

COMMUNITY

G23 WHAT IS THE BEST MODEL OF HEALTH CARE FOR CHILDREN IN NEED?

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Aims: Pilot study to assess quality and acceptability of a skillmix model of health care to meet Quality Protects objectives for children in need under 5 years of age.

Methods: A sample of 74 disadvantaged children under age 5 entering 4 categories (Looked After by the Local Authority; on the child protection register; homeless; in domestic violence refuges) over 6 months (1.2.99-31.7.99) were selectively assessed by Health Visitors using a structured health assessment proforma, combined with data from the NHS Child Health computer and compared with a Doctor performed medical assessment on 19 Looked After children.

Results: Assessment of health needs documented by HV / Doctors respectively were: access to GP 97% / 100%; immunisation needs 92% / 79%; dental care 93%/63%; medications and allergies 97% /95%; child health surveillance uptake 96%/ 0%; therapy services required 97%/84%; request for the PCHR 95% / 0%; medical care needs 93%/100%; language or literacy problems in carers 46% / 0%; problems with accessing health services 92%/0%; smoking in the household 93%/ 0%.

Conclusion: The quality of selected, structured health assessments in children under 5 years old provided by Health Visitors as part of a Consultant Paediatrician led team provides information allowing the multidisciplinary formulation of health care plans for these children. The Health visitor assessment is as useful a model of care as medical examination alone and was welcomed by parents and carers, in particular foster carers. Advantages in flexibility of service delivery, matching of skills to need and cost effectiveness are found in engaging Health Visitors in the targeted, team based health assessment of disadvantaged children.

G24 IS VIOLENCE AGAINST PAEDIATRICIANS A PROBLEM?

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Aims: Violence against doctors is increasing in our society. There has been much research looking at this but most of this has been in the field of General Practice or Accident and Emergency. I set out to ascertain the extent of the problem in Paediatrics and to see if there was a difference between Northern Ireland and other regions in the UK.

Methods: This was a telephone questionnaire addressed to 25 Specialist Registrars/Senior Registrars/ Senior SHOs in each of three regions in the UK; Northern Ireland, South Thames and North West England.

Results: 68/75 (90.7%) paediatricians had been exposed on at least one occasion to a violent incident of which 47/75(62.3 %) had occurred in the past year. 31/75 (41%) had suffered threats on at least one occasion. Although 5.3% of the interviewees had been victims of actual physical assault, more than 10 % said that an attempted assault had taken place.

Most of the doctors who had experienced a violent episode (41/68) worried about the incident after return from work and yet only 1/68 was offered any counselling. Only 9/68 (13.2%) had ever formally reported an incident to hospital management.

Less than 10% of those questioned had received any formal training in the management of violent people, although 99% thought this would be a good idea.

Conclusions: Paediatricians are involved in situations at work (e.g. child protection and casualty) which frequently result in exposure to violence. Very few of us report these incidents officially. They are often underplayed and more attention should be given to the training and counselling needs of paediatric trainees.

G25 MMR RECONSTITUTED WITH DT ADMINISTERED FOR THE PRE-SCHOOL BOOSTER

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Aim: To establish adequacy of immunological protection in a cohort of pre-school children following the administration of MMR reconstituted with DT in the same syringe.

Background: Over a twenty months period, a number of children were inadvertently administered MMR reconstituted with DT in the same syringe for their pre-school booster by a single practitioner. This was clearly outside normal practice. All the children had to be identified to ascertain whether they were effectively protected.

Method: The Patient Information Management System was used to identify 80 children at risk. Review of manual records and parental interview eliminated 35 children. 7 were not contactable via national registration data. 38 were counselled and 37 accepted serum and/or salivary serological assay which was used as proxy of immunological protection.

Result: One child opted for a third MMR vaccine and declined all tests. All 37 children showed serological evidence of full protection for tetanus and rubella.

Equivocal results were found in 3 of 37 tested for measles, 4 of 20 tested for diphtheria and 2 of 20 tested for mumps and were subsequently offered appropriate antigens, the rest had adequate evidence of protection.

Conclusion: These results would suggest no overt adverse effects following the ad-hoc administration of reconstituted MMR with DT. However, generalisation of the practice of reconstituting these vaccines together in a single syringe would require a large prospective randomised control trial.

G26 A VISUAL MOTOR PSYCHOLOGICAL TEST AS A PREDICTOR OF RESPONSE TO DESMOPRESSIN IN CHILDREN WITH NOCTURNAL ENURESIS

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Introduction: Boundary-type errors in the reproduction of the Rey-Osterrieth figure have been shown to correlate closely with abnormal nocturnal secretion of growth hormone. We hypothesised that these errors are identifying a hypothalamic problem affecting circadian rhythm setting. This study was designed to test this hypothesis, and determine if there was a similar association with abnormal nocturnal secretion of vasopressin and, as the two are related, response to desmopressin.

Methods: 34 children with severe primary monosymptomatic nocturnal enuresis copied the Rey-Osterrieth figure, and then reproduced it from memory. All tests were marked, blind to response to desmopressin, for boundary-type errors. A second investigator determined whether the child responded to desmopressin. The data was analysed for correlation between boundary-type errors and response to desmopressin. The nocturnal vasopressin levels, previously measured in 15 children, were retrieved and analysed for correlation.

Results: A significant association was found between boundary-type errors and response to desmopressin ($p=0.001$), with children making errors being less likely to respond. Boundary-type errors were independent of a number of potential confounding variables. Three cut off points in the marking of the test, were assessed and showed significant associations with respect to response to desmopressin; $p=0.02$, $p=0.002$ and $p= <0.001$, with the presence of a normal result increasing the probability of children responding from 41% to 62-70%. An association between very low vasopressin levels and boundary-type errors was noted.

Conclusions: The results suggest a hypothalamic component to the aetiology of primary nocturnal enuresis and could provide a useful tool in predicting response to desmopressin.

G27 PLAYGROUND SAFETY: DO THE REGULATIONS WORK?

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Background: Playground safety is controlled by regulations that have been developed to prevent head injury and not limb fracture. These regulations are based on cadaver road traffic studies and not on real children having real injuries on real playgrounds. We have been studying playground injuries since 1992 in partnership.

Aims of Study: To investigate whether head injuries and arm fractures are prevented by playground regulations.

Methods: We report the surveillance of injuries to children 0-14 years in our playgrounds from 1994-1998 recording injuries from the Accident Department and linking them to equipment, surface and exposure.

Results: Exposure did not change significantly overall over the period. Significant Head Injuries are very rare in our playgrounds. The incidence of concussion from a fall onto a modern surface (bark or rubber) was only 1.9/ 100,000 children/year over the five-year period. No child required more than overnight observation. However, children are sustaining arm fractures from falls from equipment onto both bark and rubber surfaces: incidence 59/ 100,000 per year in 1994 through to 45/100,000 per year in 1998.

Conclusions: We have already shown that removing monkey bars and increasing bark depth will reduce injuries. Current playground regulations with bark and rubber surfaces appear to successfully prevent head injury but they do not prevent arm fracture. This needs attention in future revisions of playground regulation.

G28 DRUG UTILISATION IN CHILDREN: A POPULATION BASED STUDY

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Background: Internationally, there is growing concern about drug use in children, the reason being limited information is available regarding dosage, meta-

bolism, and effect of drugs in children of (very) young age. However, drug use in children is often necessary.

Aims: To evaluate and quantify drug use in children in Tayside and to identify to what extent this is influenced by socio-economic factors.

Methods: A population-based study was performed in a population of 70,253 children aged <13, who were resident or born in Tayside and did not leave within the study period (1-1-93 to 1-1-96). Dispensed prescribing was classified into BNF categories. The number of children (age categories <3; 3-5; 6-12) receiving drugs from each category was calculated per year, and for the whole study period. The association with social status was evaluated using Carstairs deprivation categories.

Results: Over a three-year period, 83% of children received at least one antibiotic; 33% received drugs for the treatment of respiratory disorders (anti-histamines and asthma medication), 11% received central nervous system medication (mainly consisting of analgesics), and 25% received drugs for the treatment of skin conditions. Social status was a strong predictor of drug use ($p < 0.001$)

Discussion: This study provides an overview of drug use in children in Tayside. From it, we conclude that drug use in this population is substantial. Further research is needed as to how much of this drug use is off-label, and whether the use of certain drugs, such as antibiotics, can be reduced.

G29 EFFECTIVE SERVICE DELIVERY OF SELECTIVE NEONATAL HEPATITIS B PROGRAMME

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Aim: To assess the efficacy of three different service delivery systems of the Selective Neonatal Hepatitis B Programme over three Boroughs and four hospitals.

Methods: Prospectively collected data on coverage and serological testing, was analysed on all 640 births to HBsAg+ women from April 1994 to March 1997, analysed by service delivery, these included hospital-based, hospital then community and entirely community delivered systems. Liaison Health Visitors were based at each hospital and there was a Central Administrative Co-ordinator.

Results: Using the four dose accelerated vaccination schedule overall coverage rates were 100%, 97%, 91% and 74% for the first to fourth doses respectively. Serological testing was achieved in 60% of the cohort (80% of those who received the fourth dose). The hospital and hospital/community service achieved fourth dose coverage of 89% and 81% with the community service achieving 59%. Serological testing rates were much higher for the hospital and hospital/community service (84 and 79%) than the community based service (29%).

Conclusions: The continued involvement of the Liaison Health Visitor up to the fourth vaccine dose and serological testing achieved very high fourth dose coverage and serological testing rates in both hospital and hospital/community service. The community based service which only had Liaison Health Visitor input until the second dose had lower fourth dose coverage and serological testing rates. Continuing Liaison Health Visitor contact with families to completion of the programme maximises service delivery.

G30 COST-EFFECTIVENESS OF CURRENT AND ALTERNATIVE SCREENING STRATEGIES FOR CONGENITAL DISLOCATION OF THE HIP

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Aim: To compare performance and effectiveness of different screening strategies for congenital dislocation of the hip (CDH).

Methods: Universal and selective use of neonatal hip ultrasound (US), clinical examination (CE) alone, and a 'no screening' strategy were compared using decision trees to synthesise data. Pathway probabilities were estimated from systematic review of data relevant to the UK. For each strategy, we estimated screening test performance, and numbers per 100,000 live births of affected children with radiologically normal hip(s) by age 16, as well as numbers of treated false positive children developing avascular necrosis (AVN) of the hip.

Results: Under base case assumptions, universal US detects 94 (76%), selective US 71 (60%) and CE 42 (35%) of 120 CDH cases anticipated per 100,000 newborns. Universal US results in 427 false positives treated with abduction splinting per 100,000, selective US in 637 and CE in 403, of whom 4, 6 and 4 children respectively would develop AVN. Without any screening, 90 of 120 affected children would develop radiologically normal hips by 16 years, compared with 94 with CE, 106 with selective US and 110 with universal US screening, of whom 18%, 64% and 79% respectively would achieve this outcome without surgery. When compared in order of effectiveness, each additional favourable outcome costs £137k for CE, £66k for selective US, and £464k for universal US. With experienced clinical examiners, CE detection rates of 80% may be achieved. If abduction splinting rates were as reported in European universal US programmes, 4309 false positives would be treated in universal US of whom 427 would develop AVN.

Conclusions: Universal US is the most effective but most costly strategy. Strategies to increase CE detection rate and/or to reduce the treated false positive rate associated with selective US should be considered.