RECOMMENDATION

Assessment

a.) What to assess:

**History**
- Age
- Sex
- Current medications
- LMP/Pregnancy
- Diaphragm and spermicide use
- #UTI in past year
- UTI within 3 months and compliance with treatment
- Chronic illnesses such as: diabetes, cancer, AIDS, illness requiring steroids

**Symptoms**
- Fever > 101
- Postcoital signs/symptoms
- Flank pain
- Hematuria
- Vomiting
- Vaginal itch/pain/discharge
- Dysuria, nocturia, lower abdominal pressure
- Onset of signs/symptoms < or > 48 hours

b.) Frequency: As needed

### Treatment Regimens for Bacterial Urinary Tract Infections

<table>
<thead>
<tr>
<th>Condition</th>
<th>Laboratory tests</th>
<th>Characteristic Pathogen</th>
<th>Mitigating Circumstances</th>
<th>Recommended Empirical treatment</th>
</tr>
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</table>
| Acute uncomplicated cystitis in women      | If leukocyte esterase or nitrite is positive or pyuria is detected upon microscopic examination no culture is necessary. | *E. coli*, *S. saprophyticus*, *P. mirabilis*, *K. pneumoniae* | If no UTI in last 3 months         | **First Choice 3-day regimen:**
|                                            |                                                                                  |                                          |                                  | Trimethoprim-Sulfamethoxazole (160 mg/800 mg q12hr) |
|                                            |                                                                                  |                                          |                                  | Cipro 250 mg p.o. BID x 3 days               |
|                                            |                                                                                  |                                          |                                  | **Alternate:**
<p>|                                            |                                                                                  |                                          |                                  | 3 day treatment: Trimethoprim (100 mg q 12hr)     |
|                                            |                                                                                  |                                          |                                  | 7 day treatment: Cephalaxin (250 mg q 6hr)      |</p>
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<td>Acute uncomplicated cystitis in women</td>
<td>If leukocyte esterase or nitrate is positive or pyuria is detected upon microscopic examination no culture is necessary.</td>
<td>E. coli, S. saprophyticus, P. mirabilis, K. pneumoniae</td>
<td>Chronic conditions e.g. - Diabetes - symptoms &gt; 7 days - recent UTI - use of diaphragm - age &gt; 65 yr. * and if no UTI in last 3 months If recurrent UTI Pregnancy</td>
<td>Consider 7-day regimen: Trimethoprim-Sulfamethoxazole (160 mg/800 mg q12hrs) Trimethoprim (100 mg q 12hrs) Ciproflaxin (Cipro) 250 mg x 7 day Consider 7-day regimen: Amoxicillin (250 mg q 8hrs) Cephalexin (250 mg q 6hrs) Nitrofurantoin macrocrystals (50 mg q 6hrs) Trimethoprim-Sulfamethoxazole (160 mg/800 mg q12hrs) (Not recommended during First or Last trimester)</td>
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<td>Acute uncomplicated pylonephritis in Women (History and physical exam findings range)</td>
<td>Urine culture should be obtained in all women with suspected pylonephritis. It is useful to obtain a follow up</td>
<td>E. coli, S. saprophyticus, P. mirabilis, K. pneumoniae</td>
<td>Mild to moderate illness, no nausea or vomiting - outpatient therapy</td>
<td>First Choice: Cipro 500 mg q12 hrs x 7 day</td>
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<td>from cystitis with mild flank pain to sepsis)</td>
<td>culture two weeks after the completion of therapy</td>
<td>E. coli, Proteus species, Klebsiella species, Pseudomonas species, Serratia species, Enterococcus, Staphylococcus</td>
<td>Mild to moderate illness, no nausea or vomiting-outpatient therapy</td>
<td>Consider 10-14 day regimen: Ciprofloxacin (500 mg q 12 hrs) Initial treatment choice pending culture results Trimethoprim-Sulfamethoxazole (160mg/800mg q12hrs) Alternate: Cephalexin (500 mg QID)</td>
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Factors associated with complicated UTI:
- Male sex, Pregnancy, Recent antimicrobial use, Diabetes, Immunosuppression, Indwelling urinary catheter, Recent urinary tract instrumentation, Functional or anatomic abnormality of the urinary tract

Recurrent Infection in Women (Refer to Attached Algorithm)

**Urology Referral:** Consider Urology referral if greater than 3 UTIs in the past 6 months

**MEMBER EDUCATION**

**Recurrent Infections:** Members should be told that the use of diaphragms and spermicides have been associated with recurrence in some patients and they should consider changing contraceptive methods. In women with recurrent episodes who comply with treatment, patient-initiated therapy undertaken when symptoms arise provide a convenient, safe, and effective management strategy. Postmenopausal women should be made aware of antimicrobial prophylaxis and topically applied estradiol cream as preventive measures. For post-coital prophylaxis members should be advised to empty their bladders after sexual intercourse.
KP SELF-CARE/SELF-MANAGEMENT RESOURCES
- KP Healthwise Handbook
- www.kp.org health encyclopedia
- Health Education core library: bladder infections/urinary tract infections brochures

SYSTEM SUPPORT
Pharmacy, Lab, Nurse Clinics, Urology

PROPOSED OUTCOME & PROCESS MEASURES
Outpatient visits for cystitis, #urine cultures/ Total number of UTIs, Use of ciprofloxacin, Percentage using three day therapy for cystitis

RATIONALE & SUMMARY OF EVIDENCE
- Leukocyte esterase: 75-96% sensitive for pyuria, 94-98% specific
- 80-90% of illness caused by E. coli; 2-20% S. saprophyticus
- Gold standard for diagnosis: culture of > 100,000 colony forming units of a single pathogen per ml of urine
- In uncomplicated UTI a three day regimen is as good as a seven day regimen. Single-dose though favored by few, has a higher relapse rate. Consideration for 7 day regimen based on risk of recurrence e.g. age > 65, diabetes etc...
- 90% of recurrences in young women are episodes of exogenous reinfection typically months apart. Only rarely do such patients have anatomical or functional abnormalities of the urinary tract. Excretory urography, cystography, and cystoscopy are therefore of little use
- The routine use of imaging procedures for all young women who present with acute pyelonephritis is generally unrevealing and unnecessary.

REFERENCES