

# Abstracts Presented at the 11th National Neonatal Nurses Conference and 14th National Mother Baby Nurses Conference

## Washington, DC, September 8–10, 2011

These are the abstracts for the poster presentations from the recent 11th National Neonatal Nurses Conference and the 14th National Mother Baby Nurses Conference in Washington, DC. They represent a broad range of neonatal and perinatal issues. By sharing this information, we hope to increase awareness of research and innovative programs within the perinatal health care community, and support evidence-based nursing practice. Some abstracts have been edited for publication.

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### Special Additions:

#### **A New Approach to the Care and Treatment of NAS Infants and Their Families**

*Maureen J. Adamson, RN, BSN*

MORTON PLANT MEASE  
TAMPA BAY, FLORIDA

Special Additions is a unique and innovative program in which the needs of the mothers who are dependent on prescription medications or illicit drugs are focused on prenatally. The proactive class includes a round table discussion on the diagnosis of Neonatal Abstinence Syndrome (NAS); the use of the Finnegan Scoring system by which their infant will be assessed and the various therapeutic handling techniques used to help alleviate the infants' discomfort. Social Services personnel are available to answer questions regarding community resources and assistance.

The Finnegan Scoring system is demonstrated and practiced in the class to familiarize parents with the tool that will be used to screen their infant for withdrawal after delivery. Each participant uses a doll to demonstrate new skills in therapeutic handling, the discussion focusing on the benefits of these techniques with the fussy infant. A tour of the Labor and Delivery area and NICU is given, introducing the families to nurses they may come in contact with during their stay.

The goal of this program is to assist these infants and their families by empowering them to be informed participants in the care of their infant while in the hospital and after discharge.

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### Caring is Sharing: Improving Communication Between Nurses and Parents in the NICU

*Nicole G. Allen, BSN, RNC*

CHRISTIANA HOSPITAL  
NEWARK, DELAWARE

Family-centered care is caring for the infant and family while considering the family's opinions and beliefs. Family-centered care is one of the main focuses in the NICU. Effective communication between the caregiving team and the family is important to good family-centered care.

There have been many studies done on communication in the NICU and parents' perceptions of the communication taking place. Although this is true, and we live in a technologically savvy time, families and nurses continue to report frustrating experiences regarding communication in the NICU. As technology changes, parents' needs and perceptions also change. After examining current practice in the NICU, a practice change was able to take place. This poster shows how quality improvement changes based on family surveys in the NICU have guided change of practice that aids nurses in improved communication. Simple tips were given to nurses and communication and satisfaction of the parents improved. By simply sharing information effectively with parents, family-centered care can take place. Communication between nurses and parents will continue to be something that can be improved.

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## Close to Me: Skin to Skin Care in the NICU

*Annette Backus, RNC, MSN, CNS*  
*Lisa Roday, BA, JD*

HENRICO DOCTORS' HOSPITAL  
RICHMOND, VIRGINIA

Nurses were queried on reasons for not offering kangaroo care (KC) consistently. Limited space, inadequate seating, lack of privacy, and fear of harming the infant on transfer were identified. Knowledge deficits regarding positive benefits of KC were noted.

**Step 1.** New KC policy focusing on infant stability and safety

**Step 2.** Staff education:

1. KC benefits
2. Infant transfer techniques
3. Safety and stability during KC
4. Team decision making, including parents
5. Educate and support parents

**Step 3.** Curtains installed between beds. More KC chairs purchased.

**Step 4.** Engage, Educate, and Empower Parents: Educate within 1 day of admission. Cloth pieces are provided on admission to transfer parental scent and leave with infant. Plush kangaroos with joeys and hand mirrors for viewing infant are given with the first KC experience. Positive KC messages/pictures posted.

### Results:

- KC education increased
- Days from birth to first KC decreased
- Increased understanding of KC benefits
- Increased early parental involvement
- Pictures/quotes from parents doing KC had positive impact
- Staff/parent education equals empowerment
- Enhanced confidence increases participation
- Documentation needs reviewing
- Sustained results proved challenging
- With increased infant maturity, interest in breastfeeding increases
- Skin-to-skin includes breastfeeding, KC, non-nutritive sucking, massage, and gentle touch

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## Journey of Hopes: Palliative Care in the Neonatal Intensive Care Unit

*Karyn Brewer, RN*  
*Kari Baumann, RNC*  
*Patty Dalton, CRT*  
*Ann Diaz, RNC*  
*Joan Hebert*  
*Linda Lowman*  
*Kathy Mahanke, RRT*  
*Bentley Stewart*

WINNIE PALMER HOSPITAL FOR WOMEN AND BABIES  
ORLANDO, FLORIDA

Palliative care emphasizes family-centered care honoring the preferences of families through careful attention to their values, goals, and cultural, and spiritual perspectives. This allows a collaborative approach to medical treatments and shared decision making in the creation of an optimal plan of care. With an unrelenting desire to set best practices and craft an intersection of technology, knowledge, hopes, and realism for patients with life-limiting conditions and their families, our NICU developed a palliative care team. In 2007, we added related

service representatives from fetal diagnostics, labor and delivery, and postpartum.

As a result, best practice care for palliative care patients throughout the medical center has been evident, a hunger for information and resources, as well as a passion for the expansion of services and a dedicated team of palliative care specialists. Parent's hopes have better aligned with technology and medical care through the transdisciplinary and interdepartmental team of professionals. Moral distress in the NICU has declined and staff more freely access resources when situations warrant. Family hopes and medicine have intersected in a positive fashion allowing the child's care to be delivered within the context of the family's desired outcomes.

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## Neonatal Abstinence Syndrome: Infant and Family Characteristics During Post Birth Hospital Course

*Jean Clark, ASN, RNC*  
*Belinda Lauderdale, BSN, RNC*

SHANDS HOSPITAL AT THE UNIVERSITY OF FLORIDA  
GAINESVILLE, FLORIDA

Neonatal abstinence syndrome (NAS) is comprised of physiologic signs and behaviors that indicate a dysfunctional regulation of the newborns' central nervous system, and is variable in how it affects opioid exposed newborns.

The purpose of our study is to review data of infants with NAS, examining infant and family characteristics during post-birth and the hospital course. We plan to use the comprehensive care plan as a teaching tool to enhance parental knowledge and involvement with their infants, thereby decreasing length of stay of these newborns. The substance-abusing mother is impaired in her abilities to recognize and respond to the newborns cues and needs. Therefore, the use of a teaching tool designed specifically for these babies will improve maternal nurturing interactions and decrease the length of stay of the infants in the hospital. Mother's being able to understand and respond appropriately to the baby's neurobehavioral dysfunction may help to promote the infant's self-organization and self-regulating abilities. The investigators are doing a retrospective data review of records from NICU at Shands Hospital and will implement use of the teaching tool in the future. They are currently collecting data, and have some preliminary results of the study. Prescription drug use in pregnancy has reached epidemic proportions in Florida, leading to increasing numbers of cases of NAS in our state. We hope to increase awareness, assist in treatment through education of caregivers, and get these babies home as quickly as possible.

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## NICU Nurses as NICU Parents

*Renee Fishering, RN, MSN, CPNP-BC, NNP-BC*  
*Ann Donze, MSN, NNP-BC*  
*Jennifer Broeder, PhD, RN*

ST. LOUIS CHILDREN'S HOSPITAL  
ST. LOUIS, MISSOURI

This study utilized a narrative qualitative design to examine the experiences of NICU nurses who became NICU mothers. The purpose of the study was to determine what was challenging and meaningful for these women, how they negotiated their roles as professional and parent, and how their responses differed from the responses of mothers

without professional NICU experience. Using a semi-structured interview format, six nurses shared their experiences as NICU mothers. Responses were transcribed, then analyzed using computer-assisted and manual data analysis. "Mothering in the NICU," developed by Heerman, et al. (2005) was used as a framework to organize themes. This model describes the journey from outsider to engaged parent, defining the steps as Focus, Ownership, Caregiving, and Voice. NICU nurse/mothers made a journey similar to mothers without professional NICU experience, but they spent less time in some of the steps and identified different stressors. They also described in detail how the experience changed them as a professional, increasing their empathy for NICU mothers and families. Examining these experiences may give us insight into how we can facilitate the transition for our NICU mothers from outsider to engaged parent and help us understand how specific experiences influence clinical practice.

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### **The Effect of Maternal Preparation for Premature Infant's First Visit With Concrete-Objective Information on Maternal Anxiety**

*Chollada Jongsomjitt RN, MN*  
*Waraporn Chaiyawat, DNS*  
RAMATHIBODI HOSPITAL  
BANGKOK, THAILAND

The purpose of this quasi-experimental research was to study the effect of maternal preparation for the premature infant's first visit with concrete-objective information on maternal anxiety. Subjects were 36 mothers of premature infants randomly assigned to an experimental and a control group, and matched pairs by the treatment infants received. Mothers in the experimental group received the preparation for her premature infant's first visit with concrete-objective information. The information included the physical sensations and symptoms that occurred, temporal characteristics, environmental features, and causes of sensation, symptom, and experiences. Spielberg's STAI Form Y-1 (Thai version) measured anxiety of both groups. Data were analyzed by Analysis of Covariance (ANCOVA) with pre-test score as a covariate.

It was found that the anxiety during the premature infant's first visit with mothers who received the preparation with concrete-objective information was significantly lower than that of mothers receiving routine nursing, at the level of .05.

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### **Bonding, Best at the Breast: The Golden Hour**

*Amy Martinez, RNC, BSN*  
*Mary Ann Beltran, RN*  
*DeeDee Kelley, RNC*  
*Linda Loeffler, RN, BSN*  
*Meghan Smith, RNC, BSN*  
SIERRA VIEW DISTRICT HOSPITAL  
PORTERVILLE, CALIFORNIA

The practice of early skin-to-skin contact (SSC) promotes stabilization and bonding for the maternal infant dyad. This practice has been shown to positively influence initiation of breastfeeding and increase in-hospital breastfeeding rates. Our patient population is based in a lower socio-economic, agricultural, rural community with a 90 percent government-supported health care rate.

In a 21-bed obstetrical unit following data collection, statistical analysis of SSC and in-hospital breastfeeding rates were measured. Prior to the initiation of data collection, education was provided to obstetrical staff and practitioners regarding the documented benefits of SSC and breastfeeding. The Golden Hour Brochure and signage was developed to promote and educate our patient population to the benefits of this practice.

Significant increases in the in-hospital breastfeeding rates have been documented with the early initiation of SSC. Prior to the program initiation, the in-hospital breastfeeding rate was 70.9 percent; the current average is 89.6 percent. In a lower socioeconomic, agricultural, rural community early SSC has proven effective in increasing breastfeeding initiation and in-hospital breastfeeding rates.

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### **Theoretical Evidence About Shared Information With Family in the Neonatal Unit**

*Eliana Moreira Pinheiro, RN, PhD*  
*Daniela Felix Damaceno*  
*Myriam Aparecida Mandetta Pettengill*  
*Maria Magda Ferreira Gomes Balieiro*  
Universidade Federal de São Paulo  
SÃO PAULO, BRAZIL

**Introduction:** One of the mainstays of family-centered care is shared information, which must be established with the team to supply the family's needs.

**Objective:** Identify in literature empirical indicators of shared information between family and team at a neonatal unit, as the first phase to develop an assessment instrument.

**Method:** Review integrated literature in indexed databases (2006–2011).

**Results:** Twenty-four papers available in their entirety (level evidence 4–79 percent), whose indicators were: being heard, being appreciated in their knowledge, being guided on how to care for the newborn and the environment, being informed in accessible language about the newborn's clinical status, and being respected in their own timing and power to negotiate with the team. Strategies indicated by the family were: being supported by the multiprofessional team, participating in parent's group, receiving documents about meetings with the team, and having opportunities to access data and books. When the family is well informed, they feel less anxious, more secure and in control of the situation, bonding with the team.

**Conclusion:** Knowledge of the evidence will allow the development of an instrument to assess the quality of information that must be established between the team and family at a neonatal unit.

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### **Teaching Family Care to Undergraduate Students Using Case-Based Learning as Instructional Strategy**

*Eliana Moreira Pinheiro, RN, PhD*  
*Maria Magda Ferreira Gomes Balieiro*  
*Flavia Simphronio Balbino*  
*Myriam Aparecida Mandetta Pettengill*  
Universidade Federal de São Paulo  
SÃO PAULO, BRAZIL

**Introduction:** The family-centered care philosophy is a reference to guide health care team practice. Although it is an ideal, it must be included in the undergraduate curricula of health school, to prepare future professionals to focus on family as the unity of care.

**Objective:** To describe the experience of teaching family care to undergraduate students using case-based learning as instructional strategy. The experience: it is a discipline offered to undergraduate students of health courses in order to sensitize them to the care of family in expansion with the birth of a new member. Case-based learning is an instructional strategy that promotes active learning and engages learners in higher-order thinking, using analysis and synthesis. It promotes the learner's motivation, participation, questioning, and reflection. In this approach the cases are situations/problems that encourage learners to practice their reasoning ability, trigger a process of thinking (which can stimulate doubts), the formulation of hypothesis, and application to reality.

**Conclusion:** The use of this instructional strategy has shown its relevance, because it develops the student's critical thinking skills, improving their communication and collaboration with the family.

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### **Effect of Hearing Protectors on Sleep and Wakefulness of Newborns in a Newborn Intensive Care Unit**

*Eliana Moreira Pinheiro, RN, PhD*

*Jackeline Lourenço Gilius*

*Miriam Harumi Tsunemi, PhD*

*Marcia Lurdes de Cacia Pradella-Hallinan, PhD*

UNIVERSIDADE FEDERAL DE SÃO PAULO  
SÃO PAULO, BRAZIL

The study compared the effect of using hearing protectors on sleep and wakefulness of newborns hospitalized in an NICU in two periods. The periods are described as: napping and no napping, during the morning and afternoon shifts. It was a clinical, non-randomized, prospective study performed in the NICU of a University Hospital of São Paulo. The sample consisted of eight newborns hospitalized in the NICU with gestational ages ranging from 33 to 41 weeks. The actigraph and structured observation were used for data collection. The sleep and wakefulness records were obtained over four hours daily, two in the morning and two in the afternoon, with the same neonate, on two consecutive days, with and without the use of hearing protectors. Preliminary results revealed no significant effect found on the sleep of neonates who used hearing protectors in the morning and afternoon shifts. Significant effect of the use of ear protection was found in newborns only during the napping period for a variable period of time of wakefulness ( $W = 120.5, p = .039$ ). It was found that the use of hearing protectors in newborns have significant influence on sleep during the napping periods surveyed.

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### **Acoustic Panorama of the Intensive Neonatal Care Unit in a University Hospital**

*Eliana Moreira Pinheiro, RN, PhD*

*Daniela Daniel*

*Beatriz de Carvalho Ciaciare*

*Maria Magda Ferreira Gomes Bllieiro*

*Tereza Yoshiko Kekehashi*

UNIVERSIDADE FEDERAL DE SÃO PAULO  
SÃO PAULO, BRAZIL

The goals of the study were to evaluate the sound pressure level (SPL) in the NICU of a university hospital and to identify the perception of professionals and families about the acoustics of this environment.

This was a quantitative and descriptive study. To get the register of SPL, dosimetry was used. The samples were from 130 hours of registers of SPL, 101 professionals who work in the searched area, and 92 mothers of hospitalized neonates that were interviewed on a questionnaire and a form respectively. The results show that the average value of Equivalent Continuous Sound Pressure Level (Leq) was 71,0 decibels-A Scale (dBA) where the lower average Leq was 59,0 dBA. Forty-four percent of professionals perceived the searched area as very noisy. Analyzing the mothers' perception of the noise level, it was found that 41 percent considered it noisy. We may conclude that NICUs have high SPLs based on the established values by the international normalization institution. These results match the professionals' and families' perceptions. On the other hand, due to the results, we may conclude that it is necessary to implement a new project to reduce the SPL in NICUs.

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### **One NICU's Strategies for Improving Family Satisfaction in the Hospital Setting**

*Barbara Rowland, BSN, RNC-NIC*

*Tina Keane, BSN, RNC-NIC*

*Meg Wuest, BSN, RNC-NIC*

*Monica Boyle, BSN, RNC-NIC*

NEMOURS AI DUPONT HOSPITAL FOR CHILDREN  
WILMINGTON, DELAWARE

Achieving and maintaining high satisfaction scores is a great challenge when working with patient families facing arduous circumstances involving their child's hospitalization. Families have high service expectations in all aspects of their lives, especially in health care. Access to information and comparisons of providers and facilities is readily available through the Internet. There is a strong correlation between a family's satisfaction and its intention to return to the institution and to recommend the institution to others. To demonstrate commitment to quality patient care, organizations must meet the challenges by improving each patient/family experience. (Farber, 2010)

We consider family satisfaction an important part of practicing the art of neonatal care. This ultimately promotes positive outcomes for our patients, families, and staff. Through the development and utilization of key strategies, our NICU has contributed to the Press-Ganey patient/family satisfaction scores, making Nemours/AI duPont Hospital for Children ranked in the top one percent nationally. We present several tools utilized in the NICU, which have helped maximize satisfaction scores for Nemours.

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### **Safe Sleep Awareness Campaign**

*Elizabeth Ruello, RNC-LRN, MSN*

*Deborah Or-bach, RNC-LRN*

*Ann Barnes, RN*

SENTARA NORFOLK GENERAL HOSPITAL  
NORFOLK, VIRGINIA

- 2008—Virginia Department of Health rates SIDS as the third leading cause of infant death in the state of Virginia
- 2008—Sentara Norfolk General Hospital Nursery Practice Council set a goal to provide "Safe Sleep" program to increase SIDS awareness in our community
- 2008—Initiated first visual wall displays for the hallway of the Women's Health Department during October, SIDS Awareness month

- 2008–2009—Nursery staff and new hires completed the NICHD SIDS Risk Reduction Curriculum for Nurses
- 2009—Nursery Practice Council decided to continue with the educational and community outreach of “Safe Sleep” and SIDS Awareness, with a new goal of increasing the scope of the project
- 2009—Visual crib station displays with Halloween themes made, utilizing pumpkins.
- 2010—The SIDS Awareness Safe Sleep campaign continued to grow with the addition of a safe crib campaign while SIDS Awareness remained a goal
- 2010—Women’s Health Nursery Services for Sentara Healthcare approved a Safe Sleep Procedure
- 2010—Plans continue to grow utilizing Dr. Seuss theme for safe crib visual display stations

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### Improving Parents’ Knowledge of Discharge Criteria From the NICU

*Nikki Simmons, MSN, RN  
Sara Hopkins, RN*

VIRGINIA HOSPITAL CENTER  
ARLINGTON, VIRGINIA

**Introduction:** The day an infant is discharged from the NICU can be a very stressful time for parents. It can arrive quicker than most expect. Parents’ lack of understanding of discharge requirements can cause them to feel unprepared on discharge day, adding anxiety to an already highly stressful time. Improving parents’ knowledge of criteria for discharge from the NICU can relieve much of the anxiety and make discharge day a pleasant experience for all.

**Purpose:** The NICU Parent Board was created as a visual representation of NICU discharge criteria. It illustrates for parents how their infant is progressing in the NICU and prepares them for discharge.

**Method:** A standardized survey was given to parents on discharge day to evaluate their response to the NICU Parent Board.

**Results:** The majority of the parents found the boards to be very informative and many used the board each visit to see how their infant was progressing. A common suggestion for improvement was for the boards to be updated daily.

**Conclusion:** The NICU Parent Board has not only increased parent knowledge, but it also has encouraged parents to be involved in the discharge process.

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### Lactation Resource Nurses: Extending Support for Mothers and Nurses

*Elizabeth M. Talaga, MSN, APRN, RNC-NIC, CNS-BC  
Brenda Owens, BSN, IBCLC*

SHANDS HOSPITAL AT THE UNIVERSITY OF FLORIDA  
GAINESVILLE, FLORIDA

There is increasing realization that mothers of premature and sick infants have special needs related to lactation. Depending on unit resources, this can be a daunting responsibility for bedside nurses who may not have the advanced skills needed to support mothers throughout each day and for the extended time that infants are in the NICU.

To meet these needs, we developed the Lactation Resource Nurse (LRN) Program. The program goals are to increase maternal support and to provide resources and professional development opportunities for staff. The LRN responsibilities include conducting lactation

assessments, being a role model and coach for staff, collaborating with health care providers for complex lactation plans, and participating in regular lactation quality monitoring.

To prepare staff for this advanced role, nurses attended two days of lactation education. Quarterly meetings provide continuing education and assistance for bedside issues. In the past six months, lactation and breastfeeding rates among NICU mothers have increased and staff surveys indicate increased comfort assisting lactating mothers. The purpose of this presentation is to describe the implementation of the LRN role and the effects on lactation outcomes.

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### Induced Hypothermia for Infants With Hypoxic-Ischemic Encephalopathy: Developing Nurse Sensitive Quality Indicators

*Elizabeth M. Talaga, MSN, ARNP, RNC-NIC, CNS-BC*  
SHANDS HOSPITAL AT THE UNIVERSITY OF FLORIDA  
GAINESVILLE, FLORIDA

Induced hypothermia is rapidly emerging as a standard of care for infants diagnosed with moderate to severe hypoxic-ischemic encephalopathy (HIE). As the use of this therapy increases, the role neonatal nurses play in effecting positive infant outcomes needs to be explored and defined.

Our university-based, Level III NICU has completed treatment with whole body cooling for over 30 infants with HIE in the last 30 months. As we have operationalized medical protocols and more literature is published that outlines the outcomes of this therapy, we have begun to determine those nurse-sensitive quality indicators that may have an impact on infant outcome. Based on our experience and the literature, key indicators include the amount of time the temperature is outside the target range, changes in skin integrity, and the recognition of seizure activity at key points in the therapy. The purpose of this presentation is to discuss the process of developing and testing these quality indicators.

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### Nurse-Driven Reduction of Positional Plagiocephaly in Neonates

*Patricia S. Barnes, BSN, MS-HDED, RN-NIC  
Rowena Cadungog, BSN, RN-NIC  
Nancy Munoz, BSN, RN  
Angela Quant Weinbrenner, BSN, RN-NIC  
Patricia Anne Young, RNC*

BAYLOR UNIVERSITY MEDICAL CENTER  
DALLAS, TEXAS

With the advent of *Back to Sleep*, positional plagiocephaly has increased in infant populations. Additionally, this Nurse Sensitive Indicator for our neonatal population has recently been connected to developmental delays. Infants in NICUs remain especially vulnerable to the complications of plagiocephaly. As nurses hold a position of greatest contact, the opportunity falls largely to them to potentiate the benefits of *Back to Sleep*, while reducing positional plagiocephaly in the NICU population. Our team of nurses, referred to loosely as the “Plagio Group” have looked at evidence-based practices, current practice, use of developmental aids, and the education of both staff and families. Implementation includes focused education for staff (newsletter, bulletin board, PowerPoint presentations) and families (brochure,

infant care discharge class, mirroring of staff behavior), personalized use of positioning and developmental aids, and updated guidelines; all designed to adjust behaviors of caregivers and reduce the incidence of positional plagiocephaly in the neonatal population.

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### **Drawing Otherwise Discarded Fetal Blood From the Placenta for the NICU Baseline Laboratory Tests, Results in Fewer Early Transfusions**

*Vickie L. Baer, RN, BSN*

*Robert Christensen, MD*

*Diane Lambert, RN*

MCKAY DEE HOSPITAL  
OGDEN, UTAH

**Objective:** We previously reported a small case control study (n = 10), evaluating the feasibility of drawing NICU admission laboratory tests from fetal blood in the umbilical vein on the placenta, thereby drawing none from the neonate. We now report a larger study involving 65 cases and 130 controls who had all admission blood drawn from the neonate.

**Study Design:** The 65 case neonates (<1500 g birth weight or <32 weeks gestation), and 130 control neonates were matched for birth weight, gestational age, severity of illness, and maternal steroid administration. We evaluated the feasibility of drawing baseline blood tests from the placenta and compared neonates' hemoglobin (Hgb) concentrations, and number of RBC transfusions.

**Results:** Drawing initial laboratory tests was completely successful in 51 of the 65 cases (78 percent), partially successful in 11 (17 percent), and unsuccessful in 3 (5 percent). The cases with successful draws had an increase in Hgb in the first 24 hours ( $14.7 \pm 2.0$  to  $15.9 \pm 3.1$ ,  $p = .002$ ). Controls had no increase ( $15.8 \pm 2.2$  to  $15.8 \pm 2.9$ ,  $p = .7883$ ). Study cases were given fewer packed RBC transfusions in the first seven days than were the controls 19/51 vs 67/102,  $p = .000$ .

**Conclusion:** This method is generally successful and results in higher hemoglobin levels and fewer early transfusions.

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### **NAS: Scoring and Comfort Care: The Development of an Education Collaborative**

*Lisa McCarthy Clark, RN, DNP, CPNP-BC, PC*

*Wanda Davila, BSN, RNC-OB, C-EFM*

*Carolyn Milana, MD*

STONY BROOK LONG ISLAND CHILDREN'S HOSPITAL,  
STONY BROOK MEDICAL CENTER  
STONY BROOK, NEW YORK

**Background:** Many infants exposed prenatally to illicit drugs develop Neonatal Abstinence Syndrome (NAS). NAS affects the central nervous system, and metabolic, gastrointestinal, and respiratory function.

**Problem:** Assessing severity and the need for treatment of NAS is based the scoring tool "Modified Finnegan Neonatal Abstinence Score." Knowledge gaps of health care providers with inconsistent experiences caring for infants with NAS leads to inconsistency with interrater reliability.

**Purpose:** To develop and implement a collaborative educational model for the early identification and treatment of NAS. Treatment goals are to minimize symptoms, use supportive care and medication to

promote weight gain, facilitate maternal-child interactions, and prepare strategies for handling complex social issues.

**Method/Design:** A retrospective review of newborns with known fetal exposure from May 2009 to April 2010 identified use of cannabinoids in 38 percent, opiates in 32 percent, cocaine in 24 percent, methadone/buprenorphine in 9 percent, and other substances in 11 percent. This led to the creation of an education collaborative model which included the development of standardized care, specific order sets for NAS, education annually with instruction on how to assign a weighted numeric score, and tools to improve accuracy and consistency of scoring.

**Implications for Practice:** The importance of early recognition and management of NAS symptoms can reduce hospitalization and improve the mother baby dyad.

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### **Tiny Steps toward Improving Neonatal Skin Through Prevention and Early Intervention**

*Pamela Dozier-Young, BSN, RNC-NIC*

*Pamela Allen, RNC-NIC*

*June Amling, MSN, RN, CCRN*

CHILDREN'S NATIONAL MEDICAL CENTER  
WASHINGTON, D.C.

Over the past few years there has been considerable attention and focus on "Never Events." One never event has been on Pressure Ulcers. There is minimal research regarding neonatal wounds, including pressure ulcers. Among neonates and children, more than 50 percent of pressure ulcers are related to equipment and medical devices. Meticulous attention to prevention and early intervention is paramount to promoting patient safety.

Premature and sick neonates potentially are at risk for skin breakdown due to a thin epidermal layer, decreased subcutaneous fat, altered cardiac output, impaired nutritional status, compromised immune system, chronic medical conditions, and immobility. These high risk neonates are predisposed to infection and prolonged wound healing. Maintaining the skin integrity is a major key in preventing tissue injuries.

Children's National Medical Center is currently involved in a hospital-wide initiative to increase awareness and implementation of preventive measures to reduce hospital-acquired tissue injuries. At daily rounds over the past few years, the NICU wound team has taken a consistent, proactive approach to identifying patients who are at risk for these injuries. We have been able to improve our patient outcomes by advocating for our patients and initiating preventive measures and/or providing early intervention.

With evidence-based support, we have taken important steps that changed how we deliver skin/wound care. The team has increased staff awareness through education and reduced the number of skin injuries. Our NICU wound team has committed itself to pressure ulcer prevention and excellent wound care. We hope to assist laying the groundwork for other institutions.

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## Seeking Validation for Use of the NPASS as an Assessment Tool during Moderate Sedation Procedures

*Lydia Fletcher, RNC-NIC*  
*Jobeth Pilcher, EdD, RNC-NIC, BC*  
*Barbara Petrey, BSN, RN*  
*Diane Johnson, MSN, RN*

BAYLOR UNIVERSITY MEDICAL CENTER  
DALLAS, TEXAS

The Neonatal Pain, Agitation, and Sedation Scale (NPASS) is a nationally accepted and validated tool used for evaluating pain and therapeutic sedation in neonates. However, it had not been previously studied (found to be valid and reliable) as a sedation assessment tool during moderate sedation procedures. This poster presentation provides the results of an IRB-approved study comparing assessment findings between the NPASS and the University of Michigan Sedation Scale (UMSS), which is a validated tool used during neonatal moderate sedation procedures.

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## Decreasing Unplanned Extubations in the Neonatal Intensive Care Unit

*Nichol Harris, RRT*  
*Sheri Rosato, BSN, CCRN*

CHILDREN'S HOSPITAL OF PITTSBURGH OF UPMC  
PITTSBURGH, PENNSYLVANIA

**Purpose:** It was reported that the NICU has the highest number of unplanned extubations.

**Review of Literature:** Unplanned extubations in neonates can have serious, life-threatening consequences.

**Interventions:** Unintended extubation and airway management forms were created to determine causative factors leading to unintended extubations. Airway rounds were initiated.

The main causative factor for extubations was copious oral secretions. The volume of secretions caused the endotracheal fixation device that we used, to be ineffective in providing a secure airway. A product search yielded an alternative fixation device.

**Outcome:** Extubation rates along with ventilator days have been monitored for a 12 month period. Data suggest a downward trend in extubation rates with periodic fluctuations. Prior to changing the fixation device, the extubation rate was 2.54/100 ventilator days. Airway rounds after the change showed an extubation rate of 2.19/100 ventilator days. Education of staff regarding fixation and causes of extubation caused the extubation rate to fall to 1.79/100 ventilator days ( $p = .871$ ). While not statistically significant, clinical significance was evident in the decreased unplanned extubation rates.

**Clinical Implications:** Initiating airway management rounds can be an effective way to evaluate intubated patients and identify risk factors that can lead to unplanned extubations.

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## Alternative Developmental Therapies for the Late Preterm Infant

*Gretchen Hickman, RN, BSN*  
*Amy Barron, RN, BSN*  
*Madelynn Diaz, RN, BSN*  
*Christie Peterson, RN, BSN*  
*Tracie Nakata, RN, BSN*

CHOC CHILDREN'S HOSPITAL  
ORANGE, CALIFORNIA

This presentation addresses the subject of alternative developmental therapies for late preterm infants, 32–36 weeks gestational age. Our goal is to establish awareness with parents and the health care team to increase positive growth outcomes in these infants. Because developmental care is the support of the infant's own developmental process as it is happening outside of the uterus, we must constantly observe the infant and surrounding environment of our NICU. The brain does not fully develop until 40 weeks gestation; therefore, we are molding the brain pathways and affecting the infant with our daily interactions in the unit. Unique developmental care is addressed with regards to music, massage, acupressure, and aromatherapies. We also utilize infant cues to guide our care, incorporating physiologic, behavioral, and facial cues. Nurses play an important role in educating parents so that they can continue to fully support and enhance their child's development at home long after discharge. It is no longer enough to just send infants out of the NICU alive; we have an ethical obligation to care for babies and their families using evidenced-based research that improves their outcomes.

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## Mobile Simulation Education on a Shoestring: An Innovative Program Bringing *In-Situ*, Low Fidelity Neonatal and Perinatal Emergency Simulations to Community Hospitals

*Cynthia Jensen, RN, MS, CNS, CCRN*  
*Valerie Yates Huwe, RNC, MS, CNS*

UCSF BENIOFF CHILDREN'S HOSPITAL  
SAN FRANCISCO, CALIFORNIA

Community hospitals may not have the budget, specialized training, or equipment needed to practice emergency drills in their own facilities. This program customizes low cost, low fidelity, *in-situ* simulation scenarios to practice the cognitive, technical, and behavioral skills required in a perinatal crisis. The low fidelity scenarios are enhanced by live actors, low cost props, and moulage, adding realism to the simulation experience. The multidisciplinary trainees include obstetricians, midwives, nurses, pediatricians, anesthesiologists, respiratory therapists, and support staff.

Mirroring the new NRP 2012 course structure, the four hour class begins with an interactive briefing that highlights simulation education principles, effective communication techniques, and performance expectations for class participants. Students are then familiarized with the manikins, equipment, and props in the scenario setting. Simulations are videotaped and followed by formal, confidential debriefings.

Congruent with the Joint Commission recommendations in Sentinel Event 30: "Preventing Infant Death and Injury during Delivery," simulation provides an outstanding forum for practicing emergencies, improving communication, and perfecting roles. This mobile simulation program is an innovative, efficient way to bring specialized

education to hospitals with limited educational resources. Practicing these skills *in-situ* enhances team performance and helps to identify systems issues within the hospital's own environment.

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## Reliability of Three Visual Assessments to Identify Feeding Intolerance for Premature Infants in the Newborn Intensive Care Unit

Tiffany A. Moore, RN, PhD(c)  
Margaret E. Wilson, PhD, CPNP

UNIVERSITY OF NEBRASKA MEDICAL CENTER  
OMAHA, NEBRASKA

**Introduction:** NICU clinicians rely on visual assessments to recognize prematurity complications, such as feeding intolerance. Although feeding intolerance is defined and measured using visual assessments, gaps exist regarding standardized procedures and the reliability of these assessments.

**Purpose:** To identify a) variability in perception among NICU nurses of three assessments: abdomen, emesis, and stool; and b) association of differences in perception with years of clinical experience.

**Method:** A convenience sample of NICU nurses was shown unidentified assessment photographs of NICU patients during annual, proctored competencies. Nurses selected responses to multiple choice questions reflecting their perceptions of the photographs. Descriptive analyses and ANOVA were used.

**Results:** Examples of results include: *Abdominal assessment:* Photograph #1: 54 percent selected "flat" and 46 percent selected "round"; Photograph #4: 59 percent selected "full," 30 percent selected "distended," 11 percent selected "round"; Photograph #11: 52 percent selected "full," 33 percent selected "flat," 15 percent selected "distended." *Emesis:* Photograph #3: Actual amount = 20 ml: 65 percent selected "5 ml," 15 percent selected "10 ml" (20 percent missing data). *Stool:* Photograph #12: 80 percent selected "moderate," 11 percent selected "large," 6 percent selected "small." No differences in responses were found based on experience.

**Implications for Nursing:** NICU educators need to develop standardization policies for visual assessments. More reliability and validity testing is needed for visual measurements and idiopathic feeding intolerance.

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## Standardization of Practices to Reduce Central Line Infections in the NICU

Ann Prescott, RN  
Jennine Higa, RN  
Erin Irvin, RNC  
Ann Diaz, RNC  
Brenda Forest, RNC  
Ana Diaz-Albertini, MD  
Douglas Hardy, MD

ORLANDO HEALTH  
ORLANDO, FLORIDA

**Purpose:** To develop policies, protocols, and subsequent education to decrease central line infections, reducing the morbidity and mortality of neonates in the NICU.

**Method:** A systematic review of the literature was conducted, new policies and protocols were written, and an education program developed.

**Discussion:** Changes included developing a peripherally-inserted central catheter (PICC) bundle. A maintenance bundle was developed and all lines were closed with MicroCLAVES®. Education was disseminated, including computer-assisted education and video training.

**Results:** Central line-related infections in the NICU decreased per catheter days in 2010. For infants who weighed <1500 grams, the rate was 0.0047 percent, and for infants with weights >1500 grams, the rate was 0.006 percent. Catheter days also decreased from 4050 device days in 2009 to 2477 device days in 2010. Earlier insertion of PICCs resulted in fewer peripheral IV starts, reducing stress on the infants and opportunities for sepsis, and was one contributing factor in our unit's decrease in necrotizing enterocolitis from 21 percent to 4.1 percent from December 2008 to December 2010. With decreased sepsis, ventilator days decreased by 3 from 2009 to 2010.

**Conclusion:** As a result of the standardization of practices related to central lines and decrease in catheter days, neonatal morbidity and mortality have decreased.

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## The Use of Active *Leptospermum* Honey in Common Pediatric Wound Etiologies

Roxana Reyna, RNC, WCC

(Disclosure: This presenter is an independent contractor for Medline Industries and receives honoraria from Dermasciences.)

DRISCOLL CHILDREN'S HOSPITAL  
CORPUS CHRISTI, TEXAS

**Problem:** There is a lack of research in pediatric and neonatal wound care; therefore, clinicians do not have an adequate evidence base from which to deliver care. Further complicating pediatric wound care is the expectation that these wounds will heal rapidly and without complication, thereby producing a lack of knowledge transfer to the pediatric population. In an effort to provide a safe, effective, wound protocol to patients whose wounds failed to heal as expected, active *Leptospermum* honey (ALH) was evaluated.

**Rationale:** ALH has been found safe and effective in a three year study of pediatric patients with surgical dehiscence and IV extravasation.

**Method:** A pictorial case study of four neonatal/pediatric patients with common wounds (IV extravasation and surgical dehiscence) ALH was used as the primary dressing on several patients with full thickness wounds which had failed to heal as expected.

**Conclusion:** ALH was an effective debriding, anti-inflammatory, and healing agent in pediatric/neonatal patients with non-healing wounds. All patients continued wound care at home and dressing changes were done by their parents. Wounds were able to return to a healing trajectory and heal rapidly.

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## The Use of a Cyanoacrylate-Based Skin Barrier on Intact and Damaged Skin of the Neonate/Infant

Roxana Reyna, RNC, WCC

(Disclosure: This presenter is an independent contractor for Medline Industries and receives honoraria from Dermasciences.)

DRISCOLL CHILDREN'S HOSPITAL  
CORPUS CHRISTI, TEXAS

**Introduction and Clinical Problem:** Patients in an NICU can present unique challenges for management of their damaged or at-risk skin. The use of adhesive barriers may cause skin breakdown when

removed. Ointment barriers are easily removed by movement or exposure to body fluids, thus leaving skin unprotected. A cyanoacrylate-based skin prep that is solvent free and has shown good clinical results in an adult population was trialed on our NICU patients.

**Method:** A sample of four patients between 9 days and 7 months of age with failure of conventional methods of treatment was chosen. The patients had G-tube skin issues or damaged skin in the buttock area due to frequent stools. The skin prep was applied to the affected areas.

**Results:** Each patient's skin responded remarkably well to protection with the cyanoacrylate-based skin preparation. The product was easy to apply and remained on the skin approximately 3–6 days while minimizing or repairing the skin damage. Further study of this product and its unique method to manage the skin damage of at-risk neonates is needed.

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### **Neonatal Transport Case Review: Spontaneous Pneumothorax**

*Regina Reynolds, RNC-NIC, BSN*

BAYLOR UNIVERSITY MEDICAL CENTER  
DALLAS, TEXAS

When at a referral facility, neonatal transport team members face many emergencies, including pneumothorax. The composition of the transport team at Baylor University Medical Center in Dallas, Texas, limits the interventions available for a patient with a pneumothorax. Historically, team members would needle aspirate the chest with a butterfly needle aspiration set up. We compare two cases of pneumothorax in term infants; the first was aspirated with the butterfly set up and the second was aspirated with a large bore intravenous catheter set up, resulting in dramatically different outcomes. Our neonatal transport team was able to implement a change in practice based on case review as part of our regular team meetings and education.

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### **Development of an ROP “Safety Net”**

*Regina Reynolds, RNC-NIC, BSN*

*Barbara Petrey, RNC-NIC, BSN*

BAYLOR UNIVERSITY MEDICAL CENTER  
DALLAS, TEXAS

Retinopathy of prematurity (ROP) is a disease that requires meticulous follow up both while the infant is in the NICU and after discharge home. The NICU at Baylor University Medical Center in Dallas, Texas, developed a “safety net” to prevent any missed exam, treatment, or follow up appointment with the ophthalmologist. This “safety net,” developed with the help of Ophthalmic Mutual Insurance Company (OMIC) includes prompt identification of infants at risk, education for the parent, and patient tracking to reduce risk of a missed exam.

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### **Annual Competencies Completed via Simulation Based Learning**

*Regina Reynolds, RNC-NIC, BSN*

BAYLOR UNIVERSITY MEDICAL CENTER  
DALLAS, TEXAS

What once was a mundane annual “skills fair” at Baylor University Medical Center in Dallas, Texas, has become an exciting two hour simulation lab. The unit management team determines what competencies

need to be reviewed for the year based on quality improvement data and unit incident reports, as well as any changing, or high-risk/low frequency skills. The NICU “Drill Team” then begins to develop simulation scenarios that will encompass the competencies. Staff members attend a two hour session that includes videotaped scenarios followed by facilitated debriefing by the “Drill Team.” Participants’ learning needs are met interactively through practicing in an environment safe from patient harm and by reviewing the events with debriefing. Simulation-based learning has proven to be an effective means to complete the majority of our unit’s yearly competencies because it includes cognitive, technical, and behavioral skills.

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### **An Innovative Approach to Perinatal Nursing Education for Community Hospitals: A Pilot Study**

*Mindy Spencer, RNC-NIC*

*Jennifer Bradley, RNC-OB, CLC*

PHOEBE PUTNEY MEMORIAL HOSPITAL  
ALBANY, GEORGIA

This program was developed by perinatal outreach educators from a Level III regional perinatal center. The pilot program involved four nurses from a Level I labor and delivery (L&D) unit in a rural hospital with limited exposure to high-risk perinatal situations. A perinatal self-study program was used as the primary source for the educational content. A Likert-style comfort scoring tool and a 50 question test were created which assessed participants’ comfort and knowledge of various aspects of labor and delivery, postpartum care, and well-baby care. Chart audit tools were developed to assess basic knowledge and skill level. The test, comfort tool, and chart audits were completed at the beginning of the program. For 11 weeks participants completed course work and submitted tests at the completion of each module. During this time, the program developers traveled to the Level I facility and conducted skills sessions and critical thinking exercises. Upon completion of the required 11 weeks of course work, the four participants spent two weeks of clinical time working at the Level III unit, with the program developers serving as preceptors. After completing the two-week clinical rotation of the fellowship program, the participants completed the same posttest and comfort tool.

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### **Neonatal Rapid Sequence Intubation**

*Jana G. Spillers, BSN, RNC-NIC*

BAYLOR UNIVERSITY MEDICAL CENTER  
DALLAS, TEXAS

This evidence-based practice (EBP) project involved compilation of clinical evidence for neonatal rapid sequence intubation (RSI), collaboration with the neonatology group, protocol development, staff education, and protocol implementation. Staff members were surveyed prior to education regarding average number of intubation attempts and attitudes toward RSI and neonatal procedural pain during intubation. Most staff reported an average of two attempts for successful intubation prior to RSI protocol implementation. Many staff members were unfamiliar with RSI or were unsure of its use in NICU. As the protocol is implemented in the BUMC NICU, staff members are being re-surveyed and the number of intubation attempts after RSI will be collected from procedure notes through chart review. Preliminary qualitative data shows that 100 percent of staff surveyed view RSI positively and feel

that neonatal procedural pain control is important during intubation. The RSI protocol at Baylor University Medical Center is as follows:

1. Atropine 0.02 mg/kg IVP over one minute
2. Fentanyl 2 mcg/kg slow IVP
3. Succinylcholine 1 mg/kg IVP over 10–30 seconds

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### **The Development of Clinical Nursing Practice Guidelines to Prevent Nasal Skin Injury in Premature Infants With Nasal CPAP**

*Numtip Tongsawang, RN, MN  
Renu Pookboonmee, DNS  
Tipawan Daramas, PhD*

RAMATHIBODI HOSPITAL  
BANGKOK, THAILAND

The purpose of this study was to develop clinical nursing practice guidelines using evidence-based research to prevent nasal skin injury from nasal continuous positive airway pressure (NCPAP) in premature infants. There were 19 academic research publications related to the prevention of nasal skin injury from NCPAP in premature infants. Five experts in the fields of neonatology and neonatal nursing validated the guidelines for accuracy in content, clinical relevance, scientific merit, and potential for use in clinical practice.

The guidelines consist of the following steps: 1) selection of the proper size of nasal prongs; 2) applying prongs to infant's nares with strap; 3) nursing care during use of nasal prongs; 4) monitoring and evaluating complications due to the use of nasal prongs; 5) nasopharyngeal suction; 6) the most appropriate setting of the humidifier's temperature; 7) nursing care for comfort promotion.

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### **Implementing a Care Bundle to Improve CPAP Delivery and Maintenance**

*Stacey Upton, MS, RN  
Kimberly Hokanson, BSN, RN  
Caryn Douma, MS, RN*

CHILDREN'S MEMORIAL HERMANN HOSPITAL  
HOUSTON, TEXAS

The goal of this project was to improve continuous positive airway pressure (CPAP) delivery in the NICU through the implementation of a care bundle designed to maximize the effectiveness and standardize nursing and respiratory care practice.

Effective use of nasal CPAP in preterm infants can significantly reduce the need for mechanical ventilation. Failure to provide the necessary supportive treatment often results in respiratory failure and reintubation in low birth weight infants. Nursing and respiratory care practices influence the effectiveness of the treatment and often depend on caregiver knowledge and attentiveness.

An interdisciplinary quality improvement team was assembled to examine current practice, review available literature, and develop a strategy to decrease variation and improve respiratory outcomes through the implementation of a CPAP care bundle. Utilizing the Model for Improvement and other quality tools, the team developed a care bundle and checklist. The bundle included assessment, airway care, positioning, and equipment checks. Interdisciplinary education and a maintenance plan were crucial success factors.

A decrease in ventilator days, increase in bundle compliance, and decrease in days on CPAP were demonstrated following implementation of the care model.

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### **Jaundice Trending: Does Bilirubin Screening at 36 Hours of Age Identify At-Risk Infants Not Identified at 24 Hours of Age**

*Terry Zellinger, RNC, MSN  
Dana N. Rutledge, RN, PhD*

ST. JOSEPH HOSPITAL  
ORANGE, CALIFORNIA

High bilirubin levels can become toxic in newborn infants, particularly to the developing nervous system. The current standard of care for newborns calls for screening prior to discharge from the hospital. A sentinel event occurred at our hospital in 2006 despite 24-hour screening implementation. This event led to a practice change. Newborns still hospitalized are screened at 36+ hours after delivery in addition to the 24 hour screen.

The study was designed to evaluate how many newborns would be determined high risk for hyperbilirubinemia at 36+ hours of age vs at 24 hours of age (do we "catch" more babies with this dangerous condition?). Medical records were reviewed of newborns >35 weeks gestational age born over a three month period that were not discharged before 36 hours post-delivery.

The sample consisted of 1,117 infants with gestational ages from 35 to 42 weeks. Fifteen infants (1.3 percent) screened at 24 hours went from a lower risk category to high risk (95th percentile) at 36+ hours. That was in addition to the 15 infants already deemed high risk at 24 hours. Our data support screening newborns at both 24 and 36 hours. This practice change would increase the identification of infants with hyperbilirubinemia and the risk of kernicterus would be minimized.

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### **Successful Implementation of an Integrated Electronic Medical Record in a 92-Bed NICU**

*Susan Bedwell, MS, APN, NCNS-BC*

THE CHILDREN'S HOSPITAL AT OU MEDICAL CENTER  
OKLAHOMA CITY, OKLAHOMA

An integrated electronic medical record (EMR) can be an important tool for improving patient care delivery while meeting the demands of regulatory compliance. Adoption of EMRs by neonatal intensive care units (NICUs) has been difficult because of the complexity and uniqueness of charting within a NICU. Through collaboration with direct-care nurses on content development and training, our NICU was able to smoothly transition nursing staff from a hybrid of paper and computer charting to an integrated EMR in one day.

The Children's Hospital at OU Medical Center utilized a multidisciplinary team to successfully implement an integrated EMR within a 92-bed NICU. Direct care providers were consulted to determine workflow and system specifications and utilized to train other staff members. Training and training materials were developed to meet the needs of the learners and revised with direct-care provider input. Hands-on training allowed nurses and other providers to use the system during the training class and continue to "practice" chart in the system up to the time of implementation. On the day of implementation, all paper charting materials were removed from the bedside. Following

implementation, immediate improvement was realized in documentation of pain assessment and reassessment, handover report, and time out documentation.

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### Utilization of Computer Generated Templates Brings NICU Committee Documentation and Communication Into the 21st Century

*Nancy Gough, RN  
Susan Groden, RN*

WAKEMED  
RALEIGH, NORTH CAROLINA

The NICU Committee Standards template and the NICU Committee Resource Book were created to establish a source of documentation and communication of information specific to each NICU committee. Unique to the NICU, the Committee Standards template is the use of SBAR (a framework of communication through statements of Situation, Background, Assessment, and Recommendation or Response). A variety of committee templates are available: Committee Membership Intent, Membership List, Agenda, Minutes, Active Projects, and Participation Log. The NICU Committee Resource Book is arranged by hospital committee categories with each unit committee template placed under a category to provide access to NICU committee information. An NICU Organizational Structure graphic has also been created to illustrate the relationships among the committees.

The design style of the NICU Standards template and the NICU Committee Resource Book supports professional standardization and shared governance through the empowerment of individuals to share the knowledge and expertise of clinically-based practice with colleagues, departments, and organizations. The NICU Standards template and the NICU Committee Resource Book dissolve the decades between the Nightingale and the Z-Generation with computer compliance and technological sophistication.

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### Pulse Oximetry to Screen for Congenital Heart Disease: What is the Evidence?

*Brenda J. Bugbee, BSN, RN*

ST. PETER'S HOSPITAL  
ALBANY, NEW YORK

**Background:** Congenital heart disease is the most common birth defect, occurring in about 9 of every 1,000 births. Critical congenital heart disease is responsible for more deaths than any other malformation. A 2007 publication in the United States suggested that delayed or missed diagnosis occurs in 7 per 100,000 births.

**Hypothesis:** A pulse oximeter reading at 24 hours of age, can effectively screen for some cases of critical congenital heart disease and improve mortality and morbidity statistics by offering timely, life-saving medical interventions.

**Study Design:** The purpose of this research was to review the current literature and evaluate the effectiveness of pulse oximetry in screening for critical congenital heart disease in the well-appearing newborn.

**Conclusion:** Pulse oximetry is a low cost, noninvasive procedure that can help with early detection of critical congenital heart disease.

**Implications for Nursing Practice:** Discussion of the current financial and staffing barriers to starting a screening program.

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### A Clinical Day in the Neonatal Intensive Care Unit: A Worthwhile Nursing Student Experience

*Teresa Mingrone, MSN, RN, CCRN  
Lisa Wetmore Locasto, DNP, RN*

CHILDREN'S HOSPITAL OF PITTSBURGH  
PITTSBURGH, PENNSYLVANIA

Could exposing students to a clinical day in a critical care unit persuade them to explore a job in critical care at graduation or provide them with better tools to make decisions about where to work? Is it feasible to allow students hands-on critical care experience? The dedicated education unit is an innovative clinical education delivery model. Staff nurses become students' clinical instructors and the faculty is responsible to coordinate, educate, and support the staff in this role.

Utilizing components of this model, we expose junior nursing students to a clinical day in a neonatal intensive care unit as part of their pediatric clinical rotation. Each student is paired with a staff nurse for the day. The student focuses on assessment of the critically ill neonate. The clinical instructor provides direction to the nursing staff and the student as needed. The students complete an NICU report form documenting their experience. Since 2010, 105 students successfully completed a clinical day in the NICU. The key to a successful program is utilizing the bedside nurse with a clinical instructor present on the unit.

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### Neonates in MRI Without Sedation

*Kathy Ray, BSN, RNC  
Vicki Brockman, RN, MSN, NE-BC*

NORTHWEST TEXAS HOSPITAL  
AMARILLO, TEXAS

The use of magnetic resonance imaging (MRI) for the neonate is becoming more prevalent due to increased screening for periventricular leukomalacia and other ischemic insults in neonates  $\leq 28$  weeks gestational age that cranial ultrasound will not always detect. We have utilized the MedVac Vacuum Immobilization Bag<sup>®</sup> for the neonate in the MRI. This device allows the imaging to take place without the neonate being sedated.

The use of sedation can cause adverse effects which include hypotension with possible fluctuations in cerebral blood flow, bradycardia, and respiratory depression. These can lead to hypoventilation, hypoxemia, and potentially, the requirement for ventilation. The MedVac Vacuum Immobilization Bag<sup>®</sup> has proven to be invaluable to both neonate and staff.

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### Harlequin Ichthyosis: A Case Study

*Megan Weaver, RN, BSN  
Beverly Inge-Walti, RNC, MSN, CPNP, CNS*

CHOC CHILDREN'S HOSPITAL  
ORANGE, CALIFORNIA

Harlequin ichthyosis is an extremely rare autosomal recessive disorder. The neonate is born with a thick covering of armor-like scales, ectropion, and eclabium. There is a high mortality related to respiratory complications, infection, and fluid and electrolyte imbalance. These neonates require a high level of supportive care to counteract the defective skin barrier. Care includes, but is not limited to: the use

of humidity and emollients, surgical intervention, bathing routines, feeding/nutrition support, and infection prevention. It is well documented that survival of these neonates is limited and care is often palliative in nature. This case study demonstrates the progression from palliative care to optimization of long term treatment. There is discussion of the collaboration with experts in the field as well as the internal multidisciplinary team. An update on the patient's condition one year later is included.

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### **Group B Streptococcus Infection: Silent Sleeper in the NICU**

*Virginia L. Long, RN, CRNP*  
*Rhonda L. Steigerwald, RNC-MNN, BHA, MHA*  
SAINT VINCENT HEALTH CENTER  
ERIE, PENNSYLVANIA

One of every four or five pregnant women carries Group B Streptococcus (GBS) in her rectum or vagina. Although in the non-pregnant state this is little cause for concern, it is well understood that GBS can have devastating effects during pregnancy for the mother and her newborn. Nearly 75 percent of the cases of GBS infection among newborns occur in the first week of life. Although it is very rare, GBS infection may also develop in infants one week to several months after birth. Meningitis is more common with late-onset GBS infection. This poster presentation provides a case study of a 28 6/7 week gestation, male twin who developed GBS meningitis on Day 76 of life. The case study demonstrates the fragility of the NICU population even as the infants are approaching discharge. Astute nurses, in conjunction with the entire care team must be vigilant in their assessments and understand the potential risks, the importance of timely recognition and intervention, and equally important, the impact on the family.

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### **Hypothermia in Premature Infants Receiving Routine Delivery Room Care**

*Kathleen Godfrey, MSN, NNP-BC, CPNP-BC*  
*Elizabeth A. Schlenk, PhD, RN*  
MAGEE WOMEN'S HOSPITAL OF UPMC  
PITTSBURGH, PENNSYLVANIA

**Objective:** The goal of this quality improvement project was to describe the initial body temperatures of premature infants born at <28 weeks gestation receiving routine delivery room care.

**Method:** A descriptive design was used. A six-month retrospective chart review was performed to collect data on neonatal intensive care unit (NICU) admission rectal temperatures on all preterm infants born at <28 weeks gestation.

Forty-six infants qualified, with a mean gestational age of 26 weeks (SD = 1 week) and mean birth weight of 781 grams (g) (SD = 145 g). Delivery sites included 63 percent (n = 29) in a labor/delivery room, 35 percent (n = 16) in an operating room, and 2 percent (n = 1) in the adult ICU. The mean NICU admission temperature was 35.49 degrees centigrade (SD = 0.86°C).

**Results:** The results suggest that premature infants born at <28 weeks gestation receiving routine delivery room care experience hypothermia. A literature review of seven studies found that premature infants born at <32 weeks gestation had significantly less heat loss initially after delivery and significantly less hypothermia on admission to the NICU after being placed in occlusive bags from the neck down

after birth. This evidence and neonatal resuscitation guidelines support the need to implement and evaluate a clinical protocol using occlusive bags in addition to routine delivery room care to improve the initial body temperatures of these premature infants.

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### **Evaluating the Effectiveness of Two Safe Sleep Swaddling Techniques for Maintaining Stable Body Temperature of Premature Infants**

*Judith Jensen, RNC-NIC, MS*  
*Renee Wenzlaff, RN, DNP, APRN-BC, PNP/FNP*  
*Cheryl Walters, RNC-NIC*  
AURORA WEST ALLIS MEDICAL CENTER  
WEST ALLIS, WISCONSIN

**Statement of Problem:** The American Academy of Pediatrics (AAP) safe sleep guidelines state specific safe sleep swaddling methods. Swaddling is used by NICU nurses to minimize heat loss and keep premature infant axillary temperatures normal (36.5–37.5°C). Two common swaddle methods include blankets or a manufactured sleep sack. No previous research has documented the effectiveness of these “safe sleep” swaddling techniques for maintaining premature infant temperatures.

**Objectives of Research:** The study goal was to describe premature (<37 weeks gestational age) infant temperature responses to care in the first 48 hours in an open crib and evaluate if current swaddling practices maintain temperatures above 36.5°.

**Method:** This descriptive study used a convenience sample (n = 50) of premature infants with a mean gestational age (GA) at birth of 31.1 weeks (SD = 2.8, Range = 25–37.1), were 60 percent male, and hospitalized at two urban Wisconsin NICUs. Following institutional review board approval, infants were enrolled when they met thermoregulation weaning criteria, weight exceeding 1,800 grams, (g) and had parental consent. Infants (mean GA at study = 34.6 weeks, SD = 1.3) (22 percent were <33.5 weeks gestational age) were randomly assigned to start with either a blanket (56 percent) or sack for the first 24 hours. The swaddle method was switched to the alternate method for the subsequent 24 hours. Skin temperatures were measured with intermittent axillary and continuous skin probe monitoring. Usual NICU care was provided including use of an intervention protocol for low temperatures to limit the return of infants to incubators. Nursing interventions were recorded to determine the impact of these activities on temperature instability.

**Results:** Temperatures were evaluated using the intermittent readings. Sixteen (32 percent [Blanket = 5, Sack = 8; Both = 3]) infants had temperatures below 36.5°C, with no difference related to GA <33.5 weeks ( $X^2 = 0.123$ ,  $df = 1$ ,  $p = .7254$  with Yates Correction). Two infants using the sack method needed to be returned to the incubator. Adherence to recommended strategies to maintain temperature varied.

**Conclusion:** The blanket swaddle had fewer low temperatures with no infants needing to be returned to incubators (vs two for sack). Temperatures were maintained in the expected range for 68 percent of the infants. Variations in patient care may explain some differences in temperature outcome, unrelated to swaddle method. Strategies to standardize temperature measurement and interventions to maintain temperature are recommended for future research.

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**Keeping the Smallest Safe and Warm:  
Bringing Best Practices in  
Thermoregulation to the NICU**

*Donnetta Setters-Leach, RNC, BSN*

MIAMI VALLEY HOSPITAL  
DAYTON, OHIO

Premature infants are unable to independently regulate body temperature. As a result, hypo- and hyperthermia are significant risk factors for neonatal morbidity and mortality. This presentation describes the work of nurses, physicians, and quality management personnel of a 700+ bed Magnet re-designated hospital to provide a safe thermal environment for all infants in a Level III NICU. Members of the NICU Improvement Council, an interdisciplinary work team, developed evidenced-based temperature regulation care maps to decrease variance in neonatal body temperature and thereby reduce oxygen consumption and metabolic stress. Methods included environmental assessment, establishing baseline practices as well as temperature variance, and root cause analysis. Interventions included staff education, revision of competencies to reflect best practices, and technology modifications in the NICU. During the first year, hypothermia decreased 39 percent and after 24 months, less than 1 percent of infants experienced hypothermia or a temperature less than 36 degrees centigrade.

Thermoregulation care maps as well as project outcomes are provided to participants. Recommendations based on three years of project work are also provided to participants who are interested in improving temperature regulation in their smallest patients.

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**From Grumbling to Growth: Introducing  
Evidence-Based Practice Through Policy Writing**

*Teresa "Tita" Delisi, MSN, RNC-NIC  
Becky Bell, MSN, RN, CLC, CLE, CCBE*

MARICOPA INTEGRATED HEALTH SYSTEM  
PHOENIX, ARIZONA

Knowing that a culture that values evidence-based practice (EBP) is essential for the delivery of high quality, fiscally responsible health care, a program designed to change the culture and implement EBP was put into place in the NICU.

The coauthors, faced with an environment lacking in staff empowerment and leadership, and with over 100 policies in need of revision, decided to use policy writing as their platform to introduce to staff.

Utilizing the steps of EBP and the elements of psychological learning anxiety, the coauthors designed an introductory class in EBP for the bedside nurse. To provide staff nurses with an opportunity to control their own practice and feel more empowered, volunteers were asked to adopt a policy that needed revision. Each volunteer completed the EBP class and were provided 1:1 mentoring throughout the policy revision process. Of the participating nurses, 89 percent completed the process and this program is now being rolled out throughout the institution.

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**Nursing Morbidity and Mortality Lectures**

*Traci Eytcheson, RN, CCRN*

CHILDREN'S HOSPITAL OF PITTSBURGH  
PITTSBURGH, PENNSYLVANIA

The purpose of this program was to develop an educational program to increase nursing knowledge and improve patient outcomes through participation in nursing morbidity and mortality conferences. We hoped to increase the staff's knowledge of the pathophysiology of the patient and to provide closure in the care of the dying patient. Morbidity and mortality conferences have traditionally been physician-oriented with an open invitation to nursing staff.

Developing nursing morbidity and mortality conferences can increase collaboration, allow nurses to critically examine nursing care and improve communication among members of the health care team. NICU patient deaths are reviewed and a conference is scheduled within ten days. Nurses are notified of conference dates and the nurses that provided direct care are encouraged to attend. An educational article on the diagnosis is sent via e-mail to all nursing staff for review prior to the conference. An attending physician presents the case to the nursing staff and the nurses can ask questions about decisions that were made for the patient. The program has been in place for ten months and has been increasing in popularity with the nursing staff. Program evaluations have been favorable.

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**Development and Implementation of a  
Multidisciplinary Bereavement Team for an NICU**

*Mary Z. Kish, CRNP, MSN  
Karen Ewing, CRNP, BSN*

MAGEE WOMEN'S HOSPITAL OF UPMC  
PITTSBURGH, PENNSYLVANIA

Despite advances in perinatal and neonatal care management, pregnancy may still fail to produce a normal, healthy, term infant; more than one-fourth of all women will at some time experience the loss of a pregnancy or neonatal death. Loss and grief in the perinatal and neonatal settings encompass more than the loss of a pregnancy or infant. Grief response to premature birth or the birth of an infant with an anomaly or malformation may be similar to grief responses to death. It is important as the caregivers and facilitators of bereavement care, that we are compassionate, knowledgeable, and able to guide the family toward recovery, while understanding our own feelings and emotions throughout the grieving process. With this in mind, staff members with an interest in bereavement support came together to develop a team of multidisciplinary individuals who would be available on an ongoing basis to educate other staff members, and to assist with bereavement support and care of families and their infant in the NICU. This was the birth of our NICU Bereavement Support Team.

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## Initiating Research in a Research-Naïve Neonatal Intensive Care Unit

*Jackie B. Martin, DNP, RN, NNP-BC, CCNS*

*Manuel Peregrino, MD*

*Susan Gladfelter, PharmD*

*Richard Patterson, RPh*

*Yvonne Hodgkins, BS*

*Katherine Shaver, MS*

*Kent Nakamoto, PhD*

*Martha J. Wunsch, MD*

CARILION ROANOKE MEMORIAL HOSPITAL  
ROANOKE, VIRGINIA

As clinicians in the NICU, we faced an important clinical challenge: What is the best way to safely wean infants with neonatal abstinence syndrome off of pharmacotherapy? We developed a research study to investigate this question and engaged our clinical nursing staff to conduct the study. This led to another challenge: How do we engage our NICU staff who had never participated in research, in the conduct of research with the most vulnerable patients? The purpose of this presentation is to discuss the knowledge necessary and the impact of participation in research on nursing staff.

Our team designed a study comparing methods of weaning methadone in the newborn infant. The research relied heavily on nursing participation, but, as stated, many nurses had no experience with research. What did we need to do to get the staff up-to-date? Education included generalized research information, information specific to the neonatal opioid withdrawal study, and updates on study changes. Interrater reliability was critical to assure consistent data. Nurses discovered the importance of nursing in successful research. Staff members also realized that infants in withdrawal who were not in the study did not receive the same level of care, and a protocol was developed so that care for the infant with opioid withdrawal in the NICU was standardized.

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## Advanced Preceptor Training: Innovative Strategies for Clinical Precepting in the Perinatal Setting

*Nellann Nipper, RNC, NNP-BC*

*Cheryl Moore, BSN, RNC-OB*

UPMC HAMOT MEDICAL CENTER  
ERIE, PENNSYLVANIA

Preparing for the opening of the Women's Hospital in January, 2011, required hiring over 80 RNs. Traditionally new graduates were not hired for the neonatal intensive care unit or labor and delivery due to the advanced clinical and critical-thinking skills required in those areas. However, at this time, to meet staffing requirements we planned to hire both new graduates and experienced nurses. Thirty seven preceptors were used over a five month period.

To accomplish our goal of educating staff members to create a safe environment populated by skilled nurses, we created an Advanced Preceptor Training Course. This program focused on learning styles, communication strategies, and clinical scenario teaching. The aim was to promote critical-thinking skills in each orientee.

Nine scenarios were developed. Each required the orientee to prioritize, identify steps for immediate action, reference policies, order sets,

and communicate using SBAR (Situation, Background, Assessment, and Recommendation or Response). Roadblocks were also scripted into the scenarios. In January 2011, we opened our new hospital, confident that our staff was ready to provide safe, skilled care for patients in the Women's Hospital.

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## Reducing Necrotizing Enterocolitis of Extremely Premature Infants in the NICU

*Erin Irvin, RNC-NIC*

*David Auerbach, MD, MBA*

*Ann Diaz, RN, MA, NE-BC*

*Ana Diaz-Albertini, MD*

*Douglas Hardy, MD*

*Patrice Hatcher, RNC, MBA*

*Stephanie Holmes, RD, LD*

*Jose Perez, MD*

*Vickie Podrez, RN, IBCLC*

*Tilde Rangel, RN*

*Nellie Rey, RN, CLC*

*Pamela Seigler, RN*

*Susan Watson, RN, IBCLC*

WINNIE PALMER HOSPITAL FOR WOMEN AND BABIES  
ORLANDO, FLORIDA

Necrotizing enterocolitis (NEC) occurs in approximately 10 percent of very low birth weight (VLBW) infants and is a serious, life-threatening, disease process. In 2008, the neonatal health care team became increasingly concerned that although the survival of preterm infants in our unit had improved over the last decade, the incidence of NEC remained high.

**Discussion:** We developed a multidisciplinary team and worked together to reduce the incidence of NEC for our VLBW neonates. Investigation revealed there is a considerable amount of research to support VLBW infants that are fed exclusive breast milk having a significant decrease the incidence of NEC. Also, there has been a correlation between packed red blood cell transfusion and the development of NEC.

**Process:** The team developed protocols and programs for the prevention of NEC which included: an evaluation of current practices, a current literature review, purchasing donor milk products, suspending feedings before, during, and after blood product transfusions, purposeful discussions with families about the need for breast milk, increased support for pumping mothers, and staff education.

**Conclusion:** As of December 31, 2010, our quarterly results confirm we have successfully improved the outcomes for babies in the NICU by decreasing the incidence of NEC for VLBW babies from 21 percent to 4.1 percent.

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## Fulminant Necrotizing Enterocolitis in a Multihospital Health Care System

*Diane K. Lambert, RN*  
*Robert D. Christensen, MD*  
*Vickie L. Baer, BS*  
*Erick Henry, MPH*  
*Phillip V. Gordon, MD*  
*Gail E. Besner, MD*  
*Jacob Wilkes, BS*  
*Susan E. Wiedmeier, MD*  
*Erick Gerday, MD*

INTERMOUNTAIN HEALTH CARE  
SALT LAKE CITY, UTAH

**Introduction:** Fulminant necrotizing enterocolitis (NEC) constitutes a subset of NEC defined by rapid progression, massive bowel necrosis, and death.

**Study Design:** We conducted a multicenter, historic cohort study of all neonates who died of NEC within 48 hours of onset of symptoms (cases) from 2001 to 2009. Cases were demographically matched 2:1 with two control groups: neonates with non-fulminant NEC and neonates that did not develop NEC.

**Results:** During the study period, Intermountain Healthcare cared for 523 neonates with NEC Bell stage >II; 35 (6.7 percent) of these infants had a fulminant course. Compared to the infants with non-fulminant NEC, fulminant cases were infants with lower birth weights ( $p = .000$ ) and earlier gestation ( $p = .000$ ). At the time of NEC diagnosis, infants with fulminant NEC were more likely to have a hematocrit <22 percent ( $p = .000$ ), radiographic evidence of portal air ( $p = .000$ ), an increase in feeding volume >20 mL/kg/day ( $p = .003$ ), an increase in concentration of human milk fortifier within 48 hours ( $p = .020$ ), immature to total neutrophil (I:T) ratio >0.5 ( $p = .005$ ), and a blood lymphocyte count <4000/microliter ( $p = .018$ ).

**Conclusion:** Portal venous air, anemia, rapid feeding escalation, recent increases in human milk fortifier, a high I:T ratio, and a low lymphocyte count may all be antecedents of fulminant NEC.

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## How Does Nonpharmacologic Therapy Compare to Pharmacologic Therapy in the Treatment of Infantile Colic?

*Lauren VanCleave, SN*  
*Francine Ela, SN*  
*Temí Onibokun, SN*

CHAMBERLAIN COLLEGE OF NURSING  
DOWNERS GROVE, ILLINOIS

**Purpose:** To compare pharmacologic therapy with non-pharmacologic therapy in the treatment of infantile colic.

**Method:** Thirty original articles from 2006 to 2011 on the psychosocial factors and management of colic were assessed for effective treatment of colic using pharmacologic and non-pharmacologic therapy.

**Results:** Pharmacologic and non-pharmacologic therapies were used equally and frequently by parents with colicky babies. The excessive crying in infants was less common in families that used either therapy compared to families that did nothing.

**Conclusion:** This study advances our knowledge of effective management using both pharmacologic and non-pharmacologic therapy to treat infant colic.

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## A Descriptive Study of Neonatal Nurses Perceptions, Knowledge, and Practice on Support of Breastfeeding in the NICU

*Lori Merkel, BSN, RNC-NIC*  
*Barbara Shocker, RN, MEd, IBCLC*  
*Karen Campbell, RN, IBCLC*  
*Melissa Koonce, BSN, RN*  
*Lindsay Zaleski, BSN, RN*  
*Kim K. Haidet, PhD, NNP-BC*

PENN STATE MILTON S. HERSHEY MEDICAL CENTER  
HERSHEY, PENNSYLVANIA

The purpose of this descriptive, correlational study was to examine the knowledge, practice, and perceptions of neonatal intensive care unit (NICU) nurses regarding breastfeeding. Respondents completed a 34-item investigator generated survey. The survey utilized a 4 point Likert scale to measure views in each of three domains: knowledge, practice, and perception of breastfeeding. Additionally, nurses were asked to share their views on whether there was adequate support for breastfeeding mothers. Sixty-eight NICU nurses completed the survey. Only 32.4 percent of nurses reported completing formal breastfeeding training. The majority of nurses (58.8 percent) felt that their views/perceptions of breastfeeding were “highly” influenced by their knowledge/education. Knowledge scores were moderately above average; however, practice and perception mean scores were minimally above average. There was a direct association between nurses’ perceptions and knowledge of breast feeding ( $p = .01$ ). Fifty-four percent of nurses felt there was inadequate support in the NICU for breastfeeding mothers, thus identifying three opportunities for improvement. The areas to be addressed were: 1) the lack of lactation resource people/support, 2) inconsistent information given to mothers, and 3) a lack of time available to spend with breastfeeding mother-infant dyads. This study implies that knowledge and/or perceptions of breastfeeding, albeit positive or negative, do not necessarily affect practice. Future exploration should be aimed at strategies to remove barriers and provide consistency in breastfeeding support.

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## Development and Implementation of a Cue-Based Feeding Program With Premature Infants

*Harriett Miller, PhD, ARPN, CPN*  
*Jennifer Francis, RN*  
*Ana M. Diaz-Albertini, MD*  
*Patrice Hatcher, RNC, BSN, MBA*  
*Jane Klaus, LPN II*  
*Susan Watson, BSN, IBCLC, RLC*

WINNIE PALMER HOSPITAL FOR WOMEN AND BABIES  
ORLANDO, FLORIDA

Current feeding practices are inconsistent in identifying when premature infants are ready to nipple feed. Verbal communication and documentation are subjective. The investigators developed a program based upon cue-based feeding in the Winnie Palmer NICU in Orlando, Florida. A cue-based feeding tool was designed to assess and report objectively readiness to nipple feed. Knowledge was increased with identification of feeding issues ( $t(40) = 2.08, p = .04$ ), reading of feeding readiness cues ( $t(40) = 3.11, p < .01$ ), importance of eliciting a rooting reflex ( $t(40) = 4.85, p < .01$ ), and imposing pacing and frequent rest

periods ( $t(40) = 2.71, p = .01$ ). Attitude and practice were altered regarding feeding practices ( $t(40) = -6.82, p < .01$ ), objectively assessing and documenting feedings ( $t(40) = 4.83, p < .01$ ), use of swaddling position ( $t(40) = 4.89, p < .01$ ), chin and cheek support ( $t(40) = -3.00, p < .01$ ), standard flow nipple ( $t(40) = -2.68, p = .01$ ), and first oral feeding ( $t(40) = -3.35, p < .01$ ). The results will be used to further educational direction regarding premature infant readiness to nipple feed and use of the Cue-based Feeding Tool.

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### Implementation of a Cue-Based Feeding Initiative

*Barbara Petrey, BSN, RNC-NIC*

BAYLOR UNIVERSITY MEDICAL CENTER  
DALLAS, TEXAS

Introduction and advancement of feedings for premature infants can be a challenging experience for NICU staff and the infant's families. In an effort to change the feeding practice at our facility to an infant-driven feeding model, our unit implemented a cue-based feeding initiative. Implementation of this individualized approach to infant feeding involved education and training for over 200 NICU staff members. This program was a multidisciplinary collaboration between neonatologists, neonatal nurse practitioners, nurses, occupational therapists, and nutritionists. This poster presentation describes the steps taken and lessons learned in the implementation of this better practice in a large, Level III NICU. Strategies utilized to lead this change included assembling an interdisciplinary team, development of action plans, and strategies to support the nursing staff in this practice change.

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### Breastfeeding and the "Net" Generation

*Donna L. Warr, RN, IBCLC*  
*Susan Johnson, RN*  
*Jill Beck, MSN, RNC-NIC*  
*Tara Flood, MSN*  
*Jaclyn Cammarata, RN*

THOMAS JEFFERSON UNIVERSITY HOSPITAL  
PHILADELPHIA, PENNSYLVANIA

Breastfeeding has been in existence over generations. Our presentation focuses on communication, accessibility, and implementation. We incorporate the technical advancements of the "net" generation.

Communication is conveying information. Our goal is to translate a process defined by evidence-based practice. Breastfeeding is recognized as an invaluable process associated with the intensive care nursery experience. We have incorporated a new technology in the communication process, Podcasting. Podcasting allows visual, written research, and auditory communication accessible via internet/smartphones/iPads/MP3 players. The topic of our Podcast is Increasing Your Milk Supply. The utilization of the Podcast can enhance immediate access to a resource that will promote breastfeeding. Podcasting is the "net" generation for the breastfeeding experience with family and all health care professionals around the world.

Podcasting opens the door to invaluable evidence-based research associated with breastfeeding. Our facility allows computer access to all our families. Accessibility partners with communication to bring forth the "net" generation.

Providing technology to the breastfeeding family defines implementation. At our institution our endeavor is to improve breastfeeding by utilizing the technology of the "net" generation.

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### Improvement in Expressed Breast Milk Management: A Process Improvement Project

*Kristina Wojtaszek, BSN, RN*  
*Mary Faust, RN*  
*Mary Beth Sanders, RN*  
*Eileen Walsh, BSN, RN, IBCLC, RLC*  
*Christine Bovat, RN*  
*Penny Hatfield, MBA, RN*  
*Yvette Conyers, MSN, RN*

THE CHILDREN'S HOSPITAL OF THE KING'S DAUGHTERS  
NORFOLK, VIRGINIA

This is a project of staff involvement in process improvement: Changing how breast milk is stored in the NICU. An opportunity for improvement was identified by NICU staff and a multidisciplinary group. In response to a breast milk identification error, the staff examined the process for breast milk storage and identification. The group collaborated to identify problems and develop solutions to improve processes and minimize errors.

Using an evidence-based process and principles of performance improvement, the multidisciplinary group completed a literature search, queried a list-serv, and gathered data from other organizations. Staff input was also elicited throughout the process.

The group determined that the current method of milk storage was inadequate. Containers from one patient were falling into those of another patient. In addition, because the milk is stored by patient name and medical record number (MR #), staff members are likely to use only the patient name to identify the breast milk, which could cause an error.

The multidisciplinary group had bins specially made for our current freezer. The group also decided that the most effective way to prevent selection errors was to store the milk in bins that were identified strictly by MR #.

The new interventions were implemented in the last month and process evaluation is in progress. No new errors have occurred.

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### Got Milk? MOMS' Project: Vital Human Milk for Premature Infants

*Karen Hylton-McGuire, RNC-NIC, MS, IBCLC, RLC*  
WINTHROP UNIVERSITY HOSPITAL  
MINEOLA, NEW YORK

The New York State preterm birth rate is 12.4 percent, and Nassau County has one of the highest rates in New York State. Preterm infants are at considerable risk for increased morbidity and mortality. They have a higher risk of learning disabilities, cerebral palsy, sensory deficits, and respiratory and gastrointestinal illnesses.

Providing mothers' own milk (MOM) to the preterm infant has nutritional, gastrointestinal, immunologic, developmental and psychological benefits. Breastfed preterm infants have a lower rate of ear infections, respiratory infections, or infection-related events. They also have lower rates of gastrointestinal infections and necrotizing enterocolitis, and lower mortality rates. Breastfed preterm infants are discharged earlier from the NICU than formula fed infants. In this vulnerable population the rates of mothers providing MOM are decreased, when compared to healthy newborns.

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## Bar-Coded Label Use to Improve the Safety of Stored, Expressed Breast Milk Administration

*Anna Lane, BSN, RN-C*  
*Diwata DelaRosa, BSN, RN-C*  
*Rosabel Mendoza, BSN, RN-C*  
*Relinie Rosenberg, MS, RN*

NORTHERN WESTCHESTER HOSPITAL  
MT. KISCO, NEW YORK

Breastfeeding promotes the mother-infant relationship and provides the best nutritional support to the infant. When infants are born with medical needs that require admission to the nursery or neonatal intensive care unit (NICU), breast milk can be expressed and stored until the time of administration to the infant.

The Northern Westchester NICU/Nursery Nursing Shared Governance Council identified an opportunity to improve practice and meet quality standards to decrease the potential for administration errors. The concept of electronically scanning bar-coded labels on stored expressed breast milk (EBM) evolved.

Through an interdisciplinary team approach, a work flow algorithm was developed that incorporates bar-coded label use and applies the rights of medication administration to EBM. Accountabilities of all users in the system, inclusive of parents, are defined. A corresponding staff competency and policy were also created.

An initial audit of stored EBM administration over a four week interval identified 92 percent compliance with the process. The compliance goal for this initiative is 100 percent.

Neonatal nurses are strong advocates and voices for the smallest of patients. The implementation of the electronic bar-coded label process in EBM administration supports collaborative practice change to improve quality of care, secure patient safety, and increase parent confidence.

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## Light and Sound Level Exposure of Low Birth Weight Infants in Different Environments

*Tomiko Nakajima, RN, PhD*

*(Disclosure: This presenter is a principle researcher for Japan Society for Promotion of Science.)*

JICHI MEDICAL UNIVERSITY, SCHOOL OF NURSING  
JAPAN

Developmental Care has been supporting the optimum development of low birth weight infants in the NICU and GCU. However, in recent years low birth weight infants have been identified later with developmental disabilities. Therefore, this study was conducted to examine the environment as part of Developmental Care by adjusting the light and sound of the environment surrounding low birth weight infants. The measured variables were the environmental sound and light. They were measured in the GCU, NICU, and in the incubators at three locations. Light and sound were measured for seven days.

Results showed that light levels for the night and during the day in NICU were within the recommended range (1–60 lux\*), However, the GCU tended to be relatively bright (160–400 lux). As for sound, the inside of the incubators at night were within the recommended range (less than 65 dB\*\*), but during the day may have even exceeded the recommended range measurements of the three locations, and the GCU has more of this problem than NICU.

\* Lux is an SI unit used to measure luminous power per area.

\*\*= decibel

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## Neonatal Skin Integrity: Getting to Zero

*Sue Repking, MSN, APN, CNS*  
*Karen Lepucki, RN, MBA*

NORTHWEST COMMUNITY HEALTH CARE  
ARLINGTON HEIGHTS, ILLINOIS

Our new Level III NICU has joined the Women and Children's Services Institute for Healthcare Improvement (IHI) committee at Northwest Community Healthcare. The primary objective of the committee is to do no harm. We have postulated that with the growth of the unit as a Level III NICU, IV therapies will increase, as well as the use of hyperosmotic solutions. Also, oxygen therapies are on the rise. Risk of nasal septal damage in low birth weight infants secondary to nasal continuous positive airway pressure (NCPAP) is a concern.

Our goal is to have zero (0) incidence of skin damage caused by IV infiltration and zero (0) incidence of nasal septum breakdown caused by NCPAP.

Nursing education has been provided for skin assessment. An extravasation protocol, including the most recent evidence-based practices (EBP) for wound care, has been developed to deliver safe and effective care. Information providing a review of nasal septum protection and care during NCPAP therapy has also been provided, including correct application of nasal prongs.

A chart audit tool has been implemented to evaluate compliance with protocols and neonatal outcomes.

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## Perinatal Palliative Care: Support for Mothers, Infants, and Families

*J. Frances Fusco, MHS, BSN*  
*Theresa Bish, RN, IBCLC*

UNIVERSITY COMMUNITY/FLORIDA HOSPITAL  
TAMPA, FLORIDA

Preterm birth is the most frequent cause of infant death in the United States. Infant abnormalities account for 20 percent of all infant deaths and involve every major organ of the body. Perinatal Palliative Care (PPC) addresses the emotional, spiritual, cultural, psychological, and physical needs of the mother and infant. PPC begins from the initial diagnosis through the infant's birth and death. Its goal is to support both parents and family members, but focuses on the infant.

PPC is designed to outline, communicate, and carry out what procedures will and will not be performed on the infant. The birth plan and infant advanced directives should be formulated far in advance of the mother's arrival at the hospital. This is imperative to ensure that the parents' wishes are communicated, respected, and followed in every aspect of care. No mother, father, or family member should ever feel abandoned during this difficult time. The nurse's role is pivotal and an integral part of overall care.

This program presented is part of the overall Bereavement Program for the Women's Center at our institution. Our team consists of a case manager, neonatologist, primary obstetrician, labor and delivery nurses, neonatal intensive care unit nurses, chaplain services, bereavement team members, lactation specialists, and community representatives who deal with both PPC and support of bereaved parents through AMEND (Aiding Mothers and Fathers Experiencing Neonatal Death).

Families undergoing this tragedy, according to the perinatal literature, benefit from extensive education and support presented by the interdisciplinary team. Nurses are one spoke in a wheel of care that

includes many disciplines. Our commitment to these families focuses on service and compassionate care. We honor parents' wishes for the care of their beloved infant and we respect the infant's birth, life, and death.

Women's Center nurses provide seamless care, sensitive communication, and emotional/physical support to all who enter our doors. This presentation assists nurses caring for perinatal patients facing devastating news regarding their infant by providing tools to develop programs to support these families.

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### **Childbearing and Pelvic Floor Injury: A Multidisciplinary Approach**

*Cathie Phillips, MSN, RNC-OB*  
*Sue Antonucci, RNC-OB*  
*Bonnie Desko, BSN RNC-OB*  
*Cheryl Curtis, MPT, BCIA-PMDB*  
*Samantha Panighetti, MOT, OTR/L*

UNIVERSITY COMMUNITY/FLORIDA HOSPITAL  
TAMPA, FLORIDA

Childbearing is associated with risk for pelvic floor injury. Lacerations, inappropriate second stage labor management, and instrument-assisted delivery can contribute to these injuries.

There is greater consumer awareness of pelvic floor dysfunction than in the past. Women are concerned about urinary and fecal incontinence related to pelvic floor damage that could occur during labor and delivery. This may be contributing to an increasing elective cesarean section delivery rate. Unfortunately, women are not aware of preventive strategies, available interventions, and/or treatments for pelvic floor disorders.

In response to this health concern, the "Pelvic Floor Initiative" was developed by a multidisciplinary team of nursing and physical/occupational therapy staff. The goal was to institute an evidence-based nursing and rehabilitation program. This program would help identify women at risk for pelvic floor injury, especially after labor and delivery. Once identified, physician order sets were created for this population, education (physician, nursing, patient, and community) was presented, and treatment protocols were instituted in the acute care setting.

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### **Simple Therapy Significantly Reduces Risk Factors in Pregnancy and Throughout Lifespan: Improving Perinatal Outcomes and Life Expectancy With Adequate Vitamin D Levels**

*Amy Little, RN, IBCLC*  
INDIANA UNIVERSITY HEALTH  
BLOOMINGTON, INDIANA

Vitamin D deficiency is now recognized as a pandemic; however, many nurses are unaware of the numerous risk factors. Specific to the mother-baby area of patient care, several outcomes are significantly improved by correcting vitamin D deficiencies. Women supplemented with vitamin D 4000 IU/day compared to 400 IU/day were half as likely to develop gestational diabetes, pregnancy-related hypertension or preeclampsia, or to deliver prematurely. Women with vitamin D levels lower than 15 ng/mL were four times more likely to have a primary cesarean-section.

Breastfeeding mothers need to be aware that if they are deficient in vitamin D, their breast milk will also be deficient. The American

Academy of Pediatrics (AAP) suggested in 2008, that newborns start within days of birth on 400 IU/day of vitamin D supplementation.

This presentation reviews risk factors for vitamin D deficiency and diseases associated with deficiency from infancy through adulthood. The importance of working with a health care provider to check blood levels of vitamin D and assess response to supplementation therapy is also discussed. Learners will have a much better understanding of the importance of maintaining normal vitamin D levels in all stages of life.

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### **Community of Caring: The Creation of a Regional Postpartum Depression Task Force**

*Cheryl D. Froning, BSN, RNC-NIC*  
*Debbie Ruxer, RN, MS, CNM*  
*Marlene Sampson, MSN-Ed, RN*  
*Pamela Stout, BSN, MPH, LCCE, IBCLC*  
*Lisa Trefz, MSN, RNC, IBCLC*

SOUTHVIEW HOSPITAL  
DAYTON, OHIO

The Miami Valley Regional Postpartum Depression (PPD) Task Force is an interdisciplinary group of health care professionals in Dayton, Ohio and the surrounding 16 counties. The group acts as a catalyst for meeting the educational, resource, and support needs of mothers, families, health care providers, and the community in regard to perinatal mood disorders.

The focus of the Task Force is to offer resources and a support network for mothers and their families through a support phone line with a goal of a mom-to-mom support network. The group increases knowledge and awareness in the community with educational opportunities addressing the prevalence, significance, and importance of treatment of PPD, which affects up to 10–20 percent of postpartum women. Education includes offering nursing continuing education, participating in area hospital Grand Rounds, and partnering with Postpartum Support International. A brochure distributed to physician offices, hospitals, and community organizations provides general resource information and support contact numbers. A referral list of area health care providers offers additional support to assist with early detection and treatment.

Our poster presentation illustrates how, by using Deming's Plan-Do-Check-Act model, the PPD Task Force has implemented several innovative projects to reach women and families in need of services.

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### **Implementing Kangaroo Care for the Well Newborn at Birth**

*Natalie Drawdy, BA, RNC, CNIV*  
BON SECOURS MEMORIAL REGIONAL MEDICAL CENTER  
RICHMOND, VIRGINIA

**Purpose:** To implement practice change based on evidence supporting routine kangaroo care (skin to skin contact) at delivery for all stable mothers and infants on an LDRP unit.

**Background:** The positive physiologic and psychological effects of kangaroo care for infants and their mothers have been well documented through research; yet, mother and baby are routinely separated for prolonged periods after delivery.

**Method:** A literature search was conducted to determine current evidence-based practice using the following databases: Ovid, Pub Med, CINAHL, and the Cochrane Library. Key words searched were

“kangaroo care,” “skin to skin contact,” “kangaroo mother care,” and “term infant.”

Based on evidence in the literature, a comprehensive educational program detailing the benefits and practice of immediate kangaroo care at birth was developed and presented to staff nurses. Education included a didactic and practical component. A knowledge/comfort level assessment was administered prior to and after implementation of kangaroo care at birth as standard practice on the unit.

**Findings:** Following education and the adoption of kangaroo care as standard practice, the post assessment revealed that nurses had an increased comfort level with placing infants into kangaroo care and performing nursing care while infants remained skin to skin with their mothers, thereby reducing the amount of time mother and baby were separated.

**Implications:** A unit policy was created that supports kangaroo care at birth for all stable term infants.

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### **Juggling a Three Ring Circus: Transitioning Two Units From Traditional to Couplet Care**

*Paula Jarmon, RN, BSN, MS, NE-BC*

BAYLOR UNIVERSITY MEDICAL CENTER AT IRVING  
IRVING, TEXAS

There is strong supportive data that promotes a Family Centered Maternity Care concept which encourages the integration of care for both mother and infant from laboring through postpartum. Our unit leadership desired to offer a care model that was an evidence-based collaborative program between the nurse, physician, and family network. We began the process of transforming our traditional model of separate Nursery and Postpartum staff providing care to the infant and mother into a Family Centered Maternity Care (FCMC) “Mother/Baby” unit; where one nurse would provide care to both patients concurrently.

Our health care system has other hospitals within the network using the FCMC model; however, there were significant challenges to address/overcome for the program to have a chance of survival in our facility. We wanted to maintain our core values and reputation of great care as an organization yet encourage huge culture changes. Coordinating the clinical transformation with education, policies, physical layout, personnel attitudes, and collaborating with all major stakeholders presented us with some lofty goals. This nine month process of training often resembled a three ring circus with multiple “animals” seeking center stage.

The poster shares our steps through the transition:

- Introduction of the FCMC model to staff and physicians
- Work of the task force/shared governance
- Education process
- Teambuilding obstacles
- Lessons learned outside the classroom
- Impact of factors beyond staff control

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### **Presentation on the Importance of Early Detection and Early Motor Delays to Residents: Survey Results**

*Amy Becker Manion, PhD, RN, CPNP*

*Felicia Kurdowski, BS*

*Amanda Krupa, MSc*

*H. Garry Gardner, MD*

*John Sarwark, MD*

RUSH UNIVERSITY MEDICAL CENTER  
CHICAGO, ILLINOIS

Members of the American Academy of Pediatrics Council on Children with Disabilities estimate that as many as 400,000 children born each year are at risk for some form of an early motor delay. Health care providers play a key role in detecting early motor delays and determining the appropriate intervention and referral procedures for infants/children at risk.

A lecture providing education regarding detection, intervention, and referral procedures to identify early motor delays was presented to 21 medical residency programs from June to October of 2010. Survey results indicate 82 percent of the residents were presented with new information. Over 81 percent of the residents indicated they would be interested in more information on topics covered.

The results of this survey are an important first step toward documenting health care providers’ knowledge regarding early detection of motor delays and intervention. When medical professionals (and parents) know what to look for, they can effectively recognize the signs of an early motor delay.

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### **Perinatal Staff Development: From the Carousel to the Roller Coaster**

*Susan Frejofsky, MSN, RNC-OB, BC*

UNIVERSITY HOSPITALS CASE MEDICAL CENTER  
CLEVELAND, OHIO

Perinatal nursing is a specialty that lends itself to frequent staffing changes due to nurses gaining experience, furthering their education, and then moving on into certified nurse midwife or nurse practitioner roles. In our institution, names on the orientation list had the constancy of a carousel. There was always someone on the (orientation) ride. The recent economic downturn changed hiring practices, and an oversight committee was developed to review requests to fill new or vacated positions. In addition the region experienced lower birth rates, forcing unit consolidations and staff layoffs.

Now we are riding a roller coaster instead of a carousel. Fewer numbers of new staff made it difficult to plan classes that involved guest speakers because it is not cost effective to teach to only one or two nurses. In addition, the class schedule did not meet the learning needs of the new nurse.

The solution to this dilemma was to review, redesign, and reschedule the content of orientation classes. Other methods of learning were investigated and implemented, such as online learning modules, self-study packets, and just-in-time education. Classes were combined with pediatric staff where appropriate and prioritized according to learning needs. Transition from carousel to roller coaster is presented.