**Suggested PSNA Application Content**

**Title of activity:**

Transition to a Safe Home Sleep Environment for the NICU Patient

**Activity type:**

Provider-directed, learner-paced: Enduring material, web-based

**Professional practice gap:**

Description of the problem

NICU infants commonly require care that is inconsistent with infant safe sleep recommendations, such as the use of positioning devices. The conflicting needs of the NICU infant with the need to provide a safe sleep environment before discharge often times creates confusion for families and health providers (Goodstein M H, Stewart D L, Keels E L, et al. AAP COMMITTEE ON FETUS AND NEWBORN, TASK FORCE ON SUDDEN INFANT DEATH SYNDROME. Transition to a Safe Home Sleep Environment for the NICU Patient. Pediatrics. 2021;148(1):e2021052046). A survey of NICU providers found that only 53% agreed with the American Academy of Pediatrics’ recommendation that safe sleep positioning could decrease the risk of SIDS. Consistent NICU protocols are needed to enable NICU nurses to ensure infants’ transition to a safe sleep environment as soon as medically possible.

**Evidence to validate the professional practice gap:**

A 2015 survey of nurses in a level III NICU/TCU at University Hospitals Case Medical Center, Rainbow Babies and Children’s Hospital, Cleveland, Ohio found that only 53% strongly agreed that safe sleep recommendations make a difference in preventing SIDS. A number of reasons for this lack of agreement were posited. Perhaps the most substantial reason is a lack of safe sleep nursing education. Other reasons include enduring beliefs about infant safety and comfort; difficulty reconciling SIDS risk-reduction recommendations with the principles of developmental care; and the influences of NICU monitoring practices and societal trends. (Barsman, S. G., Dowling, D. A. , Damato, E. G. & Czeck, P. (2015). Neonatal Nurses' Beliefs, Knowledge, and Practices in Relation to Sudden Infant Death Syndrome Risk-Reduction Recommendations. Advances in Neonatal Care, 15 (3), 209-219. doi: 10.1097/ANC.0000000000000160.) In 2021, the AAP Committee on Fetus and Newborn, Task Force on Sudden Infant Death Syndrome published guidelines to facilitate transition to a safe home sleep environment for NICU patients. This education is meant to raise awareness of the importance of transitioning to safe sleep well before hospital discharge. It is also meant to provide a consistent algorithm for NICU healthcare teams to use to guide this transition.

**Educational need that underlies the professional practice gap:**

Knowledge

**Target audience:**

Registered Nurses, Occupational therapists, Physical Therapists, Respiratory Therapists

**Desired learning outcome:**

Nurses working with infants in the NICU/ICN setting will apply knowledge gained from this self-learning module into daily practice, utilizing current evidence-based and best practices for implementing safe sleep for newborns. After completion of the module, nurses will gain knowledge and implement a standardized approach for timely transition into safe sleep positioning for medically stable infants in the clinical practice setting reaching 32-weeks post-gestational age. Nurses will implement the AAP safe sleep recommendations as soon as medically appropriate for these infants. Nurses will begin educating infants’ parent(s) or guardian(s) about safe sleep practices according to the guidelines set forth by the American Academy of Pediatrics. During parent/caregiver visitations, nurses will explain any temporary medically necessary exceptions to safe sleep positioning as soon as possible after birth and will reinforce this education throughout the hospital stay. Nurses in the clinical practice setting will ensure that infants are able to consistently sleep alone and flat on their back in a crib containing only a firm mattress covered by a tightly fitted sheet prior to hospital discharge.

**Description of evaluation method:**

**Self-report of learner(s) intent to change practice specific to the learning outcome; active participation in the interactive module learning activity; post-test for knowledge. The following Multiple Choice test questions are embedded in web-based self-learning module:**

* What is the best way to swaddle a NICU infant who is at risk for developmental dysplasia of the hip (DDH)? Select all that apply.
* Which of the following practices are known to help infants with Gastroesophageal Reflux (GER)? Select all that apply.
* Identify supportive care measures that support the non-pharmacologic treatment goal for infants with NOWS. Select all that apply.
* True or false? Developmentally sensitive care for NICU infants may involve sleep positioning devices that are not consistent with safe sleep recommendations.
* Which of the following practices can help NICU infants from overheating? Select all that apply.
* True or false? When swaddled, preterm infants should be placed in supine position, have their hands brought to midline under the chin, and hips and knees should be in flexed position and able to move freely.
* How can we help families follow safe sleep recommendations before the infant transitions from the NICU to a home environment? Select all that apply
* True or false? Because human milk feeding is associated with a decreased risk of Sudden Unexpected Infant Death, parents should be encouraged to initiate milk expression.

**The first three questions are embedded throughout the module. The last five questions are a mandatory post-test at the end.**

**Description of evidence-based content with supporting references or resources:**

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| --- | --- |
| Developmentally Sensitive Care for preterm infants | Non-Supine Positioning and Use of Positioning Aids  Swaddling  Skin-to-Skin Care |
| Risk of Deformational Plagiocephaly and Torticolis | Use of positioning devices in the NICU  Supervised tummy time when infant is awake |
| Developmental Dysplasia of the Hips | Proper swaddling |
| Respiratory Distress (Acute and Chronic) | Acute: Prone positioning yields higher oxygen saturation and improvement in tachypnea.  Chronic: Once an infant has weaned to a standardized minimal supplemental respiratory support, then supine positioning can be maintained, and parents should receive additional education before discharge.  Upper Airway Obstruction: Nonsupine positioning may be necessary to prevent excessive hypercarbia or hypoxemia. |
| Apnea of Prematurity | Inadequate evidence to support the use of prone positioning for treatment of Apnea of Prematurity.  Medical-grade home monitors may allow earlier discharge in mild persistent cases of apnea.  Non-medical grade monitors have not been shown to decrease the risk of SUID and may lead to parental complacency and decreased adherence to evidence-based practices. |
| Gastroesophageal Reflux Disease | Non-Supine Positioning and Head of Crib Elevation: Not recommended. Risks outweigh any potential benefits.  Term Infants: Can be treated with small, frequent feeds; holding the infant upright after feeding;  thickened feeds; elemental formula; and removal of the NG or OG tube, when appropriate. If the parent is providing human milk, elimination of all cow milk protein from their diet may be beneficial.  Preterm Infants: Same as for term infants, but avoid commercial thickeners because of the association with necrotizing enterocolitis. |
| Thermoregulation | Preterm and low birth weight infants are prone to temperature instability and may require additional layers for warmth.  Avoid excessive bundling because overheating and head covering increased risk of SUID.  Families should be counseled to discontinue use of a hat once the infant demonstrates temperature  stability at home.  If swaddling an infant, it must be done properly, only in supine position, and must be discontinued when the infant begins trying to roll. |
| Hyperbilirubinemia and Phototherapy | There is no benefit to changing positions during phototherapy; however, phototherapy blanket may be used in addition to overhead lights.  Supine positioning should be maintained unless there are other indications for non-supine positioning. |
| Neonatal Opioid Withdrawal Syndrome (NOWS) | Early and frequent education is necessary to prevent families from thinking it is safe to implement therapeutic interventions that are not consistent with safe sleep guidelines in the home environment.  The use of therapeutic interventions that are inconsistent with home infant sleep safety should be minimized. When necessary, it is important to review their use and transition to safe sleep as soon as possible.  Emphasize clear, consistent, safe sleep messaging with families of infants with NOWS well before discharge. |
| Human Milk Feeding | Human milk feeding is recommended for its many health benefits, including SUID risk reduction.  Care should be taken for parents to minimize the risk of falling asleep with the infant in their bed.  Provide parents with appropriate outpatient support to optimize breastfeeding success at home. |

References:

Goodstein M H, Stewart D L, Keels E L, et al. AAP

COMMITTEE ON FETUS AND NEWBORN, TASK FORCE ON SUDDEN

INFANT DEATH SYNDROME. Transition to a Safe Home Sleep

Environment for the NICU Patient. Pediatrics.

2021;148(1):e2021052046

Moon RY, Carlin RF, Hand I; AAP Task Force on Sudden

Infant Death Syndrome; AAP Committee on Fetus and

Newborn. Sleep-Related Infant Deaths: Updated 2022

Recommendations for Reducing Infant Deaths in the Sleep

Environment. Pediatrics. 2022;150(1):e2022057990

**Learner engagement strategies:**

Active participation in the interactive self-learning module with embedded multiple choice questions that must be completed correctly in order to complete the educational activity, and achieve NCPD hours.

**Number of contact hours awarded and calculation method:**

| **Learning Outcome (s) for this activity as a result of participating in the activity: increase in Knowledge; Kirkpatrick level 1 evaluation**  **Select all that apply:  Nursing Professional Development  Patient Outcome  Other: ­­­­­­­­­­­­­­­­­­­­­­Describe \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | | |
| --- | --- | --- | --- |
| **CONTENT**  **(Topics)**  *Provide an outline of the content* | **TIME**  *Approximate time required for content delivery and/or participation in the activity* | **PRESENTER/ AUTHOR**  *List the Author* | **LEARNER ENGAGEMENT STRATEGIES**  *List the learner engagement strategies to be used by Faculty, Presenters, Authors (note: PowerPoint and lecture by themselves are not learner engagement strategies)* |
| Overview of why it is important to educate families and transition infants to safe sleep as soon as medically possible in the NICU | 2 minutes | Judy Vitali | Objectives:  Describe increased risk of SUID in NICU population. Understand rationale for early parent education and modeling of safe sleep practices in the NICU as soon as medically appropriate.  Methods:  Interactive web-based learning module |
| Developmentally Sensitive Care for preterm infants   * Non-Supine Positioning and Use of Positioning Aids * Swaddling * Skin-to-Skin Care | 2 minutes | Judy Vitali | Objectives:  Describe the rationale for developmentally sensitive care of preterm infants in the NICU.  Methods:  Interactive web-based learning module |
| Risk of Deformational Plagiocephaly and Torticolis   * Use of positioning devices in the NICU * Supervised tummy time when infant is awake | 1 minute | Judy Vitali | Objectives:  Describe evidence-based strategies to mitigate the risk of DP and Torticolis.  Methods:  Interactive web-based learning module |
| Developmental Dysplasia of the Hips   * Proper swaddling | 2 minutes | Judy Vitali | Objectives:  Describe EBP for reducing risk of developmental dysplasia of the hips.  Methods:  Interactive learning module, assessment question |
| Respiratory Distress (Acute and Chronic)   * Acute: Prone positioning yields higher oxygen saturation and improvement in tachypnea. * Chronic: Once infant has weaned to a standardized minimal supplemental respiratory support, supine positioning can be maintained, and parents should receive additional education before discharge. * Upper Airway Obstruction: Non-supine positioning may be necessary to prevent excessive hypercarbia or hypoxemia. | 2 minutes | Judy Vitali | Objectives:  Describe EBP for therapeutic positioning for infants with acute and chronic respiratory distress.  Methods: Interactive web-based learning module |
| Apnea of Prematurity   * Inadequate evidence to support use of prone positioning for treatment of Apnea of Prematurity. * Medical-grade home monitors may allow earlier discharge in mild persistent cases of apnea. * Non-medical grade monitors have not been shown to decrease risk of SUID and may lead to parental complacency and decreased adherence to evidence-based practices. | 1 minute | Judy Vitali | Objectives:  Describe when it would be appropriate to utilize a medical grade home monitor to facilitate earlier discharge for infants with mild persistent apnea of prematurity.  Methods: Interactive web-based learning module |
| Gastroesophageal Reflux Disease   * Non-Supine Positioning and Head of Crib Elevation: Not recommended. Risks outweigh any potential benefits. * Term Infants: Can be treated with small, frequent feeds; holding the infant upright after feeding; thickened feeds; elemental formula; and removal of the NG or OG tube, when appropriate. If the parent is providing human milk, elimination of all cow milk protein from their diet may be beneficial. * Preterm Infants: Same as for term infants, but avoid commercial thickeners because of the association with necrotizing enterocolitis. | 3 minutes | Judy Vitali | Objectives:  Describe EBP for treatment of GER in the NICU setting.  Methods:  Interactive learning module, assessment question |
| Thermoregulation   * Preterm and low birth weight infants are prone to temperature instability and may require additional layers for warmth. * Avoid excessive bundling because overheating and head covering increase risk of SUID. * Counsel families to discontinue use of a hat once the infant demonstrates temperature stability at home. * If swaddling an infant, it must be done properly, only in supine position, and must be discontinued when the infant begins trying to roll. | 3 minutes | Judy Vitali | Objectives:  Review EBP for thermoregulation of NICU infants, including risks for overheating with prone positioning, overbundling, and hat use.  Methods:  Interactive web-based learning module |
| Hyperbilirubinemia and Phototherapy   * There is no benefit to changing positions during phototherapy; however, phototherapy blanket may be used in addition to overhead lights. * Supine positioning should be maintained unless there are other indications for non-supine positioning. | 1 minute | Judy Vitali | Objectives:  Discuss recommended positioning for infants undergoing phototherapy.  Methods:  Interactive web-based learning module |
| Neonatal Opioid Withdrawal Syndrome (NOWS)   * Early and frequent education is necessary to prevent families from thinking it is safe to implement therapeutic interventions inconsistent with safe sleep guidelines in the home environment. * The use of therapeutic interventions that are inconsistent with home infant sleep safety should be minimized. When necessary, it is important to review their use and transition to safe sleep as soon as possible. * Emphasize clear, consistent, safe sleep messaging with families of infants with NOWS well before discharge. | 4 minutes | Judy Vitali | Objectives:  Review non-pharmacologic interventions for treatment of NOWS.  Methods:  Interactive learning module, assessment question |
| Human Milk Feeding   * Human milk feeding is recommended for its many health benefits, including SUID risk reduction. * Care should be taken for parents to minimize the risk of falling asleep with the infant in their bed. * Provide parents with appropriate outpatient support to optimize breastfeeding success at home. | 1 minute | Judy Vitali | Objectives:  Describe benefits of breastfeeding for NICU infants.  Methods:  Interactive web-based learning module |
| Bundled Intervention for the Transition of the NICU Patient to a Home Sleep Environment | 2 minute | Judy Vitali | Objectives:  Review EBP for implementing a bundled intervention for transitioning NICU patients to safe sleep.  Methods:  Interactive web-based learning module |

**It takes 30 minutes to complete the interactive self-learning module. The PSNA Learning activity will provide 0.5 NCPD to professional nurses completing the module in its entirety, completion of post-test, and the program evaluation.**

**Criteria for awarding contact hours:**

Credit awarded commensurate with participation.

Completion/submission of evaluation form