





Dear

On behalf of the national project team for the *AHRQ Safety Program for Long-term Care: HAIs/CAUTI*, I want to applaud you and  for joining this program. Sponsored by the Agency for Healthcare Research and Quality, this national program is focused on preventing healthcare-associated infections (HAIs), especially catheter-associated urinary tract infections (CAUTIs), and fostering a culture of safety in long-term care facilities around the country. Facilities collect and monitor data, participate in a variety of educational activities, and are coached by national faculty with expertise in infection prevention, quality improvement and safety. This program educates facility staff on the appropriate signs and symptoms of CAUTI based on the CDC's National Healthcare Safety Network (NHSN) criteria. The program also teaches about appropriate times to culture urine and prescribe antibiotics for confirmed CAUTIs.

As a prescribing physician or physician extender, *we need your support in order to achieve the goals of this program*. You play a critical role in diagnosing and treating CAUTI. We encourage clinical leaders to review their facility's processes for ordering urine cultures and prescribing antibiotics. We also educate clinicians on when and what to communicate to you, residents and family members about catheters, CAUTI signs and symptoms, urine culture results and antibiotics. Attached for your review are some of the specific evidence-based practices we cover and monitor in this program., as well as pocket cards that define the criteria for a CAUTI in the long-term care setting.

You can help support the facility's program goals by:

- assuring the facility's procedures and practices for urine cultures, catheter insertion, maintenance and discontinuation, and antibiotic use are consistent with national best practices, and
- discussing with other physicians and physician extenders who serve in the facility about appropriate urine culturing and antibiotic prescribing.

Your participation and support of this program helps your facility prevent resident harm. If you have questions about the program, please contact 

Sincerely,



**Lona Mody, MD, MSc**

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**CAUTI Criteria—NHSN Pocket Cards**

**Catheter-associated Urinary Tract Infection (CAUTI)**

Criteria for defining CAUTI in long-term care residents:  
**One or more of the following, with no alternate source:**

- Fever\*
- Rigors (shaking chills)
- New onset hypotension
- New onset confusion/functional decline AND increased leukocytosis\*
- New costovertebral angle pain or tenderness
- New or increased suprapubic pain or tenderness
- Acute pain, tenderness , or swelling of the testes, epididymis, or prostate
- Pus around the catheter insertion site

**AND**

**Any of the following:**

*If catheter removed within past 2 calendar days:*

- Clean catch (voided) urine culture with 100,000 or more colonies ( $\geq 10^5$  CFU/ml) of no more than 2 species of microorganisms
- In/Out catheter urine culture with 100 or more colonies ( $\geq 10^2$  CFU/ml) of any number of microorganisms

*If indwelling urinary catheter in place:*

- Positive urine culture with 100,000 colonies or more ( $\geq 10^5$  CFU/ml) of any number of microorganisms

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**\*Constitutional Criteria for Long-term Care Residents**

**Fever**

Must have one of the following:

- Single oral temperature >100°F (37.8°C)
- Repeated oral temperature >99°F (37.2°C)
- Repeated rectal temperature >99.5°F (37.5°C)
- Single temperature >2°F (1.1°C) over baseline for oral or rectal

**Leukocytosis**

Must have one of the following:

- >14,000 white blood cells (leukocytes)/mm<sup>3</sup>
- Increase in immature white blood cells (Left Shift) with >6% bands or > 1,500 bands/mm<sup>3</sup>

**Acute Change in Mental Status (within last 7 days)**

All components must be present :

- Confusion (with no alternate diagnosis and leukocytosis)
- Fluctuating Behavior (comes and goes, or changes in severity)
- Inattention (difficulty focusing and cannot maintain attention)
- Disorganized thinking (thinking is incoherent or hard to follow)

**OR**

Altered level of consciousness (change is different from baseline, may be sleepy, lethargic, difficult to arouse)

**Acute Functional Decline**

- New 3 point increase in total activities of daily living (ADL) score from baseline (range: 0-28)

Each ADL scored from 0 (independent) to 4 (totally dependent), including: bed mobility, transfer, locomotion within facility, dressing, toilet use, personal hygiene and eating

## Frequently Asked Questions on CAUTI Prevention and Antibiotic Stewardship in Long-term Care

### CAUTIs

#### 1. Should we check for UA every 30 days?

No. Screening for and treatment of catheter associated asymptomatic bacteriuria are not recommended to reduce subsequent catheter associated bacteriuria or CAUTI in patients with short-term or long-term indwelling urethral catheters.<sup>i</sup> The U.S. Preventive Services Task Force does not recommend performing screening urinalyses.<sup>ii</sup>

#### 2. How soon does a resident develop bacteriuria after an indwelling urinary catheter is inserted?

Presence of an indwelling urinary catheter can lead to a level of bacteriuria in the range of greater than 100,000 organisms/mL of urine within 24-48 hours.<sup>iii</sup>

In a 2000 review of literature<sup>iv</sup> on urinary tract infections related to the use of urinary catheters, it was reported that 26 percent of patients who have indwelling catheters for two to 10 days will develop bacteriuria. Some catheterized patients with bacteriuria and a urinary catheter will develop symptomatic CAUTI, and others may develop a bloodstream infection.

### ANTIBIOTIC STEWARDSHIP

#### 3. Does prescribing prophylactic antibiotics help prevent UTIs?

The CDC<sup>ii</sup> notes there are no benefits of antimicrobial prophylaxis in patients who have short-term and long-term urinary catheterization. This was supported in a 2013 AHRQ<sup>i</sup> review of the literature.

Residents with or without urinary catheters, with asymptomatic bacteriuria, should not be treated with antimicrobial therapy.<sup>v</sup> Overuse of antibiotics can lead to antimicrobial resistance, medication adverse events, and potential *Clostridium difficile* infection.

#### 4. When is it appropriate to send for a urine culture?

First, ask yourself if the resident has any specific urinary tract symptoms (refer to program's pocket card). A vague malaise is not in itself a symptom, but acute change in mental status (delirium) is a symptom. If no UTI symptoms are present, do not send a urine culture. If one or more UTI symptoms are present, ask yourself if another non-urinary condition is likely the cause. For example, if a resident has an acute change in mental status but also just started a new, sedating medication, then the cause is more likely the medication than UTI. In such a case, you would not need to send a urine culture. A positive urine culture is a powerful stimulus for antibiotic use.<sup>iv</sup>

#### 5. Would you recommend reviewing the serum white blood cell (WBC) count to diagnose a CAUTI?

An acute change in mental status or functional decline are both non-specific symptoms that can result from hypoxia, medications, dehydration, etc. Leukocytosis is also non-specific and can result from stress, medications, and other non-infectious conditions. Therefore, the diagnosis of UTI should always be a diagnosis of exclusion if the patient does not have any urinary tract symptoms. In other words, if the resident does not have symptoms that localize to the urinary tract, think about what non-urinary conditions could be causing the decline before you declare the resident probably has a UTI.<sup>v</sup>

<sup>i</sup> Diagnosis, Prevention, and Treatment of Catheter-Associated Urinary Tract Infection in Adults: 2009 International Clinical Practice Guidelines from the Infectious Diseases Society of America. Urinary Catheter Guidelines. *CID* 2010; 50: 625-663.

<sup>ii</sup> U.S. Preventive Services Task Force. Screening for Asymptomatic Bacteriuria in Adults. Reaffirmation Recommendation Statement July 2008. Available from <http://www.uspreventiveservicestaskforce.org/uspstf08/asymptbact/asbactrs.htm>; accessed June 16, 2014.

<sup>iii</sup> APIC. Guide to the Elimination of Catheter-Associated Urinary Tract Infections (CAUTIs): Developing and Applying Facility-Based Prevention Interventions in Acute and Long-Term Care Settings. 2008. Available from [http://www.apic.org/resource/\\_eliminationguideform/c0790db8-2aca-4179-a7ae-676c27592de2/file/apic-cauti-guide.pdf](http://www.apic.org/resource/_eliminationguideform/c0790db8-2aca-4179-a7ae-676c27592de2/file/apic-cauti-guide.pdf); accessed June 16, 2014.

<sup>iv</sup> Leis, JA, Rebeck GW, Daneman N, et al. Reducing antimicrobial therapy for asymptomatic bacteriuria among noncatheterized inpatients: a proof of concept study. *Clin Infect Dis* 2014; 58:980-3.

<sup>v</sup> Stone, N., Muhammad, S., Calder, J., et al. (October 2012). Surveillance Definitions of Infections in Long-Term Care Facilities: Revisiting the McGeer Criteria. *Infection Control and Hospital Epidemiology*, 33(10), 965-977.