Preventing Catheter-Associated Urinary Tract Infections in Critically Ill Children Using a Bundle Approach

Background

Catheter-associated urinary tract infections (CAUTIs) are hospital acquired infections (HAIs) that can be prevented through the standardization of practices in caring for Indwelling Urinary Catheters (IUC) (Andreessen, Wilde, & Herendeen, 2012).

It’s commonplace in adult intensive care units (ICUs) to adopt and abide by guidelines that prevent CAUTIs, however, little research and standardization of practice is in place for prevention of CAUTI’s in the pediatric population.

In October 2012, Judy Ascenzi, DNP, RN, Clinical Nurse Specialist at the Johns Hopkins Hospital (JHH) Pediatric Intensive Care Unit (PICU), implemented a care bundle in the PICU at JHH to address CAUTI prevention with this vulnerable population. The bundle emerged as part of her doctoral capstone project translating the evidence into practice.

Methods

The PICU at JHH adopted a nurse-managed urinary catheter maintenance bundle that includes best practice guidelines from prominent organizations like the Centers for Disease Control.

I. Daily care guidelines and checklist for all patients with a urinary catheter. The goal is to avoid any unnecessary urinary catheters.

II. Weekly maintenance audit completed on a specified day each week for every catheterized patient.

III. Daily data collection to identify patients with a urinary catheter.

Results

The specific aims of the project are related to post implementation of the nurse-managed urinary catheter maintenance bundle.

Specific Aim #1

To decrease the number of urinary catheter days.

Specific Aim #2

To decrease the duration of urinary catheterization.

Specific Aim #3

To decrease the number of positive urine cultures.

In addressing Specific Aim #2, data was collected for the months of January 2012 and January 2013, respectively. The IUC Device Utilization Ratio (DUR) by week was compared for those months. The DUR includes total indwelling catheter days per total patient days.

An analysis of January 2013 DUR by week was also done in order to compare the results to the national average from 2012. It’s critical to have a benchmark for improvement. How does the PICU at JHH compare to other hospitals?

Future Directions

Continue to collect data on the nurse-driven bundle.

Assess barriers to implementing bundle.

Adopt seamless data entry processes so more time is spent refining protocols and educating staff on prevention of CAUTI’s.

Disseminate data monthly to unit staff in the form of an email.

References