

***Florida Department of Health:
Healthcare Associated Infection
Prevention Program***



**CAUTI Collaborative
Cohort 2 Call
March 21, 2012**

Reminders

- **Site Visits: Scheduling remainder of site visits for early-mid April**
- **Join FDOH CAUTI Cohort 2 User Group and confer rights to FDOH**
- **January data should be in NHSN and February data should be entered by March 25th**

Today we will discuss...

- **Discontinuing Indwelling Urinary Catheters**
- **Literature review**
- **Elements of a Nurse-driven protocol**
- **Elements of a Stop Order**
- **Indications/Contraindications for an Indwelling Urinary Catheter**
- **Sharing**

Steps to Discontinue Indwelling Urinary Catheter

- Traditionally there are four required steps to remove a urinary catheter in a hospital:
 1. A physician identifies that catheter is in place.
 2. The physician identifies it as unnecessary.
 3. The physician requests with written order to remove it.
 4. A nurse removes the catheter

Steps to Discontinue Indwelling Urinary Catheter

- There are several QI initiative that can be implemented which enable these steps to be bypassed including:
 - A system of alerts or reminders to identify all patients with urinary catheters and assess the need for continued catheterization
 - Guidelines and protocols for nurse-directed removal of unnecessary urinary catheters
 - Education and performance feedback regarding appropriate use, hand hygiene, and catheter care
 - Guidelines and algorithms for appropriate peri-operative catheter management

Literature Review

- **3 studies with different levels of interventions.**
 - **Effect of Nurse-Led Multidisciplinary Rounds on Reducing the Unnecessary Use of Urinary Catheterization in Hospitalized Patients (Fakih et. al, 2008)**
 - **Prevention of CAUTI Through Computerized Feedback to Physicians and a Nurse-Directed Protocol (Topal et. al, 2005)**
 - **Stop Orders to Reduce Inappropriate Urinary Catheterization in Hospitalized Patients: A Randomized Controlled Trial (Loeb et. al, 2008)**

Effect of Nurse-Led Multidisciplinary Rounds *Fakih et. al, 2008*

- **Study Design:** Pre-post with concurrent control subjects
- **Population:** 12 med-surg units within 608 bed facility b/w May 2006-Apr 2007 (n=4963 pt. days, 885 UC days)
- **Intervention:** Nurse contacted physician for an order to remove UC each time a patient was identified who did not meet HICPAC indications for a UC.
 - Nurse trained in indications for UC utilization participated in daily multidisciplinary rounds
 - If no appropriate indication for UC was found, patients nurse asked to contact MD to request discontinuation
- **Results:**
 - Reduction utilization rate from 203 UC-days/1,000 patient-days in the preintervention phase to 162 UC-days/1,000 patient-days in the intervention phase (P=.002)
 - Postintervention rate of 187 UC-days/1,000 patient-days was higher than the rate during the intervention (P=.05) but not significantly different from the preintervention rate (P = .32)

Effect of Nurse-Led Multidisciplinary Rounds *Fakih et. al, 2008*

● Results continued:

- Rate of unnecessary use of UCs also decreased from 102 UC-days/1,000 patient-days in the preintervention phase to 64 UC-days/1,000 patient-days during the intervention phase (P = .001)
- Rate of unnecessary UC rose to 91 UC-days/1,000 patient-days in the postintervention phase (P = .01)

● Next steps identified:

- Sustainability of the effects of the interventions by having advocates (“champions”) on each unit who will promote this effort
- A mechanism to assess the need for UCs for patients being transferred from intensive care units to the general medicalsurgical units), so that any unnecessary UCs are discontinued
- Educating emergency department staff with a focus on avoiding placement of UCs unless necessary

Prevention of CAUTI Through Computerized Feedback to Physicians and a Nurse-Directed Protocol

Topal et. al, 2005

- **Study design: prospective cohort study**
- **Population: all consecutively admitted patients to 4 general medical units totaling 120 beds (3 data collection cycles, each 53 days in duration each spring from 2002 to 2004)**
- **Interventions:**
 - **Computerized physician order entry (CPOE) system to encourage the physician to select an option for minimizing the duration of catheter use**
 1. **Discontinue the device**
 2. **Maintain the catheter for a time limit of 48 hours**
 3. **Maintain the device chronically**

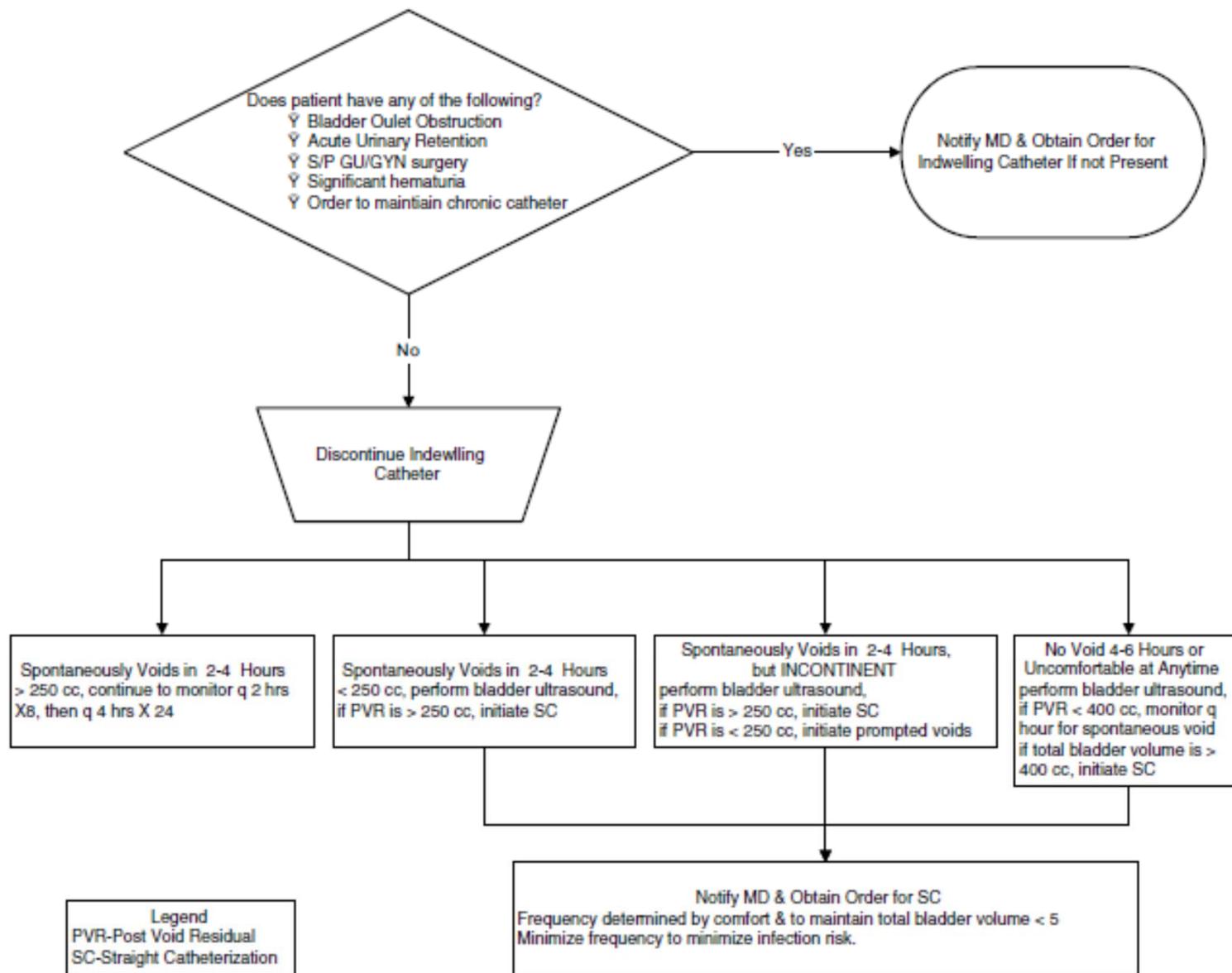
Prevention of CAUTI Through Computerized Feedback to Physicians and a Nurse-Directed Protocol

Topal et. al, 2005

- **Interventions continued:**
 - **A new nurse-driven protocol was introduced to allow the nurse to discontinue a UC when patients no longer met established criteria (HICPAC)**
 - Staff members educated on alternatives to UC including intermittent catheterization, use of bedside commodes, condom catheters, and/or prompting for voiding trials in incontinent patients
 - **Bladder scanners were purchased to enable nurses to assess for urinary retention noninvasively**
- **Results: 81% reduction in device use and a 73% reduction in the clinical end point of nosocomial CAUTI (36/1000 catheter-days to 11/1000 catheter-days; $P < .001$) was demonstrated**

Prevention of CAUTI Through Computerized Feedback to Physicians and a Nurse-Directed Protocol

Topal et. al, 2005



Stop Orders to Reduce Inappropriate Urinary Catheterization *Loeb et. al, 2008*

- **Study Design: Randomized controlled trial**
- **Population: 7 general medical units across 3 tertiary care hospitals (n=692 patients)**
- **Intervention: Prewritten orders were placed in the chart of participants randomized to the stop-order group listing the HICPAC indications for UC as criteria**
 - **Nurses were required to review participants' medical history and the results of any tests ordered by the attending physician to determine if the required criteria were met and remove catheters in their absence**
 - **The research nurse did regular follow-up with nursing staff to ensure that the automatic stop orders were followed**

Stop Orders to Reduce Inappropriate Urinary Catheterization *Loeb et. al, 2008*

- **Results: 1.69 mean days less of inappropriate UC use ($p < .001$) and 1.34 mean days less in total UC use ($p < .001$) b/w the stop-order group vs the usual care patient group respectively.**
 - **8.6% of patients had reinsertion of UC in the automatic stop-order group compared to 7.0% in the usual care group, $P = 0.45$**
 - **No significant differences seen in the CAUTI rate b/w the groups.**

Definitions

- **Nurse-driven Protocol**: directed at nurses empowered nurses to remove the catheter on the basis of a list of indications without requiring the nurse to obtain a physician-signed order before removing the catheter
- **Stop Order**: directed at physicians required an order to renew or discontinue the catheter on the basis of review at specific intervals, such as every 24 to 72 h or on specific post procedure days.

Elements of a Nurse-driven Protocol

- A nurse-driven protocol for indwelling urinary catheter removal must be reviewed and approved by a medical executive committee and should contain the following essential components:
 - Daily assessment of the need for indwelling urinary catheter using indications from HICPAC Guideline.
 - Permission for nurse to discontinue the catheter when HIPAC indications are no longer met.
 - A method for daily documentation of indication(s) for urinary catheterization.
 - A mechanism to inform physician that the catheter usage no longer meets HICPAC indications and is no longer needed.
 - A protocol to address urinary retention after the catheter has been removed.

Elements of a Stop Order

- A nurse-driven protocol for indwelling urinary catheter removal **must be reviewed and approved by a medical executive committee** and should contain the following essential components:
 - CPOE or paper order
 - HICPAC indications for an indwelling urinary catheter
 - Consensus on an “expiration” of the catheter when not re-addressed
 - A protocol to address urinary retention after the catheter has been removed
 - A mechanism to inform physician that the catheter usage no longer meets HICPAC indications and is no longer needed.
 - Permission for nurse to discontinue the catheter when HIPAC indications are no longer met or contacting physician for order to remove catheter

HIPAC Indications for Indwelling Urinary Catheter

- Upon insertion of urinary catheter or daily assessment of patients with catheter currently in place, the following HICPAC indications should be met:
 - Patient has acute urinary retention or bladder outlet obstruction
 - Need for accurate measurements of urinary output in critically ill patients
 - Peri-operative use for selected surgical procedures:
 - Patients undergoing urologic surgery or other surgery on contiguous structures of the genito-urinary tract
 - Anticipated prolonged duration of surgery (catheters inserted for this reason should be removed in the post-anesthesia care unit)
 - Patients anticipated to receive large-volume infusions or diuretics during surgery
 - Need for intra-operative monitoring of urinary output
 - To assist in healing of open sacral or perineal wounds in incontinent patients
 - Patient requires prolonged immobilization (e.g., potentially unstable thoracic or lumbar spine, multiple traumatic injuries such as pelvic fractures)
 - To improve comfort for end of life care, if needed

HIPAC Contraindications for Indwelling Urinary Catheter

- **Indwelling urinary catheters should not be inserted or remain in place for the following reasons:**
 - **As a substitute for nursing care of the patient or resident with incontinence**
 - **As a means of obtaining urine for culture or other diagnostic tests when the patient can voluntarily void**
 - **For prolonged postoperative duration without appropriate indications (e.g., structural repair of urethra or contiguous structures, prolonged effect of epidural anesthesia, etc.)**

Questions or Comments?

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HAI Program Website:

http://www.doh.state.fl.us/disease_ctrl/epi/HAI/HAI.html

