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### New and Updated Cochrane Systematic Reviews

Full-text evidence-based systematic reviews prepared by the Cochrane Collection. Please click on the title to access full text.

**New Reviews – June 2015**
- Antibiotic lock for the prevention of catheter-related infection in neonates
- Strategies for the discontinuation of humidified high flow nasal cannula (HHFNC) in preterm infants

**Updated Reviews – June 2015**
- Regional (spinal, epidural, caudal) versus general anaesthesia in preterm infants undergoing inguinal herniorrhaphy in early infancy

### New from Up To Date

UpToDate is accessible via the blue link above, or via the staff intranet home page (midway down on the right hand side). It can also be accessed via the internet at [www.uptodate.com/login](http://www.uptodate.com/login) with an OpenAthens username and password. To register for an OpenAthens account click [here](#).

- Neonatal related topics

### Key Journals Latest Edition

Full text articles from Infant, Infant Grapevine and the Journal of Neonatal Nursing may be available via the blue hyperlinks below.

- Infant & Infant Grapevine
Please click on the blue link at the end of the abstract (where available) to access the full text. You may need an OpenAthens username and password. To register for an OpenAthens account click [here](#). If you have any difficulty accessing the full text articles, or if you would like us to obtain any of the articles for you, please contact the Healthcare Library.

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25. Test of a Process Evaluation Checklist to Improve Neonatal Pain Practices


Journal Articles:

1. A literature review of parents’ experiences of kangaroo care in the neonatal unit

   Citation: Infant, May 2015, vol. 11, no. 3, p. 96-99, 1745-1205 (May 2015)
   Author(s): Sudell, Jennifer, Lanlehin, Rosemary M., Hill, Marie C.
   Abstract: Kangaroo care, a widely used method of care delivery in neonatal units, is the practice of holding an infant skin-to-skin on the chest, under clothes, in only a nappy and sometimes a hat. Much research explores the benefits of this for the infant; however, there is less holistic knowledge about the experiences of parents who deliver this care. This article summarises a review of the literature presenting parents’ experiences of providing kangaroo care in the neonatal unit. [PUBLICATION]
   Source: BNI


   Citation: Pediatrics, 01 June 2015, vol./is. 135/6(1107-1114), 00314005
   Author(s): Christensen, Robert D., Yaish, Hassan M., Gallagher, Patrick G.
   Language: English
   Abstract: Newborn infants who have hereditary spherocytosis (HS) can develop anemia and hyperbilirubinemia. Bilirubin-induced neurologic dysfunction is less likely in these neonates if the diagnosis of HS is recognized and appropriate treatment provided. Among neonates listed in the USA Kernicterus Registry, HS was the third most common underlying hemolytic condition after glucose-6-phosphate dehydrogenase deficiency and ABO hemolytic disease. HS is the leading cause of direct antiglobulin test (direct Coombs) negative hemolytic anemia requiring erythrocyte transfusion in the first months of life. We anticipate that as physicians become more familiar with diagnosing HS in the newborn period, fewer neonates with HS will develop hazardous hyperbilirubinemia or
present to emergency departments with unanticipated symptomatic anemia. We predict that early suspicion, prompt diagnosis and treatment, and anticipatory guidance will prevent adverse outcomes in neonates with HS. The purpose of this article was to review the neonatal presentation of HS and to provide practical and up-to-date means of diagnosing and treating HS in neonates.

**Publication type:** journal article  
**Source:** CINAHL  
**Full text:** Available Salisbury EJournals at Pediatrics

### 3. Accurate Weight Measurement for Neonates.

**Citation:** JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 02 June 2015, vol./is. 44/(0-), 08842175  
**Author(s):** Otero, Mary, Mayton, Michelle  
**Language:** English  
**Abstract:** Poster Presentation Purpose for the Program To improve patient outcomes and quality of care by assessing accurate weight loss of newborns who are predominantly breastfed. Proposed Change To change practice to have all newborns weighed every 24 hours from time of birth at the hospital until discharge. Implementation, Outcomes, and Evaluation Excess weight loss is common in term breastfed newborns. There are several modifiable risk factors that can affect the amount of weight loss that can occur in the first 24 to 48 hours of life in newborns. This makes it extremely important for health care professionals to have an accurate weight to establish the best plan of care. Improving rates of breastfeeding exclusivity and duration is a focus of the mother/infant unit and part of attaining Baby Friendly status. Nurses on the mother/infant unit identified increased supplementation being ordered because of weight loss. Every infant regardless of birth time was weighed on the night shift. Literature was collected to identify risk factors that could influence weight loss in newborns. A decision was made to change practice to all newborns being weighed every 24 hours from delivery time. Practice change can always be challenging. Nurse leaders met with physician leaders to elicit their support. Although there were some reservations about not always having weights at rounding, they began to support the change. Nurses were concerned about the added workload on all shifts. Feedback was encouraged from all staff to make this transition as smooth as possible. An additional scale was obtained so a newborn could be weighed in the woman's room. Physicians and families verbalize satisfaction with the new practice. The accurate weights allow physicians to see a better picture of the newborn's weight loss over a period of time. Data regarding rates of exclusive breastfeeding are in the range of 80% to 90% since 2014. Lactation data indicate a decrease in supplementation for weight loss. Implications for Nursing Practice Before May 6, 2013, the nursing staff would weigh newborns at any time during the night shift. The initiated practice change forces all nurses to track birth times and ensures that infants are weighed at this time. The education and data given from this practice change also empowered the nurses to have conversations with physicians concerning supplementation and when it is necessary. Nurses verbalize a better understanding of newborn weight loss and feel they are now documenting accurate weights.

**Publication type:** journal article  
**Source:** CINAHL

### 4. An Innovative Strategy to Improve Family Infant Bonding

**Citation:** Neonatal Network, May 2015, vol. 34, no. 3, p. 189-191, 0730-0832 (May 2015)  
**Author(s):** Hutcheson, Jamie L., Cheeseman, Susan E.  
**Abstract:** To improve family-infant bonding while newborns were separated from their parents, work began to develop a new Childbirth Center policy to guide staff in using Apple’s FaceTime application with patients. Multidisciplinary meetings were held to obtain consent for the use of FaceTime and to protect patient information. We acquired two iPads and the support needed for updates. The staff was educated, and implementation began in January, 2014. This program improved bonding as evidenced by feedback received from the parents who utilized it. Several parents commented on how much they preferred seeing images of their babies in motion breathing and crying instead of just still pictures. Physicians also used FaceTime while talking with parents about plans of care. Since our implementation, we have utilized FaceTime with 46 infants to impact bonding in our Special Care nursery. This process enhances the delivery of relationship-based care with our patients. [PUBLICATION]  
**Source:** BNI
5. Bezoar and bowel obstruction associated with the use of anti-gastro-oesophageal reflux medication in neonates
Citation: Infant, May 2015, vol. 11, no. 3, p. 94-95, 1745-1205 (May 2015)
Author(s): Parmar, Raj Singh, Cameron, Duncan, Gopalakrishnan, P. N., Corbett, Harriet J.
Abstract: Gastro-oesophageal reflux is a common condition in neonates. A compound alginate preparation (CAP, Gaviscon) is often prescribed for this problem. This article reports on three cases of gastric bezoar and one case of bowel obstruction associated with its use. The authors propose CAP caused milk curd obstruction leading to serious consequences. [PUBLICATION]
Source: BNI

6. Breastfeeding Success Is More Than Just Putting Baby to Breast
Citation: Neonatal Network, May 2015, vol. 34, no. 3, p. 192-193, 0730-0832 (May 2015)
Author(s): Discenza, Deborah
Abstract: Breastfeeding success in our society focuses heavily on putting the baby to the breast. However, NICU mothers and especially preemie moms struggle with this very task and are often feeling pressure from various angles medically and therapeutically. At the end of the day, it is about helping that mother build her confidence in her role in the NICU that can dictate breastfeeding success in whatever form that might take. [PUBLICATION]
Source: BNI

7. Cardiovascular support during neonatal intensive care
Citation: Paediatrics and Child Health (United Kingdom), June 2015, vol./is. 25/6(249-255), 1751-7222;1878-206X (01 Jun 2015)
Author(s): Brunton A., Turner M.A., Paize F.
Language: English
Abstract: Effective cardiovascular support for neonates requires an understanding of cardiovascular physiology, the developmental stages of the neonate and knowledge of the available treatment options. This review aims to provide physiologically-based recommendations for treatment, referring only to aspects of physiology that can be generally measured in neonates on neonatal units. This review is intended to give an insight into how physiology and pharmacology can be balanced when tailoring care to individual babies.
Publication type: Journal: Review
Source: EMBASE

8. Challenges in Change: The Perils and Pitfalls of Implementing a Palliative Care Program in the Neonatal Intensive Care Unit
Citation: Journal of Hospice and Palliative Nursing, Jun 2015, vol. 17, no. 3, p. 206-212, 1522-2179 (June 1, 2015)
Author(s): Conway-Orgel, Margaret, Edlund, Barbara J.
Abstract: Approximately 25 000 pediatric deaths occur annually in hospitals. More than 50% of these deaths occur in the neonatal intensive care unit. In a 10-year cohort study that examined those pediatric patients who would qualify for palliative care, only 4% of them received palliative care. This article describes the development of an algorithm and program to deliver neonatal palliative care. Challenges of implementing the program and the use of Kotter's 8-step process to facilitate change in the unit's culture are discussed. Looking ahead, the use and evaluation of the SOFT Care algorithm in the neonatal intensive care unit will help to demonstrate improved outcomes in neonates who receive palliative care. [PUBLICATION] 18 references
Source: BNI

Citation: JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 02 June 2015, vol./is. 44/(0-0), 08842175
Author(s): VanderWal, Beverly, Kyle, Charmaine L.
Language: English
Abstract: Poster Presentation Purpose for the Program Hyperbilirubinemia is the most common indication for hospital readmission of term and late preterm infants. In reviewing our performance, we identified a 12-month rolling readmission rate of 2.43%, which was greater than the 1.50% benchmark of other large teaching hospitals. Analysis of our data revealed that 25% of newborn readmissions were for hyperbilirubinemia. In an effort to
reduce readmission rates, we identified opportunities to update and standardize assessment and management of hyperbilirubinemia. Proposed Change Our previous practice was to perform a transcutaneous bilirubin test at age 30 hours and to notify the infant care provider only if the infant fell into the high-risk zone \((95^{th}\text{ percentile per the Bhutani nomogram})\). Subsequent testing and treatment was determined by the individual care provider, and there were no standard nursing interventions. A multidisciplinary task force was established to develop and implement an algorithm based on current evidence that focused on assessment, early identification of at-risk infants, early implementation of interventions, and consistent outpatient management. Simultaneously with this work our facility was implementing the 10 Steps to Successful Breastfeeding in preparation for achieving Baby Friendly Hospital designation. The task force hoped to take advantage of the work in progress to support breastfeeding because a major risk factor for hyperbilirubinemia is inadequate breastfeeding. Implementation, Outcomes, and Evaluation We utilized the plan, do, study, act (PDSA) model to develop and implement the new algorithm. After four cycles with draft algorithms, we agreed on the final version. Nurses and physicians were educated on the algorithm, and it was implemented throughout the newborn service. Physician task force members also educated their peers on criteria for readmission and use of the online BiliTool to standardize treatment. The rolling 12-month readmission rate in July 2014 was 1.89% which represents a 23% decrease. In evaluating our successful practice changes, we anticipate a continued decrease in the rolling 12-month rate. The task force continues to review monthly data and analyze the effectiveness of interventions. Implications for Nursing Practice Nurses manage the care of hospitalized newborns and are responsible for assessing newborns, collaborating with health care providers, and implementing interventions, especially those that facilitate successful breastfeeding. The use of this algorithm standardizes practice to ensure that every infant receives appropriate evaluation of risk and intervention to avoid significant hyperbilirubinemia.

**Publication type:** journal article

**Source:** CINAHL

10. Effect of a vascular access team on central line-associated bloodstream infections in infants admitted to a neonatal intensive care unit: A systematic review

**Citation:** International Journal of Nursing Studies, May 2015, vol. 52, no. 5, p. 1003-1010, 0020-7489 (May 2015)

**Author(s):** Legemaat, Monique M, Jongerden, Irene P, van Rens, Roland MFPT, Zielman, Marjanne, van den Hoogen, Agnes

**Abstract:** To review the effect of a vascular access team on the incidence of central line-associated bloodstream infections in infants admitted to a neonatal intensive care unit. MEDLINE, CINAHL, Embase, Web-of-Science and the Cochrane Library were searched until December 2013. Selection Studies that evaluated the implementation of a vascular access team, and focused on the incidence of central line-associated bloodstream infections in infants admitted to a neonatal intensive care unit, were selected. Incidence rates of central line-associated bloodstream infections were extracted, as well as information on vascular access team tasks and team composition. The quality of studies was critically appraised using the McMaster tool for quantitative studies. Seven studies involving 136 to 414 participants were included. In general, the implementation of a vascular access team coincided with the implementation of concurrent interventions. All vascular access teams included nurses, and occasionally included physicians. Main tasks included insertion and maintenance of central lines. In all studies, a relative decrease of 45-79% in central line-associated bloodstream infections was reported. A vascular access team is a promising intervention to decrease central line-associated bloodstream infections in infants admitted to a neonatal intensive care unit. However, level of evidence for effectiveness is low. Future research is required to improve the strength of evidence for vascular access teams. [PUBLICATION] 28 references

**Source:** BNI

11. Enhancing Communication and Response for Care of Newborns at Risk of Complications...

**Proceedings of the 2015 AWHONN Convention.**

**Citation:** JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 02 June 2015, vol./is. 44/(0-), 08842175

**Author(s):** Donohue, Katie E., Hyland, Theresa

**Language:** English

**Abstract:** Paper Presentation Purpose for the Program To outline innovative enhancements to the communication system and processes used by health care providers across departments and disciplines to provide a rapid response and effective care for the compromised or potentially compromised newborn. Proposed Change The previous system for responding to events involving a compromised newborn was an unstructured and informal process that included multiple telephone calls, alerting of nondedicated pagers, and often required
business associates to relay critical clinical details. Multiple points of communication opened opportunities for handoff failures, loss of information, and delay in response. The multidisciplinary Perinatal Committee designated this issue for a high-priority quality improvement project, including leadership from obstetrics (OB), pediatrics, and telecommunications. A collaborative process was used to engage multiple units across the Children's Hospital (newborn special care unit, labor and birth, maternal special care unit, maternity/well newborn, pediatric emergency department [ED], and adult ED). The existing Yale-New Haven Hospital Emergency155-page system was engaged and modified to accommodate the newborn response calls. New telephones were designated for newborn emergencies in each delivery room and within key departments, newborn response indicators were revised, and a response escalation system was implemented to ensure notification in the event of delayed newborn response. Implementation, Outcomes, and Evaluation: A direct paging system that involved scripting at the point of need when calling for a newborn response team was implemented. A numerical code system was developed to designate the primary clinical indication. The clinical indication and location for response is presented on alphanumeric pagers within seconds of the initial response call. Key neonatal providers are now carrying pagers. The NICU has designated dedicated response teams and teams for deliveries. A call escalation system ensures notification of other providers in cases of a delayed response or for emergent situations. Incorporating charge nurses and unit leadership into the notification system has improved situational awareness. Telecommunications and AT&T monitor and document all calls for quality assurance. An evaluation of postimplementation data indicated a 98.3% successful response rate when using the enhanced response system with an average response time of 2.5 minutes. Continuous communication with disciplines involved promotes analysis of current state and reveals areas for improvement. Implications for Nursing Practice: Improvements to the system enhance safety and improve the comfort level of nurses to perform rapid responses for newborns. Simple processes, scripting, and shared responsibility for the system promotes teamwork and efficiency, potentially improving neonatal outcomes for the compromised newborn.

**Publication type:** journal article

**Source:** CINAHL

12. Extracorporeal Membrane Oxygenation in the NICU

**Citation:** Neonatal Network, May 2015, vol. 34, no. 3, p. 183-188, 0730-0832 (May 2015)

**Author(s):** Prine, Kelli Beckvermit, Goracke, Kimberly, Rubarth, Lori Baas

**Abstract:** Extracorporeal membrane oxygenation (ECMO) was developed for adults but has been used in neonates as a life-saving rescue therapy for infants with respiratory failure and/or cardiac collapse as a result of congenital diaphragmatic hernia, meconium aspiration syndrome, persistent pulmonary hypertension, or systemic sepsis. ECMO has been proven to increase the survival rate for these diseases. This article provides an overview of neonatal ECMO: the history and development of neonatal ECMO, patient selection criteria, clinical management, the ECMO circuit, weaning from ECMO, and possible complications of ECMO. [PUBLICATION]

**Source:** BNI

13. Gastro-oesophageal reflux in the neonate: Clinical complexities and impact on midwifery practice

**Citation:** British Journal of Midwifery, May 2015, vol. 23, no. 5, p. 323-328, 0969-4900 (May 2015)

**Author(s):** Mitchell, Alex, Lamb, Kathryn, Sanders, Ruth

**Abstract:** Gastro-oesophageal reflux (GOR) is a common neonatal issue seen by midwives, which can develop into a complex clinical picture when symptoms give rise to gastro-oesophageal reflux disease (GORD), requiring further intervention and multidisciplinary team working. This article discusses the differences between GOR and GORD from a midwifery stance, highlighting the importance of effective communication with parents, and within the wider health-care professions. Early midwifery recognition and symptom clarity for both GOR and GORD are explored with management strategies and treatment options for both issues considered. As frontline practitioners during the puerperium, midwives are centrally placed to offer care and advice, emphasising the normality and self-limiting nature of GOR in the neonate and providing reassurance to parents. The importance of a meticulous feeding assessment and holistic midwifery approach to neonatal and maternal wellbeing is also examined. In light of the recently published national guidance, the care provision for babies experiencing GOR and GORD necessitates further midwifery consideration to ensure family-centred care. [PUBLICATION] 33 references

**Source:** BNI

**Full text:** Available EBSCOhost at British Journal of Midwifery
14. Implementation of the NTrainer System into Clinical Practice Targeting Neurodevelopment of Pre-oral Skills and Parental Involvement.

Citation: Newborn & Infant Nursing Reviews, 01 June 2015, vol./is. 15/2(46-48), 15273369
Author(s): Soos, Angela, Hamman, Alicia
Language: English
Abstract: The initiation of early oral motor assessments by neonatal occupational therapists (OT) and the implementation of an NTrainer system to help facilitate feeding progression in the premature infant population was incorporated into practice by the Ohio State University Wexner Medical Center (OSUWMC) who partnered with Nationwide Children’s Hospital, Columbus, Ohio. OSUWMC did not have a set protocol to use with infants prior to beginning oral feeds and studies have found that providing oral motor stimulation in a consistent manner accelerates transition time to oral feeds. Anecdotally, through observation, repeated experience and data recorded by the NTrainer, the NICU team as a whole noted that infants who received early oral motor assessments by the neonatal OT and NTrainer therapy demonstrated a more mature NNS pattern, improved suck strength, and a decreased hypersensitivity to oral motor intervention, overall positively affecting the neurodevelopment of the preterm infant. These combined therapies also resulted in the development of a standard feeding guideline that begins at 29 weeks gestational age (GA).

Publication type: journal article
Source: CINAHL

15. Implementation of the Power Hour Campaign to Improve Early Breast Pumping Initiation Rates...


Citation: JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 02 June 2015, vol./is. 44/(0-0), 08842175
Author(s): Gams, Becky, Flynn, Roxanne Rana
Language: English
Abstract: Paper Presentation Purpose for the Program To improve rates for early initiation of breast pumping among mothers who are separated from their newborns after giving birth at a Baby Friendly-certified hospital. Proposed Change To initiate the Power Hour campaign on the labor and delivery unit using Transforming Care at the Bedside principles. Implementation, Outcomes, and Evaluation Before this initiative, initiation of breast pumping within 6 hours of birth was a mother/infant unit expectation for mothers who were separated from their newborns. Adherence was low and practice among nurses varied. The neonatal intensive care unit (NICU) lactation consultant provided evidence that supported early initiation of breast pumping, especially within the first hour, but this information did not change practice. Labor and delivery nurses who were motivated to support early initiation within the first hour encountered barriers. Breast pumps were stored in central supply, and pump kits were stored on the mother/infant unit. Mothers who pumped more than 6 hours after birth were dismayed at the small volumes of colostrum they were able to express. The Transforming Care at the Bedside team in collaboration with the advanced practice nurse leader took on this opportunity for improvement to provide the best in evidence-based care to our new mothers. Breast pump kits and pumps are no longer stored in central supply, and par-level inventory is maintained on the labor and delivery unit. The workflow changed from a multiple step process involving many departments to a single-step process involving a trip to the storeroom. The time to obtain required supplies decreased from 60 minutes to 10 minutes. New mothers are shown models to demonstrate how small their newborn's stomachs are and to reassure them that they are producing enough colostrum. The process is hard wired into nursing workflow by adding early initiation of breast pumping to the order sets, electronic medical record documentation, and infant feeding guidelines. Audits of the electronic medical record were used to track compliance, and feedback from nurses guided any revisions needed to the new clinical practice. The nurse-led campaign empowered nurses at the bedside to apply evidence-based practice in their daily work. Rates of early initiation of breast pumping increased from 1% to 30% at 1 hour within a few months of implementation. Implications for Nursing Practice Nurses at the bedside are experts in identifying opportunities for improvement in patient care and nursing workflow. Given the right tools, guidance, and time off from the unit, bedside nurses can transform care at the bedside to improve patient experience and nursing satisfaction.

Publication type: journal article
Source: CINAHL

Citation: JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 02 June 2015, vol./is. 44/(0-0), 08842175

Author(s): Bowman, Donna S., LiVolsi, Kathy

Language: English

Abstract: Poster Presentation Objective To decrease the number of preterm infants with hypothermia on admission to the NICU by improving delivery room management. Design A best practice bundle was developed for preterm infants. This included the use of heated mattress pads for all infants 36-weeks gestational age or less and polyethylene bags for infants 28-weeks gestational age or fewer. Additionally, to prevent convective and conductive heat loss, preterm infants were not weighed in the delivery room, and operating room temperatures were set to 25 degrees C. Sample Data were collected for 300 preterm neonates admitted to the NICU between January 2013 and June 2014. Methods Using plan-do-check-act (PDCA) methodology, an interprofessional team reviewed the literature, developed and implemented an evidence-based protocol, and evaluated outcomes. Normal admission temperature was defined as 36.5 degrees C or greater within one hour of birth. Implementation Strategies All nursing and physician staff who attended births were educated on the significance of infant hypothermia and the bundle components. Following implementation of the bundle, outcomes were tracked and disseminated on a monthly basis. Outliers were analyzed and debriefs with the nursing and physician staff were conducted. Results The retrospective baseline data included 45 infants: 10 (22%) had admission temperatures of 36.5 degrees C or greater. Postimplementation, there was a steady improvement in admission temperatures. By the third quarter of 2014, 68% of infants in had admission temperatures of 36.5 degrees C or greater. For the low-birth-weight infants tracked in the Vermont Oxford Network (VON) database, for the 3 years prior to the bundle implementation, we performed at 3.8%, 3.10%, and 14.3%. The year postimplementation, of 12 VLBW neonates, 75% met the standard for temperature on admission to NICU. Conclusion/Implications for Nursing Practice Successful implementation of this project required a commitment from the obstetric and neonatal teams. Although it is clearly our responsibility to take admission temperatures and monitor various physiologic parameters in individual neonates, it is equally incumbent on the team to analyze aggregate data indicators to monitor overall performance. Data dissemination has been a crucial factor in maintaining awareness of this problem and providing the impetus for continued use of the bundle elements. In addition, conducting a case by case analysis of outliers is essential for ensuring that any gaps in performance are recognized and rectified by providing feedback to individual providers.

Publication type: journal article
Source: CINAHL

17. Improving Human Milk and Breastfeeding Practices in the NICU


Author(s): Fugate, Karen, Hernandez, Ivonne, Ashmeade, Terri, Miladinovic, Branko, Spatz, Diane L

Abstract: Objective. To determine if systematic implementation of the Spatz Ten Steps for Promoting and Protecting Breastfeeding for Vulnerable Infants (Ten Steps) would result in an improvement in the percentage of infants receiving mother's own milk (MOM) at initiation of feedings and at hospital discharge. Design. Continuous quality improvement (QI) process. Setting Urban, 82-bed, Level-III NICU. Patients Very- low-birth-weight (VLBW) infants weighing fewer than 1500 grams. Intervention. The Ten Step method was implemented during a 3-year period. Measurements. Process measurements included percentage of VLBW infants receiving MOM at initiation of feeds, number of mothers of VLBW infants with hospital-grade electric breast pump at hospital discharge, and number of mothers of VLBW infants initiating pumping within 6 hours of delivery. Outcome measurements included percentage of VLBW infants with any human milk at discharge to home and parent satisfaction with nurses support of mother's efforts to breastfeed. Balancing measurements included percentage of VLBW infants at less than the third percentile for growth on the Fenton growth chart at discharge and receiving pasteurized donor milk (PDM). Results. Significant improvements were achieved in the percentages of mothers expressing their milk within 6 hours of delivery, infants receiving MOM at initiation of feeds, and mothers with a hospital-grade pump at discharge. Improvements in these processes resulted in increased parent satisfaction with nurses support of breastfeeding and a 3.1-fold greater odds of the VLBW infant receiving MOM at discharge in 2013 compared to 2010 (odds ratio [OR]= 3.01, 95% confidence interval [CI] [1.75, 5.17], p < .001). Despite an increase in the use of MOM, there was not a significant increase in VLBW infants discharged at less than the third percentile for growth, and initiation of PDM did not negatively affect the percentage of VLBW infants with any
human milk at discharge. Conclusions. Implementation of the Ten Steps method using QI methodology resulted in significantly improved rates of use of MOM at initiation of feeds and at hospital discharge. [PUBLICATION] 43 references

Source: BNI

18. Making Meaning of Pumping for Mothers of Infants With Congenital Diaphragmatic Hernia


Author(s): Froh, Elizabeth B, Deatrick, Janet A, Curley, Martha A Q, Spatz, Diane L

Abstract: Objective. To describe the process of initiation and maintenance of milk supply and potential transition to direct breastfeeding among mother/infant dyads with infants with congenital diaphragmatic hernia (CDH). Setting. A Level-III neonatal intensive care unit. Participants. Eleven mother/infant dyads with infants with CDH. Methods. Prospective, longitudinal qualitative descriptive design. Semistructured interviews were conducted over the course of the NICU stay. Conventional content analysis was used. Results. Human milk oral care emerged from the interview data as a strong facilitating factor to encouraging mothers to continue pumping during hospitalization. Four main themes emerged regarding the importance and value of human milk oral care for the mothers in relation to pumping and maintenance of milk supply: (a) It motivates me; (b) I’m a part of my baby getting better; (c) We do it together, and (d) We’re getting somewhere. Conclusions. The findings of this study reflect the importance and value of human milk oral care as a driving factor to motivate mothers to maintain milk supply during the critical time when the infant with CDH is not able to take in enteral nutrition and throughout the hospital stay. [PUBLICATION] 32 references

Source: BNI

19. Parental presence on neonatal intensive care unit clinical bedside rounds: randomised trial and focus group discussion.

Citation: Archives of Disease in Childhood -- Fetal & Neonatal Edition, 01 May 2015, vol./is. 100/3(0-), 13592998

Author(s): Abdel-Latif, Mohamed E, Boswell, Danette, Broom, Margaret, Smith, Judith, Davis, Deborah

Language: English

Abstract: BACKGROUND: There are limited data to inform the choice between parental presence at clinical bedside rounds (PPCBR) and non-PPCBR in neonatal intensive care units (NICUs). METHODS: We performed a single-centre, survey-based, crossed-over randomised trial involving parents of all infants who were admitted to NICU and anticipated to stay >11 days. Parents were randomly assigned using a computer-generated stratified block randomisation protocol to start with PPCBR or non-PPCBR and then crossed over to the other arm after a wash-out period. At the conclusion of each arm, parents completed the 'NICU Parental Stressor Scale' (a validated tool) and a satisfaction survey. After completion of the trial, we surveyed all healthcare providers who participated at least in one PPCBR rounding episode. We also offered all participating parents and healthcare providers the opportunity to partake in a focus group discussion regarding PPCBR. RESULTS: A total of 72 parents were enrolled in this study, with 63 parents (87%) partially or fully completing the trial. Of the parents who completed the trial, 95% agreed that parents should be allowed to attend clinical bedside rounds. A total of 39 healthcare providers' surveys were returned and 35 (90%) agreed that parents should be allowed to attend rounds. Nine healthcare providers and 8 parents participated in an interview or focus group, augmenting our understanding of the ways in which PPCBR was beneficial. CONCLUSIONS: Parents and healthcare providers strongly support PPCBR. NICUs should develop policies allowing PPCBR while mitigating the downsides and concerns of parents and healthcare providers such as decreased education opportunity and confidentiality concerns. TRIAL REGISTRATION NUMBER: Australia and New Zealand Clinical Trials Register number, ACTRN12612000506897.

Publication type: journal article

Source: CINAHL

Full text: Available Highwire Press at Fetal and Neonatal

20. Postdischarge Breastfeeding Outcomes of Infants With Complex Anomalies That Require Surgery


Author(s): Martino, Kimberly, Wagner, Meg, Froh, Elizabeth B, Hanlon, Alexandra L, Spatz, Diane L

Abstract: Objective. To examine the duration and exclusivity of breastfeeding and provision of human milk
among infants with complex anomalies that require surgery postdischarge from a neonatal intensive care unit (NICU). Design. Prospective cohort study. Setting. A tertiary care children’s hospital with a fetal diagnostic and treatment center, special delivery unit, and NICU. Participants. Mothers who had delivered infants with complex anomalies that require surgery between 2009 and 2012 (N = 165). Methods. Phone interviews were used for data collection and were analyzed using descriptive statistics methods. Results The average duration of breastfeeding/provision of human milk was 8 months. The percentage of infants who received human milk at 6 months was 60.1% (n = 98/163; p = .0063) and at 12 months was 34.5% (n = 57/165, p = .023). Of infants in this cohort, the percentage of those infants exclusively receiving human milk was 54.3% (n = 89/164, p = .0004) at 3 months of age and 35.6% (n = 58/163, p < .0001) at age 6 months. Another clinically important finding is that 30.7% of the cohort required gavage feeds postdischarge from the NICU. Conclusion. Even for the most surgically complex infant/mother dyads, breastfeeding outcomes can improve significantly with a strong prenatal lactation program, nursing staff with specific breastfeeding education, and a hospital culture that values and supports breastfeeding and the provision of human milk. These findings support the use of hospital-grade electric breast pumps postdischarge for families of infants with complex anomalies that require surgery, as approximately one third of the cohort went home on tube feeds and their mothers continued to pump their breast milk at home. [PUBLICATION] 12 references

Source: BNI


Citation: Journal of Perinatology, 01 June 2015, vol./is. 35/6(424-427), 07438346
Author(s): Ma, M, Noori, S, Maarek, J-M, Holschneider, D P, Rubinstein, E H, Seri, I
Language: English
Abstract: Objective: To evaluate the cardiovascular response to short-term prone positioning in neonates. Study design: In this prospective study, we continuously monitored heart rate (HR), stroke volume (SV) and cardiac output (CO) by electrical velocimetry in hemodynamically stable neonates in each of the following positions for 10 min: supine, prone and back-to-supine position. Skin blood flow (SBF) was also continuously assessed on the forehead or foot using Laser Doppler technology. Systemic vascular resistance (SVR) index was calculated as mean blood pressure (BP)/CO. Data were analyzed using repeated measures analysis of variance. Results: Thirty neonates (gestational age: 35±4 weeks; postmenstrual age: 36±3 weeks) were enrolled. HR did not change in response to positioning. However, in prone position, SV, CO and SBF decreased and SVR index increased from 1.5±0.3 to 1.3±0.3 ml kg<sup>-1</sup> (mean ±s.d., P<0.01), 206±44 to 180±41 ml kg<sup>-1</sup> (P<0.01), 0.54±0.30 to 0.44±0.29 perfusion units (P<0.01) and 0.25±0.06 to 0.30±0.07 mm Hg ml<sup>-1</sup> (P<0.01), respectively. After placing the infants back-to-supine position, SV, CO, SBF and SVR index returned to baseline. The above pattern of cardiovascular changes was consistent in vast majority of the studied neonates. Conclusions: Short-term prone positioning is associated with decreased SV, CO and SBF and increased calculated SVR index.
Publication type: journal article
Source: CINAHL

22. Pulse Oximetry Screening for Critical Congenital Heart Defects

Citation: Neonatal Network, May 2015, vol. 34, no. 3, p. 156-164, 0730-0832 (May 2015)
Author(s): Wood, Justine
Abstract: Critical congenital heart defects (CCHD) are a subset of congenital heart defects that require acute diagnosis and interventions in order to provide optimal health outcomes for newborns. The incidence of infants with CCHD may be as high as six per 1,000 live births. Pulse oximetry screening is a new tool used in many nurseries to detect the presence of CCHD with high reliability. This article includes an overview of CCHD and the pulse oximetry screen, including the primary and secondary targets, a test algorithm, reliability, cost-effectiveness, limitations, national recommendations, and implications for nurses, particularly their role in the NICU. [PUBLICATION]
Source: BNI

Bronchopulmonary dysplasia (BPD) is the most common respiratory consequence of premature birth and contributes to significant short- and long-term morbidity, mortality and resource utilization. Initially defined as a radiographic, clinical and histopathological entity, the chronic lung disease known as BPD has evolved as obstetrical and neonatal care have improved the survival of lower gestational age infants. Now, definitions based on the need for supplementary oxygen at 28 days and/or 36 weeks provide a useful reference point in the neonatal intensive-care unit (NICU), but are no longer based on histopathological findings, and are neither designed to predict longer term respiratory consequences nor to study the evolution of a multifactorial disease. The aims of this review are to critically examine the evolution of the diagnosis of BPD and the challenges inherent to current classifications. We found that the increasing use of respiratory support strategies that administer ambient air without supplementary oxygen confounds oxygen-based definitions of BPD. Furthermore, lack of reproducible, genetic, biochemical and physiological biomarkers limits the ability to identify an impending BPD for early intervention, quantify disease severity for standardized classification and approaches and reliably predict the long-term outcomes. More comprehensive, multidisciplinary approaches to overcome these challenges involve longitudinal observation of extremely preterm infants, not only those with BPD, using genetic, environmental, physiological and clinical data as well as large databases of patient samples. The Prematurity and Respiratory Outcomes Program (PROP) will provide such a framework to address these challenges through high-resolution characterization of both NICU and post-NICU discharge outcomes.

**Publication type:** journal article

**Source:** CINAHL

### 24. Risk factors for serious morbidity in term nonanomalous neonates.

**Citation:** American Journal of Obstetrics & Gynecology, 01 June 2015, vol./is. 212/6(0-), 00029378

**Author(s):** Spain, Janine E, Tuuli, Methodius G, Macones, George A, Roehl, Kimberly A, Odibo, Anthony O, Cahill, Alison G

**Language:** English

**Abstract:** OBJECTIVE: The purpose of this study was to identify antecedent and intrapartum risk factors for serious morbidity in term nonanomalous neonates. STUDY DESIGN: We analyzed the first 5000 subjects within an ongoing prospective cohort study of consecutive term births from 2010-2012. The primary outcome was a composite of serious neonatal morbidity defined as >=1 cases of hypoxic ischemic encephalopathy, meconium aspiration with pulmonary hypertension, requirement of hypothermia therapy, respiratory distress syndrome, seizures, sepsis or suspected sepsis, or death. We calculated odds ratios for the composite morbidity that is associated with antecedent and intrapartum factors. Multivariable logistic regression was used to estimate adjusted odds ratios. RESULTS: Of 5000 term nonanomalous births, 393 had the composite morbidity. Significant risk factors for morbidity were nulliparity, presence of meconium, first stage of labor >95th percentile, second stage of labor >95th percentile, pregestational diabetes mellitus, chronic hypertension, obesity, maternal intrapartum fever, and cesarean delivery. In contrast, induction of labor and gestational age >=41 weeks were not associated with significant morbidity. CONCLUSION: We identified several significant risk factors for serious morbidity in term nonanomalous neonates. Clinicians may use these risk factors to help anticipate the potential need for additional neonatal support at delivery.

**Publication type:** journal article

**Source:** CINAHL

### 25. Test of a Process Evaluation Checklist to Improve Neonatal Pain Practices

**Citation:** Western Journal of Nursing Research, May 2015, vol. 37, no. 5, p. 581-598, 0193-9459 (May 2015)

**Author(s):** Yamada, Janet, Stevens, Bonnie, Sidani, Souraya, Souraya, Watt-Watson, Judy

**Abstract:** The Evidence-Based Practice Identification and Change (EPIC) strategy is a multifaceted knowledge translation intervention. Although the intervention promoted evidence-based practice, the process of delivering the intervention components is not well understood. The purpose of this study was to determine the construct validity of the Process Evaluation Checklist developed for monitoring the fidelity of implementing the intervention to improve neonatal pain practices (i.e., documentation of ordering and administration of sucrose). A case study design was used. A research practice council in a single Neonatal Intensive Care Unit implemented the intervention. The Process Evaluation Checklist was used to record adherence in carrying out the intervention...
components. A significant improvement in the documentation of sucrose orders (p = .002) and administration (p = .004) provided evidence of the construct validity of this intervention fidelity measure. Using this measure in different contexts over longer periods of time will further validate the Process Evaluation Checklist.

**[PUBLICATION] 31 references**

**Source:** BNI

**26. Use of Dextrose Gel Reverses Neonatal Hypoglycemia and Decreases Admissions to the NICU...**

**Proceedings of the 2015 AWHONN Convention.**

**Citation:** JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 02 June 2015, vol./is. 44/(0-), 08842175

**Author(s):** Bennett, Catherine, Headtke, Elyse, Rowe-Telow, Meg

**Language:** English

**Abstract:** Poster Presentation Objective To reduce newborn admission to the neonatal intensive care unit (NICU) for the diagnosis of neonatal hypoglycemia by using 40% dextrose gel rather than intravenous (IV) dextrose. Design A retrospective chart review of more than 700 charts from 2013 was performed prior to implementation, and approximately 60 charts per month were reviewed postimplementation. Sample The sample included infants at risk for neonatal hypoglycemia born at a tertiary teaching institution. Inclusion criteria were 35 0/7 to 42 0/7-weeks gestation with one of the following conditions: small for gestational age, large for gestational age, an infant of a diabetic mother, late preterm infant, or an Apgar score of <7 at 5 minutes. Methods A protocol was developed for the treatment of infants at risk for hypoglycemia. Newborns were fed within the first hour of life. A bedside blood glucose (BG) level was obtained 30 minutes after the feeding was completed. If the BG was < 35, the registered nurse (RN) administered dextrose gel per syringe to the buccal cavity of the infant and placed the infant with the mother to feed. A BG level was then repeated after one hour. If the BG level was < 35 a second dose of the gel was administered. If hypoglycemia was not reversed following the second dose, the physician was contacted for further orders. Implementation Strategies After review of a randomized controlled study our multidisciplinary newborn advisory committee (NAC) added glucose gel to the neonatal hypoglycemia protocol. The NAC collaborated with the pharmacy to establish weight base dosing of dextrose gel. Mandatory educational sessions were provided to all RNs that focused on the rationale for change, use of the new algorithm, and the technique to administer the gel. Once all was in place a go live date was set of May 15. Data collection began in June 2014. Results Following the implementation of the protocol, admission to the NICU for the diagnosis of neonatal hypoglycemia decreased from a mean of 11% to 2%. Conclusion/Implications for Nursing Practice The utilization of dextrose gel along with oral feeding resulted in a decrease in the incidence of neonatal hypoglycemia with a corresponding decrease in the admission rates to the NICU for the primary diagnosis of neonatal hypoglycemia. This inexpensive, noninvasive intervention can be adopted by other institutions to decrease NICU admissions for the primary diagnosis of neonatal hypoglycemia.

**Publication type:** journal article

**Source:** CINAHL

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**News**

**Healthcare Quality Improvement Partnership**

**Stillbirth and neonatal death: perinatal mortality report calls for national targets**

15th June 2015

Almost one in every 150 babies born in the UK is stillborn or dies soon after birth. A research team led from the University of Leicester has identified large differences across the UK in the numbers and rates of babies who die, even after taking account of known factors that influence the rate of death such as poverty, mother’s age and ethnicity.

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