Do Not Have Doubt, Get the Catheter Out: A Nurse-Driven CAUTI Prevention Protocol

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ABSTRACT

Background: Despite the use of sterile technique for catheter insertion, and use of the defined The Children's Hospitals’ Solutions for Patient Safety (SPS) catheter-associated urinary tract infections (CAUTI) bundle elements, the CAUTI rate in the Pediatric Intensive Care Unit (PICU) at Children’s Hospital & Medical Center in Omaha, Neb., continued to increase. In 2017, the PICU accounted for 87% of the organization’s catheter-associated urinary tract infections (CAUTI). The unit also had 65% of the total indwelling catheter device days in the organization in 2017. With the most important risk factor in CAUTIs being the duration of catheterization, the need to address the necessity of indwelling urinary catheters in the PICU became a priority.

Methods: Early in 2017, the SPS bundle elements were reviewed by the unit CAUTI Champion, and it was identified that during rounds, the indication for indwelling urinary catheterization was not consistently being addressed, and therefore, we were not able to assure timely removal. A multidisciplinary project team was formed that used the Plan, Do, Check, Act (PDCA) methodology to develop an evidence-based, nurse-driven indwelling urinary catheter removal protocol (Fig. 1). This protocol allows for nursing autonomy when making the decision to remove an indwelling urinary catheter by providing clinical indications of when to continue catheter use and promoting prompt removal when a catheter is no longer indicated.

Results: Indwelling urinary catheter device days in the PICU decreased by 28% within 6 months of protocol implementation and continue to decrease (Fig. 2). The PICU CAUTI rate declined from 4.8 per 1,000 device days in 2017 to 1.6 per 1,000 device days in 2018 (Fig. 3). As part of the PDCA methodology, the team continues to reevaluate the protocol and indications for urinary catheterization as questions from physicians arise. Each CAUTI is retrospectively reviewed to identify indications of catheter presence and provide staff with educational reminders on protocol utilization.

Conclusions: Providing the bedside nurse with an evidence-based protocol that is driven by specific patient indications and diagnoses allows them to practice autonomously and promptly remove indwelling urinary catheters and may result in decreased device days and decreased incidence of CAUTIs.
Fig. 1. Nurse-driven indwelling urinary catheter removal protocol. CWOCN, Certified Wound, Ostomy and Continence Nurse; ECMO, extracorporeal membrane oxygenation; EMR, electronic medical record; DI, Diabetes Insipidus; SIADH, Syndrome of Inappropriate Antidiuretic Hormone; RN, nurse.
Fig. 2. p-Chart representing the decline in indwelling urinary catheter device days following the implementation of the nurse-driven indwelling urinary catheter protocol.

Fig. 3. Run chart indicating CAUTI rate and annual rates to demonstrate a decrease following implementation of the nurse-driven indwelling urinary catheter protocol.