Inpatient Pediatrics Hyperbilirubinemia Pathway: Initial Pilot Data

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Conclusions

The product of this project is a clinical pathway for the evaluation and management of hyperbilirubinemia in the inpatient pediatrics unit at LVHN (Figure 2). This pathway consists of a change in the method of phototherapy delivery to maximize body surface area exposure, standardized nursing and physician protocols, and an accompanying EMR order set (Figure 3). Within the first two months, it was utilized in the care of twelve infants. Data was collected via chart review, with results shown in Figure 4.

Problem Statement

The goal of instituting a standardized approach to the identification and management of hyperbilirubinemia in term and near-term newborns is to reduce the incidence of severe hyperbilirubinemia, reduce variability in practice, optimize the delivery of phototherapy, improve safety and clinical outcomes, and decrease cost pertaining to hospital length-of-stay, laboratory testing, and other hospital resources.

Methodology

The completion of the project involved closely working with CH PQIC to create the clinical pathway. Figure 1 illustrates the steps in this process, from conception to approval. The pathway was available for use on 01/01/18 and was made live on the hospital network on 02/01/18. Finally, a post-pathway retrospective chart review was conducted on two months of pilot data.

Pathway Creation Process

Data and feedback from January and February 2018 suggest that:

- The pathway seems practical for use and feasible to follow.
- Triple phototherapy delivered in a way to maximize body surface area exposure appears to be effective in lowering bilirubin and does not appear to adversely affect temperature stability.
- There is an increase in documentation of neurotoxicity risk level in the EMR.
- There is an increase in appropriate stratification of neurotoxicity risk, and
- There is an increase in treatment of babies who met criteria for phototherapy and a decrease in treatment of babies who did not meet criteria.

Reduction in inappropriate treatment initiation suggests that the pathway may decrease unnecessary admissions, which may decrease exposure to HAIs in a vulnerable population, improve overall patient outcomes, and decrease healthcare costs.

Next Steps

- Further data collection and analysis
- Development of a process for data collection and tracking of outcome metrics with Enterprise Analytics
- Creation of EMR note templates and dot phrases to be shared with the network’s providers
- Creation of an educational outreach component to be distributed to the network’s providers
- Completion of newborn nursery unit hyperbilirubinemia pathway (currently in the development stage)