Preventing Newborn Readmissions for Hyperbilirubinemia
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Community Health Network

- 6 regions of care in Central Indiana: East, West, South, & North Indianapolis, Anderson, Kokomo

Community Health Network – Maternity Services

- Tertiary Care Center
  - CHN: 3800 deliveries/year

- Level 2 hospitals
  - CHS: 1800 deliveries/year
  - CHE: 1000 deliveries/year
  - CHA: 900 deliveries/year
  - CHRH: 500 deliveries/year
Objectives

- List 3 risk factors for newborn hyperbilirubinemia
- Describe 2 nursing interventions to decrease the risk of a newborn readmission for hyperbilirubinemia
- Describe the creation of one concise algorithm from multiple references and resources to guide clinical decision making

Patho Review of Hyperbilirubinemia

- Bilirubin is a by-product of RBC and hemoglobin breakdown
- Bilirubin binds to albumin and is carried to the liver
- Immature liver of a newborn can’t conjugate bilirubin—can’t make it water soluble so it is easily eliminated from the body
- Unconjugated bilirubin re-enters the bloodstream and can cross the blood-brain barrier, where it can cause minor to life-threatening CNS effects
- Kernicterus—permanent neurophysiologic outcome of bilirubin toxicity in newborns

(Wells, et al., 2013)

Possible Effects of Hyperbilirubinemia

- Jaundice
- Shrivil cry, inconsolable
- Lethargy
- Apnea
- Deafness
- Mental Disability
- Seizures
- Cerebral Palsy
- Death
Cause for Action

- Complaints from parents and lactation staff
- 57 newborn readmissions in 2014 at CHN (44 OBS)
- 1.45% readmission rate is more than double the benchmark rate of 0.75% (Waldrop, et al., 2013)
- Estimated loss of $204,610 to the network due to newborn jaundice readmissions
- American Academy of Pediatrics (AAP) “Guidelines for the management of hyperbilirubinemia in the newborn infant 35 or more weeks’ gestation” not fully implemented at CHN
- Neonatal jaundice is a major cause of readmissions, accounting for up to 85% of newborns hospitalized in the first week of life (Goulet, et al., 2006)

Survey of Current Practice

- 16 providers (pediatricians, neonatologists, pediatric hospitalists, family medicine) responded
- 100% of providers reported assessing for risk factors for jaundice, but only 43% reported that the presence of risk factors was used to help determine treatment and outpatient follow up
- 87.5% reported that the bilirubin level at discharge was the primary and sometimes only criteria used to determine necessary follow up

Identification of Opportunities

- Literature Review
- Chart Reviews of jaundice readmissions in 2014
- Multi-disciplinary team assembled
  - Nursing Director
  - Nurse Manager/CNS Student
  - Physician Chair of Pediatric Department
  - Private Practice Pediatrician
  - Pediatric Hospitalist
  - CNS
Recommendations of the Bili Team

• Implement use of algorithm to guide nursing and medical decision making for the management and treatment of hyperbilirubinemia combining:
  • AAP guidelines
  • Hospital policy and procedures
  • Identified best practices in the literature to guide nursing and medical decision making for the management and treatment of hyperbilirubinemia.

Jaundice Algorithm

• Laminated and placed in strategic places on the units
  • Nurses’ stations
  • MD Dictation rooms
  • Nurseries
• Education and coaching of nursing and medical staff on algorithm and Bilitool.org link in Epic
**Recommendations from Bili Team**

- Incorporate the AAP risk assessment for severe hyperbilirubinemia into nursing documentation in the electronic medical record
- Require nursing to perform the risk assessment once per shift

**Recommendations from Bili Team: Work in Progress**

- Institute in-room phototherapy for the treatment of hyperbilirubinemia to support breastfeeding, a major risk factor and a characteristic found in 100% of readmissions for hyperbilirubinemia at CHNw

**Recommendations from Bili Team: Work in Progress**

- Standardize discharge instructions for jaundice for all infants
- Encourage post-discharge outpatient lactation visits for at-risk newborns
Results

- Successful implementation has led to decreased newborn readmission rates at CHNw (Inpatient and OBS)
- 48% reduction in newborn readmissions for hyperbilirubinemia across 3 sites of care
- $71,391 in estimated direct cost savings on jaundice readmissions for CHNw in 2016, as compared to 2015

Results: CHN

Results: CHE
Results: CHS

Questions & Discussion

References