Results Two groups did not differ significantly in infant and mother demographic information. After one week of intervention, the mean difference of total crying time, duration and severity were 4.08 (1.83) time/day, 2.81 (1.77) hour/day and 2.9 (2.37) in massage group and 0.56 (2.28) time/day, 0.27 (1.09) hour/day and 0.02 (1.64) in vibrating group, respectively. The mean of total crying time, duration and severity decreased in both groups but there was a more significant reduction in crying times, duration and severity in massage group than the rocking group.

Conclusions Our findings demonstrated that infant massage was effective in reducing the time, duration, and severity of crying in colicky infants.

1625 PAIN IN CHILDREN: KNOWLEDGE AND PERCEPTIONS OF NURSING STAFF AT A RURAL TERTIARY CARE TEACHING HOSPITAL IN WESTERN INDIA

doi:10.1136/archdischild-2012-302724.1625

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Backgrounds and Aims Pain is a common cause for which patients seek treatment and an unpleasant side effect of our treatment. Young children are not able to express their pain. It is the care-givers responsibility to assess and manage their pain. Care-givers perception of the child's pain depends on various factors. We studied the perception and knowledge regarding pain amongst nursing staff at our centre. We compared these across three groups as per their exposure to pediatric patients (routinely, occasionally or rarely exposed to pediatric patients).

Method Consensually validated questionnaire containing combination of questions from basic (must know) and advanced (nice to know) areas of knowledge about nursing pediatric patients and questions related to nurses' perception about pain in pediatric patients was administered to eligible nursing staff at Rural Tertiary Care Hospital in Western India. The responses were analyzed using descriptive statistics and comparisons were made by chi-square test.

Result 351 usable questionnaires (83.37%) out of 421 were returned. The knowledge of the nurses regarding pain was observed to be poor. 60% of all the nurses had complete knowledge of all the basic questions asked. Only 3.1% had answered all of the five advanced questions correctly, while 96.9% of the nurses had answered one or more questions incorrectly.

Conclusions The deficit in knowledge and shortcomings in perception needs to be addressed and steps need to be taken to improve the nurse's knowledge and modify beliefs and attitude of the nursing staff towards the pain of the pediatric patients.

1626 IMPROVING PAIN MANAGEMENT IN TERTIARY PEDIATRIC HOSPITAL- HIGH HOPES AND ORDINARY PROBLEMS

doi:10.1136/archdischild-2012-302724.1626

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Background and Aims Observation of pain management problems in tertiary pediatric hospital (Children's Memorial Health Institute, Warsaw, Poland) resulted in anaesthesia and intensive care team initiative of pain practice improvement.

Methods In November 2011 Pain Treatment Committee represented by 22 doctors and 20 nurses of all hospital departments was established.

In November/December 2011 pilot training programme for nurses of Pediatric Urology, Neurosurgery and Cardiac Surgery Departments was performed.

In December 2011 written pain assessment and treatment guidelines accepted by the committee members and hospital administration were announced. They included:

- obligatory pain intensity assessment with age/communication skills- appropriate tools (NIPS, FLACC, Wong- Baker, VAS).
- pain treatment adequate to individual pain intensity with multimodal analgesia use.
- restriction in muscular injections of analgesics.
- analgesics dosing guidelines.
- perioperative analgesia algorithms based on predicted pain intensity.

Between February and March 2012 201 practitioners and 391 nurses participated in pain assessment and management seminars.

Results Preliminary report on analgesia practice in surgical units revealed:

- poor compliance with pain assessment guidelines .
- 100% reduction in intramuscular opioid use in one of the departments.
- improvement in analgesic prescriptions practice with individual variability between practitioners.
- increase in number of pain consultations.
- no improvement with use of regional analgesia, insufficient number of PCA pumps.

Conclusions During few months after introducing hospital pain management guidelines we notice a change in pain practice but many problems still exist. Analgesia quality improvement is long-term process requiring multidisciplinary approach.

1627 APPLICATION OF PULSE OXIMETRY FOR DETERMINING THE STATUS OF THE TOOTH IN CHILDREN

doi:10.1136/archdischild-2012-302724.1627

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Tests relying on the passage of the light through a tooth have been considered to be a suitable means of assessing pulp vitality in children. Pulse oximetry which is an effective, objective oxygen saturation monitoring technique broadly used in medicine for recording blood oxygen saturation levels, can also be used in endodontic diagnosis for differential diagnosis of vital and necrotic pulps in young teeth. In this system, light is passed from a photoelectric diode across the tooth structure into a receptor. The instrument detects changes in absorption in both red and infrared light caused by alteration in tissue volume during the cardiac cycle. However, there are some limitations such as the effect of increased acidity and metabolic rate which cause deoxygenating of hemoglobin and changes in the blood oxygen saturation. Because this test produces no noxious stimuli, children usually accept it more readily than routine methods. In this lecture, principles, indications, limitations, influencing factors, and variations in probe design for dental usage in children would be presented.

1628 OXYGEN PRESCRIBING AND SATURATION TARGETING IN NEONATAL INTENSIVE CARE

doi:10.1136/archdischild-2012-302724.1628

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Background Many newborns require oxygen; this should be prescribed as with other medical gases. In babies due to the risks from both hypoxia and hyperoxia oxygen saturation targeting to provide optimal safe oxygenation is commonly utilized.

Guidelines for the appropriate target saturations and hence monitoring alarm limits have changed locally in light of evidence from the SUPPORT¹ and BOOST II² trials.

A previous audit demonstrated that the guidance for target saturations was not being followed appropriately in all cases.

Methods Our aim was to review compliance with oxygen targeting prescriptions and the alarm limits used during saturation monitoring.

We collected data over three consecutive weeks during December 2011 for all babies on the neonatal unit who were monitored (n=102).

Results Compared to the previous audit we found there was an improvement in the set alarm limits to target oxygen within the guidelines to be correct 88% versus 69%. However compliance with oxygen prescribing was suboptimal with 78% at best.

Conclusions Despite a change in the target saturation guidelines compliance with saturation alarm limits has improved. However further work is needed to ensure that all babies have their alarm limits set within the target range and also have their requirements for oxygen prescribed as per trust guidance.

It is also important to remember that setting the alarms correctly is only a step in oxygen targeting and that ideally the percentage of time in the target range should also be assessed.

1629 NOISE POLLUTION IN INTENSIVE CARE UNITS AND EMERGENCY WARDS

doi:10.1136/archdischild-2012-302724.1629

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Technology development has increased sound level beyond standards in hospitals. Such pollution undoubtedly has negative effects on staff health and quality of care accordingly. Our goal with this study carried out to investigate noise levels in intensive care and emergency wards in Emam Reza hospital, at Mashhad University, Iran.

Materials and Methods This was a prospective study that performed on measuring of sound level of 10 intensive care and emergency wards of Imam Reza Hospital in a 30-minute-interval of AM working shift at one meter distance from nursing stations getting maximum sound level (L_{max}) and Average Sound Level (L_{eq}).

Results L_{max} in most wards were between 85–86dB. L_{eq} in all wards were between 60.2 dB. Average L_{eq} in emergency wards was 62.2 dB without any justification. (L_{eq}) in NICU was 60.8 dB (beyond standard level). In most of wards peak of noise were between 9:30–11 AM. L_{eq} in all wards were more exceeded the standards levels.

Conclusion The average of sound levels in our wards remarkably exceeds the standards levels. The hospital staff should be aware of this noise level and its effects.

1630 CENTRAL VEIN CATHETER AND BLOODSTREAM INFECTION IN A PICU: CLABSI OR CRBSI?

doi:10.1136/archdischild-2012-302724.1630

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Aims To differentiate between Central Line Associated Blood Stream Infections (CLABSI) and Catheter Related Blood Stream Infections (CRBSI) where the same microorganism is identified on catheter tip cultures and the bloodstream, in Pediatric Intensive Care Unit (PICU) patients.

Methods Prospective 1 year study of CLABSI (group 1- all patients with a CVC in situ) and CRBSI (group 2-only first, temporary CVC, inserted in PICU, during first admission). CLABSI and CRBSI rates were estimated according standard criteria. CVC insertion and maintenance was under local protocols (simple polyurethane, multiple lumen, plus chlorhexidine-gluconate- impregnated sponge,

stayed as long as needed if they were functioning without evidence of local or systemic complications).

Results 91 patients have had a total of 136 CVCs insertions. 112 temporary and 24 permanent catheters were evaluated for CLABSI whereas 73 CVCs were evaluated for CRBSI. Mean catheter days in group 1 was 11.95 ± 12.48 and 20 cases of CLABSI were recorded in 1626 catheter days, given a CLABSI rate of 12.3:1000, whereas mean catheter days in group 2 was 9.30 ± 5.23 with 1 case of CRBSI in 679 catheter days, given a CRBSI rate of 1.47:1000. 11 Gram -, 8 Gram + and 1 fungal infection were recorded in group 1, and only 1 Gram - infection in group 2.

Conclusions Strict adherence to protocols in group 2 led to much lower CRBSI compared to CLABSI. Gram - infections predominated. Reducing CLABSI and CRBSI over time, after implementation of bundles of care, should be the goal.

1631 CHANGE OF HABITS AFTER YEARS OF EVIDENCE: A QUESTIONNAIRE ON NEONATAL CARE

doi:10.1136/archdischild-2012-302724.1631

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Background and Aims Evidence based knowledge in neonatal care has substantially increased during the last years. We tried to evaluate how well guidelines and evidence from studies have been implemented into clinical practice during the last 15 years.

Methods Detailed questionnaires were sent 15 years apart to all neonatal units potentially treating VLBW infants in Germany (1995) and all German speaking countries (2010).

Results The response rate was 66% both times. Whereas in 1995 $\frac{2}{3}$ of the units used 100% oxygen and $\frac{1}{4}$ 50% to start respiratory support in the delivery room, in 2010 only 3% and 5% of the units used 100% and 50% oxygen, respectively. Caffeine and Theophylline were used to treat apnoea of prematurity by 50% and 87% of the units in 1995 compared to 96% and 10% in 2010, respectively. Pasteurization of breast milk was done in 24% of the units in 1995 compared to 53% in 2010. In 1995, 37% of the units routinely used erythropoietin in ELBW infants compared to 27% in 2010.

Conclusions Treatment of VLBW infants changed significantly within the last 15 years and some of the existing guidelines and evidence seem to be transferred into clinical practice in most units.

1632 QUALITY CLINICAL IMPROVEMENT: PROSPECTIVE TEST OF CHANGE

doi:10.1136/archdischild-2012-302724.1632

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Background Change is a fundamental component of continuous quality improvement. Surfactant clearly works better the earlier it is given in at risk babies. Previously, surfactant was given after transfer to the NICU due to concerns such as the grade of doctors who were present during these deliveries and endotracheal (ETT) position. With the introduction of resident consultants, the NICU service became a fully consultant-delivered care and therefore always present at the stabilisation of these infants.

Audit of Practice Showed Surfactant administration at mean of 39min (9 min outside our set protocol time), with wide variability.

Aims

- Feasibility and safety issues of giving surfactant right after intubation on Delivery suite,

Mean time to surfactant administration and ETT position post-change.