Preventing CAUTIs in Critically Ill Children Using a Bundle Approach

Judy Ascenzi, DNP, RN
Johns Hopkins Hospital; Pediatric Intensive Care Unit Bloomberg Children’s Center, Baltimore, Maryland

Introduction
A comprehensive evidence-based approach was used to evaluate research and non-research findings related to preventing catheter associated urinary tract infections (CAUTI) in critically ill children. The Johns Hopkins Evidence-Based Practice Model was used to rate evidence, synthesize findings and make practice recommendations.

Problem Statement
Are there evidence based interventions that a multi-disciplinary team should follow to minimize the risk of CAUTI in critically ill children.

Implementation Framework/Framework for Change
Knowledge to Action Framework
- Local Context
- Barriers to Knowledge Use
- Select, Tailor, Implement Interventions
- Monitor Knowledge Use
- Evaluate Outcomes
- Sustain Knowledge Use

Evaluation of Process and Outcomes

Search Strategy/Results/Synthesis

- Pub Med • 132
- CINAHL • 85
- Embase • 277
- Hands Searching and Cochrane • 14

Total 61 Sources of evidence

Catheter Removal

Maintenance Care Bundle

CAUTI Risk Factors
Silver/Antibiotic Catheters

CDC/Centers for Disease Control and Prevention

Silver/antibiotic catheters are NOT indicated for:
- Prolonged post op use
- Immobility without the presence of a Stage IIIIV sacral or perineal pressure ulcer
- Patient request

Johns Hopkins PICU Nurse Driven Indwelling Urinary Catheter Prevention Bundle (October 2012)

Indications for Indwelling Urinary Catheters
- Known or suspected urinary obstruction
- Need for continuous measurement in critically ill child
- Perineal Central Venous Line
- Post surgical for selected surgeries (CI patients)
- Required immobilization for trauma or surgery and other urinary measurement techniques cannot be used
- Continuous bladder irrigation
- Assistance in pressure ulcer healing Stage III/IV of the Petechial Sacral Area
- As an exception, to improve comfort during end of life care

MUST HAVE AUTHORIZED PRESCRIBER ORDER TO PLACE AN INTRAVENOUS CATHETER

Implications and Significance to DNP Practice

- 50% Reduction in number of confirmed CAUTI cases
- 21% Difference in Surgical Indwelling Urinary Catheter Days
- 11% Difference in Surgical Device Utilization Ratio
- Translation from Adult Evidence Useful in Pediatrics

Recommendations

- Nurse Driven Indwelling Urinary Maintenance Bundle
  - Feasible
  - Multi-disciplinary Collaboration
  - Addresses Daily Need
  - Longer Measurement Period
  - Plan-Do-Study-Act
  - Device Utilization Ratio Based on Patient’s Age
  - Device Utilization Ratio Based on Patient Diagnosis

Contact: jascenzi@jhmi.edu