both DUI and NE appear to have common risk factors. Of the risk factors identified, some might be expected to self correct with increasing age, but some may require medical/social intervention.

THE GLOBAL BURDEN OF CHILDHOOD OTITIS MEDIA AND HEARING IMPAIRMENT: A SYSTEMATIC REVIEW

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Introduction: The World Health Organisation (WHO) has declared that chronic otitis media is a significant global health problem and a major cause of hearing impairment which is estimated to affect 120 million people worldwide. WHO has called for more detailed epidemiological information, particularly the association between otitis media (OM) prevalence and socioeconomic variables.
Method: Medline (1966), Embase (1980) and Cinahl (1982) were searched using a highly sensitive strategy to identify all population-based studies (including foreign language publications) with prevalence data on OM and hearing impairment in children under eighteen years. Studies identified through content experts and searching reference lists were also included. We examined the effect of risk factors such as poverty, not breastfeeding and smoking on prevalence. When appropriate, meta-analysis was performed using random effect models.
Results: Seventy three relevant studies were found from 1504 initially identified with a combined sample size exceeding 180,000 children. The highest prevalence rates were found in Australian Aborigines (84%) and Inuits (45%). Increased prevalence was associated with not breastfeeding (OR 1.28, 1.03–1.59) and parental smoking (OR 1.73, 1.42–2.10). Individual studies reported increased prevalence of OM with the following socio-economic variables: overcrowding; lower maternal education; slum dwellings; and poorer household sanitation. Male gender (OR 1.04, 0.90–1.20) and urban living (OR 0.72, 0.28–1.83) did not affect OM prevalence. Hearing impairment (≥25 dB) was significantly more common in children with OM (odds ratio, OR 8.11, 6.91–9.52).
Conclusion: Indigenous populations in Australia and the Artic circle have the highest prevalence of OM and its complications. Otitis media remains an important cause of preventable hearing impairment in children worldwide and many of the risk factors are modifiable.

CLINICAL FEATURES OF SERONEGATIVE ANTI-MUSK POSITIVE MYASTHENIA GRAVIS IN CHILDHOOD

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Introduction: Myasthenia gravis (MG) is a disorder in which there is impairment of neuromuscular transmission, most commonly due to an autoimmune mechanism. Recent identification of antibodies to MuSK in patients with seronegative MG has led to the description of a clinical subgroup of patients with this type of autoimmune MG, although to date, most data has been reported from adults.
Method: Review of the literature on seronegative anti-Musk positive MG was undertaken. The clinical features of two paediatric cases of seronegative anti-MuSK positive MG were described and compared to those found in adults with this disease.
Results: The clinical findings reported to occur more frequently in anti-MuSK positive adult MG patients include facial and bulbar muscle weakness, involvement of respiratory muscles with a high frequency of respiratory failure and marked neck and shoulder weakness. Anti-MuSK positive MG patients respond less well to conventional immunosuppressive therapy and a higher frequency of adverse reactions to acetylcholinesterases is reported. The two children reported clearly have the phenotype of anti-MuSK positive disease described in adults. Both display predominant bulbar and facial muscle involvement plus impairment of respiratory musculature. Both have encountered difficulties with treatment similar to that described in adults.
Conclusions: As in adults, children with anti-MuSK positive MG have a constellation of clinical features that enable identification of a distinct subgroup of seronegative MG. Seronegativity for the acetylcholine receptor in MG occurs more commonly in children than adults. Data to assist the clinical differentiation of anti-MuSK positive children will be a useful guide to laboratory investigation and contribute to our knowledge of preferred treatment options and prognosis.

MENINGOCOCCAL MISCONCEPTIONS: DO MEDICAL PERSONNEL UNDERSTAND TERMINOLOGY RELATED TO MENINGOCOCCAL DISEASE AND MENINGITIS?

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Introduction: Meningococcal disease (MD) is an important cause of illness in children in New Zealand (NZ). Inspite of a successful immunisation programme, MD maintains a high profile in the media but inaccurate use of terminology creates public confusion about the illness. Sometimes, medical personnel also seem unclear about the meaning of specific terms; this can create difficulties when making decisions regarding diagnosis and management of patients with MD. Of particular concern is confusion between the terms "meningitis" and "meningococcal disease". This study was done to assess the understanding of terminology related to MD and meningitis among medical personnel.
Method: A simple questionnaire was formulated to assess understanding of concepts relevant to MD. The questionnaire was answered by five groups of medical personnel from the Waikato region: first year house surgeons; emergency department nurses; paediatric ward nurses; General Practitioners; fifth year medical students. Each group contained 20 randomly selected participants.
Results: Most participants had previous clinical experience with MD and meningitis. However, overall, 21% of participants believed MD and meningitis were the same illness; 42% could accurately describe the

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rash associated with MD; 46% believed that rash was a key feature of meningitis and 26% believed that signs of meningism were key features of meningococcal sepsis. In addition, 48% believed that a purpuric rash on an unwell febrile child implied a diagnosis of meningitis.
Conclusions: The understanding of terminology related to MD and meningitis among medical personnel in the Waikato is mediocre. It is reasonable to suspect that this is a national trend rather than a local one. By increasing our knowledge we can improve not only patient management but also the accuracy of information we impart.

A PROSPECTIVE AUDIT OF INFECTIOUS DISEASES IN 222 NEWLY ARRIVED AFRICAN REFUGEES

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Australia accepts between 12,000 and 14,000 new refugees every year. In the last 2–3 years, the focus has shifted away from Europe towards sub-Saharan Africa and the Middle East. 8353 African refugees were accepted in 2003–4. As a result of these shifts, increasing numbers of cases of malaria, schistosomiasis and other tropical diseases have been confronting Australian health care services. In order to improve our ability to identify and treat these conditions, local prevalence data for newly arrived refugees is essential.
The Newcastle Refugee Health clinic was set up in May 2004 and began screening all newly arrived refugees for a number of health problems in January 2006. After a history and physical examination, refugees who gave consent had blood collected for a full blood count, malaria films and antigen test, and serology for HIV, hepatitis B, syphilis and schistosomiasis.
We screened 226 new patients between January and December 2005, of whom 222 were from Africa. The commonest countries of birth were Sudan (n = 81), Liberia (n = 45) and Burundi (n = 37), with smaller numbers from 7 other African countries.
The most common symptoms were headache and dyspepsia and the most common abnormality on physical examination was dental caries. Schistosomiasis serology was positive in 34% of people (n = 76) and falciparum malaria was found in 9.5% of people (n = 21). Anaemia, eosinophilia and intestinal parasitosis were also common.
Data will be presented about the point prevalences of these conditions, along with details of the investigation and treatment we undertook. Finally, a proposed national screening and treatment protocol, which is based in part on these data, will be presented.

QUEENSLAND PAEDIATRIC IN-HOSPITAL DEATHS IN 2001. AVOIDABLE MORTALITY AND INEVITABILITY OF DEATH AT HOSPITAL PRESENTATION

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Introduction: Queensland's paediatric death rate is higher than the rest of Australia. Specific information is lacking on avoidable mortality. Primary avoidable mortality relates to social determinants of health, and specific injury and vaccination public health programs. Secondary and tertiary avoidable mortality relate to early detection and medical and surgical invention, influenced by the inevitability of death at presentation.
Method: A retrospective audit of in-hospital paediatric deaths (age range 29 days to 15 years) in 2001 was conducted. Death certification data, Queensland Health hospital data, and data from the hospital medical record of each case, were obtained. In associated studies, accuracy of death certification, adverse events in hospital, and social determinants of mortality were also analysed.
Results: In 2001, 144 paediatric deaths occurred in 33 Queensland hospitals (there were a further 80 out-of-hospital paediatric deaths). 75% of deaths at the final hospital presentation were assessed as "inevitable" or "more likely than not to occur". 50% of deaths were from chronic conditions; most causes were determined at birth and not amenable to primary prevention. Some children had progressed to end stage disease; others succumbed to complications of disease or high-risk interventions. Many of the deaths from acute conditions (injury 25%, acute infections 16%) were amenable to primary prevention strategies. In-hospital adverse events were detected in the care of 27% of cases.
Conclusion: Of in-hospital deaths, 37% were assessed as being amenable to primary prevention and 9% amenable to secondary/tertiary prevention strategies at or after final hospital presentation. Given mortality is a marker of population wellness, opportunities to reduce in-hospital mortality in almost 50% of cases will also impact on the burden of illness and injury.

QUEENSLAND PAEDIATRIC IN-HOSPITAL DEATHS IN 2001. ADVERSE EVENTS AND EFFECT ON OUTCOME

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Introduction: Queensland's paediatric death rate is higher than the rest of Australia. Adverse events in the care of hospitalised patients have been widely recognised, but specific information on their incidence in the paediatric population and contribution to death is lacking.
Method: A retrospective audit of in-hospital paediatric deaths (age range 29 days to 15 years) in 2001 was conducted. Death certification data, Queensland Health hospital data, and data from the hospital medical record of each case, were obtained. The "Quality in Australian Health Care Study" (Wilson et al, 1995) definitions of adverse events were used. A subset of records was reviewed by a second reviewer, blinded to the first reviewer's opinion, and degree of consensus analysed.
Results: In 2001, 144 paediatric deaths occurred in 33 Queensland hospitals. In-hospital adverse events were detected in the care of 34 (27%) of cases. "Human error" was the most common type of error (62%). 38% of adverse events were considered to be preventable. The impact of the adverse event was considered most relevant on the outcome for children assessed as "less likely" to die at presentation. Overall, adverse events may have contributed to the death in 9% of in-hospital deaths.
Conclusion: No published studies are available to directly compare these findings. The identification of adverse events in the care of more than one quarter of children who die in hospital is of great concern, and given that some of the events were judged to be preventable, offers the potential for a reduction in mortality if the events can be avoided.

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PERINATAL MORTALITY AND MORBIDITY AUDIT IN RURAL AND REGIONAL AUSTRALIA

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Introduction: Peer review of perinatal deaths and severe morbidities is difficult to achieve in rural and regional areas. It is challenging to ask pertinent questions while continuing to work with colleagues who have been involved in adverse events. The main objective of the Review is to remain transparent and open with an emphasis on improving practice and preventing further such events.
Method: This two year programme is a collaborative venture between the Division of Paediatrics and Child Health and RANZCOG. Rural obstetricians visited volunteers at 13 regional centres to conduct a confidential audit of perinatal deaths and unexpected transfer to Special-care/ Neonatal Intensive care units following caesarean

section. This included: retrospective 12–24 month record review; interviews with obstetricians, paediatricians and midwives; review of the practice surroundings; checking compliance with the Perinatal Society of Australia and New Zealand's 'Perinatal Mortality Audit Guidelines'.
Results: receiving a collegial audit from clinicians working in similar circumstances provided a supportive environment for discussion of distressing adverse events. Whilst the majority of perinatal deaths were not preventable, there were a small number that could have been averted through better team work, communication, emergency procedures and antenatal care.
Conclusion: this has been a successful first step in understanding adverse events in neonates in regional centres while providing a supportive environment for audit and review. We would like to see further involvement and participation by paediatricians as audit facilitators to explore a greater range of neonatal morbidities that may be improved upon in the future.

DELAYING SCHOOL ENTRY

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Introduction: Notions of readiness to start school are prominent in our community. Some children, who are considered not ready to learn and at risk of adverse educational outcomes, are advised to delay school entry. This approach tends to deny the realities of individual difference and may disadvantage selected children by exacerbating feelings of inadequacy and delaying access to formal education.
Method: In order to seek evidence to resolve this debate a literature search was conducted using the educational database, ERIC.
Results: Debates relating to school readiness are over 100 years old and tend to ebb and flow with international events and political imperatives.
Proponents argue that younger and/or less able children do less well in lower grades, tend to be socially isolated, and are at risk of long term educational and emotional problems. They will benefit from deferment until they are more ready to learn; i.e., learning is primarily dependent on neurological maturation.
Opponents argue that this approach ignores the reality of individual difference; and that held back children are disadvantaged: i.e., learning is dependent on a combination of maturation and teaching.
The available evidence indicates that boys, younger children, and socially disadvantaged children are more likely to be held back. Age-related differences in educational attainment disappear by the 3rd grade. Children who are held back do less well academically and are more likely to have behavioral problems, than ability-matched controls who are not held back.
Conclusion: There is no evidence to support practices which delay or retard the school progress of selected children and there are significant disadvantages.

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REDUCTION IN PERCENTAGE BODY FAT IN BOYS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) STARTING TREATMENT WITH STIMULANT MEDICATION

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Introduction: Attenuated growth rates are frequently observed in children with ADHD starting treatment with stimulant medication. Children of higher weight for age tend to lose more weight[1] and it has been assumed that weight loss mainly represents loss of fat. This prospective study investigates changes in body composition using dual-energy x-ray absorptiometry (DXA).
Methods: Children newly diagnosed with ADHD were recruited to the study from a paediatric private practice. Stimulant medication was started when clinically indicated, with DXA taken pre-treatment and then after several months of treatment. Height and weight were monitored.
Results: To date 6 boys aged 4.7–7.1 years (6.37 ± 0.88) have had baseline and repeat DXA scans 3.9–11.7 (7.9 ± 3.1) months following treatment initiation. Lean tissue mass, bone mass and bone mineral density all increased significantly; fat mass showed a significant reduction from baseline. (table 1). The ratio of lean tissue:height showed no significant change and the ratio of bone mass:height increased significantly. There was a significant reduction in z-score for weight but not height.

Table 1

	Pre treatment ($n = 6$)	Post treatment ($n = 6$)	Significance (paired t-test)
Fat mass	5.63 kg 22.71%	4.91 kg 19.62% 19.62%	$p < 0.01$
Lean tissue mass	19.16 kg 77.29%	20.12 kg 80.38%	$p < 0.01$
Total tissue mass	24.79 kg	25.03 kg	NS ($p = 0.36$)
Bone mass	0.87 kg	0.92 kg	$p < 0.01$
Lean tissue mass/ht	157.3 g/cm	160.7 g/cm	NS ($p = 0.11$)
Bone mass/ht	7.12 g/cm	7.38 g/cm	$p < 0.01$
Bone mineral density	0.843 g/cm^2	0.851 g/cm^2	$p < 0.05$
Weight z-score	1.14	0.59	$p < 0.05$
Height z-score	0.68	0.51	NS ($p = 0.11$)

Conclusion: In this pilot sample, stimulant medication was associated with loss of percentage and total body fat and increases in lean tissue, bone mass and bone mineral density. Weight loss on stimulant medication may be due to loss of fat; increases in lean tissue and bone mass may be related to increases in height.

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INFECTIVE ENDOCARDITIS: A RETROSPECTIVE AUDIT OF CHEMOPROPHYLAXIS FOR DENTAL TREATMENT 1995–2005

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Introduction: Infective endocarditis (I.E) is an uncommon condition occurring at an approximate rate of 4/100,000 population, I.E is associated with significant morbidity and mortality and can be difficult to treat. Specific high risk groups for I.E have been identified and although *most* cases of I.E are not directly attributable to specific invasive procedures a variety of antibiotic prophylaxis guidelines have been developed including the Recommendations of the National Heart Foundation of New Zealand. Our aim was to audit practice of chemoprophylaxis over a 10 year period in an identified at risk group of patients undergoing dental treatment.
Method: Children less than 15 years of age attending the Taranaki Outreach Paediatric Cardiology Clinic over a 10 year period were identified. Their clinical medical notes, echocardiography results and community dental records were reviewed. They were stratified according to risk as outlined by the NZ guidelines. Appropriateness of antibiotic treatment was assessed with regard to their cardiac risk and dental procedure.
Results: 112 children were identified and complete documentation was available for 82 (73%). From available information 8 (10%) were classified as "high" risk 47 (57%) as "moderate" risk and 27 (33%) "no" risk. Inappropriate antibiotic prophylaxis was given to 3 (37.5%) of high risk, 3 (6.3%) of moderate risk and 17 (62.9%) of no risk patients. Overall 23 (28%) had inappropriate treatment.

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Conclusion: Inappropriate chemoprophylaxis for I.E is common in this group of children who are known to have cardiac disease. There were a number of reasons identified for this including poor documentation of risk in clinical records and failure to follow guideline recommendations.

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ANALYSIS OF PAEDIATRIC CLINICAL INDICATORS: POTENTIAL FOR IMPROVEMENT

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Introduction: The Australian Council on Healthcare Standards (ACHS), with colleges and other stakeholders develops clinical indicators. It reports aggregated data to participating hospitals on a six monthly basis to assist them to review their performance, benchmark against other similar organisations and identify areas for potential improvement. The objectives of this study are to report on this ACHS Comparative Reporting Service and to summarise the accumulated paediatric clinical data between 1998–2004.
Method: The mean, 20th and 80th centiles were calculated, and data were plotted over a 7 year period. Trends and significant differences between different strata and hospitals were identified.
Results: There are 5 indicators for paediatrics, 2 of which are measures of immunisation status. The rate for whether catch-up immunisation was given or planned was only 65% in 2004 with 20th and 80th centiles of 29% and 67% with some hospitals having very low rates. There is an opportunity to significantly increase catch-up immunisation and this should be a priority area for governments.
The re-admission rate for children with asthma was a relatively high rate of 4%, with the 20th centile being not much lower at 3%. The lack of any trend or a low centile suggests that it may be hard to reduce this rate.
The presentation will also discuss data trends identified in 2005 data which will be available by the end of March 2006.
Conclusions: Many indicators reveal a high level of variation in the rates between hospitals, which show areas for potential improvement. This should lead to questions such as: are these trends and variations important, what are the causes and what could be done to improve them?

A REVIEW OF MALAYSIAN ABORIGINAL NEWBORNS ADMITTED TO THE NEONATAL INTENSIVE CARE UNIT IN A MALAYSIAN DISTRICT GENERAL HOSPITAL

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Introduction: The *Orang Asli* (Aboriginal) population in Peninsular Malaysia is mainly concentrated in the central Malaysian states of Pahang, Kelantan, Perak, Selangor and Negeri Sembilan. Data regarding neonatal problems in this population is rather limited. They make up less than 2 percent of the population, however morbidity and mortality amongst this group is well recognized. The aim of this study is to collect data on *Orang Asli* newborns, looking for variables compared to the rest of Malaysia's multi-racial population.
Methods: This is a retrospective study of all *Orang Asli* neonates admitted to the Neonatal Unit in Mentakab Hospital over a 1 year period (2003).
Results: There were 65 *Orang Asli* admissions out of a total of 1543 admissions to our Neonatal Unit. The average birth weight was 2569 g. The commonest indication for admission was neonatal jaundice secondary to glucose-6-phosphate dehydrogenase (G6PD) deficiency. 10 babies were ventilated – 7 for prematurity and 3 for mild-moderate perinatal asphyxia. There were 3 deaths – a baby with a lethal congenital abnormality, one with Congenital Rubella Syndrome with cardiac failure, and a preterm baby delivered at 28 weeks gestation, with late neonatal sepsis.
Conclusions: The data collected from our study group showed many similarities with other newborns admitted to our hospital**.** A large number of these newborns had G6PD deficiency resulting in Neonatal Jaundice. An average *Orang Asli* newborn had a rather good birth weight and almost 2/3 were born term. One expects that due to the harsh environment they live in, low birth weight and prematurity to be more prevalent. Prematurity was the main cause for ventilation.

ARE SCHOOLS MEETING THE NEEDS OF KIDS WITH ADHD?

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Introduction: Attention Deficit Hyperactivity Disorder (ADHD) has a major impact on children's functioning at school – academically and socially. This study examined parental perceptions of schools in relation to their understanding of ADHD, information provided and general support. It was hypothesised that parents would perceive schools as having a limited understanding of ADHD and providing insufficient support for their children.
Method: Parents of consecutive children with ADHD seen in the Behaviour Clinic at the Royal Children's Hospital completed a questionnaire which assessed thier beliefs about ADHD and schools.
Results: 66 parents (43 mothers, 23 fathers) of patients aged from 6 to 19 years (mean 10.4) with ADHD completed the questionnaire. 28% of parents reported that a teacher was the first person to suggest their child needed help. 77% disagreed that most school teachers have a good understanding of ADHD. 53% disagreed that schools are supportive of children with ADHD. 83% agreed that class sizes are too large for teachers to properly support children with ADHD. 51% of children received no extra help in school, 19% received integration assistance, 23% had repeated a school year, and 7% attended a special school. 35% had been suspended. 30% of parents had received information about ADHD from teachers (89% from doctors, 71% from the media, 59% from family and/or friends, 44% from other health professionals). Parents rated teachers as their fifth most valuable source of information.
Conclusions: Parents of children with ADHD perceive that teachers have inadequate understanding, and schools insufficient resources, to support their children's special needs. Health professionals (particularly paediatricians) need to work more effectively with the education system to promote positive experiences and outcomes for children with developmental problems, including ADHD.

RISK FACTORS FOR RECURRENT URINARY TRACT INFECTION IN CHILDREN: A POPULATION BASED COHORT STUDY

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Introduction: Urinary tract infection (UTI) occurs in 10% of children but risk factors are poorly understood and so interventions to prevent UTI are generally lacking. We have designed a prospective cohort study to identify the risk factors for UTI in a primary school population.
Methods: The study population consisted of primary school children from the first 4 years of school in Sydney who consented to take part in the 1 year follow up study. We recorded incident UTI over 1 year of follow up by means of a questionnaire. A validated parent-administered questionnaire (average kappa = 0.75) assessed baseline data on demographics and possible risk factors for recurrent UTI. The questionnaire was administered at baseline and at every 3 months to monitor any events of UTI occurrence.
Results: Of the 2855 children (males 53%, mean age 7.3 years, range 4.5 to 12.8 years) 3.3% of parents reported new episodes of UTI during

the 1 year follow up period. 1.5% have had recurrent UTI (females 77%, mean age 7.1). Multivariate logistic regression analysis adjusted for age showed a history of kidney problems (OR 6.1, 95% CI 2.3 to 16.0), female gender (OR 3.1, 95% CI 1.5 to 6.3), micturating habits (holding on maneuver OR 1.8, 95% CI 1.1 to 3.0 and dribbling OR 2.4, 95% CI 1.4 to 4.1) were statistically independent risk factors for UTI.
Conclusion: Presence of kidney problems and female gender appear to be the strongest risk factors for UTI followed by urination behaviour. Prospective trials need to be conducted to determine whether changes improvements in micturating habits reduce the likelihood for UTI.

RISK FACTORS FOR URINARY TRACT INFECTION AT BASELINE: A POPULATION BASED STUDY

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Introduction: To assess the validity of parent reported urinary tract infections (UTI) and to identify the risk factors associated with those confirmed UTIs from baseline data.
Methods: A validated and reliable questionnaire was sent to 8960 primary school children randomly selected from the first 4 years of school. A total of 3331 children consented to take part in the baseline study with a response rate of 37%. The questionnaire inquired about demographic factors, symptoms and potential risk factors for UTI. A sub sample of negatively reported and all positively reported UTIs by parents were verified with a microbiological report.
Results: A total of 2855 children (mean age 7.3 years, range 4.8 to 12.8 years) completed the questionnaire who consented to take part in the follow up study from 60 schools. In addition 477 children participated only in the baseline study. Parent reported prevalence of urinary tract infection was 13.2% compared to the prevalence of bacteriologically confirmed UTI of 3.4%. The prevalence of UTI decreases with age, from 6.1% in 4 to 5 years age group to 1.9% in 9 to 12 years age group (P value for trend 0.31). On univariate analysis birthweight, social concerns, constipation encopresis, emotional stressor, nocturnal enuresis, kidney problems, daytime incontinence and gender were associated with UTI. Multivariate polychotomous logistic regression showed kidney problems, daytime incontinence, gender, encopresis, and nocturnal enuresis being associated with UTI after adjusting for age.
Conclusion: Parents over-report UTI by about three fold. After adjusting for potential confounding we found that kidney problems, daytime incontinence, gender, encopresis and nocturnal enuresis were significant risk factors for UTIs.

FEATURES OF PNEUMONIA IN FEBRILE CHILDREN

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Introduction: Pneumonia can be difficult to diagnose in children. A better understanding of presentation may help in understanding the illness. Our aim was to describe clinical features, test results and management for children with fever and chest x-ray consolidation.
Method: All children under five years presenting with a febrile illness to the emergency department (ED) at The Children's Hospital at Westmead are included in a large prospective study collecting information on presentation, clinical care and diagnosis. Children with consolidation on chest x-ray between July 2004 and June 2005 were selected for this sub-study. Clinical features, antibiotic use, test results, clinical care and admission data are electronically recorded in several hospital databases and linked in a research database. Health status and further investigations 10 days post-ED visit are determined by telephone contact with parents and if necessary general practitioners/ other care providers.
Results: Over the study period 389 febrile illnesses were identified. 211 (54%) episodes were in children under 24 months at presentation. In 82% of episodes the child had been ill for <7 days, respiratory rate at triage was normal in 54% and 79% had normal oxygen saturation. Positive blood cultures occurred in 17 (2.3%) episodes. Nasopharyngeal aspirates were performed in 82 episodes (21%) and 45 were positive for virus. Effusion was present on chest x-ray in 23 episodes (6%). ED doctors prescribed antibiotics in 296 (76%) and admitted 248 (63%) to hospital.
Conclusion: Children with fever and consolidation on chest x-ray often presented quite well at triage and after only a short period of illness. Positive blood cultures and effusion were not common features of the illness.

LACTATE: CREATININE RATIO IN BABIES WITH THIN MECONIUM STAINING OF AMNIOTIC FLUID

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Background: Lactate creatinine ratio (L: C ratio) of 0.64 or higher in first passed urine of babies suffering severe intrapartum asphyxia has been shown to predict Hypoxic Ischaemic Encephalopathy (HIE) (1). We tested L: C ratios in a group of babies born through thin and thick meconium,
Methods: 86 consecutive newborns with meconium staining of liquor, were recruited for the study. 52 voided urine within 6 hours of birth; of these 27 had thick meconium and 25 had thin meconium at birth. 42 others, who did not have meconium or any other signs of asphyxia at birth provided controls. Lactate and creatinine levels in urine were tested by standard enzymatic methods in the three groups.
Results: Normal babies had an average L: C ratio of 0.13 (± 0.09). L: C ratio was more among thin meconium babies (4.3 ± 11.94) than thick meconium babies (0.35 ± 0.35). L: C ratio was above the cutoff of 0.64 of Huang et al in 40% of those with thin meconium. 2 of these developed signs of HIE with convulsions (HIE Sarnat and Sarnat Stage II) during hospital stay. One had L: C Ratio of 93 and the other of 58.6. A smaller proportion (20%) of those with thick meconium had levels above the cutoff and 2 developed HIE and convulsions with L: C ratio of 1.25 and 1.1 respectively.
Conclusion: Our study shows that the specificity of the L: C ratio may not be as good, if babies born through thin meconium are also included. In the presence of meconium a higher cut-off than 0.64 is needed. L: C ratios should be tested in a larger sample that includes babies with thin meconium, before L: C ratios can be applied universally.

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WHO WARRANTS A GLUTEN-FREE DIET?

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Aims: To examine the response to a gluten-free diet in children with high gliadin antibodies, but who did not have evidence of coeliac disease. Conventionally, a gluten-free diet is prescribed only for those with a histologic diagnosis of coeliac disease. This guideline was challenged.
Methods: A retrospective audit of children, referred to a gastroenterology and allergy clinic, investigated by endoscopy for coeliac disease, and with an elevated IgG-gliadin antibody test (during 2001–2005).
Inclusion criteria were: eating gluten prior to endoscopy and blood tests; had blood tests for IgG-gliadin antibody (*Inova Diagnostics*) and tissue transglutaminase (tTG) or endomesial antibody (EMA); and clinical follow-up for at least three months. *All* these children with elevated

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IgG-gliadin antibodies were offered a gluten-free diet, *whatever* the small bowel histology appearance.
Results: There were 190 children (96 males and 94 females, mean age 5.3 years, sd 3.8): 31 (16%) had a histology diagnosis of coeliac disease; 31 (16%) were deemed possible coeliacs because of elevated tTG or EMA antibodies (they had normal small bowel histology); but the majority, 128 (67%), did not have any supportive evidence of coeliac disease – labelled "non-coeliacs. Clinical and demographic features were similar across these three groups.
Of the 128 non-coeliacs, 81 (76%) reported substantial clinical improvements on a gluten-free diet within three months. Of the remaining 47: 31 did not try a gluten-free diet, and 8 reported no benefit.
Conclusions: Many children have symptoms consistent with coeliac disease, but have normal small bowel histology and normal tTG or EMA results. But they frequently have high IgG-gliadin antibody levels. Notably, these children also clinically respond to a gluten-free diet – they are gluten-sensitive. IgG-gliadin is a valuable test to detect these children. Many more children, other than coeliacs, warrant a gluten-free diet.

IS GASTROINTESTINAL PERMEABILITY STABLE OVER TIME IN CHILDREN WITH AUTISM? A PILOT STUDY

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Introduction: Theories of autism aetiology currently focus on developmental abnormalities of the central nervous system (CNS), but there have been a number of findings of pathology in other body systems. Abnormalities of gastrointestinal (GI) function, metabolism of the CNS and immune system have been repetitively identified.
However the biological observations do not have real clinical meaning. There is limited longitudinal data on the stability of these abnormalities over time, their interrelationship with communication, social development and other biological indices.
Methods: This longitudinal pilot study investigated three of the most common biological indices in children with autism – platelet serotonin levels, GI permeability and serum antibodies to myelin basic protein (MBP). Psychometric measures of communication and socialisation were collected. This paper focuses on the results of GI permeability. Ten children with autism were evaluated at one point in time (mean age = 52 months, range = 37–76). Six children were evaluated at two points in time (mean age = 44 months & 66 months).
Results: For the 10 children who were evaluated just once, GI permeability decreased with age ($r = -0.71$ $p = 0.02$). Of the six children who were evaluated twice, 92% had GI permeability outside of the normal range at baseline, compared with 10% at follow-up ($n = 6$ $p = 0.045$). These findings were not correlated with any of the psychometric or other biological markers.
Conclusion: GI permeability was not stable over time in this cohort of children with autism and decreased with age. Our pilot study indicates that it may be an independent biological marker. Further longitudinal sampling of permeability along with other selected measures is indicated.