

Results A total of 384 infiltrations were recorded. The average monthly rate pre-intervention was 26.8 and post-intervention was 20.7 with a p-value of 0.04 (statistically significant). Although a reduction was seen post-intervention, there was a rebound in infiltrations starting Nov 2010 to Feb 2011, which was recognized at the time, attributed to a high turnover of nurses and higher rates of admissions. We repeated a series of in-services with a subsequent reduction in infiltration rate.

Conclusions The overall pattern shows a statistically significant reduction in infiltration rate after the intervention. However, continuous surveillance and reinforcement of interventions is mandatory to sustain improved rates.

1565 USE OF THE MODIFIED BRIGHTON PEDIATRIC EARLY WARNING SCORE (PEWS) IN A NORWEGIAN DEPARTMENT FOR CHILDREN AND ADOLESCENTS

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Background and Aims Structured observations and examination are crucial. However, paediatric early warning scoring systems is a relatively new concept.

We aimed to investigate the feasibility of a modified version of the Brighton paediatric early warning score (PEWS) in our department.

Methods The PEWS consists of respiratory, circulatory and behavioural parameters with 0–3 points assigned for each category. Persisting postoperative vomiting and continuous inhalation medications give 2 extra points each. Hence, a score of 0 to 13 can be assigned, score 0 being most favorable.

All acutely referred children in April/May 2011 were scored.

Patients were retrospectively categorized into diagnose groups. We included patients with score 0 (n=89) and those with scores ≥4 (n=49).

Results The 0 group:

Sixty percent of patients considered to be well enough to be sent home without admittance to the ward had a PEWS of 0. Only 10% of patients that were admitted had a PEWS of 0. Allergic reactions (excl. anaphylaxis), arthritis, vasculitis, abnormal head circumference, psychosomatic disorders, constipation and upper respiratory tract infection typically gave low PEWS.

The ≥ 4 group:

Diagnoses like asthma, bronchiolitis and other lower respiratory tract infections gave almost invariably high PEWS. In addition, cardiological conditions gave PEWS ≥4.

PEWS scoring varied with age as 18/35 (60%) of 0–2 year olds scored ≥ 4, 11/20 (55%) at 2 years and only 17/83 (20%) of patients >3 years scored ≥4.

Conclusions The modified PEWS may be a useful method to detect high-risk patients in our department.

1566 PARENTS/CAREGIVERS' KNOWLEDGE TOWARDS MEDICINES ADMINISTRATION IN PAEDIATRICS

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Background and Aims The increasing complexity in paediatric patient care emphasizes patient safety as a topic of high priority. Parents/caregivers' lack of knowledge on how to administer extemporaneous formulations in paediatrics can be a potential source of medications errors.

Methods A 2-month cross sectional study was conducted with a convenience sample of paediatric outpatients' parents/caregivers from four hospitals in Lisbon. A questionnaire was developed to assess knowledge on how to administer the medicine (liquid or

powder), how to measure the dose to be administered, administration schedule, storage conditions, validity period of the extemporaneous formulation, and adequate behaviour in case of missing a dose or vomiting immediately after taking the medicine. A univariate analysis was performed using SPSS v.19.

Results Eighty-four individuals participated in the study. The mean (SD) age was 34 (18.6) years, 26.0% were non-Caucasian, 75.3% were married, 46.8% had an average of nine years of education and 50.6% were professionally active.

The mean level of knowledge as assessed by the questionnaire was 53.7%. The lowest levels of knowledge were found for adequate behaviour in case of missing a dose or vomiting after taking the medicine, for which only 10.7% and 20.2% parents/caregivers, respectively, gave the correct answer. Non-Caucasian parents/caregivers and lower education level were significantly associated with a deficit of knowledge (p<0.05).

Conclusions Low levels of knowledge were found among parents/caregivers of paediatric patients. Strategies to enhance knowledge should be developed to improve patient safety.

1567 A REVIEW OF PAEDIATRIC HANDOVERS - ARE THEY SAFE AND EFFECTIVE?

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Background With changing work patterns effective handovers are essential for patient safety and continuity of care. Handovers also provide educational opportunities, to initiate or complete work place based assessments (WPBA), improve communication, management skills to prioritise work.

Methods A 10 point online questionnaire was sent by email to all the trainees and tutors from June - August 2010.

Results Responses were received from 17 trusts (17/18 hospitals, 94%) and from 56 trainees (18 ST1–3 and 38 ST4–8). Feedback was received on a total of 73 handovers: 36% covered both general paediatrics and neonates; 27% general paediatrics only and 23% neonatal intensive care. 78% of respondents were involved in two or more handovers during the working day. 69% of the handovers were lead by consultants or registrars. All the handovers had registrars present, 93% had junior trainees, 82% consultants and 34% had members from nursing team. 69% of the handovers were conducted with the aid of printed sheets. Only 51% of the handovers started on time, 19% were free from distractions by allied professionals and just 4% were 'bleep' free. 64% had some educational activity within the time allocated. WPBAs were initiated or completed in only 3% of handovers.

Conclusions Handover practice varies between hospitals. Most are well organised but many do not start on time and are not free from interruptions. Formal teaching was not a regular feature of handovers and WPBA were rarely initiated or completed. The role of the handover in training could be developed further.

1568 BURTON NEONATAL TRACK AND TRIGGER OBSERVATION CHART

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Background The use of early warning system scores and track & trigger charts is widespread in adult and paediatric hospitalised patients. Its use in neonatal group is not well recognized. Lack of well established normal ranges for biophysical variables in preterm/term neonates illustrate difficulties in establishing a scoring system

that can potentially be used on the neonatal units and postnatal wards.

Aim To develop neonatal track and trigger observation chart in order to enable early identification of neonates in need of urgent medical assessment and intervention.

Methods A core group involving local paediatricians, neonatal nurses and midwifery sister was established to lead the project. The group contacted various neonatal units in different newborn networks in England seeking information if early warning scores or track & trigger system was being developed or already well established. Literature search was carried out to identify studies related to newborn early warning system scores.

Results One relevant published study was retrieved from Medline search (Roland 2010). None of the neonatal units contacted had an established early warning neonatal scoring system. Group developed newborn observation chart for "At Risk" and "High Risk" Infants. It was based on neurophysiological parameters, intervention criteria and staff concerns. A decision tree was devised based on trigger scores.

Conclusions Prospectively evaluation of Burton neonatal track and trigger observation chart is required to ascertain its efficacy. If found to be reliable and valid, it will facilitate observation of neonates deemed to be at risk and prompt an early review in triggered neonates.

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CARDIAC INVOLVEMENT IN YOUNG INFANTS WITH SEPSIS-LIKE ILLNESS IS NOT ASSOCIATED WITH ENTEROVIRUS INFECTION

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Introduction Enterovirus (EV) infection is common in young infants, amongst those admitted to intensive care units acute myocarditis has been reported. We questioned if myocardial involvement exists in less seriously ill children with EV infection.

Methods From August 2011 onward we included children under 90 days of age, who were admitted to our hospital for sepsis-like illness. During admission serum concentrations of Troponin-I, CK, CK-MB, BNP and NT-Pro-BNP were determined and an electrocardiogram and echocardiography were performed. Differences between children with and without EV infection were studied.

Results We present results of the first 28 patients included, 14 were EV positive. Basic patient characteristics were similar between EV positive and negative infants. In 17/28 infants cardiac enzymes could be determined. CK was normal in all, CK-MB was elevated in 11 infants, Troponin-I in 2, BNP in 14 and NT-Pro-BNP in all but one. There was no difference in cardiac enzyme concentration between the two groups.

Electrocardiograms showed signs of ischemic heart disease in two infants that disappeared at follow-up four weeks later. One was EV positive and one negative. In both cases not enough material was collected to evaluate cardiac enzymes.

None of the children showed signs of cardiac dysfunction at echocardiography.

Conclusion Regarding signs of cardiac involvement no differences were found between EV positive and negative infants with sepsis-like illness. Both groups showed elevation of cardiac enzymes. Cardiac involvement seems to be subtle, only 2 infants showed transient ischemia on ECG whereas none showed myocardial dysfunction on conventional echocardiography.

1570

PROGNOSTIC PARAMETERS AND OUTCOME OF INVASIVE MENINGOCOCCAL DISEASE IN CHILDREN

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The Aim of this study was to evaluate retrospectively the clinical prognostic parameters of children with diagnosed invasive meningococcal disease (IMD) during their admission to the emergency department and compare them to clinical diagnosis and outcome.

Methods We retrospectively evaluated 75 patients admitted to the PICU of Vilnius University Children's Hospital during 2009–2010 years. IMD with meningitis was diagnosed in 32 patients (McM group), meningococemia and septic shock without meningitis in 43 patients (Mc group). 6 patients died (8%), 5 in Mc group (11.6%), and 1 in McM group (3.1%). 6 bad prognosis parameters (BPP) during admission were evaluated:

1. short duration of illness before admission (less than 24 hours),
2. widespread haemorrhagic rash,
3. signs of septic shock,
4. alert state of consciousness,
5. blood leukocyte count < 10×10⁹/L,
6. blood platelet count < 100×10⁹/L.

Results All 6 BPP were established in 6 Mc group patients, 5 of them died, all have duration of illness less than 12 hours. 4 or more BPP was in 16 (37.2%) Mc group patients, and in 6 (18.7%) McM (p>0.05). 3 or less BPP was equal in both groups. More than 2 BPP was established statistically significant more often in Mc patients group - 60.5% and 34.4% (p=0.036).

Conclusions An early identification child with meningococcal sepsis without meningitis is important to start the appropriate treatment as soon as possible. 2 or more BPP during the first assessment in the emergency department can be predictive values of the life threatening process of meningococcal infection.

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RISKS FACTORS FOR METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) ACQUISITION IN PEDIATRIC INTENSIVE CARE UNIT (PICU)

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Background MRSA is a significant problem in ICUs. Data on risks for acquiring MRSA while in PICU are minimal.

Methods Children < 19 years old admitted to PICU between 4/1/2008 & 3/31/2011 had admission & weekly MRSA nasal surveillance done. MRSA affected (colonized or infected) children were compared to unaffected.

Results There were 2861 admissions. Mean age 6.7 yrs (median 4.7); 1444 (50.5%) male. 2632 (92%) of 2861 either had a known history of MRSA or an admission surveillance test and were included in the analysis. 415 (15.8%) were MRSA affected; 264 had known history of MRSA, 132 were MRSA+ on admission and 19 became affected while in PICU (18 colonized & 1 infected). 14 (77.8%) of 18 colonized were identified on weekly surveillance, 4 (22.2%) had a positive non-surveillance culture. 19 children who became MRSA affected were further analyzed. There was no significant difference in gender or ethnicity between the two groups. MRSA affected were younger (3.68 vs 6.79 yrs, p=0.03). Mean Hospital length of stay (LOS) prior to PICU admission was longer in the MRSA affected group (2.3 vs 0.6 days, p=0.04). Systemic steroids (p=0.009), mechanical ventilation (p=0.001) and a central venous catheter (CVC) (p=0.001) were all higher in the MRSA affected group; surgery & antibiotic use were not. Mean LOS in the PICU was 4.3 days, Mean LOS in the PICU before becoming MRSA affected was 18 days.