

URINARY TRACT INFECTIONS (UTIs) IN WOMEN

More than one-half of women will have at least one UTI during their lifetime and three to five percent of all women will have multiple recurrences. Because UTIs often occur in relation to intercourse, they are a common problem in women of reproductive age.

KEY POINTS

- A detailed history, and in some cases physical exam, is necessary to differentiate lower UTIs (acute bacterial cystitis, also referred to as a “bladder infection”) from upper urinary tract infections (pyelonephritis).
- The initial diagnosis or treatment of a lower UTI does not routinely require a urine culture. The use of urine cultures in women with acute cystitis is limited to those with a recent history of recurrent UTI and those with treatment failures.
- Trimethoprim-sulfamethoxazole (TMP-SMX) given for three days is the preferred treatment regimen for UTIs, while ciprofloxacin given as a three-day regimen and cephalexin given for seven days are available as alternative regimens.
- Other effective antibiotic treatments for acute cystitis include nitrofurantoin, trimethoprim, fosfomycin, and multiple quinolone products but none are covered as Family PACT benefits.

QUESTIONS AND ANSWERS

What are the risk factors for urinary tract infection in premenopausal women?

The presence of risk factors may aid in the diagnosis of both acute and recurrent UTIs:

- Frequent or recent sexual activity, use of diaphragm and spermicidal agents, and increasing parity;
- A history of previous urinary tract infections;
- Medical conditions such as diabetes, obesity, sickle cell trait, anatomic congenital abnormalities, urinary tract stones;
- Neurologic disorders or medical conditions requiring indwelling or repetitive bladder catheterization.

Should asymptomatic women be screened with a dipstick urinalysis?

No. Screening for and treatment of asymptomatic bacteriuria is not recommended in nonpregnant, premenopausal women. Bacteriuria has not been shown to be harmful in this population nor does treatment decrease the frequency of symptomatic infections.

What are the presenting findings in women with UTIs?

History-taking is essential in differentiating uncomplicated from complicated urinary tract infection.

- Uncomplicated acute cystitis usually presents clinically as dysuria with symptoms of frequent and urgent urination, secondary to irritation of the urethral and bladder epithelium. Women also may experience suprapubic pain or pressure and rarely have hematuria. Fever is uncommon in women with uncomplicated lower UTI. Acute urethritis owing to infection from gonorrhea (GC) or *Chlamydia trachomatis* (Ct), or urethral pain secondary to genital herpes simplex virus, may present with similar clinical symptoms.
- In contrast, upper UTI (acute pyelonephritis) frequently occurs with a combination of fever and chills, flank pain, and varying degrees of dysuria, urgency, and frequency. Severe flank pain radiating to the groin is more indicative of kidney stones.
- Other factors that define complicated UTIs include diabetes, pregnancy, immunosuppression, previous pyelonephritis, symptoms lasting >14 days, recent hospitalization, presence of kidney stones, or structural abnormalities of the urinary tract.

How should women with UTI symptoms be evaluated?

Urine dipstick testing for pyuria with leukocyte esterase (LE) or nitrite (indicative of *E. coli* bacteriuria) is a rapid and inexpensive method with a sensitivity of 75 percent and specificity of 82 percent. While a dipstick is a good initial test, women with negative dipstick test results and characteristic UTI symptoms may be treated presumptively. In addition, if GC or Ct are suspected based on sexual history or symptoms, collect a sample for a GC and Ct nucleic acid amplification test (NAAT) from the beginning of the urine stream and a second sample for dipstick urinalysis from the mid-stream. GC and Ct NAAT tests are more accurate if the urine sample is obtained at least one hour after prior urination.

When is a urine culture necessary?

Urine culture is not indicated for the initial diagnosis or routine follow-up of an uncomplicated lower UTI. However, if clinical improvement does not occur within 48 hours, or in the case of a recurrent UTI, a urine culture is useful to help tailor treatment. Women with complicated UTIs also should have a urine culture performed (although it is not a Family PACT benefit; see below)

How should uncomplicated acute cystitis in women be treated?

A three-day antimicrobial regimen is the recommended treatment for uncomplicated lower UTI in women, with bacterial eradication rates consistently higher than 90 percent. Treatment decisions should follow a step-wise consideration of each antibiotic option.

- **First-line therapy:** Trimethoprim 160 mg and sulfamethoxazole 800 mg (TMP-SMX double strength) twice daily for three days is the preferred therapy for lower UTIs, with a 94 percent bacterial eradication rate.
- **Second-line therapy:** Ciprofloxacin 250 mg twice daily for three days.
 - Fluoroquinolones that have shown equivalency include ciprofloxacin, levofloxacin, norfloxacin, and gatifloxacin (only ciprofloxacin is included in the Family PACT formulary). Although highly effective, fluoroquinolones should not be used as a first-line agent as overuse will likely hinder the ability to effectively use this class of antimicrobials in patients with complicated UTIs and in those patients with respiratory and other non-urinary tract infections.

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- **Third-line therapy:** Cephalexin 500 mg twice a day or 250 mg four times a day for seven days. Disadvantages include:
 - β -lactams, such as first-generation cephalosporins and amoxicillin, are less effective in the treatment of uncomplicated UTIs. This is because of increasing resistance among the common uropathogens, rapid excretion from the urinary tract, and the inability to completely clear gram-negative rods from the vagina, increasing the risk for recurrence.
 - Lower completion rates, since the regimen must be used for seven days instead of three days (vs. first and second line treatments).

Is a routine follow-up visit necessary after the treatment of a UTI?

Given the high cure rate after treatment for an uncomplicated UTI, a routine follow up visit or test-of-cure urinalysis is not necessary. However, if the client's symptoms do not respond to treatment, she should be re-evaluated for treatment failure or another condition.

How are recurrent (repeated) UTIs categorized and managed?

Recurrent UTIs are defined as three or more episodes per year and may be due to relapse (failure to completely cure an initial infection) or reinfection with the same or a different organism. In addition to a urine culture and consideration of whether an anatomic cause may be present, the following interventions should be considered:

- Discontinuation of vaginal spermicides.
- Drinking cranberry juice has been shown to decrease symptomatic UTIs. In a recent meta-analysis addressing the effectiveness of drinking cranberry juice and taking other formulations, it was reported that taking cranberry formulations was more effective compared with taking a placebo.
- Though not Family PACT benefits, the following interventions will reduce recurrent UTIs:
 - Intermittent (post-coital) or continuous prophylactic antimicrobial therapy prevent recurrences in 95 percent of cases.
 - Patient-initiated therapy with symptom onset. Women are given a prescription for one of the three-day dosage regimens and instructed to start therapy when symptoms develop. If symptoms do not improve in 48 hours, clinical evaluation should be performed.
- There is little evidence that aggressive hydration to prevent recurrences has any major effect, and this practice can theoretically worsen urinary retention issues, decrease urinary pH affecting the antibacterial activity of urine itself, and dilute antimicrobial concentrations in the urinary tract. It is currently not recommended for prevention of UTI recurrence.
- Post-coital voiding has not been proved effective, nor have douching or wiping techniques.

APPLICATION OF FAMILY PACT POLICIES

Can women with pyelonephritis or other "complicated" UTIs be treated under the Family PACT Program?

Management of women with complicated UTIs is beyond the scope of the program and is not a covered benefit. These clients often require referral for expert management, which on occasion includes hospitalization.

Is the diagnosis and management of cystitis in men a covered benefit?

No. Bladder infections in men rarely are sexually transmitted infections and therefore are outside the scope of the program.

How should UTI visits in women be coded?

UTI services are restricted to female clients who present with symptoms of infection. Therefore, all claims for evaluation and treatment of UTIs in women must contain a primary diagnosis (S-code) and a secondary diagnosis.

- If the diagnosis of UTI is made, use International Classification of Diseases, 9th Revision (ICD-9) code 595.0 (acute cystitis) for the secondary diagnosis.
- If a UTI is presumptively treated based on presenting symptoms, enter an ICD-9 code for the client's presenting symptom from the following list:
 - 599.71 Gross hematuria
 - 788.1 Dysuria
 - 788.41 Urinary frequency
 - 789.09 Abdominal pain, other specified site

Which laboratory tests does Family PACT cover?

With appropriate Clinical Laboratory Improvement Amendment certification and, in some cases, using test kits approved by the Centers for Medicare and Medicaid Services, dipstick urinalysis (CPT code 81000), urinary analysis (UA) dipstick with microscopy (81001) and without (81002), UA automated without microscopy (81003), and UA microscopy only (81015) are covered either as point of care office tests or when performed by a clinical lab. In addition, urinalysis qualitative (81005) is performed by a clinical lab, as well as urine culture (87086). If the culture is positive, reflex sensitivity testing (87181, 87184, or 87186) are benefits.

Are alternative antibiotic regimens available by Treatment Authorization Request if a formulary drug is not appropriate?

No. Only the drugs listed in the formulary will be covered by Family PACT. However, a clinician may prescribe a non-formulary antibiotic which can be purchased by the client, in some cases through pharmacy discount programs for generic drugs.

Providers should refer to the Family PACT Policies, Procedures, and Billing Instructions for the complete text of the Family PACT Standards, official administrative practices, and billing information.

RESOURCES FOR INFORMATION ON URINARY TRACT INFECTIONS IN WOMEN

1. American College of Obstetricians and Gynecologists. Treatment of urinary tract infections in nonpregnant women. *ACOG Practice Bulletin No. 91. Obstet Gynecol* 2008;111:785-94.
2. Finh, SD. Acute uncomplicated urinary tract infection in women. *N Eng J Med* 2003;349(3):259.
3. Mehnert-Kay SA. Diagnosis and management of uncomplicated urinary tract infections. *Am Fam Physician* 2005;72:451-6.
4. Guay DR. Cranberry and urinary tract infections. *Drugs* 2009;69(7):775-807.
5. Katchman EA, et.al. Three-day vs. longer duration of antibiotic treatment for cystitis in women: systematic review and meta-analysis. *Am J Med* 2005 Nov;118(11):1196-207.