Abstracts Presented at the National Neonatal, Advanced Practice, and National Mother Baby Nurses Conference

Las Vegas, NV, September 13-16, 2017

These are the abstracts for the poster and podium presentations from the National Neonatal, Advanced Practice, and National Mother Baby Nurses Conference in Las Vegas, Nevada. They represent a broad range of neonatal issues. By sharing this information, we hope to increase awareness of research and innovative programs within the neonatal health care community, and support evidence-based nursing practice.

A Comparison of Splanchnic-Cerebral Oxygenation Ratios During Various Feeding States in One Extremely Low Birth Weight Infant – A Case Presentation

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Background/Significance: Feeding intolerance (FI) is common in premature infants but can be a symptom of necrotizing enterocolitis (NEC). While treated with caution, the definition and management of FI varies widely among clinicians. An objective measure of the severity of FI is needed. Near infrared spectroscopy (NIRS) can measure splanchnic oxygenation; low splanchnic oxygenation has been shown to correlate with severity of NEC.

Purpose: To describe splanchnic-cerebral splanchnic oxygenation ratios (SCOR) obtained from NIRS in one extremely low birth weight (ELBW) infant with different feeding strategies.

Methods: Case study. SCOR's were calculated and compared to nil per os (NPO), continuous and bolus feedings. SCOR values were evaluated for range and variability and placed in a scatter plot to evaluate patterns in the data.

Results: SCORs were highest for NPO and bolus feeding and lower for continuous feeding. NPO and bolus feeding showed more variability in SCORs than continuous feeding.

Discussion: The variability in SCORs may suggest a relative hypoxia and reperfusion. It's possible that lower but less variable SCORs may provide more consistent oxygenation. More research is needed in the role splanchnic oxygenation plays in ELBW infants and how it may be used to guide enteral feeding management.

Antibiotic Administration in the Newborn Nursery Impact on Breastfeeding Exclusivity

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Maternal-newborn separation has been associated with a decrease in breastfeeding success and infant attachment and possibly influences maternal feelings of competency. As a Baby Friendly Hospital, our goal is to minimize separation. However, it was noted that when an infant's diagnosis is "rule out chorioamnionitis," 100 percent of those infants were being separated from their mothers, even when stable. Utilizing techniques taught in project management classes, improvement was able to be achieved and sustained. The presentation incorporates a discussion on process improvement techniques, including process mapping, plan-do-check-act (PDCA) cycles, and outcomes. The literature discusses the importance of physical and emotional contact between a mother and infant. The postpartum period is a time to establish bonding. Studies have shown that when a mother is separated from her infant, she can begin to acquire negative feelings, like despair.

Outcome: Overall, the separation time between a mother and her infant decreased and breastfeeding and skin-to-skin contact increased.

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Baby Steps to Breastfeeding Success

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The Nevada Division of Public and Behavioral Health offers a 4-hour customized training opportunity to improve infant feeding practices and policies in Nevada hospitals. The goal of the training is to focus on the following five steps, which have been correlated with significantly increasing breastfeeding initiation and duration rates:

1. Initiate breastfeeding within one hour after birth.
2. Promote 24-hour rooming-in, encouraging the family to recognize and respond to the infant's hunger cues.
3. Avoid giving infants fluids or solids other than breast milk unless medically necessary.
4. Do not use a pacifier or artificial nipple with healthy term infants during the hospital stay.
5. Give mothers a list of resources to call for help with breastfeeding after discharge, and review this list with them.

Administration mandates attendance to this continuing education approved training for all postpartum and labor and delivery nurses. Attendees are paid for their time according to their salary.

To date, six hospitals in Nevada have received this training. Each of the hospitals trained saw significant improvement in their hospital's Centers for Disease Control (CDC) Maternity Practices in Infant Nutrition and Care (mPINC) scores between 2013 and 2015.

These evidence-based, best practice steps will improve the quality of care hospitals provide to mothers and infants.

Buccal Care with Colostrum/Banked Breast Milk in the Low Birthweight Infant

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Background: Research supports that human milk is superior to any form of nutrition for neonates, because it contains immunologic nutrition and developmental properties that can prevent/decrease infection. Studies have shown the protective factors in colostrum are even more concentrated in the colostrum of women who deliver low birth weight (LBW) infants. The low birth weight infant in the NICU is most vulnerable to morbidities, including necrotizing enterocolitis (NEC) and late onset sepsis.

Methods/Results: Using evidence from the literature, a buccal care policy was developed and implemented within a 50-bed Level III NICU. Subject inclusion was defined as infants born weighing <1,500 grams (n = 112). Utilizing chart reviews, data was collected pre-policy implementation from June, 2010–December, 2010 (n = 54). Post-policy data came from infants born June, 2012–December, 2012 (n = 58). Initial findings of decreases by percentages, pre- and post-policy implementation, included: surgical NEC (9.26 percent to 0 percent), and late-onset sepsis (14.8 percent to 5.17percent).

Implications: Future research may identify additional variables impacted by the introduction of buccal care in low birth weight neonates. Nursing implications include the need for standardization in practice of the buccal care policy.

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Delayed Immersion Bathing: An Evidence Based Improvement Project

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In the 1990s, there was a push to bathe infants soon after birth to decrease the risk of transmitting infections. Recent research has contradicted this theory. Evidence has also shown that the immediate sponge bathing of the infant can lead to hypoglycemia and decreased breastfeeding success. Professional organizations recommend delaying the first bath until at least 2 hours of life and preferably up to the 2nd or 3rd day of life.

Purpose: To evaluate the effect of delayed immersion bathing on the mother's success in meeting her exclusive breast milk feeding goal.

Method: Current bathing practices are to sponge bathe after recovery, usually at two hours of life. Of moms admitted to the Child Birth Center, 68 percent have chosen to exclusively breast milk feed (EBMF). Only eight out of ten of these mothers are able to achieve their goal. Data will be gathered to look at the effect of delayed immersion bathing on the overall success of mothers who want to EBMF. Infants with low blood sugar levels leading to the failure of EBMF will also be evaluated. The data will be analyzed using SPSS to look for statistical significance.

Delayed Newborn Bath: Correlations with Exclusive Breastfeeding, Feeding Frequency, and Phototherapy

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Background: The World Health Organization recommends that newborn bathing be delayed until >24 hours of age. The events of the immediate postpartum period are highly associated with the initiation and duration/exclusivity of breastfeeding, but stress of the bath can induce newborn drowsiness, impeding good feeding practices and feeding frequency.

Methods/Results: The study asked, "Does delayed newborn bath for the first 24 hours correlate with an increase in exclusive breastfeeding rates on hospital discharge to home?" with the objective to support evidence-based practice in the area of infant bath and breastfeeding. A total of 2,292 infants were included in the study, 1,087 (pre-intervention) and 1,205 (post-intervention). Significant correlations were made between the use of delayed bath and the decrease in the use of phototherapy ($p < .01$). Delayed bath was not significantly correlated to exclusive breastfeeding and feeding frequency. Exclusive breastfeeding was significantly correlated to gestational age ($p = .02$), Black race ($p = .02$), Hispanic ethnicity ($p < .01$), and cesarean birth.

Implications: Further research will be conducted on the frequency of feedings and bilirubin levels and treatment with delayed bath. Continued outcomes measurement of the practice of delayed bath should be performed that include transition of the infant to external uterine life and family satisfaction.

Feeding Protocols, Packed Red Blood Cell Transfusions, and Necrotizing Enterocolitis

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Background: Necrotizing enterocolitis (NEC) is a serious medical condition that affects almost 10 percent of premature infants leading to increased hospitalization or even death. NEC affects the intestinal wall, causing inflammation and potential death to the intestinal tissue. There is no specific cause that can be directly linked to the onset of NEC; however, feeding practices in relation to packed red blood cell (PRBC) transfusions have often been identified as contributing factors.

Practice Question: Do lack of feeding protocols lead to a higher incidence of NEC in relation to PRBC transfusions?

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Methods: A literature review was conducted using the CINAHL database to obtain relevant and current evidence. Articles used included a literature review; an internal review board (IRB)-approved prospective, observational study; a retrospective cohort study; and a case control study.

Findings: There were several examples across all studies that indicated onset of NEC within 48 hours of PRBC transfusion. There was no significant difference between the incidence of NEC amongst patients who were fed during transfusions and those patients who were not. The only significant result, which led to a decrease in NEC, was demonstrated in facilities that developed a standardized feeding protocol that was not based on physician preference.

Discussion: Evidence suggests that standardizing feeding protocols can lead to a reduction in NEC amongst patients receiving PRBC transfusions.

First Feeding: Amniotic Fluid and Its Necessity in Gastrointestinal Development

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Background: Amniotic fluid has a powerful role in the development of the fetal gastrointestinal (GI) tract, which then translates to the overall health of the fetus by way of innate immunity and microbiome development. Ingesting amniotic fluid exposes the fetus to growth factors, immunoglobulins, microbiota, and stem cells.

Purpose: Our purpose is to inform neonatal care providers about the critical functions of amniotic fluid to improve feeding outcomes of high-risk neonates that did not receive full exposure to amniotic fluid.

Search strategy: A search from online databases was conducted using PubMed, Medline, and CINAHL to understand how ingesting amniotic fluid affects the fetus and developing GI tract.

Results: Main themes identified were amniotic fluid components, gross fetal development, GI development, immunologic components, microbiome development, and stem cell properties.

Implications for Research: Research is needed to focus on amniotic fluid for interventions against GI disorders that plague premature neonates and neonates born with congenital GI anomalies.

From Feeding Efficiency to the Feeding Experience: External Validity of Neonatal Feeding Research

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In neonatal research specific to feeding, external validity (generalizability to other settings and populations) is becoming difficult to assess across nations because current American studies have drastically shifted the fundamental focus of study away from the goal of feeding efficiency to that of feeding quality and neurologic safety using cue-based, infant driven feeding and pleasurable oral motor experiences. This shift away from feeding efficiency and to the feeding experience must be considered when attempting to generalize results of an intervention where measurement of feeding "success" is the main outcome. The variations in both the feeding environment and in the neonate as a result of exposure to the new neuroprotective environment, demand a cautious approach to evaluating generalizability.

This presentation describes an original research study conducted through a collaboration between researchers in the United States and in Thailand (the data collection site) using oral motor therapy to improve feeding in preterm infants. The research question, variables, design, methods, and results are presented. The process of assessing external validity is described. The variations in the international setting/feeding environment, thus the preterm infants themselves, are highlighted, with a focus on the potential impact of an infant-driven neuroprotective environment surrounding feeding and care.

Implementation of Infant Driven Feeding in a Neonatal Intensive Care Unit

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Background: Premature infants must orally feed before they are discharged from the hospital. Traditionally infants in the NICU were fed based on a medical model. The physician would order the volume and how many times a day the infant could orally feed using no standard gestational age or weight to trigger oral feeding.

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Plan: Infant-Driven Feeding is a developmental approach to feeding infants. Infants are assessed for readiness to feed orally based on behavior. Studies show that infant-driven feedings can decrease number of days to it takes for an infant to reach full oral feedings and decrease length of hospital stay. Infant-driven feeding provides a more consistent approach for caregivers and minimizes practice variations.

Method: A quality improvement team was developed. The members conducted a literature review and developed guidelines, education materials, and an audit tool. All nurses that work in the NICU were required to attend a 3-hour education program that included principles of developmental care and the Infant-Driven Feeding process. The team also provided education to physicians and incorporated their suggestions from the physicians into the program. The program went live April, 2016.

Results: Since implementation, infants that were fed in the Infant-Driven Feeding model achieved full oral feedings 13.6 days earlier, were discharged 16 days earlier, and had their first oral feeding 15.9 days earlier than those who were not fed on using this model.

Importance of STAT Colostrum in the NICU in a Timely Manner

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Background: There was limited importance placed on ensuring NICU mothers and nursing staff were educated in hand expression/pumping so that NICU infants received human milk in a timely manner. This resulted in having decreased human milk supply for the infant's hospitalization and at discharge. Between September 1, 2016, and September 30, 2016, obtaining colostrum for oral care/feeding was delayed and not consistently charted. We determined that an average of 19.7 hours passed before an NICU infant was receiving colostrum oral care/feeding. This is below the benchmark goal of 6 hours and led to increased costs due to donor milk usage, an increase in formula intake, decreased bonding, minimal transfer of antibodies, and a decrease in human milk feeding at discharge.

Method: We taught staff members and families the importance of human milk, especially in the NICU population with regard to immunity, feeding intolerance, growth, bonding, and increase in breastfeeding at discharge.

Outcomes: After education and collaboration, delay in colostrum oral care/feeding for NICU infants decreased from 19.7 hours to 4.6 hours. Lessons learned during our data collection were: that identifying consistent electronic health record locations for consistency of documentation is important for audit purposes, rounding on at-risk mothers, when possible, to educate them regarding hand expression prior to the infant's admission to the NICU decreased time to delivery of colostrum. We modified our colostrum policy and added additional lactation support and random audits.

Improved Tolerance in Preterm Infants Fed a Non-Acidified Human Milk Fortifier: A Prospective Randomized Clinical Trial

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Feeding human milk with the addition of human milk fortifier (HMF) meets the nutrient requirements of premature infants. Concerns with an acidified liquid (AL) HMF are reported. We designed the first prospective, randomized trial to test the hypothesis that there are more adverse events and slower growth in premature infants fed AL vs non-acidified (NAL) liquid HMFs.

Objective: To evaluate growth, tolerance, and safety outcomes in premature infants randomized to AL or NAL HMFs. Infants were studied for 29 days or until hospital-discharge, whichever came first.

Results: There were 160 (AL, n = 78; NAL, n = 82) infants in the intent-to-treat study. We found greater weight gain from study day (SDAY) 1 to SDAY 15 for the NAL group compared to AL (16.8 vs 14.8 g/kg/day, p =.004) but no difference from SDAY1–SDAY 29. The AL group had more feedings withheld due to emesis (10% vs 2%; p =.018) and gastric residuals (13% vs 4%; p =.022) than NAL. Further, we observed more metabolic acidosis (27% vs 5%, p <.001) and more treatment for acidosis (10% vs 0%; p <.001) in AL than NAL.

Conclusion: These results are consistent with retrospective studies showing a higher rate of metabolic acidosis, poor tolerance, and early growth deficits in premature infants fed AL HMF.

Improving Breast Milk Feeding Rates in the Full-Term Nursery

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In April 2010, TJC adopted the rate of exclusive breast milk feeding as one of five Core Measure sets that hospitals must meet to remain accredited and operational in the U.S. In July 2012, this measure was added to our Balanced Score Card. Our monthly target of infants receiving breast milk while in the hospital was set at 66.9 percent. The Full-Term Nursery has been able to maintain a rate of 35 percent since the initiation of the target. With the support of the department nurse manager and director, and with staff buy-in, a position was designed to provide help and support to the lactation consultants and nurses. The breastfeeding assistant provides education to patients about breastfeeding and information on the availability of donor breast milk. She will also provide breastfeeding support in postpartum. Staff members completed education regarding the use of donor breast milk to provide updated patient education. Our exclusive breast milk feeding rates have increased monthly and we are currently at 60 percent, with an increase in donor breast milk usage from 2,200 mL/month to over 5,500 mL/ month. We are currently looking for ways to expand the role of the breastfeeding assistant.

Initiate, Build and Maintain a Milk Supply: Assisting Mothers in Meeting Their Lactation Goals

Disclosure: The presenter is a salaried employee of Medela LLC
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Breastfeeding initiation rates continue to rise for mothers within the U.S. Yet, many mothers begin early supplementation with formula and fail to reach their personal breastfeeding goals. Early intervention in the initial post-birth period with in-hospital, evidence-based lactation strategies is vital to assist the mother in reaching adequate milk production. Reaching adequate milk production is a journey that requires mothers to initiate, build, and maintain their lactation. This poster describes the lactation journey through secretory differentiation during pregnancy and secretory activation in the early post-birth period. It includes strategies that assist in initiating, building, and maintaining milk volumes if the infant is unable to adequately demonstrate appropriate breastfeeding behavior or if the mother is at risk for lactation failure. The poster includes a framework that was developed to assist bedside clinicians in determining if, and when a mother might need additional technology to assist her on her journey. The chart offers an easy, visual guide

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describing mother and infant scenarios when obtaining a breast pump would be advantageous in helping the mother maintain milk volumes and ultimately meet her personal lactation goals.

Meeting the Educational Needs of Formula Feeding Mothers in a Breastfeeding World

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Our hospital embarked on the Baby Friendly Pathway in 2013. In the Designation Phase in 2015 for our visit, we identified that formula education for non-breastfeeding mothers needed improvement.

Through a series of audits, mothers were asked questions concerning formula preparation and feeding, feeding on cue, and mothers' access to support after returning home. Scores for formula feeding mothers in the three areas were under the required 80 percent. Our team identified the need to revamp the formula education taught to mothers prior to discharge.

After a literature review, it became clear that while breastfeeding received a large amount of support and education, mothers who elected to formula-feed their babies received less education and little support.

A decision was made to design and implement an easy to understand flip chart to be used for bedside teaching for postpartum families who chose to formula-feed. The flip chart was introduced in March, 2016, and the new bedside education was utilized. Audits were done from April to June, 2016, with significant improvement in outcomes for the three values measured. Postpartum teaching was successfully redesigned to meet the educational needs of this group of mothers.

Newborn Delayed Bathing

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Background of Clinical Practice: Delaying a newborn's first bath is beneficial in many ways. The objective of the poster is to summarize our practice changes related to the benefits of delayed bathing.

Purpose of Practice Change: Southern California Kaiser Permanente Medical centers sought to standardize bathing practices to promote improved outcomes and decrease variation in care.

Supporting Research Evidence: Delaying the first bath may improve parental bonding and decrease cold stress. Delayed bathing also reduces energy expenditure, which affects skin-to-skin holding and breastfeeding success. Vernix caseosa is an anti-infective and provides a protection barrier to the skin when left on.

Practice Change Methods: In alignment with our Labor Management Partnership, our Unit Based Team developed a plan and completed recommended changes to delay the first bath until the infant was twelve or more hours old.

Challenges: Previously, baths were provided in Labor and Delivery. We needed to support mother baby nurses with their bathing competencies and various comfort levels while creating new workflows. Standardizing how we educate parents regarding the benefits of delayed bathing was also a topic of discussion after the implementation.

Primo-Lacto: A Closed System for Colostrum Collection

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Primo-Lacto: A Closed System for Colostrum Collection, is Maternal Life's first product. Primo-Lacto is intended for use when 1) mothers cannot or choose not to nurse their newborn or 2) the newborn cannot nurse due to trouble latching, limited sucking reflex, or prematurity.

The Need: Colostrum is the nutrient- and antibody-rich first milk. Its importance cannot be understated for infant health and development. A positive experience during the colostral phase encourages women to continue breastfeeding long term, but complications are extremely common. Twelve percent of births in the U.S. are premature and 10 percent of otherwise healthy full-term infants may also be prevented from initial breastfeeding due to birth complications.

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Primo-Lacto enables colostrum collection and delivery in any circumstance where direct nursing is impossible or undesired.

The Product: Primo-Lacto can interchangeably connect to the most commonly used feeding syringes and hospital-grade breast pump systems. Primo-Lacto encourages alternation of hand expression and pump expression for maximum quantity and caloric value. Connection to an enteral feeding syringe creates an elegant closed and sterile system for collection and delivery of colostrum with 43 percent less material loss.

The Impact of the Gentle Transition Initiatives on Exclusive Breastfeeding Rates

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The gold standard recommended by the American Academy of Pediatrics for newborns during the first six months of life is exclusive breastfeeding. The focus for our Mother Baby Unit is to foster approaches that support and encourage minimal separation, the initiation of skin-to-skin holding, and breastfeeding immediately after birth and during the postpartum period. The exclusive breastfeeding rates have lagged even with these initiatives in place.

Method: A retrospective review of the monthly and quarterly randomized data for exclusive breastfeeding was completed six months prior and six months post-implementation of the Gentle Transition Initiative. The initiative was comprised of delayed bathing for newborns and designated quiet times for the new family. It was implemented to optimize best practice for the mother/infant dyads. Research articles were shared with stakeholders. Delayed bathing was initiated first, followed by the quiet time project. The theoretical frameworks used were the Iowa Evidence-Based Practice and Lewin's change model.

Results: Exclusive breastfeeding rates pre-implementation were between 38–43 percent. Post-implementation results demonstrated a significant increase, 56–61.5 percent. These rates are above the Joint Commission's national benchmark of 54.39 percent. The staff has implemented cost-effective interventions that demonstrated optimal outcomes in increasing the in-hospital exclusive breastfeeding rates.

The Role of Peer Counselors in the Promotion of Exclusive Breastfeeding in a Rural Community Hospital

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Promoting exclusive breastfeeding is a public health issue. Many hospitals are seeking and obtaining recognition through the Baby Friendly Hospital Initiative (BFHI). BFHI promotes exclusive breastfeeding. Hospitals must be diligent and creative in discovering ways to promote exclusive breastfeeding. This is a particular challenge for rural community hospitals. In 2015, Susiloretni, Hadi, Probandari, Soenarto, and Wilpo found that high levels of maternal breastfeeding knowledge are positively associated with the duration of exclusive breastfeeding. Social and peer support has also been found to positively affect breastfeeding exclusivity. These factors provide the framework for the use of peer counselors. Through a partnership with Women, Infants, and Children (WIC) and the community hospital, peer counselors provided interaction and support during prenatal appointments and throughout postpartum hospitalization. This poster depicts the impact of the intervention on breastfeeding exclusivity.

Utilizing Breastfeeding Peers and Innovative Curriculum with Integrated Technology to Inspire Expectant Families to Give Breastfeeding a Try

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Peer support is a culturally competent, evidence-based approach to engage and empower women in their decision about how they will feed their babies. Breastfeeding peers are women from within the community who are trained in breastfeeding education and support and who have breastfed their own child/ren. It has been shown that women considering breastfeeding are influenced most by other women that they perceive to be "like them"—how they look,

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how they talk, and where they come from. Peers build a relationship with other women over time, becoming a respected source for information, support, and advice.

The Mother Nurture Project at MetroHealth has transformed the way families are engaged in the conversation about breastfeeding in the prenatal setting. This unique program has married the concept of breastfeeding peer support with a new and innovative curriculum called COffective. COffective is a comprehensive curriculum based on the Baby Friendly Hospital Initiative's "Ten Steps to Successful Breastfeeding." The evidence-based, visually-engaging content explains the most effective means to support practices that lead to successful breastfeeding experiences. It helps families anticipate what to expect during their birth hospital stay and in the early days of breastfeeding and caring for a newborn. COffective's corresponding mobile phone application continues to engage families at home and/or "on the go," keeping the conversation going outside the clinic setting.

Since beginning the program in January, 2016, The Mother Nurture Project has had over 3,900 patient/family prenatal contacts. The program is credited for an increase in breastfeeding initiation rates, a key step in helping more new mothers to breastfeed exclusively through their birth hospital stay, a Joint Commission Perinatal Care Core Measure.

Babies Blossom When Breastfed

Candy Itwaru
Crystal Gomez
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Breastfeeding is the normal way of providing young infants with the nutrients they need for healthy growth and development. According to the article, "What are the Benefits of Breastfeeding"? breastfeeding has many health benefits for infants and for mothers, as well as potential economic and environmental benefits for the community. Because breastfeeding is an active metabolic process, the production of milk requires the use of an increased number of calories per day, benefiting the breastfeeding mother as she returns to her pre-pregnancy weight. Human milk provides virtually all the protein, sugar, and fat an infant needs to be healthy and it also contains many substances that benefit the infant's immune system, such as antibodies and enzymes. Breastfeeding may decrease the risks of infant diarrhea, respiratory infections, and otitis media. It may decrease hospitalization risks for respiratory syncytial virus infection. The success rate among mothers who want to breastfeed can be greatly improved by active support from their families, friends, and health care leaders. Given the importance of breastfeeding for the health and well-being of mothers and children, it is critical that we take action across the country to support breastfeeding.

Improving Neonatal Resuscitation Performance Using Unannounced Simulation-Based Mock Codes

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True neonatal emergencies fortunately occur in less than 1 percent of newborn births. Although rare, it is important to note that these events could result in neonatal morbidity and mortality. During neonatal resuscitation, the response time of health care staff is critical. The Neonatal Resuscitation Program (NRP) clearly states that ongoing clinical staff education and follow up are necessary. The purpose of this retrospective study is to investigate whether monthly, unannounced, simulation-based neonatal mock codes improved staff response time and overall neonatal resuscitation performance in a community hospital from June, 2014–December, 2014. Each month, different scenarios were played out and rotated around postpartum, Labor and Delivery and Special Care Nursery units. The arrival time of all responders was documented and NRP staff performance was evaluated. The findings have demonstrated that the monthly, unannounced, neonatal emergency simulation drills have not only tremendously decreased staff response time but also allowed for staff to improve on neonatal resuscitation performance.

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Improving Outcomes Through Required In Situ Simulations

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Background: The Intermediate Special Care Nursery (ISCN) has had a process in place for conducting in-situ simulations on a quarterly basis. However, the simulation was run on one day and only staff working during that shift were able to participate. This led to a lack of learning and practice opportunities and staff members were feeling uncomfortable responding to emergency situations. In November, 2015, the in-situ simulation process was changed.

Objectives: To verbalize understanding of how in-situ simulations increase confidence levels of nurses in responding to emergency situations.

Methods: A pre-survey was sent in November, 2015, that assessed the current confidence levels of staff members. Required in-situ simulations were conducted quarterly for all nurses on the unit. A post-survey was sent in November, 2016.

Results: Every nurse has participated in an in-situ simulation on a quarterly basis. In addition, the simulation facilitators have seen a great improvement in the nurses' abilities to respond quickly, appropriately, and confidently. Post-survey data showed an increase in confidence levels in all areas.

Conclusion: Implementing an in-situ simulation process that allows for all nurses to participate has many benefits, including an increase in knowledge, skills, and confidence. This could easily be replicated on other units.

NICU Inter-Professional Code Blue Quality Improvement Project

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Problem: The interprofessional NICU team continuously responds to life-threatening changes in patient status. To improve overall performance, a survey was developed to assess team members' knowledge and confidence levels regarding future resuscitation events. Two main points were revealed: 1. Staff members strongly expressed a need for code blue debriefs and 2. Real time mock codes are necessary to keep skills and knowledge current in the NICU.

Approach: An evidenced-based, quality improvement plan was implemented to improve overall performance of the NICU team during code situations. The team survey highlighted key areas in need of improvement, such as computer charting during Code Blue, use of the defibrillator, and location of supplies in the code cart. Real time post-code debriefings, staff inservices, and real time mock codes were designed to address the educational needs identified by the survey. During the debriefing, performance was evaluated along with opportunities for improvement.

Results: The original survey was re-administered to the team. The survey results show that there was significant improvement in participants' perceived ability to function as a confident code team member.

Transition to Exclusive Use of the T-Piece Resuscitator in the NICU

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Based on recent research comparing t-piece resuscitators (TPR) and traditional resuscitation bags for ventilation, a conclusion can be made that the use of TPR could potentially prevent volutrauma and pneumothorax when compared to the self-inflating bag or the flow-inflating bag. When compared to standard resuscitation bag ventilation, providers can deliver more consistent peak inspiratory pressures with the TPR. At Methodist Dallas Medical Center, NICU leadership decided that conversion from historical use of self-inflating bags to the exclusive use of T-piece resuscitators would be an effective way to reduce the risk of pneumothorax and chronic lung disease. Three methods were used for staff education: educational inservices, hands-on training, and viewing an instructional video after which an exam was completed. Members of the resuscitation team were given additional, more intensive hands-on training. The T-piece resuscitator has now been routinely used in lieu of a resuscitation bag in the NICU on all patients for two years. Staff competency is maintained by mock codes, skills lab practice, and Neonatal Resuscitation Program education.

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Does Simulation Impact Nurses' Performance in Neonatal Resuscitation

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Patient safety in the NICU is understudied. Teamwork and communication are integral components, or prerequisites for supporting a culture of patient safety. Teamwork and communication in clinical practice are reported to improve with simulation and structured learning strategies. Based on an institutional needs assessment and literature review specific to quality improvement strategies for neonatal resuscitation, an improved NRP course was developed and implemented. The revised course included NRP simulation cases, communication education with TeamSTEPPS strategies, and documentation training for the clinician-guided revision of the resuscitation form. The purpose of this project was to evaluate the perceived level of confidence, satisfaction, and communication skills in nurses performing neonatal resuscitation following the NRP course. The training was guided by the NLN/Jeffries Simulation Framework and the TeamSTEPPS program. A purposeful sample of nurses (n = 61) in a tertiary hospital volunteered to participate in the training and simulation exercise. In a nonrandomized, descriptive evaluation with a posttest one-group design, the analysis found 49 percent of the nurses were confident in their resuscitation skills, 50 percent were satisfied with the simulation experience, and 47 percent reported the need for improved communication. This project demonstrated the need for integration of communication and teamwork skills in neonatal resuscitation.

A Case Study in the Care for an Infant with Maple Syrup Urine Disease

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Background: Neonatal nurses regularly face complex, unusual diagnoses following an abnormal, newborn state metabolic screen. We present the case of a term newborn infant diagnosed with Maple Syrup Urine Disease (MSUD). MSUD is a complex disorder of metabolism which affects branch chain amino acids. It can be damaging and deadly if not rapidly diagnosed and treated. With treatment, the infant may live a long and healthy life with life-long dietary restrictions. This poster presents the diagnosis, management, and prognosis of MSUD.

Case Study: BG XXX was born at 40 6/7 weeks gestation. She weighed 4,345 grams and presented from the delivery room with respiratory distress. On DOL 8, she was diagnosed by state screen with MSUD and stayed a total of 15 days in the Level III neonatal intensive care unit of a small-sized hospital in the Midwest. XXX's care was complex and required a large, multidisciplinary team. Family education and teaching were extensive.

Conclusion: The ramifications of MSUD cannot be understated. Strict adherence to treatment is necessary for a healthy life. There are resources and groups available to assist families in the care of their children with MSUD.

Assessment of the Impact of Standardized Nasal Continuous Positive Airway Pressure Weaning Bundle on the Length of Hospitalization in Very Low Birth Weight Infants: A Quality Improvement Project

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Background: Nasal continuous positive airway pressure (CPAP) is a widely accepted method of respiratory support for very low birth weight infants. However, controversy continues over the best method of weaning CPAP.

Objective: To determine the impact of a standardized, quality improvement nasal CPAP weaning bundle with the goal to stay off on the length of hospitalization in very low birth weight infants.

Design/Methods: A three-pronged, standardized, nasal CPAP weaning bundle was implemented that included: utilization of established stability criteria of identification for readiness for nasal CPAP weaning, timely recognition of nasal CPAP weaning failure based on defined clinical criteria, and standardized subsequent attempts for nasal CPAP weaning following a prior failure. The impact of this nasal CPAP weaning quality improvement intervention on the outcome of length of hospitalization was evaluated over the next two quarterly cycles and compared to the pre-protocol

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quarter prior to implementation.

Conclusion(s): Implementation of a standardized nasal CPAP weaning bundle with the view to stay off results in decreased length of hospitalization in very low birth weight infants.

Eagle-Barrett Syndrome: A Case Study

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Eagle-Barrett syndrome is a rare congenital anomaly consisting of genital and urinary tract abnormalities with absent or decreased abdominal wall musculature. It is caused by urethral outlet obstruction in early development. A male infant was born at 35 weeks gestation. The pregnancy was complicated by fetal bladder outlet obstruction and oligohydramnios. At delivery, the infant was breathing spontaneously. Apgar scores were 8 and 9 at one and five minutes, respectively. At six minutes of life, he had increased work of breathing requiring intubation. The infant's clinical exam was concerning for Eagle-Barrett syndrome with a protuberant abdomen, poor abdominal wall musculature, and flat-appearing facies. Initial x-rays were remarkable for a small chest with moderately reduced lung volumes, suggestive of pulmonary hypoplasia. An initial renal ultrasound showed bilateral ureteral dilation and tortuosity. Definition of the renal parenchyma was difficult to appreciate. Due to the infant's lack of musculature in his genitourinary tract as well as his bladder outlet obstruction, he retained urine. Renal insufficiency led to a rising BUN and creatinine, hyperkalemia, and metabolic acidosis. This case illustrates Eagle-Barrett syndrome and its common sequelae, including pulmonary hypoplasia, risk of genitourinary abnormalities, and renal insufficiency.

Prophylactic Application of Skin Barrier Cream in Hospitalized Neonates

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Skin breakdown in hospitalized infants is a common condition that results from progressive desquamation of the epidermis and causes pain, stress, and a weakness in the immune system. Infants in the newborn intensive care unit (NICU) are at an increased risk of skin breakdown due to conditions, medications, or infections that cause frequent stooling.

Method: All patients admitted to the NICU with intact skin during an 11-week period were included. Baseline data were collected on the infants' responses to current standard of care, which was to apply a barrier cream only if skin breakdown was appreciated. Comparatively, all infants' responses to prophylactic application of the skin barrier cream Critic-Aid Clear, were collected.

Results: We found approximately 21.7 percent reduction between the two groups in skin breakdown. Additionally, we found that 50.5 percent fewer treatment products were needed in the second group that received preventative Critic-Aid Clear.

Conclusion: Our results suggest a preventative cream has protective qualities. Critic-aid Clear is a moisture barrier without medicinal additives. There are several other products available that could be trialed so that institutions could isolate top-performing, cost effective options.

Raising Awareness of Necrotizing Enterocolitis Risk Factors

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Background: Necrotizing enterocolitis (NEC) is a disease process that continues to plague the premature infants in our NICUs. Nurses play a direct role in prevention of NEC by coaching the mothers of premature infants to pump their breast milk. Necrotizing enterocolitis is a relative unknown disease. Lack of knowledge may impact the mother's perception of the dangers of NEC, leading her to believe the disease is not a real threat to her infant and contributing to a lack of commitment in providing her breast milk.

Clinical Problem: To help the mother understand her infant's individual risk, the nurse must be able to identify each infant's individual risk factors for NEC and feeding intolerance.

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Clinical Question: Within the largest NICU quality database in the United States, data show only 56 percent of very low birth weight (VLBW) infants are discharged still receiving their mother's own milk. Would mothers pump longer if they understood the individual risk of NEC to their own infant?

Framework: Using the eNEC tools to raise nurse awareness of each infant's risk factors is one way to improve the nurse's ability to communicate to the mother her infant's individual risks for NEC. The eNEC tools were created from the evidence and formatted to optimize the information for the bedside nurse.

Retinopathy of Prematurity and Oxygen Within Limits (OWL): Nursing Interventions in Very Low Birth Weight Infants

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Background: Retinopathy of prematurity (ROP) is a proliferative neovascular disorder of retinal vessel development that can lead to blindness. The most significant risk factors are prematurity and oxygen exposure. Research shows that limiting supplemental oxygen, so oxygen saturation is less than 95 percent decreases the incidence of ROP. Maintaining oxygen saturation within limits is difficult with variable compliance.

Problem: The Oxygen Within Limits (OWL) protocol was established with oxygen saturation limits of 85–97 percent for infants born <1250 g. Audits in 2015 showed that 40 percent of the time infants were not within the target range.

Interventions: Guidelines were developed to maintain oxygen saturations at 85–95 percent. Protocol reminders were given at morning/evening briefs. Visual aids were developed: OWLS placed on bedside monitors, OWL reminder to set limits at 85–95 percent when oxygen >21 percent were placed on oxygen regulators, guidelines for regulating oxygen were placed in patient rooms. Oxygen limits were discussed on daily rounds, and daily rounds to check compliance with limits on monitors were instituted.

Results: Increased compliance was seen. Before the interventions compliance with the guidelines was at, 56 percent, one month after interventions were initiated, compliance was at 74 percent, and at 6 months it was 100 percent. Infants spend significantly less time hyperoxic compared to infants with 97 percent upper limit (16.6% vs 32%, p<.0001). Infants requiring laser surgery decreased (84% to 43%).

Recommendations: NICUs should establish oxygen saturation limits to prevent ROP. Implemented interventions increase compliance with OWL and decrease incidence of ROP.

Decreasing RSV in the Neonatal Intensive Care Unit

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The incidence of respiratory syncytial virus (RSV) in the neonatal intensive care unit (NICU) is an ongoing concern and can be life threatening. Our 10-bed Level II NICU has seen an increase in the number of infants with RSV. We needed to explore the reasons for this occurrence and to find a solution to prevent this hospital-acquired infection from affecting our most precious little ones.

The objective of this project was to engage the healthcare team in the prevention of RSV in the NICU. Decreasing hospital-acquired RSV will prevent serious complications and decrease prolonged hospitalizations; hospital readmissions; and the worst case scenario, infant death.

Journey to Zero Infections: Implementing the NICU 'Sterile Hour'

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Infants in the NICU are vulnerable to a host of infections, specifically those associated with central lines. Our NICU was challenged with an increase in central line infections in 2015 (total = 5). That increase was directly attributed

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to breaks in sterility when changing central lines and their dressings. Specifically, the geography of our unit caused frequent breaks in sterile technique and did not permit nurses to assist each other readily. The clinical nurses in the NICU devised the NICU Sterile Hour: A one-hour window daily where the NICU is closed to visitors, parents, and traffic, and turned into a clean environment to allow sterile line and dressing changes. Nurses don sterile attire, the unit curtains and barriers are removed, and all surfaces are cleaned and prepped. Each RN is assisted by a peer to ensure no breaks in technique or process. During the Sterile Hour, parents attend education classes that teach more about the care of their baby or that prepare them for discharge. With the implementation of Sterile Hour, our NICU saw a >50 percent drop in our central line infections (total for 2016 = 2) and shorter length of stay for our most vulnerable babies.

MSSA-Incidence and Implications in Neonatal Intensive Care Units

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The bacteria, *Staphylococcus aureus*, is a frequent cause of infection in neonatal intensive care units (NICUs) and is the second leading cause of late-onset sepsis in very low birth weight infants. Preterm and low birth weight neonates are more susceptible to infection due to immature immune systems, need for invasive procedures, and prolonged duration of hospitalization. Methicillin-resistant Staphylococcus aureus (MRSA) and methicillin-susceptible Staphylococcus aureus (MSSA) are known health care–associated infections and MSSA has been shown to occur 2.5 times more frequently than MRSA infections.

A female infant born at 28 3/7 weeks' gestation and at day-of-life (DOL) 28, had a significant increase in apneic and bradycardic episodes requiring intubation. A sepsis evaluation was performed. Blood cultures were positive for S. aureus. On DOL 30, the infant's right leg became edematous. On DOL 36, the culture was positive MSSA and magnetic resonance imaging (MRI) demonstrated several fluid-filled abscesses. She was transferred to a tertiary center for hip and thigh debridement. The final diagnosis, osteomyelitis, caused by MSSA, required a second debridement, plus five weeks of antibiotic administration. This case illustrates the potential devastation that can be caused by S. aureus, as well as the need to perform active surveillance cultures for MSSA in conjunction with MRSA screenings.

Optimum Detection of Ureaplasma in Premature Infants

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Background: Studies suggest that early treatment may reduce the incidence of bronchopulmonary dysplasia (BPD) in infants colonized with Ureaplasma species (spp).

Objective: The aim of this study is to determine the best site and time to screen for Ureaplasma spp. in preterm infants.

Design/Methods: Oral, nasal, gastric, and tracheal fluid specimens were cultured for Ureaplasma spp. at day-of-life (DOL) 1–2 and 7–10. Categorical risk factors were examined using the chi-square test.

Results: 168 patients were tested and 80 (48 percent) had Ureaplasma spp. Risk factors were not significantly different between infants with and without Ureaplasma spp., except for prelabor, premature rupture of membranes (PPROM) (OR = 13.9, 95% CI: 1.8–110.1, p =.002). Nasal culture detected more Ureaplasma spp. than other sites (p =.008). Collection at DOL 7–10 detected more Ureaplasma spp. than at DOL 1–2. An oral culture at DOL 1–2 combined with nasal and oral cultures at DOL 7–10 detected 96 percent of neonates with Ureaplasma spp.

Conclusions: Optimum Ureaplasma spp. detection includes cultures at multiple sites and times. Clinical studies

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evaluating the effectiveness of Ureaplasma spp. intervention strategies should consider this information.

The NICU Nurse's Role in Antibiotic Stewardship

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Our leadership and physician team joined a 12-month, statewide collaboration to decrease the antibiotic utilization rate in our NICU. We are 1 of 28 centers in California participating. In 2013, out of 127 centers in California, there was a range of antibiotic days (days of antibiotic use divided by NICU patient days) from 2.7 percent on the low end to 97.1 percent on the high end (published in Pediatrics, May, 2015). Our center's rate at the start of the project was 19.9 percent. Our goal was to decrease further to 14.9 percent.

Currently our rates are 13.4 percent in January, 2017 and 14.9 percent in February, 2017. Communication between medicine and nursing has played an important role in in achieving an antibiotic time out at the 48-hour mark. Through hand-off report and visual bedside clipboard reminders we have decreased "unnecessary" doses of antibiotics. Even avoiding 1–2 extra doses of antibiotics can decrease the potential harmful effects of antibiotics and reunite the family either by transfer of the newborn back to the mother baby unit or discharge home.

Treatment of Chorio Babies on the Mother-Baby Units: A Win-Win Situation

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Maternal chorioamnionitis is an amniotic sac infection that is associated with neonatal morbidities. Treatment requires a sepsis evaluation, which can include an NICU admission. This separation of mother and newborn may interfere with maternal-infant bonding and breastfeeding, and evidence suggests it affects mother and baby outcomes. The current model of care involved admission to the NICU with a sepsis evaluation and forty-eight hours of antibiotic treatment.

Purpose: The purpose of the study is to create a model of care that promotes attachment for mother and baby while providing safe care for sepsis evaluation.

Method: Staff were surveyed on the current and proposed models of care. Guidelines were implemented that determined eligibility for treatment and parent education. Admission criteria; physician, Mother-Baby, and NICU nurse roles; physiologic criteria; and a process algorithm were developed. Womancare Birth Center (WCBC), Mother Baby, and NICU physicians and nurses were educated.

Results: One hundred thirty-nine babies >37 weeks were born to mothers with a diagnosis of chorioamnionitis. Twenty-four percent successfully completed treatment on the Mother-Baby unit. This resulted in a more conducive environment to initiate breastfeeding and support mother-baby bonding, which positively impacted patient satisfaction. A cost savings was also recognized by eliminating a 48-hour NICU stay.

Alarm Fatigue Prevention: An Interdisciplinary Approach

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Purpose: This presentation will enhance awareness of The Joint Commission's safety goal regarding alarm management and share our initiative to reduce alarm fatigue.

Background: The Joint Commission has named clinical alarm management as a patient safety goal. Alarm management is needed to prevent alarm fatigue while maintaining patient safety.

Methods: A multidisciplinary team was formed to address TJC's patient safety goal on alarm management. A survey was sent to staff asking questions related to nuisance alarms and text messages. The team looked at alarm escalation and made changes to decrease non-actionable alarms and delete text message alarms.

Results: The results revealed that 90 percent of staff members did not answer their text message alarms and 65 percent thought there were too many nuisance alarms. After the new alarm escalation was activated, the number of alarms decreased significantly.

Conclusions: Although the number of nonactionable alarms decreased, there are improvements that continue to be

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worked on. The number of alarms during shift change remains elevated and processes are being established to decrease alarms during this time.

Implications: Managing alarm fatigue will be an ongoing effort, not just in our unit, but in institutions around the country.

Conservative Management of Preeclampsia: Impact of Clinical Nurse Education on Patient Outcomes

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Martha Hill, RNC-OB
Christine Conrad BSN, RNC-OB, C-EFM
Joni Lisenbee, MSN, RN, IBCLC
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Background: Improved perinatal outcomes may be affected by perinatal management of preeclampsia. The goal of this project was to improve clinical nurse performance in blood pressure assessment, patient education, and time to treatment of severe range blood pressures.

Methods: Clinical nurses were educated about 2013 ACOG updates to hypertensive disorders in pregnancy that included: didactic and simulation opportunities to review blood pressure assessment; patient/family bedside posters/handouts, with patients invited to hold nurses accountable; standardized order sets; written and didactic education for all staff on the new order sets, including control of hypertension within 60 minutes.

Documentation in the electronic medical record (EMR) was updated to allow for cuff size, location, and patient position. Monthly data collection of patient education and time to treatment of severe range blood pressures was implemented and reported to staff.

Results: There was a 26 percent increase in documented patient education regarding hypertensive disorders (pre-intervention 57%, post-intervention 83%) and a one year 41 percent increase. There was a 43 percent increase (pre-intervention 50%, post intervention 93%) in the number of patients with severe range blood pressure control within 60 minutes and a one year 37 percent increase.

Discussion: Standardization and staff education increased documented patient education and timely control of hypertension.

Development of Falls Risk Tool Specific to Obstetric Patients

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The Fall Risk Assessment for Perinatal Patients (FRAPP) Tool was created using evidence-based obstetric risk factors that have been supported in the literature to contribute to an obstetric woman falling in the antepartum, intrapartum, or postpartum period. Previous practice within our institution was to utilize the Morse Falls Risk Assessment (MFRA) Tool upon admission in all adult inpatient settings. This tool has not been validated or deemed reliable for the obstetric population. Of the obstetric patients that fell, the MFRA Tool only identified our patients as high risk 60 percent of the time and fall rates continue to rise.

Purpose: The purpose of our FRAPP Tool is to decrease the number of falls throughout the obstetric patient's hospital stay.

Method: Retrospective audits were conducted, identifying trends of obstetric falls over a three-year period. Eleven patient falls were archived using our hospital's event management system. The FRAPP Tool was implemented in October 2016.

Results: Since implementation of the FRAPP Tool, there have been zero falls. An ongoing assessment of the FRAPP Tool's validity and reliability is in process. Perinatal risk factors have now been captured within the new tool to recognize appropriate risk categories and improve reporting of patient falls.

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Examination of Neonatal Nurse Practitioner Competence and Confidence: Insight for Educational Programs and Faculty

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It is imperative that educational programs optimally prepare students for their roles. For neonatal nurse practitioners (NNPs), their type of education, years of nursing experience, and time in practice can affect feelings of competence and confidence. Bridging the gap between feelings of incompetence, or lack of confidence, to that of being competent and confident is key to success.

Purpose: The purpose of this pilot study was to determine any relationship between education level, type of educational program, number of student clinical practice sites, and time in practice with the NNP's self-reported levels of competence and confidence.

Methods: A pilot survey was developed for the purpose of measuring self-reported variations of skill and competence/confidence levels in practicing NNPs.

Sample/Instrument: The survey utilized an Internet-based tool to assess practicing NNPs reflections of competence and confidence. The survey included basic demographic questions and a 30-item Likert scale that gauged competence and confidence in a variety of management and procedural skills.

Results: T-test showed high competence/confidence in common NICU procedures and management. Increasing age was highly correlated with competence/confidence. No significant differences were noted in comparing differing years of RN experience with competence/confidence. Higher levels of competence/confidence levels were seen in classroom prepared students.

How Sweet It Is

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Much research has recently been released surrounding "how low is too low" and the devastation a low blood glucose can cause for a newborn/neonate. Our previous Maternal Newborn Division's policy on monitoring newborn/neonatal blood glucose levels was patterned on outdated data. To ensure that all stakeholders were heard, we included neonatologists, pediatricians, and nurses.

Our current policy/standard work involves several new components:

- A defined timeline: when to start and how often to monitor blood glucose. This ensures that everyone knows when they are due.
- Plotting each newborn on the WHO growth chart. This allows nurses to determine if the newborn is LGA or SGA.
- An easy to read algorithm. This allows nurses to direct care as needed by the individual newborn/neonate.

There are also provisions made for late preterm infants, infants of diabetic mothers, and symptomatic infants. A Healthstream learning module was created for all the nurses in the Maternal Newborn Division to complete. This ensured that all would understand the policy/standard work changes.

Less is More: A Leadership Challenge for Advanced Practice Neonatal Nurses

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WESTMEAD, AUSTRALIA

Background: In the changing environment of a neonatal intensive care unit (NICU) we often say "we need more" resources to manage the complex care of babies and families. Is the request for "more" the answer to ensure we deliver best practice? How do we challenge our own leadership responsibility to adapt to the demands of an NICU environment, given the resources available?

Method: Ten years of nursing management and leadership experience has allowed me to reflect on my personal journey and the models I have applied. How do we measure what model works most effectively to challenge our critical thinking and decision making to ensure best practice in a NICU?

Conclusions: Critical thinking of nurses in leadership is essential for best practice of basic nursing care and

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decision making. Working as a team means that you must delegate some of the work and have less control. To empower others to act is intentionally choosing the most important aspect of care and challenging the process "Less is more."

NONSTOP: A New Model for On Boarding NICU Nurses

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A standardized orientation program is lacking universally within neonatology; orientation is often fragmented and inconsistent for novice nurses.

NICU nurses care for the most vulnerable infants. They must be equipped with knowledge, hands-on skills, and critical thinking skills within this environment to promote patient safety and quality outcomes, "NONstOP" is a systematic, standardized, evidence-based, orientation program, created to ensure that key cognitive, application, and critical-thinking skills can be obtained in a community hospital setting.

Core curriculum was divided into major domains: antepartum, intrapartum, infant assessment, and systems. Domains were broken into subsections: developmental, functions, presentations, diagnostic, conditions, and nursing care. Teaching modalities include: didactics, reflective learning, communication skills, simulation, web, and case presentations. The entire NONstOP orientation program, was compiled into an individual binder with lesson plans, and is outlined for preceptors to follow.

Using Kirkpatrick's Level of Evaluation, nurses were evaluated weekly throughout the 12-week program. From 2013 to present, nine nurses utilized the NONstOP orientation program. Eight nurses are currently working independently in the NICU (Kirkpatrick L4) one nurse was unsuccessful in meeting the program goals (Kirkpatrick L2).

NONstOP provides nurse leaders with a comprehensive, standardized, orientation program for novice NICU nurses.

Outsourced Care: Partners or Conflict in Patient Care

Romina Hipolito Elias, MSN, RN-BC

Claudia Colantonio, BSN, CLC

Janelle Jahnke, MSN, RNC-OB, C-EFM

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WHITE PLAINS, NEW YORK

Newborn hearing screening has traditionally been performed by nurses at the bedside for our facility. In 2016, we partnered with a company to bring in hearing screeners, thus taking the task away from nurses and outsourcing to the company the education and reporting of results. We aim to share our experiences in this process: the good, bad, and ugly, as well as question the necessity/helpfulness of sharing care responsibilities with a third-party vendor. Are we unburdening the nurses, helping them in the process, or are we potentially harming the relationship that our care providers have with our patients?

While it May be a Silent Problem, the Solution is Anything But...Let's Make it Loud and Clear

Disclosure: This presenter is a salaried employee of Natus Peloton

Amy Law, BSN, RNC-MNN

NATUS MEDICAL/PELOTON NEWBORN SCREENING
FREDERICK, MARYLAND

Purpose: Identify and address educational opportunities for nursing personnel at multiple hospitals regarding knowledge of hearing screening.

Background: Although clinicians understand that hearing screening is standard nursery procedure to be completed prior to discharge, they may not grasp its importance and urgency along with its impact on potential outcomes for babies in their care.

Method: Questionnaire completed by mother child health (MCH) nurse management and MCH staff nurses at 25 hospitals across 14 states will identify nursing staff knowledge of principles, outcomes, and feedback regarding education needs. Data will be utilized to present objectives, strategies, and tools to enhance MCH nurses' understanding of the value of hearing screens and the important role they play.

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Goals: To show stakeholders the importance of understanding the entire universal newborn hearing screening (UNHS) process including diagnoses, statistics, methodology, and interventions. To increase knowledge regarding the test, the follow up, and state reporting for families of infants with congenital hearing impairment, because we understand that we, as nurses, are most often the initial primary communicators with the families.

Can a Novel Noninvasive Bedside Measure of Cerebrovascular Autoregulation Identify Congenital Heart Disease in Neonates at Higher Risk for Developmental Delays?

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Background: Neonates with congenital heart disease (CHD) are at high risk for developmental delays, but the causes are unclear. The purpose of the study was to examine whether impaired cerebrovascular autoregulation (CA) is associated with poorer neurodevelopmental outcomes.

Methods: This was a prospective, cross-sectional, 2 group design (n = 44). Twenty-eight neonates with CHD (gestational age ≥37 weeks, and ≤12 days of age, prior to surgery) and 16 healthy controls were enrolled. CA was determined using regional cerebral oxygenation (rSO2) with a noninvasive near infrared spectroscopy device and a postural change. The Einstein Neonatal Neurobehavioral Assessment Scale measured neurodevelopmental outcomes.

Results: No significant differences were found in impaired CA between the two groups (p =.38). However, neonates with CHD had poorer total neurodevelopmental scores (β = 9.30, p =.02) and motor scores (β = 7.6, p =.04) when controlling for CA. CHD neonates also had lower baseline and sitting rSO2 (p <.00).

Conclusions: These findings provide evidence of worse developmental outcomes and hypoxemia in preoperative CHD neonates, supporting standardized screening and follow up in this high-risk population. A prospective, longitudinal study is needed to identify differences in the developmental trajectories of CA across groups and to associate abnormalities in those trajectories in the CHD group with neurodevelopmental outcomes. Future research on impaired CA may lead to treatments to prevent developmental delays in this vulnerable population..

Parents with NICU Babies are Particularly Interested in Developmental Mobile Tools

Disclosure: This presenter is a stock shareholder of BabyNoggin

Jin Lee, PhD

BABYNOGGIN
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The Centers for Disease Control and Prevention (CDC) reports that 1 in 6 children has developmental and behavioral problems. Extensive research proves that early detection can improve outcomes and reduce costly interventions. To test if parents are interested in screening their own children's development at home, Qidza Foundation partnered with Wells Span's Newborn Medicine to measure parents' interest. Of the 75 NICU parents we interviewed, 75 percent reported tracking their babies' developmental milestones using mostly community support websites. Seventy one percent of parents stated they will track milestones more carefully if it were recommended by the their physician. Seven of ten neonatal physicians and nurses said they will recommend a developmental milestone tool if it's based on scientific content and would also help them better follow up with their patient's development. After three months using the app, 78 percent of parents reported increase understanding of developmental milestones. Ninety-six percent completed at least one developmental screening, while only 75 percent used the baby tracker tool to track baby's pooping, sleeping, and nursing activities. This study further demonstrated that developmental milestones are the top concern for parents. With a proper tool, parents and NICU professionals are motivated to learn about developmental milestones and help their children achieve them.

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Preemie Orthotic Device to Manage Deformational Plagiocephaly in Extremely Low Birth Weight Infants

Disclosure: Plagio LLC funded the manufacture of the study prototypes and paid for the U.S. patent application for the device Dr. DeGrazia invented. She has been offered a small share of the company; the agreement is still under consideration.

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Background and Purpose: Prematurely born infants are predisposed to developing deformational plagiocephaly (DP). This pilot study investigates the safety and feasibility of the Preemie Orthotic Device (POD), a new, non-commercial, supportive orthotic device to manage DP.

Methodology: Ten premature infants weighing less than 1 kg were enrolled. All participants received the experimental treatment with the POD. Data was collected on adverse events, time spent on the device, head measurements, and provider perception.

Results: The ten infants had an average gestational age of 25.7 weeks (range 23.6–27.7 weeks) and average birth weight of 676 g (range 465–880g). The POD was used an average 20.1 hours per day. All participants had normal cranial symmetry at study enrollment and completion. Only one participant had a normal cranial index at enrollment, compared to five at study completion. CPAP and complex courses may have influenced the outcomes. No device-related adverse events were reported.

Conclusions: The POD was found to be safe and feasible. Staff had favorable responses to the device. Data suggest the POD may help to manage DP, though further studies are warranted to assess effectiveness. Recommendations by nursing staff include enlarging the device to extend its use.

Translating Current Developmental Practices into Action in the Neonatal Intensive Care Unit

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Background: Inappropriate developmental positioning of the preterm newborn has the potential to negatively impact sensory and motor development.

Purpose: The need for a protocol to improve consistency and appropriate positioning was identified by management and staff of a 51-bed Level III Midwestern neonatal intensive care unit (NICU). This need led to the development of an evidence-based practice (EBP) change project with the aim to improve developmental outcomes.

Methods: An educational module for developmentally appropriate therapeutic positioning, including a Prezi Presentation and a 10-question pre-test/post-test was developed based on current evidence-based practices. NICU nurses were required to attend one of the fourteen 30-minute inservice presentations. Knowledge gain was assessed through comparison of pre-test to post-test scores.

Results: The 10 percent benchmarked level of improvement from pre-test to post-test scores was achieved by 87 percent of the participants, with an aggregate mean improvement of 42.9 percent (SD = 3.10). A paired two-sample of means t-test indicated a statistically significant difference from pre-test to post-test scores with $t(45) = 9.38$, $p < .05$.

Future Implications: Future research examining the relationship between developmental positioning educational intervention, translation into clinical practice, and ultimately achieved changes in developmental outcomes is needed.

Unit-Based Education Coordinator and CNS Collaboration in Educational Endeavors

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Collaboration is a fundamental concept of the clinical nurse specialist (CNS) role that enhances registered nurse (RN) professional development. As an advanced practice registered nurse (APRN), the CNS mentors the RN staff, including roles involved in a clinical advancement program. This collaboration allows for improved patient outcomes,

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nurse sensitive indicators, and satisfaction.

The Neonatal Education Coordinator (EC) role within the clinical advancement program, assists in staff engagement and is a facilitator of learning. The EC is empowered to improve outcomes through education. Serving as a resource for educational needs is a primary focus.

The collaborative goals of the Neonatal CNS and EC include core curriculum development, a certification review course, competency and learning needs assessments, just-in-time training, and educational board displays. Together they synthesize assessment findings to identify education needs of the RN staff and patients.

CNS and EC collaborative efforts include the redesign of the core curriculum course to broaden the impact of educational programming: 1) Concentrated content focuses on basic newborn care that includes staff from NICU, labor and delivery, newborn nursery, and pediatric staff, and 2) Expanded content to achieve both neonatal core curriculum and certification review. Successful implementation resulted in enhanced RN satisfaction with professional development.

Home Health Nursing: Care of Infants with Perinatal Substance Exposure

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Pam Tidwell
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Families affected by perinatal substance exposure have complex health and social contextual needs that transcend the inpatient care experience. Follow-up with home health nursing creates an opportunity to address the needs of the family with a newborn affected by substance exposure, engage community services, and provide support for both pharmacologic and non-pharmacologic interventions.

Method: Descriptive record review research was conducted between October 1, 2014, and September 1, 2017 on 575 infants with perinatal substance exposure followed by a home health agency referred for follow up after discharge from the hospital.

Results: Of the 575 families referred for home health services, 465 (87.9%) completed their treatment plan.

Discussion: The complexity of the family social context with perinatal substance exposure creates a paradox as to engagement in much needed services. The home health nursing care for families affected by perinatal substance exposure demonstrated the engagement of families in this service with completion of treatment goals.

Novel Psychotropics, Perinatal Substance Abuse and Child Maltreatment: Qualitative Study

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Background: Alpha pyrrolidinopentiophenone (α-PVP) acts as a norepinephrine-dopamine reuptake inhibitor. Behavior post-use of this psychostimulant can cause hyperstimulation, paranoia, hallucinations, excited delirium overdose, and suicide. Reports of adult behavior characteristics after use of this synthetic neurostimulant contain descriptions of disturbing and severe child abuse and endangerment.

Purpose: The purpose of the study is to describe the behaviors of parents and caregivers of children under the influence of α-PVP, from reported cases of child maltreatment.

Design: The study was a qualitative case study phenomenological analysis using de-identified reports of child maltreatment with associated caregiver use of the synthetic neurostimulant drug α-PVP.

Method: Collection of child maltreatment cases (n = 151) that were reported contained information that the child's caregiver/parent was using α-PVP during the time of the potential incidence of child maltreatment.

Results: Phenomenological thematic analysis was performed (n=151) and categories of child maltreatment were identified that included: abandonment, child reports of unusual parent behaviors, physical abuse of the child, violent behaviors of the adult, and paranoid ideations of the adult.

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Pain in the Neonate

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Background: Inadequately treated pain in the neonatal intensive care unit (NICU) may lead to unplanned extubations, inadvertent removal of vascular access devices or other monitoring equipment, and an increased length of stay. Neonates are not able to verbalize pain and discomfort; therefore, the nurse must rely on an objective scale to measure pain, such as the Neonatal Pain, Agitation, and Sedation Scale (NPASS). With education and implementation of a nurse-driven pain algorithm, the nurse will be able to consistently evaluate pain and provide quality pain management in neonates.

Methods: Prior to introducing the pain algorithm, a survey was conducted with 71 staff nurses. Education included infant pain signs, how to score using NPASS, and an introduction to the pain algorithm. The algorithm categorizes NPASS scores as requiring no action (0–3); non-pharmacologic interventions followed by medications (4–7); and pharmacologic interventions based on the healthcare provider's order (8–10).

Findings: Post-surveys were conducted after education that included 56 staff nurses. Improvement was seen in all areas of the survey, indicating improved understanding of the algorithm and pain management in the neonate.

Discussion: The overall goal of this study was to improve the consistency and quality of pain and sedation management in neonates. Re-education was successful, and focused on the NPASS, the components of that scale, and how to assign a score based on the signs and symptoms the infant displayed.

Pharmacological Management of Persistent Pulmonary Hypertension of the Newborn

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Introduction: Persistent pulmonary hypertension of the newborn (PPHN) is defined as the failure of the normal circulatory transition that occurs after birth. National guidelines have recently been released outlining the standard of care for these patients. Treatment of PPHN includes optimization of lung volume and function, oxygen delivery, and support of cardiac function. Pulmonary vasodilation is the goal, and while inhaled nitric oxide (iNO) remains the frontline treatment, new adjunctive therapies for refractory PPHN have been recommended for implementation.

Case Study: A newborn delivered at 39 weeks' gestation with severe left congenital diaphragmatic hernia was admitted intubated and on iNO and vasopressors to a referral center immediately following birth. An echocardiogram was obtained, and at five hours of life after aggressive medical management, ECMO was begun. A variety of adjunctive medications was used with iNO for acute and chronic hypertension management

Discussion: This case presentation highlights the importance of adjunctive therapy in neonates with PPHN. While iNO and a few adjunctive therapies initially controlled the hypertension, changes were required as the patient shifted to chronic state.

Survey of Neonatal Intensive Care Unit Nurses' Use of the mamaRoo® as a Nonpharmacologic Treatment

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Background: There is a rapidly escalating number of perinatally substance-exposed infants in the NICU population. Current recommendations support nonpharmacologic treatments. The mamaRoo is a multimodal (motion, sound) seat used to soothe infants. It is marketed to the public as an intervention for withdrawal symptoms, yet there is a paucity of evidence and protocol for its use.

Methods/Results: Sixty-six nurses (52 percent) completed the survey about their self-disclosed practices (reasons for use, settings, timing, infant response) when using the mamaRoo. The chief reasons for use were: state of the infant,

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lack of persons to hold the infant, and a diagnosis of neonatal abstinence syndrome. Time spent in the seat ranged from 15–360 minutes. Analysis of how nurses determined which motion and sound settings to use included the following categories: trial and error, prior settings, personal preferences/patterns, assumptions, and random selection.

Implications: The results of this study demonstrate the variability of practices by neonatal nurses in the use of the mamaRoo. Further research is needed as to the responses of infants with the use of this intervention. Research is needed as to the variable settings and infant response, in addition to guidelines for timing, parent education, and possibly weaning infants from this intervention.

EASE: Utilizing App Technology to Enhance the Parent Experience

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Online and mobile communication tools have the potential to increase communication between the family and the infant care team, thereby building trust and contributing to a more positive NICU experience. This project was designed to use a mobile communication platform to enhance the communication between families, patients, and their caregivers in the NICU at Winnie Palmer Hospital for Women and Babies.

The EASE application was an established app that was designed by two staff anesthesiologists to update parents with children in surgery. The extension and modification of the app for the NICU was the brainchild of an NICU staff nurse. The most recently added feature is the ability to enroll patients who are being transported to our facility and to utilize a remote registration process to link mothers and patients.

Communication with the families improved dramatically with the use of EASE Ex. An increase in the NICU Press Ganey Patient Experience Scores of 4.4 percent has been achieved.

NICU Patient Experience scores are averaging above 90 percent. This places the WPH NICU well above the Press Ganey 50th percentile average of 88.4 percent. Further work is needed to explore hospital-wide roll out.

Enhancing the Sensory Environment of the NICU Patient: Implementing a NICU Reading Program 'It's Not Just a Book...It's Food for My Brain and So Much More'

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Reading aloud to infants and young children has been associated with increased reading in older children, improved language achievement, and ultimately, improved academic attainment. Staff observed an absence of bedside reading to infants in the NICU and assumed that reading aloud to infants at home was not common among NICU graduates. The multidisciplinary team anticipated that encouraging parents to read to their infants, combined with the availability of resources, might change the "reading culture" and the frequency of parents reading to NICU graduates after discharge.

It Really Opened My Eyes: Illuminating the Pathway to Evidence-Based Nursing through Practice-Based Research

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Problem: Evidence-based practice (EBP) has been slow to take hold, as nurses do not consistently use evidence in practice. One factor may be that research lacks relevance for nurses. The EBP nursing model was derived from medicine, which prioritizes quantitative studies designed to measure physiologic responses to disease. Nursing, however,

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is a discipline rooted in the biological world (like medicine), but equally situated in the human world of values, meanings, and concerns.

Literature Review: To accelerate the pace of evidence translation, more practice-based research is needed, which includes qualitative evidence derived from experiences, contexts, and practices of providers working in real-world settings.

Purpose: Our initial purpose was to examine the experiences of parents of premature infants during their transition home. As the study unfolded, another compelling story emerged: By interviewing parents, practicing nurses on the research team witnessed a different, often hidden side of parenting, which prompted immediate changes in how they cared for NICU families.

Method: The qualitative methodology was interpretive phenomenology. The sample consisted of 18 mothers and fathers who completed a total of 42 interviews.

Findings: Thematic analysis revealed that when NICU nurses engaged with parents' stories, the nurse's understanding deepened, which enhanced empathy and family-centered caregiving.

NICU Infants Caregiver Influenza Vaccine as Part of the Discharge Process

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Statement of issue: The NICU staff needed to offer and document an adult vaccination prior to the discharge of a neonate. A workflow to educate, administer, and document the vaccine for adult caregivers needed to be developed, as well as a record of the caregiver's vaccine and lot number for tracking purposes.

Methods:

- A smart phrase in the electronic medical record (EMR) was created and shared with all staff.
- The signed consent was labeled with the infant's patient identification label and scanned into the media tab to be part of the EMR. The tab was labeled "Caregiver Flu."
- A build in the EMR was started. This would enable us to run a report on compliance with the new regulation.

Results: The smart phrase could not be exported to a report on vaccine compliance. The build went to corporate compliance for review and approval. HIPAA compliance issues were noted with the signed consents being scanned into the infant's chart. A plan was developed to do a quick registration for the caregiver and create an account to scan the consent into for record keeping. In the infant's EMR we would only chart "caregiver" and type in relation to the infant.

NICU Nurses and Families Partnering to Provide Family-Centered Developmental Care

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The aim of this evidence-based practice (EBP) project was to determine how implementing the seven neuroprotective core measures of family-centered developmental care will impact the satisfaction of nurses and families through new knowledge and skills compared to traditional care. Family-centered care is grounded in the principle that optimal health outcomes are accomplished when patients' family members participate in an active role to contribute emotional, social, and developmental support.

To accomplish this, nurses needed an understanding of the developmental problems with high-risk, premature infants, and the fundamentals of neurosensory growth. They also needed to understand how the intrauterine environment protects the infant from the fluctuations of an unstable extrauterine environment.

The model we used was the Neonatal Integrative Developmental Care Model, which included: a healing environment, partnering with families, positioning and handling, safeguarding sleep, minimizing stress and pain, protecting skin, and optimizing nutrition.

Pre- and post-surveys were collected from nurses showing an increase in knowledge and benefits. Pre- and post-Press Ganey reports, along with post-discharge phone calls showed families had a strong satisfaction in partnering with family-centered developmental care.

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Patient Family Centered Care: A Cultural Change

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Patient-Family Centered Care (PFCC) has been shown to decrease the length of hospital stay, improve patient satisfaction, and decrease the rate of readmissions after discharge.

The current culture within this setting was measured by surveys to assess staff member attitudes regarding the nurse/parents' roles in the NICU. Families were interviewed for their perceptions of inclusion in the care. Observational studies were also performed. The staff was then introduced to the core concepts of PFCC. The chasm between the nursing staff perceptions of the care they provide versus the care based on the core principles of PPCC rapidly became apparent. Realizing the vital role nursing staff play in the success of PFCC, the project was designed to change the culture within the unit to one of full integration of the family into the care of their infant.

Interventions included awareness raising, bedside rounding including all members of the health care team as well as the parents, and identification of unit-based champions to work in the roles of educator, facilitator, mentor, leader, policy developer, and evaluator. These actions have provided a foundation of support which aids in sustainability.

Family Survey of Urban NICU Discharge Experience: A Longitudinal Pilot Study

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Background: Discharge planning is an important aspect of assuring a successful transition to home of low birth weight (LBW) or very low birth weight (VLBW) infants. It is assumed by nurses that families are an ongoing presence within the NICU and that discharge education will help with the successful transition to home. However, there is limited literature regarding discharge education of NICU parents, parent readiness, and parent-driven educational interventions.

Objectives: The primary aims were to address the parental preferences of low socioeconomic status (SES) and minority parents concerning discharge from the NICU, to determine appropriate markers of parent discharge readiness, and to identify parent-driven educational interventions. We could then tailor interventions that would support improved outcomes of the VLBW infant following discharge for future NICU families.

Method: This study is a prospective, observational survey study. Families were contacted two days following discharge, at one month post-discharge, and at six months post-discharge. The parents were asked a mix of open- and closed-ended questions pertaining to their infant's discharge process and what could have been done to make the discharge process better.

Improving the Discharge Process Using an Electronic Discharge Checklist

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Problem Statement: Admission to the NICU is disruptive to a family. A safe and timely discharge to a family that is adequately prepared is mandatory to ensure an adequate transition home. There are many unintended consequences for an ill-prepared family discharged from the NICU.

Proposed Solution: Improvement of documentation of family preparedness can be facilitated with an electronic discharge checklist.

Plan: The number of procedures done and the amount of education documented on the day of discharge were identified as an area for improvement. Furthermore, essential teaching and procedures necessary for discharge were documented inconsistently and in multiple areas of the electronic medical record (EMR). This inconsistency can result in an inappropriate evaluation of a family's level of self-efficacy. Modification of an existing well newborn discharge checklist was done to meet the unique needs of the families being discharged from the NICU. Information was imported into the EDC from other patient education forms to eliminate duplication of documentation. Implementation was done with formal and informal instruction for the healthcare team and identification of project champions and stakeholders.

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Improving the Pathway to Discharge

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Introduction: The current healthcare paradigm requires a more efficient discharge of patients. Nurses face the challenge of having patients ready for discharge earlier, without sacrificing the quality of patient preparation and education. Current evidence shows that education is most effective when presented throughout the patient's stay, rather than presented all at time of discharge.

Aim: The newly created tool, Pathway to Discharge, places discharge tasks at timed intervals throughout the patient's stay to improve the efficiency of discharge and the education offered to patients. Using this new discharge tool incorporates the patient in the process by encouraging ownership of the activities required to leave the hospital.

Outcomes: The measurable outcome goals for this project include improved patient and nurse satisfaction, earlier time of day for discharge, demonstrated cost savings, and an increased amount of education completed prior to day of discharge. Measurement of outcomes is under assessment, but positive headway for all outcome goals has been identified since implementation of this project. Although current development focuses on the mother-baby population, implications of this project include application to other patient populations requiring extensive education and preparation prior to discharge.

Parents of NICU Babies Desire a Complete Care Coordination for Follow-Ups

Disclosure: This presenter is a stock shareholder of BabyNoggin
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Babies who spend time in the neonatal intensive care unit (NICU) may need specialized follow-up care after discharge. Research has shown that neonatal developmental care can improve neurodevelopmental outcomes. Qidza Foundation partnered with Wells Span's Newborn Medicine to measure parent's interest in a digital model of follow up. Out of 80 NICU parents, we found 74 percent desired a digital model of care coordination for follow ups and an end-to-end system to connect with all the providers: nurses, pediatricians, occupational therapists, social workers, physical therapists, and nutritionists. Eighty percent reported wanting telemedicine in replace of in person visits. This study further demonstrated that modern day parents desired more convenient and digital care.

Teach Back and Roadmap: Bridging the Gap to Discharge

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Research has shown that patients retain about 40–80 percent of information given by the nurses during discharge. Nurses face many challenges in providing education for every patient population in today's healthcare arena. Before being released from the hospital, the mother is expected to exhibit knowledge and self-reliance to be able to care for her newborn and herself. It is critical for nurses to understand various strategies that can expedite a proficient postpartum informative process in the hospital environment. The National Quality Forum addressed that "teach back," is considered one of the safe practices and that errors are reduced when this method is utilized during the discharge process. The goal is to demonstrate a 1–2 percent increase in the patient satisfaction scores focusing on the indicator "instructions care at home."

The theoretical framework of Orem's Nursing Theory guided the change project. The Iowa Model of Practice Change was used for the practice change. Improved patient satisfaction is evident with "teach back" and the roadmap tool. The patient experience scores related to the indicator "instructions care at home" improved from 89.5 to 92.2. The strategies of "teach back" speak to individualized, patient-centric needs and address the needs of the diverse patient population.

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The Discharge Train: Improving Parent Communication And Participation in the Throughput Process

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Background: The impetus for this project was to design a simple discharge visual that could be used to provide timely recognition of the infant's readiness for discharge.

Methods and Approach: A performance improvement (PI) project was undertaken starting in the summer of 2016. Members of the PI committee sought staff and parent feedback. All agreed that the "Discharge Train" was a simpler process that warranted evaluation. The Discharge Train is placed at every patient's bedside. The train has four cars; each labeled a different category. The labels on the four cars are Heart/Lungs, Growth/Nutrition/Temperature, Preparation for Home, and Parenting/Development. A patient needs to achieve outcomes in each category to be discharged from the unit.

Measures: Each family is given a survey asking if the discharge train was a viable visual that helped prepare them for the neonate's progress through the NICU and if the train helped them to prepare for discharge. Nurses also complete a survey.

Conclusion: Discussion about the Discharge Train has helped to improve communication, participation, and parent education for the discharge process. The train represents an exciting opportunity to foster communication during a stressful time for our families. All Aboard!

The Momma Hotline

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Mary Ellen Wright, PhD, APRN, CPNP

THE MCDOWELL HOSPITAL - MISSION HEALTH SYSTEM
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Background: Rural communities often struggle to provide health care services, instigating a sense of isolation for anxious postpartum mothers. This initiative bridged the gap between discharge and initial follow up visits.

Action: Staff identified the phenomena of postpartum mothers visiting the hospital emergency department (ED) with common concerns. "The Momma Hotline" was developed to facilitate 24-hour phone access between the Birthing Center and post-discharge. Prior to the go-live date, protocols were established for approved reference materials, documentation, and follow up. Upon receiving a call, the nurse documented the education, which was followed by physician review within 24 hours and notification of the primary care provider.

Lessons Learned: A review of ED visits and cost analysis was conducted. Post-hotline implementation, a 45 percent decrease was observed for newborn, antepartum, and postpartum visits, amounting to savings of $15,000/month. New mothers frequently used electronic media for information, which often provided inaccurate advice. These factors supported the need for formal social support programs in rural communities facing constrained resources. Strategies to support mothers during the perinatal care continuum have resulted in a decrease in ED visits and healthcare costs. As community awareness grew, multiple phone calls were fielded from antepartum patients, prompting expansion of the hotline.

Keeping Babies Balmy

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Vicky Gronewold, RNC

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A rise in newborn hypothermia rates two hours post-birth was identified at a medical center with 629 licensed beds located in the Midwest. Further data analysis identified barriers to keeping infant temperatures higher than 97 degrees Fahrenheit. "Cold baby" action plans were developed following data analysis of dependent variables by an

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interdisciplinary newborn committee. Action plans to remediate chilly findings such as delayed cord clamping, setting of birth (labor room vs surgical suite), and infant transport procedures will be detailed in this poster describing the journey and progress of a traditional family birthing center. Included are improvement strategies for infants who are mildly hypothermic immediately post-birth. Effects of variables will be correlated to outcomes of process change interventions.

Graphic analysis illustration of hypothermia rates pre- and post-interventions will be detailed including innovative strategies to decrease infant hypothermia rates that can be replicated by other facilities.

Prevention of Inadvertent Hypothermia in Neonates During In-Hospital Transport to and from the Operating Room

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Background: Hypothermia during in-hospital transport is a well-recognized complication affecting a large number of newborns. In our surgical population at a Level IV neonatal intensive care unit (NICU), inadvertent hypothermia during transport to and from the operating room (OR) was a common event. In 2015, 14 of 48 newborns (29 percent) were cold before or after their transport to the OR and 35 of 48 (73 percent) were cold in the OR (<36.5°C).

Design: During the first six months of 2016, after a root cause analysis, a process map was developed which included the implementation of existing technology for transporting neonates and a training program for personnel involved in transport. We evaluated temperatures in 34 neonatal transports between the NICU and the OR, 24 before and 10 after the implementation of the new process.

Results: For 2016, a before and after implementation of our quality project show a significant decrease in the incidence of inadvertent hypothermia before, during, and after surgery. After implementation of the new map process we observe no cases of hypothermia upon return to the NICU.

Conclusions: Inadvertent hypothermia during in-hospital transport is a very common problem that goes unrecognized. With the implementation of an educational program and the use of available technology this is a preventable morbidity.

Temperature Stabilization of the ELBW and VLBW Neonate

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Heat loss prevention and temperature stabilization in the low birth weight (LBW) and extremely low birth weight (ELBW) infants is important because these infants are vulnerable to heat loss. The effects of hypothermia have been shown to increase mortality and morbidities. Improving outcomes by preventing hypothermia is possible. Standards of practice promote heat loss prevention and temperature stabilization in the LBW and ELBW infant. The nurse at the bedside is in the forefront of setting in place improved outcomes by preventing heat loss and maintaining temperature stabilization.

For our clinical practice, staff members are educated on the latest evidence-based information. Guidelines are explained and demonstrated in this presentation

Keeping Our Vulnerable NICU Patients Safe: A Unit-Specific Emergency Preparedness Plan

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UCLA MATTEL CHILDREN'S HOSPITAL AT RR-UCLA MEDICAL CENTER
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The population of premature and critically ill newborns is among the most vulnerable of hospitalized patients. They depend on specialized healthcare providers and advanced technology and resources to deliver complex patient care.

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Therefore, adequately trained and equipped NICU staff members are vital during an emergency evacuation to ensure the safety of these patients.

Methods: In 2014, NICU staff and leadership in collaboration with the Office of Emergency Preparedness and Nursing Administration formed an interdisciplinary NICU Emergency Preparedness Committee (EPC) to develop a unit-specific emergency guideline that would supplement the hospital's existing emergency operations plan and enhance appropriate resources and training for staff.

Interventions/Results: The emergency guideline is focused on creating an emergency response plan and conducting annual staff training to address the unique needs of these fragile patients and to manage their high-risk mobilization during an evacuation. The EPC team conducted mock drills that emphasized the expectations for specific roles, responsibilities, and the use of new infant evacuation baskets, backpacks, and other resources that further enhance staff knowledge and confidence during an emergency.

Conclusion: The implementation of these emergency guidelines, resources, and training resulted in ongoing interdisciplinary and multi-facility efforts to improve emergency preparedness in the NICU.

Neonatal Intensive Care Unit Evacuation Plan

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WELLSTAR KENNESTONE REGIONAL MEDICAL CENTER
MARIETTA, GEORGIA

Problem/Background: Our neonatal intensive care unit put our neonates at risk in an emergency requiring sudden evacuation because we had no evacuation plan. Reviewing the evacuation indicated the following gaps: staff unaware of how to evacuate; our unit is separate from the hospital, providing less support for emergencies; fast exit from the building relied primarily on one bridge; no equipment was available for a safe evacuation.

Methods: A multidisciplinary team consisting of safety officers, quality leaders, nurses, respiratory therapists, emergency medical service (EMS) personnel, and administrators was formed to address our need for an evacuation plan. After assessment of options, we determined vertical and horizontal evacuation was needed to address all emergency needs. Once the routes were mapped, and table top drills were run, our plan was submitted for approval. Evacuation sleds, boxes, and backpacks with 24-hour supplies were purchased. Staff members were required to complete education and drills.

Results/Discussion: We now have a well thought out evacuation plan with 2 staging areas to track neonate movement to ensure all babies are secure. This is critical in our location. It is a commercial hub which has been identified as a city at risk for potential terrorist activity and prone to weather alerts for tornadoes, flooding, and tropical storms.

NICU Evacuation: More Than Just Moving Horizontal

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Janice L. Hart, BSN, RN

LOYOLA UNIVERSITY MEDICAL CENTER
MAYWOOD, ILLINOIS

In the aftermath of recent natural disasters and continued threats of terrorism in the world today, the need for an evacuation plan specific to the neonatal intensive care unit (NICU) is critical. NICU staff must be prepared to safely evacuate medically fragile infants in a well-organized manner, ensuring the best outcome for high-risk patients, family members, visitors, and staff.

Our previous evacuation plan was brief. A multidisciplinary team, including emergency preparedness staff, nurses, physicians, respiratory therapists, dietitians, a pharmacist, and secretaries was assembled to add specific roles, procedures, and equipment needs to our policy. Our new evacuation plan addresses acuity, an evacuation algorithm, personnel roles and responsibilities, guidelines for evacuation devices, medical concerns during transport, security, tracking forms for reconciliation of patient movement, and family notification. In addition, evacuation equipment and supplies to use at alternate care sites were purchased.

From March, 2016, to May, 2017, staff were trained on all aspects of evacuation. This training was put into practice in May during a unit upgrade. This upgrade required that all NICU patients be relocated for three days to two alternate care sites in the hospital. This poster will present the key components and implementation of a successful NICU evacuation plan.

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When We Realized it was Not a Drill: Our Fire and Evacuation Experience

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A true scenario will be presented describing the identification, alarm, and evacuation when fire is discovered on the second floor of a hospital tower. The NICU, labor and delivery, general pediatrics/PICU, and mother-baby unit of 310 staff, faculty, and patients/families required evacuation as smoke filled the building. Participants are divided into groups and given discussion topics on communication, leadership, resources, evacuation dilemmas, education, and debriefing. I was in charge of the mother-baby unit and we thought it was a regular fire drill until we started smelling the smoke. Because the evacuation route was filled with smoke, we had to evacuate our patients and families by an alternative route. We were able to evacuate the entire building without any harm, due to team work and support from leadership. We successfully managed to evacuate the entire women, infants, and children (WIC) department without any casualties, but no drills can prepare you for the trauma you go through.

Staffing for Acuity in Labor and Delivery

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The results of a prior study conducted in the women's and children's area of this institution demonstrated a significant correlation between staffing patterns and culture of safety. The purpose of this project was to create a staffing pattern in labor and delivery that takes into consideration the acuity of patients and patient volume while adhering to the AWHONN staffing guidelines, in consideration of the Institute of Medicine reports on safety without increasing the workforce.

Methods: A needs assessment was conducted of the nurses in labor and delivery. This was followed by an analysis of acuity and volume levels in labor and delivery during the week. From both analyses a new staffing model was created that did not increase FTEs but used variability of scheduling to achieve the objective. Nurses actively participated in the planning of the staggered staffing schedule.

Results: Staggering shifts allowed for safe staffing patterns during the times of the highest acuity and volume of patients. There was a demonstrated increase in nursing satisfaction.

The Sunshine Committee: Encouraging Staff Engagement to Increase Workplace Morale

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NEW YORK, NEW YORK

Nursing satisfaction and workplace stress are topics that are of great concern throughout the healthcare industry. Workplace stress and low morale often lead to high turnover and low retention rates. Happell and colleagues suggest that in addition to addressing unit-based issues such as staffing and workload, the engagement of nurses in "non-ward-based initiatives" and "special events" can help decrease work place stress and improve satisfaction. In response to low staff morale, the NYU Langone Medical Center mother-baby unit created "The Sunshine Committee." This committee's goal is to engage nurses and staff members in a social context, both on and off the unit, fostering better work relationships. Some activities include group volunteer days at a local New York City soup kitchen, walking as a team at the annual March of Dimes March for Babies, unit "Just Because" parties, and off unit holiday parties. In addition to mother-baby staff engagement, the Sunshine Committee also encourages positive interactions with our sister units, Labor and Delivery and the Neonatal Intensive Care Unit. As care for our patients span across these units, we recognize the importance of collaboration and strive to increase staff morale both as a unit and as a multi-unit team.

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Bringing the NICU RN to the Family: A Program to Provide End of Life Care Outside of the NICU

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With the advancement of antenatal testing, fetal abnormalities may be diagnosed early in the pregnancy. Our program provides support to the family after diagnosis until the end of life or discharge home to hospice care. Traditionally these infants are cared for in the neonatal intensive care unit (NICU) setting. In 2015, a program was developed that was similar to our sister hospital's program, but tailored to our setting. Families are provided with a pre-conference to determine their wishes during and after birth. This conference includes neonatologists, nurses from labor and delivery (L&D), mother-baby, and the NICU, the obstetrician, a case management/social service representative, and a chaplain.

Once the newborn has delivered, the family is cared for first in L&D and then mother-baby. What is unique about our program is that an NICU RN is assigned to care for and support the newborn. This allows the parents to remain together as a family and provides the opportunity for them to bond and parent for the few hours or days they have with their special newborn.

A 4-hour multidisciplinary education program is provided to all maternal newborn staff, including secretaries and obstetrical technicians. This allows everyone to understand and support these courageous families.

Nurses, Firemen and Infants: A Successful Collaboration

Alison Thomas, RNC-NIC, C-NPT, MSN

Berverly E. Schwerin, RNC-NIC, BSN

HUNTINGTON HOSPITAL
PASADENA, CALIFORNIA

Babies born in an uncontrolled environment outside the hospital can experience many issues, such as asphyxia, birth injuries, and hypothermia. Firemen and paramedics face many challenges when responding to these situations. A difficult case that our hospital was involved in exemplified these challenges and more. A performance improvement opportunity was identified. An educational program was created to teach the skills and provide the tools related to infant stabilization. This program was presented to the entire city's fire department by two neonatal intensive care unit nurses. This program provides essential life-saving information to first responders about this fragile population that they serve. One of the most significant impacts that has resulted from this program is that the paramedics and firemen have reported increased confidence in infant stabilization and relief from the moral distress they experienced in not knowing what to do.

Perinatal Substance Exposure: An Exemplar Family Centered Collaborative Comprehensive Approach Along the Continuum of Care

Mary Ellen Wright, PhD, APRN, CPNP

MISSION CHILDREN'S HOSPITAL
ASHEVILLE, NORTH CAROLINA

Background: The opioid epidemic has created a growing interest in the area of perinatal substance exposure. The presentation will address a regional, multi-agency, transdisciplinary, family-centered approach along the continuum of care for perinatal substance exposure.

Methods: A transdisciplinary team in the tertiary care hospital system and a community collaborative from multi-agency stakeholders formed in a primarily rural region of 21 counties.

Results: The results of multiple collaborations and funding efforts resulted in the following achievements:

- A prenatal intervention team to perform care planning during pregnancy and postpartum
- A neonatal nurse practitioner-led consultation team in the hospital to manage all perinatal substance-exposed infants with an interdisciplinary team
- In-hospital order sets that are specific to substance plan of care
- An embedded Department of Social Services (DSS) worker in the hospital to collaborate with county DSS
- Standardized education materials for providers and families distributed and electronically available

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- Nurse-led task force to address non-pharmacologic interventions
- Home health development of care to follow post-hospital discharge
- Collaboration of services for the infant
- Increase in available treatment facilities for the mothers
- Multiple research initiatives on the topic of perinatal substance exposure.

Resource Nurse Position in a Neonatal Intensive Care Unit

Diane Shimborske, BSN, RNC-NIC

Patty Macho, MS, RNC-NIC

COHEN CHILDREN'S MEDICAL CENTER
NEW HIDE PARK, NEW YORK

Background: Over two years in the neonatal intensive care unit (NICU) 45 new RNs were hired for the night shift, representing 58 percent of the night staff. The majority were new graduate nurses. Nightly, over half the nurses have less than two years' experience. The Assistant Nurse Manager was unable to provide the support and guidance these nurses needed. Nor could one person monitor them as needed due to the high census and acuity. A need was identified to support the nurses' successful transition from novice to competent nurses.

Proposal/Solution: The Resource Nurse role was developed. The Resource Nurse is a senior NICU nurse with excellent clinical and communication skills. Responsibilities included: supporting newer staff members as they transition to an independent role, assisting with developing critical thinking skills and mastering new tasks, and providing guidance in unfamiliar situations.

Results: Pre- and six months post-implementation, survey results showed that on a scale from 1 to 5, an increase in overall average comfort rose from 3.46 to 4.1. The greatest increases were in comfort level in caring for extremely and very low birth weight infants, (3.93 to 4.38) and working with drips (3.60 to 4.31). Increased confidence, competency, and satisfaction have been noted among the staff since implementation.

Placental Blood Draws: Conserving Neonatal Blood to Reduce Blood Transfusions in Premature Infants

Robyn Duafala, BSN, RNC

Jayme Garman, MS, RNC, CNL

Melissa Wisniewski, BSN, RNC

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BALTIMORE, MARYLAND

Premature infants born at less than 1,500 grams are at risk for multiple morbidities and mortality. Conserving the infant's blood volume by drawing baseline blood work from the placenta after birth may reduce early transfusion in the first three days of life. An association of early transfusions and intraventricular hemorrhage (IVH) has been noted.

The Level III neonatal intensive care unit (NICU) at Sinai Hospital of Baltimore has approximately 250 admissions each year; 20 percent of those may have a birth weight of less than 1,500 grams.

In 2015, the NICU and labor and delivery staff collaborated to design a new, efficient, and effective process to obtain placental blood after delivery and use it to run admission lab tests. We used resource information and YouTube videos posted by Intermountain Health Care to train staff.

We successfully obtained placental draws for 88 percent of infants less than 1,500 grams and decreased transfusions within the first week of life by 22 percent. This lead to a significant decrease in the need for supplies, donor blood, nursing care hours, painful procedures, and pathology services. It is still too early to determine any impact on reduction in IVH. We will continue to collect data.

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To Change or Not to Change: Reducing CLABSI with 96-Hour Closed System IV Tubing Changes

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Central line (CL) associated blood stream infections (CLABSI) are associated with thousands of deaths each year and billions of dollars in health care costs. Premature infants are at great risk due to their critical condition, immature immunologic status, and the length of CL dwell times. Increased compliance to CL insertion and maintenance bundles and customized CL dressing change kits have resulted in positive patient outcomes.

A change was made in our 49-bed, Level III neonatal intensive care unit (NICU) as the result of the 2011 CDC Guidelines for the Prevention of Intravascular Catheter-Related Infections. Intravenous (IV) tubing changes with a closed medication line were extended to every 96 hours with intralipid tubing continuing to be changed every 24 hours via a closed system access cap. More recently, an additional change has integrated a closed system flush into the IV tubing, which continues to support every 96-hour tubing changes and nearly eliminate CLABSIs.

Despite more than doubling the number of CL days in the past decade, continuous interdisciplinary quality improvement initiatives have made significant impact on CLABSIs. The unit experienced a 94.8 percent decrease during this time period, bringing current rates down to less than 0.5 percent.

Getting From There to Here: Implementation of the National Perinatal Association Standards for Psychosocial Support of NICU Parents and Staff

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Psychosocial needs along the perinatal continuum have been well-documented in the scientific literature. However, specific guidelines for how to allocate limited psychosocial resources have been limited to date. The National Perinatal Association (NPA) has recently published recommendations for psychosocial support of neonatal intensive care unit (NICU) parents. This is a step toward a more thoughtful, evidence-based approach to addressing this need. Although these recommendations focus on particular aspects of the NICU, they have broader applicability across the perinatal continuum.

This presentation will provide information on the recent NPA recommendations. Within these recommendations are strategies for support of the NICU family and the professionals who care for them. A case example applying the recommendations in a resource constrained NICU will be offered, along with discussion of methods for implementing and sustaining positive change.

Improved Patient Experience after Initiation of a Developmental Care Committee in a NICU

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Background: Developmental care involves providing an environment in the neonatal intensive care unit (NICU) that minimizes overstimulation of the infant, involves parents in the infant's care, and adapts care based on the infant's behavioral state. Use of developmental care concepts results in a trend toward improved growth, decreased need for respiratory support, decreased length of stay, and decreased hospital costs.

Problem: No formal developmental care program or education in NICU.

Interventions: Developed and introduced a developmental care program in 2012. The program included: interdisciplinary staff education, Developmental Specialist certification of 25 staff members who are resource persons, developmental care rounds twice weekly on day/night shift, developmental care posters, weekly baby care classes,

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institution of a cue-based feeding protocol and audits, development of a pain committee, and a completed research project.

Results: Change in unit culture to incorporate developmental care interventions in daily practice. An increase in skin-to-skin holding; an increase in infants' breastfeeding on discharge from the NICU from 78 percent in December, 2011, to 90 percent in 2015; implementation of quiet hours, 3–5 am and 3–5 pm; improved pain management; and an increase in parent involvement. Increased compliance with a cue-based feeding protocol (from 40% to >90%) was also seen.

Breaking Bad News to Parents

Lori Rubarth, PhD, APRN, NNP-BC

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OMAHA, NEBRASKA

Neonatal nurse practitioners (NNPs) must often break bad news to parents. This can occur following a delivery or during their infant's care in the neonatal intensive care unit (NICU). Nurse practitioners talk to parents on a daily basis and often the information given is not good news. It's easy to give daily updates on weight, but it is very different to deliver bad news to parents who desperately want their infant to be healthy. Delivering bad news is especially difficult when NNPs have not been formally trained in this type of communication skill.

This presentation will discuss ways to improve your skills when talking to parents about "bad" news. We will review what "to say" and what "not to say" during difficult situations. In addition, we will discuss the option of simulated parent/infant situations that can be used to assist the practitioner to develop expertise in a controlled, yet "real," setting. Experiential learning through simulation is a great way for new NNPs or student NNPs to practice and refine their communication skills with parents and families. These simulations can be recorded for group debriefing, individual review, or self-reflection after the sessions. Examples of videos will be presented.

Addressing the Diagnostic Challenge: The Floppy Newborn and What To Do Next

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Although not an uncommon finding in the neonatal intensive care unit (NICU), neonatal hypotonia (the floppy baby) can be an overwhelming and complex non-specific finding with numerous etiologies. Depending on gestational age, prenatal history, and delivery factors, there are many diagnostic possibilities for the floppy newborn. However, in the absence of any known causative family or significant history, these infants can create a diagnostic challenge. Known as "the newborn with generalized hypotonia presenting at birth," the floppy baby can have various clinical presentations. The diversity and complexity of the possible pathologies justifies a thorough understanding and assessment by the NICU team.

This presentation illustrates an organized approach to the hypotonic newborn using a case study. It will review the initial presentation and examination identifying hypotonia, present approaches to aid in the diagnostic pathway, and touch on differential diagnosis formulation. The importance of utilizing a well-organized clinical approach to simplify this complex presentation is emphasized. Understanding the different presentations of hypotonia can help determine the possible etiology and level of dysfunction. Accurate diagnosis and evaluation of the hypotonic neonate is crucial to providing necessary and timely management, counseling families, and optimizing outcomes for these vulnerable newborns.

Biomarkers to Detect Neonatal Acute Kidney Injury

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Neonatal acute kidney injury (NAKI) prevalence among infants in the neonatal intensive care unit (NICU) is approximately 30 percent. Approximately 25–41 percent of premature infants develop NAKI, with mortality rates of 50–80 percent. The risk for chronic kidney disease later in life doubles for those who survive. Current diagnostic criteria for NAKI include serum creatinine elevation and diminished urine output; however, this approach lacks precision, which most likely leads to lack of recognition and delayed intervention. Studies show that up to 50 percent of renal

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damage has already occurred by the time these indices appear abnormal. Therefore, a more precise approach is required. Current research has shown that urinary biomarkers accurately predict early NAKI, before substantial damage has occurred. In addition, near-infrared spectroscopy (NIRS) continuously measures renal tissue bed oxygenation, which identifies tissue hypoxia and potential ischemia. Combining these approaches may substantially increase prediction and identification of early NAKI. The purpose of this presentation is to discuss current research findings related to NAKI risk factors and associated disease processes, provide an overview of short and long-term outcomes, describe innovative diagnostic approaches supported by scientific evidence, and identify future research directions needed to improve prediction and intervention strategies associated with NAKI.

ABO Hemolytic Disease of the Fetus and Newborn: Is a New Paradigm Needed?

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Background: ABO hemolytic disease occurs among neonates with blood groups A or B delivered to group O(+) women. Questions remain about the severity of this entity.

Methods: We determined severity among neonates born to blood group O(+) women by comparing outcomes of group A or B with group O (control) neonates, using 13 years of multihospital data.

Results: Of 400,531 live births, 47 percent were to blood group O women; 86 percent of whom were group O(+) (the focus of all subsequent studies). 42,529 neonates had their blood group determined: 68% were O, 25% A, and 7% B. Peak total serum bilirubin (TSB) levels during the first 10 days were higher in group A (11.0 ± 4.2 mg/dL) and B (11.5 ± 4.3 mg/dL) than O neonates (10.3 ± 4.1 mg/dL). However, the risks of a TSB ≥25 mg/dL, readmission for jaundice, kernicterus, or hydrops/erythroblastosis, were not higher.

Conclusions: ABO hemolytic disease typically results in a higher TSB in the first 10 days. However, we doubt the existing paradigm that it can be severe enough to cause hydrops/erythroblastosis, or extreme hyperbilirubinemia. This should be reexamined using other large datasets. We postulate that when a neonate with ABO hemolytic disease has severe hyperbilirubinemia, other complicating hemolytic conditions co-exist and should be sought.

Disaster Preparedness Neonatal Intensive Care Unit: Infant Evacuation

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Background: In the last several years, medical centers have faced natural disasters that required the emergency evacuation of hospitalized patients, including premature and critically ill neonates. The emergent evacuation of this vulnerable population relies on staff and technology for all aspects of care and is considered a high-risk activity. In response, The Joint Commission issued specific requirements for emergency management and disaster preparedness, known as Standards of Care for Disaster Preparedness and Response. Hospitals are mandated to have a disaster management program in place that addressed emergency preparedness and planning activities. A quality improvement project was created to improve the processes related to the safe and efficient emergent evacuation of neonates and ensure hospital alignment with The Joint Commission's recommendations for a comprehensive Emergency Operations Plan.

Outcomes: Results of education and training of 33 neonatal nurses on a department-specific emergency response plan, roles and responsibilities during neonatal evacuation, and the use of evacuation equipment indicated increased knowledge and self-efficacy. The neonatal nursing task force developed for this project has become an interprofessional, multi-facility committee, chaired by the author, whose purpose is to present findings and proposed solutions on NICU disaster preparedness and emergency management issues to hospital and regional disaster preparedness administration.

Decreasing NICU Admissions and Increasing Exclusive Breastfeeding Rates Through Implementation of a Glucose Gel Protocol in the Newborn Nursery

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Background: Neonatal hypoglycemia is a common and potentially life-threatening condition. At NYULMC, approximately 35–60 newborns per month experience hypoglycemia (glucose <40 mg/dL) and 15–30 percent of these

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newborns require transfer to the neonatal intensive care unit (NICU). NICU admissions for hypoglycemia increase cost and lead to decreased maternal-infant bonding and exclusive breastfeeding. Glucose gel has been found to be a safe and effective treatment for asymptomatic neonatal hypoglycemia. Our goal was to implement a glucose gel protocol to reduce the percentage of newborns requiring NICU transfer and treatment. Additional goals included reducing the percentage of newborns who experience repeat episodes of hypoglycemia and increasing the percentage of hypoglycemic newborns exclusively breastfed.

Outcomes: Since implementation, 52–68 percent of hypoglycemic newborns received glucose gel. This has led to a decrease in the percentage of hypoglycemic neonates requiring NICU admission and an increase in the percentage of hypoglycemic newborns exclusively breastfed at discharge. We have also finalized standard guidelines for supplementation with breast milk (expressed or donor) when needed for repeat hypoglycemic episodes. As our efforts continue, we hope to increase the percentage of hypoglycemic newborns receiving glucose gel, with continued education of all interdisciplinary staff members.

NICU Nurses' Stressors and Coping Styles

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The stress of working in a neonatal intensive care unit (NICU) can impact job satisfaction, well-being, and can ultimately lead to turnover. The purpose of this study was to examine stressors and coping using Lazarus and Folkman's cognitive appraisal theory. Seventy-two NICU nurses from three Magnet facilities in North Carolina completed The ICU Stressors Survey, The Ways of Coping Scale, demographic data questions, and free text questions in Qualtrics, a secure online survey system. Patient care concerns, technical skills, and the NICU environment were not identified as particularly stressful. Nurses identified staffing issues as the main stressor. They also identified relationships between shifts and other disciplines as stressors. Overall nurses felt that they coped well with job stress. They used positive coping approaches that included problem solving and positive reappraisal. Study findings highlight the need for careful attention to staffing patterns. In addition, implementing healthy work environment standards would be helpful to address key stressors identified in this study.

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