

□ Catheter-Associated Urinary Tract Infection

Catheter-associated [urinary tract infection](#) (CAUTI) is one of the most common healthcare-associated infections, especially in hospitalized and catheterized patients.

□ Definition

Infection of the urinary tract occurring in a patient who has had an indwelling urinary catheter in place for more than 2 days **or within 48 hours of catheter removal**, without another identifiable source of infection.

□ Epidemiology

[Catheter-Associated Urinary Tract Infection Epidemiology](#)

□ Pathophysiology

- **Intraluminal route:** entry via contaminated collection system.
- **Extraluminal route:** migration of organisms along the external surface.
- Biofilm formation on catheter surfaces contributes to persistence and antibiotic resistance.

□ Common Pathogens

- **Gram-negative:** *E. coli*, *Klebsiella* spp., *Proteus* spp., *Pseudomonas* spp.
- **Gram-positive:** *Enterococcus* spp., *Staphylococcus aureus*
- **Fungi:** *Candida* spp. (especially in patients with prolonged antibiotic use)

⚠ Clinical Features

- Often **asymptomatic**, especially in chronically catheterized individuals.
- When symptomatic:
 - Fever
 - Suprapubic or flank pain
 - Hematuria
 - Mental status changes (elderly)
 - Sepsis or systemic signs

□ Diagnosis

- Urine culture from catheter or freshly placed catheter: **>10⁵ CFU/mL**
- Must correlate with **clinical signs/symptoms**.
- Do **not screen or treat asymptomatic bacteriuria**, except in specific cases (e.g., prior to urologic surgery).

□ Treatment

- **Targeted antibiotic therapy** based on culture results.
- Duration:
 - **5-7 days**: mild/moderate cases with good response.
 - **10-14 days**: severe infection, bacteremia, or persistent symptoms.
- **Catheter removal or exchange** is essential.

□ Prevention

- Avoid unnecessary catheterization.
- Use sterile technique for insertion.
- Maintain closed drainage system.
- Daily reassessment of catheter need.
- Use **external catheters** or **intermittent catheterization** when possible.
- Consider **antimicrobial-impregnated catheters** in high-risk patients.

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Last update: **2025/06/16 15:42**

