

Abstracts Presented at the 13th National Neonatal Nurses Conference and 16th National Mother Baby Nurses Conference

Las Vegas, NV, September 8–11, 2013

These abstracts represent a broad range of neonatal and perinatal issues. By sharing this information, we hope to increase awareness of research and innovative programs within the perinatal health care community and support evidence-based nursing practice. Some abstracts have been edited for publication.

Implementation of Potentially Better Practices to Decrease Ventilator-Associated Pneumonia and Chronic Lung Disease

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Setting: Our unit is a 54-bed Level III NICU. Project aims included the following:

- Decrease rate of chronic lung disease (CLD) by 20% before 12-31-12.
- Decrease ventilator-associated pneumonia (VAP) rate to <10th percentile per NHSN definition before 12-31-12.

Mechanisms: Our team implemented multiple respiratory PBPs.

Methods: Multiple PDSA cycles were tested including revision of VAP bundle, inclusion of respiratory therapists in delivery room (DR), prophylactic surfactant for infants <26 weeks GA, extubation/placement on noninvasive positive pressure ventilation (NIPPV) in DR, standardized extubation and reintubation criteria, and ordering of caffeine upon admission.

Process Measures: Process measures included VAP bundle audits, development of extubation log, Golden Hour tracking log, and NIPPV tracking log.

Results: CLD rate per VON data—decrease from baseline of 38% to 18%.

VAP incidence/rate per NHSN definition—decrease from baseline of 7 percent per year to 0.

Discussion: Key factors to our success included multidisciplinary team development, regularly scheduled meetings, team updates and staff education, development of data tracking tools, and implementing tests of change. Lack of evidence and experience using noninvasive ventilation devices and a large number of changes over a relatively short period of time were challenges for our team.

Objective: The learner will be able to identify and verbalize benefits of a potential test of change for improvement in their work environment.

Development of a Process-Improvement Plan for Peripherally Inserted Central Catheters in Neonates and Formation of a Pediatric Vascular Access Team

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Purpose: From 2011 to 2012 this neonatal nurse practitioner (NNP) group evaluated peripherally inserted central catheter (PICC) practices in the NICU after development of evidence-based guidelines.

Project Description and Goals

- Literature review of techniques to improve PICC success rates, current placement practices, and education
- Introduction of modified Seldinger technique
- RN and NNP education
- Development of "PICC Rounds"
- Data collection, analysis, comparison of multiple PICC insertion and maintenance variables
- Improve success rates, minimize insertion difficulties, decrease complications

Outcomes: Two years of PICC data were collected and analyzed including multiple insertion maintenance and complication variables. PICC rounds included daily visualization with site documentation, interventions, and identification of possible PICC candidates and patients ready for PICC removal.

Conclusions: Evaluation and improvement of our PICC practice, with future goals of improving PICC insertion success with ultrasound guidance, standardization of PICC education, and the creation of a hospital VA team (including NNPs).

Implications for Practice: Improvement in first-attempt PICC insertion, reduction of procedural stress and length of procedure, increase in vein preservation, cost reduction, and decreased risk of catheter-related bloodstream infections (BSIs) that a VA team can provide.

Limitations: Training costs, developing proficiency.

Objective: Describe the advantages of PICC insertion and education standardization.

Eradication of Catheter-Associated Bloodstream Infections

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The goal was to decrease catheter-associated BSIs to zero through a series of rapid-cycle quality-improvement projects. A 16-month period of no catheter-associated BSIs was achieved.

Design: The NICU Quality Improvement Committee designed and implemented a series of rapid-cycle projects according to recommendations of the CDC, IHI, and other evidence-based literature.

Implementation: The rapid-cycle projects included sequential introduction of components of a bundle that included revision of the hand-washing protocol, hand-washing education, "sacred space" around babies, standardized hub care, IV setup, and review of all catheter-related infections

Data Analysis: A rapid decrease in the catheter-related infections was noted followed by a slower decline. During the period from 2/1/2012 to 5/31/13, there were no catheter-associated BSIs.

Discussion: Use of serial rapid-cycle projects demonstrated a decrease in catheter-related infections. Continued staff education and monitoring were important

Objectives: (1) Identify two projects to decrease the incidence of catheter-associated infections. (2) Describe the benefit of sequential rapid-cycle projects in attainment of a quality-improvement goal.

Perceptions from the Front Line

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Background: The neonatal intensive care unit (NICU), pediatric intensive care unit (PICU), and cardiovascular intensive care unit (CVICU) at a world-renowned, comprehensive children's hospital and newly opened women's and fetal center evaluated avenues to decrease central line-associated bloodstream infections (CLABSIs). Multiple contributing factors were identified as potential causes in our increase in CLABSIs. These factors included changes in the central line change process, on boarding of over fifty new registered nurses, a newly developed vascular access team, and the opening of a new women's and fetal medicine hospital. This information drove us to assess our current line insertion and tubing-change process.

Method: An interdisciplinary team of neonatal, pediatric, and cardiology experts was convened to evaluate and make

recommendations for improvement. Weekly meetings were initiated with nursing and medical front-line staff and leadership. I represented the frontline nursing staff as their central-line champion. My role was to be the voice of my colleagues and actively participate in effecting change. Our primary areas of focus included comparing processes between all three units, determining a workable process for the front-line nursing and medical staff, analyzing methods proven effective at other large children's facilities, and reaching a goal of zero central line-associated BSIs.

Results: Current data collected demonstrate positive trending toward our goal of zero. Daily education and rounding with front-line staff provided great opportunities for positive change and implementation of a line-insertion and tubing-change method proven to be infection free. Standardizing of the insertion and tube-change process eliminated variation between the three departments.

Conclusion: CLABSI rates are on the decline trending toward our goal of zero. Now, front-line staff have a proven effective process for insertion and line changing that is workable in the already-complex intensive care environment.

Objective: The learner will be able to identify a safe and effective practice for central line care.

Preventing CLABSI in the NICU

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Background: Northwest Community Hospital NICU obtained Level III status in December 2010. In 2012, NICU had 3 confirmed CLABSIs by August. A taskforce was formed to evaluate CLABSI prevention initiatives. In January 2013, a 4th CLABSI had been reported.

Primary Objective: The primary objective was to decrease the incidence of CLABSIs by 50% in 2013.

Development of the Program: NICU CNS researched current recommendations to decrease CLABSI incidence. Change needless connector from positive to neutral pressure.

CLABSI I PowerPoint was presented to staff. The information presented included definition and incidence of CLABSI and CDC recommendations for prevention. NICU CLABSI bundle was reviewed.

CLABSI II PowerPoint was presented to staff to demonstrate standardization of administration set changes for central lines.

Broviac, PICC, UVC, and UAC protocols were updated to reflect new practices.

Implement use of biopatch with PICC dressings in neonates >28 weeks or <28 weeks and >2 weeks chronological age.

New products were trialed to increase scrub the hub compliance in December 2012.

PCQI taskforce was formed February 2013 to include infection control, neonatology, management, and nursing staff.

Outcomes continue to be evaluated by CLABSI incidence, self audits and taskforce audits.

Objectives: The learner will be able to (1) verbalize NICU CLABSI bundle practices, (2) discuss central line insertion and maintenance procedures, and (3) outline central line dressing care and documentation.

Aim for Excellence: Neonatal Infection Prevention

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Background of Problem: Central line insertion and maintenance bundles are attributed to the decrease in central line associated blood stream infections (CLABSIs) in the neonatal population. The objective of this poster is to summarize our practice changes and results related to the decrease of infections in the neonatal intensive care unit (NICU).

Purpose of Practice Change: We recently joined California Children's Service (CCS) Neonatal Infection Prevention Collaborative in Association with California Perinatal Quality Care Collaborative (CPQCC) in efforts to adopt evidence-based practices that would decrease our infection rates.

Supporting Research Evidence: Standardization of central line care has shown to decrease NICU CLABSIs.

Practice Change Methods: In alignment with our Nursing Professional Practice Model, our leadership team developed a plan and completed recommended changes to our practice. Our goal was to decrease CLABSIs by 25% in all NICU patients by December 31, 2012.

Results: Our QI dashboard illustrates our efforts of meeting our goal. Our last CLABSI was in the second quarter of 2011 (June 27, 2011).

Comparison to Research: While there is a decrease in overall infection in NICUs, there is still a risk of acquiring infections.

Recommendations: Continue to collaborate with other hospitals on infection prevention, audit and evaluate our practice, and make changes based on emerging evidence.

Objective: The learner will be able to summarize our practice changes and results related to the decrease of infections in the NICU.

Facilitating a Change in Practice through NeoCAT and QI

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This presentation will demonstrate the process we went through in order to bring about a change in practice from placing low-lying umbilical artery catheters (UACs) to high UAC lines. To get to the core of the evidence which may support the placement of high vs low lines, we did an extensive Neonatal Critically Appraised Topic (NeoCAT) review. The process starts with stating an informed clinical question, identifying the Problem, Intervention, Comparisons, and Outcomes. Next, a literature search and review with evaluation of the level of evidence that is supported or refuted and stating theoretical concerns about biologic and physiologic plausibility. Each article was then ranked according to its level of evidence (LOE), and categorized as to whether it supports, is neutral, or is against the practice of placing high lines. Finally, the information is summarized, and a best evidence statement is provided.

We then presented the data from our institution, which was a quality improvement (QI) project that tracked the incidence of clinical vascular compromise (CVC) with low lines, and compared it to the Cochrane Review data that have been compiled. Finally we made a conclusion with draft recommendations to change our practice to placement of high lines.

Objective: The learner will be able to describe the process to review a controversial topic, present it with a high level of evidence, and ultimately come up with draft guidelines to provide the best-quality care to neonates.

Clinical Vascular Compromise with High vs Low Positioning of Umbilical Artery Catheters

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The placement of umbilical artery catheters (UACs) is a common procedure in the NICU. UAC lines may be positioned high at T6-9 or low at L3-4. A review of the literature provides conflicting accounts as to the superiority of high versus low placement of UACs. The purpose of this study was to note the frequency of clinical vascular compromise (CVC), necessitating removal of the UAC line, and to compare the occurrence with positioning of the catheter tip. We reviewed 144 charts.

Results: Overall, 30.4% of low lines were DC'd because of CVC. If the infant was <1,500 g, the rate was 39.7%. Seventy-five percent of the lines were removed within 24 hours of placement. There was a highly significant difference between the newborns who had CVC and those that did not, for gestational age $p < .001$, birth weight $p < .001$, and duration $p < .001$. There was a significantly lower CVC rate (17.3%) with the high position subgroup compared to the low position subgroup (30.4%), p -value .001.

This study supports the use of high UACs especially in the more premature babies, allowing for monitoring of critical labs and blood pressure, and administration of fluids with minimal disruption to the infants and their environment.

Objectives: The learner will be able to: (1) describe the indications for placement of umbilical artery catheters in neonates, (2) describe the risks and benefits of UAC lines, (3) compare the outcomes with high vs low placement of UAC lines.

Coagulation Test Reference Intervals and FFP Usage for Preterm Infants

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Fresh frozen plasma (FFP) is sometimes given to nonbleeding preterm neonates because their coagulation tests are abnormal. The benefits/risks of this practice are not well defined. Progress has been limited by a lack of reference ranges for coagulation tests based on gestational age.

We drew fetal blood at 175 preterm births (≤ 34 weeks) for fibrinogen, PT, aPTT, D-dimer, platelets, and mean platelet volume. Reference intervals were constructed using 5th and 95th percentile values, organized by gestational age. Associations were sought between abnormal coagulation values (below or above the reference interval) and bleeding during the

first week. No abnormal coagulation test, either alone or in combination, predicted bleeding (intraventricular, gastrointestinal, or pulmonary). However, an elevated fibrinogen (>95th percentile) was associated with *in utero* infection/inflammation (elevated C-reactive protein, $p < .01$, and immature to total neutrophil ratio, $p < .001$).

This study provides reference intervals for coagulation tests of preterm neonates. Thus, abnormal coagulation values can now be confidently recognized. Abnormal coagulations tests at birth do not predict bleeding during the first week, indicating that early bleeding is not generally the result of *in utero* coagulopathy. This brings into question the value of prophylactic administration of FFP to preterm neonates with abnormal coagulation values.

Objective: The learner will be able to realize that results of coagulation tests at premature birth do not predict early hemorrhage.

Taking Family-Centered Care to a Whole New Level: BabyCam

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It is a scary time when your baby is in intensive care. To address these fears, a 40-bed, Level III, neonatal intensive care unit (NICU), instituted the BabyCam service. A high-definition camera allows parents and other parent-approved individuals to view their baby in the NICU through a secure internet connection. This innovative technology enables families to remotely visit at any time to feel more connected to baby when unable to be physically present. This particular program was developed by a United States University Hospital and the presenting organization is the first hospital outside that system to adopt it. This poster describes BabyCam, inclusive of work flow and processes, adaptations from the originating organization, evaluation methodologies, outcomes to date, and lessons learned. Of particular interest are barriers originally identified by staff and parents, which were reframed to assure satisfaction and comfort with the processes. The BabyCam has truly enhanced the concept of family-centered care.

Objective: The learner will be able to detail an innovative technology project utilized in the NICU which promotes family-centered care.

Teaching Parents Trach Care

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This program will familiarize the nurse with important aspects of trach care and the differences in trach management between hospital care and home care. This program will also describe how to bring a parent from being dependent on staff to being independent in providing trach care to their child.

Method: By adapting the Model of Self-Directed Learning, theorized by Gerald Grow, PhD, this program teaches nurses how to assess parents' readiness to learn and how to progress them through a trach teaching program.

Results: Upon completion of the program, parents are capable of providing all aspects of trach care including independently changing a tracheostomy tube. They are tested and approved for discharge by the pulmonology NP.

Conclusion: Parents gain independence by being presented with a logical progression of information and skills when learning trach care.

Objective: The learner will be able to state four behavioral cues that parents display that indicate readiness to learn.

Family-Centered Care: A Phased Approach

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Family involvement is a critical component in achieving quality outcomes in the neonatal population. Trends in satisfaction survey scores identified key opportunities for improvement in nurse-to-parent communication and family participation in planning care for their infant throughout hospitalization. Other areas for improvement included the admission process and discharge readiness. A work group consisting of staff and leadership met bi-monthly for six months. Activities included review of four quarters of patient satisfaction data. Vital inconsistencies in delivery of patient education to families by nursing staff were identified. The work group revised the education process by implementing a phased approach based on oral intake percentages. Educational materials were reviewed and revised; new materials were created where gaps were identified. Education plans, reflecting phased education, were updated in the EMR, thus streamlining nursing documentation. Patient satisfaction surveys improved dramatically over the 3-6 months following implementation of "Phased Education" in the Intermediate Special Care Nursery. Staff satisfaction also improved, with clear expectations for timing and content of education for families. Improving patient satisfaction helps demonstrate an overall improvement in quality of patient care. These outcomes will lead to optimal reimbursement as we move towards a "pay for performance" model.

Objective: The learner will be able to describe how a phased education approach can improve patient, family, and staff satisfaction.

The Missing Note

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Literature states that communication failure is a primary cause of health system errors and preventable harm to patients. In striving to improve communication and care, much emphasis has been placed on the patient and family as essential members of the health care team. Bon Secours St. Mary's Hospital implemented family-centered care (FCC) in the obstetrical and neonatal areas and continues to evaluate ways to empower families. We recognize that family is the child's main source of support and strength. Our NICU realized that the parents, a valuable and recognized member of the health care team, are not represented in routine hospital documentation. Parents of sick neonates frequently spend hours at their infant's bedside and are quick to recognize subtle changes in their infant that may be the first sign of serious illness. Our unit developed a parent progress note (PPN). The PPN is a simple checklist for the parent to update on a daily basis. The goal is for the medical team to have a record of any parental concerns, expressed in their own words; therefore, limiting problems of misinterpretation.

The PPN emphasizes to the family the value of their opinions as an integral part of FCC.

Objectives: The learner will be able to (1) discuss the importance of parents as a health care team member, (2) review 3 components of the PPN, and (3) discuss how the PPN improves communications between parents and providers.

“Is the Baby Pink?” Changes in Neonatal Resuscitation

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Problem: In the past, neonatal health care providers have been trained to ask themselves “Is the baby pink?” at 30 seconds of life. If not, they administered 100% oxygen to “pink up” the baby. New guidelines for neonatal resuscitation recommend beginning resuscitation with 21% oxygen and monitoring oxygen saturation. Evidence showing that the use of 100% oxygen can cause cardiac muscle and renal tissue damage prompted these changes.

Purpose: NRP changes were implemented January 1, 2012. All maternal and child staff needed education to alert them to the practice changes.

Process: A self-learning module presentation was created including; choosing appropriate oxygen concentration for a distressed newborn, identifying risks of administering 100% oxygen in the delivery room, and new SpO₂ guidelines in the first 5–10 minutes of life. The module was emailed to staff. They had 30 days to complete the posttest. The presentation was given at several staff meetings. New oxygen saturation ranges were hung on every warmer for reference.

Outcomes: 1) Safer care for neonates. 2) Overwhelmingly positive staff feedback. 3) This successful model of education is being used as a template for dissemination of other new practices and equipment.

Objectives: The learner will be able to (1) correctly apply pulse oximeter probe to the correct extremity, (2) state appropriate oxygen concentration for resuscitation of neonates in the delivery room, and (3) identify risks of administering 100% oxygen to neonates in the delivery room.

NAS Challenges: Improving Care Delivery for NAS Babies and Families

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Care of the mother-infant dyad affected by neonatal abstinence syndrome is an increasing challenge. Defined standards of nursing care and discharge planning were lacking at our organization. Additionally, inter-observer reliability scoring was not occurring at our hospital. Several babies transferred from regional hospitals did not require medical treatment as these hospitals also faced challenges in caring for these babies. Parents lacked understanding of diagnosis and treatment plans. Participation in the Vermont Oxford Network (VON) quality-improvement collaborative and survey identified additional quality-improvement opportunities.

Interdisciplinary and intradepartmental collaborative addressed current issues surrounding the care of NAS babies.

Outcomes include:

- Length of stay: 5-day minimum
- Policy and procedure revisions
- Education on physiology and psychology of providing care for the mother-infant dyad
- Implemented annual inter-observer reliability scoring for Finnegan tool
- Regional education and collaboration program: 72 attendees
- Parent information pamphlet and education plan developed

Future goals: Continued participation in the VON collaborative, a resurvey in the fall of 2013, and use of a PDSA cycle will continue to measure quality improvement and identify opportunities for care delivery for the NAS baby and family.

Objectives: The learner will be able to (1) describe key components for interdisciplinary and intradepartmental quality improvement for NAS infants and families, (2) discuss potential benefits of standardizing particular aspects of care for the infant and family, and (3) identify methods to involve parents in care of their infant.

Pulse Oximetry: Use in the Newborn Population to Detect Congenital Heart Disease

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Background: Congenital heart disease occurs in about 9 out of every 1,000 live births. Critical congenital heart disease (CCHD), with defects requiring interventions, is responsible for more deaths than any other type of malformation. Since timely recognition of CCHD can improve outcomes, it is important to identify strategies to enhance early detection. Pulse oximetry is one such strategy.

Study purpose: All RNs and patient care technicians (PCTs) completed an online pretest, and then reviewed the online educational Power Point presentation. The pretest was then completed as a posttest to test the effectiveness of the online learning. All RNs and PCTs then completed a teaching checklist while performing a practice pulse oximetry test on an infant's right wrist and foot. The results were then analyzed using the algorithm by the American Academy of Pediatrics.

Results: The online learning increased the percentage of correct answers in all of the 10 questions. No staff member required further training after the online education and teaching checklist. The current rate of false-positive pulse oximetry tests is 0.004%. The procedure takes several minutes, and the use of no disposable probes keeps the cost low.

Objective: The learner will be able to identify the benefits of testing the newborn for congenital heart disease prior to discharge.

Factors That Can Effect Nurse Engagement in a Shared Governance Model

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Nurse engagement at work has emerged as an important factor in employee performance and as an ongoing topic in health care management. A growing body of evidence supports the relationship between the engagement of the nurse at work and organizational outcomes, including those that are performance based. Performance-based outcomes are important data for Magnet hospital accreditation.

Professionals in both the academic and clinical arenas support nurse engagement as an important work-related factor, but definitions and measurements of factors that affect nurse engagement are poorly understood. Clear theoretical and practical understanding of nurse-engagement factors are needed in order to prioritize and implement interventions targeted towards improving nurse engagement.

This project will define what factors have had the most impact on nurse engagement in one Magnet hospital and identify practical measures that can be implemented to facilitate nurse engagement using a shared governance model.

Objective: The learner will be able to identify what factors and practical measures have the most impact on nurse engagement using a shared governance model.

Clinical Nurse Engagement

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Clinical nurse engagement is the key to reducing low unit morale, decreasing poor nurse retention and increasing staff satisfaction. In the NICU at Children's National Medical Center we take staff engagement seriously. As members of the Culture of Nursing Excellence (CONE) Team we have witnessed a boost in morale and commitment in the unit.

At the advent of the CONE Team morale on the unit was low, staff satisfaction survey results were dismal, and, other than pointing fingers at the leadership team, the group was at a loss for why. Via brainstorming sessions and quarterly retreats, the CONE team implemented various activities, and modes of staff encouragement were developed. The activities ranged from an entire weeklong "Spirit Week" during nurses week in May to monthly holiday celebrations such as National Chocolate Day on July 7th. These days include a treat and recognition from leadership and encourage camaraderie. Additionally, the CONE Team took on the role of nominating nursing staff for awards during hospital-wide events and developing recognition on the unit for parent compliments and colleague accolades.

Objective: The learner will be able to identify areas at risk for decreased nurse engagement and ways in which to increase staff satisfaction.

Partnering Along the Path of Phased Orientation

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We are faced with a looming nursing shortage and retention of nurses is essential. The staff education committee in the intermediate special care nursery (ISCN) needed to increase orientee satisfaction to increase retention. Registered nurses were being hired with less or no neonatal/newborn experience, thus making it difficult to incorporate teaching into orientation. The ISCN education committee developed three foundation levels and oriented nurses in a phased approach. After foundation I and II, the orientees work independently with a resource RN. This allows orientees to apply new knowledge before moving on to the next foundation level. After implementing the phased orientation model, communication increased between preceptors, charge nurses, nursing leadership, and nursing staff. Survey results reported increased job satisfaction of orientees and preceptors. Orientees felt very satisfied and confident to practice in the ISCN, and preceptors reported more time available to teach the new specialty to the orientees. In addition, the length of orientation was shortened with this phased approach, which resulted in a more efficient use of staff and financial resources. We recommend this phased orientation model be implemented by other units, especially units where orientees have little previous knowledge of the specialty.

Objectives: The learner will be able to (1) identify the benefits of a phased orientation process, (2) discuss how a phased orientation process could be implemented in various settings.

Facilitating Competency Utilizing a "Just-in-Time" Educational Resource: Neonatal Epidural Analgesia

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Purpose: To determine if an educational resource designed to inform care at the bedside would facilitate nurse competency in caring for a patient receiving neonatal epidural analgesia

Sample: A convenience sample of neonatal intensive care nurses ($n = 14$)

Design: NICU nurse volunteers were randomly assigned to either complete a pretest/posttest questionnaire and perform a timed skill both before and after using the bedside resource or complete the posttest only and perform a timed skill after use of the bedside resource.

Measurement: Changes in knowledge and skill were analyzed using paired t -tests. Self-reported confidence levels were measured on a five-point Likert scale and analyzed using independent samples t -test.

Outcomes: Participants in the pretest/posttest group increased cognitive scores by 24 percent ($p=.04$), ability to successfully complete the skill improved by 71 percent ($p=.008$), and confidence levels by 65 percent ($p=.01$). These same measures were compared between groups to discern if the pretest impacted the outcomes. Differences in cognitive scores, ability to complete the motor skill, and confidence levels were not statistically significant between groups ($p=.27, 1.0, .56$, respectively). Use of a "Just-in-Time" educational resource facilitated nurse competency within this limited study.

Objective: The learner will be able to identify three features of an effective bedside educational resource.

Oxygen Targeting to End Retinopathy: The OTTER Collaborative

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Preterm infants commonly have lung disease that lowers blood oxygen saturation levels leading to disability or death. Supplementing with oxygen helps but runs the risk of overoxygenation leading to retinopathy of prematurity (ROP). SaO₂ measurements of 100% represent a huge range of pO₂, from normal to dangerously high levels. ROP disease benchmarks were higher than the national benchmarks at this tertiary medical center.

A collaborative team of neonatologists, ophthalmologists, respiratory therapists, and nurses developed a solution. To enhance knowledge and increase awareness of oxygen targets and monitor oxygen saturation levels for neonates, the following were developed and implemented:

- New oxygen policy with clear saturation target ranges and alarm limits
- Bedside reminder card for target oxygen and alarms
- Oxygen is treated as a drug, ordered as one, and discussed daily on rounds.
- The process for increasing oxygen levels in response to desaturations is delineated.
- Education of all staff was completed.
- Audits of new policy is ongoing.
- Current activity indicates that less plus disease has occurred along with less laser surgery in the first 6 months; benchmarking comparisons will not be known until all data are submitted to Vermont Oxford in 2014.

Objective: The learner will be able to identify steps to improve staff awareness of oxygen targeting in an attempt to improve ROP outcomes.

Cuddle UP! The Use of Medical Students to Enhance Developmental Care in the NICU

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Parents of ill neonates often worry about the amount of time they are able to spend in the NICU with their baby. There is often anxiety related to the gap between the amount of time they would like to spend with their infant and the reality of the actual time spent in the NICU.

Parents' concern about how often their infant is held and has nurturing positive experiences can be ameliorated through a cuddling program. This unique use of medical students also enhances the student experience. Medical students become more aware of the human side of medical care and enhance their relationship with the bedside nurse. Cuddling infants in the NICU also offers the medical student an opportunity to destress after a long day of classes.

Medical students received two hours of education on neonatal development, thermoregulation, and positioning. Parents consent to cuddling, and medical students are scheduled to come in and cuddle infants in the evenings.

Parents, nurses, and students have all expressed positive feelings about the program.

Objective: To understand the role of medical student cuddlers in enhancing developmental care of the neonate

Comparison of the Effect of Heartbeat Sound and Mozart's Music on Sleep Duration in Preterm Infants

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This study aimed to compare the effect of heartbeat sound and Mozart's music on sleep duration in preterm infants. The study was a randomized controlled trial design. Study subjects were 24 preterm infants admitted in the neonatal intensive care unit of a university hospital in Bangkok, Thailand. Twelve preterm infants were randomly assigned listening to a heartbeat sound, while the other 12 preterm infants listened to Mozart's music. The environments were arranged similar to a womb environment, controlling light not to exceed 600 Luk and sound not to exceed 58 dB. The sleeping duration of all preterm infants was recorded by video camera. The preterm infants' sleep-wake behaviors were evaluated by using sleep-wake behavior evaluation guideline for preterm infants. The findings of the study revealed that the total sleep duration during listening to heartbeat sound and Mozart's music was different with statistical significance ($p < .05$). The oxygen saturation level among preterm infants while listening to heartbeat sound and Mozart's music was different with statistical significance ($p < .001$). The results from this study can be used as nursing practice guidelines for promoting the sleep of preterm infants

Objective: The learner will be able to, (1) discuss the importance of promoting sleep in preterm infants and (2) describe how a longer sleeping phase benefits preterm infants' growth and development.

Issues of Sound Surrounding the Preterm Infant in Different Environmental Conditions

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Sound and light environment as developmental care in the NICU was considered to support the development of preterm infants. In this study, results were obtained to investigate the current status of

environment in NICU and GCU. The sound of 70 dB or more occurred frequently, which exceeds the recommended level during periods of daily activity. The results were reported in this survey and the re-examination showed that the sound of 50 dB or less has increased, the sound of 70 dB or more has decreased, and the environment became quieter.

Recognizing the current state, nurses tried to reduce the transient sound. However, limitation must be kept in mind. To further reduce the noise, an attempt to visualize the sound is required.

Objective: To review a sound-reducing strategy as part of developmental care.

Benefits of Using Donor Milk in the NICU

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Indisputable evidence shows that the nutrition of the premature infant must be designed to support their metabolic and gastrointestinal immaturity, immunologic insufficiency, as well as other related medical conditions. The early introduction of human milk not only benefits the premature population but extends itself into adulthood. Therefore, if a mother's own milk is unavailable, donor milk should be considered the optimal nutritional choice for the NICU patient. Pasteurized donor breast milk provides many of the components of human milk. The stringent guidelines and processes used to screen potential donors increases the safety and efficacy of using banked milk in the NICU. Although during the pasteurization process some variable loss of the breast milk composition may occur, the benefits far outweigh the risks of formula feeding.

Objectives: The learner will be able to understand the benefits, the criteria to receive, and the safety/regulation of donor milk in the NICU population.

A Systematic Review of Oral Stimulation to Enhance Sucking and Swallowing in Preterm Infants

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Oral stimulation in preterm infants is a way to improve oral muscle strength and increase coordination between sucking, swallowing, and respiration, resulting in better sucking and swallowing, earlier transition to oral feeding, and improved feeding performance.

Purpose of the Study: The purpose of this systematic review was to synthesize the evidence-based practice in oral stimulation in preterm infants by searching research both in Thailand and foreign countries from the years 1999–2009.

Methods: There were 9 studies selected for quality assessment: 7 providing evidence in randomized controlled trials and 2 providing evidence in quasi-experimental design or nonrandomized controlled trials.

Results: The review found that there were seven methods used for oral stimulation in preterm infants by massage with fingers around and inside the mouth of preterm infants. The outcomes are good oral motor

function, better sucking and swallowing, reduced transition period, decreased length of hospital stay and higher rate of breast feeding.

Conclusions: Knowledge from this systematic review can be used to improve feeding performance in preterm infants and can be applied to enhance the quality of care.

Objective: Discuss the oral stimulation methods in preterm infants.

How Do YOU Know I'm Hungry? A Cue-Based Approach to Feeding the Premature Infant

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Background: Recently there has been an increased awareness about feeding aversions and failure to thrive in the premature infant population. Our NICU used physician-driven feeding practices, which are volume focused regardless of the infants' readiness or ability to successfully feed. We questioned if cue-based feeding is an appropriate and safe approach to guide and advance feeds for the premature infant.

Literature Recommendations:

- The literature suggests that using infant cues to guide practice will promote a safe and positive feeding experience.
- Physician-driven feeds are associated with orally defensive behaviors and may further inhibit feeding skill development.
- There is a shortage in the literature of reliable and valid tools to assess infant feeding cues and help guide practice for safe feeding advancement.

Practice Changes: Literature supported a change in practice. An intra-disciplinary team was identified and worked towards creating an effective tool that would determine infant readiness to eat and the infant's feeding skill. Staff education via multiple methods and policy changes were put into effect to assure proper use of the new feeding tool. Ongoing reliability and validity testing remains in progress.

Objective: The learner will be able to identify the importance of cue-based feedings and the impact it has on the neurodevelopment of the premature infant.

Obtaining Colostrum for the Neonatal Transport Patient

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The neonatal transport team at Baylor University Medical Center in Dallas, Texas promotes safe passage of our neonates from one facility to another. Our goal is to protect each infant at all cost, providing every amenity at our disposal, as if we were at the hospital in a protective environment. As a team, we work to provide safety and security while minimizing exposures of any kind.

One of our most important duties is to provide emotional support, reassurance, and encouragement to all grieving families as we assume care of their infant. As a Texas Ten Steps designated facility, it is our mission to encourage and assist each family with a knowledge to

provide their infants with mom's own lifesaving, milk. This is an extra-important step when transferring an infant away from its mother.

Most mothers will be separated from their infants for approximately 24–48 hours (sometimes longer); that being said, it is imperative to initiate the breast milk collection process as soon as possible. To accomplish this goal, we request that each mother pump or hand-express colostrum for the transport team to take back to the receiving facility so that the infant will be provided his mother's very own milk, when medically possible.

Colostrum's benefits: Decreased infection rates, increased feeding tolerance, better weight gain, better immunity, and a close bond with mom are only a few reasons why our mission is clear. Having mom's "first milk" can significantly increase an infant's NICU successes. Encouraging this one small step drastically increases each neonate's chances for a brighter future.

Objectives: The learner will be able to (1) identify the benefits of colostrum/breast milk for sick and premature infants, (2) describe the Texas Ten Steps facility participation, (3) review the process for breast milk collection during neonatal transport process.

Care of the Dying Neonate and Family on Transport: A Case Presentation

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The neonatal transport team is often faced with life-threatening cases and at times may have to assist with the process of dying instead of life-saving interventions. This case presentation will review one particular case where the team was challenged with assisting the pediatrician in making the decision of removing support, supporting a nursing staff through the crisis and comforting a grieving family.

Objectives: (1) Review the presentation of the patient. (2) Describe activities of team members to support both the referral hospital staff and the patient's family during the death of a neonate.

SOS: Neonatal Skin Risk Assessment

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

astute at recognizing patients at risk and, when necessary, generating a wound/ostomy consult to assist in preventing skin breakdown and pressure ulcer injury. Future plans include quarterly audits of tool scoring, interventions, and documentation, as well as the development of a comprehensive skin care protocol.

Objective: The learner will be able to discuss key steps in establishing a skin care program, from tool selection to implementation and maintenance.

Postpartum Hemorrhage High-Fidelity Nursing Simulation: Embedding QSEN Competencies

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Nursing simulation bridges the gap between didactic instruction and safe clinical practice. Simulation is used to prepare nursing students, new nurses in orientation, and for continuing staff development. Specifically, obstetrical units are developing special "code status" for postpartum hemorrhage (PPH) patients, with a separate crash cart, PPH kit, and protocols. Students and staff need to be prepared for this emergency in a similar way as they are for a mock code. An example of how the three components of a simulation (critical thinking, technical skills, and communication skills) are used in a high-risk scenario involving a postpartum woman who is hemorrhaging is presented. Additionally, in response to the Institute of Medicine's (2003) report on the Future of Nursing, the Quality and Safety in Nursing Education (QSEN) Institute was formed. Nursing educators have always valued quality and safety, yet changes in nursing practice are requiring new approaches. There are six QSEN competencies for preparing students to provide safe, quality care. Embedding QSEN competencies across nursing curricula, including in simulation experiences, is essential. Examples of the student preparation guide and instructor implementation guide framed by the six QSEN competencies are presented, as well as the importance and techniques of debriefing.

Objectives: The learner will be able to (1) describe the steps involved in the development of a high-fidelity obstetrical nursing simulation (postpartum hemorrhage), (2) discuss the guides used to prepare participants and instructors to implement/evaluate the simulations, (3) identify QSEN competencies embedded within the experience.

Going Interdisciplinary with Research and Practice: Partnering RNs and Developmental Therapists to Provide Oral Motor Therapy in the NICU

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The development, research and implementation of a new oral motor intervention designed for preterm infants has required an interdisciplinary approach. Oral feeding is a complex skill that requires the infant's ability to coordinate the muscles of the jaw, lips, tongue and cheeks for motor stability, as well as incorporate intra- and peri-oral tactile sensoristimuli. Solutions to these unique feeding problems are beyond the scope of nursing alone or any single discipline. Thus, oral feeding of preterm infants has become a specialized area requiring the integration of knowledge and insights from both neonatal nursing and developmental care specialists.

The visibility of occupational/physical/speech-language therapists in the neonatal acute care settings has increased in recent years, largely due to these complex feeding issues.

The journey from initial development to implementation of an oral motor intervention specifically for preterm infants is used as a template/case study to demonstrate the successes and challenges of collaboration among disciplines in the NICU. Using concepts from Repko (2008) on the interdisciplinary research process, "steps" are highlighted, as well as potential barriers at each step, using examples from this case study. Nursing must invite and embrace interdisciplinary participation to continue the inspiring pursuit of advancing neonatal care.

Objectives: The learner will be able to (1) define interdisciplinary research, (2) summarize the steps in the interdisciplinary research process to apply to their practice setting, (3) identify successful strategies for interdisciplinary nursing research, (4) discuss solutions to potential barriers to collaboration among nursing and developmental therapists in the neonatal practice setting.

Gentle Hold in the NICU

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Background: Neonatal intensive care units (NICU) support transition to extrauterine life and aim to reduce risk of physiological and iatrogenic problems. Care experienced by the premature infant can be intrusive, painful, and a source of aversive learning. Little research has investigated what effect therapeutic touch has on extremely low birth weight (ELBW) infants.

Purpose: Investigate the effects of GH among ELBW infants.

Methods: Randomized controlled pilot study. Subjects randomized to GH or placebo group. Trained staff administered GH (i.e., one hand on the head, one on the buttocks/thighs) for 15 minutes, 4 times/week for 3 weeks. Infants in placebo group had the curtain drawn with staff near isolette. Data on physiological parameters (heart rate, respiratory rate, oxygen saturation, temperature) taken immediately before/after intervention for both groups. Data gathered on length of stay (LOS), weight gain, ventilator, oxygen (O₂), and phototherapy days.

Results: $N = 10$ subjects (5 subjects/group). Mean gestational age 26.1 weeks. GH group experienced fewer desaturation episodes ($n = 2$ for GH; $n = 5$ for placebo), shorter LOS, fewer ventilator and O₂ days, and higher weight gain.

Implications: Findings indicate GH therapy can be safely performed, and may positively impact key outcomes. Findings should be validated using a larger sample size.

Objective: The learner will be able to describe the effect of therapeutic touch on physiological and discharge outcomes among ELBW infants in the NICU.

Accuracy of Monitoring Axillary Temperature with Skin Temperature Probe

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Introduction: Using a servocontrolled radiant warmer or isolette reduces the risk of hypo/hyperthermia for sick/high-risk infants. Accuracy of temperature is crucial as improper temperature regulation may result in hypo/hyperthermia causing or exacerbating medical conditions for these vulnerable infants.

Method: Infants requiring warmer/isolette were enrolled in the study ($n = 85$). Digital axillary temperatures were recorded every 4 hours according to standard of care. A second temperature sensor (DataTherm) was placed in the axilla region to continuously monitor temperature. Patients were randomized to either a control group (standard care probe placement on abdomen/back) or an experimental group (probe placement in axilla). Temperatures were recorded hourly for 12 hours.

Results: The control and experimental group temperatures were compared with both the digital axillary and DataTherm to assess differences in readings. Temperature readings within 0.5 degree Celsius were considered accurate. Overall, temperatures using axillary placement were more accurate than temperatures using standard location when compared with the DataTherm (89.5% vs. 67.5%; $p < .001$) and the digital axillary (91.3% vs. 68.3%; $p < .001$).

Conclusion: Axillary temperature probe placement provides a more accurate measurement than traditional placement when monitoring a sick infant's temperature.

Objective: The learner will be able to compare accuracy of traditional skin temperature monitoring with alternative placement for NICU infants in radiant warmers/isolettes.

Whole Blood Viscosity in the Neonate: Effects of Gestational Age, Hematocrit, Mean Corpuscular Volume, and Umbilical Cord Milking

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Delayed cord clamping or cord milking is advocated by the American College of Obstetrics and Gynecology for all preterm deliveries. Some practitioners are hesitant to adopt this practice for fear of causing hyperviscosity in the neonate. We conducted a prospective study in two NICUs to 1) establish reference ranges for blood viscosity among preterm neonates (this was previously reported only for term neonates) and 2) determine the effect of cord milking

on viscosity. Reference ranges were determined for ($n = 52$) preterm infants <32 weeks gestation. Cord milking was used on ($n = 20$) deliveries <32 weeks and viscosity measured at birth and again during the 12 hours after. In those with viscosities >95th percentile range we sought signs of hyperviscosity (plethora, hypotonia, hypoglycemia, hyperbilirubinemia, thrombocytopenia).

We found that viscosity is proportional to hematocrit/hemoglobin ($r = 0.877$), lower at earlier gestation, and not associated with erythrocyte size ($r = 0.179$). Viscosity levels were generally low in preterm neonates, ranging from 3.1 to 9.5 centipoise. Three of the neonates had viscosities above the upper reference range, but these were all well below those where hyperviscosity is defined in term neonates and none had clinical features of hyperviscosity. Thus, cord milking, using this technique, is not associated with hyperviscosity.

Objective: The learner will be able to discuss that at delivery of VLBW neonates, umbilical cord milking, as performed in this study, does not result in a significant risk of hyperviscosity.

Interventions to Improve Radiograph Quality in the Neonatal Intensive Care Unit

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Introduction: High-quality x-rays are important to ensure accurate diagnosis with minimal radiation exposure. Many variables can interfere with x-ray quality including poor exposure, head/body rotation, wires and other artifacts. Our objective was to improve the quality of x-rays, sustain this improvement over time, and reduce the need for repeat x-rays.

Methods: We conducted a three-phase quality-improvement study from March 2012 to May 2013. A tool was developed to evaluate x-ray quality using several variables with scores ranging from 0–12. Phase 1 covered the 4 months before intervention after which an educational session was done using x-ray preparation checklists for unit staff. Phase 2 data were collected over the next 4 months after which a more interactive intervention was done. The subsequent 4 months represented Phase 3.

Results: X-ray quality improved from a mean score of 6.78 in phase 1 to 9.44 in phase 2 and 9.52 in phase 3 ($p < .05$). No repeat x-rays were required over a 6-month period after phase 2.

Conclusion: A structured, collaborative educational intervention improves radiograph quality and decreases the need for repeat x-rays in the NICU.

Objective: Describe a quality-improvement study that increased the quality of x-rays in the neonatal intensive care.

Establish and Improve Current Waste- Disposal System in the NICU

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Problem: The present disposal system in the NICU is centralized to a limited location. RNs have to walk a number of steps to dispose of waste materials. This can result in possible spillage of waste during transport and may lead to possible nosocomial infection in the unit.

Purpose: NICU needs bedside garbage containers to improve garbage-disposal system.

Methods: Pedometers were used to count the steps of 20 RNs who worked day/night (12hrs) shifts in NICU.

Outcomes: Installed garbage cans had improved garbage-disposal system.

This process will eventually minimize if not totally eliminate possible occurrence of nosocomial infections in NICU. Staff nurses had simplified disposal system with ease and comfort. Improved work flow and happier working environment.

Objective: The learner will be able to discuss how to improve a waste-disposal system that could potentially lead to less nosocomial infection while maintaining cleanliness in the workplace.

Implementing Guidelines Supporting Noninvasive Respiratory Management for Premature Infants

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Respiratory assistance has been and remains the most commonly performed stabilization intervention after birth. Establishing effective oxygenation is vital to infants' survival and development. For neonatal practitioners, there is a fine line between an invasive, aggressive approach and non-invasive, gentle respiratory assistance. Based on recent research findings and best examples of evidence-based practice, newly developed guidelines and an algorithm supporting a non-invasive approach for the respiratory management of premature infants was implemented in the NICU of Memorial University Medical Center in Savannah, Georgia. This project has focused on improving the quality of the initial respiratory stabilization of premature infants and providing further respiratory support by utilizing a non-invasive approach for eligible newborns. The poster will describe the practice changes in the respiratory management of premature infants and analyzes the outcomes of the implemented changes. The pre- and post-implementation data were obtained retrospectively and compared. As a result of this quality-improvement initiative, there was a statistically significant increase in the rate of using CPAP—65.3% ($p < .05$). Improvements in other variables of interest include a decrease in rates of intubation and reintubation, length of mechanical ventilation and oxygen requirement, use of surfactant, and the number of discharges on home oxygen.

Objectives: The learner will be able to discuss improvements in respiratory outcomes of premature infants after implementation of new guidelines and an algorithm with a focus on a non-invasive approach.

Neonatal Simulation Medicine and Resuscitation Team Training (nSMARTT). Interprofessional Neonatal Education and Training Using High-Fidelity Simulation and Checklists: An Innovative, Customizable, Scalable Model

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Resuscitation teams require integrated cognitive, technical, and behavioral skills and teamwork to support neonates during the critical period surrounding birth.

To effectively train large interprofessional groups, we created an education and training model using high-fidelity simulation and checklists. The model provides step-by-step guidance on planning, set-up, achieving buy-in, implementation, and evaluation of a program that is structured, sustainable, cost-effective and can be reproduced in different settings.

An interprofessional leadership team trained in neonatal simulation identified learning objectives based on high-priority needs from clinical areas. Stakeholders and resources were identified. The proposal described priorities to be addressed, project goals, objectives, resources, projected costs, cost-mitigation, timeline, evaluation and sustainability. A project logo was created to distinguish the program brand. Pre- and postevaluation data were analyzed and summarized, and results presented to the stakeholders demonstrating the magnitude of impact on the targeted educational objectives.

The nSMARTT model is an innovative, customizable, and scalable educational strategy that facilitates interprofessional collaboration, practice, and team training. nSMARTT can address a variety of clinical concerns including ongoing neonatal education, knowledge translation, quality improvement, and critical event management in a structured, sustainable, and reproducible manner.

Objective: The learner will be able to outline a strategy to plan, set-up, implement and evaluate a program using the nSMARTT model of team education and training.

Celebrating 50 Years of Saving Lives through Newborn Screening

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Nurses perform newborn screening on nearly every baby born in the U.S. That adds up to 4 million heel-stick blood samples every year. This year marks the 50th anniversary of newborn screening. It all started with Dr. Guthrie's phenylketonuria (PKU) test. Then we began screening for other disorders such as galactosemia, hemoglobinopathy, hypothyroidism, homocystinuria, and metabolic abnormalities such as maple syrup urine disease. Later cystic fibrosis screening was added. Now with the advent of tandem mass spectrometry, we can screen for 29 or more disorders from a few dried blood spots collected on special filter paper. The CDC, HRSA, ACMG, and state health departments are all working together to advance the science of newborn screening. Nurses play an important role at the bedside drawing samples, talking

with families, and ensuring follow-up. As champions for newborn screening we need to keep up-to-date on this rapidly changing field. We present stories of success, patients and families who have benefited from newborn screening; for example, Baby S. who suffered from IVA, Baby M. with CCHD, and Baby J., the first baby with SCID identified through newborn screening. Through these stories, we learn the importance of newborn screening and can clearly see that nurses play a vital role in saving lives.

Objectives: The learner will be able to (1) develop a deeper understanding of expanded newborn screening through discussion of case studies, (2) identify available resources related to metabolic screening for clinicians and families.

Enhancing OB Patient Safety: Use of a Standardized Tool for RN-to-RN Bedside Report in Labor and Delivery to Mother Baby Unit Transfer

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In 2005, the Joint Commission identified communication as the top contributing factor in medical errors, with handoffs playing a role in approximately 80% of serious preventable adverse events. It was identified in our hospital that one of the most critical times for OB safety occurs in the communication of essential information from RN to RN in the transfer of mother and baby from Labor and Delivery (L&D) to the Mother/Baby Unit (MBU).

A standardized handoff report form was developed with input from the staff of both units. The form is used to give report on both mother and infant by the transferring L&D RN to the receiving Mother/Baby RN when the patient is transferred to the Mother/Baby floor. This report is a face-to-face, joint focused bedside report, given in the mother's postpartum room when the mother and infant are transferred from L&D. This form was developed to facilitate synchronicity of information, transfer accuracy, and understanding between the transferring and receiving RNs. Mandatory use of this tool is required in our hospital, 100 percent, of the time, by all RNs for the L&D to MBU transfer.

Objectives: The learner will be able to (1) identify the importance of standardized handoff report communication to improve patient safety, (2) describe the process used to create and implement the standardized RN-to-RN L&D to MBU maternal/infant transfer form.

Breastfeeding Exclusivity: A Strategy for Best Practice

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Background: Exclusive breastfeeding is now a recommendation of the American Academy of Pediatrics. The Surgeon General states "Ensure that Maternity Care Practices throughout the United States are fully supportive of breastfeeding." As of January 1, 2014, exclusive breastfeeding will be a mandatory core measure for all hospitals with

over 1,100 births per year. Additionally, if 90% of families in the US comply with the medical recommendations to breastfeed exclusively for 6 months, the US would save \$13 billion per year and prevent in excess of 911 deaths.

Initiative/approach: A multidisciplinary work group was formed including physicians, midwives, labor and delivery nurses, mother/baby nurses, lactation specialists, as well as various community resource leaders to accomplish the goal.

Implementation: Various strategies were used including staff education, patient education and policy and procedure updates.

Conclusion: After implementing the strategies determined to be barriers to meeting the exclusivity goal, the exclusive breastfeeding goal was obtained within the projected time frame. Healthy People 2020 Objectives for Breastfeeding goals include exclusive breastfeeding through 3 months at 46.2%. To reach this goal, further measures will need to be implemented based on the work groups recommendations.

Objective: To determine barriers to exclusive breastfeeding in our facility and implement strategies to increase our exclusive breastfeeding rate from 14% to 24% within one year.

Implementing Evidence-Based Breastfeeding Practices in a Community Hospital

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The benefits of breastfeeding for short-term or long-term periods are widely recognized by the World Health Organization, the American Academy of Pediatrics (AAP), and the Centers for Disease Control and Prevention as a natural source of nutrition and immunological protection (AAP, 2012). Evidence-based studies recommend the integration of the “Ten Steps to Successful Breastfeeding” to increase breastfeeding exclusivity which can save \$13 billion in direct and indirect medical costs annually if babies are breastfed for six months (U.S. Department of Health and Human Services, 2011). Mount Pleasant Hospital’s Women’s Center utilizes breastfeeding best practices as outlined by the Baby-Friendly designation process to initiate breastfeeding and skin to skin within the first hour of life and throughout hospitalization. The results demonstrate that evidence-based breastfeeding practices work: moms and newborns are skin to skin 100% after delivery regardless of method, mom and baby stay together >80% of the time before discharge, a 0% supplementation need for hypoglycemia, a 0% treatment need for hyperbilirubinemia, and the exclusivity rate is 76.1% for 2012 year to date. This poster presents how the incorporation of evidence-based breastfeeding principles can transform nursing care, patient satisfaction, and outcomes.

Objectives: The learner will be able to (1) outline evidence-based breastfeeding practices supported by the World Health Organization to support exclusive breastfeeding, (2) review strategies to transform nursing culture and maternal and infant outcomes.

Implementing AWHONN’s Staffing Guidelines to Cure the “Staffing” Blues

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Nursing ensures standards of care, such as staffing, are evidence based through participation in their nursing specialty organizations. To meet the Association of Womens Health, Obstetric, and Neonatal Nurses professional perinatal staffing guidelines released in 2010, leadership advocated for an all RN staff on the Mother Infant Unit to identify needed changes in their staffing mix for patient safety and staff engagement. This skill mix change involved finding new roles for 11 LPNs employed both in the nursery and caring for mother-baby couplets. Transformation on the Mother Infant Unit over the last year has taken place following the implementation of the AWHONN guidelines. This is evidenced by increased Gallup RN scores: 4.55 in 2011 to 4.88 in 2012. Certifications have increased from 3 certified nurses to 22 certified nurses and quality of care has risen. Patient satisfaction scores have also steadily increased. Prior to this change, the RN would be responsible for the outcome of care for 6 to 8 couplets and directing care for the LPN’s assignment. Modification of our staffing guidelines decreased workload and individual responsibility, allowing for unified teamwork. Now the RN has more time at the bedside while spending less time making staffing decisions.

Objectives: The learner will be able to (1) differentiate between common staffing patterns and the AWHONN perinatal staffing recommendations, (2) distinguish different staffing ratios based on skill mix and patient acuity, and (3) list 3 benefits of incorporating AWHONN’s perinatal staffing guidelines.

Implementing Change: A Multidisciplinary Approach to Improve Exclusive Breastfeeding Rates on a Mother Baby Unit

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Exclusive breastfeeding during the first year of life promotes optimal growth and development of infants and provides protection from various diseases. The World Health Organization (WHO) recommends that all infants are exclusively breastfed for the first six months. Early initiation of breastfeeding during hospitalization contributes to breastfeeding sustainability during the first six months of life. Support and education from health care providers can impact the mother’s decision to initiate and continue breastfeeding. As part of a process-improvement project, a multidisciplinary team was formed to identify perceived barriers to breastfeeding initiation and exclusivity in breastfeeding. Baseline data were collected utilizing the electronic medical records of all breastfed infants to determine the number of mothers who elected to breastfeed and/or exclusively breastfeed. Based on the recommendation from the process-improvement team, the following measures were implemented; pacifiers and infant formula removed from the cribs of all breastfed infants, addition identifies placed on the cribs of breastfed infants denoting feeding method, nursery

discharge bags containing infant formula, coupons for infant formula, logos of formula companies or literature with formula company logos removed from the newborn nursery, all RNs and PCTs required to attend educational sessions on lactation management and breastfeeding promotion to ensure correct, current, and consistent information was provided. Breastfeeding promotion was increased via webpage, newsletters, and lunch and learn offerings. Exclusive breastfeeding rates increased from 2.8% to 46%.

Objective: The learner will be able to identify measures to increase exclusive breastfeeding rates during the initial postpartum period.

Night Nurses Shed Light on Baby Friendly

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Background: The Baby Friendly Hospital Initiative (BFHI) is an international hospital designation that promotes breastfeeding. Only 196 hospitals are designated baby-friendly in the United States. Several BFHI steps address exclusive breastfeeding, which is an important component of designation.

Barriers: Changing attitudes toward supplementation is challenging for both nurses and patients. Mothers do not understand the implications of supplementing and often do not have full family support. Nurses are concerned about the time required to teach and support mothers and may not totally support breastfeeding exclusivity themselves.

Night Nursing Strategies: Nightshift nurses took charge and developed a plan to encourage exclusivity that:

- Assessed common reasons for supplementation
- Developed consistent nursing responses when mothers asked to supplement
- Educated staff at the Nursing Shared Governance Councils
- Collaborated with lactation consultants

Outcomes:

- Increased consistency in breastfeeding teaching
- Increased nursing confidence in supporting breastfeeding mothers
- Increased exclusive breastfeeding rates

Nursing Implications: Empowering nurses positively impacts exclusive breastfeeding rates and facilitates BFHI designation! Nurses are confident and encouraged when a mother successfully breastfeeds!

Objective: The learner will be able to discuss effective nursing responses when mothers ask to supplement.

We Are Sold on Liquid Gold

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Background: Breast milk is routinely given in NICUs. The Baby-Friendly Hospital Initiative advocates pumping/storing of breast milk by women who cannot nurse their infant due to illness or separation. Because breast milk can contain communicable diseases, infants

exposed to wrong breast milk are at a higher risk for these diseases and associated co-morbidities and increase parents' stress and erode their confidence in their baby's nurses. Breast milk scanning is not widely done by smaller community hospitals.

Problem: Two separate incidents of breast milk given to wrong babies in a community hospital's special care nursery (SCN), despite a second RN check, prompted changes in practice. Breast milk scanner expense and nursing resistance to change were barriers to change.

Changes:

- Classification of breast milk as a medication
- Scanning breast milk using the current medication administration process
- Revision of the breast milk policy
- Revised breast milk storage processes

Outcomes:

- Breast milk administration errors reduced to zero
- Increased parental confidence in SCN safety procedures
- Increased nursing satisfaction

Nursing Implications: Administering breast milk using the same medication safety practices is cost effective while improving patient safety and fostering both parent and nursing satisfaction.

Objectives: The learner will be able to (1) identify potential patient safety issues regarding administration of the wrong breast milk, (2) explain barriers experienced in implementing breast milk scanning in a community hospital, (3) state how breast milk scanning impacts parents' perceptions of their baby's safety in the NICU.

Mobile Health Care: An Intervention for Delivery of Prenatal Care to Lower Socioeconomic Regions

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Prenatal care is an essential component of successful healthy deliveries. Undiagnosed health disparities can place a pregnancy at greater risk for premature delivery; a serious complication that is responsible for Delaware's high infant mortality rate. Despite excellent technology resources and health care advances, this state remains among the top ten for infant mortality rates. Factors known to be responsible for premature delivery include ethnicity, access, and socioeconomic. One solution might be found in easier access to prenatal health care made possible through a mobile health van. This paper investigates this method as an intervention to increase available prenatal care within a vulnerable population and by doing so, show a decrease in infant mortality rates related to lack of prenatal care. Discussion of the purpose, significance, and theoretical frameworks will allow the reader to understand the background and importance of such a project. A review of the literature will reveal the barriers to and risk factors of creating the need for better health care delivery as well as demonstrating mobile health care's success in meeting those needs. Plans for implementation are followed by an evaluation and summary of the project.

Objective: The learner will be able to understand that there is a lack of prenatal care leading to neonatal morbidity and how mobile health care delivery can help alleviate the problem.

Nurses as First-Line Counselors in a Perinatal Palliative Comfort Care Program

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The purpose of creating a perinatal palliative and comfort care program is to provide synergistic care to families with an infant who has life-limiting diagnoses and end-of-life care.

Evidence-based practice has shown that nurses can influence maternal recovery from pregnancy loss. Having nurses as bereavement-certified counselors can have an impact on patients' labor, and their delivery recovery from this life-changing event.

The program incorporates a team approach starting from the time of prenatal diagnosis of fetal demise or diagnosis of a neonatal condition incompatible with life. This team approach is led by a certified bereavement RN counselor assigned to the family. The bereavement counselor works with the mother to help develop a compassionate plan of care that will continue through hospital admission, labor, delivery, and the postpartum period.

The expected outcome is that the patient will perceive the birth as a positive experience as they go through one of life's most difficult challenges.

Objectives: The learner will be able to (1) describe the role of a first-line bereavement counselor in facilitating the maternal healing process in a palliative comfort care program and (2) discuss the process of developing a hospital-based program to educate and certify perinatal nursing staff as first-line bereavement counselors.

Nurses' Grief and Coping with Frequent Perinatal Loss in a High-Risk Ambulatory Clinic Setting

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Persistent exposure to loss can increase nurses' stress levels and lead to profound grief, which, in turn, can lead to occupational burnout. Overall the participants felt overwhelmed with the extent of perinatal loss and grief experienced in daily work life. Responses confirmed that it did not affect their ability to care for patients but indicated they need more support in the workplace. Respondents were not aware of support services offered in the workplace. Resources and education are needed to raise professional awareness of how grief affects nurses, as well as the development of appropriate coping strategies.

Conclusion: Strategies for coping include, talking to nursing peers and partaking in therapeutic activity to have time to release and reflect; for example, yoga. Developing clinical expertise is necessary to gain the comfort level and skills necessary to care for these vulnerable families. Bereavement training needs to be added to the orientation of the new hires. Nursing managers can demonstrate their support by providing debriefing sessions and ongoing education for nurses about perinatal bereavement. Effective strategies for coping during and after providing care would support nurses in meeting the emotional challenge of providing high-quality perinatal bereavement care.

Objective: The learner will be able to evaluate the impact of frequent exposure to grief and perinatal loss on nurses and whether there is adequate support for them to cope in the workplace.

Creating a Perinatal Palliative Care Program

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Traditionally palliative care was thought of as end-of-life care after all curative measures were halted. However, palliative care is evolving to begin while curative treatments are still in progress. With the advancement of treatment and technology in perinatal care, the focus of palliative care has now moved to the neonatal population.

The purpose of this project is to create a perinatal palliative care (PPC) program for a community hospital with a high-risk obstetric program and Level III neonatal intensive care unit (NICU) to benefit both families and hospital caregivers. The PPC program is designed to help families prepare for the delivery of their infant and creation of memories for their family. The program has received medical staff and hospital administration approval. One family was seen prenatally and then delivered a live baby. The birth plan was well received by the nursing staff. The delivery did not occur when scheduled but during the next shift, making the birth plan even more important, as the nurses knew what to do after the birth. The perinatal palliative care is a new program for the hospital to improve quality of life for infants and families while providing educational needs and support for the staff.

Objective: The learner will be able to design and propose a perinatal palliative care program for their hospital.

Web-Based Education for Placental Complications of Pregnancy

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Methods: A prospective study. Maternal demographics and Internet usage were recorded at the patient's baseline appointment. Placental knowledge was determined using structured verbal and illustrative assessments. The six-item State-Trait Anxiety Inventory (STAI) was administered to assess baseline maternal anxiety. Women were asked to visit the Placenta Clinic website for a minimum of 15 minutes before their follow-up appointment, at which time their placental knowledge and STAI assessments were repeated.

Results: Eighteen women were included in the study. Patient knowledge at baseline appointment was generally poor, with major deficits in basic placental knowledge, placenta previa/increta, and preeclampsia. At follow-up appointment, placental knowledge was significantly improved. Educational status (high school or less vs. college or more) had no effect on either baseline knowledge or knowledge improvement. Maternal anxiety at baseline was significantly reduced at follow-up appointment.

Conclusion: Deficits in maternal knowledge of placental complications of pregnancy in high-risk pregnant women were substantial but easily rectified with a disease-targeted web-based educational resource. This intervention significantly improved patient knowledge and significantly reduced maternal anxiety.

Objective: The learner will be able to discuss whether a web-based education strategy could improve maternal knowledge of placental complications of pregnancy and reduce maternal anxiety in high-risk pregnancies.

Decreasing Length of Stay: Making Delivery Affordable

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Tracy Hicks, RNC-MNN
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With the knowledge that childbirth is one of the most common reasons for hospitalization coupled with the need to be affordable, our unit set out on a journey to decrease our average length of stay for our uncomplicated vaginal and cesarean deliveries. Our average length of stay in 2011 for both vaginal and cesarean deliveries was at 2.4 days, higher than the benchmark of 2.0 days set by the Centers for Medicare & Medicaid Services for hospitals in our region. Working collaboratively with our physician partners our initiative prompted interventions including pre-hospital education, pediatric bedside rounding, establishing a “bedtime snack” discharge education session, and changes in our birth certificate completion process. The outcomes of our initiative did result in a decreased length of stay for the indicated patient population. Outcomes in 2012 were an average length of stay for uncomplicated vaginal births equal to 2.2 days and to 2.3 days for uncomplicated c-sections. With the results we continue to consider additional interventions including extending the discharge times and the development of a discharge nurse.

Objective: The learner will be able to discuss the relationship between affordability and length of stay.

Bloom Where You’ve Been Planted

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The goals of our process improvement were to promote excellence in nursing and to instill a sense of pride and professionalism in the daily work of our Women’s Center staff. Our initiative was prompted by results from our September 2011 NDNQI survey. The outcomes of our survey revealed nurses on the unit to be a mere 55.8% satisfied with professional development opportunities. The data were 10% below the national average of comparative nursing units. A few of the interventions executed included a step-by-step review of the career ladder process, posting professional conference and educational opportunities, and proctoring on-site certification exams. The results surpassed our goals and overall expectations. Five nurses have successfully achieved career ladder. Eight RNs completed their certification exam with a 100% successful passing rate resulting in 50% of our nurses having their specialty certification. Six RNs are currently seeking higher education and 2012 NDNQI data results improved to 60.7% satisfaction with professional development. Overall, this initiative has enhanced the nursing staff’s sense of pride and ownership. They openly display a passion and desire to be the experts when it comes to caring for women and children.

Objective: The learner will be able to discuss the reason for focusing on high performers and to share ideas for assisting staff to grow and develop professionally.

A Retrospective Study Examining the Validity of the Schmid Fall Scale in the Postpartum Population

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Background: Patient falls increase hospitalization costs by 60%, prolong stay, and account for 15% of readmissions. The financial burden of patient falls is estimated to reach \$54.9 billion by the year 2020. Fall prevention is a central component of patient safety initiatives.

Purpose: To determine whether the Schmid Fall Risk Assessment Tool was accurate in identifying patients at risk for falls in the obstetric setting.

Design: A retrospective chart review.

Subjects: Patients who fell between November 8, 2006 and August 23, 2011.

Methods: For this IRB-approved study, data were collected retrospectively from the EMR of subjects.

Results: 42 patients fell, 30 had a Schmid score documented, 12 did not. For the 30 who had a score documented, the Schmid tool did not identify any of them as “high risk” (score >3) for fall. Of those that fell ($n = 42$), 92% delivered vaginally, 77% had received recent pain medication, 90% had their epidural turned off <4 hours. Our findings suggest that women who deliver vaginally and receive pain medication during delivery and/or had a recent epidural should be monitored closely for falls. The Schmid scale did not accurately predict those at risk for fall in this cohort of post-partum patients.

Objective: Learner will be able to describe risk factors for patient falls in the obstetric setting.

Skin-to-Skin Care Effects on Three Painful Procedures in a Healthy Full-Term Newborn: A Case Study

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The Joint Commission mandates that interventions to reduce procedural pain in newborn babies be administered. One such intervention is skin-to-skin (STS) care. The aim of this report was to describe a case in which a newborn who was receiving STS on the second day of life experienced two heel-sticks and an injection in the same session.

A descriptive design was used after convenience sampling yielded a full-term baby girl and her mother. Newborn responses were measured by heart rate, oxygen saturation (SaO₂), crying time, and behavioral state. Each painful procedure increased her heart rate above baseline. SaO₂ did not decrease with heel-sticks or injection and only dropped once during squeezing at the end of the first heel-stick. Crying time increased during the first heel-stick and only slightly thereafter. The infant was predominantly in a sleep state and aroused to a crying state with squeezing during the first heel-stick and when the injection occurred. Oxygen saturation, crying time, and behavioral state values swiftly returned to baseline by the first 30 seconds of recovery, and heart rate returned to baseline by minute 5 of recovery and vacillated

only slightly thereafter. Conclusion: STS is an intervention that may help in managing newborn's pain.

Objective: The learner will be able to describe a case in which a newborn baby girl who was receiving skin-to-skin care experienced three painful procedures in one session.

Promoting and Providing the Ultimate Embrace . . . Our Kangaroo Care Journey

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Our 10-year journey includes kangaroo care (KC) certification of nursing staff, a published research project, national presentations, and development of the "Kangurus" (a shared governance group that kept the vision alive). Each served as a vehicle to introduce KC to our OB staff. Steady growth of KC has been quantified and is reported on our scorecard. This laid the groundwork for successful implementation of our non-separation transition process including cesarean deliveries. An interdepartmental shared governance council developed an algorithm for decision making and communication rooted in evidence-based practice. Changing customary practice was not without challenge. Historically we separated the dyad as infants moved to the nursery to complete extrauterine transition 60 minutes after delivery for up to 2–4 hours. Our nursery certified lactation counselor transition nurses now go to L&D to eliminate couplet separation and increase the duration of KC to a minimum of two hours as our standard practice. Additionally interdepartmental relationships have improved. Numerous physiological and psychological benefits to both the mother and baby have been observed. Our steps have been many and resulted in successful implementation of this best practice endorsed by WHO, AAP, ACOG, AAFP, AWHONN, ILCA, CDC, NRP, Lamaze International, and the Joint Commission.

Objectives: The learner will be able to (1) describe the steps, challenges and outcomes involved in changing a standard operating procedure to evidence-based nursing practice involving multiple departments, (2) list the benefits of extending KC for the mother and baby during the newborn transition period.

Impact of Kangaroo Care on Parental Anxiety Level and Parenting Skills for Low-Birth-Weight Infants in the Neonatal Intensive Care Unit

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Purpose: Assess the impact of Kangaroo Care (KC) on parental anxiety levels, readiness at discharge, and successful breastfeeding.

Background: Admission of a premature low birth weight infant (LBWI) to the NICU may cause parents to experience anxiety levels equivalent to post-traumatic stress disorder. The value of KC for parental anxiety is not clear.

Methods: This was an observational, single cohort, pre-post study design. Parents of all premature LBWI were eligible for the study. Parents completed the STAI survey prior to and after 2–3 successful KC sessions.

Results: Of 108 parents enrolled, complete data were available for 86 parents. The mean changes in pre- and post-KC STAI scores were significantly different for both state anxiety and trait anxiety, and 83% of parents reported being very or extremely confident in caring for their infant at discharge. Eighty percent of mothers initiated breastfeeding, with 61% breastfeeding at discharge.

Discussion: We conclude that KC for LBWI in NICU is associated with decreased parental anxiety levels as measured by STAI. This decrease did not correlate with gestational age of the LBWI. Conversely, the decrease in anxiety gets smaller as parental age increases. Parents report higher discharge readiness and breastfeeding success.

Objective: The learner will be able to discuss the impact of KC on parental anxiety levels.

"Give Me Some Skin": What to Do When You Aren't Baby Friendly

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Baby friendly is expensive, highly encouraged and may be cumbersome to implement for some facilities. The premise and practice involved in being baby friendly is highly recommended, evidence-based practice validated by many national institutions and committees.

All facilities want to grow closer to being baby friendly. Learn a step-by-step way to educate staff on the importance of breastfeeding, and modification of procedures to facilitate early breastfeeding and baby-friendly standards of care.

Included are processes that show how to facilitate appropriate use of skin to skin during the golden hour and beyond, supplementation algorithms and guidelines, use of pacifiers using education and procedures to limit use, elimination of formula bags, and implementing exclusivity audits for breastfeeding.

Objective: Learners will be able to identify interventions that can be taken to increase patient satisfaction and exclusive breastfeeding rate without being a baby-friendly hospital.

The Rise of Positional Plagiocephaly, Positional Torticollis, and Motor Delays in Children

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Since the implementation of the American Academy of Pediatrics (AAP) Back to Sleep campaign in 1994, there has been a need to educate parents and providers about the importance of "tummy time" when infants are awake. We will address the increase in positional plagiocephaly, positional torticollis, and motor delays in infancy, while highlighting tummy time as a way to help prevent these conditions. In addition, research demonstrating a lack of knowledge regarding the benefits of tummy time will be discussed. Management of infants with positional plagiocephaly, positional torticollis and motor delays will be addressed. Tips for parent education will be provided especially

regarding prevention of “container baby” issues. “Container baby” is a term describing an infant perceived to spend an excessive amount of time in pieces of equipment (car seat, stroller, etc.), which can lead to delayed milestones such as crawling, walking, sitting, etc. We will address the educational gap about the importance of tummy time when awake.

The purpose of this poster is to understand the history of the Back to Sleep campaign and its importance, along with helping to decrease the incidence of motor delays, positional plagiocephaly and positional torticollis through the promotion of tummy time.

Objectives: The learner will be able to (1) explain the link between positional plagiocephaly, positional torticollis, motor delays, and the Back to Sleep campaign, (2) educate families on the importance of tummy time and the different tummy time positions that can be incorporated into play time with their infant, (3) discuss how to manage positional plagiocephaly, positional torticollis, and motor delays if suspected and explain the types of therapies and interventions used in treatment.

Implementing Bedside Reporting on a Mother Baby Unit

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Bedside reporting is the new standard in health care hand-off communication. Giving a bedside report on a Mother Baby unit at a baby-friendly hospital is unique, due to having two patients housed in the same room with very different needs. The proposed presentation addresses the complexity of bedside reporting on a Mother Baby unit through the multi-step process of introducing this new standard to staff and the results of a survey evaluation post implementation.

The proposed poster will present the concepts, evidence, and research that contributed to the implementation of bedside reporting on our Mother/Baby unit. The replicable 9 elements required for fulfillment of this standard will be included in the presentation. The process of implementation using a shared-governance model will be the framework of the presentation. Process evaluation results will be included of a post-implementation survey on a 34-bed unit that employs 80 nurses. As bedside reporting becomes the standard of care for all hospitals nationwide, our presentation assists other Mother Baby units by sharing a reproducible process model of bedside reporting.

Objectives: The learner will be able to (1) establish the process of implementing bedside reporting on a Mother Baby unit, (2) identify the nine required elements for standardized bedside reporting.

Applying the “Mothers’ Mental Health Check Sheet” to Childcare Counseling

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Purpose: In this study, we prepared and evaluated a personal profile table (referred to as the “Mothers’ Mental Health Check Sheet”), which converts evaluation values of a check sheet consisting of 13 items from the short-form child care happiness scale and 16 items from the short-form child care stress scale developed by Shimizu et al., into percentiles, and applied them to child care counseling.

Methods: Participants were 20 mothers whose first child was 1.5 years old. Counselors were 7 midwives who visited individual homes once every 6 months, for a total of two times. Each counselor was in charge of three participants and continuously involved with them. The duration of each counseling session was approximately 1.5 hours. Research was performed in 2012 after receiving approval by an ethics committee. Consent was obtained from participants to record the counseling sessions. Verbatim transcripts were analyzed to study relationships between mothers and counselors.

Results: The two scales were analyzed by repeated measures as one-way analysis of variance at three time points, followed by a multiple comparison test. In counseling sessions using the check sheet, we identified empathic relationships through counselors bringing out participant feelings. Mothers confirmed their mental health status with the check sheet and provided their thoughts regarding the items. Through two home visits, “ties with the child” and “appreciation for the husband,” which are child care happiness items, significantly increased, while “mental and physical fatigue” corresponding to child care stress decreased compared to before the visits, suggesting that child care counseling using the check sheet is an effective support method for mothers.

Objective: The learner will be able to explain how child care counseling using the check sheet is an effective support method for mothers.

A Perinatal Quality and Patient Safety Collaborative Improves Birth Outcomes

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With 4 million births a year, the care of a mother and newborn requires health care to be safe and reliable. Without safety protocols and effective communication in place, an adverse event can impact a family and health care providers’ lives with devastating consequences. Many quality and health care organizations such as the Institute for Healthcare Improvement; American College of Obstetricians and

Gynecologists; and the Association of Women’s Health, Obstetrics, and Neonatal Nurses advocate building a culture that is patient centered, evidence based, and cost effective. At Roper St. Francis Healthcare, a multi-disciplinary team of physicians and nurses transformed the care environment built on quality and patient safety to improve birth outcomes in a community hospital setting.

Objective: The learner will be able to discuss how a quality and patient safety collaborative improves nursing practice and birth outcomes.

“It’s Their Call”—Giving Parents the Option to Choose Their Own Quiet Times on the Postpartum Unit

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Research shows that interruptions can result in shortened rest periods and less alone time with infants to bond and breastfeed. Critical periods for establishing breastfeeding are within the first hours and days after birth. Maternal sleep deprivation also increases the risk of postpartum depression.

Many postpartum units have instituted set “quiet times” for the entire postpartum or mother baby unit (MBU). Quiet time for an entire floor may not meet individualized family needs, especially with couplet care.

“It’s Their Call” gives patients the option to choose when they want privacy without staff or visitor interruption. They choose their own quiet times based on their infant’s feeding and sleep times as well as their desire for private family time. Education on the use of the “Quiet Time” signage and the specific process to follow is given to the patient on admission to the MBU. “It’s Their Call” required education of nursing staff as well as other departmental hospital staff that would be entering a patient room for any type of service or care.

Outcomes will be measured by evaluation of patient satisfaction scores related to rest and interruptions.

Objectives: The learner will be able to (1) describe the evidence-based reasons for creating a patient-directed “It’s Their Call-Quiet Time” on the MBU, (2) describe the process development used to create a patient-directed “It’s Their Call-Quiet Time,” (3) identify education strategies used in teaching patients and staff about the use of the patient-directed option for choosing their own quiet times that is mutually beneficial and satisfying for patients and caregivers.

Implementation of an Evidence-Based Screening Program for CCHD in a Community Hospital

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CCHD is the most common birth defect. A new California law mandates that all hospitals have a program in place by July of 2013. This is an important screening, but what is the best timing for the test? Who is competent to complete the screening? How can you add this to an already-busy nursing staff to be completed?

A change project was entered into by the leadership team. After a policy was completed, an education program was developed that included a self-learning and competency check off. Part of that program had “near misses” for our unit. Data from our own hospital helped the staff to see that this program was indeed going to save lives.

To date (May 2013) we have screened 2,013 babies. Six babies referred and had an echocardiogram per our protocol. The results varied with minor defects. Only one baby required admission to the NICU because of prematurity and apnea.

Screening for CCHD will save the lives of newborns that would be discharged to home undiagnosed. Involving the staff in the implementation of this program will allow nurses unfamiliar with pulse oximetry in newborns the ability to be successful in screening all newborns.

Objective: The learner will be able to educate leaders and staff about how to implement a successful screening for CCHD.

Podium Abstract Presentations

Evaluation of Internet-Based Videoconferencing in the NICU

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Introduction: Effective communication between NICU healthcare providers and parents is an essential aspect of high-quality, family-centered care. The primary aim of this study was to evaluate the feasibility of internet-based videoconferencing (Skype, Facetime) between NICU parents and providers to support provider-parent relationships.

Methods: Enrolled parents completed demographic and relationship surveys pre-intervention. They then received a once daily video-conference update from their infant's doctor, nurse practitioner, or nurse for 5 consecutive days, followed by completion of the relationship survey and a feasibility survey. We also collected infant medical record data and feasibility input from providers.

Results: Sixteen parents enrolled. Most (81%) were White and 75% were college graduates. Infants ranged from 24 to 39 weeks gestation at birth (mean = 30.5) and were from 1-85 days old (mean = 26) at the time of enrollment. Initial logistical problems involved timing, connectivity, and staff buy-in. After improvements in research team-staff collaboration and timing to avoid busy times, these problems were largely resolved.

Conclusion: Videoconferencing in the NICU is feasible. The relationship survey is appropriate only for premature infants. Additional surveys of trust, communication, and decision making were added later and are being tested in a larger study.

Objective: The learner will be able to identify two challenges and/or benefits of internet-based videoconferencing with parents.

Walking on Eggshells: Family Stress Beyond the NICU Discharge

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Purpose: The high-risk family experience in the NICU is a major stress event that is not necessarily resolved with discharge. Many families report "walking on eggshells" with stress for up to a year beyond the birth of their infant. Because stressors can induce behavioral and biochemical changes to such a degree that family adaptation is challenged, resolving stress before the discharge is a nursing goal. The purpose of this study was to examine the relationship between unresolved family stress and high-risk family experiences.

Methods: This was a cross-sectional correlation design of 54 mothers of infants 6-months or older enrolled in a childcare setting. The Family Emotion Expressiveness (FEE) tool was completed by the mothers. This tool measures emotional climates of family and information on corresponding infant behavior. Data was analyzed using Pearson correlation coefficients to determine relationship between variables.

Results: Findings show a positive correlation between NICU admissions and family stress ($r = .88$) and high-risk primiparous births and family stress ($r = .72$).

Conclusion: While this is a pilot study, the findings illustrate unresolved stress well beyond the birth of the baby, providing support for early identification of stressed families and interventions to normalize that stress before discharge.

Objective: Describe the family stress experience in the NICU and discuss the consequences of unresolved family stress.

Care of the Infant Experiencing Drug Withdrawal: A National Dilemma

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It is estimated in the United States that more than 5 percent of pregnant women abuse illicit substances and/or use prescription drugs. Evidence reveals 25% to 50% of the neonatal intensive care unit (NICU) populations are being treated for drug withdrawal. Highly skilled healthcare team members can make a difference in the outcome of growth and development of newborns at risk. Early recognition of the signs and symptoms of drug withdrawal along with providing appropriate treatment is an important part of infant care. Nurses in a Level III NICU requested the development of an educational DVD to promote consistent evidence-based identification and care for infants experiencing drug withdrawal. Further, the nurses urged that information be included to assist parents to understand the neonatal abstinence syndrome (NAS) Scoring System and supportive care. An interdisciplinary educational DVD has been developed which offers evidence-based techniques to assist nurses and parents who face a daunting task of caring for an infant experiencing drug withdrawal. Nurses and families mentioned the DVD program promotes identification of infant's risks and condition plus a skill set for care. The DVD is available 24/7. The DVD program has potential to be implemented in rural medical communities.

Objective: The learner will be able to identify at least three signs and symptoms of neonatal drug withdrawal and list at least three evidence-based techniques for infant care.

Bringing Tablet Technology to the Bedside:

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Computerized technology, particularly tablet technology, provides an innovative solution for insuring patient safety in the NICU. Our Level III NICU struggled with missed medication orders and an ineffective system of bedside shift report. A survey of nurses and a review of existing alternatives revealed that tablet technology posed a viable solution for alleviating these problems. After a successful trial from a leading vendor, tablets were secured for purchase that allowed safety innovations to be implemented, including easier medication scanning and the creation of a Hand Off intervention. Further, tablet technology allowed the implementation of web based innovations in the NICU. To date, we have sustained a 100% compliance rate with medication scanning, bedside shift report compliance, no missed orders, and no medication errors. Concurrently, our HCAP scores have remained at 8/8 and our patient satisfaction scores at 99% on Press Ganey reports following the implementation of tablet technology.

Objective: The learner will be able to identify areas in their current practice setting that can be enhanced with the use of tablet technology.

Examining the Impact of Enterovirus on the Neonate: A Case Study

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Enteroviruses are among the most common viruses that cause disease in humans; 10–15 million symptomatic cases annually. Neonatal infections are not rare however most (79%) are asymptomatic or mild with an estimated 4% demonstrating significant illness requiring neonatal intensive care unit (NICU) admission. Viral transmission to the neonate is typically antenatally, intrapartum, and postnatally and can present with a wide spectrum of symptoms. In severe cases neonates may progress rapidly from clinical stability to fulminating systemic insult requiring global support and expert nursing care.

Two case studies will be presented which occurred 6 months apart within the same NICU. Each case will be examined to provide a better understanding of viral transmission and progression of systemic injury. Methods of testing and treatment of this illness including recommendations from pediatric specialist (infectious disease, cardiology, nephrology and neonatologist) will be reviewed. Attention to developmental care needs of the infant and family support during crisis is explored. Long term evaluation and follow up requirements for this specialized neonate will conclude the discussion. Understanding the neonate diagnosed with enterovirus will provide NICU nurses with the tools to anticipate, hone assessment skills, perform required medications, procedures and support the neonatal/family dyad.

Objective: The learner will be able to discuss the diagnosis, pathophysiology, treatment, and long term implications of neonatal enterovirus.

Neonatal Simulation Medicine and Resuscitation Team Training (nSMARTT) Interprofessional Neonatal Education and Training using High-Fidelity Simulation and Checklists: Improving Clinical Practice

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Neonatal resuscitation teams require the integrated acquisition of cognitive, technical, and behavioral skills and teamwork to support neonates during the critical period surrounding birth. Optimal quality care minimizes long-term morbidities. The Neonatal Resuscitation Program (NRPTM, 6th edition) provides guidance about best practice.

To educate and help sustain skills required for low frequency, high-risk resuscitation situations, NRP megacodes (NRPTM 6th edition) were done as mock code drills in the clinical area. After nSMARTT education, improvement was noted in the timeliness of interventions and in teamwork skills during mock resuscitations.

The care of extremely preterm infants during the first hour of life (the Golden Hour) focuses on stabilization rather than true resuscitation. Gentle assistance during the transition from placental to pulmonary gas exchange is the goal. Teamwork, application of evidence-informed practices, and the use of checklists can improve quality of care. After nSMARTT education, improvement in interprofessional team planning and documentation of care was noted. Debriefing and lessons learned are being used more consistently in the clinical area.

The nSMARTT model is an innovative educational strategy which facilitates interprofessional collaboration and practice, while enhancing communication and teamwork skills.

Objective: The learner will be able to understand the benefits of using checklists to facilitate interprofessional collaboration and teamwork when complex, multi-step, detailed care practices are required.

Implementation of an Electronic Identification System for Expressed Breast Milk Management

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Breastfeeding promotes the mother-neonate relationship and provides the gold standard of nutritional support. In the neonatal intensive care unit (NICU) expressed breast milk (EBM) is regularly stored for future administrations. The identified challenge in neonatal nurse practice is efficient EBM management and accurate administration.

The existent practice, relying on nurse identification and verification of EBM, was flawed by human error. This problem is magnified in a critical care environment. Neonatal nurses manage high volumes of EBM in daily routine requiring a second nurse witness prior to each patient administration. The potential for inaccurate administration and decreased nurse efficiency was identified as an opportunity to improve practice.

A system of electronic identification of EBM was implemented as a safer and more effective alternative to the former method. The hospital's existent bedside medication verification system was adapted to EBM management. Through an interdisciplinary approach, the process was developed incorporating the rights of medication administration and

bar-coded label use as applied to EBM. A work flow algorithm was designed to identify parent and care provider responsibilities in each step of EBM management.

Electronic identification of EBM is a successfully implemented program as evidenced by high user compliance rates and error free EBM administration

Objective: The learner will be able to explain the process of electronic identification of expressed breast milk to decrease the potential for administration errors and improve nurse efficiency.

Reduction in Newborn Screening Metabolic False-Positive Results

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Background: All newborn infants receive a newborn screening test to detect rare inherited metabolic diseases. As a screening test, there is a possibility of a false-positive result with a higher rate noted among preterm or critically ill infants. This leads to unnecessary confirmatory testing, creating increased infant and parent stress. Early amino acid administration in total parenteral nutrition (TPN) is common and essential in the NICU and has been associated as a possible factor contributing to an increased rate of false-positive results.

Primary Objective: To reduce the number of presumptively positive metabolic newborn screening results in the NICU.

Methods: A medical record review after revision of the newborn screening policy to include an interruption of TPN for three hours prior to collecting the newborn screen specimen was conducted. The study compared the number of false-positive results for one year prior to and one year following the protocol change.

Results: The new protocol reduced metabolic false-positive result rates by 74%. An estimated cost savings of more than 80% was achieved.

Recommendations: A revision in the newborn screening collection protocol was easy to implement and resulted in a significant reduction of false-positive results and the need for unnecessary additional testing.

Objective: The learner will be able to describe implementation of a quality improvement project to improve care and reduce unnecessary lab draws.

Key Components for Successful Implementation of a Critical Congenital Heart Disease Screening Program

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In 2011 the Secretary of Health and Human Services approved the addition of critical congenital heart disease (CCHD) to the universal newborn screening panel. Also, the American Academy of Pediatrics (AAP) endorsed CCHD screening. These actions prompted nurseries to develop individualized strategies to launch CCHD screening programs.

A review of established programs identified key components of integrating a CCHD screening program into clinical practice.

First, the AAP flow algorithm was individualized based on hospital population and resources. The algorithm directs actions in identifying newborns requiring screening, timing and result management.

Next the Neonatal Nurse and Informatics developed electronic documentation tools to promote accurate documentation and alert staff to required screening.

Maternal child health nurse and physician education included: grand rounds, meeting presentations, competency and reference binder.

Parents are informed of screening requirement for discharge and CCHD resource is in their discharge folder.

Screenings are performed in a designated area of the nursery with dedicated equipment. A newborn CCHD list is stationed in this area.

Lastly, verification of appropriately screening infants is indicated by a "smiling heart" sticker on the newborn crib and in shift report kardex.

Instituting the aforementioned components resulted in 100% compliance with CCHD screening according to protocol.

Objective: The learner will be able to identify the components of a successfully implemented Critical Congenital Heart Disease screening program.

A Pilot Study of an Evidenced-Based, Individualized Breastfeeding Support Program for Mothers of Preterm Infants

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Statement of Problem/Literature Review: Mothers of preterm infants encounter many barriers to establishing and maintaining lactation during their infant's NICU stay. NICU nurses can play a key role in supporting these mothers, and promoting enhanced lactation/breastfeeding outcomes.

Purpose: To determine whether an individualized breastfeeding support program for NICU mothers lengthens lactation duration and enhances breastfeeding success.

Methods: Nineteen mothers who planned to provide breastmilk for their preterm infants served as subjects for this IRB-approved study. Subjects were randomly assigned to group A or B. Group A mothers were paired with a designated "breastfeeding nurse" who followed a standardized, evidence-based program of individualized lactation support consisting of (1) counseling/early intervention beginning <24 hours post-delivery (2) weekly phone and/or personal in-hospital contact during the infant's NICU stay, and (3) weekly post-NICU-discharge phone contact for 2 months. Group B mothers received standard support.

Data Analysis/Interpretation: Results were not statistically significant, however, 80% of Group A mothers were still pumping at infant's discharge, compared to only 55% in Group B.

Conclusions: Results from this pilot study suggests that this easy, feasible, intervention may potentially lead to enhanced health outcomes for infants as more mothers' milk may be available for a longer duration post-birth.

Objective: The learner will be able to describe common lactation and breastfeeding barriers for mothers of preterm infants in the NICU.

The Use of Own Mother's Colostrum as a Potential Immune Therapy for Extremely Premature Infants: State of the Science

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Problem/Literature Review: Own mother's colostrum contains many immunologically derived factors that protect the recipient infant against infection and have trophic, healing, and maturational effects on the intestinal mucosa. The colostrum produced by mothers who deliver extremely premature infants contains the highest concentrations of these protective factors, and is potentially an "immune therapy" for these immune-deficient infants in the first days of life. Unfortunately, clinical instability precludes enteral feedings for extremely premature infants during this period. Alternative methods for administering own mother's colostrum as a potential immune therapy during this critical period must be explored. Oropharyngeal administration is a feasible option.

Purpose: To examine the use of own mother's colostrum, administered via the oropharyngeal route, as a potential "immune therapy" to improve health outcomes for preterm infants.

Objective: The learner will be able to describe how own mother's colostrum may protect preterm infants from infection.

Parental Experience Learning to Feed Their Preterm Infant

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Purpose: Although extensive research has been conducted on preterm infant oral feeding, few investigations have examined parents' experiences learning to orally feed their preterm infant while in the NICU. As such, the aim of this study was to explore parental learning experiences with the intent to improve preterm infant feeding outcomes by gaining a better understanding of the process parents' use in learning to feed their preterm infant.

Methods: This investigation used hermeneutic phenomenology to explore parental experiences with the learning process. Twelve mothers and eight fathers participated in semi-structured interviews. For eight mothers and six fathers, this was their first child. In addition, this was the first preterm infant for all participants.

Results: Three themes were identified: an emotional experience; learn as you go; and it's technical. Parents' noted that feeding encompassed both positive as well as negative emotions, that learning was a process, and that feeding a preterm infant could be very technical, requiring extra skills for feeding success.

Clinical Implications: Nurses can play a key role in helping parents learn by acknowledging both positive and negative feelings about the feeding process, recognizing parents' learning needs, and teaching and demonstrating appropriate feeding techniques.

Objective: The learner will be able to identify recommendations and clinical implications that are key when helping parents learn to feed their preterm infant.