

# Abstracts from the 14th National Neonatal Nurses Conference and 17th National Mother Baby Nurses Conference New Orleans, LA, September 3–6, 2014

These abstracts 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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## **An Integrative Literature Review: Two-Month Vaccines for Infants in the Neonatal Intensive Care Unit**

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**Background:** Published studies report a variance in adverse side effects for premature infants post-vaccination. The American Academy of Pediatrics guideline for premature infants recommends giving two-month vaccines based on chronological age.

**Purpose:** To examine current literature to determine how evidence informs practice regarding the administration of the two-month vaccines to premature infants in the NICU.

**Design:** An Integrative literature review (ILR) was performed of studies done between 2003 and 2014, involving two-month vaccines administered in the NICU. PRISMA, reporting tool was used.

**Results:** Ten articles met criteria for inclusion. Apnea and bradycardia were found potential adverse reactions after vaccines especially for certain populations.

**Discussion:** This ILR suggests that two-month vaccines in the NICU for birth weight <1,000 g and those with chronic illness may have less apnea and bradycardia if the DTaP and Prevar containing vaccines are separated by 48 hours and infants should be monitored in the hospital 48 hours after vaccines before discharge.

**Objective:** Discuss the side-effects of routine immunizations in the NICU.

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## **Changing a Paradigm of Neonatal Pain Management: Implementing a Performance Improvement Process**

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Pain is often referred to as the patient's Fifth Vital Sign. Assessment and management of pain is a required standard of care of both hospital accrediting agencies and medical and nursing governing organizations. Neonates suffering from disease or exposed to medical procedures cannot rate their pain, and expressions of pain may be overlooked, resulting in significant negative physical and developmental outcomes. An acute episode of pain response changes the physical stability of an infant with notable fluctuations in the cardiovascular and respiratory system with potential to alter cerebral blood flow changes. Research into the long term effects of neonate repetitive pain experiences has found a potential link to later behavioral and learning disabilities.

The authors of this poster utilized Deming's Plan-Do-Check-Act to change a Level III NICU's approach to pain management. A practice protocol was developed incorporating guidelines for neonate evaluation and care. A new pain assessment tool was included as part of the protocol. An online PowerPoint educational class was developed and adopted as required training for all NICU and Newborn Nursery staff. The goal was to advocate for infant comfort, safety and well-being through consistent bedside assessment and intervention.

**Objective:** Discuss how a performance improvement process was used to implement a change of practice for pain management of the neonate.

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## RN Bedside Checklists for NICU Procedures

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**Purpose:** To enhance patient safety in the NICU through updated procedure checklists written by direct care nurses.

**Introduction:** Beaumont Troy NICU UPC identified the need to have procedure checklists for high risk and low frequency procedures written by direct care nurses to describe step by step what the bedside RN's responsibility is during a bedside procedure with or without a physician and/or midlevel provider.

**Method:** An NICU RN updated the procedure checklists and with the assistance of the Unit Practice Council (UPC) each procedure was again researched and reviewed. The UPC reviewed many evidence-based studies and determined that checklists have been adopted in a wide variety of settings including the airline industry and that they represent a strategy for improving the culture of patient safety.

**Results:** The new checklists have been laminated and placed on the procedure cart at Troy Beaumont's NICU. The checklists will be used for all bedside procedures within the unit.

**Conclusion:** The World Health Organizations indicates checklist can improve the quality of care. Human error and system factors can account for increased morbidity and mortality within the healthcare setting. The use of checklists encourages communication and collaboration among all team members. Continuing to improve standards of care will improve patient outcomes.

**Objective:** Discuss the importance of procedure checklists for high risk and low frequency procedures to improve patient safety and reducing errors.

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## Preparing Nurses for the Future

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With the average age of the Registered Nurse in the United States nearing retirement, it was determined that a plan needed to be executed to ensure the appropriate preparation for the future of nursing in the Neonatal Intensive Care Unit. A demographic review identified that 33% of the nurses were between the age of 51 and 60 years, 55% of these nurses between the age of 56 and 60 years. A NICU New Graduate/Transitional Nurse Residency Program was designed to ease the transition of a newly licensed nurse and/or an experienced acute care nurse into professional neonatal nursing practice. This program provided a supportive environment to help build confidence and close the experience gap between nursing school and clinical practice. This competency based program will increase job satisfaction, assist in developing decision making skills, improve organizational and unit retention, increase competency to deliver care, diminish stress, and focus on the importance of incorporating evidence based research into practice. The program provided a mix of didactic and clinical experiences to provide nurses with a foundation for building a career in NICU nursing.

**Objective:** Describe the development and implementation of a NICU New Graduate/Transitional Nurse Residency Program.

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## Interprofessional Communication Within a Neonatal Multidisciplinary Team: A Systematic Review

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This systematic review identifies strategies for improving effective communication amongst members of the NICU interdisciplinary team.

**Search methods:** PubMed, CINAHL, and Embase were searched to identify strategies for improving effective communication within the NICU interdisciplinary team. Key terms utilized: "interdisciplinary communication," "interprofessional relation," "communication," "Neonatal Intensive Care Unit," OR "NICU," and "Intensive Care Unit" OR "ICU." Manual searching of article references was performed.

**Method of grading evidence:** Article strength and quality were evaluated using the Johns Hopkins Evidence-Based Practice Model and Guidelines (JHEBP). Two reviewers independently evaluated all full-text articles. A third reviewer evaluated articles where discrepancies occurred between the two reviewers.

**Review of evidence:** Fifteen articles were included in the review; 1 systematic review, 5 quasi-experimental studies; 9 qualitative studies. Six articles were categorized as level II-B; 9 articles as level III-B.

**Synthesis of findings:** Key themes emerged from the evidence; the importance of standardized patient care rounds; need for team building; importance of perception.

**Recommendation:** Develop, implement, and evaluate comprehensive plans that incorporate standardized patient care rounds, teambuilding, and address staff perception to improve effective communication within the NICU interdisciplinary team.

**Objective:** Identify three emerging themes from this systematic review of the evidence, which addresses interprofessional communication within a neonatal multidisciplinary team.

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## Interprofessional Faculty Mentoring and the Neonatal Nurse Practitioner Student: A Pilot Program

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**Purpose:** Mentoring relationships, underpinned by Bandura's (1986) social cognitive theory, utilize role-modeling to promote both self-confidence and self-efficacy in students. The use of an interprofessional faculty mentoring model enhances the breadth and depth of preparation of the novice, encouraging the submission of scholarly contributions to the nursing profession after the completion of graduate studies.

**Design:** In this pilot program, doctoral-prepared graduate faculty mentor neonatal nurse practitioner (NNP) students throughout their final year of graduate studies. Concurrently, university scholars from the writing and speech communications centers work 1:1 with students to refine the student's written and oral communications skills relative to population-specific assignments, which mimic tasks and professional behaviors expected of the NNP in the professional sector.

**Implications for Practice:** Mentorships are essential to groom the neophyte for a successful and scholarly integration into the professional sector. Interprofessional faculty involvement provides committed, multimodal, multisensory and differentiated learning opportunities for NNP students, thereby promoting a robust and scholarly role transition. Further research is indicated to assess the role transition of the neophyte post matriculation, through the use of employer and graduate satisfaction surveys.

**Objective:** Understand the requisites for successful mentoring relationships within the academic arena and their positive implications for the scholarly role transition and successful integration of the novice neonatal nurse practitioner into the professional sector.

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## Mapping the Way for Critical Thinking Skills

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Orientation is focused on learning new skills and knowledge. The learning is often task-oriented and skills are acquired without strong emphasis on critical thinking. Concept mapping has shown to enhance meaningful learning and improve processing skills. Development of critical thinking skills occurs as the new nurse engages in an interactive learning session.

NICU requires staff to demonstrate independent critical thinking skills in their approach to planning, implementing, and evaluating patient care with appropriate and timely notification to the medical provider. The goal of the concept mapping session for new NICU nurses was to develop critical thinking skills related to admission of NICU infants. Additionally the simulation lab provided hands-on experience by integrating critical thinking skills with tasks associated with an admission.

**Future:** Concept mapping to develop critical thinking skills for high-risk delivery attendance.

**Objectives:**

- Describe and identify key components of concept mapping to enhance new knowledge and develop critical thinking skills in new nurses.
- Identify methods to incorporate concept mapping with hands-on learning in the simulation lab.
- Discuss potential benefits of using concept mapping to create an interactive learning environment.

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## Do No Harm: Transforming Neonatal Care Using High-Reliability Science

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Adverse events within the healthcare system expose current failures of protecting patients and providers. Slow-moving rates of improvement in patient safety and insufficient application of evidenced-based research plague delivery of care. Neonatal units carry a high risk of mortality and morbidity when patient safety breaches occur. Complexity science assists in recognizing variances in expected outcomes and prevents serious error from occurring.

Neonatal units differ in their capacity to prevent patient injury and medical malpractice litigation. Using nationally recognized guidelines and a culture of safety, high-reliability organizations manage complex systems, reducing error.

This project demonstrates a multidisciplinary multihospital system implementation of a neonatal intensive care high-reliability initiative. The organization operates one hundred Level III beds in four separate sites. We aimed to achieve consistently high levels of reliable and safe operations, reduce adverse events, and achieve and sustain a culture of high-reliability across all four units.

Organizational change phases, quality improvement approaches, and educational practices are discussed. We present methods to decrease cultural and systems barriers to achieving high-reliability teams. Outcomes include a high level of consistency in clinical practice, a decrease in adverse events, and a positive shift in organizational culture to one of high-reliability principles.

**Objective:** Describe a high-reliability principle application to NICUs to improve patient safety and evidence-based practice.

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## New Opportunities for Verification of Enteral Tube Location

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**Introduction:** The challenge of best practices for the placement of nasogastric tubes (NGT) has been a long debated subject. A variety of best practice procedures have been outlined, yet according to the literature, discrepancy exists among which procedures are utilized. NGT placement and verification centers on safety for the patient, yet studies report NGT misplacements can occur up to 43.5% of the time.

**Purpose:** The purpose of this presentation is to discuss the NOVEL multi-center 24 hour prevalence study

**Methodology:** Create an automated report to collect baseline data and verify manually:

- Age
- Weight
- Location, type (NG/OG/ND) and size of tube
- Verification methods

**Objective:** Determine the number of NG/OG and trans-pyloric feeding tubes used on a given day

**Preliminary Results:**

- 59% tubes located in the NICU
- 21% located on general floors
- 18% located in the PICU
- Verification methods: aspiration (35%), auscultation (22.8%), PH (17%), Measurement (14%), X-ray verification (10.5%)

**Conclusion:** Preliminary data validate that despite current recommendations of utilizing X-ray as the gold standard, large variations still exist for NGT placement/verification. Further research is needed to evaluate this question, "Is PH a reliable indicator of NGT placement/verification in neonates?"

**Objective:** Discuss the findings of a research study examining the prevalence of methods for verifying NG tube placement.

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## A Multidisciplinary Team Approach to Implementation of Delayed Cord Clamping in the VLBW Infant

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Our facility is a Level-III 83-bed NICU that delivers approximately 250 low birth weight infants per year. In August of 2013 we implemented delayed cord clamping for the very low birth weight (VLBW) infant. A multidisciplinary team of obstetricians, neonatologists, nurses and respiratory care practitioners was involved in the planning and implementation of this procedure. This multidisciplinary approach in addition to a standardized procedure and use of simulation to perfect the process contributed to the success of implementation. This poster will highlight the team members involved in the creation of the procedure as well as the process of implementation. We would like to share this innovative procedure with others in an effort to improve outcomes for the VLBW infant nationwide.

**Objective:** Discuss implementation of delayed cord clamping in the VLBW.

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## RBC Transfusion of Neonates: Effect on Serum Bilirubin

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**Background:** Neonatal hyperbilirubinemia can cause neurological injury but it is not clear whether red blood cell (RBC) transfusions can cause hyperbilirubinemia.

**Study Design and Methods:** This was a retrospective analysis of neonates from 2009 to 2012 in Intermountain Healthcare NICUs. We collected total serum bilirubin (TSB) measurements during 8 hours before and 48 hours after RBC transfusions, recording blood types of mothers, neonates, and blood donors, and whether phototherapy was used before, during, or after each transfusion.

**Results:** Of 7,272 neonates, 658 (9%) received  $\geq 1$  RBC transfusion. TSBs were obtained before and after 431 transfusions. Seven percent of all transfusions, and 12% of transfusions to VLBW neonates ( $< 1,500$  g), were followed by a TSB increase  $\geq 5$  mg/dL. For those not on phototherapy before transfusion, the average TSB rise was 2.2 mg/dL. Transfusions with blood type O negative resulted in a higher ( $p < 0.0001$ ) rise, but the magnitude was clinically insignificant (0.3 mg/dL). Of those with the highest TSB rises most were unexplainable other than transfusion-related.

**Conclusions:** RBC transfusions can present a "bilirubin load." Since a rise  $\geq 5$  mg/dL occurs after 12% of transfusions to VLBW neonates, bilirubin elevation should be considered as a risk of RBC transfusion to these patients.

**Objective:** Identify the percentage of neonates with a total bilirubin rise  $\geq 5$  mg/dL associated with a red blood cell transfusion.

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## End-Tidal Carbon Monoxide as an Indicator of the Hemolytic Rate

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**Background:** Hemolytic disorders place neonates at risk for developing hazardous hyperbilirubinemia. However, it is challenging to identify, during their first days of life, all neonates with hemolytic disorders, thus many develop hyperbilirubinemia after discharge home. Detecting an elevated end-tidal carbon monoxide (ETCO) concentration during their birth hospitalization could be a noninvasive means of recognizing neonates with hemolytic disorders.

**Method:** Utilizing the CoSense device, we established ETCO reference ranges, obtaining 60 values on 30 healthy neonates during their birth hospitalization. We then studied an additional 40 neonates and children; 20 with known hemolytic disorders and 20 healthy matched controls.

**Results:** The instrument appeared to cause no discomfort during any of the 100 measurements, completing each within 2 minutes. The ETCO reference intervals during the first 72 hours of life were higher (5th to 95th range, 1.4 to 1.7 ppm) than at  $\geq 1$  month of age (0.9–1.1 ppm,  $p < 0.0001$ ). Values from the 20 with hemolytic disorders were invariably higher (2.6–4.2 ppm, 95th % CI) than their controls (0.9–1.1 ppm,  $p < 0.0001$ ).

**Conclusions:** This instrument can recognize neonates with hemolytic disorders. Plans have been made for a large prospective, multi-center study, to quantifying ETCO in jaundiced neonates in order to identify those with hemolytic disorders.

**Objective:** Identify the neonatal end tidal carbon monoxide (ETCO) reference intervals during the first 72 hours of life identified in this pilot study and review the role ETCO measurements have in identifying hemolysis.

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## Evaluation of Nursing Compliance with a Targeted Oxygen Saturation Protocol, Compared to Usual Care, in Reducing Retinopathy of Prematurity and the Need for Surgery

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Carefully controlled management of supplemental oxygen to very low birth weight premature infants is one of many factors that may decrease the incidence of retinopathy of prematurity (ROP). The objective of this quality improvement project (QIP) was to measure the effect of nurse compliance with a targeted oxygen saturation range protocol for premature infants, compared to usual care on reducing ROP stage  $> 2$  and the need for laser photocoagulation surgery during a twelve

month period in a twenty-six bed neonatal intensive care unit. The QIP consists of four phases. Phase I identified the need for intervention based on historical unit data. Phase II incorporated designing and providing staff education about ROP and creating a targeted oxygen saturation range protocol. Phase III involved implementation of the protocol. Phase IV involved monitoring and measuring nursing compliance with the targeted oxygen saturation range protocol. The Plan-Do-Study-Act (PDSA) model was used to provide feedback to staff. During the twelve month period, there was a decrease in both ROP stage >2 from 30.8% to 0%, and ROP surgery from 7.4% to 0%. The results suggest rates of ROP and surgery can be reduced by utilizing a four-phase plan for supplemental oxygen management in premature infants.

**Objective:** Describe implementing the process of a four-phase targeted oxygen saturation protocol in the NICU to reduce severe ROP stage >2 and need for laser surgery in premature infants.

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### **Palliative Care, Bereavement Support, and the Newborn at a Community Hospital**

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There is nothing as strong an emotion to deal with when there is death. Death is certain to occur after one enters into the world but when that happens it is not always known. How each and every person approaches this difficult event will be influenced by experiences we see or receive throughout our life. It is known that many hospitals do not offer formal education for end-of-life care. These deficiencies in education and in palliative care guidelines decrease the chance that infants and their families will receive the end-of-life care they deserve. Education, communication, collaboration, protocols, policies and guidelines are essential in assisting the patient, family and staff to be able to deal with neonatal outcomes.

At our community hospital, located in Pennsylvania, there is an 18-bed maternity unit staffed with 28 registered nurses that range in expertise in caring for the dying newborn. Currently there are not any set guidelines for the care at the end of life of a newborn. With this known, there is a great need to create education, policies, protocols and guidelines for palliative care and bereavement support. The research being done will address whether implementing an educational process with policies, procedures, and guidelines for the care related to bereavement support and palliative care to a newborn in a community hospital will help overcome the barriers that the nurses have related to the care given to the family and neonate. This experiment will be a quasi-experimental design. There will be one group pretest-posttest. The participants are the 28 registered nurses on the maternity unit.

**Objectives:**

- Describe the importance of bereavement support in a community hospital.
- Understand the importance of education on palliative care and bereavement support in a community hospital.
- Discuss the barriers related to palliative care and bereavement support.
- Outline the educational needs related to palliative care.

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### **Exploring Parental Stress Associated with NICU Design**

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Despite improved neonatal survival, the parent experience in the NICU remains stressful. Scientific evidence has linked parent perception of the NICU sights and sounds, infant appearance/behavior, and alteration in parental role to increased levels of sleep disturbance and depression. The redesign of NICU environment from open bay to private rooms holds potential to reduce parent stress. The purpose of this study was to assess parent stress in an open bay versus private room NICU using the Parental Stressor Scale-NICU. Eligible parents whose infants had been discharged were mailed/emailed a flyer describing the study with directions to complete the online survey. Data collection remains in progress, but to date, 41/257(16%) have completed the survey. Preliminary sample characteristics reveal that the majority of respondents were mothers ( $N = 39$ ), aged 22-42 years. The average parent visited 7-10 times per week. The open bay unit was negatively correlated with constant noises ( $r = -.428, p = .006$ ), not being able to care for baby myself ( $r = -.401, p = 0.11$ ) and not having time alone with my baby ( $r = -.318, p = .048$ ). Free text comments reflected positive experiences in the private room unit; however, some parents noted areas of improvement for visitation and communication in the private room unit.

**Objective:** Identify three areas of stress for parents in open bay versus private room NICU design.

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### **Emollient Use in Term Newborns: An Opportunity for Further Research**

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The skin of a term newborn differs both from preterm skin and that of an adult's, and there is currently little consensus on the proper use of emollients in this population. The focus of the majority of the published literature is on preterm skin or the use of bathing products, with limited information regarding emollient use. Although the Association of Women's Health, Obstetrics, and Neonatal Nurses has some general recommendations, current practice is largely dictated by cultural beliefs. Intact skin is the first line of defense against infection, allergens, and dehydration, and dry and compromised skin puts the infant at greater risk of harm from the aforementioned complications. Emollients are part of the front line treatment for atopic dermatitis (AD), and with the incidence of AD on the rise, it is imperative that further research is conducted to provide a guide for clinical practice. A study of emollient use in term newborns is currently being planned at Winnie Palmer Hospital's Alexander Center for Neonatology, and is expected to commence within the year.

**Objective:** Discuss the current literature gaps related to emollient use in term newborns and the need for further research.

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## Improving Care of the Surgical Neonatal Patient

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*Ann Diaz, MA, BSN, NE-BC*  
*Douglas Hardy, MD*  
*Anita Loggins, MA, BSN*  
*Kimberly MacDonald, BSN*  
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Surgical neonatal patients pose complex challenges to coordination of care across departments and specialties. Starting in the delivery room with infants known to have surgical conditions, management varied, NICU golden hour principles were not aligned, babies were often rushed to surgery without the necessary stabilization, and initial fluid management posed challenges. Neonates requiring surgery later had other challenges that affected collaboration and outcome. The NICU quality collaborative made this a focus of their 2013 process-improvement goals.

After a literature search for best practices including World Health Organization checklists, groups were established to manage specific problems and potential solutions utilizing PDSA cycles to establish protocol guidelines. Initial measurements were taken, protocol education took place and the protocol was implemented over a two month period. Data collection occurred again 6 months after implementation to ensure sustained changes and improved outcomes.

Improvements were sustained in all categories as well as numerous other improvements that had been noted as original issues with the care of surgical patients. Unit based quality improvement teams utilizing the PDSA cycle have demonstrated the development of effective protocols for managing complex surgical patients across traditional departmental barriers.

### Objectives:

- Discuss at least three initiatives that can be utilized to improve care of surgical patients.
- Describe how a collaborative process utilizing the PDSA cycles can enhance outcomes.

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## The Great Imposter: A Study of the Late Preterm Infants, their Common Issues, and Outcomes

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*Patty Gordon, MSN, RNC-NIC, BC*  
*Monique Casey, BSN, RNC-LRN*  
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**Problem:** LPIs are infants born between 34 weeks and 36 6/7 weeks gestation. In the U.S., LPIs account for over 70% of preterm births and have higher morbidity and mortality rates than term infants.

**Methodology:** The study was conducted in a Magnet designated community hospital using a retrospective, descriptive design and a convenience sample. Data from the medical records included maternal/infant demographics and newborn complications (cardiorespiratory issues, hypothermia, hypoglycemia, poor feedings, and sepsis).

The analyses included appropriate descriptive statistics and inferential statistical tests to determine differences between the LPI and term infants.

**Results:** The two groups were demographically similar. Statistically significant findings for LPIs included higher occurrences of cesarean delivery, twin gestation, conception via in-vitro fertilization, cardio-respiratory issues, hypoglycemia, hyperbilirubinemia, poor feeding, sepsis, and prolonged hospitalization.

**Implications:** Study results supported the need for careful monitoring of LPIs during hospitalization. Discharge planning should include education regarding their specific issues, including a feeding plan, lactation support (if breastfeeding) and early follow-up with pediatrician and/or VNA to monitor transition to home. Efforts to decrease elective deliveries prior to 39 weeks gestation should continue.

**Objective:** Describe three statistically significant findings of newborn complications commonly seen with LPIs.

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## Music Does Sooth the Soul

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The purpose of this research was to determine if playing music in NICU would affect heart rate, respiratory rate, and oxygen saturations in the fussy/irritable neonate in NICU. According to the evidence, decibel levels of the music should range from 55-80 db for the neonate. Music included classical, piano, lullabies, and women's voices. Music was played by placing the ear buds of an iPod in the neonate's ears at 55 decibels. Fifty-five decibels were marked on the iPod by the use of a decibel meter. The neonate was determined after 5 minutes or more of crying as being irritable. Once irritability was determined physiological measures of heart rate, respiratory rate, and oxygen saturations were used to measure the change before and after music. Heart rate and respiratory rate increased in all neonates when irritable. Some neonate's heart rate and respiratory rate increased as much as 20 points when irritable. Conversely, oxygen saturations decreased when the neonate was irritable. Statistical significance, using a paired *t*-test, was found when comparing the before heart rate, respiratory rate, and oxygen saturation with the heart rate, respiratory rate, and oxygen saturation after the intervention of music. Neonates were most irritable at change of shift, when labs were drawn, and when parents visited. Once music was applied neonates were calmed and soothed by evidence of lower heart rate and respiratory rate, and increased oxygen saturations. According to Schwartz (2004) Lullabies at a rate of 60-90 beats per minute (BPM) are the music of choice for a neonate, which might be due in part to a normal resting adult heartbeat of the mother. In conclusion, lullabies at 60-90 BPM at 55db can be used to decrease heart rate and respiratory rate resulting in an increase in oxygen saturation for all neonates that are irritable.

**Objective:** Describe how music helps soothes irritable neonates.

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## New York State NICU CLABSI Collaborative: Lessons Learned from a Community Hospital

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**Background:** The New York State Perinatal Quality Collaborative (NYSPQC), an initiative of the New York State Department of Health, aims to provide the best and safest care for women and infants in New York State by preventing and minimizing harm by the use of evidence-based practice interventions. One of the current intervention projects of the NYSPQC is preventing central line-associated blood stream infections (CLABSI) in the NICU. In June 2013, St. Peter's hospital was invited along with the rest of the Level III NICU's in the state to join the existing collaborative with all the regional centers in New York.

**Purpose:** Through the participation in the NYSPQC, our goal was to reduce the incidence of NICU CLABSI's and to decrease central line days.

**Interventions:** The NICU CLABSI Collaborative Team, a multidisciplinary group, formed and submitted the application to participate in the NYSPQC CLABSI reduction initiative. The team evaluated current practices and identified opportunities for improvement. This resulted in the development of the Neonatal Procedure Note to document best practice had occurred during bedside procedures. Evidence based interventions that changed our practice are shared.

**Objective:** Identify three strategies to reduce central line infections in the NICU.

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## Reductions in the Central Line- Associated Bloodstream Infections in the Neonatal Intensive Care Unit

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FLOATING HOSPITAL FOR CHILDREN AT  
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**Purpose:** To evaluate whether standardized care practices of catheter care leads to central line-associated bloodstream infection (CLABSI) rate reduction is sustainable long term, and to identify key determinants of this sustainability in our unit.

**Background:** CLABSIs result in increased morbidity, length of stay, medical costs, and mortality. Standardized bundle elements and checklist reduce CLABSIs in NICUs.

**Population:** Reviewed the incidence of CLABSIs in the NICU temporally to the implementation of new practice policies and procedures, from July 2008 to present.

**Process:** Adoption and implementation of evidence-based measures for catheter care, including bundles, and checklists leads to reductions in CLABSI rates.

**Outcome Measures:** Adoption of standardized care practices was associated with a significant reduction of CLABSI rate to zero for over 495 consecutive days in our NICU. Our CLABSI rates decreased from 4.1 per 1000 line days in 2009 (13 infections; 3163 line days), to 0.94 per 1000 line days in 2013 (2; 2115), which represents a 77% reduction over a five year period. Ongoing training, surveillance and vigilance

with catheter insertion and maintenance practices, and improved documentation lead to a reduction of CLABSI rate to zero, which is 495 consecutive days to present.

**Practice Implications:** High quality training, strict compliance with evidence-based guidelines and thorough documentation is associated with significant reductions in CLABSIs. Unit specific practices are implemented and maintained is critical for long-term sustainability of a zero CLABSI rate.

**Objective:** Identify three strategies to reduce central line infections in the NICU.

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## Zeroing in on CLABSI Elimination

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*Julie Cupit, BSN, RN*  
*Tiffany Dufour, BSN, RNC-NIC*  
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OSCHNER MEDICAL CENTER - BAPTIST CAMPUS  
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The evidence is strong to support the standardization of a multi-component intervention bundle to reduce health care acquired infections. The goal in our Level III Regional NICU was to achieve/sustain zero central line associated blood stream infections (CLABSI) using a customized CLABSI prevention program. Starting in 2003 using rapid cycle PDSA methodology, we were able to standardize the following best practices: central line IV tubing configuration and medication administration system, sterile IV tubing change, and scrub the hub.

By 2009 the CLABSI rates decreased to zero for 2 months but the improvement was not sustained. In 2011, the Customized Unit Safety Program (CUSP) began. The CUSP leaders worked with an inter-professional team to create a customized central line dressing change kit and insertion checklist. Using daily huddles, inter-professional rounds and parent/family education the CUSP team was able to obtain staff and family buy-in for CLABSI prevention. By 3rd quarter 2012 the CLABSI rate dropped to zero and has been sustained for 18 months except for one occurrence 3rd quarter 2013. Key drivers of success were the inter-professional commitment to sustain best practices and the inclusion of parents/families in the CLABSI prevention initiative.

**Objective:** Describe the CLABSI elimination initiatives that have produced a nearly zero CLABSI rate in the NICU.

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## Preventing Peripheral Tissue Infiltration by Lowering Intravenous Infusion Pump Pressures in the NICU

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High intravenous infusion pump pressures in the NICU can be set to trigger alarms based on increased resistance within the interstitial compartment. This may result in a substantial amount of fluid infused into the tissue, often causing significant damage before triggering pump alarms to sound. By lowering IV infusion pump pressure alarms, the amount of damaging fluid infiltrating in the tissue can be significantly reduced.

**Purpose:**

- Protecting fragile neonatal skin.
- Lowering intravenous pump pressures, allows caregivers to be alerted to infiltration prior to having excessive amounts of IV fluid/medications infuse into neonatal tissue.
- Preventing tissue damage, from infiltrations, due to vesicant fluid / medication that can lead to extravasation.
- Implications:
- Neonates are at increased risk for compartment syndrome, even with minor IV infiltrations, and skin breakdown.
- Irreversible damage can occur and a fasciotomy may be required to decompress compartments and relieve pressure.

**Conclusion:** Protecting fragile skin is essential and by lowering IV pump pressures, NICU nurses have been alerted to infiltrations prior to having a considerable amount of IV fluid infusing into delicate tissues, resulting in minimal fluid leakage into tissues and no significant localized damage.

**Objective:** Analyze the effects of lowering intravenous infusion pump pressure on peripheral tissue infiltration.

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**Just Keep Swimming, Just Keep Swimming:  
Guiding Neonates to a Safer Start!**

*Tenaya Strong, BSN, RNC-NIC  
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BAYHEALTH MEDICAL CENTER, KENT CAMPUS  
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Our institution is on the magnet journey and we have adopted the magnet model. A part of this model includes nursing self-governance, which promotes nursing empowerment and making changes that affect our practice.<sup>1</sup> As a result, the Neonatal Emergency Management Organization (NEMO) group was created. The group’s responsibilities are: review all neonatal codes, evaluate the neonatal emergency equipment, recommend system and process changes, implement neonatal mock drills, and recommend nursing education. Through this organization we have discovered that our current emergency equipment set up is causing anxiety and confusion among the maternal child staff; therefore, creating a potential for adverse neonatal outcomes.

It is well known that while working in the NICU, emergencies are bound to happen and the team must make quick decisions in order to have the best end result.<sup>2</sup> Not only does teamwork and training among NICU staff have improved neonatal outcomes, but also taking a multidisciplinary approach will ensure staff members become more comfortable with both the neonatal code process and the equipment involved.<sup>3,4</sup>

**Objective:** Discuss the purpose and need for NEMO.

**References:**

1. Grant B, Colello S, Riehle M, Dende D. An evaluation of the nursing practice environment and successful change management using the new generation Magnet Model. *J Nurs Manag.* 2010;18:326-331.
2. Stokowski LA. Learning by doing: simulating NICU emergencies. *Adv Neonatal Care.* 2004;4:57.
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4. Charney C. Making a team of experts into an expert team. *Adv Neonatal Care.* 2011;11:334-339.

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**Saving our Smallest Patients: An Aspect  
of Care Often Overlooked**

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The evacuation of any healthcare facility is difficult, but the evacuation of the NICU carries tremendous risk and responsibility. Interruptions in care can pose life threatening consequences and even death.

In the aftermath of recent local disasters in our area and region, the need for an evacuation plan really hit home. Although the medical center has an extensive disaster plan, the expertise and knowledge needed to execute an efficient and effective evacuation needs to be the responsibility of the caregivers working in the NICU.

The fragile NICU infant has multiple specialized needs not found in other patient population groups.

Our evacuation plan was developed focusing on the following concepts:

- Communication
- Resources and assets
- Safety and security
- Staff responsibilities
- Support

Our strategy in disaster preparedness follows the conventional wisdom of an “All Hazards” approach. The utilization of the “Hospital Incident Command System” (HICS) and “HICS Forms” were incorporated.

Scenario: A helicopter departing from the BMC helipad experiences a mechanical malfunction. The aircraft swerves into the Wesson Women’s building and into the parking lot of the Emergency Department below. Damage to the NICU/CCN includes: Blown out and broken windows, loss of power, with limited structural damage to the building. There is no fire, but jet fuel is spilling into in the parking lot.

If this happened at your hospital would your unit be ready?

**Objective:** Discuss the five concepts needed to develop an evacuation plan that meets individualized needs of each facility.

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**Improving NICU Referral Base  
Satisfaction through Outreach**

*Jessica Carman, RN  
Tara Taylor Floyd, MPH, BSN, RN  
Nickie Andescavage, MD  
Billie Short, MD  
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WASHINGTON, DC

Increasingly, tertiary-care NICUs and those within a larger health care system are called upon to provide outreach, education, and training to both referral centers and the community at large. Many NICUs admit patients from multiple referral centers, and each center has a diverse set of providers and preferences. Meeting their needs is paramount to our continued success. To that end, our team conducted a needs assessment of community providers and other stakeholders. The resulting assessment showed gaps in communication and follow-up

for patients transferred to our facility, as well as increased demand for provider education (such as STABLE and NRP). Some providers even referred to our facility as a “black hole” of information—it went in but didn’t come out. Consequently, we streamlined our referral process, implemented a robust proactive site visit program, and standardized our follow-up communication. Follow-up data from a post-implementation survey show a significant increase in referral provider satisfaction, and we now evaluate our program annually. Referrals are at an all-time high, indicating that the program has been successful. In summary, patient referrals from community providers are critical to the continued success of tertiary-care centers. This poster shares lessons learned during our journey to increased satisfaction.

**Objective:** Describe ways to increase community provider satisfaction with tertiary-care referral programs.

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### Implementation of Donor Human Milk as a NICU Standard of Care

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*Tara Taylor Floyd, MPH, BSN, RN*  
*Melissa Miller, MS, RD, LD, CSP, CNSC*  
*Lamia Soghier, MD*  
*Billie Short, MD*  
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The American Academy of Pediatrics recommends human milk for all preterm infants. If mother’s own milk is unavailable, pasteurized donor milk should be used as a standard of care.<sup>1</sup> When compared to formula, donor milk has been demonstrated to decrease morbidity, NICU length of stay and rates of nosocomial infections and necrotizing enterocolitis.<sup>2</sup> The Human Milk Banking Association of North America sets rigorous standards and guidelines for milk banking, including triple-screening donors and pasteurizing milk in order to eliminate viral and bacterial pathogens.<sup>3</sup> Despite these safeguards, some hospitals remain unconvinced that the benefits of implementing a donor milk program outweigh perceived legal, operational and/or fiscal hurdles. Our NICU successfully initiated a donor milk program in 2014, after a rigorous and multidisciplinary failure-mode effect analysis was conducted and metrics for effectiveness were identified. This poster presents lessons learned throughout implementation of a donor milk program, suggests practical ways to be effective advocates for donor milk, and presents ideas for promoting and sustaining a program when hiring additional staff members is not a viable option.

**Objective:** Discuss costs, benefits, and outcomes associated with implementation of a donor milk program in a Level IIIC NICU.

**References:**

1. American Academy of Pediatrics and Workgroup on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics*. 2005;115:496-506.
2. Edwards TM, Spatz DL. Making the case for using donor human milk in vulnerable infants. *Adv Neonatal Care*. 2012;12:273-278.
3. Human Milk Banking Association of North America. <http://www.hmbana.org>

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### “Got Milk?” Yes! We Were First in Maryland to Offer a 100% Human Milk Diet

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*Janet S. Alderfer, RNC, MS*  
*Melinda J. Elliott, MD, FAAP*  
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Necrotizing enterocolitis (NEC) is a serious, often life threatening illness affecting 5% of infants born weighing <1,500 g. The NICU staff examined research related to decreasing the incidence of NEC related to diet. The literature provides ample evidence of decreased rates of NEC with infants who receive a breast milk diet. Previous to late 2011, cow’s milk fortifier was the only way to provide premature infants with breast milk augmented to meet their caloric and metabolic needs. In late 2011, a fortifier made from human milk became commercially available. A multidisciplinary group led by NICU nursing leadership was formed to examine the necessary steps to implement a 100% human milk diet for patients at high risk for NEC. The guidelines were completed and the 100% Human Milk Diet was started in March of 2012. Since the implementation, the Vermont Oxford Network (VON) NEC rates in the NICU have been reduced from 10.4% to zero while the VON rate has remained stable at about 5%. There has been virtually no feeding intolerance. The process is being continuously refined to reduce waste and cost. This is the only NICU in Maryland to provide a 100% human milk diet.

**Objective:** Discuss an innovative method to decrease the incidence of NEC in the neonatal population.

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### Effect of a Donor Milk Program on the Amount of Mothers’ Own Milk Consumed by Very Low Birth Weight Premature Infants in a Neonatal Intensive Care Unit

*Lynette Cunday*  
*Teresa McClean, RN, BSN*  
*Clara Englemann*  
*Leslie Parker, PhD, NNP-BC*

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Mother’s own milk (MOM) is the best source of nutrition for very low birth weight (VLBW) <1,500 g preterm infants. The benefits of human donor milk are less known. There is a lack of evidence on the effects of a donor milk program on the amount of MOM that VLBW infants receive while in the Neonatal Intensive Care Unit (NICU). The objective of this retrospective observational study is to evaluate the amount of MOM that preterm VLBW infants received, before and after the initiation of a donor milk program in a NICU. Data concerning the amount of MOM preterm VLBW infants received from birth until 34 weeks post-conceptual age was collected for one year before and after inception of a donor milk program. The weekly amount of MOM received by VLBW infants after the implementation of donor milk decreased significantly. Any weekly variation in the amount of MOM received could be clinically significant and needs further investigation.

**Objective:** Discuss the impact of a donor milk program on amount of mothers own milk consumed by very low birth weight infants

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## The Feeding Readiness Initiative

Marcia Fonseca Dalton, MSN, RN  
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SOUTH WEYMOUTH, MASSACHUSETTS

The successful transition of preterm infants from gavage feeding to full oral feedings is one of the main goals of the NICU team. Impaired or delayed suck and feeding can result from a variety of causes, including some of the necessary procedures done in the NICU. Many studies show there are evidence based interventions that facilitate development of oral-motor skills, contributing to improved oral feeding, thus shortening hospital stays and lowering costs, while contributing to the goal of providing family centered care. The use of these interventions had not been consistently observed or documented in our 30-bed Level II and III nurseries. Through a peer-led performance improvement project we were able to increase the documented use of these intervention four fold. The pre-intervention chart audit of 140 eligible patient days found documentation of twice a day use of the feeding readiness interventions 11% of the time. After education and coaching, the documented use of the interventions increased to 44% in the post intervention audit of 95 eligible days (chi-square 34.6, df 1;  $p < 0.001$ ).

**Objective:** Describe interventions that contribute to an improved transition to full oral feeding for preterm infants in the pre-oral feeding stage.

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## A Bedside Screening Tool Developed to Identify Infants who are at Risk for Feeding Intolerance and eNEC

Christine Wetzel, MSN, RN, IBCLC  
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CHAMPAIGN, ILLINOIS

Necrotizing enterocolitis (NEC) is a destructive disease in the neonate population, effecting 5%–10% of NICU infants. These national rates have not decreased over the last decade. Bedside nurses are the first line of defensive in identifying infants who are developing the symptoms of NEC but there has been no method or tool available for nurses to identify which infants are at highest risk. By reviewing the literature and applying themes and strong levels of evidence two tools were constructed for bedside NICU nurses. The first tool is a scoring tool that functions like a fall risk tool and the second tool provides nurses with focused assessments and interventions.

These tools were created to heightened awareness of infants who are at risk to develop feeding intolerance symptoms and eNEC and are designed to guide nursing interventions and assessments. The desired clinical outcome of these tools is to reduce the incidence and severity of NEC and reduce mortality and morbidity in the premature infant population.

To avoid any appearance of a diagnostic tool, a new term was created during design of the tool: eNEC. The term eNEC is non-diagnostic and infers evaluation for NEC which is within nursing scope of practice.

### Objectives:

- Describe the eNec tool to calculate infant risk for developing feeding intolerance and necrotizing enterocolitis.

- Identify maternal and infant risk factors that contribute to the development of feeding intolerance.
- Develop a plan of care with the Interventions and Assessment tool for an infant who is assessed as high risk for developing feeding intolerance and eNec.

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## Counting Sheep to Safe Sleep

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Demonstrating safe sleep on a hospital setting is important in order to model safe sleep for parents to help ensure they continue the habits at home. Our old practice was to swaddle infants in blankets to keep them warm. To promote a safe sleep environment we implemented the use of sleep sacks.<sup>1</sup> Implementing this change in practice in a community hospital has many barriers. Many steps were needed and took place to implement the change. When looking at best practice to implement change, a team approach is the best way.<sup>2</sup> An outside laundry facility was contacted and consulted to launder the sleep sacks because the hospital laundry service was unable to meet the recommended guidelines. All nurses at both hospitals had to be educated on the change in practice and why it was occurring. This change not only provides safe sleep in the hospital setting, but it also models and encourages safe sleep in the home.

### Objectives:

- Identify best practice regarding safe sleep
- Explain barriers experienced in implementing sleep sacks in a community hospital.
- Discuss the importance of demonstrating safe sleep in a community hospital.

### References:

1. Shaefer S, Herman S, Frank S, Adkins M, Terhaar M. Translating infant safe sleep evidence into nursing practice. *JOGNN*. 2010;39:618-626.
2. Covill C, Hope A. Practice development: implementing a change of practice as a team. *Br J Community Nurs*. 2012;17(8): 378-383.

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## Polysomnographic Study of the Quiet Time Effect on Sleep of Premature Newborns

Eliana Moreira Pinheiro, PhD  
Kelly Cristina Sbampato Coaldo-Orsi  
Marcia Pradella-Hallinan, MD, PhD  
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The sleep of preterm newborn (PN) can be influenced by hospital environment and care provided in neonatal units. The implementation of quiet time (decreasing lighting, noise and handling of PN) has been widely used to promote sleep. This cross-sectional observational study aimed to identify and compare the sleep patterns and time in PN during and out of quiet time periods, in a neonatal semi-intensive care unit at a university hospital in Brazil. A sleep evaluation of 12 PN was performed

by polysomnography for 24 hours, and comparison was accomplished between 4 hours of quiet time and 20 hours without intervention. The results showed that the total sleep time of PN out of quiet time period was in average of 701 ( $\pm 116$ ) minutes and 116 ( $\pm 31$ ) minutes during quiet time, therefore, proportionally the PN slept on average 76,0% ( $\pm 12.4\%$ ) of the quiet time period and 58.4% ( $\pm 9.7\%$ ) of the remaining hours, resulting in 17.6% more time sleeping during quiet time ( $p = 0.003$ ). In conclusion, the reduction of environmental stimuli and handling of preterm infants were effective to promote longer sleep time.

**Objective:** Evaluate the effectiveness of nursing care to promote sleep in hospitalized preterm infants.

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## Arousal from Sleep in Preterm Infants Related to Sleeping Positions

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Arousals, events that occur commonly during sleep, can be influenced by sleeping position in newborns. Observational study aimed to evaluate the influence of supine, prone, left side and right side on arousal's frequency in preterm infants hospitalized in a neonatal unit in São Paulo, Brazil. The sample consisted of 10 preterm infants (PI) and data records were registered by polysomnograph and video recorder during 24 hours. The sample studied was composed by moderately preterm, with low weight at birth and during data collect, and 60% were girls. The results showed that the four positions evaluated exerted a significant influence on the arousal's frequency ( $p = 0.001$ ), with the largest mean occurrence of these events in the supine position ( $20.33 \pm 21.38$ ). Considering the sleeping position dwell time, we found that the time exerts effect on the mean arousal's frequency ( $p = 0.040$ ), with lower average in the prone position ( $11.56 \pm 4.75$ ). We conclude that the position of the PI influences the arousal's frequency, identified mainly in the supine position.

**Objective:** Discuss how positioning the bed of hospitalized preterm infants influences the occurrence of arousals.

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## Characteristics of the Sleep Patterns of Preterm Infants

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**Purpose:** In this study, we focus on the sleep pattern of pre-term infants of four to five months old which is one of outcomes of developmental care.

**Method:** Continuous actigraphy monitoring was used to take sleep-rest-activity data, on 7 infants who were four to five months old of a corrected age over a 3-day period. Parents applied to their infants an actigraph that was worn 24 hours a day, except for baths.

**Data and analysis:** Night sleep time, longest sleep time, naps, total sleep time (minutes), percent sleep (%), onset of night sleep, onset of wake-up, were calculated and compared using 1 to 3 days of data, and in this study a 2nd day of data provided sufficient to analyze sleep pattern.

**Ethical consideration:** The human research ethics committee of the university approved this study, informed consent was obtained from all families to be enrollment in the study.

**Result:** As a result, sleep pattern of deep sleep was less than 5-6 minutes which was relatively short on each sleep episode, and shallow sleep was taken in many sleep episodes. Therefore, we considered to make family care program to support sleep pattern for pre-term infants at home.

### Objectives:

- Describe sleep pattern which is one of outcomes of developmental care.
- Discuss the family care program to support sleep pattern of preterm infants at home.

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## Evaluation of an Educational Intervention on Adherence to Safe Sleep Strategies in Infants Greater Than 32 Weeks Gestation

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**Problem:** While safe sleep strategies may decrease the incidence of sudden infant death syndrome neonates may not have a safe sleep model in the hospital for parents to continue at home.

**Conceptual Framework:** *Theory of Caring*<sup>1</sup>

**Literature Review:** Approximately 50% of nurses in the acute care setting do not place infants in the correct sleep position.<sup>2</sup> Based on the hospital experience, nurses/parents may not understand how to provide safe sleep environments.

**Methodology:** A quasi-experiment was conducted evaluating the teaching of safe sleep strategies to nurses/parents of neonates on MB/NICU. Sleep environments were assessed using AAP guidelines - pre-intervention (T1), and at 3 and 9 months (T2, T3) post-intervention ( $N = 720$ ).

**Data Analysis:** Two one-way ANOVAs were calculated [MB,  $F(2,375) = 89.18$ ;  $F(2,357) = 120.62$ ;  $p < .001$ ]. MB mean scores increased from T1 ( $M = 12.49$ ,  $SD = 3.73$ ) to T2 ( $M = 14.87$ ,  $SD = 3.64$ ), and from T2 to T3 ( $M = 18.02$ ,  $SD = 1.97$ ). NICU means increased from T1 ( $M = 11.48$ ,  $SD = 4.21$ ) to T2 ( $M = 17.13$ ,  $SD = 2.75$ );  $p < .001$ .

**Interpretation:** Positive changes in behaviors regarding sleep safety occurred and were maintained following an educational intervention for nurses.

### Objectives:

- Describe safe sleep strategies in infants greater than 32 weeks.
- Describe an educational intervention regarding safe sleep practices in neonates.
- After the objectives, please add

### References:

1. Watson J. Nursing: human science and human care. New York, NY: Appleton-Century-Crofts; 1985.
2. Grazel R, Phalen A, Polomano R. Implementation of the American Academy of Pediatrics recommendations to reduce sudden infant death syndrome risk in neonatal intensive care units: an evaluation of nursing knowledge and practice. *Adv Neonatal Care*. 2010;10(6):332-342.

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## Optimizing Experience: A Standardization of the Clinical Education for Neonatal Nurse Practitioner Students

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If nurse practitioners are to be an integral part to the current solution of the health care crisis, the education of students must guarantee attainment of basic knowledge and competencies. Increasing utilization of the nurse practitioner role has led to busier, less consistent preceptors with a paucity of time for consistent and uniform teaching of students. This jeopardizes the overall clinical experience and potential learning of the nurse practitioner student. In an attempt to improve consistency and quality of NNP student education, a clinical map has been designed which will provide a planned curriculum to guide progression towards national knowledge competencies and clinical skills. Within the clinical map, each topic section will contain a pre-test of the related topic, current evidence to support practice, norms for specific institutional practice, a post-test, and a list of critical discussion points. Once a topic is adequately completed, the student may then progress through the educational map, with the goal of completing the assigned practice topics by the end of the clinical experience. A trial of these clinical maps is in progress.

**Objective:** Discuss implementation of current research and unit specific practices to enhance neonatal nurse practitioner clinical experience.

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## Enhancing a NICU Internship with Simulation

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Constantly striving to improve the quality of the NICU Nursing Internship for a busy Level-III NICU is of the utmost importance. The amount of clinical and technical new knowledge required to transition inexperienced NICU nurses into independent, competent NICU nurses is oftentimes a challenge. In our facility, while evaluating our processes regarding our NICU internships, we wanted to take full advantage of our Women's & Children's service line simulation lab.

We increased valuable time spent learning new concepts and skills in the simulation lab. In addition to one day of learning using simulation at the beginning of the internship, we added self-directed learning focusing on NRP training and higher-level scenarios throughout the internship. We ended with a level-3 day of several higher acuity simulations toward the end of the internship.

**Objective:** Describe how the added exposure to different levels of NICU scenarios throughout the NICU internship enhanced the skills and knowledge for the NICU intern.

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## Neonatal Abstinence Syndrome: Increasing Inter-Observer Reliability

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**Methods:** In December of 2013 nurses in NICU and Mother-Baby were given a neonatal abstinence syndrome (NAS) scenario to score and a pre-test to assess for knowledge deficits related to scoring NAS infants. After completion of pre-tests, inter-rater reliability was tested using the modified Finnegan scoring tool. Assessments of NAS infants were completed simultaneously by bedside nurses and nursing research fellows to determine scoring variations. Pre-test data and observations were used to create a self-learning module highlighting opportunities for improving accuracy of NAS scoring and NAS education. In January and February 2014, following staff review of the module, a post-test was given and observations repeated to measure gains.

**Results:** A comparison of pre-post test scores and observations yielded significant improvement in accuracy of scoring.

**Conclusion:** Improved accuracy in scoring NAS infants was seen.

**Future Objective:** Formation of an interdisciplinary work group for improving care of NAS infants.

**Objective:** Describe the importance of improving accuracy of nurses using the Finnegan Scoring for NAS.

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## Evaluation of Nurse's Opinions Towards NAS Infants to Determine the Need for Further Education

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**Goal:** To evaluate if RNs providing direct patient care to neonatal abstinence syndrome (NAS) infants have preconceived notions when caring for them.

**Background:** There continues to be rapid rise in NAS infants. In Massachusetts, some hospitals are seeing as much as a 44% increase in NAS infant admissions.

**Team:** Over 100 RNs at Tufts Medical Center were surveyed on their preconceived notions towards NAS infants and families.

**Process:** An electronic survey was sent to all RNs who worked in NICU, Labor and Delivery, and the Mother-Infant Unit. Questions pertained to RN's attitudes toward NAS infants and their families.

**Results:** Sixty-six percent felt comfortable caring for NAS infants, but 13% preferred not caring for them. Twenty-nine percent felt that moms were bad parents, and 91% felt that substance-dependent mothers are not good or trustworthy individuals. Sixty-six percent felt uncomfortable discharging NAS infants home. Ninety-eight percent felt they need more educational resources.

**Conclusions:** RNs that have negative responses can affect the Finnegan scores and treatment options for NAS infants. RNs are extremely important in advocating for NAS infants. Educational

brochures/in-services will be distributed to all NICU, L&D, and MIU RNs to better understand the psychology and mechanism of the disease of substance dependence.

**Objective:** Identify nurses' attitudes towards caring for infants with NAS.

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## Factors Related to Hospitalization and Pharmacotherapy of Infants with Neonatal Abstinence Syndrome

Emmitt Turner

Laura L. Meschke, PhD

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Prenatal misuse of prescription medications and illicit drugs has resulted in an increase of babies born with neonatal abstinence syndrome (NAS).<sup>1</sup> Currently, 3.39% per 1,000 hospital births are diagnosed with NAS.<sup>2</sup> Hospitalization time required to treat the drug withdrawal symptoms of infants with NAS necessitates the investment of substantial public dollars as most mothers are uninsured or recipients of Medicaid.<sup>3</sup> The estimated total cost of NAS is \$720 million. Limited research has addressed the factors associated with the length of infant hospitalization and associated pharmacotherapy.<sup>4</sup> Medical records for 678 infants hospitalized in an East Tennessee NAS specialized NICU revealed that most infants are born full term and within acceptable weight ranges. Average weaning days and hospitalization time were 26.4 and 33.9 days respectively. The average initial infant morphine dosage was 66.22mcg. Preliminary analysis revealed 20.4% of infants were exposed prenatally to only to maternal pharmacotherapies (e.g., methadone and/or buprenorphine), while 36.4% were exposed prenatally to pharmacotherapies and other substances. The remaining 43.2% were not exposed exclusively to prescription or illicit drugs and no pharmacotherapy. Subsequent analysis will examine the relation of maternal drug use and infant characteristics with duration of hospitalization and initial weaning dosage.

**Objective:** Discuss the correlation between both maternal and infant factors and the costly hospitalization time and pharmacological treatment of infants diagnosed with NAS.

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## Improving Productive Interactions between Substance Using Pregnant Women and Healthcare Providers: An Integrative Review

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The perception of the healthcare experience differs between substance using pregnant women (SUPW) and the healthcare providers (HP), leading to ineffective interactions. Productive interactions between SUPW and HP can lead to improved maternal and infant outcomes. An integrative review was completed to identify the perceptions of care delivered, received, and desired among SUPW and HP from the prenatal to postpartum period.

**Source:** Electronic databases including CINAHL, PubMed, and PsycINFO were searched for relevant research from January 1993 to March 2014, using the terms "attitudes" AND "drug abuse" AND "pregnancy".

**Selection:** Sixteen research studies (10 qualitative descriptive, 3 quantitative descriptive, and 3 quasi-experimental) were identified that met inclusion criteria.

**Data Extraction:** The Johns Hopkins Nursing Evidence-Based Practice Model guided the data extraction, subsequent analysis, and quality rating.

**Synthesis:** Six themes were identified: education, fear, support, judgment, role conflict, and ethical dilemmas. Themes were divided into three categories; patients, patients & providers, and providers.

**Conclusions:** Acknowledging the perceptions of the care delivered, received, and desired by SUPW and HP helps to identify strategies to improve interactions throughout the pregnancy. These findings provide direction in how to improve interactions, further studies with larger sample sizes and interventions geared towards each theme are needed.

**Objective:** Evaluate strategies to improve productive interactions between substance using pregnant women and healthcare providers within their facilities.

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## Delivering Early Head Start Developmental, Psychosocial, and Educational Support Services to Infants and Families in the NICU

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BRONX LEBANON HOSPITAL CENTER  
BRONX, NEW YORK

Since 2010, South Bronx Early Head Start (SBEHS) has provided early developmental intervention services to low birth weight, preterm babies admitted to the NICU at Bronx-Lebanon Hospital Center. SBEHS is the first Early Head Start program to extend support and psycho-educational services to this especially vulnerable population. While the specialized treatment infants receive in the NICU is of lasting, often life-saving benefit, exposure to the unit's physical and social environment can have long-term consequences for their development. At the same time, new parents may be overwhelmed by the task-centered nature of the NICU and struggle to interpret and respond to their baby's cues. These factors can compromise the quality of early parent-child interactions and disrupt processes of bonding and attachment during this critical period. Our patient population is also exposed

to chronic social stressors linked to poverty which increase the risk of poor developmental and relational outcomes. The ongoing collaboration between NICU nursing and SBEHS staff allows us to deliver comprehensive health and development care, and has enhanced our ability to restore parents' self-esteem and limit stress, promote sensitive and responsive exchanges with their newborns, and support these infants' social-emotional development as we continue to meet their complex medical needs.

**Objectives:**

- Discuss the positive effects of delivering support and educational services to NICU infants and their families on developmental and relational outcomes.
- Recognize the opportunities and challenges involved in designing and implementing an interdisciplinary intervention on this model.

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### **Infant and Family Characteristics during Post Birth Hospitalization**

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UF HEALTH  
GAINESVILLE, FLORIDA

The population of infants, born with neonatal abstinence syndrome (NAS), increased 274% between 2005 and 2009 in the state of Florida. Our NICU saw a similar increase in this population.

The purpose of this study was to describe the infant characteristics, weaning patterns, and family involvement to better identify unmet nursing care needs prior to implementation of a cue-based approach to care. A retrospective record review of all NAS infants ( $n = 50$ ) admitted in 2010 was conducted. Results showed 59% of infants received morphine but no standard dosing protocol was identified. Formula fed infants weaned off morphine in an average of 6.5 days compared with breast milk only (11 days) and combined breast/formula (19.2 days). The majority of infants (76%) were discharged home with parents. This study found great inconsistencies in how infants were assessed, symptoms managed, and families integrated into care. The results suggest that a more interdisciplinary coordinated plan of care based on infant cues could reduce necessity for back weaning of narcotics, better manage infant symptoms, and positively impact length of stay and parental involvement. Standardizing NAS protocols for care is consistent with our hospital's Baby Friendly Initiative goals.

**Objective:** Describe the characteristics of the infant with neonatal abstinence syndrome and the implications for care.

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### **Code Pink: Does Response Criteria Predict Delivery Room Intervention**

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The Code Pink Team (CPT) at our institution has been operational for over 3 decades, even before NRP. The CPT attends over 50% of deliveries; to date there has not been an evaluation of outcomes. In today's healthcare arena, care delivery must be productive, effective, and

cost-efficient. There have been no studies to determine if current criteria identify the majority of infants that require assistance. Evaluation of these criteria and subsequent outcomes will assist in validating current practice. It is hypothesized that Code Pink criteria will require different levels of intervention; therefore, criteria can be utilized to distinguish between attendance of a full CPT versus modified rapid response team. The study is a retrospective chart review of nearly 3,000 deliveries over 2 years. First year results indicated: premature infants or those delivered via c-section were more likely to need resuscitative measures. The need for additional resuscitative steps reached statistical significance with risk factors of prematurity, emergency cesarean section, general anesthesia, pre-eclampsia, multiple gestation, non-vertex presentation cesarean section, and cord prolapse. Final data analysis with second year is pending.

**Objective:** Identify if any criteria used to call Code Pink Team for neonatal resuscitation in the delivery room can be predictive of type of intervention needed or if a tiered code/response team can be considered.

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### **Infant Comforter Program: Volunteers Making a Difference**

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The national epidemic of infants born to drug addicted women has created additional strain on the healthcare delivery system, as well as widening the gap to meet the needs of this vulnerable population with more limited resources at the bedside. Delivering time consuming compassionate care needed by the infant experiencing neonatal abstinence syndrome (NAS) in a high-tech, acute care environment is a drain on hospital resources, while simultaneously "stressing out the staff." Staff are confronted with a heart-wrenching dilemma: the needs of the NAS infant, requiring continuous holding and comfort, while also meeting the needs of the other more acute patients.

The creation of the volunteer-based Infant Comforter Program at our institution has enabled the care delivery of not only the NAS patient population to improve, but we have expanded to include this as a standard of care in our NICU for all patients. The volunteers attend a training program introducing them to concepts necessary to interact with neonates, as well as return demonstrate critical behaviors (hand hygiene, proper positioning while holding, etc.).

Informal feedback from staff has been extremely positive; now even actively seeking Infant Comforters to hold their patients and disappointed when not available. Staff satisfaction results are pending.

**Objective:** Identify at least one strategy to assist in care delivery of infants in need of a nurturing and supportive environment during separation from mother/family due to hospitalization.

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## Enhancing the Charge Nurse Role

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*Donna Serrenti, RN*  
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Effective charge nurses provide leadership and support for clinical decision making at the unit level on a designated shift.

As a young Level-II NICU at Geisinger Wyoming Valley, the charge nurse role lacked definition which led to a breakdown in planning, coordinating and evaluation of nursing activities. The aim of this evidence based practice project is to redefine the charge nurse role to achieve safe and effective outcomes.

Surveys addressing charge nurse and transport nurse designation, staffing and communication were distributed to NICU staff. Surveys revealed ineffective charge nurse role. A charge nurse work sheet will be rolled out. Three weeks after the rollout, post worksheet implementation surveys will be distributed.

The NICU is hopeful the results will yield a well-defined charge nurse role improving communication.

Charge nurses determine each nurses daily assignments ensuring continuity of care. Charge nurses keep patients and families happy by making themselves available to them. Nurses' job satisfaction is directly related to the patients' satisfaction with the nursing care they received. Nursing strives for enhanced communication, continuity of care, patient satisfaction, as well as job satisfaction.

**Objective:** Describe the qualities that a well-defined charge nurse role should entail.

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## Transition and Teamwork

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Infants experiencing difficulty with neonatal transition require an increased level of care. At our facility, there was often a discrepancy among the Women's and Children's Service Line as to which unit was best equipped to care for this patient population. Each of the three units (L&D, Newborn Nursery, and NICU) had policies that differed in the expectations for vital signs and assessment parameters. These contradictory policies caused confusion and frustration for the nurses and the families when caring for infants experiencing difficulty transitioning.

Best practice shows us that skin to skin holding (kangaroo care) is optimal for newborns immediately following birth through the transition period. Our facility created a multidisciplinary work group to address the policy issues we were encountering while also looking at how early kangaroo care benefits infants who are having difficulty transitioning after delivery. The work group consisted of staff nurses, unit based nurse educators, unit managers, and physicians. As a group, we created an entirely new policy that encompassed all units within the service line regarding transitioning infants. Staff education was provided by the educators and staff nurses, and consisted of 40 classes educating nearly 300 nurses.

**Objective:** Discuss how the facility used communication and teamwork to improve the outcomes of infants experiencing difficulty transitioning.

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## Delayed Newborn Bathing: Using PDSA and Rapid Cycle Process Improvement to Support Staff Compliance with Practice Change

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**Background:** The newborn transition from intrauterine life to extrauterine life can take anywhere from 2–6 hours. In order to allow the newborn to transition naturally, a stressful bath should not be introduced until the transition phase is completed or is in its later stages to promote thermoregulation, glycemic control, bonding between the family, and breastfeeding establishment.

**Purpose of the Project:** Appraise staff compliance with delaying newborn bathing until a minimum of four hours of life by implementing Plan-Do-Study-Act (PDSA) and rapid-cycle process improvement. Synthesize outcome data to ensure that 90% staff compliance is met within three months of implementation.

**Implementation, Outcomes, Evaluation:** The PDSA model was adapted to guide the evidence-based practice change on the Family Birth Center unit at a Magnet hospital. Real-time audit forms were utilized as data collection method. Data collection included time of birth, time of bath, and whether hypoglycemia or hypothermia were experienced. Five hundred and forty three audits were completed. The first month revealed staff compliance of 85%, the second month 92.81%, and the final month 92.96%.

**Implications for Nursing Practice:** Utilization of PDSA and rapid-cycle process improvement allows for quick implementation of evidence-based practice changes. Real-time audit forms serve as a daily reminder of the practice change. Providing staff members with periodic data also encourages compliance with practice changes.

**Objective:** Define both the Plan-Do-Study-Act model and rapid-cycle process improvement and how they benefit in the implementation of evidence-based practice changes.

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## Get Ready for Discharge: Postpartum Unit Modifies Delivery of Care to Enhance Readiness

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*Beth McGovern, MSN, RNC-OB*  
*Kate Amin, BSN, RNC-MNN*

THE VALLEY HOSPITAL  
RIDGEWOOD, NEW JERSEY

**Background:** To improve our patient's experience, and to increase patients' perception of preparedness for discharge, our postpartum unit embarked on a care delivery model revision.

**Methodology:** Modifications were developed and implemented to address specific Press Ganey questions:

1. Nurses and physicians explained things in a way patients could understand:
  - Blue Discharge Folder: Originated on admission and available as resource for inter-professional team and for home.

- Daily in-patient baby care class developed and provided for patients and their families to attend during their stay.
2. Patients received information in writing about symptoms or health problems to look out for after leaving the hospital:
    - Discharge education form created for documentation at the bedside at time of teaching and signed by patient at discharge.
  3. Staff described possible side effects of their medicine:
    - Individual medication cards developed to be reviewed with patient and included in the Blue Discharge Folder at time of discharge.
  4. Extent to which you felt ready for discharge:
    - Dedicated unit “Discharge Nurse” to provide consistent, accurate individual discharge instructions.

**Outcomes:**

Question	Pre-Intervention Press Ganey Score (Jan.–June 2013)	Post- Intervention Press Ganey Score (Jan.–June 2014)
1	87.2	91.5
2	87.3	98.3
3	55.9	73.7
4	88.9	92.7

**Objective:** Describe a program designed to enhance discharge planning process.

### Sudden Unexpected Infant Death Syndrome and Sudden Infant Death Syndrome Prevention Program for Postpartum Mothers

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PINEVILLE, LOUISIANA

Sudden Unexpected Infant Death Syndrome (SUIDS) and Sudden Infant Death Syndrome (SIDS) Prevention Program for Postpartum Mothers—was utilized to propose a change in nursing practice through the development and implementation of a teaching project to enhance postpartum mothers’ knowledge of the American Academy of Pediatrics’ (AAP) recommendations for Safe Sleep for the prevention of SUIDS and SIDS.

According to the Centers for Disease Control and Prevention (CDC) 2013, more than 4,500 infants every year in the U.S. die from SUIDS and SIDS. SUIDS and SIDS are defined as sudden and unexpected deaths in infants less than 1 year of age of no apparent cause prior to investigation. In 2011 the AAP expanded its recommendations from a focus only on SIDS to a focus on a safe sleep environment in an effort to reduce the risk of all sleep-related deaths. The project included the development of teaching modules using animation recorded on a DVD on these topics: (a) incidence of SUIDS and SIDS, (b) positioning of the infant and types of recommended sleep surfaces, (c) room sharing without bed sharing, (d) smoke exposure as a risk factor, and (e) benefits of breastfeeding and pacifier use.

**Objective:** Discuss a creative teaching strategy to assist in the prevention of SUIDS and SIDS.

### Strategies to Prevent Newborn Falls in a Large Urban Academic Medical Center

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*Salina Cascino, BSN, RN*

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NEW YORK, NEW YORK

**Background:** Infant falls are infrequent and underreported events that can cause injury ranging from bruises, skull fractures, to possibly death. There are approximately 600–1,600 falls per year. After six infant falls occurred at an urban academic medical center during one year, an infant falls prevention plan was established.

**Purpose:** To develop strategies to prevent infant falls in a hospital environment where keeping mothers and babies together is encouraged.

**Interventions:** Staff education, formation of an infant falls committee, and increased rounding promoted best safety practices. Using a “Risk Scale for Infant Falls,” nurses assessed patients at risk based on clinical status and subjective level of drowsiness. A safety checklist and video were developed to highlight safe practices during hospitalization. Motrin and Toradol were used as first-line pain relief agents, with narcotics titrated up if necessary. Custom beds with side rail extenders were designed to block open areas, an environmental factor contributing to infant falls.

**Results:** The number of falls decreased with each successive year; presently, the fall rate is zero.

**Practice Implications:** Interventions have been modified according to their effectiveness. As hospitals adopt rooming-in practices, it is necessary to concurrently establish safety guidelines that protect infants in this new environment.

**Objective:** Identify effective interventions to reduce rates of in-hospital newborn falls to zero.

### Prevention and Management of Infant Falls in the Hospital Setting

*Donna Souza, BSN, RNC-MNN*

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BAYHEALTH-KENT GENERAL HOSPITAL

DOVER, DELAWARE

After a recent newborn fall, it was realized that our hospital’s “Risk to Fall Program” is not specific to newborns and their care. A new infant specific “Risk to Fall Program” will emphasize the prevention and management of infant falls in the hospital setting. Also, as our hospital is striving for Baby Friendly recognition, “rooming-in” and recommendation for “skin-to-skin” has increased the need for infant fall awareness and parent education. The poster includes:

1. The prevalence of infant falls in our hospital within the past 2 years in comparison to the national statistics of in-hospital infant fall rates
2. Infant fall risk assessment tool
3. Infant fall prevention interventions by risk category
4. Post-infant fall documentation form
5. Post-fall physician order set
6. Fall protocol specific to newborns
7. Safety instruction sheet for parents to read and sign on admission to our Mother/Baby unit
8. Safe sleep education

The goal of the implementation of this new infant specific fall policy is an increased awareness by staff, parents, and families associated with decreased infant falls.

**Objective:** Outline increasing staff awareness and parent education of the potential for newborn falls related to “rooming-in” and recommendation of “skin-to-skin”.

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### Identifying Learning Opportunities among Postpartum Nurses Related to HYDROmorphone

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*Barbara J. Lewthwaite, RN, MN, RM*

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ST. BONIFACE HOSPITAL  
WINNIPEG, MANITOBA, CANADA

In 2008, Health Canada issued a warning regarding codeine use in mothers of breastfed babies. Codeine is converted to morphine in the human body, and some individuals are “ultra-rapid metabolizers”—meaning they are at risk of experiencing very high serum morphine levels. If this occurs, transfer of morphine via breast milk renders the infant at risk of respiratory depression.

In response to this warning, nurses at a large central Canadian hospital began exploring alternate types of analgesia for post-partum women. One strategy involved a change from codeine to HYDROmorphone for mothers requiring narcotics for pain relief. When this change was made, staff received extensive education regarding use of HYDROmorphone in this population.

Approximately two years after the change to HYDROmorphone, two clinical nurse specialists led a team of nurse educators to conduct a study exploring post-partum nurses’ knowledge base. The Institute for Safe Medication Practices’ HYDROmorphone Knowledge Assessment Survey was the primary data collection instrument used.

Using descriptive and inferential statistics, this presentation will review study findings on nurses’ knowledge about HYDROmorphone use. A clear understanding of knowledge gaps will facilitate targeted education and guide nursing practice for pain management for post-partum patients.

**Objectives:**

- Describe knowledge gaps among a sample of postpartum nurses related to the analgesic HYDROmorphone.
- Relate the strategies to address the knowledge gaps and enhance nurses’ knowledge base.

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### Leadership Development of Senior Nursing Students through Simulation

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PINEVILLE, LOUISIANA

Leadership outcomes among senior level nursing students are assessed according to evaluation rubrics in the clinical setting. Performance and cognitive deficiencies have been assessed through delegation activities, the roles and responsibilities of a leader, and leadership communication skills. Deficient leadership students were incorporated into structured, competency-based activities within the simulated obstetrical environment to improve leadership outcomes. Riley (2008) discusses that a proper plan for the simulation environment is to determine what the

student needs to learn. The leadership student is evaluated by meeting the course outcomes of decision making, problem solving, and team leading. The learning environment is informal, following suggestions by Riley (2008) for conducting teaching and learning tasks as well as observations that require facilitation by the student and intervention by the instructor to improve documented deficiencies.<sup>1</sup>

Obstetrical course objectives for simulation are identified during course curriculum planning. The coordinators of the Nursing Leadership course and the Maternal Newborn course integrate clinical rotations with leadership students into the simulation schedule. The leadership student is expected to participate in planning meetings, coordination of the simulation groups, assist with simulation set-up, and facilitate the simulation and debriefing sessions. An evaluation rubric that is developed according to leadership outcomes is provided to the nurse faculty assigned to the student. An evaluation rubric is provided to at least two junior level students who are participants in the simulation. Formative feedback is provided to the leadership student after simulation debriefing. Summative evaluation is delivered at course completion following a leadership performance rubric.

**Objective:** Describe how incorporation of leadership students within a simulation environment may improve course outcomes.

**Reference:**

1. Riley R. A manual of simulation in healthcare. Oxford University Press; 2008.

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### Journey to Baby Friendly: The Ticket is Education

*Agnes B. Fuentes, MA, BSN, RNC-NIC*

*Jane Lodise, RNC-OB, BS, CBC*

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PHILADELPHIA, PENNSYLVANIA

Our hospital applied for Baby-Friendly Hospital Designation in 2011 and is on the 4D pathway towards designation. The phases on the 4D pathway are Discovery, Development, Dissemination, and Designation. We are currently in the third phase of the pathway and have set a target date for Designation in July 2015. This presentation will focus on the Development phase where a facility seeking designation develops a work plan including a breastfeeding and infant feeding policy, and a staff training curriculum on the Ten Steps to Successful Breastfeeding.

One of the criteria for implementing Step 2: Train all health care staff in skills necessary to implement this policy is for staff to be trained on breastfeeding and lactation management at least 20 hours in total, including a minimum of five hours of supervised clinical experience. This specific criterion was a challenge for us both fiscally and operationally. This poster will illustrate how we overcame these challenges, outline an educational plan that provided the twenty hours of education to more than 180 staff members over the course of 18 months, and strategies for ongoing staff competency validation.

**Objective:** Describe one hospital’s educational journey towards Baby-Friendly Hospital Designation.

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## Adapting the Culture to Baby-Friendly Evidence-Based Practice

Lynne Reiner, MSN, RNC, IBCLC  
OSF ST. FRANCIS MEDICAL CENTER  
PEORIA, ILLINOIS

Resistance to change is part of the culture in the medical field. This poster describes the journey and progress of a traditional family birthing center adapting to Baby-Friendly practice. Included are the education, implemented changes and plans for further change, staff buy in, plans for research regarding acceptance once the changes are fully implemented, and work of the task force impacting the community affected by the positive changes being made.

Educational strategies to impact the community clinics and low income populations are included with algorithm of task force strategies for successful outcomes and decreased infant mortality rates that may be replicated by other facilities on their journey to Baby-Friendly status.

**Objective:** Describe the practice changes and acceptance of Baby-Friendly evidence-based care to a resistant culture in a 700-bed mid-west medical center.

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## Does Staff Education on Breastfeeding/Pumping in the NICU Increase Breastfeeding Rates?

Catherine DiBernardo, RNC-NIC, CLC  
ST. PETER'S HOSPITAL  
ALBANY, NEW YORK

**Background:** Species-specific human milk is the optimal choice for all babies, especially sick and preterm infants. Although human milk for preterm infants may need supplements added to meet their rapid growth patterns, it is associated with decreased sepsis, retinopathy of prematurity, necrotizing enterocolitis and hospital readmissions. All women at risk for, or who have already delivered a preterm/compromised infant should be presented with evidence-based information on the importance of providing human milk.

**Purpose:** A study by the Centers for Disease Control and Prevention concluded that NICU staff have a strong influence on mothers and their choice to provide breast milk for their preterm/compromised infant. Women planning to strictly formula feed have changed their minds when told about the special characteristics of human milk. Health professionals without evidence-based education can be a negative source of support. Evidence-based education taught to staff is expected to increase breastfeeding/pumping rates.

**Conclusion:** The NICU staff was presented with various forms of evidence-based education on breastfeeding/pumping. Data was collected from 2012 until 2014. Overall breastfeeding rates increased as a result. Teaching methods will be discussed.

**Objective:** Identify at least two different education methods in the subject of breastfeeding and pumping in the NICU.

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## Improving the Process for Newborn Car Seats at Discharge

Vicky Gronewold, RNC, CPS technician  
Lynne Reiner, MSN, RNC  
OSF ST. FRANCIS MEDICAL CENTER  
PEORIA, ILLINOIS

Even with 40 weeks preparation time, we all know the struggles at discharge when it comes to the newborn car seat. This poster describes the recently updated improvement process identifying if the seat the parents provide is the safest option, educating the parents, fitting the infant, ensuring paperwork completion, and getting the infant to the parking deck and seated in the car safely.

The process of improvement for newborn car seat safety can be adapted to any hospital environment and includes an algorithm to help with suggestions on which infant seat may be the best option for the baby.

**Objectives:**

- Describe the implemented process and improvements to identify infant car seat needs and correctly identify the safest car seat for all infants being discharged in a 700-bed midwest medical center.
- Verbalize strategies of replication and application to use the car seat implementation process in other healthcare facilities.

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## S.O.S. Neonatal Skin Risk Assessment

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Pressure ulcers in the high-risk neonatal patient have prompted the need for a skin risk assessment tool and intervention protocol. Prevalence rates for pressure ulcers in this population are reported to be as high as 25%, with general skin breakdown nearing 50%. Risk factors include extremely low birth weight, immature skin, equipment/devices, immobility, and oxygenation/hemodynamic instability. This project was developed in response to a RCA involving 3 pressure ulcer incidents in our NICU. Steps taken included an extensive literature review, multi-disciplinary team participation (physician, clinical dietician, wound/ostomy nurse, NICU staff nurse, national skin care experts), skin risk assessment tool selection and modification, staff education, piloting tool, inter-rater reliability testing with written case scenarios and concurrent RN beside scoring, and documentation modification (nurse-driven order sets and EMR Plan of Care). In addition, skin care products that were in use were reviewed and new products trialed and selected. The nursing staff has become more astute at recognizing patients at risk, and when necessary, generating a wound/ostomy consult to assist in preventing skin breakdown and pressure ulcer injury. Ongoing implementation includes quarterly audits of tool scoring, interventions and documentation. Future plans include development of a comprehensive skin care protocol.

**Objective:** Discuss key steps in establishing a skin care program, from tool selection to implementation and maintenance.

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### Tradition Meets Technology: Strategies for Decreasing Neonatal Mortality in a West African Neighborhood

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Global neonatal mortality rates comprise 44% of all under-5 deaths with most occurring during the first hours to days of life. Liberia, in West Africa, has one of the highest rates of neonatal mortality in the world. We seek to mitigate this issue through education of local providers and collection of newborn health information in a high risk community where many infants are born at home or in the presence of unskilled birth attendants.

This innovative educational program teaches local providers resuscitation skills, how to perform examinations, conduct risk assessments and collect data. During home visits a tablet survey tool is used to screen for common risk factors and danger signs. Immediate decisions are made for care and referral if necessary. Data from visits is uploaded to a Wi-Fi hotspot and upon review, the clinic supervisor can efficiently advise providers in their management and follow up plans. Trends are analyzed in real time here in the U.S. and used to provide a framework for ongoing support and future educational programs. Identifying community trends and project progress better equip the team to implement interventions specifically targeted to decrease mortality in this densely populated and unique neighborhood.

**Objective:** Demonstrate understanding of factors contributing to neonatal mortality in the resource- limited setting.

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### You've Come a Long Way Baby: From Earthquake to Excellence—The Journey of a Haitian NICU

Jennifer Rogers, BSN  
L'HOPITAL BERNARD MEVS  
PORT AU PRINCE, HAITI

Imagine a Christmas in the NICU. . . . you have all worked one . . . . giving of yourself, making time away from your loved ones to give another family hope in some of their darkest hours. Now, imagine

that Christmas without any of the lifesaving tools you are used to; no surfactant, no prostaglandin, no bubble CPAP, occasionally no labs, and no specialized training. Imagine a unit without NRP, STABLE, or standardized protocols for common pathologies, often no electricity, and ventilating neonates by hand throughout the night.

Welcome to our world just a few short years ago. Welcome to the world of l' Hopital Bernard Mevs, Port au Prince, Haiti. Hospital Bernard Mevs is the only hospital in Haiti that takes the sickest of the sick, including severely premature infants. Many have been abandoned at our gates, and if we did not take them, quite simply, they would die. Espwa is the Haitian Kreyol word for hope. Sometimes it seems as if Espwa has been our strongest tool for promoting sustainable, self-sufficient excellence in Haitian NICU nursing. Join us on our journey in Espwa from 2010 to the present day, from devastating earthquake to developing excellence.

**Objective:** Describe key lessons learned and integrated in the ongoing needs assessment and development of neonatal ICU capability in a severely underserved region.

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### Got Milk? Effects of Early Enteral Feedings in Gastroschisis Patients

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WOMEN AND CHILDREN'S HOSPITAL  
LAFAYETTE, LOUISIANA

**Statement of the Problem:** Newborns with gastroschisis frequently experience delayed enteral feedings, which increases length of stay (LOS) and associated morbidities.

**Literature Review:** Literature review revealed that initiating early intake post-surgical repair results in better outcomes. However, there is lack of evidence and consistency in clinical practice regarding the timing of initiation of feedings, and few studies have determined best practices for post-operative nutritional management.

**Methodology:** A retrospective study on gastroschisis patients, following the implementation of a new early enteral feeding protocol. Data compared those neonates in the NICU over a six year period. During the period of January 2007–December 2009, patients managed without the new protocol formed the traditional feeding (TF) group, while those receiving management following protocol implementation, January 2010–December 2012, comprised the early enteral feeding (EEF) group. The main outcome measure was LOS and secondary outcomes including incidence of sepsis, were evaluated;  $n = 32$ .

**Data Analysis:** There was a statistically significant difference in the scores for LOS TF group ( $M = 25.25, \pm 8.3467$  days) and the EEF group ( $M = 35.31, \pm 8.2196$  days),  $t(30) = -2.412, p = 0.022$  two tailed and incidence of sepsis [ $\chi^2(1) = 4.386, p = .036$ ], TF ( $n = 9$ ) vs. EEF ( $n = 2$ ). No correlation was found between the number of days to initial feeding and LOS,  $r = .063, n = 32, p = .732$ . However, there was a robust, positive correlation between the number of days to achieve full feedings and LOS,  $r = .895, n = 32, p < .001$ .

**Interpretation:** These findings support the benefit of early initiation of enteral feedings in reducing the incidence of sepsis. Furthermore, they suggest the time to achieve full enteral feedings, not necessarily the timing of initiation of feedings, significantly impacts LOS.

**Objective:** Evaluate the effects of initiating early feeds in infants undergoing gastroschisis repair.

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### **VAP: Maintaining Zero**

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*Connie Eggleston, BSN, RN*

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THE METROHEALTH SYSTEM  
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Challenging clinical issues, such as ventilator associated pneumonia (VAP), have been impossible to ignore. Despite years of continual quality improvement initiatives, achieving zero has been difficult and tenuous. In 2007, VAP rate = 1.9 and despite many tests of change, rose to 2.27 in 2012; and zero (0) in 2013 to present. Initially an evidence-based VAP bundle was developed and implemented. Later, multidisciplinary efforts to decrease unplanned extubations were implemented in hopes of significantly impacting VAP. Initial rates in late 2010-11 were as high as 4.93/100 vent days, decreasing to 1.59 in 2013 (current rate pending). Medical management has shifted significantly over the past 2-3 years at our institution to early use of non-invasive mechanical ventilation after initial course of intubation, as evidenced by the ventilator utilization rates of 0.17 in 2011, and 0.08 in 2014. VAP bundle compliance monitoring was reinitiated in early 2013, including all bundle components over 5 months in 2013. The alarming results were: 56%, 52%, 64%, 71%, and 69%. Subsequently, we developed a competency-based testing program. Over 70 % of staff have completed VAP bundle competency to date, with 100% achieving competency status upon first attempt. Nurse sensitive indicators results pending.

**Objective:** Describe the multifaceted approach taken to maintain VAP rate at zero for over 2 years.

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### **Baby! Baby! Are You All Right? Baby ANN's Greatest Hits: A Collection of Our Most Popular Case Studies**

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L'HOPITAL BERNARD MEVS  
PORT AU PRINCE, HAITI

Who can ever get enough neonatal critical care and emergency education? Are you preparing for certification exams or are just orienting to the NICU? Regardless of your experience level, we have something for everyone! Come learn with Baby ANN! Baby ANN is the Academy's unique Facebook page that utilizes case based learning to review key pathologies. Here, we present some of Baby ANN's most popular cases and crises! This seminar will provide you with some of the in-depth skills and knowledge you need to overcome the challenges you face on both certification exams and the exam of real life. We will cover selected neonatal problems head to toe, including airway abnormalities, congenital heart defects, and gastrointestinal emergencies. We draw from several industry standard certification exam blueprints and real world cases to provide you with key must-know clinical pearls! In addition to what we discuss, conference handouts will include several bonus cases for your learning pleasure! Come test your skills and gain new ones in this fun, and interactive session, loaded with audience participation!

**Objectives:**

- List findings in the presentation of life threatening neonatal medical and surgical emergencies.
- Describe concepts of the pathophysiology of selected neonatal medical and surgical emergencies.
- Discuss key palliative interventions in the stabilization and projected continuum of care for selected neonatal medical and surgical emergencies.