Australian College of Neonatal Nurses Inc

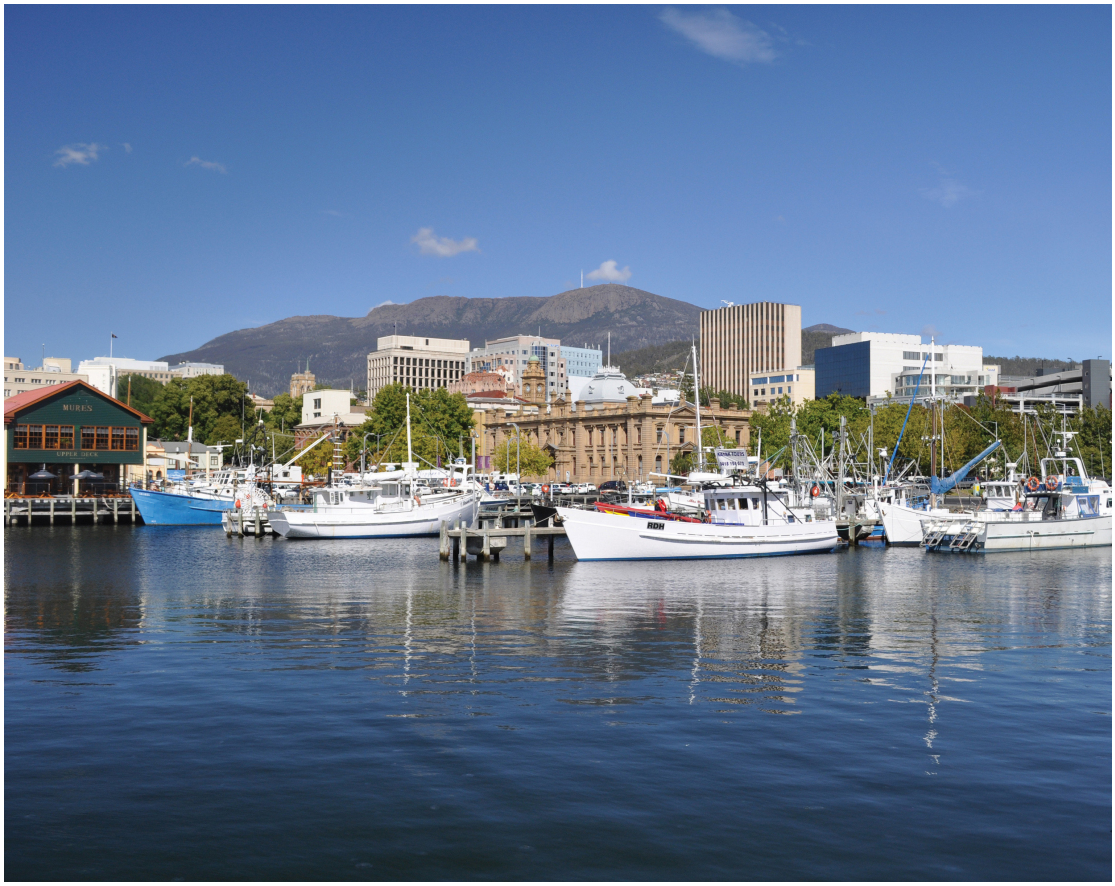
6th Annual Conference

Friday 8 April 2011

Hotel Grand Chancellor
Hobart, Tasmania

Franklin River. Courtesy Tourism Tasmania and George Apostolidis

Nature, nurture and the neonatal environment



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Information

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Registration

The registration desk is situated on the Mezzanine level in the Hotel Grand Chancellor and is open from 18:00 to 19:30 on Thursday 7 April and at 08:00 to 08:30 on Friday 8 April. Attendance certificates will be available on Friday 8 April.

Venue

The venue is the Hotel Grand Chancellor, Hobart. The mini symposium on 7 April will be held in Harbour View Room 2. All sessions on 8 April will be held in Grand Ballroom 3. Poster will be displayed in the Mezzanine area.

Exhibitors

The trade exhibitors will be located in Grand Ballroom 1 and 2. Please visit the stalls as trade exhibitions and sponsorship form an important part of the conference. Not-for-profit exhibitors will be located in the Mezzanine area.

Program

The speakers, topics and times as shown are correct at time of printing. In the vent of unforeseen circumstances the organisers reserve the right to alter the program or substitute speakers.

Catering

Morning and afternoon teas and lunches are included in the registration.

Liability

The ACNN 6th Annual Conference does not include provisions for the insurance of participants against personal injuries, sickness, theft or property damage. Neither the ACNN Conference Committee, nor its sponsors, assume any responsibility for loss, theft, injury or damage to persons or belongings.

Program

Time	Topic/Speaker
0800 – 0830	Registration
0830 – 0840	Opening address: Karen New, ACNN President
Session 1 0840 – 1000	Prof. Paula Meier: *Lactation research technologies improve the use of human milk in the NICU: creamatocrits, test-weights and nipple shields* Assoc. Prof. Sandie Bredemeyer: *Donor milk in the NICU: back to nature and nurture*
1000 – 1030	**Morning tea**
Session 2 1030 – 1205	Susan Hughes, Kimbra Thomas: *Challenging practices, thinking differently: practice development using a project management framework* Margaret Broom: *Facilitating change during an NICU redevelopment* Tamera Watling: *Working towards a culture of person-centredness: essentials of care in the newborn care centre* Michelle Evans, Megan Murphy: *Neonatal resuscitation and stabilisation workshop for rural North Queensland* **Poster platform** Shanette Sims: *Parent CPR training in preparation for discharge from a level 2B high dependency neonatal unit* Helen Conroy: *Clinical education prior to introduction of bubble CPAP to a private level 2B neonatal unit in Perth, Western Australia*
1205 – 1240	AGM
1240 – 1330	**Lunch**
Session 3 1330 – 1520	Vanessa Sakalidis: *Development of the suck-swallow-breathe reflex in preterm and term infants* Robyn Richards: *The cold truth of therapeutic hypothermia. Is there a better way?* Louisa Ramadu: *Transfer of infants from level 3 NICUs to level 2 SCNs: preliminary findings of the perceptions and experiences of parents and health professionals* Claire Sutcliffe: *Do inline pressure readings detect extravasation of central lines in neonates?* Poster platform Mary Wagner: *Neonatal compartment syndrome: a rare complication of central venous access* Shanette Sims: *Neonatal outreach reduces infant-maternal separation* Declan Cooper: *Out of the wilderness: nurturing and supporting experiences of fathers in the neonatal environment*
1520 – 1545	**Afternoon tea**
Session 4 1545 - 1645	Kaye Spence for Mary Lou Morritt, Lynn Sinclair and the NSW Neonatal CNC Network: *Neonatal nurses reflect on neonatal nursing* Kristen James: *Confessions of a novice researcher* Shirley McCarron: *The 'female factory': reflecting on our history*
1645 – 1700	Closing address

Lactation research technologies improve the use of human milk in the NICU: Creamatocrits, test-weights and nipple shields

Paula P. Meier RN DNSc FAAN

Director for Clinical Research and Lactation
Professor of Women, Children and Family Nursing and
Professor of Pediatrics
Rush University Medical Center

Professor Paula Meier is the Director for Clinical Research and Lactation in the Neonatal Intensive Care Unit and is a Professor of Women's and Children's Health Nursing and a Professor of Pediatrics at Rush University Medical Center in Chicago.

Dr. Meier has conducted numerous externally-funded research projects, and currently serves as the principal investigator for a 5-year, $2.76 million NIH-funded study, *Health Outcomes and Cost of Human Milk Feedings for Very Low Birthweight Infants*. She has published over 65 peer-reviewed manuscripts, and serves as a member of the International Society for Research in Human Milk and Lactation and of the Health Advisory Council for La Leche League International.

Objectives

1. Describe critical exposure periods during the NICU stay when high doses of human milk are especially important in reducing the risk of morbidity in NICU infants.
2. List techniques that have been used extensively in lactation research that can be used to diagnose and manage problems that potential reduce the dose and exposure period of human milk feedings in the NICU.
3. Discuss the evidence basis for creamatocrits, test-weights and nipple shields in the NICU.
4. Discuss clinical case examples using combinations of these techniques for NICU infants.

Outline

I. Conceptualizing human milk feedings, using dose and exposure period methodology to identify time periods when high doses (e.g., approximating or achieving exclusive human milk feedings) of human milk are most closely linked to the reduction in the risk of morbidity in NICU infants.

   A. Four critical exposure periods for the use of human milk
   B. Common NICU problems that compromise human milk use during these times

II. Evidence-based techniques that can be used to identify, diagnose, and manage human milk feeding problems during these critical exposure periods.

   A. Creamatocrit
   B. Test-Weights
   C. Nipple shields

III. Discuss the evidence-base for creamatocrits, test-weights and nipple shields

A. Creamatocrit
   1. Accuracy studies
   2. Use in lactation research
   3. Translation into NICU practice

B. Test-Weights
   1. Accuracy and reliability
   2. Can observation or "breastfeeding effectiveness" tools substitute for test-weights?
   3. Do test-weights make mothers nervous?

C. Nipple Shields
   1. Do they reduce milk to the infant?
   2. Are they "addictive"?
   3. Do they shorten duration of breastfeeding?
   4. Which infants need them for how long?

IV. Clinical case studies that exemplify the use of these technologies to solve common NICU problems

A. Slow weight gain in a 6-week old 24-week premature infant receiving exclusively fortified human milk
B. Slow weight gain in a breastfeeding term infant with a cardiac anomaly awaiting NICU discharge
C. Small amounts of at-breast intake for a late preterm infant during the first weeks at home

V. Summary, Conclusions, Questions

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Donor human milk in the NICU: back to nature and nurture

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In the event of a mother being unable to provide sufficient milk for her baby, human donor milk (HDM) offers a safe alternative with almost all the immunological advantages of a mother's own milk [1]. While the potential benefits and harms of pasteurised HDM for preterm and / or sick infants continue to be explored [2,3], exclusive use of human milk is demonstrated to have fewer risks than the use of artificial formula in this group of infants[2,4,5,6,7].

The availability of HDM in RPA Newborn Care does not change the current strategies to assist and support mothers to provide milk for their own infants. Support for the breastfeeding woman remains the focus of the nursing team and the lactation specialists now report the almost exclusive use of expressed breast milk in the first 30 days of life for all infants born at less than 30 weeks gestation in RPA Newborn Care. Use of HDM therefore complements the use of mother's own milk when maternal illness or supply issues may affect the exclusive use of breast milk in the sick and / or preterm infant.

Since the implementation of our programme in 2005 it has provided HDM for 96 high risk infants, with 53 (56%) of these infants being less than 30 weeks gestation. To achieve this, the team has pasteurised 162L of donor milk from 40 donor mothers, with each donor mother supplying a volume within a range of 1.5 to 13L.

This presentation will describe the development of the HDM Programme at RPA Newborn Care, briefly review the quality processes in place to ensure optimal standards during pasteurisation and storage of HDM [8], discuss the potential benefits of HDM over formula in the management of high risk infants and prompt reflection about the responses of donor and recipient mothers to the use of HDM.

References

1. Royal Australian College of Physicians Health Policy Unit (2002). Paediatric Policy: Human Milk Banking. http://www.racp.edu.au/hpu/paed/milkbank Accessed 11/09/2005.
2. Boyd CA, Quigley MA & Brocklehurst P. Donor breast milk versus infant formula for preterm infants: a systematic review and meta-analysis. *Archives Disease in Childhood. Fetal Neonatal Edition* 2006; 0: adc.2005.089490v3 http://fn.bmj.com/cgi/content/abstract/adc.2005.089490v3 Accessed 23/03/07.
3. Schanler RJ, Lau C, Hurst NM & Smith EO. Randomized trial of donor human milk versus preterm formula as substitutes for mothers' own milk in the feeding of extremely premature infants. *Pediatrics* 2005; 116: 400-406.
4. El-Mohandes AE, Picard MB, Simmens SJ, Keiser JF. Use of human milk in the intensive care nursery decreases the incidence of nosocomial sepsis. *Journal of Perinatology* 1997; 17: 130-4.
5. Ewer AK, Durbin GM, Morgan MEI *et al*. Gastric emptying in preterm infants. *Archives of Disease in Childhood: Fetal and Neonatal Edition* 1994; 71: F24-7.
6. Lucas A, Morley R, Cole TJ *et al.* Breast milk and subsequent intelligence quotient in children born preterm. *Lancet* 1992; 339: 261-4.
7. McGuire W & Anthony MY. Donor human milk versus formula for prevention necrotising enterocolitis in preterm infants: systematic review. *Archives of Disease in Childhood: Fetal and Neonatal Edition* 2003; 88: F11-4.
8. National Institute for Health and Clinical Excellence (NICE) Clinical Guideline 93. *Donor breast milk banks: the operation of donor milk bank services.* Centre for Clinical Practice at NICE. 2010: www.nice.org.uk/guidance/CG93 Accessed December 2011.

Challenging practices, thinking differently: practice development using a project management framework

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Background

A purpose-built 26-bed neonatal and paediatric intensive care facility, the first in Australia, was opened in Hobart in 2007. Neonatal staff had to expand their repertoire to manage critically unwell children and adolescents as well as neonates. Bed numbers had been increased from 18 to 26 which had implications for staffing and education. The neonatal unit already faced difficulties in relation to leadership, retention of staff and ability to meet service demands. This provided the impetus for an assertive approach from unit staff which culminated in the NPICU Continuing Enhancement Project being undertaken.

Method

We utilised a project management approach to support, facilitate and mentor staff. It included a process to recognise and build on their existing knowledge and skills, ensure succession planning and incorporate practice development. A philosophy was developed to underpin the construction of the unit's strategic and operational plan.

Results

Many projects and programs lose momentum when the leaders or coordinators leave, but it has not been the case with this project. Staff embraced the outputs of the project and are continuing to use practice development to take their unit forward to provide the best possible patient care to children and their families.

Conclusion

A more nurturing neonatal and paediatric environment has evolved which has attracted a full compliment of staff, student and staff learning, supportive staff structures and stable management.


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Facilitating change during a NICU redevelopment

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Background

ACT Health is in the process of redesigning the neonatal intensive care unit (NICU) as part of a large capital asset development plan. The NICU design will change from the current open plan design to one made of two-cot pods. Since early planning stages nurses have acknowledged the benefits of the small pod design for neonates and their families. Conversely there have been concerns expressed regarding the short and long term effects of the change.To make a successful move to the new unit it became a priority to engage staff in a constructive change process.

Method

Participatory action research methodology has been engaged to provide an organisational structure to facilitate the transition into the new NICU. In 2009 the Change and Networking (CAN) group was established. The group collaboratively determined their goals and objectives. The group aims to: 1) provide mediation between the NICU redevelopment user group and NICU staff; and 2) inform and support staff through the transition into the new NICU. The CAN group meets weekly to discuss topics, concerns and develop strategies to engage and support staff during the transition.

Results

The CAN group has been recognised as an essential part of the change management process. The CAN group has facilitated changes in layout and design from staff feedback to the NICU user group. NICU staff are engaged and interested in being involved in the design and planning for their new NICU.

Conclusion

Collaboration and early engagement with NICU staff is essential to facilitate effective change during the redevelopment of a NICU.

Working towards a culture of person-centredness: *Essentials of Care* in the Newborn Care Centre

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Background

The *Essentials of Care* (EOC) program is a framework for the improvement of patient care that is underpinned by principles of emancipatory practice development. It identifies the essential components of patient care and recognises that nurses and midwives are at the centre of providing this care and who are therefore in a unique position to examine its effectiveness. The person-centred nature of EOC promotes the inclusion and participation of patients and clinicians at the ward level to examine and reflect on clinical practice and the care environment to recognise and celebrate good care as well as identify areas for improvement. Through implementation of the EOC process, clinicians are supported to take ownership of their practice and are guided through the development and implementation of actions that will address these areas for improvement and make sustainable changes to practice.

Method

Essentials of Care was developed and piloted by staff at the Prince of Wales Hospital for implementation across the state of New South Wales. The Newborn Care Centre (NCC) at The Royal Hospital for Women commenced implementation in February of this year.

Results

The NCC is the first neonatal intensive care unit to participate in EOC, which required some tailoring of the domains of care to suit the neonatal context, particularly with respect to developmental care. With 42 beds and 90 nurses, NCC is also the biggest unit of any kind to participate in EOC. This presentation will focus on Essentials of Care within the NCC and examine the challenges and successes experienced throughout this journey.

Neonatal resuscitation and stabilisation workshop for rural North Queensland

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Background

Whilst it is optimal to transfer high-risk deliveries in-utero from rural settings to tertiary hospitals, this is not always possible. Thus it is imperative that staff in rural healthcare facilities be competent in the knowledge and skills to perform neonatal resuscitation and stabilisation whilst awaiting the arrival of the retrieval team. Becoming proficient and maintaining these skills is often difficult for rural healthcare practitioners as they lack exposure to high risk deliveries, have difficulty attending workshops due to staff shortages and geographical isolation.

Method

We conducted a pre and post workshop survey designed specifically for this study. The survey questions covered areas relating to participants learning objectives and self-assessed confidence in performing neonatal resuscitation and stabilisation. A purpose built workshop was designed based on the pre survey responses; content included neonatal resuscitation and stabilisation theory delivered at the rural facilities as didactic lectures and practical sessions integrating local equipment and resources. Participants then demonstrated their knowledge and skills, utilising high fidelity simulation (SimNewB).

Results

Fifty-two participants from four rural and remote North Queensland healthcare facilities took part in the workshop. Analysis of pre and post- surveys results revealed 100% of participants found the workshop and its delivery method to be beneficial to their practice with 95.7% of participants' learning objectives being met and an increased confidence in 93% of the participant's ability to perform neonatal resuscitation and stabilisation.

Conclusion

Practitioners in rural healthcare facilities require regular education utilising high fidelity neonatal resuscitation and stabilisation simulation to improve competence and reduce infant morbidity and mortality.

Parent CPR Training in preparation for discharge from a level 2B high dependency neonatal unit (CSF Level 5)

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Background

Research suggests cardiopulmonary resuscitation training can improve survival outcomes for high risk infants and reduce parental stress. Parent CPR training was formally introduced into the neonatal unit at St John of God Hospital, Subiaco, Western Australia in February 2010. Training sessions are conducted weekly and all parents of preterm and/or babies admitted to the unit are invited to participate. Since the implementation of CPAP in 2008 the acuity in the unit has increased and it was recognised that parents required training prior to discharge. There are three certified instructors facilitating the parent training within the unit.

Method

A retrospective study was conducted to measure participation, parent satisfaction and comments immediately following the training session and three months post discharge.

A chart review was conducted to measure readmission to hospital and episodes requiring parents to implement resuscitation measures after discharge.

A survey was conducted to measure staff satisfaction and medical practitioner satisfaction with the introduction of this training.

Results

Seventy-eight parents participated in the training. A high level of satisfaction was demonstrated with the training session, venue and timing of training prior to discharge. Parents indicated they appreciated the opportunity to obtain information, practical demonstration and also had the opportunity to keep the manikin for a few hours after the session to practice. One baby required resuscitation by parents after discharge with excellent outcome.

Conclusion

The results indicate that the training was well received by parents in particular the opportunity for practical experience of CPR prior to taking their babies home.

Resource

http://www.redcross.org.au/ourservices_acrossaustralia_firstaid_courses.htm#cardio

Clinical education prior to introduction of bubble CPAP in a private level 2B neonatal unit in Perth, Western Australia

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Background

St John of God Hospital, Subiaco is the largest private maternity hospital in Western Australia. The neonatal unit is a level 2B (CSF Level 5) neonatal unit equipped with 26 beds. Bubble CPAP was introduced in February 2008. Prior to this, several education strategies were utilised to prepare nursing staff for successful implementation. CPAP is a relatively simple procedure however it is resource-intensive, particularly in relation to the requirement for appropriately skilled nursing staff. Approximately 52% of its workforce is neonatal intensive care trained.

Aim

To assess the effectiveness of the various training strategies utilised to up-skill nursing staff prior to and during the implementation phase of bubble CPAP.

Method

Education included respiratory care sessions facilitated by medical and nursing staff, Fisher & Paykel training sessions, a CPAP workbook (developed by SJOG staff) and Professional Development Activity (PDA) providing information and assessment.

Data was collected from staff education records including attendance, competency achieved; pre and post CPAP training questionnaires; and chart review for clinical outcomes and anecdotal reporting

Conclusion

Education prior to commencement of CPAP and continued clinical support during the implementation phase of CPAP provided the necessary skills and confidence for inexperienced nurses and midwives to provide safe and competent nursing care for babies on CPAP. An unexpected benefit was nursing staff became more motivated and enthusiastic, and retention and recruitment of staff to the unit has increased due to this change in clinical care.

Development of the suck-swallow-breathe reflex in preterm and term infants

Sakalidis VS, McClellan HM, Hartmann PE, Geddes DT

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The University of Western Australia, Crawley, WA.

Vanessa Sakalidis successfully completed a Bachelor of Health Science with first class honours in Public Health, investigating the sucking dynamics of infants in early lactation. She is currently studying for her PhD at The University of Western Australia under the supervision of Dr Donna Geddes and Professor Peter Hartmann. Her research focuses on infant suck, swallow, breathe coordination during the establishment of lactation in both successfully breastfed infants and infants of mothers experiencing nipple pain. In addition she is using ultrasound imaging to study the influence of birth mode on sucking patterns of breastfed infants.

Oral feeding is common to all newborn mammal species. It requires a complex interaction and coordination of the jaw, hyoid bone, tongue, palate, pharynx and larynx to coordinate sucking, swallowing and breathing. Healthy term infants are born with an innate ability to coordinate sucking, swallowing and breathing (SSB) during breastfeeding, however in the case of the preterm infant this reflex may be compromised. At the University of Western Australia we are investigating SSB patterns during the course of lactation. Simultaneous ultrasound imaging of the infant's mouth, intra-oral pressure and respiration were performed during breastfeeding. During sucking a minimum vacuum is applied by the infant while the tongue is in apposition with the palate, this corresponds with maximum vacuum and milk flow on ultrasound. These results support intra-oral vacuum as the primary mechanism of milk removal from the breast. In addition as respiration ceases during swallowing, breathing rates during nutritive sucking decrease compared to pausing. SSB ratios are highly variable between suck bursts and rarely 1:1:1. This suggests infants can adapt their SSB coordination to accommodate for changes in milk flow during feeding.

The cold truth of therapeutic hypothermia. Is there a better way?

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Background

Hypoxic-ischemic encephalopathy (HIE), associated with acute perinatal asphyxia in the term or near-term newborn, may cause permanent neurodevelopmental deficits. The positive effects of controlled hypothermia on the neonatal brain following acute brain injury are well accepted.[1] A controlled temperature of 33 – 34°C decreases the rate of cell death and delays the cascade of metabolic changes that are associated with cell hypoxia. Methods of inducing hypothermia for the brain include head cooling, combined head and body cooling, and body cooling alone. The usual method used in NSW NICU is body cooling alone. Therapeutic hypothermia should be commenced and the target temperature attained as soon as practicable after risk is identified.[2]

Aim

To audit the practice of therapeutic hypothermia in the Liverpool Hospital NICU for the purpose of improving clinical practice.

Method

We undertook a retrospective observational study of a cohort of 31 babies, managed with a variety of methods of therapeutic hypothermia over a three-year period from 2007 to 2010.

Results

We identified that using cold packs and a servo-controlled heater did not produce a predictable reduction in temperature, was associated with over-cooling, periods outside the therapeutic range and over-heating during re-warming. Conversely once education regarding new equipment and a tight policy were instituted, the use of a servo-controlled water-cooled mattress led to a reduction in complications and increased efficacy of therapy.

Conclusion

This presentation will discuss our observations regarding methods of therapeutic hypothermia and how this can improve practice.

References

1. Shankaran S, Laptook A, et al. (2005). Whole-body hypothermia for neonates with hypoxic-ischemic encephalopathy. *New England Journal of Medicine* 353: 1574 – 1584.

2. M. Verklan (2009). The chilling details hypoxic-ischemic encephalopathy *Journal of Perinatal Neonatal Nursing* 23:1, 59-68.

The transfer of infants from Level 3 NICUs to Level 2 SCNs: the preliminary findings of the perceptions and experiences of parents and health professionals

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Background

The transfer of an infant from a tertiary NICU to a community SCN is often a difficult period for parents. Once the infant is medically stable, transfer from NICU is imminent. This process supports effective and efficient utilisation of neonatal cots in the state. Literature review has identified a number of factors that have a negative impact on the transfer experience for parents: stress; lack of communication; 'medical setbacks;' differing practices; parent-staff relationships and the nature of the neonatal environment [1 2]

Method

This study aims to capture the perceptions and experiences of parents and health professionals before and after the transfer of their infants from NICUs to Level 2 SCNs in Victoria, Australia. A mixed methods approach was applied in this study. Two validated tools, the 'NICU*/Community Hospital Transfer Questionnaire' (TQ) and the 'Brief COPE' was administered to 80 parents at three SCN sites. An interview schedule was used for 80 health professional participants at three NICUs and three SCNs in staff focus groups. Themes were coded from the additional parent comments in the TQ and from the taped focus groups for health professionals.

Results

Preliminary data from health professionals and parents support five of the factors identified in the literature review. Whilst preliminary quantitative data from the TQ portrayed a positive transfer experience, parents coded their experiences as 'very stressful' to 'some stress.' The Brief COPE identified 'venting' as a coping strategy for parents following transfer.

Conclusion

Preliminary qualitative data portrayed health professionals' awareness of the causes of parent stress and the impact on families. Preliminary quantitative data suggests a tendency between levels of parent stress and expression of negative feelings (venting).

References

1. Slattery MJ, Flanagan V, Cronewett LR, Mead SK, Chase NS (1998). Mothers' perceptions of the quality of their infants' back transfer. *Journal of Obstetric, Gynecologic, and Neonatal Nursing* 27:4, 394-401.

2. Rowe J, Jones L (2008). Facilitating transitions: Nursing support for parents during the transfer of preterm infants between neonatal nurseries. *Journal of Clinical Nursing* 17:6, 782-789.

Do inline pressure readings detect extravasation of central lines in neonates? A prospective audit

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Background

Reports from the NSW Incident Information Management System (IIMS) have documented several episodes of central line extravasation in preterm neonates resulting in mortality and significant morbidity. A review of the associated literature demonstrated that inline pressure monitoring did not predict extravasation in peripheral lines[1,2]. There was a scarcity of evidence for use of the routine nursing practice in observation for central line extravasation. Anecdotal evidence also suggested lack of reliable or consistent pressure changes before extravasation of a central line.

Aims

First, to document the range of pressure readings seen in neonates with central line access. Second, to assess any differences in pressure measurements between neonates whose catheters extravasated and those neonates whose catheters did not.

Method

The prospective audit began in October 2010. All infants with a central venous line (umbilical or percutaneous) were enrolled in the audit and commenced on a data collection form completed by the registered nurse (RN) caring for the infant. When the catheter was inserted, the infusion pump (Signature Edition® GOLD Infusion Pump, Cardinal Health) was positioned at heart level, the pressure reading was zeroed according to the manufacturers' instructions and the pressure alarms set at 50mmHg above the baseline pressure. Pressure readings were recorded in the settled infant, with the RN inspecting and describing the dressing/catheter site and recording the volume infusing through the primary lumen every hour. Zeroing of the pressure lines was limited to line insertion and on change of the infusion set.

Results

Non parametric statistics will be used to analyse the data with categorical and continuous data analysed using Chi-square and Mann Whitney U respectively. Parametric tests including an unpaired t-test will be used to measure any significant difference in pressure readings between the neonates with and without extravasation.

Conclusion

This audit was designed to contribute to current knowledge about the routine use of pressure readings by RNs to predict extravasation in central lines. The literature suggests it may not provide the nurse with any meaningful information and therefore this practice requires investigation and evaluation in the clinical practice setting.

References

1. Gnanalingham MG, Irving V, Shaw NJ (2005). Consensus on neonatal infusion pumps and pressure monitoring *Achieves of Disease in Childhood* 90: F93.

2. Phelps SJ, Tolley EA, Cochran EB (1990). Inability of inline pressure monitoring to predict or detect infiltration of peripheral intravenous catheters in infants *Clinical Pharmacy* 9: 266-292.

Neonatal compartment syndrome: A case review

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Background

Compartment syndrome (CS) is a condition in which there is swelling and an increase in pressure within a limited space that presses on and compromises blood vessels, nerves and tendons that run through that compartment. CS in the neonatal population is thankfully rare. Case reports of neonates with CS of extremities have emphasized the importance of early diagnosis and fasciotomy to prevent limb loss and preserve function[1]. Abdominal compartment syndrome (ACS) is defined as organ system dysfunction that occurs as a result of an acute increase in intra-abdominal pressure[2].

Case Report

A 26-week infant with a birth weight of 1040g was retrieved ex-utero following an emergency caesarean section for placental abruption. The infant was extubated on arrival to JHCH and remained stable in air on continuous positive airway pressure (CPAP) support. Umbilical arterial and venous catheters were inserted and their tip position was seen on x-ray to be at an appropriate location. Total parenteral nutrition (TPN) was commenced via the UVC. A cardiac echocardiography on day 2 revealed a clinically significant patent ductus arteriosus measuring 2.2mm and a course of ibuprofen was commenced.

The infant was reviewed on day 3 due to poor saturations despite rising FiO_2, mixed acidosis, decreased urine output and abdominal distension. The infant became acutely unwell most notably with a large, tender, firm abdomen, poor perfusion to lower limbs and a profound metabolic acidosis. He was intubated and ventilated and fluid resuscitated with normal saline, sodium bicarbonate and packed red blood cells. A septic workup was performed and antibiotics commenced. Hypotension was treated with volume expansion and inotrope support. Serial abdominal x-rays revealed disappearing bowel gas. A working diagnosis of necrotizing enterocolitis was made.

Abdominocentesis was performed by the surgical team and 65ml of TPN-like fluid was drained. A glove drain was left in situ. Multi system failure ensued but parameters were back to normal within 5 days. Renal function, however, continued to worsen with urea peaking at 69 and creatinine at 639. Due to a poor prognosis intensive care support was withdrawn and the infant died on day 19.

Conclusion

Once ACS is diagnosed infants will respond well to aspiration of ascitic fluid and catheter removal. Although most infants will make a complete recovery, this infant succumbed to ongoing renal failure. This emphasizes the need for early identification and decompression of ACS which may turn out to be life saving.

References

1. Allen L, Benacci J at al. (2010) A case of neonatal compartment syndrome: importance of early diagnosis in a rare and debilitating condition. *American Journal of Perinatology* 27:2, 103-106.

2. Decou J, Abrams R et al. (2000) Abdominal compartment syndrome in children: experience with three cases. *Journal of Pediatric Surgery* 35:6, 840-842.

Neonatal outreach reduces infant-maternal separation

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Background

It is recognized by infant mental health specialists that the neonatal intensive care environment is a source of intense stress and trauma for many infants and parents and that preterm infants are at risk of insecure attachment. Insecure/disorganized attachment can result in long term psychiatric disabilities, chronic medical problems, drug and substance abuse, learning difficulties, unemployment and other serious social and health problems.

Aim

To provide nursing care to stable infants requiring admission to a level 2 high dependency neonatal nursery, at the mother's bedside.

Method

One neonatal unit staff member is allocated a maximum of four neonatal patients on the postnatal ward. The nurse is contactable at all times by the neonatal unit and postnatal ward shift coordinator and parents via mobile phone. A retrospective survey was administered to all nursing staff, medical practitioners and parents involved in program.

Results

Over 12 months, approximately 40 patients per month have been cared for successfully. Some infants were initially cared for in the neonatal unit and then went onto outreach prior to transfer to the postnatal ward. Some were initially assessed in the unit and then had all care administered at the mother's bedside.

Nursing staff: 31.3% response rate. Identified decreased separation and increased support for the mother and baby. Breastfeeding and lactation support was improved as all mothers received 1-1 assistance. Postnatal staff expressed concern of an overlap of the role of the midwife and that of the neonatal staff member. An issue that has arisen is an extension of maternal bed days resulting in bed management issues where previously the mother would have been discharged from hospital before her infant.

Medical practitioners: 100% response rate. All responses indicated the program was of value and resulted in reduced separation of mother and infant, increased continuity of care and expert care was provided at the bedside.

Parents: 89.5% response rate. Parents indicated they were able to spend time with their baby, felt well supported and the program built maternal confidence. Promptness with answering the phone was indicated as an issue for some mothers (5.2%). Parents reported how they experienced less stress by having their baby in their room, felt less isolated from other postnatal mothers and had increased confidence.

Conclusion

If strategies are introduced to reduce maternal-infant separation, the risk of anxiety and depression is minimized. It is important to educate our peers and implement policies that allow mothers and their infant to remain together wherever possible. This ultimately will result in a decrease in medical utilization after discharge as well as cost savings from the provision of long term psychological support or the cost of subsequent illnesses associated with the risk of prematurity.

Out of the wilderness: nurturing and supporting experiences of fathers in the neonatal environment

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There is much knowledge around the experiences of fathers and the transition to fatherhood. Yet there still remains a lack of understanding or knowledge around the lived experiences of fathers in the neonatal environment and particularly the role nurses play in supporting these unique experiences. It is recognised that becoming a father is an extremely profound experience; however, these experiences are often identified as of lesser importance than that of the mother's and minimal emphasis is played on the nurturing role of fathers.[1] Traditionally neonatal care pays attention to the mother-infant interactions and the woman's transition to motherhood.[2] This notion seems to be compounded when fathers are suddenly and very unexpectedly propelled into the wilderness of the neonatal environment because of a sick infant at birth.

The literature that is around fathers' challenges, experiences and transitioning to fatherhood within the neonatal environment is often combined with the experiences of the mother resulting in the uniqueness of these challenges and experiences had by fathers being lost. Both anecdotally and through literature it is known that fathers strive for the balance between work and family life. It is further identified that the male reports having more concern for their partner than they do for their child. Also known is the fact that fathers feel 'unequal' thus not becoming as actively involved with the care of their child.[3] Therefore as nurses within the wilderness of the neonatal environment we need to better understand the unique experiences of fathers so as to nurture them so they feel supported and equal within the partnership.

References

1. Bradley E, MacKenzie M, Boath E (2004). The experience of first-time fathers: a brief report. *Journal of Reproductive and Infant Psychology* 22:1, 45-47.

2. Lundqvist P, Hellström Westas L, Hallström I (2007). From distance toward proximity: Fathers' lived experiences of caring for their preterm infants. *Journal of Pediatric Nursing* 22: 490-497.

3. Arockiasamy V, Holsti L, Albersheim S (2008). Fathers' experiences in the neonatal intensive care unit: A search for control. *Pediatrics* 121, e215-e222.

Neonatal Nurses Reflect on Neonatal Nursing

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We have been challenged to provide data on neonatal nurses and what impacts on the outcomes of their care. Challenges include answering questions such as does a neonatal qualification make a difference, what are the measurable outcomes of nursing care, what constitutes nursing knowledge, and what do nurses know about the outcomes of neonatal care? Does knowledge make a difference? Can we benchmark nursing practice between units? These questions led us to a study on neonatal nurses to hopefully find an answer.

The study is being coordinated by the *NSW Network of Neonatal Clinical Nurse Consultants*. It is anticipated we will further our understanding of the nurse's contribution to the outcomes of sick newborns and their families by identifying those health-related outcomes that are sensitive to nursing interventions. This will facilitate the development of a set of outcomes that may be used to benchmark practice across the neonatal intensive care units in NSW and potentially Australia.

The study is being conducted in several phases. Phase one commenced in April 2010 with focus groups across all nine NICUs and NETS in NSW. This presentation will describe the process and initial outcomes of the focus groups. A total of 19 focus groups were held with a total of 127 participants. Twelve groups consisted of experienced neonatal nurses and seven groups consisted of less experienced and novice neonatal nurses. Each group had between 4 and 8 participants and were facilitated by an experienced psychologist with a CNC acting as a scribe; the CNC was from a different NICU to the participants.

The facilitator developed themes from the combined groups and these were re-coded independently by three CNCs who were able to verify the relevance and applicability to neonatal nursing. Agreement was then reached on re-classification of the themes and the final themes were identified.

This presentation will focus on the final themes and differences in terms of the nurses' experiences. One aim of the presentation is to highlight how information can be gathered through focus groups to enable data to be used in a format that can further elicit what neonatal nurses consider the key components of their work.

The study had institutional approval from each of the participating units through a multi-centred NEAF (National Ethics Application Form) process.

References

1. Turrill S (2003a). A focus of care for neonatal nursing: the relationship between neonatal nursing practice and outcomes. Part 1**.** *Paediatric Nursing* 15:4, 13-17.
2. Turrill S (2003b) A focus of care for neonatal nursing: the relationship between neonatal nursing practice and outcomes. Part 2. *Paediatric Nursing* 15:5, 30-34.

Confessions of a novice researcher: A reflective piece.

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When I answered an expression of interest to complete the Clinical Nursing Research Fellowship offered within the NICU I was working, I was filled with ambition and held high expectations. The fellowship allows the novice researcher the opportunity to gain experience in conducting a small research project, provides the opportunity to be exposed to the research community, as well as seminars and practical experience in research. Being particularly clinically focused, I chose to complete a randomised control trial comparing two methods of stabilising the endotracheal tube in the newborn infant in the Neonatal Intensive Care unit.

I quickly realised ambition and high expectations can only go so far, with the complexities and intricacies of conducting a research project becoming blatantly apparent to me, the extremely inexperienced, as I faced the multiple challenges that research would bring. This paper will discuss the challenges faced by a novice researcher conducting a small pilot study involving forty-nine newborn infants in a surgical neonatal intensive care unit.

These challenges include:

1. Gaining ethical approval
2. Trial recruitment
3. Documentation
4. Implementation of a 'new' method into practice
5. Acceptance of nursing staff
6. Terminologies of research

The Female Factory: reflecting on our history

Shirley McCarron

The Female Factory Historic Site has been the site of various government institutions, and some private enterprises, since it was first purchased in 1827.

Cascades Female Factory operated between 1828 and 1856. The Colonial Government bought the site of Lowes Rum Distillery in 1827 and extended the existing buildings to house the increasing numbers of female convicts under sentence in the colony. The colonial architect undertaking this task was the well-known John Lee Archer.

The complex gradually extended to encompass a series of five yards, around which cells, storerooms, workrooms and offices were built.

In 1888, a lying-in (or maternity) hospital for single mothers was added to the various establishments already present at Cascades. A voluntary women's visiting committee was recruited to assist with the running of the hospital.

The hospital did not accept 'street girls'. As such, less than 20 single women passed through the hospital each year.

The hospital was removed to New Town Charitable Institution in 1896.