

Title of Abstract:

Reduction of Antibiotic Utilization Rate by Standardizing Approach to Sepsis in a Level III Community Neonatal Intensive Care Unit

Name of Abstract Submitter:

Hsiang-Fen Frances Su, MD - Clinical Associate Professor of Pediatric

Organization:

Children's Hospital Los Angeles, USC Keck School of Medicine

Co-Author / Co-Investigators:

Michael Luu, MPH. Children's Hospital Los Angeles ; Steve Chin, MD, Clinical Associate Professor of Pediatric

; Srikumar Nair, MD, Clinical Associate Professor of Pediatric

Abstract Description:

BACKGROUND: Sepsis is one of the most common diagnoses in NICU. Indications for empiric antibiotic therapy in the NICU are often non-specific and duration of therapy is not uniform. There is a wide practice variation in antibiotics use among our group of neonatologists who work in both community and Children's Hospital NICU settings.

AIMS: To reduce the antibiotics utilization rate (AUR) by 20% over a 12 month period.

SETTING: 21-bed community Level III NICU with neonatal surgery service. Annual admission rate is 450 infants a year, 85% inborn, 10% very-low-birthweight neonates and 10 surgical patients a year.

DRIVER OF CHANGES:

1. Standardization of antibiotics usage by using Early Onset Sepsis (EOS) and Late Onset Sepsis (LOS) algorithms.
2. Raising the awareness of antibiotics usage in NICU via meaningful discussions on daily bedside rounds.

METHOD: After joining the Vermont Oxford Network (VON) QI collaborative, Choosing Antibiotics Wisely, in February 2016, we established a multidisciplinary improvement team. The following interventions occurred: 1. Creation of the local NICU-specific antibiotic susceptibility

CAN: Cool Topics in Neonatology

March 3-5, 2017

report, 2. Implementation of early and late onset sepsis algorithms after formal education, 3. Meaningful discussion of antibiotics (indications, doses, culture results, and duration) was incorporated into daily bedside rounds. Antibiotic Utilization rate (AUR) was measured for the five most commonly used antibiotics in our NICU- ampicillin, gentamicin, vancomycin, cefotaxime and piperacillin- tazobactam (PT), as well as the overall AUR. AUR is defined as Day of therapy/ 1000 patient days.

RESULTS: Baseline AUR was obtained from August 2015 to January 2016. The intervention period is from February to November 2016. After implementation of a standardized approach, the mean overall AUR for the five antibiotics was reduced by 19% (P=0.067). Mean PT and vancomycin usage was reduced by 50% (p = 0.293) and 44% (p = 0.410) respectively.

CONCLUSION: Standardization of sepsis evaluation and empiric therapy use, in addition to daily discussion of antibiotic therapy, effectively reduces antibiotics utilization in NICU. The availability of a unit-specific antibiotic susceptibility report can aid in choosing the most specific, appropriate antibiotic regimen and reduces the use of empiric broad spectrum antibiotics for late onset sepsis.

TEAM ACKNOWLEDGEMENT: Hsiang-Fen Su, MD (Team Leader), Steve Chin, MD (Medical and QI Director), Srikumar Nair, MD (QI Associate director), Michele Lavin, RN (Nursing leader), Susan Wee, Pharm D (Pharmacy), Michael Luu, MPH (IT and statistician), Mary York, MD (ID), Hoa Vu (IT) and Julie Evans (QI Manager)

Funding Acknowledgement (if applicable):

None