

level for female teachers about asthma was fairly higher than male ones. According to the education level, there was not a remarkable difference. According to the school types, public school teachers were somewhat lower than private school teachers. Asthma experience caused a meaningful increase in teachers' asthma knowledge level. According to the career duration between the teachers, the experienced teachers had more information about the triggers, whereas less experienced teachers were evaluated as well-informed about emergency medical care during the attack.

Conclusions The teachers having the knowledge about asthma reduce familial anxiety and school abstinence rate. This survey helps prepare a guideline for the next education programs and seminars amongst teachers.

377 PREVALENCE OF HYPOSPADIAS IN DENMARK: A REGISTRY BASED POPULATION STUDY FROM 1986–2009

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Background Over the last decades the prevalence of hypospadias has been reported with increasing trends, but with widespread variation across countries.

The aim of this study was to determine the prevalence and trend of hypospadias over 23 years in a Danish population.

Design Population-based study of all infants born in the period 1986–2009 in Funen County, diagnosed with hypospadias and reported to the EUROCAT registry of congenital anomalies.

Cases were included only if surgery for hypospadias was performed or planned.

Results 201 cases of hypospadias were registered in 1986–2009 with an overall prevalence of 15.2 pr 10000 births. (95% CI: 12.2 to 17.9). The prevalence of hypospadias increased from 4.1 in 1986 to 15.1 in 2009 with a peak prevalence in 2002 at 25.5 per 10000 births. The increase in prevalence was significant comparing the years 1986–1999 to 2000–2009 ($p < 0.001$).

From 2000–2009 it was possible to specify the degree-of-severity of hypospadias. Infants with hypospadias as an isolated congenital anomaly were more likely to have a mild form of hypospadias (93%) while cases with associated congenital anomalies had a lower proportion of mild hypospadias (58%) ($p < 0.001$).

Conclusion The prevalence of hypospadias has increased in a Danish county from 1986–2009 although from 2002 the rate seems to be levelling off. The aetiology of isolated hypospadias is multifactorial (paternal, maternal, endocrine and environmental factors). It is mandatory to have a comparable surveillance system in place to assess rates properly between countries in order to monitor changes in potential risk factors.

378 GROWING UP HEALTHY IN GHANA II: SOCIOECONOMIC AND SPATIAL PREDICTORS

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Background and Aims Especially in resource poor settings measures for health promotion should be guided by evidence to channel expenditures according to populations' health priorities. Our aim was to identify predictors for infants' health amenable for short or midterm change to guide health policy decision making in Ghana.

Methods This part of the Intermittent Preventive Treatment in Infants Trial used socioeconomic, behavioral and knowledge-related data that were collected on recruitment with interviews in the local language. Spatial data on the infants' residence area were measured

by handheld global positioning system (GPS) receiver. We tested the association between these factors and health in bivariate and multi-variable analyses adjusted for each other and for genetic and clinical factors.

Results In bivariate analyses, maternal age, financial status, TV, radio, refrigerator and kitchen in the house, malaria knowledge, effective protection against mosquitos and the villages' distance to the next hospital were related to health but birth order and water source were not. In multivariate analyses, infants from well-off families were twice as likely to grow up healthy (OR=2.03, 95% CI=1.32–3.54) than infants from poor families. Type of mosquito protection and distance to hospital also were related to health.

Conclusions Independently of the child's genetic traits, effective protection against mosquitos and access to hospital may be related to better health outcomes in this area in Ghana. Further studies should explore how access to health services can be improved in remote settings. In the meantime, investment in effective mosquito protection may support growing up healthy in Ghana.

379 HEALTH DISPARITIES IN WELL CHILD VISIT IN A COMPREHENSIVE PEDIATRIC CARE CENTER IN UNITED STATES: DOES INSURANCE MATTER?

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Background and Aims The Center for Disease Control and Prevention (CDC) provides guidelines on age-appropriate well child visit. We aimed in this study to examine the health disparities in well child prevalence.

Methods We examined data on children born between 2007 and 2009 in 2010/2011. Using the primary level of service (LOS) procedure codes: 99381, 99382, 99391, and 99392 (evaluation and management codes), we obtained 69,447 visit records (11,374 patients). The health disparities by race and insurance status were examined using Chi squared statistic and multivariable logistic regression.

Results A significant racial/ethnic disparities was observed: Caucasians (68.1%) relative to African Americans/Blacks (46.1%), Asians (66.3%), Hawaian/PI (53.4%), and some other race (52.4%) were more likely to meet the recommended schedule, χ^2 (7) = 2,800, $p < 0.0001$. Similarly, higher compliance was associated with commercially insured patients (73.4%), relative to Medicaid (45%) or uninsured/Nemours subsidized (38.3%), χ^2 (2) = 4,700, $p < 0.0001$. Compared with Caucasians, AA/Blacks were 60% (Prevalence Odds ratio[POR]=0.40, 95%CI, 0.39–0.42), while Asians were 8% (POR=0.92, 95%CI, 0.82–1.12) less likely to comply with the schedule. After controlling for insurance status, racial disparities was lowered, and AA/blacks were 42% less likely to comply compared with Caucasians, adjusted POR = 0.58, 99%CI, 0.55–0.61; and uninsured/Nemours subsidized were 77% less likely to adhere to schedule relative to the commercially insured patients, adjusted POR, 0.23, 99%CI, 0.21–0.26.

Conclusions Racial disparities exist in "well infant visit", and was not completely removed after adjustment for insurance status which is known to influence access and care utilization.

380 COMPARING THE EFFICACY OF TOPICALSUCRALFATE VERSUS TOPICAL ZINC OXIDE IN DIAPER DERMATITIS, A RANDOMIZED DOUBLE BLIND STUDY

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Diaper dermatitis is one of the most common skin disorder during infancy. Different modality of treatment is suggested. Sucralfate

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.