Antibiotic Stewardships Frequently Asked Questions (FAQs) on CAUTI Prevention in Long-Term Care

Disclaimer: Some answers to the following FAQs are based on scientific evidence; others are based on practical hygiene issues of daily living.

1. **Does prescribing prophylactic antibiotics help prevent UTIs?**
   The CDC[ii] 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[i] review of the literature.

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

2. **When is it appropriate to send for a urine culture?**
   First, ask yourself if the resident has any specific urinary tract symptoms (see 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.[1]

3. **Would it be useful for LTC facilities to assess local antibiotic resistance patterns in their facility?**
   Yes. The best source for determining local antibiotic resistance patterns in your LTC facility is the laboratory that serves you. Laboratories often produce an "antibiogram" that details what percentage of each type of bacteria are resistant to a given antibiotic. In other words, the antibiogram can tell you that 30% of E. coli detected at the laboratory are resistant to ciprofloxacin. A good source for the local antibiogram also might be an infection control practitioner. If the antibiogram for urinary tract pathogens is not available or identified, you may be able to pull antibiograms from other LTC facilities in your community. Another alternative is to request the antibiograms for urinary tract pathogens from the local hospital if you don't have antibiograms of cultures from residents in your facility.

[1] Leis, JA, Rebick 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.

4. **Are there certain species that are found in the urine culture that should be considered red flags that will always require antibiotics?**
   No. The catheter increases the ability for bacteria and yeast (*Candida*) to enter the bladder, but whether or not a symptomatic infection with tissue damage occurs depends on multiple factors.

5. **Would you recommend reviewing the serum white blood cell (WBC) count to diagnose a CAUTI?**
   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 say the resident probably has a UTI. [2]

6. **How do you recommend we engage physicians in antimicrobial stewardship based on the treatment guidelines?**
   It is important to build trust and be diplomatic when approaching another clinician. Start by sharing factual observations and information. Describe your observations and things you've considered, including the treatment guidelines. Then ask more questions to understand the provider's observations. You can use communication strategies and tools from *TeamSTEPPS*, an evidence-based teamwork system designed to enhance performance and patient safety. Another approach could be on a systems level to enlist the support of the infection preventionist or director of nursing to address policy level changes.

7. **How does one have an appropriate conversation with the medical staff about placing residents on antibiotics (abx) for asymptomatic bacteriuria, especially in those residents who always have a resistant organism each time a urine culture is sent?**
   Emphasize your shared goals—you both want to deliver the best medical care to the resident. Consider what factors or pressures may be driving the physician's repeated rounds of cultures and antibiotics for this resident. Is the physician acting out of habit, because of concern about making a choice that differs from the norm or out of fear of missing urosepsis? Your conversation may differ to address these different pressures. For

[2] 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.

example, if you think the antibiotic use is just a reflex or habit, you might bring up the concept that overuse of antibiotics can cause harm to the resident, leading to *C. diff* infections. If the concern is of missing urosepsis, consider pointing out that you will help assess for any deterioration, and treating the urine in a resident without UTI might lead to missing the real problem. Final advice—have courage to bring up your concerns. These aren't easy conversations to initiate.

8. **How can I explain to a resident[ii] why we decided to not conduct a urinalysis or urine culture?**
   It's important to remain sensitive to their concerns and assure them that you are closely observing the resident for signs and symptoms of a CAUTI. For example, you could say, "we're not going to culture for a CAUTI today. We're going to look at other causes. If anything changes, we haven't lost any ground. We can start treatment whenever is necessary. Overuse of antibiotics can be harmful to you and makes them less effective later when antibiotics really are needed." Provide them with additional resources and materials, such as the "When Do You Need an Antibiotic?" brochure.

9. **How do you start to change resident safety culture when the family asks for the patient to be sent to the hospital for a urinalysis when you determine it's not appropriate to conduct test?**
   Bridge the gap between the LTC facility and hospital ED staff through diplomacy and information sharing based on the training you are receiving from the *AHRQ Safety Program for Long-Term Care: CAUTI* project, as well as through resources such as the *On the CUSP: Stop CAUTI* initiative.

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[i] Nicolle LE and the SHEA Long-Term-Care Committee. Urinary tract infections in Long-term-care facilities. March 2001. Available from http://www.shea-online.org/assets/files/other_papers/utis_in_ltcf_2001.pdf; accessed June 16, 2014.

[ii] *Reference to Resident includes whoever the resident designates as family or their partner in care.