Clinical Decision Support Interventions to Reduce CAUTI: Pitfalls of Implementation

Zachary N Gordon, Julie E Mangino, Daniel S Eiferman, Iahn Gonsenhauser, and Susan D Moffatt-Bruce
The Ohio State University Wexner Medical Center, Columbus, OH, USA

Indwelling urinary catheter use is the most important risk factor for CAUTI. In 2014, several clinical decision support (CDS) interventions were implemented to restrict catheter use to six specific indications and facilitate prompt removal when no longer necessary. Providers were required to specify the indication for catheter placement at order entry:

**Introduction**

Indwelling urinary catheter use is the most important risk factor for CAUTI. In 2014, several clinical decision support (CDS) interventions were implemented to restrict catheter use to six specific indications and facilitate prompt removal when no longer necessary. Providers were required to specify the indication for catheter placement at order entry:

- **Automated alerts reminded nurses to assess catheter necessity daily, and either document the indication for ongoing catheter use, or remove catheter per protocol:**

**Materials and Methods**

An audit across three hospitals of 100 consecutive inpatients in non-ICU locations with indwelling urinary catheters was performed. Indication for placement was selected by the provider at order entry; indication for continued use was selected by nursing the day the audit was done. Retrospective chart review was performed to determine if the indication selected was indeed a valid and appropriate indication for that patient.

**Results**

- **Inappropriate Indication Entered by Provider**
  - James: 35%, Ross: 42%, UH: 38%, Total: 38%
  - James: 63%, Ross: 84%, UH: 76%, Total: 75%

- **Inappropriate Indications Selected by Providers**
  - Accuracy of Urinary Output in Critically Ill: 41%
  - Acute Urinary Retention: 15%

- **Inappropriate IndicationsSelected by Nurses**
  - Acute Urinary Retention: 71%
  - Accuracy of Urinary Output in Critically Ill: 71%

- **Daily Review of Catheter Necessity**
  - Indication for Continued Use Documented by Nurse:
    - James: 83%, Ross: 93%, UH: 95%, Total: 91%

- **Conclusions**

  The indication of “accurate measurement of urinary output in the critically ill” was intended to mean hourly monitoring in ICU patients. This nonspecific wording resulted in inappropriate selection of this indication and unnecessary urinary catheter use. Ongoing audits are useful to assess actual compliance with CDS interventions followed by re-education to further optimize urinary catheter utilization.