The Military Health System's

PARTNERSHIP FOR PATIENTS CAMPAIGN

SAFE CARE SAVES LIVES

Implementation Guide for Catheter-Associated Urinary Tract Infection

February 14, 2013

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES

PARTNERSHIP FOR PATIENTS

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Contents

1. Introduction

This implementation guide was created to support the Partnership for Patients, a national initiative sponsored by the Department of Health and Human Services to reduce harm in health care facilities. Military Health System leadership has pledged its support to the PfP, and has made a commitment to specific, identified aims. Improving the quality and safety of health care in all Department of Defense facilities will only be possible with universal support at every level in the MHS.

This guide is one of 10 harm-specific guides designed to assist you as you implement identified evidence-based practices to improve patient care. Common to all guides are resources that support efforts to educate the health care team by providing MHS-selected EBPs and quality improvement strategies.

In addition, implementation strategies and tools relevant to all harm categories are included in a guide titled "Practical Applications for Process Improvement and Change Management." This guide supports efforts to equip the health care team with rapid-cycle process improvement methods and engage the health care team through the use of change management strategies.

2. Catheter-Associated Urinary Tract Infection Prevention Evidence-Based Practices

2.1 Background Information

The Centers for Disease Control and Prevention defines CAUTI as a symptomatic urinary tract infection in a patient with an indwelling urinary catheter at the time of or within 48 hours before onset of the event. There is no minimum period of time that the catheter must be in place in order for the UTI to be considered catheter associated. To review the CDC/National Healthcare Safety Network surveillance definition, visit: http://www.cdc.gov/nhhsn/psc_da.html/.

CAUTI Burden of Illness

- Are diagnosed more than 560,000 times annually
- Cause an estimated 13,000 attributable deaths annually
- Extend length of hospital stay 2 to 4 days
- Increase national health care costs by $400-500M per year
- Are estimated to be preventable 40 percent of the time

Sources:

1. Roadmap to Better Care Transitions and Fewer Readmissions. DHHS. http://www.cdc.gov/nhsn/PDFs/pscManual/7pscCAUTIcurrent.pdf

2.2 Risk Factors

A number of factors can put a patient at risk for a CAUTI. Risk factors identified by the Healthcare Infection Control Practices Advisory Committee include:

- Prolonged catheterization
- Older age
- Female sex
- Impaired immunity

2.3 Evidence-Based Practice Guidelines

To reduce the prevalence of CAUTI, The Society for Healthcare Epidemiology of America, the Infectious Diseases Society of America and the Healthcare Infection Control Practices Advisory Committee developed a synthesis of evidence-based CAUTI prevention guidelines which provide recommendations for catheter use, catheter insertion and catheter care.

Evidence-Based Practice Guidelines for CAUTI Prevention

- Insert catheters only when necessary. Limit catheter use to:
    a. Perioperative use for selected surgical procedures
    b. Urine output monitoring in critically ill patients
    c. Management of acute urinary retention and urinary obstruction
    d. Assistance in healing for incontinent patients with Stage III-IV pressure ulcers
    e. Comfort care in end of life situations
- Consider other methods of catheterization (e.g. condom catheters, in-and-out catheter)
- Use of ultrasound bladder scan to determine need for catheterization or re-catheterization
- Practice hand hygiene before and after catheter insertion and/or manipulation
- Insert catheter under aseptic technique with sterile equipment
- Educate health care workers involved in insertion, care and maintenance
- Review the need for catheter use daily and document medical necessity
- Anchor catheter per nursing standard practice
- Maintain continuous connected drainage system
- Maintain the urinary drainage bag below the level of the bladder at all times
- Empty drainage into a container specific to the patient

Source:
Gould, C., Umscheid, C., & Agarwal, R. (2009). Guideline for prevention of catheter-associated urinary tract infections. *Healthcare Infection Control Practices Advisory Committee (HIPAC).*

In an effort to prevent infection, care management bundles have been created. ***A care bundle is a set of evidence-based interventions*** that, when used together, significantly improve patient outcomes. While there does not currently exist a generally accepted CAUTI bundle, the following represent best practices that have been shown to dramatically decrease the rate of CAUTIs:

MHS CAUTI-Maintenance Best Practices

1. Maintain a sterile, continuously closed drainage system.
2. Keep catheter properly secured to prevent movement and urethral traction.
3. Maintain unobstructed urine flow.
4. Keep collection bag below the level of the bladder at all times.
5. Empty collection bags regularly, using a separate container dedicated to each patient, and avoid allowing the draining spigot to touch the collecting container.
6. Review of the need for the urinary catheter is documented daily.

Source:
Institute for Healthcare Improvement. (2011). How-to Guide: Prevent Catheter-Associated Urinary Tract Infections. Cambridge, MA.

2.4 MHS Performance Measures

The MHS has selected the following CAUTI process and outcome measures to track performance:

Descriptions	Data Source	Metric
• Observation/checklist for best practice compliance	Essentris	Process Measure
• Urinary catheter removed on post-operative day 1 (POD 1) or 2(POD 2) with day of surgery being day 0 • All selected surgical patients with a catheter in place postoperatively	SCIP-Inf-9	Process Measure
• **CAUTI Rate:** ([Number of CAUTIs in each location monitored]/ [Total number of urinary catheter-days for all patients that have an indwelling urinary-catheter in each location monitored]) x 1000	CDC/NHSN	

3. References

CDC. (2012). CDC CAUTI Website. Retrieved March 15, 2012, from CDC : http://www.cdc.gov/HAI/ca_uti/uti.html Accessed 7/10/12.

CDC. (2012). CDC National Healthcare System Network (NHSN) Device-associated Module: CAUTI. Gould, C., Umscheid, C., & Agarwal, R. (2010, April 31). Guideline for prevention of catheter-associated urinary tract infections. Infect Control Hosp Epidemiol. http://www.ncbi.nlm.nih.gov/pubmed/20156062 Accessed 7/10/12.

Gould, C., Umscheid, C., & Agarwal, R. (2009). Guideline for prevention of catheter-associated urinary tract infections. Healthcare Infection Control Practices Advisory Committee (HIPAC). http://www.cdc.gov/hicpac/pdf/CAUTI/CAUTIguideline2009final.pdf Accessed 7/10/12.

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Saint, S., Kowalski, C., & Forman, J. (2008). A multicenter qualitative study on preventing hospital-acquired urinary tract infection in US hospitals. Infection Control Hosp Epidemiol. http://www.ncbi.nlm.nih.gov/pubmed/18462146 Accessed 7/10/12.

Zhan, C., Elxhauser, A., & Richards, C. (2009, March). Identification of hospital-acquired catheter-associated urinary tract infections from Medicare claims: sensitivity and positive predictive value. Med Care. http://www.ncbi.nim.nih.gov/pubmed/1914330 Accessed 7/10/12.

4. Appendix

4.1 Attachment A: CAUTI Best Practices – Compliance Form

CAUTI-Maintenance Best Practices - Compliance

Objective: To provide documentation of compliance with implementation of CAUTI best practices.
Instructions: Assess guideline compliance on patients with indwelling urethral catheters.

CAUTI-Maintenance Best Practices Compliance Checklist	Yes	No	Identified Barriers/ Plans to Overcome Barriers
1. Maintain a sterile, continuously closed drainage system.			
2. Keep catheter properly secured to prevent movement and urethral traction.			
3. Maintain unobstructed urine flow.			
4. Keep collection bag below the level of the bladder at all times.			
5. Empty collection bags regularly, using a separate container dedicated to each patient, and avoid allowing the draining spigot to touch the collecting container.			
6. Review of the need for the urinary catheter is documented daily.			