Computer and information

G170 POPULATION ATTRIBUTABLE RISK FOR ADVERSE BIRTH OUTCOMES DUE TO MATERNAL SMOKING DURING PREGNANCY

A. Delpisheh[1], Y. Kelly[2], S. Rizwan[1], E. Attia[1], B. Brabin[1]. [1]*The University of Liverpool, Liverpool, UK;* [2]*The University College, London, UK*

Objective: To estimate the population proportion of low birthweight, preterm births, and fetal growth restriction, which can be prevented with smoking avoidance during pregnancy.

Methods: An analysis of community and hospital based cross sectional studies undertaken in Merseyside covering the period 1983–2003.

Results: Maternal smoking status and pregnancy outcomes were available for a sample of 12 771 women. The proportion of women smoking during pregnancy has decreased from 37% in 1983 to 28.8% in 2003 ($p<0.001$). Smoking during pregnancy was a highly significant risk factor for both low birthweight (RR 2.1; 95% CI 1.9 to 2.4) and preterm birth (RR 1.5; 95% CI 1.3 to 1.7). The population attributable risk (PAR) for low birthweight due to maternal smoking ranged from 12.9% (95% CI 12.1 to 13.9) in 1983 to a peak of 40.9% (95% CI 40.5 to 41.3) in 1999 (mean 28.1%). For preterm birth, the PAR ranged from a low of 10% (95% CI 9.7 to 10.4) in 1983 to a peak of 25.7 % (95% CI 25.5 to 26.0) in 1999 (mean 15.1%). For fetal growth restriction, the minimum was 4.2% (95% CI 4.0 to 4.4) in 1988 to maximum of 56.6% (95% CI 56.1 to 57.1) 10 years later in 1998 (mean 22.0%).

Conclusions: Approximately 28.1% of low birthweight babies, 15.1% of preterm births, and 22.0% of cases of fetal growth restriction in Merseyside could be prevented if the risk of maternal smoking during pregnancy was removed.

G171 PAEDIATRIC TRAINING SCHEME WEBSITES

C. Dunkley[1], M. Hesseling[2]. [1]*Great Ormond Street Hospital, London, UK;* [2]*Alder Hey Hospital, Liverpool, UK*

Introduction: A survey was conducted in 2004 among UK paediatric specialist registrar training schemes to establish the use of training scheme websites and email communication.

Method: A questionnaire was sent to each training scheme RCPCH Trainees Committee Representative. Websites identified from this initial survey were then visited and analysed.

Results: Reponses were obtained from 17 of 19 regions. 9/17 regions had existing websites. Two had plans to introduce a website. 15/17 training schemes maintained a database of SpR email addresses, 11 of which were used for communication within the scheme. There were seven separate websites identified; three within deanery websites; one within Partners in Paediatrics; and three independent. Three are managed by SpRs; one senior lecturer; two RCPCH regional advisers, and one deanery. Contents included trainee details, contact lists, job descriptions, appraisal, and RITA resources, discussion groups, social diaries, training programme details, and weblinks. Evidence of recent updates to the website was variable. A web template was felt to be potentially useful by 12 representatives.

Conclusions: Websites are used in approximately half the training schemes. Email communication is not universally used. Survey participants' comments would suggest that the organisation and maintenance of email addresses is poor. Websites and email communication are an ideal resource for SpRs compared with traditional communication using paper mail as SpRs are often widely distributed in terms of ''time and space''. Skills developed establishing and maintaining websites are likely to be increasingly useful for future clinical and non-clinical roles. Training, financial, and IT resources should be available to those interested in establishing and managing websites. A downloadable web template has been produced to aid training schemes in further developing web based resources (www.amieonline.org.uk).

G172 AN UPDATE ON THE EUROPEAN PAEDIATRIC CLINICAL TRIALS REGISTER

H. M. Sammons[1], I. Choonara[1], C. Pandolfini[2], M. Bonati[2], E. Jacqz-Aigrain[3], I. Danes[4]. [1]*Academic Department of Child Health, University of Nottingham, Derbyshire Children's Hospital, Derby, UK;* [2]*Mario Negri Institute for Pharmacological Research, Milan, Italy;* [3]*Hospital Robert Debre, Paris, France;* [4]*Fundacio Institut Catala de Farmacolgia, Barcelona, Spain*

Introduction: There is increasing recognition that as well as performing clinical trials registration is essential. Registration can help prevent publication bias, duplication, and under reporting. Currently national and international registers can be difficult to search for childhood data and none of them focuses on paediatric trials.

Aim: The creation of an online registry designed to collate essential data from all on going and planned paediatric therapeutic clinical trials. This will include data from European member states. It should help recruitment, aid agencies in deciding on allocation of funds, and allow research into research. It will be a tool for promoting and coordinating paediatric drug research and for identifying children's therapeutic needs.

Methods: Funding has been granted from the European Community, through its Fifth Framework Programme, in December 2002. There are four partners: UK, France, Italy, and Spain. The register went live in July 2004 (www.dec-net.org). Inputting of trials has been taking place from this date.

Results: A total of 61 trials have so far been entered onto the register, 42 of these being based in the UK. There are now over 400 visits to the site per month and a total of 3094 since its creation. Trial information is available in two different formats, a simple one aimed at parents and the public and a more advanced one aimed at health professional. The register is freely available to both health professionals and the public. Trials from other Europeans countries are found in their own language and English. Data collection sources have included research and development departments, academic centres, direct contact with investigators, and cooperation with current registers such as the National Research Register. Within the UK there has been considerable support for the register from the Royal College of Paediatrics and Child Health, the Neonatal and Paediatric Pharmacists Group and the ABPI.

Conclusions: Registering trials would satisfy the rights of children, parents, and health care professionals to have access to all available evidence. Entries to the register began in July 2004 and will continue. At the end of the first year of registration a qualitative analysis of trial data will be performed.

G173 EVALUATION OF NEONATAL ADMISSION RECORDS

P. Holmes, N. J. Wild. *North Cheshire Hospitals NHS Trust, Warrington, UK*

Aims: Admission of a baby to a neonatal unit is an important and expensive healthcare episode. It is essential that information is clearly recorded at the time. This study was designed to look at the completeness of admission notes and the degree to which duplication was present.

Methods: Thirty one pieces of information which should be documented at admission were determined and the case notes of 32 babies admitted to a neonatal unit during May to July 2004 examined. These records consist of hand written notes and a printed summary of information entered into the hospital information system. For each of the 31 items we determined whether they were recorded in the handwritten notes, printed record, or were absent/incomplete. The items were subdivided into five domains: basic admission, maternal, previous pregnancy and delivery details, and initial neonatal unit progress.

Results: The table demonstrates the percentage of information found in the case notes and information not present in the case notes but which was present in the hospital information system (''printed''). Fifteen out of 31 pieces of information were present in every set of case notes. Only three were found in less than half, these were: maternal past medical history, maternal HIV status, and maternal drug history. Information present in both was duplicated.

Abstract G173

Domains	Case notes (%)	Printed (%)	Total (%)	Duplicated (%)
Basic admission details	87.5	7.3	94.8	92.3
Maternal details	58.75	18.75	77.5	76.7
Previous pregnancy details	45.8	2.1	47.9	46.8
Delivery details	76.6	20.8	97.4	78.6
Initial progress	83.3	0	83.3	0
Mean	**70.39**	**9.79**	**80.2**	**58.9**

Conclusions: Admission details were recorded at an acceptable level: a mean of 70% were found in the doctor's case notes with a further 10% in the printed record. The domain recorded with the least consistency was the previous pregnancy details; however the three least documented items were from the maternal details domain. Absent information could be taken to be normal but negatives need to be documented as clearly as

positives. Over half of the information recorded was duplicated. A single standardised format for documentation would reduce duplication. It would make information easier to locate in the case notes and might even improve the completeness of documentation.

G174 THE PICU PALM PROJECT: A HANDHELD COMPUTING SYSTEM FOR INTRAVENOUS DRUG INFUSION MANAGEMENT

A-R. Mehrkar-Asl[2], A. M. T. L. Choong[1], P. Habibi[3]. [1]*St Mary's Hospital NHS Trust, London, UK;* [2]*School of Clinical Medicine, University of Cambridge, Cambridge, UK;* [3]*Imperial College School of Medicine, London, UK*

Introduction: Current intravenous drug infusion calculations are performed by nursing staff in a number of different ways, which are not standardised, but usually involve the use of pocket calculators.

Aim: To assess the impact of a standardised handheld computing intravenous drug infusion calculation system on a paediatric intensive care unit (PICU).

Methods: IBM WorkPad c3 (Palm Vx equivalent) personal digital assistants (PDAs) were loaded with ''InfusiCalc'', a ''Palm OS'' program for intravenous drug infusion management. The authors programmed specific intravenous drug infusion protocols into the software. A consultant paediatrician, paediatric pharmacist, and two clinical nurse educators designed five clinically relevant drug infusion calculation simulations. Nursing staff were chosen at random and voluntarily participated in two timed simulations where they were asked to calculate the infusion rate, in ml/hr, of these five drugs. They were given no formal training on the handheld computing system. They first attempted these simulations using their own non-standardised methods and then with the handheld computing system. The primary outcome measures were calculation duration and calculation accuracy. A secondary outcome measure was user preference for each method.

Results: Using the non-standardised method, there was a 14.1% *v* a 0.8% error rate using the standardised handheld computing system (17 *v* 1 error in 125 calculations, respectively). The handheld computing system was found to be at least three times faster than the non-standardised method (38 *v* 126 seconds).

Conclusion: Without formal training, staff can use a handheld computing system for intravenous drug infusion management. It can significantly improve the accuracy of infusion calculations as well as dramatically decrease the time required to perform them. Their use can improve the efficiency of paediatric intensive care staff and decrease potentially fatal drug calculation errors at the patient's bedside. The single error in the handheld computing system resulted from the program's lack of support for the SI unit ''nanogram''. The author of ''InfusiCalc'' has since been notified and the latest version of the program has been modified accordingly. The system was very well received; however, an exception being one nurse employing mental arithmetic who was faultless and faster than even the handheld computing system. Such systems could replace the use of the pocket calculator to the benefit of staff and patients alike.

G175 UNATTENDED HOME OXIMETRY SLEEP STUDIES IN CHILDREN FOR THE EVALUATION OF SUSPECTED OBSTRUCTIVE SLEEP APNOEA SYNDROME (OSAS)

A. Patel[1], M. Watson[2], P. Habibi[3]. [1]*The Hammersmith Hospital, London, UK;* [2]*Department of Paediatrics, St Mary's Hospital, London, UK;* [3]*Department of Paediatrics, Faculty of Medicine, Imperial College London, St Mary's Hospital, London, UK*

Introduction: Children suspected of OSAS are traditionally investigated in hospital with overnight sleep studies. Single channel pulse oximetry is the commonest form of initial investigation. We investigated whether unattended home studies could be performed in preference to hospital studies requiring overnight admission.

Aims: To determine the feasibility of home sleep studies. To compare the quality of home and hospital sleep studies. To determine the economic implications of performing sleep studies in the home.

Methods: A prospective study was conducted comparing unsupervised sleep studies, using a Nellcor N-395 pulse oximeter, performed in hospital and in the home. A 1–16 year old patient cohort of from the sleep study waiting list was separated into two groups using postcodes. One group comprised patients living in the catchment area of the home care community nurses; they had their sleep studies performed at home. All the other patients comprised the hospital group, and had hospital studies. A trained nurse from the home care team and one from the hospital became leads for performing the studies. The same structured protocol was used by both groups and parents were given the same instructions in both settings. The data gathered were stored electronically on the oximeter, then analysed using dedicated software (Score Software version 1.1a, Mallinckrodt). The studies were downloaded in hospital directly in the hospital group. In the home group, they were either emailed prior to remote download or were physically brought to hospital for download. The percent of time in pulse search was used as a quality measure (lower values reflect better quality). A failed study was defined as any reason why a booked study did not occur or required repeating.

Results: *Baseline characteristics*: 211 patient studies were completed in 18 months, 158 in hospital, and 53 in the home. For both, the median ages were 4 years, and the male to female ratios were 2:1 and 1:1, respectively. *Study quality measures*: Mean study duration (hours: minutes); hospital 09:05 (SD 0.009), home 09:12 (0.006); p 0.747. Mean time in pulse search; hospital 0.38% (0.733), home 0.16% (0.423); p 0.008. *Economic implications*: The number of failed studies; hospital 96 of 254 (38%), home 3 of 56 (5%); $p<0.001$. 149 hospital bed days were saved (£689.79 per bed day), representing £72,549.68 saved annually.

Conclusions: We showed unattended home oximetry sleep studies were successfully performed, to a better standard, with significantly fewer failed studies, representing reduced healthcare system costs. Home studies can be performed in preference to hospital studies, where local community nursing facilities exist, and we suggest further community nursing units linked to a specialist hospital be established.

G176 DOES PARTIAL CLINIC BOOKING THROUGH THE ACCESS, BOOKING AND CHOICE AGENDA IMPROVE ATTENDANCE IN PAEDIATRIC OUTPATIENTS?

A. W. R. Kelsall. *Addenbrookes NHS Trust, Cambridge, UK*

Introduction: Over the past few years patient choice has been given a higher priority in the health service. In many adult specialities partial booking (PB) systems for new patient appointments having reduced the ''did not attend'' (DNA) rates in outpatients. After the introduction of partial booking in this trust DNA rates in some adult clinics have fallen from above 10% to around 5%.[1] Partial booking was rolled out to the paediatric clinics in January 2004, new patients were given the option to choose appointment times, return patients already had some flexibility to negotiate follow up appointment dates and times.

Aims: To determine whether the introduction of partial booking for clinics conducted by a single paediatric consultant improved attendance rates.

Methods: Two 6 month periods were identified for comparison, February to July 2003 before and February to July 2004 following the introduction of partial booking. Three types of clinics conducted by the consultant were included in this study: clinic A general paediatric cardiac; clinic B neonatal cardiac; and clinic C specialist joint cardiac with a visiting cardiologist. Details of the number of clinics and patients

Abstract G176

	Before PB (Feb–July 2003)			After PB (Feb–July 2004)		
Type	n Clinic	Booked	DNA (%)	n Clinic	Booked	DNA (%)
A	21	159	11 (7%)	23	179	13 (7%)
B	30	139	11 (8%)	29	156	10 (6%)
C	6	157	13 (8%)*	7	145	20 (14%)*
Total	57	455	35 (8%)	59	480	43 (9%)

Type, the specific clinic; n, the number of clinics conducted; booked, number patients booked to attend clinics; and DNA number (%) failing to attend.

booked were extracted from the hospital information systems by a paediatric manager.

Results: A total of 935 patients were booked to attend 116 clinics. Results for the two periods are shown in the table. There were no significant differences in the number of patients seen or clinics conducted over the two periods, but there was a surprisingly significant increase in DNA rate in clinic C with partial booking (*χ^2 $p<0.05$).

Conclusions: The introduction of a partial booking system giving parents more choice in specialist paediatric outpatient clinics did not reduce the overall DNA rate. The benefit of partial booking may not be apparent in specialist clinics where the base line DNA rate is already low and parents are motivated to attend with their children.

1. **Step by Step Guide**. Department of Health 2000.