

# Utilizing Evidence-Based Practice to Achieve “Zero Tolerance” for Catheter-Associated Urinary Tract Infections (CAUTIs)

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## Problem

Catheter associated urinary tract infections (CAUTIs) continue to remain the single most common HAI; with external forces, such as mandated public reporting of HAI and the climate of “zero tolerance” for hospital-acquired infections have led to an increased effort in the reduction/elimination of CAUTIs.

## Background

A healthcare associated, or hospital-acquired infection, is defined as an infection that is not present when a patient is admitted to a healthcare facility. If the infection develops in a patient 48 hours or more after admission to the facility, the infection is referred to as a healthcare-acquired infection. There are 4 major types of HAIs, they include:

- Surgical site infection (SSI)
- Central line-associated bloodstream infection (CLABSI)
- Catheter-associated urinary tract infection (CAUTI)
- Ventilator-associate pneumonia (VAP)

## Literature Review

An estimated 1.7 million HAIs occur in United States hospitals annually. Healthcare-associated infections among adults and children outside of the intensive care unit (ICU) averaged approximately 1.2 million. Deaths associated with HAIs in United States hospitals were 98,987 of these 13,088 were associated with urinary tract infections (UTIs). Urinary tract infections are the most common HAIs; approximately 80% of UTIs are associated with the use of urinary catheters. Costs of catheter-associated urinary tract infections (CAUTIs) can be estimated at \$1006 per incidence. In addition to the financial burden CAUTIs place on the healthcare system, there are also issues related to length of stay and quality of life that should be noted.

In recent years, organizations such as The Joint Commission (TJC) and Centers for Medicare and Medicaid Services (CMS) have targeted efforts to reduce HAIs such as CAUTIs. In 2008, CMS issued an announcement that under a revision of the Prospective Payment System it would no longer reimburse healthcare facilities for costs attributed to CAUTIs. The 2012 National Patient Safety Goals includes a goal focused on the use of evidence-based practices to prevent infections of the urinary tract that are caused by catheters.<sup>16</sup> Most recently the CMS released that as part of a national quality improvement effort it plans to require by 2014 the reporting of rates of CAUTIs publicly by healthcare facilities participating in the Hospital Inpatient Quality Reporting Program.

## Evidence-Based Practice

In 2009 the CDC released its guidelines for the prevention of catheter-associated urinary tract infections including that urinary catheter use and duration of use should be minimized in all patients.

Despite efforts unnecessary urinary catheterization of hospital patients continues to be estimated at a rate of between 21% and 50%. Studies suggest that a majority of these inappropriate catheter uses are inserted in the emergency department. Additionally urinary catheters are being inserted without the physician’s order in an estimated one-third of all catheterized patients with no documented rationale. Regardless of the reason for urinary catheter insertion, evidence strongly supports the continued assessment for the need of an indwelling catheter. Dingwall and McLafferty cited that although nurses are trained with the knowledge about correct and incorrect indications for urinary catheters, they continue to use indwelling catheters for reasons outside of evidence based practice.

## Indications for Indwelling Catheter Use

**Table 2. A. Examples of Appropriate Indications for Indwelling Urethral Catheter Use**  
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<p>Patient has acute urinary retention or bladder outlet obstruction</p> <p>Need for accurate measurements of urinary output in critically ill patients</p> <p>Perioperative use for selected surgical procedures:</p> <ul style="list-style-type: none"> <li>• Patients undergoing urologic surgery or other surgery on contiguous structures of the genitourinary tract</li> <li>• Anticipated prolonged duration of surgery (catheters inserted for this reason should be removed in PACU)</li> <li>• Patients anticipated to receive large-volume infusions or diuretics during surgery</li> <li>• Need for intraoperative monitoring of urinary output</li> </ul> <p>To assist in healing of open sacral or perineal wounds in incontinent patients</p> <p>Patient requires prolonged immobilization (e.g., potentially unstable thoracic or lumbar spine, multiple traumatic injuries such as pelvic fractures)</p> <p>To improve comfort for end of life care if needed</p> <p><b>B. Examples of Inappropriate Uses of Indwelling Catheters</b></p> <p>As a substitute for nursing care of the patient or resident with incontinence</p> <p>As a means of obtaining urine for culture or other diagnostic tests when the patient can voluntarily void</p> <p>For prolonged postoperative duration without appropriate indications (e.g., structural repair of urethra or contiguous structures, prolonged effect of epidural anaesthesia, etc.)</p> <p>Note: These indications are based primarily on expert consensus.</p>
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## Objectives

- Discuss the impact that HAIs have on the current healthcare environment.
- Describe the current trend toward a “zero tolerance” for HAIs
- Identify ways to reduce HAIs in your clinical setting.

## Practice Change

Implementation of a nurse driven foley catheter protocol. The foley catheter protocol proposed:

- The patient must meet the CDC’s criteria for insertion of a foley catheter
- Assess the foley catheter every 24 hrs to determine continued need
- Discontinue foley catheter when a patient does not meet criteria
- All foley catheters inserted in surgery should be removed by post-op day 2 unless documentation supports the continued need
- All catheter placed by a urologist cannot be removed unless an MD order is present

Additionally, a new educational process was devised to support the policy and competency evaluation of clinical staff.

## Proposed Order Set

FOLEY CATHETER ORDERS	
PHYSICIAN'S ORDERS	
Only the boxes checked apply. <small>bottom edge of patient label</small>	
DATE:	Allergies: <input type="checkbox"/> none <input type="checkbox"/> other: _____
	Diabetic: <input type="checkbox"/> yes <input type="checkbox"/> no Weight: _____ Height: _____
	Level of Care: <input type="checkbox"/> Inpatient <input type="checkbox"/> Outpatient <input type="checkbox"/> Outpatient with Observation Services
TIME:	Diagnosis: _____
	<input type="checkbox"/> 1. Patient meets criteria for insertion of Foley catheter. (Select criteria below)
	<input type="checkbox"/> Urinary retention
	<input type="checkbox"/> Incontinence with pressure sores
	<input type="checkbox"/> Urinary tract obstruction
	<input type="checkbox"/> Neurogenic bladder patients not performing self catheterization at home
	<input type="checkbox"/> Surgery involving GU tract
	<input type="checkbox"/> Monitoring accurate urine output in critically ill patients
	<input type="checkbox"/> Palliative care measures
	Insert: <input type="checkbox"/> # 16 Foley catheter or <input type="checkbox"/> #18 Foley catheter or <input type="checkbox"/> # _____ FR catheter if indicated.
	<input type="checkbox"/> 2. Patient has indwelling catheter on admission. If catheter in place > two weeks remove and assess for replacement. If replacement needed insert: <input type="checkbox"/> # 16 Foley catheter or <input type="checkbox"/> #18 Foley catheter, if indicated, and obtain urine for culture.
	If catheter has been in place < two weeks obtain urine culture day of admission from the sample port.
	<input type="checkbox"/> 3. Assess Foley catheter every 24 hours for continued need.
	<input type="checkbox"/> 4. When patient does not meet criteria for continued Foley catheter, discontinue Foley.
	<input type="checkbox"/> 5. All foley catheters inserted in surgery should be removed by post op day two unless physician documents rationale to retain. Check with physician daily for removal orders.
	<i>A urology order supercedes criteria; insertion of Foley for a dialysis patient requires a physician's order</i>

## Project Results

The new urinary catheter protocol and education intervention was initiated on a single pilot unit. The unit consisted of:

- Adult patient population
- General Medical/Surgical Telemetry Unit
- 42 bed capacity
- RNs, LPNs, and unlicensed staff

A retrospective data collection began in February of 2012 and ended in July 2012, a total of 6 months. Prior to initiating the new foley catheter protocol the HAI rate on the pilot unit was 2.38%. Urine specific HAI rate was 1.56%, which accounted for 62% of total HAIs. Data revealed for the post intervention 6 month pilot period a urine specific HAI rate of 0. Additionally, it was of interest to evaluate the catheter utilization rate. In comparing data from pre/post intervention status it appears that their was a minimal reduction in the use of catheters on the pilot unit.

## Discussion

Due to the pilot project success it was determined to incorporate the new process organization wide and to continue evaluating data over the next 6 months to track progress.

Also of importance is change sustainability. Often in healthcare one of the principal challenges in changing practice is the ability to maintain that change over a period of time. In realizing this concern it was critical to the project that a method for sustainability be built into the project. As a result a visual audit/communication board was implemented to communicate success and opportunities with staff. The board was initially rolled out in the pilot project. The visual board was mounted in the nursing unit and was approximately a 24 x 36 poster that mirrored a calendar. Each day the data collector would tabulate how the process was being conducted. If all steps were successful then a green dot would be placed on the board. However, if a part of the process was unsuccessful then a red dot would be placed on the board. This

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