The Technical and Socio-Adaptive Aspects of Preventing CAUTI

Dr. Sanjay Saint, University of Michigan

Broadcast Live from the Australasian College for Infection Prevention (www.acipc.org.au)

Outline

- CAUTI Prevention: The Technical
- CAUTI Prevention: The Socio-Adaptive
- "Normative" Pressure & My Wife
- Conclusions

Catheter-Associated Urinary Tract Infection (CAUTI)

- UTI is a leading cause of hospital-acquired infections
- Largely due to urinary catheters
- ~20% of inpatients are catheterized
- Leads to increased morbidity and healthcare costs

www.catheterout.org

Satisfaction survey of 100 catheterized VA patients:

- 42% found the indwelling catheter to be uncomfortable
- 48% stated that it was painful
- 61% noted that it restricted their ADLs
- 2 patients provided unsolicited comments that their catheter "hurt like hell"

(Saint et al. JAGS 1999)

Annals of Internal Medicine
Established in 1927 by the American College of Physicians

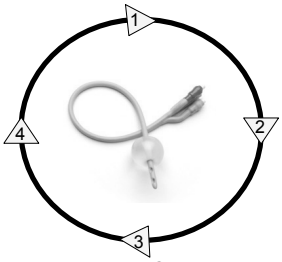
Indwelling Urinary Catheters: A One-Point Restraint?

Sanjay Saint, MD, MPH
Benjamin A. Lipsky, MD
Susan Dorr Goold, MD, MHSA, MA

16 July 2002

Disrupting the Lifecycle of the Urinary Catheter

1. Preventing Unnecessary and Improper Placement
2. Maintaining Awareness & Proper Care of Catheters
3. Prompting Catheter Removal
4. Preventing Catheter Replacement



(Meddings. Clin Infect Dis 2011)

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How Can We Implement Changes to Reduce CAUTI?

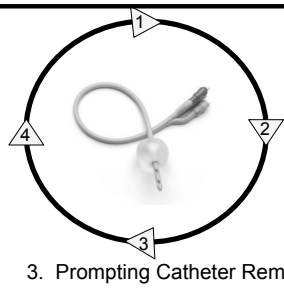
Implementation

Technical

Socio-adaptive

Disrupting the Lifecycle of the Urinary Catheter

1. Preventing Unnecessary and Improper Placement



2. Maintaining Awareness & Proper Care of Catheters

3. Prompting Catheter Removal

4. Preventing Catheter Replacement

(Meddings. Clin Infect Dis 2011)

2009 Prevention of CAUTI HICPAC Guidelines

(Gould et al, Infect Control Hosp Epidemiol 2010; 31: 319-326)

Table 2. **A. Examples of Appropriate Indications for Indwelling Urethral Catheter Use** [1-4]
Patient has acute urinary retention or bladder outlet obstruction
Need for accurate measurements of urinary output in critically ill patients
Perioperative use for selected surgical procedures: • Patients undergoing urologic surgery or other surgery on contiguous structures of the genitourinary tract • Anticipated prolonged duration of surgery (catheters inserted for this reason should be removed in PACU) • Patients anticipated to receive large-volume infusions or diuretics during surgery • Need for intraoperative 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

Urinary Catheters Often Placed in the Emergency Department: A National U.S. Study

- Catheters often inserted without clear indications and may remain in place for convenience rather than medical necessity
- An Infection Control Nurse: "our other barrier is the Emergency Department and this is where most Foleys are placed. . . . Doctors forget to look under the sheets to say, 'Oh yeah, there's a Foley there' and … the nurses aren't going to take the initiative. . . "

(Saint et al. Infect Cont Hosp Epid 2008)

But if the patient really, really needs a Foley…

Ensure proper aseptic technique is used during insertion

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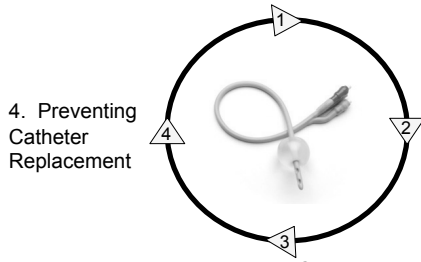
Use Aseptic Technique for Catheter Insertion

- NEJM Videos in Clinical Medicine: The NEW ENGLAND JOURNAL of MEDICINE
  - Male Urethral Catheterization
    T. W. Thomsen and G. S. Setnik - 25 May, 2006
  - Female Urethral Catheterization
    R. Ortega, L. Ng, P. Sekhar, and M. Song - 3 Apr, 2008
- Goal is to avoid contamination of the sterile catheter during the insertion process
- Should not assume that the healthcare workers inserting urinary catheters know how to do so

Disrupting the Lifecycle of the Urinary Catheter

1. Preventing Unnecessary and Improper Placement



4. Preventing Catheter Replacement

2. Maintaining Awareness & Proper Care of Catheters

3. Prompting Catheter Removal

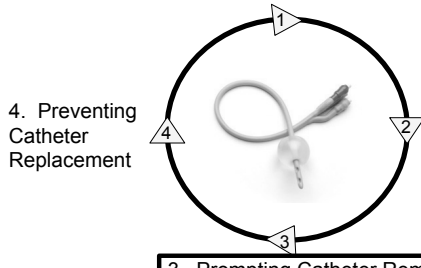
(Meddings. Clin Infect Dis 2011)

Proper Maintenance

- Keep the urinary system closed
- Make sure flow is unobstructed:
  - No kinking of the catheter
  - Drainage bag should be lower than the bladder
  - Regularly empty the bag

Disrupting the Lifecycle of the Urinary Catheter

1. Preventing Unnecessary and Improper Placement



4. Preventing Catheter Replacement

2. Maintaining Awareness & Proper Care of Catheters

3. Prompting Catheter Removal

(Meddings. Clin Infect Dis 2011)

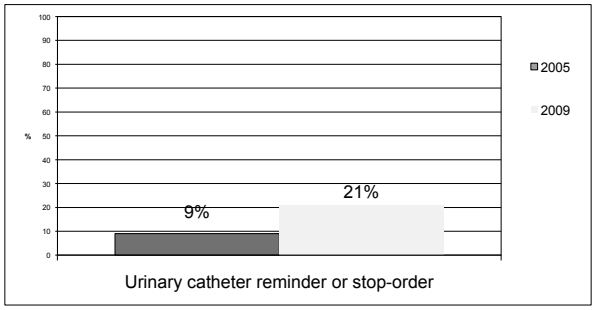
A Systems (and Technical) Solution: Timely Removal of Indwelling Catheters

- 14 studies have evaluated urinary catheter reminders and stop-orders (written, computerized, nurse-initiated)
  - Significant reduction in catheter use (~2.5 days)
  - Significant reduction in infection (~50%)
  - No evidence of harm (ie, re-insertion)

(Meddings J et al. Clin Infect Dis 2010)

Regularly Using to Prevent CAUTI: 2005 vs. 2009 U.S. National Data

(Krein et al. J Gen Intern Med 2012)



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Implementation

Technical

Socio-adaptive

Start with a Plan

1) Form a CAUTI prevention team that consists of various key people, with one person identified as the team leader

2) Develop a CAUTI policy for the institution

3) Pick a unit where to begin, usually where there are the most catheters and where you are most likely to succeed

Start with a Plan

4) Anticipate barriers – nurse resistance, physician resistance, patient/family requests for a catheter

5) Track performance (both processes and outcomes) and then escalate the intervention as necessary

6) Once successful, spread to other places (either units or other hospitals)

Hospital Outcomes Program of Excellence (HOPE)

(http://va-hope.org)

- Systems redesign grant to Ann Arbor VAMC
- Behavioral lab for interventions to improve quality of care, and enhance nurse-doctor communication
- CAUTI prevention one of many initiatives: nurse-initiated reminder

The key intervention was having the bedside nurse take ownership of the issue.

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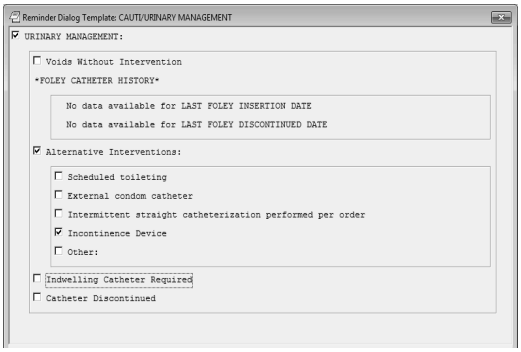
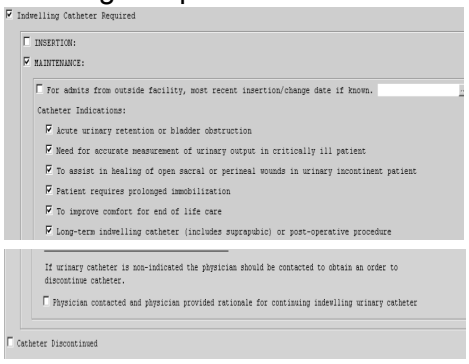
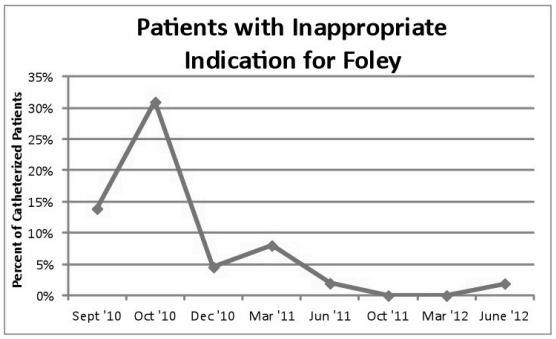
Our Experience: Nursing Template



Nursing Template for Maintenance

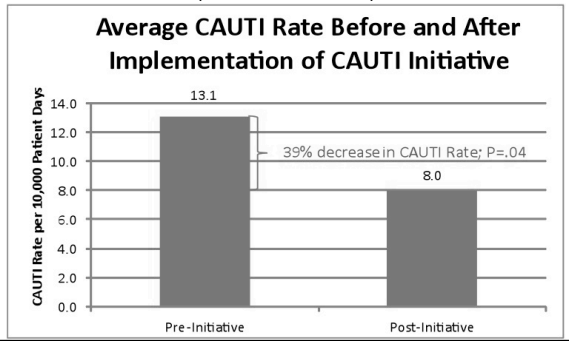


Indication for Catheter Placement



Significant Reduction in CAUTIs

(Miller B et al. ICHE 2013)



Try to take advantage of "normative pressure"…

(conformity)

Conformity & Social Learning

- Conformity & social learning are universal
- Conformity: tendency to prefer behavior that is common in the local population despite previous preferences for other options
- Social learning: when the beliefs and behavior of a group are internalized by an individual

This cultural transmission of behavior is a "second inheritance system"

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The Culture at Our Hospital Has Now Changed

- Foley catheters go in and stay in for appropriate reasons
- Bedside nurses track if a patient has a Foley and why…on every shift
- Doctors are now frequently asked by the nurses: "Can we remove the catheter?"

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Conclusions

- Foley catheters lead to important infectious and non-infectious complications
- CAUTI is a common patient safety problem
- Preventing CAUTI requires both the technical and socio-adaptive aspects of implementation
- Several practices appear to decrease CAUTI
- Normative pressure and culture change will help in sustaining the improvement

www.catheterout.org

- Website includes information on CAUTI prevention:
  - Tools for physician and nurse engagement
  - Reference list of relevant articles
  - Brochures for patients and families
  - Prevention protocols
  - Table of common barriers and possible solutions

Thank you!

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