UNRAVELING THE COMPLEXITIES OF cUTI CARE

Modernizing cUTI Care with the 2025 IDSA and EAU Updates

This activity is supported by an independent medical education grant from GSK.

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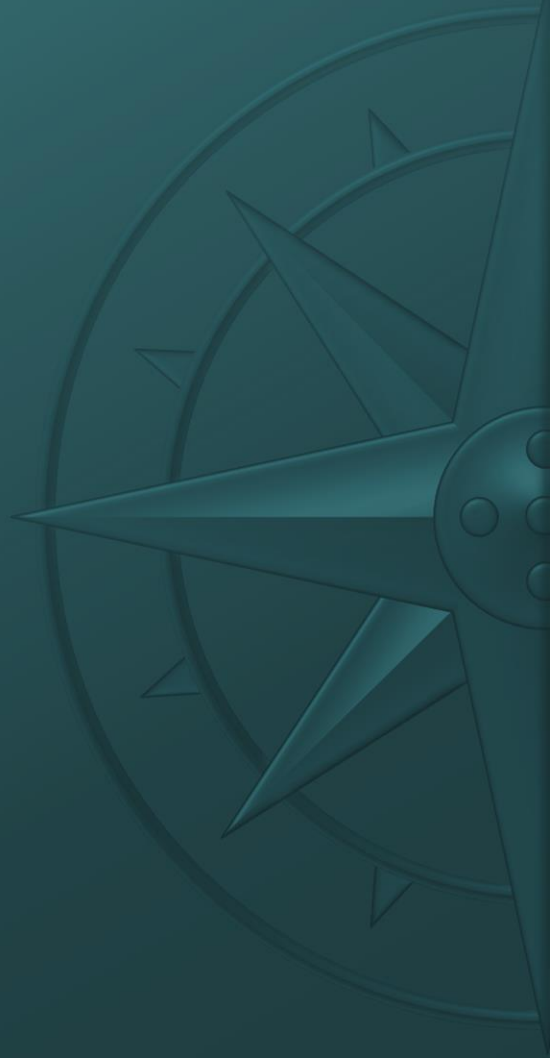
To submit a question, please go to the *Ask Question* tab at the bottom of the screen.



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All identified conflicts of interest have been mitigated.

Learning Objectives

1. Demonstrate the burden of cUTI on individual patients and the broader healthcare system
2. Identify opportunities for improved care and outcomes for patients with cUTI through the utilization of up-to-date guidelines and new and emerging antibiotic therapies
3. Ensure patients with cUTI are treated in the appropriate healthcare setting and are transitioned seamlessly between inpatient and outpatient care

PART 1

Complicated UTI

Burden and Clinical Challenges

Patient Case: Paula

Paula, age 57, has a long history of urinary symptoms beginning in childhood. Her first bladder procedure was at age 5 to address infections (hydrodistention).

She has a history of recurrent UTIs since her late 20s. Initial infections responded to antibiotics, but at age 25, symptoms persisted with more complex episodes despite negative cultures. Her journey has included:

- Multiple antibiotic courses and visits to urgent care, ED, urology, and primary care
- Significant impact on her work, energy levels, travel, and daily functioning
- Several incidences of feeling unheard and frustrated after years of ongoing symptoms and inconsistent care

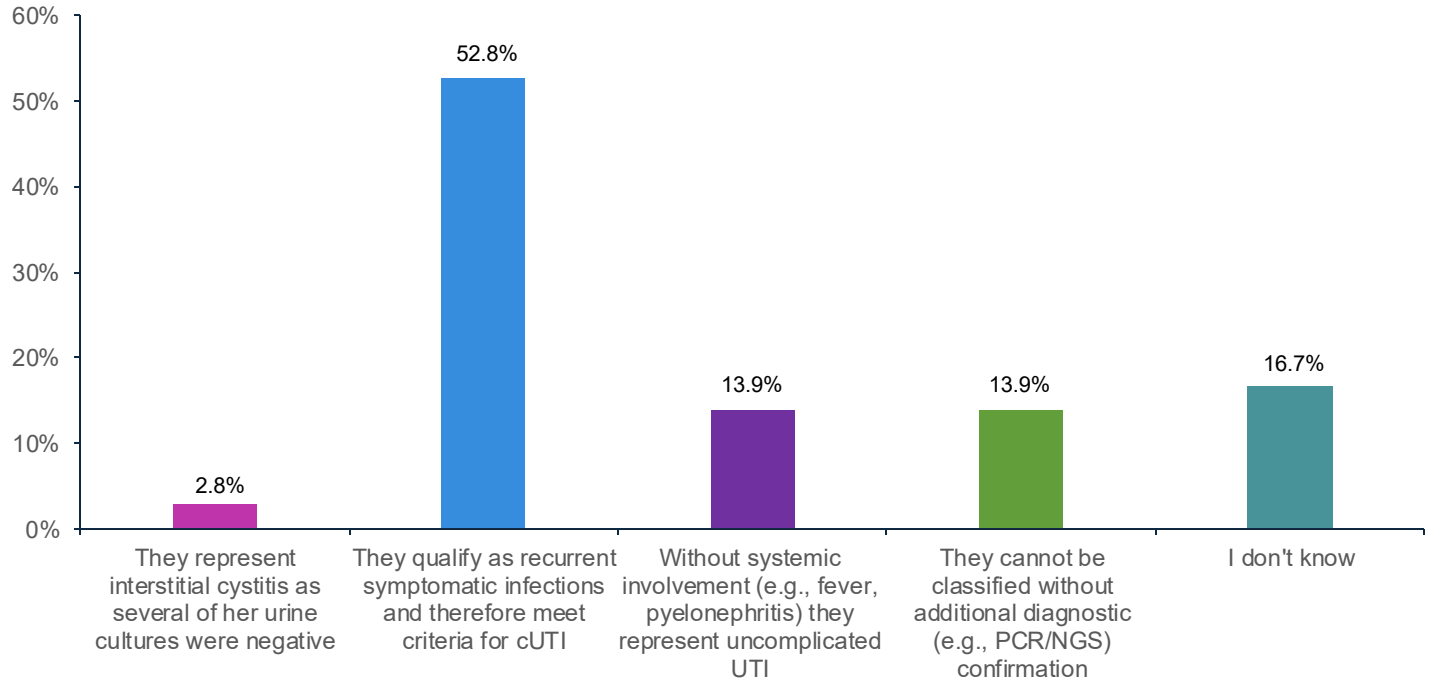
cUTI, complicated urinary tract infection; cUTI, complex UTI; ED, emergency department.

Audience Response

Based on Paula's history and symptom pattern, how should her past episodes be classified according to the 2025 IDSA/EAU presentation-based system?

A. They represent interstitial cystitis as several of her urine cultures were negative
B. They qualify as recurrent symptomatic infections and therefore meet criteria for cUTI
C. Without systemic involvement (e.g., fever, pyelonephritis) they represent uncomplicated UTI
D. They cannot be classified without additional diagnostic (e.g., PCR/NGS) confirmation
E. I don't know

Based on Paula's history and symptom pattern, how should her past episodes be classified according to the 2025 IDSA/EAU presentation-based system?

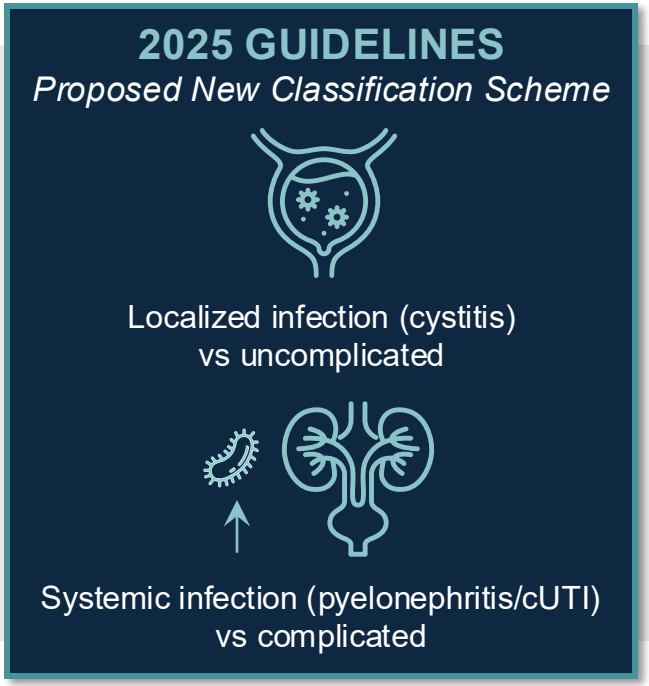


Results recorded from December 2025.

What Makes a UTI "Complicated" in 2025?

- **2025 IDSA/EAU UPDATES:** cUTI = systemic signs (fever, rigors, flank pain, hemodynamic instability) or infection extending beyond the bladder (e.g., pyelonephritis)
- Localized cystitis without systemic features can be "uncomplicated," even in patients with comorbidities (e.g., diabetes)

  Example: afebrile dysuria in a patient with diabetes → uncomplicated; dysuria + fever → complicated
- Febrile UTI in any adult (male or female) is considered a cUTI
- Indwelling catheters or urinary obstruction automatically classify the infection as complicated



EAU, European Association of Urology; IDSA, Infectious Diseases Society of America.
IDSA Clinical Practice Guideline for Complicated Urinary Tract Infection (cUTI). 2025.
https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
EAU Guidelines on Urological Infections. 2025.
https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Urological-infections-2025_2025-05-24-110339_pxmf.pdf.
IDSA. Complicated UTI: New Guidelines Q&A. Last updated August 26, 2025.
https://www.idsociety.org/science-speaks-blog/2025/complicated-urinary-tract-infections-new-guidelines-qa/.

Why the Burden of cUTI Matters

cUTIs are common and clinically significant across urology, infectious diseases, emergency medicine, hospital medicine, and pharmacy practice.

UTIs are among the most frequent infection-related causes of hospitalization; cUTIs account for hundreds of thousands of admissions annually in the United States.

2025 guideline updates (IDSA, EAU, AUA) were introduced in response to the rising impact and complexity of cUTI.

AUA, American Urological Association.
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
EAU Guidelines on Urological Infections. 2025.
https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Urological-infections-2025_2025-05-24-110339_pxmf.pdf.
AUA Recurrent UTI Guideline Update, 2025. https://www.auanet.org/guidelines-and-quality/guidelines/recurrent-uti.
Sabih A, Leslie SW. Complicated UTI. *StatPearls (Internet)*. Last updated December 7, 2024. https://www.ncbi.nlm.nih.gov/books/NBK436013/.

cUTI by the Numbers—How Big Is the Problem?

1. UTIs lead to **~3 million ED encounters and ~400,000 hospital admissions annually** in the United States, making them one of the most common infection-related causes of hospitalization.

2. UTIs are one of the **leading infection-related causes of hospital admissions.**

3. Incidence rises sharply in **adults ≥65 years**, and older men with cUTI have **higher morbidity and mortality than women.**

4. cUTI account for ~1.8% of all hospitalizations, with most admissions occurring in older adults.

5. Long-term care residence, indwelling urinary catheters, and urinary tract stones are key drivers of cUTI risk.

6. Indwelling catheters lead to near-universal bacteriuria over time and substantially increase the risk of symptomatic infection.

Ackerson BK, et al. *J Infect Dis*. 2024;230:e1101–1111.
Sabih A, Leslie SW. Complicated UTI. *StatPearls (Internet)*. Last updated December 7, 2024. https://www.ncbi.nlm.nih.gov/books/NBK436013/.

Quality of Life for Individuals with UTI

Functional and Mental Health Impact

Emotional and Social Impact

- Care avoidance
- Feeling unheard
- Intimacy strain
- Social isolation

Work Limitations

- Reduced productivity
- Missed days
- Difficulty sustaining daily responsibilities

Sleep Disruption

- Nocturia
- Pain
- Anxiety interfering with rest

Psychological Distress

- Anxiety
- Fear of recurrence
- Depression symptoms
- Emotional exhaustion

Thompson J, et al. *PLoS One*. 2023;18(2):e0277728. Baars C, et al. *Healthcare (Basel)*. 2023;11(20):2761.

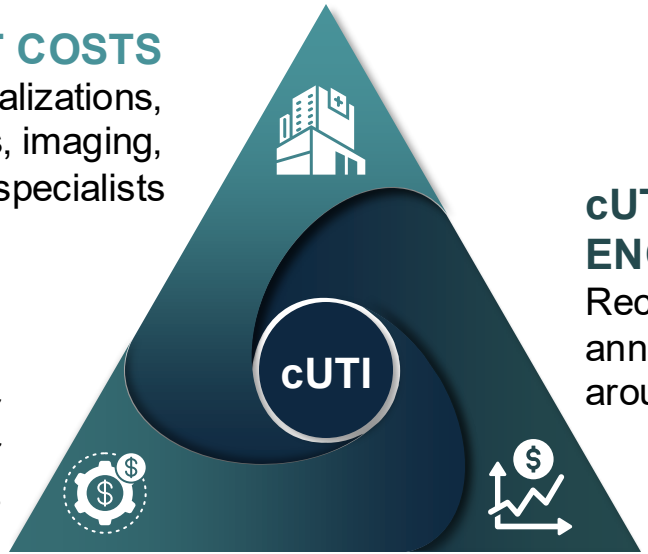
Financial Burden of cUTI

DIRECT COSTS

ED visits, hospitalizations, rehospitalizations, imaging, IV/PO antibiotics, specialists

INDIRECT COSTS

Lost wages, caregiver time, transportation, other non-medical costs



cUTI DRIVES ENORMOUS COSTS

Recent analyses peg annual U.S. expenditures around $5–$6 billion

IV, intravenous; PO, by mouth.

Lodise TP, et al. *Antibiotics (Basel)*. 2022;11(5):578.
Dmochowski, RR. *Urology Times*. November 10, 2023. https://www.urologytimes.com/view/dr-dmochowski-on-the-economic-burden-of-urinary-tract-infections.

Diagnostic Pitfalls That Increase Burden

Patients who are "lost" at diagnosis → incomplete evaluation or symptoms attributed to noninfectious causes

Empiric treatment failures due to resistant organisms or inadequate initial therapy

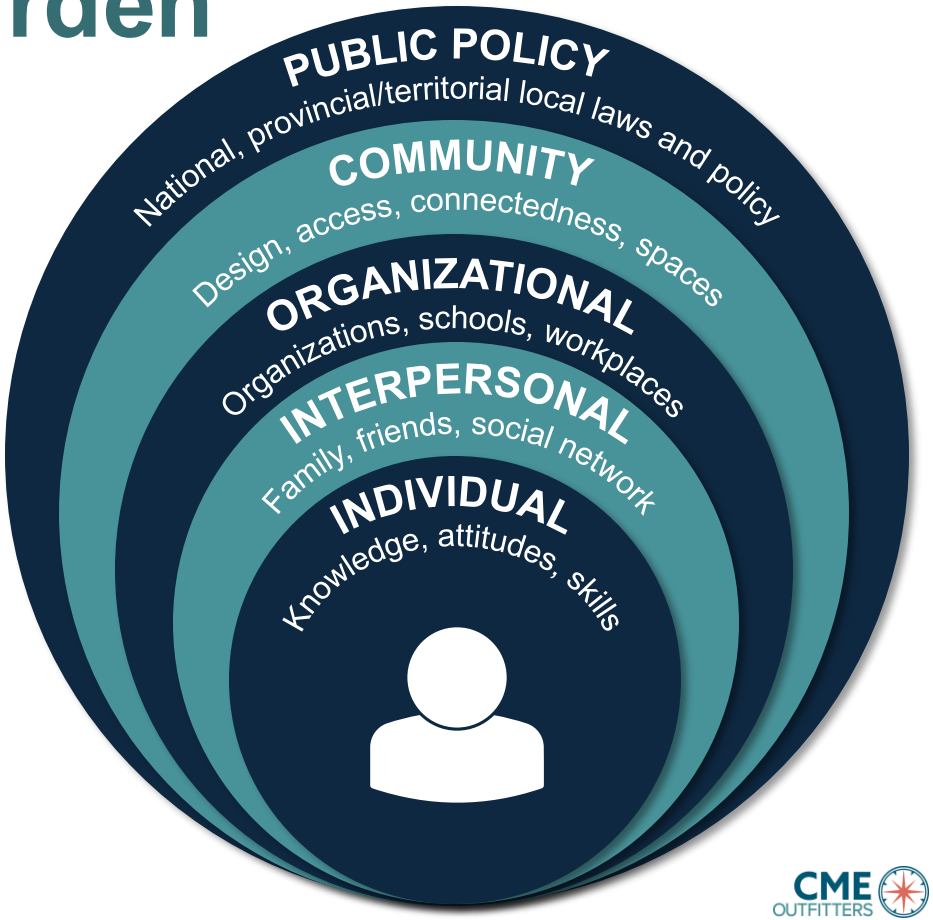
Misdiagnosis or misclassification, including treatment of *asymptomatic bacteriuria (ASB),* instead of identifying true source of infection or other cause of symptoms

Inconsistent follow-up potentially contributing to recurrent or unresolved UTIs

Baars C, et al. *Healthcare (Basel).* 2023;11(20):2761.
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
Tuinte RAM, et al. *J Antimicrob Chemother.* 2024;79(7):1688–1696.

Inequities in cUTI Burden

- Individuals in underserved racial and ethnic populations and low-income patients often *access care later and more frequently through ED* or urgent care settings
- **Social drivers of health** (SDoH)—transportation limitations, insurance gaps, neighborhood resources—can drive progression from simple → cUTI via *delayed diagnosis or limited follow-up*
- These inequities translate into higher recurrence and hospitalization rates in marginalized populations, exacerbating the overall cUTI burden



Agarwal S, et al. *Am J Obstet Gynecol.* 2024;230(4):S1250–S1251. McLeod CC, et al. *Antimocrob Steward Health Epidemiol.* 2023;3(e214):1–4.

The Impact of Antimicrobial Resistance (AMR)

ESBL and multidrug–resistant uropathogens are increasingly common in cUTI, limiting empiric and oral treatment options.

AMR contributes to treatment failures, longer hospital stays, increased toxicity, and higher costs.

cUTI sits at the intersection of high antibiotic use and AMR risk, highlighting the need for guideline-based therapy.

ESBL, extended-spectrum β-lactamase.

Centers for Disease Control and Prevention (CDC). Antibiotic Resistance Threats Report. 2019. https://www.cdc.gov/antimicrobial-resistance/data-research/threats/index.html.
Ruiz-Lievano AP, et al. *Microorg*. 2024;12(11):2320.
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
Miftode I-L, et al. *Antibiotics*. 2024;13(5):462.

Clinical Complications

From cUTI to Sepsis

UTI **Pyelonephritis** **Sepsis**

- Serious complications include pyelonephritis, urosepsis, perirenal abscess, and potential renal damage (e.g., scarring, chronic kidney disease)
- *~10% mortality when UTIs progress to bloodstream infection (urosepsis)*
- Obstruction (e.g., stones) and indwelling catheter markedly increase the risk of cUTI and bacteremia

Timely, guideline-based management is essential to prevent these severe complications.

Sabih A, Leslie SW. Complicated UTI. *StatPearls (Internet)*. Last updated December 7, 2024. https://www.ncbi.nlm.nih.gov/books/NBK436013/.

PART 2

Complicated UTI Management

Updated 2025 IDSA and EAU guidelines

Novel and Emerging Therapies

Patient Case: Paula

Paula, age 57, has a long history of urinary symptoms beginning in childhood. Her first bladder procedure was at age 5 to address infections (hydrodistention).

She has a history of recurrent UTIs since her late 20s. Initial infections responded to antibiotics, but at age 25, symptoms persisted with more complex episodes despite negative cultures. Her journey has included:

- Multiple antibiotic courses and visits to urgent care, ED, urology, and primary care
- Significant impact on her work, energy levels, travel, and daily functioning
- Several incidences of feeling unheard and frustrated after years of ongoing symptoms and inconsistent care

cUTI, complicated urinary tract infection; cUTI, complex UTI; ED, emergency department.

Paula's Journey

Clarifying Evidence-Based vs Personalized Approaches

What the Evidence Does Support

- **Topical vaginal estrogen** → improves bladder mucosal health and reduces recurrent UTI risk in postmenopausal women
- **Appropriate antibiotic therapy** during symptomatic episodes and prophylaxis when indicated
- **Addressing bladder emptying, device removal, and flow dynamics** → key components of recurrence prevention
- **Standard urine cultures** remain the validated diagnostic tool; NGS/PCR may be additive but are not standard of care

AUA Guideline–Supported Prevention Strategies (cUTI / rUTI)

- **Vaginal estrogen** → recommended for peri- and postmenopausal women to reduce recurrent UTI risk when not contraindicated
- **Behavioral and anatomic optimization** → adequate hydration, timed voiding, management of incomplete bladder emptying, removal of unnecessary catheters or foreign bodies
- **Antibiotic prophylaxis** → may be considered after SDM when non-antibiotic measures fail
- **Non-antibiotic prophylaxis** (e.g., methenamine hippurate) → may reduce recurrence and antibiotic exposure
- **Routine treatment of asymptomatic bacteriuria is not recommended**, except in specific populations (e.g., pregnancy, prior to urologic procedures)

rUTI, recurrent UTI; LDL, low-density lipoprotein. SDM, shared decision-making.

American Urological Association (AUA). 2025. https://www.auanet.org/guidelines-and-quality/guidelines/recurrent-uti.
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
Chen YY, et al. *Int Urogynecol J.* 2021;32(1):17–25.
Kronenberg F, et al. *Eur Heart J.* 2022;43(39):3925–3946.

Four-Step Empiric Therapy Algorithm

This structured approach enables optimized empiric therapy, rapid de-escalation, and antimicrobial stewardship.

1 ASSESS SEVERITY OF ILLNESS

- Sepsis?
- Fever?
- Systemic symptoms?

4 CONSULT LOCAL ANTIBIOGRAM

- Especially for sepsis/ systemic cases

2 EVALUATE RESISTANCE RISK FACTORS

- Prior antibiotics?
- Previous cultures?
- Healthcare-associated risks?

3 CONSIDER PATIENT-SPECIFIC FACTORS

- Allergies?
- Renal function?
- Pregnancy?
- Comorbidities?
- Drug interactions?

IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
EAU Guidelines on Urological Infections. 2025.
https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Urological-infections-2025_2025-05-24-110339_pxmf.pdf.

FDA-Approved cUTI Antibiotic Options*: Sepsis

Clinical Context	Preferred Agents (with MOA)	Alternative Agents** (with MOA): Based on Risk and Susceptibility
IV Therapy (Sepsis)	**3rd/4th generation cephalosporins** (ceftriaxone, cefotaxime, ceftazidime, cefepime) **MOA:** β-lactams → inhibit cell-wall synthesis by binding PBPs	**Novel BL/BLI combinations** (ceftolozane/ tazobactam, ceftazidime/ avibactam, meropenem/vaborbactam, imipenem/ cilastatin/relebactam) **MOA:** β-lactam + β-lactamase inhibitor → restores activity vs ESBL/AmpC/KPC (agent-specific)
	Piperacillin/tazobactam MOA: β-lactam cell-wall inhibition + β-lactamase inhibitor	**Cefiderocol MOA:** siderophore cephalosporin using iron-uptake pathway + β-lactam inhibition
	Carbapenems (imipenem/cilastatin, meropenem, doripenem, ertapenem) **MOA:** broad-spectrum β-lactam cell-wall inhibition; highly stable to ESBLs	**Plazomicin MOA:** next-generation aminoglycoside → 30S ribosomal inhibition, protein synthesis blockade
	Fluoroquinolones (ciprofloxacin, levofloxacin) **MOA:** DNA gyrase and topoisomerase IV inhibition → prevents DNA replication	**Aminoglycosides** (gentamicin, amikacin, tobramycin) **MOA:** 30S ribosomal binding → misreading of mRNA → bactericidal

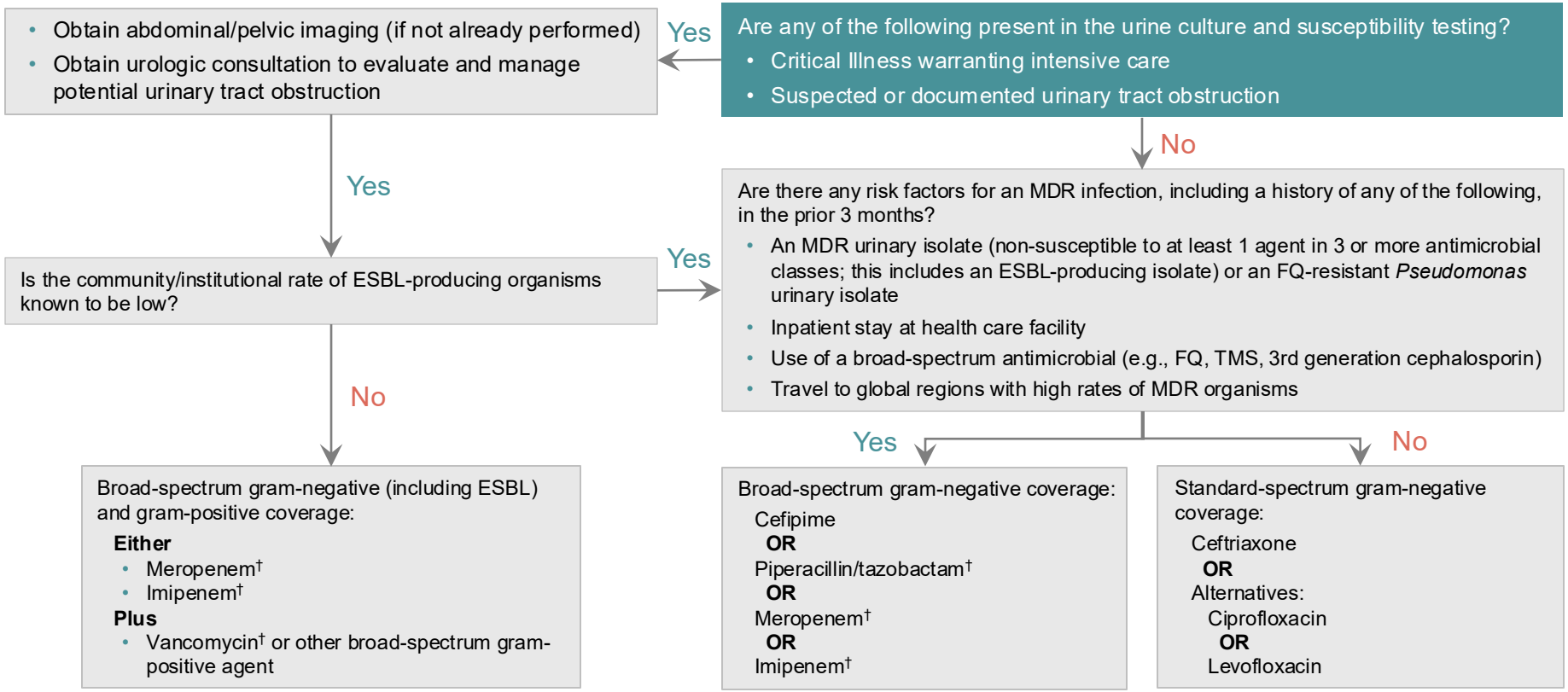
*Table reflects common FDA-approved options; apply per 2025 IDSA/EAU guidance and local resistance patterns.
**Alternative agents are not direct substitutes but may be appropriate in similar clinical contexts depending on resistance risk, patient factors, and susceptibility patterns.
BL, β-lactam; BLI, β-lactamase inhibitor; KPC, Klebsiella penumoniae carbapenemase; MOA, mechanism of action; PBP, penicillin-binding protein
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.

FDA-Approved cUTI Antibiotic Options*: No Sepsis

Clinical Context	Preferred Agents (with MOA)	Alternative Agents** (with MOA)
IV therapy (no sepsis)	Same preferred agents as for sepsis, with identical MOAs	Same alternatives as for sepsis, with identical MOAs
Oral therapy (no sepsis)	**Fluoroquinolones** (ciprofloxacin, levofloxacin) **MOA:** inhibit DNA gyrase/topoisomerase IV	**Amoxicillin–clavulanate MOA:** cell-wall synthesis inhibition + β-lactamase inhibition
	Trimethoprim–sulfamethoxazole (TMP-SMX) MOA: sequential folate synthesis blockade → bactericidal	**Oral cephalosporins** (e.g., cefpodoxime, cefdinir; review Table 3.1 for options) **MOA:** β-lactam inhibition of cell-wall synthesis
Agents not recommended for cUTI	—	**Nitrofurantoin, fosfomycin reason:** inadequate renal parenchymal penetration (not MOA-related)

*Table reflects common FDA-approved options; apply per 2025 IDSA/EAU guidance and local resistance patterns.
**Alternative agents are not direct substitutes but may be appropriate in similar clinical contexts depending on resistance risk, patient factors, and susceptibility patterns.
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.

Algorithmic Approach to Empiric Treatment of cUTI in Nonpregnant Adults*



*Adapted from the 2025 IDSA Guidelines.
†Not FDA-approved for use in cUTI
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.

Relevant Emerging Antibacterial Agents

Agent	Class / MOA	cUTI-Focused Rationale	Development Status (cUTI/AP)
Cefepime-taniborbactam*	IV cefepime + boronate β-lactamase inhibitor	Broad activity vs **ESBL, AmpC, many KPC-producing *Enterobacterales* and MDR *Pseudomonas***; evaluated head-to-head vs meropenem in hospitalized cUTI/AP	**Phase 3 (CERTAIN-1) completed**; *NEJM* data show noninferiority/superiority vs meropenem for cUTI/AP
Ceftibuten-ledaborbactam etzadroxil*	Oral cephalosporin + oral boronate β-lactamase inhibitor prodrug	Developed as a **novel oral option for cUTI due to MDR *Enterobacterales*** producing serine β-lactamases (Ambler class A, C, D); aims to fill the resistant oral cUTI gap	Pre-registration/**phase 3-ready** program
HRS-8427*	IV siderophore cephalosporin	Designed to treat serious gram-negative infections; being studied specifically in adults with **cUTI, including acute pyelonephritis**	**Phase 3** randomized trial vs imipenem/cilastatin in cUTI/AP ongoing (NCT06569056)
Tebipenem pivoxil hydrobromide (tebipenem HBr)*	Oral carbapenem prodrug	**First-in-class oral carbapenem** with activity against resistant *Enterobacterales,* aimed at step-down or full oral therapy for hospitalized patients with cUTI/AP, especially when IV carbapenems would otherwise be required. QIDP and Fast Track designations from the FDA	**Phase 3 PIVOT-PO trial** vs IV imipenem-cilastatin in cUTI/AP met primary endpoint and was stopped early for efficacy; not yet FDA approved

*Not FDA-approved for use in cUTI.
QIDP, Qualified Infectious Disease Product.
Wagenlehner FM, et al. *N Engl J Med.* 2024;390(7):611–622. Eckburg PB, et al. *N Engl J Med*. 2022;386(14):1327–1338. Karlowsky JA, et al. *Antimicrob Agents Chemother.* 2022;66(11):e0093422. ClinicalTrials.gov. Identifier: NCT06569056. Rodvold KA, et al. *Antimicrob Agents Chemother.* 2023;67(7):e0042623.

Patient Case: Dan S.

2025 IDSA/ EAU

UPDATED UTI CLASSIFICATION

UTIs in males are no longer **all** considered complicated; instead, the IDSA uses a presentation-based approach where systemic features determine whether a UTI is complicated.

PT

A 55-year-old male presents with fever, flank pain, dysuria, and inability to void fully. A CBC, CMP, urinalysis, and urine culture are ordered.

CME OUTFITTERS

CBC, complete blood count; CMP, comprehensive metabolic panel.

Four-step Empiric Therapy Algorithm

Severity Assessment

- Fever 101.8°F (38.8°C)
- Flank pain, CVA tenderness
- Heart rate (HR) 112 bpm
- Blood pressure (BP) 128/74 mmHg
- No hypotension or altered mental status

Resistance Risk Factors

- Took ciprofloxacin twice for presumed UTI with incomplete response → ↑ risk FQ resistance
- Prior culture: ESBL-producing *E. coli* (11 months ago)
- No recent hospitalizations
- No travel to high-resistance regions
- No prior carbapenem exposure

Patient-Specific Considerations

- Possible **acute bacterial prostatitis** → requires agents with prostatic penetration
- No β-lactam allergy
- Creatinine normal; no renal dose adjustments needed
- No major drug interactions or QTC issues

Local Antibiogram Integration

***E. coli* resistance:**

- Ciprofloxacin: 32%
- TMP-SMX: 29%
- Ceftriaxone: 14%
- Piperacillin/tazobactam: 9%
- Cefepime/enmetazobactam susceptibility: >95%
- Carbapenems: >99%

Severity Category → Systemic infection (pyelonephritis ± prostatitis), not septic but requires urgent evaluation

Risk Category → Moderate ESBL risk; high likelihood of FQ resistance

Key Implication → Choose an agent with good penetration and ESBL coverage if needed

bpm, beats per minute; FQ, fluoroquinolone; mmHG, millimeters of mercury;
QTC, corrected QT interval; TMP-SMX, trimethoprim/sulfamethoxazole.

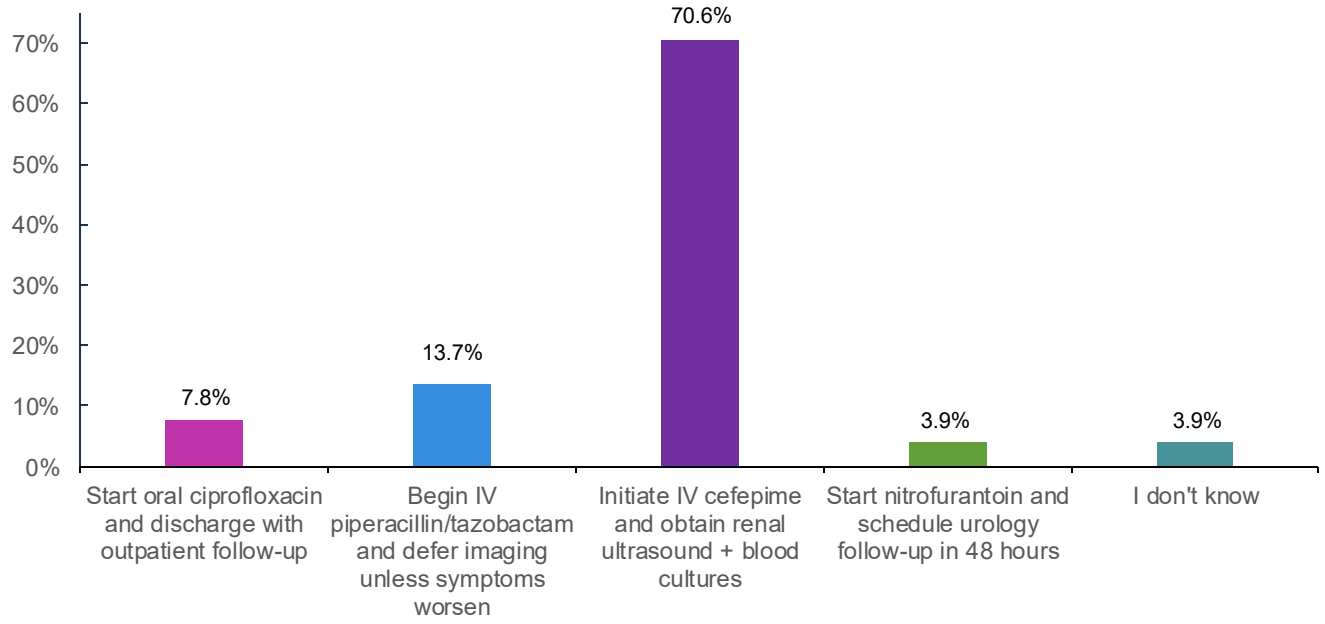
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.

Audience Response

Which of the following is the MOST appropriate next step in empiric management for Dan S. presenting with fever, flank pain, and prior recent fluoroquinolone exposure, given the 2025 IDSA/EAU 4-step algorithm?

A. Start oral ciprofloxacin and discharge with outpatient follow-up
B. Begin IV piperacillin/tazobactam and defer imaging unless symptoms worsen
C. Initiate IV cefepime and obtain renal ultrasound + blood cultures
D. Start nitrofurantoin and schedule urology follow-up in 48 hours
E. I don’t know

Which of the following is the MOST appropriate next step in empiric management for Dan S. presenting with fever, flank pain, and prior recent fluoroquinolone exposure, given the 2025 IDSA/EAU 4-step algorithm?



Results recorded from December 2025.

Summary for Dan S.

Empiric Therapy Recommendation
(based on the algorithm)

- Because there is a high ESBL suspicion
  - Option 1: cefepime (carbapenem-sparing)
  - Option 2 (if unstable or prior ESBL severe infections): ertapenem or meropenem
    - If concern for prostatitis: ensure agent with prostatic penetration (e.g., levofloxacin if susceptible; otherwise, carbapenem acceptable)
    - Add plazomicin only if severe MDR risk or limited options

Cefepime/enmetazobactam (package insert). Revised February 2024. https://www.accessdata.fda.gov/drugsatfda_docs/label/2024/216165s000lbl.pdf.
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
EUA Guidelines on Urological Infections, 2025.
https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Urological-infections-2025_2025-05-24-110339_pxmf.pdf.

Patient Case: Gene M.

2025 IDSA/ EAU

CA-UTI carries high MDR risk due to biofilm + repeated antibiotic exposure

ALWAYS replace the catheter before obtaining a urine culture—cultures from old catheters are unreliable

DO NOT treat asymptomatic bacteriuria in catheterized patients—only treat when systemic or local symptoms are present

PT

A 72-year-old male with chronic Foley catheter (6 months) presents with fever, cloudy urine, fatigue, and an altered mental status of 3 weeks' duration.

CA-UTI, catheter-associated urinary tract infection.

IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
EAU Guidelines on Urological Infections. 2025. https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Urological-infections-2025_2025-05-24-110339_pxmf.pdf.

Four-step Empiric Therapy Algorithm

Severity Assessment

- Fever 101.4°F (38.6°C)
- HR 108 bpm
- BP 132/68 mmHg
- RR 20/min
- Acute mental status change (possible early sepsis), suprapubic tenderness

Resistance Risk Factors

- Chronic indwelling Foley (>2–4 weeks) → high biofilm burden
- ≥3 antibiotic courses in past year (TMP-SMX ×2, ciprofloxacin ×1)
- Nursing facility residence (independent risk for ESBL and CRE)
- Prior urine culture 5 months ago: ESBL *E. coli*
- No known colonization with CRE or non-fermenters

Patient-Specific Considerations

- Chronic Foley → needs **catheter exchange BEFORE obtaining culture**
- Cognitive impairment makes outpatient management unsafe
- Renal function mildly reduced (eGFR 55 mL/min) → requires dose adjustments
- No β-lactam allergy
- No significant drug interactions

Local Antibiogram Integration

Local hospital antibiogram example:

- ESBL prevalence in urinary *Enterobacterales:* 18%–24%
- FQ resistance in *E. coli:* 32%–40%
- Ceftriaxone resistance: 18%
- Cefepime/enmetazobactam susceptibility: 94%
- Carbapenems: >99%
- Piperacillin/tazobactam: variable activity in ESBL

Severity Category → Systemic infection (complicated CAUTI), not yet septic (no hypotension, lactate pending), but requires inpatient-level evaluation

Risk Category → High ESBL likelihood, moderate CRE/*Pseudomonas* risk

Key Implication → Avoid FQs and standard oral agents; choose IV therapy effective against ESBL and possible *Pseudomonas*

CAUTI, catheter-associated UTI; eGFR, estimated glomerular filtration rate; min, minute; RR, respiratory rate.

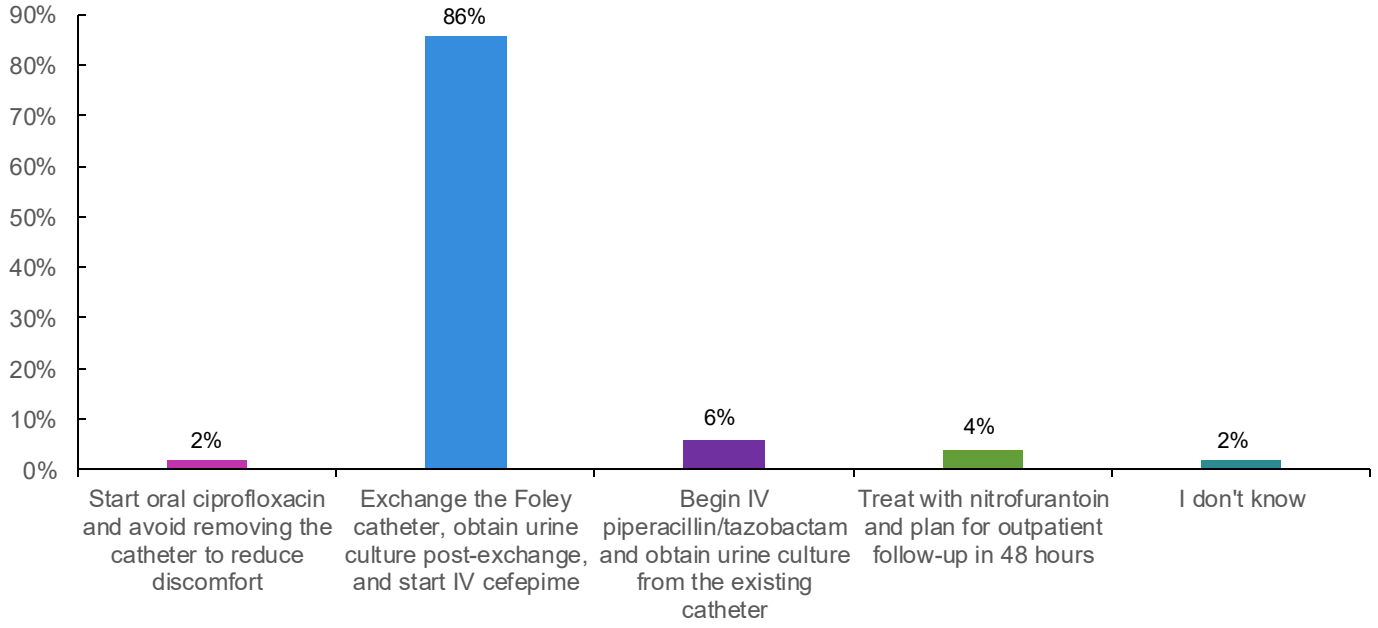
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.

Audience Response

What is the MOST appropriate next step in management for this 72-year-old male with chronic Foley and suspected CAUTI?

A. Start oral ciprofloxacin and avoid removing the catheter to reduce discomfort
B. Exchange the Foley catheter, obtain urine culture post-exchange, and start IV cefepime
C. Begin IV piperacillin/tazobactam and obtain urine culture from the existing catheter
D. Treat with nitrofurantoin and plan for outpatient follow-up in 48 hours
E. I don’t know

What is the MOST appropriate next step in management for this 72-year-old male with chronic Foley and suspected CAUTI?



Summary for Gene M.

Empiric Therapy Recommendation
(based on the algorithm)

Preferred empiric options:

- Option 1: cefepime (renally adjust if necessary)
  - Strong ESBL activity; excellent CAUTI data from ALLIUM trial subgroup
- Option 2: ertapenem or meropenem
  - For higher-risk CRE or if patient deteriorates

If critically ill or strong CRE suspicion:

- Consider imipenem/cilastatin/relebactam or cefiderocol depending on risk profile and institutional testing

Imipenem/cilastatin/relebactam (package insert). Revised June 2020. https://www.accessdata.fda.gov/drugsatfda_docs/label/2020/212819s002lbl.pdf.
Cefepime/enmetazobactam (package insert). Revised February 2024. https://www.accessdata.fda.gov/drugsatfda_docs/label/2024/216165s000lbl.pdf.
Cefiderocol (package insert). Revised June 2025. https://www.accessdata.fda.gov/drugsatfda_docs/label/2025/209445s009lbl.pdf.
IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
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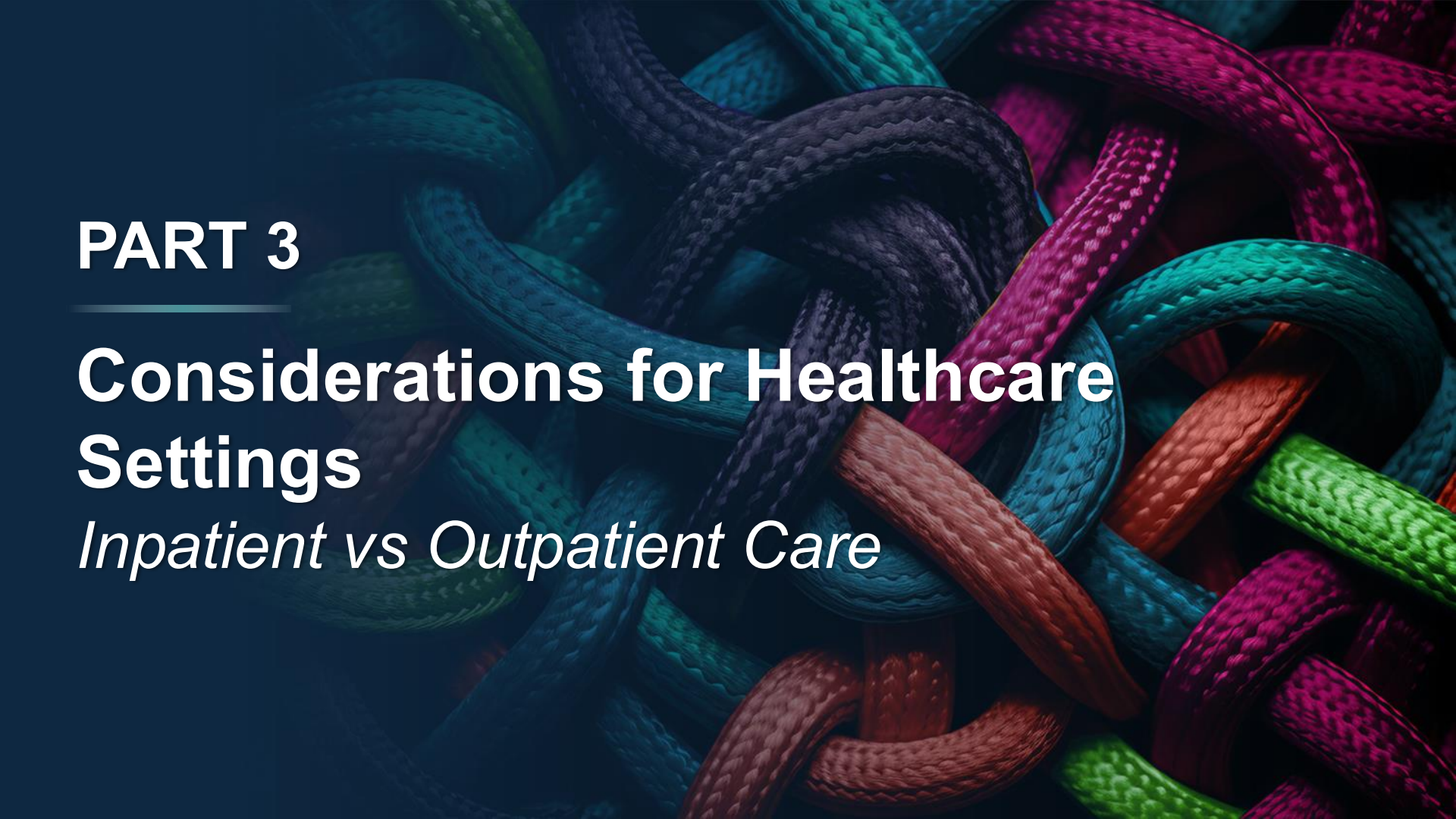


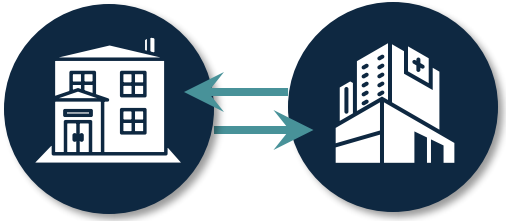
PART 3

Considerations for Healthcare Settings

Inpatient vs Outpatient Care

Why Site-of-Care Decisions Matter in cUTI

Site of care directly affects mortality, length of stay, cost, and overall patient experience.



cUTI is a **high-impact area** for improving care transitions and reducing hospital readmissions.

Both under-admission and over-admission are common, each carrying avoidable risk (under-treatment → sepsis; over-treatment → cost issues)

IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.

Severity- and Presentation-Based Framework
IDSA/EAU 2025

- **Systemic versus localized infection** is the foundation of the 2025 EAU classification
- **Systemic features require treating as cUTI** and typically need a higher level of care
  - Systemic signs (fever, rigors, bacteremia) = cUTI
- **Use severity** (systemic features) to drive setting decisions, not traditional risk factors (e.g., diabetes, male sex) alone
  - Comorbidities (e.g., diabetes, BPH) alone do not make a UTI complicated; **clinical severity determines classification**

Localized	Systemic
• Dysuria, frequency, urgency	• Fever, rigors, chills
• No flank pain	• Flank pain or tenderness
• No systemic instability	• Tachycardia, hypotension
• Oral intake	• Requires IV fluids
• Outpatient-appropriate	• Inpatient recommended

BPH, benign prostatic hyperplasia.

IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.

Common Pitfalls in Site-of-Care Decisions

Admitting clinically stable patients who could be safely cared for as outpatients → **UNNECESSARY COST AND EXPOSURE** to hospital-associated risks

UNDER-ADMISSION of borderline or systemically ill patients → delayed escalation and higher risk of sepsis

- Failure to reassess after initial ED treatment → missed deterioration or missed opportunity for safe discharge
- Missed culture-based adjustments → treatment failures, selection for antimicrobial resistance, persistent symptoms

Outpatient cUTI Management Pathway

IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
EAU Guidelines on Urological Infections. 2025.
https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Urological-infections-2025_2025-05-24-110339_pxmf.pdf.

Inpatient Management of cUTI

Initial Stabilization	IV Antibiotic Management	Step-Down to Oral Therapy
Assess for sepsis (fever, rigors, hypotension)	Choose IV agents active against ESBL/MDR pathogens; broaden if septic	Transition when clinically improving and tolerating oral antibiotics
Fluids, vitals, and evaluate for obstruction; involve urology early if abscess suspected	Use local antibiogram for empiric choices	Select oral agents with good tissue penetration
Obtain cultures before antibiotics (when feasible)	Narrow therapy once susceptibilities return	Tailor duration to severity and organism

ESBL, extended-spectrum β-lactamase; MDR, multidrug–resistant.

IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
EAU Guidelines on Urological Infections. 2025. https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Urological-infections-2025_2025-05-24-110339_pxmf.pdf.

Best Practices for Transitions of Care in cUTI

1 CONFIRM CLINICAL STABILITY

- Afebrile or improving
- Stable vitals
- Tolerating oral therapy

2 FINALIZE ANTIMICROBIAL PLAN

- IV → oral transition
- Duration based on severity/response
- Culture-guided adjustments

4 ENSURE CONTINUITY

- Follow-up in 48–72 hours
- Confirm clinical improvement
- Address barriers (access/adherence)

3 COMMUNICATE CLEARLY

- Final oral antibiotic regimen
- Return precautions
- Pending culture/imaging results

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EAU Guidelines on Urological Infections. 2025.
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Special Populations at Higher Risk of Complications

OLDER ADULTS

Higher risk of systemic infection and sepsis, atypical presentations (delirium, weakness), often limited physiologic reserve

CATHETERIZED PATIENTS

Increased risk of obstruction and biofilm, higher rates of recurrent infection, requires careful assessment before discharge

PATIENTS WITH CKD OR DIABETES

Altered host defenses, slower response; higher risk of treatment failure; requires tailored antibiotic selection

CME OUTFITTERS

IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
EAU Guidelines on Urological Infections. 2025. https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Urological-infections-2025_2025-05-24-110339_pxmf.pdf.

Putting It All Together

Site-of-Care Decision Framework

PATIENT WITH SUSPECTED cUTI

Assess symptoms, vitals, and systemic features

ANY SYSTEMIC FEATURES

(fever, rigors, tachycardia, hypotension, altered mental status, flank pain)?

If YES

INPATIENT PATHWAY

Stabilization → IV therapy → obstruction evaluation → culture-guided narrowing → oral therapy

CAN PATIENT BE CARED FOR AS OUTPATIENT

(stable vitals, tolerating PO, reliable support, follow-up available)?

If YES

OUTPATIENT PATHWAY

Culture first → oral therapy → return precautions → 48–72-hour follow-up

IDSA Clinical Practice Guideline for cUTI. 2025. https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/.
EAU Guidelines on Urological Infections. 2025.
https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Urological-infections-2025_2025-05-24-110339_pxmf.pdf.

Optimal Management of cUTI Requires a Multidisciplinary Approach

COMMUNICATE RESPECTFULLY

- Do not blame patients
- Do not assume UTIs are caused by "bad behavior"
- Do not label patients
- Take detailed medical histories
- Listen to your patients
- Foster open discussions
- Involve your patients

Goals for Increased Interprofessional Communication and Collaboration

Establish clear communication channels

Commitment to evidence-based practices

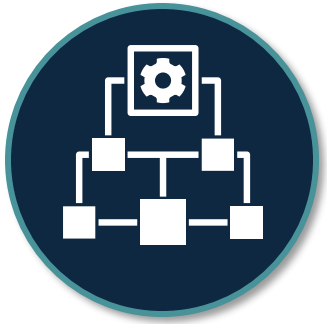
Respect for other HCPs' unique knowledge and contribution

Evans S, et al. *J Interprof Care*. February 6, 2025 [Epub ahead of print].
Bowman KS, et al. *Behav Anal Pract*. 2021;14(4):1191–1208. Price JR, et al. *Sch Psychol*. 2024;39(4):419–432.

Goals for Increased Interprofessional Communication and Collaboration

Assess collaboration competency and willingness to accept feedback from other HCPs

Patient and caregiver values, preferences, and needs are considered by all HCPs



Use frameworks for structured communication

Evans S, et al. *J Interprof Care*. February 6, 2025 [Epub ahead of print].
Bowman KS, et al. *Behav Anal Pract*. 2021;14(4):1191–1208. Price JR, et al. *Sch Psychol*. 2024;39(4):419–432.

SMART Goals

Specific, Measurable, Attainable, Relevant, Timely

Put information into action!

- **Implement routine use of the 2025 IDSA/EAU presentation-based classification within 60 days.** Apply the localized vs systemic framework in at least 70% of evaluated UTI encounters, with documentation of severity assessment and presence/absence of systemic features (fever, flank pain, CVA tenderness, instability).
- **Incorporate the 4-step empiric therapy algorithm into clinical decision-making over the next 90 days.** Use severity, resistance risk factors, patient-specific considerations, and local antibiogram data to guide empiric therapy in ≥75% of cUTI cases.
- **Integrate guideline-based management pathways for high-risk cUTI populations within 4 months.** Apply population-specific best practices—catheter exchange in CAUTI, inpatient IV therapy in pregnancy, prostatitis considerations in men—in ≥70% of relevant encounters, with demonstrated improvements on post-activity case-based assessments.

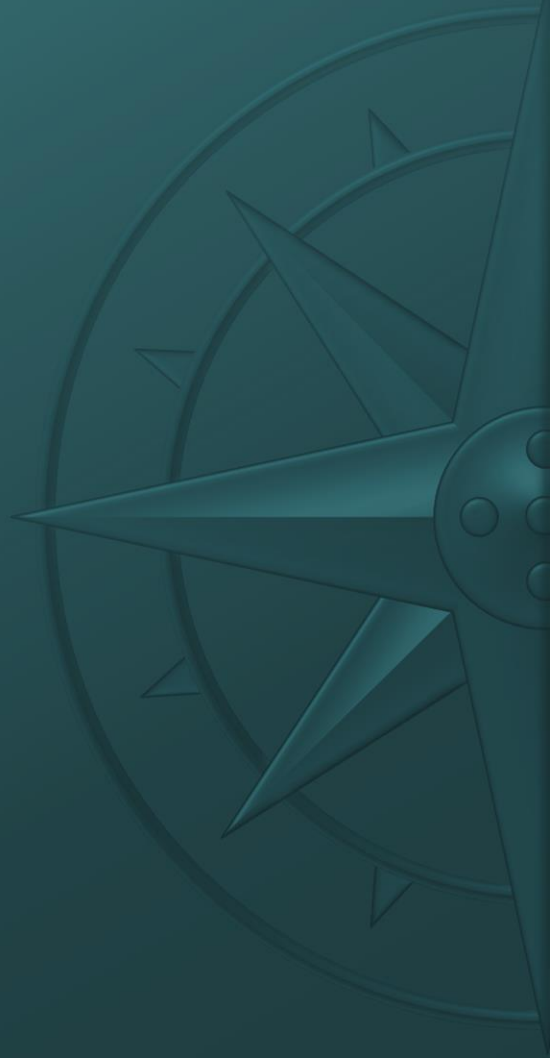
CME OUTFITTERS

AFTER THE SHOW

Questions & Answers

Additional Resources

Visit www.cmeoutfitters.com for clinical information and certified educational activities



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1. Actively participate in the discussion today by **responding to questions** and/or **asking the faculty questions** *(MOC credit can be claimed even if a question goes unanswered or an incorrect response is entered)*
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3. Enter your **ABIM ID number** and **DOB** (MM/DD) on the evaluation, so credit can be submitted to ABIM

ABIM CME MOC ACCREDITED

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How to Claim This Activity as a CME for MIPS Improvement Activity

- Actively participate today by responding to ARS questions and/or asking the faculty questions
- Complete the post-test and activity evaluation at the link provided
- Over the next 3 months, actively work to incorporate improvements from this presentation into your clinical practice
- In approximately 3 months, complete the follow-up survey from CME Outfitters

CME for MIPS IMPROVEMENT ACTIVITY

CMEO will send you confirmation of your participation to submit to CMS attesting to your completion of a CME for MIPS Improvement Activity.

UNRAVELING THE COMPLEXITIES OF cUTI CARE

Modernizing cUTI Care with the 2025 IDSA and EAU Updates

This activity is supported by an independent medical education grant from GSK.