**Key points**
- *E. coli* remains the most common cause of both simple cystitis and complicated urinary tract infection
- Heavy fluoroquinolone use has led to widespread emergence of quinolone-resistant *E. coli* at DH
- Screen for risk factors for fluoroquinolone resistance when considering their use

**Possible signs and symptoms of urinary tract infection:**
1) Urinary frequency
2) Urgency
3) Dysuria
4) Suprapubic pain
5) Hematuria

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1) Urinary frequency
2) Urgency
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4) Suprapubic pain
5) Hematuria

**Clinical picture suggestive of urinary tract infection?**

**Any complicating factors present? (associated with broader spectrum of bacteria and/or increased risk of complications)**

Male gender  
Systemic symptoms  
Symptoms >7 days  
Diabetes mellitus  
Evidence of pyelonephritis  
Immunosuppression  
Nephrolithiasis  
Urinary obstruction  
Anatomical GU abnormality  
Recent GU instrumentation  
Azotemia  
Urinary catheter  
Recent treatment failure  
Recent hospitalization

**Clinical picture suggestive of urinary tract infection?**

**Simple cystitis**

Urine culture generally not indicated†

Nitrofurantoin 100mg PO BID for 5 days*  
(nitrofurantoin contraindicated if creatinine clearance <60 mL/minute)

**Complicated infection**

- Obtain urinalysis and culture  
- Blood cultures if systemic signs/symptoms  

Clinical evidence of pyelonephritis?  
- Fever  
- Nausea/vomiting  
- Leukocytosis  
- Flank pain  
- CVA tenderness

**Complicated UTI**  

**Pyelonephritis**

**Risk factors for fluoroquinolone (FQ) resistance present*b:  
1) Hospitalization in previous 12 months OR  
2) Fluoroquinolone use in previous 12 months OR  
3) Prior documented FQ-resistant organism

**Moderate to severe illness**

**If appropriate for outpatient therapy:**  
Ceftriaxone 1gm IV or IM daily OR  
Amikacin 10mg/kg IV or IM daily if *Pseudomonas* likely or if serious cephalosporin allergy

**Levofloxacin 500mg daily (use 750mg if risk for FQ resistance)**

**Mild illness**

**Adjust antibiotics based on cultured organism and susceptibilities**

**If quinolone-resistant AND ceftriaxone-susceptible organism:**  
Cefixime 400mg PO daily  
*not for empiric use for suspected quinolone resistance

**Treatment duration varies by clinical scenario: 5-14 days**

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**Disclaimer:** This is intended only as a guide for evidence-based decision-making; it is not intended to replace clinical judgment. Assess for antibiotic allergies and use alternative agents as appropriate. Suggested doses are for normal renal function; adjust for renal impairment.

*Consider evaluation for gonorrhea and chlamydia in sexually active patients; treat appropriately if confirmed
*5 days of levofloxacin 750mg daily effective for complicated UTI/acute pyelonephritis (*Urology* 2008; 71:17-22)

**References:**  