acts as a physical barrier to irritants and has antibacterial activity. Encouraging reports of topical sucralfate effect on epithelialization of wounds along with its bacteriostatic property have led us to carry out a trial to evaluate its role as a topical agent in the treatment of diaper dermatitis and compare its efficacy with topical zinc oxide.

Methods A double blind randomized clinical trial was conducted from April 2008 to september 2009. Sucralfate and zinc oxide were formulated as 20% ointment with same excipients. All patients were randomly treated topically with either sucralfate (N=25) or zinc oxide (N=21) for 7 days. Diaper severity were obtained before treatment and days 3, 5, 7 by authors.

Results A total of 46 infants (54.3% female and 45.7% male) entered the study. They had a mean age 4.4+/-6.5 months. The mean age, sex, frequency of diaper changing (per day) and severity of diaper rash had no statistically significant difference between two groups. Sucralfate 20% ointment was significantly superior in healing dermatitis at days 5, 7 ($p<0.05$ and 0.01 respectively) and had significant shorter healing time (3.24 ± 2.02 days) in comparison with zinc oxide 20% ointment (5.42 ± 2.39 days) (p value =0.002).

Conclusion Since sucralfate in topical formulations acts as a physical barrier with proved safety and has no noticeable absorption it may become a potential treatment for diaper dermatitis.

381 THE EFFECTS OF ENVIRONMENTAL TOBACCO SMOKE ON PNEUMONIA RISK IN CHILDREN UNDER 7 YEARS IN NORTHERN NIGERIA

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Background The numerous adverse effects of Environmental Tobacco Smoke (ETS) on the non-smoking public have being evidenced through decades of research. This does not only affect adults but children. ETS effects on children have shown to be grave as it worsens asthma conditions, increases pneumonia cases and causes Sudden Infant Death Syndrome (SIDS).

Methods Most residents in all 44 Local Government Areas (LGAs) in Kano State of Northern Nigeria took part in a population-based large-scale cross-sectional survey in Kano state from 2007–2010. Demographic information coupled with socioeconomic status, smoking status and house environment of each household member, was collected from participants.

Results Out of a total of 528, 800 people resident in 102,334 homes identified in the survey areas and visible/present as at the time of the study, 52,888 (10%) were children aged 7 years and below. While the prevalence of ETS exposure on children was 81%, the prevalence of reported pneumonia cases was 3.5%. Multiple logistic regression analysis showed that exposure to ETS was independently associated with reports of pneumonia cases (adjusted odds ratio 1.55, 95% CI 1.25 to 1.92). The prevalence of tobacco smoking was higher among men than women (63.5% vs 44.1%). It is estimated that 32.7% of childhood pneumonia in the northern region of Nigeria is attributable to ETS.

Conclusions Attention should be given to reduction to children's exposure to ETS not only in Nigeria but in all affected areas mostly all parts of the world.

382 IMPROVING ASTHMA MANAGEMENT FOR SOUTH ASIAN CHILDREN; WHOSE PRIORITIES MATTER?

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Background South Asian Children present more frequently than White British Children to emergency departments with acute asthma: tailored interventions may redress this. The Management Interventions for Asthma project (MIA) assessed the feasibility of involving adults, parents and children from this potentially 'hard to reach' ethnic community alongside healthcare professionals (HCPs) in prioritising components for tailored asthma interventions.

Methods Eleven issues identified as barriers to asthma management following interviews with community members, parents, children and HCPs were presented at community based events by the MIA team utilising interpreters/facilitators for simultaneous 5-way translation. HCPs were sent information electronically.

Forty six community members, 22 parents, 19 children and 13 HCPs used Borda ranking to prioritise the issues for subsequent development of interventions in the current health care system.

Results Getting a diagnosis was ranked first by parents and community members but last by HCPs. Language barriers were ranked first by HCPs. Children prioritised managing acute asthma attacks.

Conclusions Ethnicity and language need not be barriers to involving South Asian families in health services research.

It is crucial to include community members, families and children in the development of tailored interventions as well as HCPs. Relying on HCPs alone could lead to key issues being missed or priorities misjudged.

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383 A RAPID BLOOD NGAL ASSAY FOR DETECTION OF RENAL CORTICAL DEFECT IN INFANTS WITH FEBRILE UTI: A PROSPECTIVE STUDY

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Background and Aims Infants with renal cortical defect due to acute pyelonephritis (APN) may be associated with an increased risk of progressive kidney damage. Neutrophil gelatinase-associated lipocalin (NGAL) is produced and secreted by renal tubule cells at low levels, but the amount produced and secreted increases dramatically after ischemic, septic, or nephrotoxic injury of the kidneys.

To investigate the usefulness of a rapid blood NGAL assay as a diagnostic marker of cortical defect in infant with febrile UTI at the bedside.

Methods Sixty-three infants with suspected febrile UTI were divided into a documented UTI group (n=49) and a non UTI group (n=14). UTI group were divided into cortical defect (UTI-D) group (n=26) and non cortical defect (UTI-N) group (n=23) according to the result of DMSA scan. Blood NGAL concentrations were analyzed using a commercial kit (Triage NGAL test) by fluorescence immunoassay.

Results NGAL concentrations were significantly higher in UTI-D group ($68.0[60.0-172.5]$ mg/mL) than in UTI-N group ($60.0[60.0-86.5]$ mg/mL) and in non UTI group ($60.0[60.0-60.0]$ mg/mL). In UTI-D group, NGAL concentrations were significantly decreased after antibiotic therapy ($60.0[60.0-71.2]$ mg/mL). The area under the ROC curve of NGAL for the detection of cortical defect was 0.74 ($p=0.004$). The best cutoff NGAL concentrations for the detection of cortical defect was found to be 61.5 mg/mL (sensitivity: 69.2%; specificity 78.2%).

Conclusions Although it is not a stand-alone test, the rapid determination of blood NGAL concentration provides valuable information quickly, concerning the distinction between APN and lower UTI, for determining the clinical course of infant with febrile UTI.

384 QUANTIFICATION OF IGM AND IGA ANTI-PNEUMOCOCCAL POLYSACCHARIDES BY A NEW ELISA ASSAY. A VALUABLE DIAGNOSTIC AND PROGNOSTIC TOOL FOR HYPOGAMMAGLOBULINEMIAS

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CVID are a group of heterogeneous conditions characterized by reduced immunoglobulin levels and absent or poor antibody responses. The latter diagnostic criterion has not been clearly defined leading to a highly variable number and type of immunizations performed among centres. Specific antibody responses cannot be evaluated in patients who are already on immunoglobulin replacement, due to the interference of passively administered IgG. Classification schemes are based on cellular phenotyping and offer instruments for recognition of patients at risk for CVID-associated clinical conditions, but do not take advantage of the possibility to evaluate in vivo antibody responses as a prognostic marker for infectious complications. We immunized 91 CVID patients with a 23-valent pneumococcal polysaccharide vaccine (Pneumovax®) and measured the IgM and IgA to single pneumococcal polysaccharides before vaccination and 4 weeks later. Results were compared with those obtained using a new IgM and IgA anti-pneumococcal polysaccharides 23-valent assay (PC23). We demonstrated that the IgM/IgA response to PC23 allows stratifying CVID patients into groups with different risk to experience pneumonia and to develop bronchiectasis. Immunological IgM/IgA responders had the lowest risk for pneumonia (0%) and bronchiectasis (1.2%), while non responders had the highest risk (37% and 41.5% respectively) and IgM-only responders had an intermediate risk (8.8% and 8% respectively). The antibody response correlated with the frequency of IgMpos and switched memory B cells. The IgM and IgA PC23 assay represents a valuable prognostic tool for CVID patients and allows investigating the residual antibody production capacity, even in patients on substitutive immunoglobulin replacement.

385 A DOUBLE BLIND, RANDOMIZED CONTROLLED TRIAL ON THE RESUSCITATION OF PRETERM INFANTS WITH 30% VERSUS 65% OXYGEN AT BIRTH

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Background Resuscitation of term infants at birth with 100% oxygen increases oxidative stress with concomitant deleterious effects. Optimal levels for preterm infants are unknown. We hypothesized that resuscitation of preterms with initial FiO₂ of 30% is safe, decreases oxidative stress and improves outcome compared to an initial FiO₂ of 65%.

Design Preterm infants (GA<32 weeks) were randomized to start resuscitation after birth with 30% or 65% oxygen. FiO₂ was adjusted based on oxygen saturation and heart rate. Primary outcome was survival without bronchopulmonary dysplasia (BPD) at 36 weeks postmenstrual age. Oxidative stress was determined by urinary DNA and protein oxidation markers, and plasma non protein bound iron.

Results We included 194 infants, mean GA (28⁴/₇±2¹/₇ weeks) and birth weight (1076±347 gram) were not different between groups. FiO₂ was significantly different during the first 5 minutes following birth. Clinical outcomes (table) and oxidative stress markers were not statistically different between groups.

Abstract 385 Table 1 Clinical outcome

FiO ₂	30% (n=99)	65% (n=95)
Mortality (%)	6.1	10.5
BPD (%)	23	15
Survival without BPD (%)	72	75
Intraventricular hemorrhage ≥stage 2 (%)	8.1	10.5
Retinopathy of prematurity ≥stage 2 (%)	6.1	5.3
Necrotizing enterocolitis ≥stage 2 (%)	4.0	3.2

Conclusion Resuscitation of preterm infants at birth with 30% oxygen is as safe as resuscitation with 65%, but does not offer benefits with regard to survival without BPD.

386 A COUNT OF THREE NEONATAL MORBIDITIES MAY SUBSTITUTE FOR LONG-TERM NEURODEVELOPMENTAL FOLLOW-UP IN VERY LOW BIRTH WEIGHT (VLBW) INFANTS

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Background In very preterm infants who survive to a postmenstrual age (PMA) of 36 weeks, a count of BPD, brain injury and severe ROP predicts the risk of a later death or neurosensory impairment at 18 months (JAMA 2003; 289:1124).

Objective To validate this count of 3 neonatal morbidities as a predictor of poor long-term outcome in VLBW infants who participated in the CAP Trial.

Methods Five-year follow-up of 1514 CAP trial participants who survived to a PMA of 36 weeks. Poor outcome was a late death or survival with one or more disabilities.

Results The incidences of BPD, brain injury and severe ROP were 40%, 13%, and 6.0%, respectively. Each morbidity was similarly and independently correlated with a poor 5-year outcome. Table 1 shows the risks of a poor long-term outcome with none, any 1, any 2, and all 3 neonatal morbidities.

Abstract 386 Table 1

Neonatal morbidities	No. of Infants	Poor Outcome at 5 Years	95% CI
None	759	11%	9 to 14%
Any Single Morbidity	590	23%	20 to 27%
Any 2 Morbidities	139	44%	36 to 53%
All 3 Morbidities	26	62%	41 to 80%

Conclusions In VLBW infants who survive to a PMA of 36 weeks, a count of BPD, brain injury and severe ROP predicts the risk of a later death or survival with disability at age 5 years. This morbidity count may substitute for long-term outcome assessments in very preterm infants whose families do not comply with neurodevelopmental follow up.