2017 ANMC Adult Ambulatory Urinary Tract Infection Treatment Guideline

Severity	This guideline is intended for patients who can tolerate oral therapy and **do NOT require hospitalization**.			
Category	**Asymptomatic Bacteriuria**	**Acute Cystitis**	**Acute Pyelonephritis**	**Complicated UTI / Catheter-Associated UTI (CAUTI)**
Symptoms and/or Risk Factors	Isolation of a specific quantity of bacteria in an appropriately collected urine specimen (**$\geq 10^5$ cfu/mL** or from catheter; **$\geq 10^2$ cfu/mL**) from an individual **WITHOUT** signs or symptoms of infection.	**General symptoms**: acute onset dysuria, frequency or urgency *Risk factors for resistance* • Antibiotic exposure within 90 days • Hospitalization within 90 days • Presence of invasive device(s)	**Upper UTI** is frequently associated with general symptoms PLUS **back/flank pain, fever & chills.**	**Complicated UTI:** infection in the presence of an anatomic or functional abnormality (e.g. enlarged prostate, calculi, obstruction, catheter or stent, neurogenic bladder, renal transplant, neutropenia). **Lower UTI** classically presents with suprapubic pain, increased frequency, and dysuria.
Culture & Susceptibility (C&S) Investigation	Routine C&S is NOT indicated in asymptomatic patients *unless* screening for pregnancy or urologic procedure with mucosal bleeding.	Routine C&S is NOT indicated *unless* risk factor(s) for resistance exist; consider if prescribing 2nd line therapy	**Urine C&S are critical** in order to optimize treatment. Urine collection from freshly placed catheter or if discontinued, a voided midstream prior to antibiotics. ***Note: if indwelling catheter or urinary stent, **contact lab** to identify all species since multiple isolates or "skin flora" may be discarded as contaminants.*	
Recommended Treatment and Duration	Pregnant women: 1. **Cephalexin** 500mg BID x 3d 2. **Nitrofurantoin** 100mg BID x 5d Urologic procedure: Direct treatment based on pre-procedure screening C&S. Treatment is **NOT** appropriate for women (premenopausal, non-pregnant), diabetics, elderly, nursing home residents, spinal cord injury or indwelling urethral catheters.	First Line: 1. **Nitrofurantoin** 100mg BID x 5d 2. **Cephalexin** 500mg BID x 7d **Fluoroquinolone FDA Safety Alert**: *Disabling & potentially permanent adverse effects outweigh benefit in cystitis. Only use when no other alternatives exist.* 3. **Ciprofloxacin** 250mg BID x 3d ***Note: If STD risk w/ symptoms of urethritis, consider treatment for chlamydia.*	First Line: 1 dose of **Ceftriaxone** 1gm IM or **Gentamicin** 3 mg/kg IM PLUS 1 of the following: 1. **Cephalexin** 1gm BID x 14d 2. **Levofloxacin** 750mg daily x 5d 3. **Ciprofloxacin** 500mg BID x 7d *Tailor maintenance therapy to C&S report.*	Base empiric treatment on prior culture data. If stable vitals & afebrile, provide definitive therapy when new C&S result. **Duration:** • Stop antibiotics **3-5 days** after either defervescence or elimination of complicating factor (e.g. catheter, stone) • *If female and ≤ 65 years of age*, a **3-day** regimen *may be considered* for CAUTI with catheter removal. • *If CAUTI and NOT severely ill*, a **5-day** regimen of **levofloxacin 750mg** may be considered. • Shorter courses (**7 days**) are reasonable, if symptoms promptly resolve. • Longer courses (**10-14 days**) if delayed response, regardless if catheterized or not.

- **Nitrofurantoin is 1st line for most patients without** fever. Toxicity is minimized by short course therapy, which can be safe and effective with a **CrCl as low as 30mL/min**. Contraindicated in pregnancy at term (38-42wks)
- **3rd generation cephalosporins** (e.g. cefpodoxime) provide **no additional coverage for *E.coli* or *K. pneumoniae* over cephalexin**.
- Per ACOG/IDSA, TMP/SMX 1 DS tab BID x 3d may be used during the 2nd and 3rd trimester if needed as an **alternative** for nitrofurantoin or cephalexin in pregnancy.
- *E. coli* susceptibility to TMP/SMX is <80% **and should be avoided as empiric therapy** but may be considered if confirmed by C&S for complicated UTI or pyelonephritis (2 week duration).
- For **ESBL (Extended Spectrum Beta-lactamase)** producing organism, **treat according to reported susceptibility** with nitrofurantoin, TMP/SMX or FQ. If resistant to all tested antibiotics or multiple allergies, ***consult Infectious Diseases*** for potential alternatives: (ex. Fosfomycin). ESBL pyelonephritis may require IV carbapenem.
- **Penicillin allergy**? Inquire about onset and severity of symptoms and update patient medical record. ***Most PCN-allergic patients CAN safely receive cephalosporins.***
- **Antibiotic prophylaxis for most patients** with risk factors for recurrent, complicated UTI **is NOT recommended**. Risk of resistance outweighs the slight reduction in infection rate.
- **Methenamine salts** or **cranberry products** should ***NOT*** be used routinely to reduce CA-bacteriuria or CA-UTI.

Antimicrobial Stewardship Program Approved 2017

Executive Summary: International Clinical Practice Guidelines for the Treatment of Acute Uncomplicated Cystitis and Pyelonephritis in Women: ***CID 2011;52(5):561–564.*** *Diagnosis, Prevention, and Treatment of Catheter-Associated Urinary Tract Infection in Adults:* ***CID 2010; 50:625–663.*** *IDSA Guidelines for the Diagnosis and Treatment of Asymptomatic Bacteriuria in Adults.* ***CID 2005; 40:643–54.*** *2015 Updated Beers Criteria.*