SAN FRANCISCO CITY CLINIC
CLINICAL PROTOCOLS
SEXUALLY TRANSMITTED DISEASES
(Revised, September 2011)

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# Table of Contents

Actinomycosis in Women with IUD ........................................................................... 1
Bacterial Vaginosis ................................................................................................. 2
Candida Balanitis .................................................................................................. 5
Candidiasis in Women ............................................................................................. 7
Chancroid ............................................................................................................... 10
Chlamydia Trachomatis ......................................................................................... 13
Epididymitis .......................................................................................................... 17
Genital Herpes ...................................................................................................... 20
Genital Ulcer Disease ........................................................................................... 24
Genital Warts ......................................................................................................... 28
Gonorrhea ............................................................................................................ 33
Hepatitis A and B ................................................................................................. 38
Human Papillomavirus (HPV): Prevention and Screening .................................... 41
Lymphogranuloma Venereum .............................................................................. 44
Molluscum Contagiosum ....................................................................................... 47
Mucopurulent Cervicitis ....................................................................................... 49
Nongonococcal Urethritis .................................................................................... 52
Recurrent and Persistent Urethritis ...................................................................... 56
Pelvic Inflammatory Disease ............................................................................... 58
Proctitis ................................................................................................................ 63
Pubic Lice (Crabs) ................................................................................................. 66
Scabies .................................................................................................................. 69
Syphilis .................................................................................................................. 71
Trichomoniasis ...................................................................................................... 82
Urinary Tract Infections ....................................................................................... 85
Patient-Delivered Partner Therapy (PDPT) .......................................................... 89
Events Requiring Attending Physician Notification ............................................ 90
Common Medications Used for STDs .................................................................. 91
Select STD Resources .......................................................................................... 92
Actinomycosis in Women with IUD

*Actinomyces israelii* is a fastidious, anaerobic Gram-positive bacterium that can colonize the female genital tract and may be detected on a Pap smear. While usually harmless, *Actinomyces* can cause a rare but serious form of PID in IUD users. This condition, called “pelvic actinomycosis,” is typically indolent and characterized by fever, abdominal pain, weight loss, and abnormal vaginal bleeding or discharge.

While pelvic actinomycosis is rare, detection of *Actinomyces* on Pap smear in IUD users is not. There is no clear-cut standard of care in asymptomatic women, but evidence suggests that neither IUD removal nor antibiotic therapy is needed. Symptomatic cases should be evaluated individually and may require consultation with the attending physician.

A. Diagnosis

1. History
   a. *Actinomyces* noted on a Pap smear of IUD user.
   b. Evaluate for signs of pelvic infection; lower abdominal tenderness, cervical motion tenderness, uterine/adnexal tenderness, fever, weight loss, abnormal vaginal bleeding or discharge.

2. Laboratory
   a. Test for gonorrhea and chlamydia per San Francisco City Clinic guidelines.

B. Treatment

1. For an asymptomatic patient:
   a. Removal of IUD is not necessary.
   b. Antibiotic treatment is not necessary.
   c. Patient should be counseled regarding signs and symptoms of pelvic actinomycosis and informed that she should be evaluated if any such symptoms develop.

2. If patient has symptoms of PID, refer to SFGH ER for further management after standard PID treatment started at San Francisco City Clinic.

3. If patient has cervicitis, treat as per cervicitis protocol.
Bacterial Vaginosis

Bacterial vaginosis (BV) is a polymicrobial syndrome that results from alterations in the normal vaginal flora. In BV, anaerobic bacteria replace the normal hydrogen peroxide producing *Lactobacillus sp.* that colonizes the vagina. *Gardnerella vaginalis* (a small Gram-negative pleomorphic coccobacillus), *Bacteroides sp.* (anaerobic Gram-negative bacilli), *Mobiluncus sp.* (motile, anaerobic, curved Gram-positive bacilli), and genital mycoplasmas have been implicated. Recent molecular investigations have also found novel bacteria that are highly specific for BV. BV is manifested by a malodorous vaginal discharge that is often most noticeable after intercourse and has been associated with subclinical endometritis and pelvic inflammatory disease. Women with BV may be at increased risk for other STDs (e.g., HIV, gonorrhea, chlamydia and HSV-2). Treatment of male sex partners has not been beneficial in preventing BV recurrence.

A. Diagnosis

1. History
   a. Patients often complain of a malodorous vaginal discharge (may have a fishy odor, usually not itchy).
   b. Patients may be asymptomatic, but have all the signs of BV on exam.
   c. Douching is associated with BV.

2. Examination
   a. Classically, BV produces a homogeneous, adherent, malodorous, white vaginal discharge.
   b. In the absence of other conditions, the remainder of the exam is normal.

3. Laboratory
   a. BV can be diagnosed by clinical criteria (Amsel’s) or by Gram stain (Nugent criteria).
   b. Amsel’s criteria (at least 3 must be present):
      i. Homogeneous gray or white, adherent discharge on the vaginal wall.
      ii. pH of vaginal secretions > 4.5.
      iii. A positive whiff test: fishy, amine odor from vaginal fluid, enhanced by mixing with 10% potassium hydroxide (KOH).
      iv. Presence of clue cells on a saline preparation. Clue cells are epithelial cells with a granular appearance and obscured edges caused by adherent bacteria.
   c. Nugent criteria: Standardized 0-10 point score based on Gram stain that is based on the relative concentration of lactobacilli (i.e., long Gram-positive rods), Gram-negative and Gram-variable rods and cocci (i.e., *G. vaginalis*, prevotella,
porphyromonis, and peptostreptococci) and curved Gram-negative rods (i.e., mobiluncus).

B. Treatment (Nonpregnant Women)

The goal of treatment is to relieve signs and symptoms. At this time, evidence does not support treating asymptomatic women.

Recommended regimens:

1. **Metronidazole** 500 mg orally twice daily for 7 days OR
2. **Metronidazole** gel 0.75%, one full applicator (5 g) intravaginally daily for 5 days OR
3. **Clindamycin** cream 2%, one full applicator (5 g) intravaginally at bedtime for 7 days (patients should be told this is an oil-based cream, and can weaken latex condoms)

   *Note: Clindamycin cream is less effective than Metronidazole orally or gel.*

Alternative regimens:

1. **Clindamycin** 300 mg orally twice daily for 7 days (note: keep in mind small risk of antibiotic-associated colitis) OR
2. **Clindamycin Ovules** 100 g intravaginally once at bedtime for 3 days OR
3. **Tinidazole** 2 g orally daily for 3 days OR
4. **Tinadazole** 1 g orally daily for 5 days

C. Treatment in Pregnancy

Although BV has been associated with preterm labor and other adverse pregnancy outcomes, the mechanism remains poorly understood, and treating asymptomatic BV diagnosed during pregnancy has not been shown to decrease the risk for these events. Therefore treatment of asymptomatic BV during pregnancy is not recommended. Treatment of symptomatic BV during pregnancy is indicated to reduce the signs and symptoms of vaginal infection.

Treatment:

1. **Metronidazole** 500 mg orally twice daily x 7 days OR
2. **Metronidazole** 250 mg orally three times daily x 7 days

Alternative regimen:

1. **Clindamycin** 300 mg orally twice daily x 7 days

   *Note: Clindamycin cream has been associated with adverse events (prematurity and neonatal infections) in 3 trials so it is not recommended in pregnancy.*
D. Follow-up

Routine follow-up is not recommended for nonpregnant women. Recurrence is common, and women should be advised to return for re-evaluation if symptoms recur. Alternative treatment regimens may be used to treat recurrent disease (see below).

E. Counseling/Education

Patients should:

1. Understand how to take prescribed medications and be instructed to avoid alcohol 24 hours before and after metronidazole administration.
2. Return for evaluation if symptoms persist or recur after treatment.
3. Refrain from douching.

Some experts recommend the following:

1. Advise patients to use condoms, as this has been shown to be protective in some studies.
2. For women with recurrent BV a longer course of therapy (10-14 days) may be helpful. With multiple recurrences, consider prophylactic use of intravaginal metronidazole 1 applicator at bedtime twice weekly for 4-6 months.

F. Evaluation of Sex Partners

Condoms may be helpful to reduce the frequency of recurrence. No clinical counterpart of BV is recognized in the male and treatment of sex partners does not affect likelihood of relapse or recurrence. The male partner can be offered a STD exam and appropriate screening tests and be given relevant information on BV. Female partners of females diagnosed with BV have shown high rates of BV in several studies and should be offered an evaluation and STD testing as indicated by screening guidelines.
Candida Balanitis

In men, the glans of the penis may become colonized with yeast. This condition (candida balanitis) typically causes pruritus and a red rash with white flat lesions on the glans, prepuce, coronal sulcus, and shaft. If inflammation continues, men may exhibit shallow ulcerations on the glans. As in women, this condition is generally not sexually transmitted, partner referral is not necessary and no data support the treatment of sex partners. After unprotected intercourse with a woman who has Candida vaginitis, a man may experience transient erythema, burning, and pruritis on the glans of the penis. This may occur as early as minutes after intercourse, and may be alleviated by washing. Candida balanitis is more common and more frequently symptomatic in uncircumcised men.

A. Diagnosis

1. History
   a. Rash on glans and/or prepuce.
   b. Often pruritic.
   c. Candidiasis in sexual partners.
   d. Diabetes mellitus.
   e. Immunosuppression, including HIV infection.

2. Examination
   a. Red rash with white flat lesions and possibly shallow ulcerations on glans, prepuce, and shaft.
   b. Excoriations may be present.

3. Laboratory
   a. A KOH preparation of a skin scraping may reveal pseudohyphae or budding yeast.
   b. If there is any question of diagnosis, a stat RPR and VDRL must be done to exclude syphilis.
   c. Consider herpes serology and/or PCR (or culture if PCR not available).

4. Diagnostic Criteria
   a. History and clinical appearance consistent with above.
   b. A KOH preparation from a skin scraping which reveals budding yeast and/or pseudohyphae.
B. **Treatment**

Any of the following topical OTC antifungal preparations are effective:

1. **Clotrimazole** 1% cream twice daily x 7-14 days
2. **Miconazole** 2% cream twice daily x 7-14 days
3. **Tolnaftate** (tinactin) 1% cream twice daily x 7-14 days

All are available without prescription. Creams should be applied in a thin layer twice a day until balanitis has resolved. Most cases should resolve within one to two weeks. Therapy may require 14-42 days in some cases. The area under the prepuce should be kept clean and dry.

Severe disease:

   **Fluconazole** 150 mg orally once, then repeated in three days

Other oral azole agents such as ketoconazole and itraconazole have been shown to be as effective as topical agents; one advantage is ease of administration but the potential for toxicity, particularly adverse hepatic effects should be considered.

C. **Follow-up**

Routine follow-up is not required.

D. **Special Considerations**

Predisposing factors such as HIV infection and diabetes should be considered. Patients who may be at risk for HIV infection should be offered HIV antibody testing. Patients with symptoms of diabetes, a family history of diabetes or recurrent candida balanitis should have a urine dipstick test to screen for glucosuria. A primary care provider should evaluate patients if glucosuria is present.
Candidiasis in Women

Vulvovaginal candidiasis is not a sexually transmitted infection. Most infections are caused by the dimorphic fungus *Candida albicans* which is microscopically visible as oval buds and/or pseudohyphae. This common disorder is characterized by vulval and/or vaginal itching, redness, or discharge. Women who are immunosuppressed, diabetic, or pregnant are at greater risk for *Candida vaginitis*. Many women are asymptotically colonized with *C. albicans*.

A. Diagnosis

1. History
   a. Patients may complain of vaginal discharge and/or vaginal/vulvar itching.
   b. Note recent use of antibiotics, oral contraceptives, topical or systemic steroids, symptoms or diagnosis of diabetes, HIV infection or other risk factors for immunosuppression.

2. Examination
   a. White, thick, cheesy vaginal discharge. Occasionally, discharge is scant.
   b. Vulva may be red, swollen, and may have excoriations or very shallow ulcerations.

3. Laboratory
   Budding yeast and/or pseudohyphae on a saline or KOH preparation. The wet mount has low sensitivity, approximately 50%.

4. Diagnostic Criteria
   Typical clinical findings, yeast (budding cells) or pseudohyphae on microscopic examination of a smear of vaginal discharge by Gram stain, potassium hydroxide wet mount preparation (10% KOH), or saline wet mount. The pH will be in the normal range of 4.0 to 4.5. Remember that mixed infection can occur so patients should also be evaluated for other causes of vaginitis.

B. Treatment

Any of the following antifungal preparations are effective:

Vaginal:

1. **Clotrimazole** 1% cream 5 g intravaginally for 7-14 days
2. **Clotrimazole** 2% cream 5 g intravaginally for 3 days
3. **Miconazole** vaginal suppositories (100-200 mg) or cream (2%, 4%) x 3-7 days
4. **Terconazole** vaginal suppositories (80 mg) or cream (0.4%, 0.8%) x 3-7 days
5. **Butoconazole** 2% cream 5 g intravaginally x 3 days
6. **Nystatin** 10,000 unit vaginal tablet, one tablet daily x 14 days
7. **Tioconazole** 6.5% ointment 5 g intravaginally in a single application

Oral:
1. **Fluconazole** 150 mg orally once – **do not use in pregnancy**

   Severe candidiasis may be treated with Fluconazole 150 mg orally repeated in three days.

   *Note: Single-dose therapy of vaginal creams has higher failure rates than three or seven day regimens. Clotrimazole and miconazole are available without prescriptions. Terconazole requires a prescription and is covered under Medi-Cal but is not available at SFGH. Vaginal creams and suppositories are considered safe in pregnancy and during lactation. Fluconazole (or other oral azoles) should not be used in pregnancy.*

   Other oral azole agents such as ketoconazole and itraconazole have been shown to be as effective as topical agents; one advantage is ease of administration but the potential for toxicity, particularly adverse hepatic effects, should be considered.

C. **Follow-up**

   Patients with frequent or chronic candidal vulvovaginitis may be more difficult to treat; they should be evaluated for predisposing conditions (especially HIV infection and diabetes) (see section F).

D. **Counseling/Education**

   Patients should:
   1. Understand how to take or use medications.
   2. Return for evaluation if symptoms persist or recur after treatment.
   3. Understand that many yeast creams are oil-based and may break down latex condoms.

E. **Evaluation of Sex Partners**

   Treatment of sex partners is usually not necessary unless candida balanitis in the partner is present.

F. **Recurrent Candidiasis**

   Defined as four or more recurrences per year. Due to poor accuracy of self-diagnosis (confusion with other causes of vaginitis) it is recommended that recurrences be clinician-diagnosed.

   First, try a longer duration of initial therapy before initiating a maintenance antifungal regimen: e.g., 7-14 days of topical therapy or fluconazole 200 mg orally every third day for a total of 3 doses (day 1, 4 and 7).
Recommended maintenance regimen (continue for 6 months, then trial period off therapy):

**Fluconazole** 100-150 mg orally weekly x 6 months

If this is not feasible, topical treatments administered intermittently, can be used as a maintenance regimen.

Fluconazole is not effective against *Candida glabrata* which has been found in some studies to be present in HIV-infected women, sex workers, and women with multiple partners. This pathogen requires longer duration of treatment (7+ days) with intravaginal antifungal creams or other oral medications and is often associated with severe burning and itching, but may have no positive microscopic findings. Consult with the attending physician in difficult cases, as fungal cultures may be required.
Chancroid

Chancroid is a sexually transmitted infection caused by *Haemophilus ducreyi*, a Gram-negative bacterium. It is characterized by painful, nonindurated genital ulcerations with irregular, undermined borders. Chancroid does not have a vesicular stage but may present initially as a small pustule or as a raised, beefy red lesion. Unilateral or bilateral tender adenopathy occurs in approximately half the patients and an inguinal bubo (abscess) may occur. *H. ducreyi* has a short incubation period (on average 4-7 days, with a range of 3-10 days) which may help distinguish it from other causes of genital ulcer disease. Complications of chancroid include phimosis or paraphimosis and ruptured buboes, which may result in fistulae. Studies from Africa, where chancroid was once endemic, suggest that genital ulcer disease caused by *H. ducreyi* increases risk of HIV transmission.

A. Diagnosis

1. History
   a. Male patients may present with a painful genital ulcer(s) and inguinal swelling or pain; female patients may present with a vulvar or vaginal ulcer(s) or with dysuria, bleeding, or vaginal discharge. Ulcer(s) in women may be relatively painless.
   b. See genital ulcer disease section for key characteristics that should be ascertained during the history of present illness (HPI).

2. Examination
   a. There may be a single ulcer or multiple ulcers, frequently in a linear pattern.
   b. The ulcer typically begins as a pustule and then erodes within a few days, has undermined edges that can be ragged or serpiginous in appearance. Rectangular shaped ulcers are considered characteristic. The ulcers are usually sharply demarcated, but they may become confluent and quite large. They are generally not indurated, and are usually friable and deep. The base may be covered by a grey or yellow necrotic purulent exudate. Tenderness is usually, although not always, present. Painful and tender inguinal adenopathy is present in approximately 50% of patients.
      A bubo is an enlarged inguinal lymph node that is tender and fluctuant. The skin overlying a bubo is often erythematous, quite thin and tense.
   c. See genital ulcer disease section for key characteristics that should be ascertained during the exam.

3. Laboratory
   Since \( \geq 1 \) organism may coexist in a genital ulcer, all patients with a genital ulcer must have a darkfield examination, a stat RPR, TPPA and VDRL if the darkfield is negative, and a PCR assay and serologic test for herpes simplex virus infection.
4. **Diagnostic Criteria**

*All suspected cases of chancroid should be presented to the attending physician.*

Painful ulcers on the genitalia (atypical ulcers may be painless), possibly accompanied by enlarged and tender inguinal lymph nodes. Other causes of genital ulcers (i.e., herpes and syphilis) should be excluded by darkfield, RPR, TPPA, and HSV-PCR assay. Dual disease is possible and may not be ruled out on the day of presentation.

**B. Treatment**

Recommended regimens:

1. **Ceftriaxone** 250 mg IM once OR
2. **Azithromycin** 1 g orally OR
3. **Ciprofloxacin** 500 mg twice daily for 3 days OR
4. **Erythromycin** base 500 mg three times daily for 7 days

*Note: Ceftriaxone and azithromycin offer the advantage of directly observed administration at the clinic. There have been no documented cases of ceftriaxone or azithromycin-resistant H. ducreyi.*

Buboes should be drained to prevent rupture and subsequent fistula formation. This can be performed by the attending physician in the clinic with a 20 gauge, 1 1/2 inch needle and syringe. First, cleanse skin with povidone-iodine or chlorhexidine. To avoid creating a sinus tract, insert needle into unaffected skin adjacent to area of bubo involvement, then direct needle into bubo and aspirate contents.

**C. Follow-up**

Patients with presumed or confirmed chancroid should be re-examined three to seven days after beginning therapy. If treatment is successful, lesions should be less painful within three days and the patient should be feeling better. Partial healing should be evident seven days after therapy begins. The patient should return at weekly intervals until complete healing occurs. The clinical resolution of lymphadenopathy is slower than that of ulcers. A bubo may continue to enlarge even after successful therapy of the ulcer, so careful follow-up of a bubo is necessary and the attending physician should be informed of any buboes. Patients should have a VDRL repeated one week and six weeks after therapy. HIV-testing should be encouraged in any patient with negative or unknown HIV serostatus at the time of the visit and should be repeated three months later. If there is no improvement at the 1-week follow-up, the attending physician should be informed.

**D. Counseling/Education**

Patients should:

1. Be referred to the disease control investigator (DCI) for counseling and interview.
2. Understand how to take prescribed oral medications.
3. Avoid sex for at least 7 days and until the patient and partner(s) have completed therapy.

4. Use condoms to prevent future infections.

5. Be informed that chancroid has been associated with an increased risk of acquiring and transmitting HIV infection.

E. Evaluation of Sex Partners

Partners who had sexual contact with the patient during the 10 days preceding the patient’s onset of symptoms should be treated with an appropriate regimen for *H. ducreyi*.
**Chlamydia Trachomatis**

Chlamydial genital infection is one of the most common STDs in the United States. The single most important risk factor is young age. History of multiple partners, other STDs and past infection with chlamydia are other risk factors. An obligate intracellular bacterium, *Chlamydia trachomatis* (CT) can infect the urethra, cervix, rectum, and less commonly, the pharynx. Infections in both women and men commonly occur without symptoms or signs. Women may report urinary frequency and dysuria, an increase in vaginal discharge, or lower abdominal pain. Men may have symptoms that include urethral itch, dysuria, or a mucoid-to-purulent discharge. Rectal chlamydia infection is usually asymptomatic, but can be associated with symptoms of proctitis, including anorectal pain, discharge or tenesmus. Serious complications related to chlamydial infection include epididymitis in men; endometritis, salpingitis, infertility, ectopic pregnancy, chronic pelvic pain and postpartum infection in women; and conjunctivitis and pneumonia in infants. Chlamydia has a variable incubation period of approximately 7-21 days, but symptom onset may be delayed up to several months. Lymphogranuloma venereum (LGV), an uncommon disease caused by *C. trachomatis* serovars L1, L2 or L3, will be discussed in another section.

A. Diagnosis

1. History
   a. Male patients may complain of dysuria and/or urethral discharge; typically the symptoms tend to be milder than for gonococcal urethritis and many men (> 50%) may be asymptomatic. Rectal chlamydial infections may be asymptomatic, or may resemble gonococcal proctitis with pain, bleeding, tenesmus or mucous discharge.
   b. Female patients may have no symptoms. If symptomatic, women may complain of vaginal discharge, urinary frequency and dysuria, or lower abdominal pain.
   c. For symptoms of complicated infections in men and women, refer to the epididymitis and PID protocols.

2. Examination
   a. Male patients with a urethral chlamydial infection may have a mucoid or purulent urethral discharge usually without inguinal adenopathy, although the exam may be normal.
   b. Male patients with rectal chlamydia may have signs of proctitis, although the exam may be normal.
   c. Female patients may have mucopurulent cervical discharge, cervical erythema, edema, and friability, although the exam may be normal.
3. Laboratory
   a. A nucleic acid amplification test (NAAT) is the preferred screening test for genital chlamydia infection and can be performed from urine, vaginal, urethral or cervical samples. In women, a self-collected or provider-collected vaginal swab is the specimen of choice. A urine specimen can be tested if there is a tampon in place or the patient is unwilling or unable to have a vaginal swab collected. Labs that have met CLIA requirements and validated chlamydia NAAT testing from extragenital sites can perform a chlamydia NAAT test on an oropharyngeal or rectal sample.
   
   b. The Centers for Disease Control (CDC) recommends annual chlamydia screening of sexually active women ≤ 25 years. Pharyngeal screening is recommended for men who report oral receptive sex (i.e., performed fellatio) and rectal screening is recommended for men who report receptive anal sex. Women who have undergone hysterectomy with complete cervical resection need not be screened. See current clinic guidelines for specific recommendations regarding indications for genital, pharyngeal and rectal chlamydia screening.
   
   c. Diagnostic testing should be performed for all individuals with syndromes potentially caused by chlamydia including urethritis or epididymitis in men, and vaginitis, cervicitis, PID, dysuria, pyuria and intermenses bleeding in women.

4. Diagnostic Criteria
   a. Positive test by NAAT of urine, cervical, vaginal, rectal, pharyngeal or urethral specimens or
   
   b. A positive chlamydia culture from the cervix, vagina, rectum, pharynx or urethra.

B. Treatment of Uncomplicated Chlamydia Infections

Recommended regimens:
1. **Azithromycin** 1 g orally in a single dose OR
2. **Doxycycline** 100 mg orally twice a day for 7 days

Alternative regimens:
1. **Erythromycin base** 500 mg orally four times a day for 7 days OR
2. **Erythromycin ethylsuccinate** 800 mg orally four times a day for 7 days OR
3. **Ofloxacin*** 300 mg orally twice a day for 7 days OR
4. **Levofloxacin*** 500 mg orally once daily for 7 days

*Note: Ofloxacin and levofloxacin are more expensive than the other recommended and alternative regimens.
C. Recommended Regimens for Pregnant Women

Doxycycline, ofloxacin and levofloxacin are contraindicated in pregnant women. Clinical experience and preliminary data support that azithromycin is safe and effective in pregnancy.

1. **Azithromycin** 1 g orally in a single dose *OR*
2. **Amoxicillin** 500 mg orally three times a day for 7 days

Alternative regimens for pregnant women:

1. **Erythromycin base** 500 mg orally four times a day for 7 days *OR*
2. **Erythromycin base** 250 mg orally four times a day for 14 days *OR*
3. **Erythromycin ethylsuccinate** 800 mg orally four times a day for 7 days *OR*
4. **Erythromycin ethylsuccinate** 400 mg orally four times a day for 14 days

Erythromycin (base or ethylsuccinate) may have gastrointestinal side effects that discourage patient adherence and therefore lower efficacy.

D. Follow-up

Taken as directed, the recommended antimicrobials are highly effective and post-treatment tests are not necessary for adherent patients. Note that for 3 weeks after completion of therapy, nonculture tests (e.g., NAATs) may detect biologically inactive *C. trachomatis* DNA and may yield false-positive results. If a patient is being evaluated for re-infection or treatment failure and it has been less than 3 weeks since the initial treatment, testing with a nonculture method is not recommended. If there is strong suspicion of nonadherence or of re-infection, repeat empiric treatment should be given.

Test-of-cure at three weeks is only indicated in pregnant women.

All patients diagnosed with chlamydia should have repeat testing at 3 months to rule out re-infection. Re-infection in patients treated for chlamydia is common (10-15%).

All sex partners in the previous 60 days should be treated. Patients can be given treatment to give to partners with appropriate written instructions (see evaluation and treatment of sex partners).

E. Counseling/Education

Patients should:

1. Understand the importance of regular screening (if MSM or aged ≤ 25 years) since chlamydia is often asymptomatic.
2. Understand how to take prescribed oral medications.
3. Return for evaluation if symptoms persist or recur after treatment.
4. Be counseled to notify sex partners and refer them for examination and treatment, or provide them with patient-delivered partner therapy.
5. Avoid sex for ≥ 7 days and until partner(s) have completed therapy.
6. Use condoms to prevent future infections.
7. Be advised to return in 3 months for repeat testing to rule out re-infection.

F. Evaluation and Treatment of Sex Partners

All sex partners within the prior 60 days of patients who have C. trachomatis infection should be examined, tested, and promptly treated with an appropriate regimen. Patient or field-delivered therapy with azithromycin 1 g orally once or doxycycline 100 mg orally twice a day for 7 days may be treatment options for patients or partners unlikely to come in for examination.

G. Special Considerations

All patients with chlamydial infection should have a gonorrhea test, either culture or NAAT; a VDRL, and be assessed for HIV testing. Patients who were called back to the clinic because a screening test was positive do not need a repeat VDRL if the initial VDRL done in the previous week was nonreactive.

H. Reporting

Report confirmed or suspected chlamydia cases to STD Control within 1 week.
Epididymitis

Acute epididymitis can be divided into a sexually transmitted form frequently associated with urethritis and commonly caused by *Chlamydia trachomatis* or *Neisseria gonorrhoeae* (usually occurring in men less than 35 years of age), and a nonsexually transmitted form associated with urinary tract infections and *E. coli* (usually occurring in men over 35 years of age). Acute epididymitis caused by enteric organisms also occurs in men who have insertive anal sex. Symptoms and signs include pain in the scrotum, tenderness, and swelling of the scrotal contents with or without dysuria or urethral discharge. The testis is also often involved, resulting in epididymo-orchitis. Epididymitis must be distinguished from testicular torsion. Torsion generally will occur in younger men, have a sudden onset, and present with the involved testicle lying higher in the scrotum than the uninvolved one and with the epididymis anterior instead of in its normal posterior position. *Torsion is a surgical emergency* so a prompt diagnosis is imperative in any man with scrotal pain and swelling.

A. Diagnosis

1. History
   Patients usually present with unilateral scrotal pain and swelling with or without symptoms of urethritis; fever may be present. The pain and swelling may have a relatively sudden onset or be gradual. Sudden onset of unilateral pain and swelling in a young man should raise the suspicion of testicular torsion.

2. Examination
   Patients with epididymitis will have scrotal swelling, tenderness, and possibly, scrotal redness; the epididymis and often the testicle will be tender and swollen (the swelling usually begins at the tail, i.e., lower pole of the epididymis). Systemic symptoms such as fever may occur. It is very important to document that the epididymis is located posteriorly; an anterior epididymis with an elevated testicle suggests testicular torsion and requires immediate surgical evaluation. A negative cremasteric reflex is also concerning for testicular torsion. Note that epididymitis and testicular torsion can occur simultaneously. All cases of epididymitis should be presented to the attending physician.

3. Laboratory
   Signs of urethritis (urethral discharge, positive urine leukocyte esterase test or ≥ 10 WBCs per high power field (40x) on spun urine) may be present. Urine-based gonorrhea and chlamydia NAAT tests should be done on all patients with epididymitis, as well as other STD screening as clinically indicated.

4. Diagnostic Criteria
   Clinical symptoms and signs of epididymitis with or without signs of urethritis.
B. Treatment

1. Acute epididymitis most likely caused by a sexually transmitted organism:
   a. Ceftriaxone 250 mg IM once AND
   b. Doxycycline 100 mg orally twice daily for 10-14 days

   *When sexually transmitted enteric organisms are also likely (e.g., in men who report insertive anal sex) treatment should include ceftriaxone with a fluoroquinolone (see below).*

2. Acute epididymitis most likely caused by enteric organisms:

   Patients in whom a nonsexually transmitted etiology is suspected should be seen by the attending physician. Optimally, men who have sex with men and heterosexual men > 35 should have a urine culture sent prior to treatment. Urologic consultation may be indicated.

   a. Levofloxacin 500 mg orally once daily for 10 days OR
   b. Ofloxacin 300 mg orally twice a day for 10 days OR
   c. Ciprofloxacin 500 mg orally twice daily for 10 days

3. Supportive treatment including analgesics, antipyretics, bed rest, sitz baths, and scrotal elevation should be instituted until tenderness has resolved.

4. Indications for referral to ER:
   a. Significant fever (> 103.5°F) OR
   b. Significant abdominal tenderness OR
   c. Toxic/acutely ill; extremely uncomfortable OR
   d. Rule out torsion (especially in young men with abrupt onset)

C. Follow-up

Patients should return for repeat evaluation in three days and demonstrate symptomatic improvement. Failure to improve within three days requires re-evaluation of the diagnosis or the therapy and consideration of urologic consultation. Swelling that persists unchanged for more than one month after beginning antimicrobial therapy should be evaluated for testicular cancer or other less common forms of epididymitis such as tuberculous epididymitis.

D. Counseling/Education

Patients with sexually transmitted acute epididymitis should:

1. Be counseled about epididymitis and its relationship to STDs.
2. Understand how to take prescribed oral medications.
3. Return for follow-up in three days.
4. Refer sex partner(s) in past 60 days for examination and treatment.
5. Avoid sex for $\geq 14$ days and until partner(s) are treated.
6. Use condoms to prevent future infections.

E. Evaluation and Treatment of Sex Partners

Sex partners of patients in past 60 days with sexually transmitted acute epididymitis should be evaluated for STDs and be promptly treated for gonococcal and chlamydial infections.
Genital Herpes

Genital herpes is caused by one of two DNA viruses, herpes simplex virus (HSV) type 1 or type 2. It has an incubation period of 3 to 21 days, with an average of 6 days. Genital herpes is characterized by single or multiple vesicles anywhere on the genitalia, perineum or rectum. Vesicles rupture spontaneously to form shallow ulcers that are usually very painful. Because the vesicular phase may be missed, especially in women, ulcers may be the first sign. Lesions heal spontaneously, without scarring. The first occurrence, called “primary infection,” has a mean duration of 12 days. Aseptic meningitis occurs infrequently during the first episode. In subsequent milder occurrences called “recurrent infections” lesions have a mean duration of five to ten days. Most anogenital herpes is caused by HSV-2, but an increasing proportion is attributed to HSV-1. Anogenital HSV-1 infections are less likely to recur; therefore, PCR or cultures of recurrent lesions usually identify HSV-2 virus.

The interval between clinical episodes is called "latency". Although viral shedding is greatest during symptomatic periods, viral shedding occurs intermittently during latency and accounts for asymptomatic transmission. On the basis of serologic studies, the prevalence of HSV-2 infection has been estimated to be approximately 18% of the general sexually active population in the United States. Many persons with HSV anogenital infection have mild or asymptomatic disease and therefore have never been diagnosed and are not aware they have the infection.

Herpes zoster, which is a reactivation of varicella zoster (chickenpox) virus, is usually seen at City Clinic in HIV-infected patients. Early in its course it may mimic HSV, but within hours or days it will become more widespread as it develops its dermatomal (or generalized) pattern. The attending physician should be consulted in possible cases of disseminated zoster.

A. Diagnosis

1. History
   a. Patients may present with an initial episode of small blisters (vesicles) or with tender anogenital ulcers.
   b. Patients with a true primary infection (i.e., no prior history of either HSV-1 or HSV-2) have a more severe presentation, often with bilateral lesions, than those with prior clinical or serologic evidence of HSV-1.
   c. Patients may present with a history of recurrent anogenital lesions that may or may not be painful.
   d. A known history of contact to an infected partner is infrequent.

2. Examination
   a. Intact vesicles may be present and are strongly suggestive of HSV infection.
b. If ulcers and not vesicles are present then a complete evaluation of the anogenital ulcers must be done to distinguish between HSV, syphilis and chancroid (refer to the genital ulcer protocol for details). When herpetic ulcers become confluent, they may present as a large, painful solitary ulcer that may be clinically indistinguishable from chancroid.

In addition, multiple shallow ulcers may appear in patients with primary syphilis particularly in those HIV-infected.

3. Laboratory
a. If vesicles are present, HSV infection is most likely. A swab for HSV PCR to assess the HSV type is useful to confirm the diagnosis and for counseling purposes. A VDRL should be sent if the patient has epidemiologic risk factors for syphilis, but additional evaluation of the ulcer is not necessary.
b. For patients with a genital ulcer of unknown etiology, the full laboratory evaluation including HSV PCR as outlined in the genital ulcer protocol must be done.
c. Type-specific HSV-2 antibody serologic testing should be considered to confirm a clinical diagnosis of herpes or to distinguish between primary and recurrent disease. HSV-2 PCR positive, HSV-2 antibody negative patients have primary infection whereas HSV-2 PCR positive, HSV-2 antibody positive patients may have long-standing infection. Type-specific HSV-2 antibody testing can also be considered in patients with a partner with known genital HSV-2 infection to guide counseling and prevention messages.

4. Diagnostic Criteria
a. The appearance of vesicular lesions anywhere in the anogenital region. The cervix may be involved, particularly in primary outbreaks, and can be erythematous, with shallow ulcers that may appear necrotic and friable.
b. Typical painful genital or anogenital lesion(s) and exclusion of other causes of genital ulcers are consistent with HSV infection.
c. Recovery of HSV by PCR from vesicular fluid or scrapings of cervical, genital, or the anogenital lesions confirms the diagnosis.
d. A positive type-specific antibody blood test signifies prior infection. However, HSV PCR is necessary to confirm that the current symptoms are due to HSV.
B. Treatment

Anti-herpetic agents may be used episodically, to shorten the duration and severity of symptoms, or on an ongoing basis (i.e., suppressive therapy) to decrease frequency of recurrences and to decrease risk of transmission of HSV-2 to susceptible sex partners.

Primary Episodes:
1. **Acyclovir** 400 mg orally three times daily for 7-10 days \( OR \)
2. **Famciclovir** 250 mg orally three times daily for 7-10 days \( OR \)
3. **Valacyclovir** 1 g orally twice daily for 7-10 days

Episodic Recurrent Infection:
To be effective, episodic treatment should be initiated within 1 day of lesions or during the prodrome that may precede an outbreak.
1. **Acyclovir** 400 mg orally three times daily for 5 days \( OR \)
2. **Acyclovir** 800 mg twice daily for 5 days \( OR \)
3. **Acyclovir** 800 mg orally three times daily for 2 days \( OR \)
4. **Famciclovir** 125 mg orally twice daily for 5 days \( OR \)
5. **Valacyclovir** 1 g orally once a day for 5 days \( OR \)
6. **Valacyclovir** 500 mg orally twice daily for 3 days

Daily Suppressive Therapy:
Suppressive therapy reduces the frequency of genital herpes recurrences by 70-80% among patients who have frequent recurrences. Patients who report marked anxiety/depression due to recurrent herpes may benefit from daily suppressive therapy. Suppressive therapy reduces the transmission of HSV infection from infected to uninfected partners.
1. **Acyclovir** 400 mg orally twice daily \( OR \)
2. **Famciclovir** 250 mg orally twice daily \( OR \)
3. **Valacyclovir** 500 mg orally once daily \( OR \)
4. **Valacyclovir** 1 g orally once daily

C. Follow-up

Patients with an established diagnosis of HSV infection do not require follow-up. Patients in whom a presumptive diagnosis has been made during the initial evaluation of a genital ulcer must return in one week for a repeat evaluation including a repeat VDRL (see [genital ulcer protocol](#)).
D. Counseling/Education

Patients should:

1. Understand how to take prescribed oral medications.
2. Keep the lesions clean.
3. Return for evaluation if symptoms persist or recur after treatment.
4. Be counseled about HSV transmission.
5. Avoid sex while lesions are present.
6. Understand that a lesser, but real, risk of transmission exists during asymptomatic periods.
7. Be counseled about the potential benefits of suppressive therapy, including decreased risk of recurrences and decreased risk of transmission of HSV to sex partners.
8. Use condoms to help decrease transmission.
10. Refer sex partner(s) with lesions for evaluation.

11. For women: If pregnant, inform prenatal provider about the history of herpes.
12. Understand that genital herpes (and other genital ulcer diseases) has been associated with an increased risk of HIV transmission.

E. Evaluation of Sex Partners

Sex partners of patients with HSV infection may benefit from counseling and evaluation including HSV serologic testing.

F. Special Considerations

Genital herpes infection during pregnancy:

Acyclovir is pregnancy class B and available data suggest it is safe to use during pregnancy and lactation. Uncomplicated primary or recurrent genital herpes in pregnant women can be treated with oral acyclovir. Herpes can be transmitted to a neonate during delivery. The risk of perinatal transmission during a vaginal delivery in women with primary HSV infection is approximately 20-50%, whereas the risk is < 1% in women with a known history of herpes and vulvar recurrences at term. Because neonatal HSV infection is quite serious, most experts recommend that women with symptomatic HSV infections at the time of delivery should be delivered by cesarean section. Pregnant women with a known history of herpes, a new diagnosis of herpes infection during pregnancy, or with a partner with known or suspected herpes infection should inform their prenatal provider and be advised to discuss prevention of neonatal herpes. Pregnant women should be counseled that primary HSV-1 infection could occur through oral sex with a partner with orolabial herpes (cold sore).
Genital Ulcer Disease

Genital ulcers result from several different sexually transmitted pathogens that may be difficult to distinguish clinically. In addition, more than one pathogen may be present. The most common clinical entities to consider include herpes, syphilis, and chancroid. Other sexually transmitted infections that can present as genital ulcers include lymphogranuloma venereum (Chlamydia trachomatis, serovars L1, L2, L3) discussed in a separate section, and granuloma inguinale (Calymmatobacterium granulomatis); which is rare in the United States and will not be addressed here. This protocol outlines the general evaluation of a patient with a genital ulcer. For specifics regarding the management of a patient with a genital ulcer for which the diagnosis has been established, please refer to the protocol regarding the specific disease entity. The etiologic diagnosis of a genital ulcer by clinical presentation alone, even by experienced clinicians, is unreliable. Therefore, a thorough clinical and laboratory evaluation of all genital ulcers is extremely important.

One exception exists:

HSV lesions typically are small grouped lesions with vesicular/pustular centers and red borders. If vesicles are noted on exam, a diagnosis of HSV can be made. A serum VDRL should still be drawn, but further work up for diagnosis is unnecessary.

A. Diagnosis

1. History

The following characteristics should be ascertained during the history of present illness (HPI) when evaluating a patient with genital ulcer disease (GUD):

a. Duration of ulcer(s).

b. Date of last sexual contact (may help to identify etiologic agent by an obvious incubation period).

c. Painful vs. painless.

d. Was lesion a fluid-filled blister (vesicle) (e.g., HSV).

e. Symptoms such as tingling/itching prior to appearance (e.g., HSV).

f. History of ulcers in the past and similarity of previous ulcers to current ulcer(s); do they occur in same location (e.g., HSV).

g. Any travel history or sex contacts in areas outside of the Bay Area (South East U.S., Africa, Central or South America, Caribbean, and Asia).

h. Use of systemic or topical antimicrobial agents.

i. Use of other topical preparations.

j. Symptoms or signs in partner(s).
k. As always, review the patient's history of previous STDs. If patient has a history of syphilis, note the date and titer of the last VDRL (or RPR). If the patient was treated for syphilis elsewhere, ask the patient if she/he knows the date of the last VDRL (or RPR) and whether or not it was reactive. Always attempt to obtain an accurate history regarding prior syphilis stage and treatment.

2. Examination

Describe the following characteristics of the genital ulcer(s) and lymph nodes.

**Ulcer(s):**

a. Number
b. Location
c. Shape: oval, round, serpiginous, rectangular
d. Size
e. Nature of the edges: raised, rolled, flat, undermined
f. Base of ulcer: purulent, clean
g. Approximate depth of largest ulcer
h. Tenderness
i. Induration
j. Friability
k. Circumcision status

**Lymph node(s):**

a. Number and location of enlarged nodes
b. Size
c. Tenderness
d. Presence of bubo (if bubo is present, check for fluctuance – the attending physician should see any patients with a fluctuant bubo and drain it)

3. Laboratory

a. Darkfield examination – If the initial darkfield examination is negative, it should be repeated (refer to syphilis protocol regarding technique).
b. Swab for HSV PCR.
c. Stat RPR, VDRL and clinician-ordered TPPA (Per lab protocol, the TPPA is not run if the VDRL is negative. The TPPA may be positive before the VDRL, so it is important to ask the lab to run the TPPA regardless of the VDRL result in suspected early cases).
d. HSV-2 type specific serology.
4. Diagnostic Criteria
   a. If the darkfield is positive then a diagnosis of primary syphilis can be made.
   b. If the stat RPR is reactive in the absence of a known serofast status, make a presumptive diagnosis of primary syphilis (refer to syphilis protocol).
   c. If the stat RPR is negative, make a presumptive diagnosis of either HSV or chancroid and treat appropriately. In certain cases a clinician might still consider a primary syphilis diagnosis even with negative tests. In such cases it would be appropriate to treat for syphilis and HSV. If uncertainty remains, the attending physician should be consulted.

B. Treatment
   1. In patients in whom syphilis is diagnosed or there is a high likelihood of syphilis, treat for primary syphilis (see syphilis protocol).
   2. In pregnant women in whom syphilis cannot be ruled out, discuss with attending physician and consult syphilis treatment protocols. Penicillin is the only appropriate therapy for syphilis in pregnancy.
   3. If herpes is suspected, treat for herpes as either initial or recent episode (see HSV protocol).

C. Follow-up
   1. If herpes diagnosis is certain, no follow-up is necessary (refer to HSV protocol). Other patients with nonvesicular genital ulcers should return in one week.
   2. At follow-up confirm medication adherence. If oral medication was prescribed, note any symptomatic improvement, verify that partner(s) have been treated, ask about a Jarisch-Herxheimer reaction (if the patient received an antimicrobial agent that has any activity against T. pallidum, regardless of whether or not the patient was presumptively diagnosed with syphilis), note any changes in the ulcer(s), and repeat the stat RPR and VDRL (if these tests were negative at initial visit). If the ulcer is not completely healed, schedule a follow-up visit in one week. Continue to follow the patient until the lesion has healed completely.

D. Counseling/Education
   1. Explain to the patient how to take the prescribed medication.
   2. Explain the follow-up schedule.
   3. Discuss with patient the need to evaluate sex partner(s) (see section E).
   4. Advise avoiding sex for at least 7 days until patient and partner(s) have been fully treated.
   5. Make certain that patient understands HIV infection is associated with genital ulcer disease.
6. Offer HIV-testing and repeat testing at 3 months.

7. Use condoms to prevent future infections.

E. Evaluation of Sex Partners

Sex partners of patients with genital ulcer disease must be evaluated. If a specific diagnosis has been made, refer to the appropriate protocol regarding which partners need to be referred. For genital ulcer disease of unknown etiology, partners within the past three months (90 days) should be evaluated. The disease control investigator (DCI) can make a better judgment on the disposition of partners when all the tests are completed.

F. Reporting

Report suspected or confirmed syphilis cases to STD Control within 24 hours.
Genital Warts

Genital warts, or *condyloma acuminata*, are caused by human papillomavirus (HPV), the most common sexually transmitted infection in the US. 90% of genital warts are caused by HPV strains 6 or 11. HPV has a variable incubation period, which averages two to six months, but may be much longer. Patients who develop warts due to HPV may have single or multiple soft, fleshy growths anywhere around the anogenital region, which are usually painless, but can be painful, friable, or pruritic depending on the lesion size and/or location. The warts may have a flat morphology, which can be very difficult to detect. Clinically, genital warts should be distinguished from other papular and warty lesions including pearly penile papules, skin tags, *condyloma lata* of secondary syphilis and molluscum contagiosum. Biopsy is necessary for pigmented or atypical external warts to rule out malignancy.

A. Diagnosis

1. History
   a. Patients may present with painless genital “bumps” or lesions that may have been present for many weeks; continued growth of the long-standing lesions is not uncommon. Women with vulvar warts and individuals with perianal or rectal warts may have itching.
   b. Many patients present with recurrent warts.
   c. Known exposure to a partner with genital warts is infrequent. Exposure to a partner with a history of warts does not necessarily mean that the patient will develop visible warts in the future.

2. Examination
   a. Warts may be found on any part of the genitalia, perianal area, in the anal canal and rectum, and in the inguinal area.
   b. They usually have a characteristic raised or flat fleshy appearance and range between 1-5 mm although warts that have been present for a long time may be larger and keratotic. Grouped warts may attain a size of several centimeters.
   c. Care must be used not to mistake *condyloma lata*, a flat skin manifestation of secondary syphilis, for *condyloma acuminata*. Pearly penile papules and Tyson’s glands in men, as well as vaginal papillae in women, may also mimic warts.

3. Laboratory
   a. HPV DNA typing has no role in the routine clinical evaluation of genital warts.
   b. If there is any clinical suspicion for syphilis, obtain a specimen from the lesion for darkfield microscopy and perform a stat RPR and VDRL.
   c. Obtain other STD screening as indicated.
4. Diagnostic Criteria
   a. Diagnosis is clinical and based on visual inspection of lesions.
   b. Any atypical or deeply pigmented lesions on the genitals, perianal area, or rectum should be referred for biopsy.
   c. Lesions that do not respond to standard therapy or worsen during therapy should be referred for biopsy.
   d. Possible condyloma lata should be evaluated by darkfield microscopy, stat RPR and VDRL.

B. Treatment

Warts are treated for cosmetic purposes and symptom management (e.g., bleeding, discomfort with sex), and warts that are left untreated may remain unchanged, grow in number and size, or regress spontaneously. While patients may experience psychological morbidity from the presence of genital warts, there are no clear medical indications supporting routine therapy. Treatment of genital warts reduces the amount of HPV viral DNA present, but whether this reduces future transmission is unclear. There is no evidence that the presence of anogenital warts or their treatment is associated with the development of cervical or anal cancer.

There is no clear evidence that one treatment option is superior to the others. Treatment is divided into provider vs. patient-administered therapies, and should be chosen based on patient preference, availability of resources, and provider experience.

Provider-Administered Therapies:

1. Liquid nitrogen (LN2) can be applied topically with a swab. The swab should be left on the wart(s) for a slow 10 second count, the wart should be allowed to thaw, and then the treatment should be repeated for up to three cycles. The freeze/thaw cycle results in cell cytolysis which destroys the wart. Side effects include discomfort up to 15 minutes after the procedure, erythema and possible blistering at treatment site. Multiple treatments at three-week intervals are usually required.

2. Podophyllin 25% can be applied topically with a swab. It is a plant extract that inhibits cell division. The podophyllin must dry completely so that normal skin does not come into contact with the medication, and patients must be instructed to wash the podophyllin off four hours after it has been applied. Podophyllin should not be applied to areas that are occluded such as under the foreskin or to mucous membranes. Podophyllin has the potential to be neurotoxic, oncogenic, teratogenic and mutagenic and so should not be used in pregnancy or to treat extensive warts with a large surface area. Side effects may include erythema, ulceration or pain at treatment site within 48 hours after application.

3. Trichloroacetic acid (TCA) in alcohol is useful for warts on mucous membranes. It can be applied with the end of a cotton swab. Extreme care must be used when applying it to prevent burns. Avoid all contact with normal skin around wart. TCA causes a
chemical coagulation of cell proteins, which destroys the wart. Side effects include pain, erythema, burning, and ulceration.

4. **Electrocautery, surgical excision.** For severe disease – requires referral to appropriate specialist.

**Patient-Applied Therapies:**

1. **Podofilox 0.5%** solution (3.5 ml) or gel (3.5 g) is applied with a cotton swab or finger to visible warts twice daily for three consecutive days followed by four days without treatment. This cycle can be repeated as necessary for a total of four times. Similar to podophyllin, podofilox prevents cell division. However, it is more stable than podophyllin and therefore safe for patient administration. Side effects may include erythema, swelling, and erosions at the treatment site. Podofilox is available only by prescription ($102/3.5 ml solution at Walgreens) and is covered by Family PACT. **Should not be used in pregnancy.**

2. **Imiquimod 5%** cream (distributed in small packets) to be applied with fingertip at bedtime three times a week for up to sixteen weeks. Wash off with a mild soap and water 6-10 hours after each application. Imiquimod does not have direct antiviral properties, but stimulates the local immune response. Some studies indicate it has a lower recurrence rate than other wart treatment. Side effects may include local erythema and ulceration. Imiquimod is available only by prescription ($182/one month treatment at Walgreens) and is covered by Family PACT. **Should not be used in pregnancy.**

3. **Sinecatechins 15%** ointment is applied as a 0.5 cm strand of ointment to each wart three times daily using a finger to ensure coverage with a thin layer of ointment until complete clearance of warts. Do not wash off. Avoid sexual contact, may also weaken latex barriers. Side effects can include erythema, pruritis/burning, pain, ulceration, edema, induration and vesicular rash. Sinecatechins are a green tea extract with an active product (catechin) that inhibits specific HPV gene products.

If internal anal warts are noted on routine visual anal inspection and patient requests treatment referrals can be made (for San Francisco residents) to the general surgery clinic at San Francisco General Hospital (SFGH). Referrals should be placed through e-referral or by calling (415) 206-8673 or (415) 206-8271. If extensive vaginal warts are noted on exam and patient requests treatment, referrals can be made (for San Francisco residents) to the Women’s Clinic, SFGH where the patient will be evaluated and possibly referred for surgery.

**C. Follow-up**

Patients being treated with LN2, TCA and podophyllin 25% should return at three-week intervals for re-treatment until lesions have disappeared and the skin is healed. Scabbed lesions are not suitable for treatment. Patients being treated with imiquimod or podofilox should follow-up for severe side effects or treatment failure.
D. Counseling/Education

Patients should:

1. Be counseled about external genital warts and HPV and be told that:
   a. Genital HPV infection is very common. Most sexually active adults will get HPV at some point, but in most cases it is asymptomatic and clears spontaneously.
   b. The types of HPV that cause genital warts are different from the types that can cause anogenital cancers.
   c. A diagnosis of HPV in one sex partner is not indicative of sexual infidelity in the other partner.

2. Return for provider-applied treatment every three weeks until lesions have disappeared, if needed/desired.

3. Understand that after treatment of visible warts, the potential for transmission may persist and that recurrences are very common.

4. Know that condom use is associated with faster rates of regression of cervical intraepithelial neoplasia, penile warts in men, and the clearance of cervical HPV infection in women.

5. Know that consistent condom use has been shown to decrease the acquisition of HPV and incidence of external genital warts in men and reduce HPV acquisition in women, but that condoms are not fully protective because HPV can infect areas not covered by a condom.

6. Be informed that women should get regular Pap smears as recommended, regardless of genital wart history, to screen for precancerous lesions associated with HPV.

E. Evaluation of Sex Partners

Current sex partners of patients with HPV infection can be examined for warts and, if present, may be treated with an appropriate regimen for warts. Acetoacetic acid (vinegar) should not be used to detect genital warts, as the whitening that occurs is very nonspecific. HPV testing is not indicated. Partners should also be screened for other STDs as indicated and female partners have a Pap smear if indicated by screening guidelines.

F. Special Considerations

Genital warts in pregnancy:

Podophyllin, podofilox, imiquimod and sinectechins are not approved for use during pregnancy. Pregnant women can be treated for warts with LN2 or TCA. Although genital warts may be transmitted to infants during delivery, the risk is thought to be quite low and cesarean delivery is not indicated in pregnant women with warts.
G. Colposcopy

Colposcopy services are available to eligible City Clinic patients through the family planning clinic. Consult the family planning clinicians for further details. Patients with visible cervical warts and squamous intraepithelial lesions (SIL) on Pap smear should be referred for colposcopic evaluation. Consult the HPV screening protocol for further details.
Gonorrhea

The Gram-negative bacterium *Neisseria gonorrhoeae* (GC) can infect the urethra, cervix, rectum, pharynx, and in rare cases may become disseminated (bloodborne). Infections caused by antimicrobial-resistant *N. gonorrhoeae* are clinically indistinguishable from those caused by antimicrobial-susceptible strains. Sexually transmitted infections caused by GC may be symptomatic or asymptomatic. Urethral GC in men is usually symptomatic and is characterized by the acute onset of purulent urethral discharge, often accompanied by pain with urination that begins approximately 1-10 days (average 2-5 days) after exposure. Women with cervicovaginal GC may have abnormal vaginal discharge, abnormal bleeding, pelvic pain or pain with urination, but as many as 50-70% of women with GC are asymptomatic. In addition, the majority of gonococcal infections in the rectum and pharynx are asymptomatic. Serious complications of gonococcal infection include pelvic inflammatory disease with subsequent infertility or risk of ectopic pregnancy in women, and epididymitis and urethral stricture in men. Disseminated gonococcal infection (DGI) may occur in either sex, but is not common. Untreated infection in pregnancy may result in premature delivery, including stillbirth. Newborns of women with untreated infection are at risk for gonococcal eye infection (*ophthalmia neonatorum*), scalp abscess at the site of fetal monitors, and disseminated infections.

A. Diagnosis

1. History

Symptoms will vary depending on the site of infection. GC infections in both men and women can be asymptomatic. Women with a positive GC test from a cervical, vaginal or urine specimen who have suggestive symptoms should be evaluated for pelvic inflammatory disease.

   a. Cervix – None or patients may present with vaginal discharge, lower abdominal pain, pain with intercourse, post coital bleeding or pain with urination.

   b. Urethra – None or pain with urination, discharge.

   c. Rectum – None or discharge (usually described as mucous on stools), tenesmus, perianal itching, rectal pain and possibly rectal bleeding.

   d. Pharynx – Usually asymptomatic, or patients may complain of a sore throat or pain with swallowing.

   e. DGI – see section J below.
2. Examination

Signs of infection may or may not be present.

a. Cervix – mucopurulent or frankly purulent cervical discharge, redness, and friablity.

b. Urethra – purulent discharge, possibly phimosis and swelling, tender inguinal adenopathy.

c. Rectum – purulent exudate (clinicians must use anoscope for proper rectal examination).

d. Pharynx – rarely redness, exudate (most have no signs of infection and when present are nonspecific).

e. DGI – see section H below.

3. Laboratory

a. A Gram stain of the discharge should be done and the discharge should be streaked on a modified Thayer-Martin (MTM) plate for GC culture.

b. A nucleic acid amplification test (NAAT) is the preferred screening test for genital gonorrhea infection and can be performed from urine, vaginal, urethral or cervical samples. In women, a self-collected or provider-collected vaginal swab is the specimen of choice. A urine specimen can be tested if there is a tampon in place or the patient is unwilling or unable to have a vaginal swab collected. Labs that have met CLIA requirements and validated gonorrhea NAAT testing from extragenital sites can perform a gonorrhea NAAT test on an oropharyngeal or rectal sample. Pharyngeal screening is recommended for men who report oral receptive sex (i.e., performed fellatio) and rectal screening is recommended for men who report receptive anal sex. See current clinic guidelines for specific recommendations regarding indications for pharyngeal and rectal chlamydia screening.

4. Diagnostic Criteria

a. Isolation of *N. gonorrhoeae* from sites of exposure (e.g., urethra, pharynx, endocervix, rectum) by culture or nucleic acid amplification test (NAAT).

b. Gram stain should be performed to evaluate all discharges. The sensitivity of Gram stain of urethral discharge in men is near 95%. The endocervical Gram stain has a sensitivity of approximately 50%, and a specificity of 95%. In persons attending City Clinic who have a Gram stain showing Gram-negative intracellular diplococci, there is a high positive predictive value and such persons should be treated for GC. Gram stain of the oropharynx is not advised because of the plethora of other pharyngeal bacteria of the *Neisseria* family that will stain similarly to *N. gonorrhoeae*. 
B. **Treatment of Uncomplicated Cervicovaginal, Urethral or Rectal Infection**

Due to the threat of future emergence of cephalosporin resistance, patients with GC or suspected GC should receive *dual therapy* with two antibiotics, administered at the same time, regardless of chlamydia test result. Because of widespread resistance throughout the United States and the world, fluoroquinolones are no longer recommended for the treatment of GC.

Recommended regimens:

1. **Ceftriaxone** 250 mg IM in a single dose once and **azithromycin** 1 g orally once OR
2. **Ceftriaxone** 250 mg IM in a single dose once and **doxycycline** 100 mg orally twice daily for 7 days

*If Ceftriaxone is not an option:*

3. **Cefixime** 400 mg orally once and **azithromycin** 1 g orally once OR
4. **Cefixime** 400 mg orally once and **doxycycline** 100 mg orally twice daily for 7 days

C. **Treatment of Uncomplicated Pharyngeal Infection**

1. **Ceftriaxone** 250 mg IM in a single dose once and **azithromycin** 1 g orally once OR
2. **Ceftriaxone** 250 mg IM in a single dose once and **doxycycline** 100 mg orally twice daily for 7 days

*Note: Oral antibiotics alone are not recommended for pharyngeal GC infection due to poor antibiotic penetration into the oropharynx.*

D. **Alternative Regimen for Patients with Allergy**

Should be reserved for individuals with severe penicillin or cephalosporin allergy (defined as hives, angioedema, anaphylaxis or Stevens Johnson Syndrome/toxic epidermal necrolysis):

**Azithromycin** 2 g orally once (warn patients about gastrointestinal side effects)

E. **Treatment of DGI**

See section J below and call for expert consultation: (415) 487-5595.

F. **Follow-up**

Symptoms that persist after treatment are more likely due to re-infection rather than treatment failure. Patients should be questioned regarding the possibility of re-infection, including any new sex partners or repeated exposure to an untreated partner.
If the patient does not give a history of interval sex, and treatment failure is suspected, obtain a culture for \textit{N. gonorrhoeae} and write "Rx failure" on the lab slip. Consult with the attending physician for treatment guidelines in the case of suspected treatment failure.

1. Test-of-cure 3 weeks after treatment is only indicated for pregnant women.
2. All patients should return for repeat testing for GC \textbf{three months} after treatment.

\textbf{G. Counseling/Education}

Patients should:

1. Be counseled to notify sex partners and offered patient-delivered partner therapy.
2. Understand how to take prescribed oral medications.
3. Return for evaluation if symptoms persist or recur after treatment.
4. Avoid sex for $\geq 7$ days and until partner(s) have completed therapy.
5. Use condoms to prevent future infections.
6. Be advised to return in 3 months for repeat testing to rule out re-infection.

\textbf{H. Evaluation and Treatment of Sex Partners}

All sex partners in the prior 60 days of patients who have been diagnosed with \textit{N. gonorrhoeae} infection should be examined, tested, and promptly treated for \textit{N. gonorrhoeae} and \textit{C. trachomatis}.

Patient-delivered partner therapy (PDPT) with cefixime 400 mg orally once and azithromycin 1 g orally once should be offered to all patients with GC. Partners should be informed that it is optimal for them to come to clinic or their primary medical doctor in order to receive IM ceftriaxone and azithromycin, but that if this is not feasible, they should take the patient-delivered partner therapy instead. Men should be strongly encouraged to also refer female partners for clinician evaluation.

\textbf{I. Special Considerations}

All patients with GC should have a chlamydia test, a VDRL, and be assessed for HIV testing. Patients who were called back to the clinic because a screening test was positive do not need a repeat VDRL if the initial VDRL done in the previous week was nonreactive.

\textbf{J. Disseminated Gonococcal Infections (DGI)}

Although uncommon, \textit{N. gonorrhoeae} can cause bacteremia and systemic infection including arthritis, meningitis, endocarditis, tenosynovitis and diffuse skin eruption characterized by small pustules. DGI should be considered if a patient has fever, pustular skin lesions, erythema and swelling of a joint (often a single joint), and/or tenosynovitis – redness, swollen or tender tendon sheath(s). Patients with suspected DGI should be evaluated by the attending physician.
Recommended therapy for DGI includes 7 days of high dose anti-gonococcal antibiotics. Consider hospitalization for severe disease. Patients should be treated with ceftriaxone 1 g IM or IV every 24 hours and should be evaluated daily to assess for clinical improvement. This regimen should be continued for 24-48 hours after clinical improvement begins, at which time therapy can be switched to cefixime 400 mg orally twice daily to complete the remainder of the seven-day course.

K. Reporting

Report confirmed or suspected gonorrhea cases to STD Control within 1 week.
Hepatitis A and B

Vaccine Preventable STDs

One of the most effective methods to prevent the acquisition of STDs is pre-exposure immunization. Currently licensed vaccines for the prevention of STDs include those for hepatitis A, hepatitis B and HPV. City Clinic is currently offering the hepatitis A, hepatitis B and HPV vaccine series to eligible patients. Refer to current clinic guidelines regarding vaccine availability.

Hepatitis A

Hepatitis A is caused by infection with the hepatitis A virus (HAV). HAV replicates in the liver and is shed in the feces. Virus in the stool is found in the highest concentrations from two weeks before to one week after the onset of clinical illness. Virus is also present in serum and saliva during this period, although in much lower concentrations than in feces. The most common mode of HAV transmission is fecal-oral: either person-to-person transmission between household contacts or sex partners, or by contaminated food or water. Transmission between sex partners occurs because of oral-anal contact. Because viremia occurs in acute infection, bloodborne HAV transmission can occur, but it has been reported infrequently. Although HAV is present in low concentrations in the saliva of infected persons, saliva has not been demonstrated to play a role in transmission.

Up to 20% of persons with acute hepatitis A require hospitalization and 0.1% will develop fulminant liver failure. The overall mortality rate for acute hepatitis A is 0.3%, but is higher (1.8%) in adults over 49 years and one study suggested among those with chronic hepatitis C mortality may be as high as 40%. HAV infection is not associated with chronic liver disease.

Outbreaks of hepatitis A among men who have sex with men have been reported in urban areas, both in the U.S. and abroad. The prevalence of HAV infection among men who have sex with men has been found to be significantly higher than that among heterosexual men (30% vs. 12%) in one study. A case-control study of men who have sex with men with acute hepatitis A conducted in New York City found cases to have more anonymous sex partners and to be more likely to have engaged in group sex than controls; oral-anal intercourse (oral role) and digital-rectal intercourse (digital role) were associated with infection.

A. Pre-exposure Prophylaxis

Pre-exposure protection against HAV infection by immunization with hepatitis A vaccine is indicated for the following risk groups:

1. Sexually active men who have sex with men
2. Persons who have used injection drugs in the past year
3. Persons with chronic liver disease, including chronic hepatitis C (HCV)
4. Travelers to endemic areas (refer these clients to the SF Department of Public Health Adult Immunization and Travel Clinic at 101 Grove)

B. Dosing

Adults – **Havrix** (1440 EL.U) or **Vaqta** (50 units) hepatitis A vaccine IM at 0 and 6 months. No need to repeat or restart if doses are late.

C. Post-exposure Prophylaxis

Nonimmune patients exposed to a person with acute HAV (household, sexual or IDU contact) should receive HAV immune globulin. This is available through Tom Waddell Clinic or the Adult Immunization Clinic. They should also begin the HAV vaccination series (at a separate injection site) as outlined above.

**Hepatitis B**

Sexual transmission accounts for an estimated 30-60% of the estimated 75,000 new HBV infections that occur annually in the United States. Of persons infected as adults, 6-10% develop chronic HBV infection. These persons are capable of transmitting HBV to others and are at risk for developing chronic liver disease and liver cancer. HBV infection leads to an estimated 5,000 deaths annually in the United States from cirrhosis of the liver and primary liver cancer.

A. Pre-exposure Prophylaxis

With the implementation of routine infant hepatitis B immunization in 1991 and the wide scale implementation of programs to vaccinate adolescents, immunization of high-risk adults has become a high priority in the strategy to eliminate HBV transmission in the United States. All persons attending STD clinics, or persons known to be at high-risk for acquiring HBV infection (e.g., persons with multiple sex partners, sex partners of persons with chronic HBV infection, or injection-drug users) should be advised of their risk for HBV infection and offered hepatitis B immunization.

B. Screening for Antibody or Immunizing without Screening

The prevalence of past HBV infection among sexually active men who have sex with men and among injecting-drug users is high. Although serologic screening for evidence of past infection before vaccinating adults ≥ 30 years of age may be cost-effective in a primary care setting, at City Clinic we vaccinate patients who are unsure of their HBV status without screening for antibodies. At the current cost of vaccine, it is not cost-effective to perform pre-vaccination testing on adolescents or young adults. Vaccination of a person who is already immune is not harmful.

C. Dosing

Adults/Adolescents – **Recombivax HB** (10 mcg) or **Engerix-B** (20 mcg) hepatitis B (IM) at 0, 1, and 4 months. No need to restart or repeat doses if missed or late.
D. Post-exposure Prophylaxis

**Exposure to Persons with Acute Hepatitis B**

Sexual contacts: Persons with acute HBV infection are potentially infectious to sexual contacts. Passive immunization with hepatitis B immune globulin (HBIG) has been shown to prevent 75% of these infections. Sexual contacts of persons with acute hepatitis B should receive HBIG and begin the hepatitis B vaccine series as soon as possible (preferably within 24 hours of exposure). Testing of sexual partners for susceptibility to HBV infection (hepatitis B surface antibody) can be considered if it does not delay treatment beyond 14 days.

Nonimmune persons recently exposed to hepatitis B can receive HBIG at Tom Waddell Clinic, if available.

**Exposure to Persons with Chronic HBV Infection**

Sexual and nonsexual household contacts: Hepatitis B vaccination without the use of HBIG is highly effective in preventing HBV infection in household and sexual contacts of persons with chronic HBV infection. All such contacts should be vaccinated.

**Exposure to Persons with Unknown HBsAg Status**

Unvaccinated persons who have a discrete, identifiable exposure to blood or body fluids from a source with unknown HBsAg status should receive the hepatitis B vaccine series as soon as possible after exposure (preferably within 24 hours).

E. Special Considerations

Pregnancy:

Pregnancy is not a contraindication to hepatitis B vaccine or HBIG administration.
Human Papillomavirus (HPV): Prevention and Screening

There are more than 100 types of HPV, over 40 of which can infect the genital area. Oncogenic, or high-risk HPV types (e.g., HPV types 16 and 18) cause cervical cancer, while nononcogenic, or low-risk HPV types cause genital warts and recurrent respiratory papillomatosis. Oncogenic HPV types are also associated with anal, penile, vulvar and vaginal cancer, as well as some oropharyngeal cancers.

Two HPV vaccines are available in the United States: a bivalent vaccine (Cervarix) containing HPV types 16 and 18 and a quadrivalent vaccine (Gardasil) containing HPV types 6, 11, 16 and 18. Cervarix is indicated for the prevention of cervical cancer in women. Gardasil is indicated for the prevention of cervical cancer, anal cancer, and genital warts and is approved for use in males and females aged 9-26 years. The benefit of the vaccine is greatest if administered prior to the onset of sexual activity. The quadrivalent HPV vaccine is available at City Clinic for eligible males and females aged < 19 through the Vaccines for Children (VFC) program. Refer to current clinic guidelines for HPV vaccine availability for males and females aged 19-26. Women who have received HPV vaccine should continue routine cervical screening (i.e., with Pap smears) because 30% of cervical cancers are caused by HPV-types other than 16 or 18.

The Papanicolaou (Pap) smear is an effective and relatively low-cost screening test for invasive cervical cancer and squamous intraepithelial lesions (SIL), the precursors of cervical cancer. Women attending STD clinics are at increased risk for cervical cancer. Prevalence studies have found that precursor lesions for cervical cancer occur about five times more commonly among women attending STD clinics than among women attending family planning clinics. Moreover, studies conducted among women attending STD clinics indicate that many women do not understand the importance of Pap smears and almost half of women who have had a pelvic examination erroneously believe they had a Pap smear when they actually have not.

Because MSM, particularly HIV-infected MSM, are at increased risk for anal HPV infection and anal cancer, some clinics offer anal Pap smear screening to men at high-risk for this infection. However data are limited on the natural history of anal intraepithelial neoplasia (AIN) and the safety and response to the treatment of AIN, and the personal and public health benefit of anal Pap screening is unknown. Clinics offering anal Pap smears should have access to high resolution anoscopy (HRA) to follow-up abnormal cytologic findings identified on anal Pap screening.

Cervical Cancer Screening

A. Recommendations

The American College of Obstetricians and Gynecologists (ACOG) screening guidelines recommend the following:

1. Aged < 21: Cervical cancer screening should be avoided.

2. Ages 21 to 29 years: Pap smear every 2 years.
3. Ages 30 years and older: If three consecutive negative Pap smears and no history of cervical intraepithelial neoplasia-2 (CIN) or CIN 3, the interval between Pap smears may be extended to every 3 years.

At the time of a pelvic examination for STD screening, the health care provider should inquire about the result of her last Pap smear and should discuss the following information with the patient:

1. Purpose and importance of a Pap smear.
2. Whether a Pap smear was obtained during the clinic visit.
3. Offer to perform a Pap smear at the visit if it has been more than 2-3 years (depending on her age) since last done, or if the patient has missed a follow-up for a previously abnormal Pap.

Women “out of the care loop”, psychiatric patients, and homeless women should have a Pap done on an STD visit while there is an opportunity to do it. It is important not to miss opportunities to perform Pap smears in these high-risk patients when they present to STD clinic.

B. Other Management Considerations

Other considerations in performing Pap smears are the following:

1. The Pap smear is not an effective screening test for STDs. If indicated, other diagnostic testing for STDs should be performed.
2. The presence of a mucopurulent discharge should not delay the Pap smear. A Pap smear can be obtained after gentle removal of the discharge with a saline-soaked cotton swab (Scopette).
3. Liquid-based cytology can be performed during menstruation. Conventional cytology Pap test should be postponed if a woman is menstruating.
4. A woman with external genital warts does not need to have Pap smears more frequently than a woman without warts, unless otherwise indicated.
5. Women who have had hysterectomies do not require annual Pap smears unless the hysterectomy was related to cervical cancer or its precursor lesions. In this case, women should be advised to continue follow-up with the physician(s) involved in their care at that time.

C. Colposcopy

City Clinic provides colposcopy to women who are in the Family Planning Program (Medi-Cal Family PACT). Women needing colposcopy who are not in the Family Planning Program or who do not have Medi-Cal should be referred to the SFGH Dysplasia Clinic. These women should be evaluated with one of the clinicians in the Family Planning Program.
D. **Special Considerations**

Pregnancy:

Women who are pregnant should have a Pap smear as part of routine prenatal care. A cytobrush may be used for obtaining Pap smears in pregnant women, although care should be taken not to disrupt the mucous plug.
**Lymphogranuloma Venereum**

Lymphogranuloma venereum (LGV) is a systemic sexually transmitted disease caused by serovars (sub-types) L1, L2, or L3 of *Chlamydia trachomatis*. It presents in a variety of clinical syndromes, most commonly characterized by proctitis/proctocolitis or the bubonic form with tender inguinal lymphadenopathy.

**A. Diagnosis**

1. **History**

   The clinical presentation of LGV can vary and the incubation period is 3 to 12 days or longer. Primary LGV infection may present as a small genital papule that may ulcerate, though the ulcer is generally painless and heals very rapidly. Because of the transient nature of the ulcer, patients are rarely identified at this stage. Untreated infection extends to lymph nodes and presents as tender lymphadenopathy with or without subsequent bubo (inflamed, purulent lymph node) formation. The average time to development of this stage is 10 to 30 days after infection, but it may be delayed for as long as 4 to 6 months. The bubo is unilateral in two-thirds of cases and may enlarge to the point of rupture with the development of sinus tracts that drain for weeks or months before healing.

   The proctitis syndrome, the presentation most commonly seen in MSM, is characterized by rectal discharge, bleeding, ulcerative proctitis and painful inflammation progressing to proctocolitis. LGV proctitis has been associated with HIV acquisition and sexually transmitted hepatitis C virus (HCV) infection in MSM. Rare complications of LGV include chronic inflammation with development of genital elephantiasis, fistulas, and rectal strictures, sometimes requiring surgical intervention.

   LGV should be considered in MSM who present with rectal complaints or a tender lymphadenopathy syndrome.

2. **Examination**

   a. Patients may present with a papule, ulcer, erosion or small herpetiform lesion on the genitals. The primary lesion of LGV is usually asymptomatic and heals rapidly on its own, so patients rarely present at this stage of infection.

   b. Painful, fluctuant inguinal lymphadenopathy, usually unilateral, may be present.

   c. MSM typically present with bloody, purulent or ulcerative proctitis, though rectal LGV infection can be asymptomatic.

   d. MSM with chronic, untreated LGV may present with perirectal abscesses, anal fistulas or rectal strictures.
3. Laboratory and Diagnostic Criteria

Currently, there is no standardized test for the diagnosis of LGV and the diagnosis should be considered based on a compatible clinical presentation. In MSM with bloody proctitis or tender inguinal lymphadenopathy, providers should collect specimens to test for chlamydia (rectal swab and urine sample for chlamydia NAAT) and presumptive treatment for LGV should be initiated. NAATs are very sensitive for chlamydia but do not distinguish between LGV and non-LGV serovars. The chlamydia culture, though not as sensitive as the NAAT, may be DNA sequenced to identify LGV serovars; however, chlamydia culture is not widely available. LGV serology is not helpful for diagnosis. Consult the attending physician for any cases of suspected LGV.

B. Treatment

1. **Doxycycline** 100 mg orally twice daily for 21 days

   Alternate:

   1. **Azithromycin** 1 g orally qweek x 3 weeks may be effective, but clinical data are limited, 
   OR

   2. **Erythromycin** 500 mg orally four times daily for 21 days

C. Follow-up

Patients should return to clinic if symptoms persist after treatment. All patients with a positive chlamydia test should return to clinic in 3 months for repeat testing.

Patients should also be tested for HIV, gonorrhea, syphilis (VDRL or RPR) and other STDs as indicated.

D. Counseling/Education

Patients should:

1. Understand that LGV is currently treated presumptively as a clinical syndrome in MSM.
2. Understand how to take prescribed oral medications.
3. Return for evaluation if symptoms persist or recur after treatment.
4. Refer sex partner(s) for examination and treatment. Patients should be offered patient-delivered partner therapy (PDPT) if their partners are unlikely to present to clinic for examination and treatment.
5. Avoid sex until both they and their partner(s) are fully treated.
6. Use condoms to prevent future infections.
7. All patients should return in 3 months for repeat testing for chlamydia.
E. Evaluation and Treatment of Sex Partners

Optimum treatment for partners of patients with LGV is not known; at City Clinic, partners are treated with standard regimens for uncomplicated chlamydia infection:

1. **Doxycycline** 100 mg twice daily x 7 days *OR*

2. **Azithromycin** 1 g orally once

Partners should be encouraged to come to clinic for evaluation, particularly if they develop symptoms of proctitis (rectal discharge, irritation) or inguinal lymphadenopathy.
Molluscum Contagiosum

Molluscum contagiosum, caused by a poxvirus, is characterized by smooth, spherical papules with umbilicated centers that emerge on the skin of the genitalia, the thighs, the lower abdominal wall, and occasionally, the face. It has an average incubation period of two to three months (range one week to six months). Most lesions heal spontaneously, without scarring. However, lesions may persist for 2 to 3 months and infection may persist for several years. Transmission is through direct skin to skin contact.

A. Diagnosis

1. History
   Most patients are asymptomatic or present with a complaint of a rash or a "bump" or "warts".

2. Examination
   The lesions are typically smooth spherical papules with pearly borders and a characteristic central umbilication. The core consists of caseous fluid or a keratotic plug. They are usually found on the aforementioned areas.

3. Laboratory
   There is no specific laboratory test available to diagnose molluscum contagiosum. All patients should have a VDRL done and a full STD evaluation, if indicated.

4. Diagnostic Criteria
   a. Diagnosis is clinical and based on visual inspection of lesions.
   b. Expression of a firm keratotic plug, which may be followed by brisk bleeding, supports the clinical diagnosis.

B. Treatment

The benefits of treatment are uncertain. Lesions may heal spontaneously. Patients may also be instructed to squeeze the central plug of the lesions to expedite healing. For more extensive lesions, cryotherapy with liquid nitrogen may be used in the same manner as used with warts.

C. Follow-up

A single treatment is generally effective, although the lesion may take several days to weeks to resolve.

Patients should also be screened for other STDs, based on their risk factors.
D. Counseling/Education

Patients should:

1. Return for evaluation if symptoms recur after treatment.
2. Avoid intimate (direct) contact until lesions have disappeared.

E. Special Considerations

Extensive molluscum, repeated recurrence after treatment or appearance of lesions on the face are common in patients with cellular immunodeficiency and should raise the suspicion of HIV infection. Treatment for HIV infection with highly active antiretroviral therapy (HAART) has been shown to reduce the occurrence of molluscum in HIV-infected patients.
Mucopurulent Cervicitis

Mucopurulent cervicitis (MPC) is a clinical syndrome characterized by a mucopurulent cervical exudate and endocervical friability. Patients may be asymptomatic. *Chlamydia trachomatis, Neisseria gonorrhoeae* and *Mycoplasma genitalium* are among the pathogens associated with infectious MPC, but in many cases no etiologic organism can be identified. Herpes simplex virus and *Trichomonas vaginalis* can also produce cervicitis but these organisms tend to infect the ectocervix, thereby not creating endocervical mucopus. Complications of untreated infection may include the development of endometritis and salpingitis (PID), which may subsequently result in infertility, ectopic pregnancy, or chronic pelvic pain.

Noninfectious cervicitis can result from malignancy, trauma associated with foreign objects (diaphragms, tampons, IUD strings), radiation treatment, sensitivity to irritants (contraceptive jelly, latex, douches, etc.), systemic inflammatory disease (Behcet’s syndrome), surgical instrumentation, or idiopathic inflammation of the cervical transformation zone.

A. Diagnosis

1. History
   a. MPC is frequently asymptomatic.
   b. If symptomatic, patient may complain of vaginal discharge, coital or intermenstrual bleeding, pain with intercourse, or pain with urination.
   c. The patient may have a partner who was diagnosed with urethritis.

2. Examination
   a. Mucopurulent cervical discharge. A positive swab test is defined by the finding of exudate (yellow discoloration) on the first swab after insertion into endocervix. It is often helpful to hold the swab against a white paper background for contrast.
   b. Cervical friability (bleeding) is often present after the first swab is inserted. Cervical erythema and edema may also be present.
   c. Cervical motion tenderness may be present and is diagnostic of concurrent pelvic inflammatory disease.

3. Laboratory
   a. A Gram stain of the cervical discharge may reveal white blood cells. The presence of Gram-negative intracellular diplococci suggests gonorrhea as the etiologic agent.
   b. Vaginal wet mount to assess for leukorrhea, trichomoniasis or bacterial vaginosis.
   c. Send a vaginal swab, cervical swab or urine sample for gonorrhea and chlamydia nucleic acid amplification (NAAT) testing. Vaginal swabs have the highest sensitivity and are the preferred specimen.
4. Diagnostic Criteria
   (requires a or b, and c)
   a. Presence of mucopurulent endocervical exudate or the finding of yellow or greenish exudate on the first white cotton-tipped swab inserted into the endocervical canal (positive swab test). The cytobrush does not count.
   b. Demonstration of cervical bleeding when the first swab is placed in the endocervix (the cytobrush does not count).
   c. Exclusion of other causes of cervicitis.

   Note: MPC is a clinical diagnosis; if mucopus is present, a Gram stain should be done to look for white blood cells and for N. gonorrhoeae. If there is microscopic evidence of gonococcal infection, the diagnosis of gonococcal cervicitis should be made.

B. Treatment
   The results of the chlamydia and gonorrhea test should determine the need for treatment. Adolescents, patients unlikely to return for treatment, and women at high-risk for chlamydia (e.g., those with prior infection, known recent exposure, new or multiple sex partners, or who are aged ≤ 25) should be treated empirically with a regimen that covers chlamydia:

   1. **Azithromycin** 1 g orally once OR
   2. **Doxycycline** 100 mg orally twice daily for 7 days

   Note: Doxycycline is contraindicated during pregnancy and lactation; azithromycin 1 g orally should be used.

   Concurrent treatment for gonorrhea should be administered if gonorrhea is identified on Gram stain, or the patient is in a high-risk group for gonorrhea (age < 25, previous GC, African-American).

   Treatment for trichomoniasis and/or bacterial vaginosis should be given if detected on wet mount.

C. Follow-up
   1. If symptoms persist, women should be instructed to return for re-evaluation.
   2. Patients diagnosed with chlamydia or gonorrhea should return in 3 months for repeat testing.

D. Counseling/Education
   Patients should:
   1. Be counseled about the potential health consequences of untreated MPC.
   2. If indicated, understand how to take prescribed oral medications.
3. Return for evaluation if symptoms persist.
4. Based on test results, refer sex partner(s) for examination and treatment or provide them with patient-delivered partner therapy.
5. If treated, abstain from sex for at least 7 days and until sex partners have been treated.
6. Use condoms to prevent future infections.

E. Evaluation and Treatment of Sex Partners

Men who are sex partners in the past 60 days of women with MPC should be examined for STDs and treated with the same regimen.

Patient-delivered partner therapy should be given for partners unlikely to come in for evaluation and treatment.
Nongonococcal Urethritis

Nongonococcal urethritis (NGU) is characterized by a mucoid or mildly purulent urethral discharge often accompanied by discomfort or burning with urination or urethral itching. The incubation period of NGU may be one to five weeks, so is considerably longer than for gonorrhea. However, it is not possible to differentiate gonorrhea from NGU based on clinical presentation alone. On microscopy, the diagnosis can be made if white blood cells are present and Gram-negative intracellular organisms are absent. *C. trachomatis* is the most frequent cause of NGU (i.e., in 20% of cases); however, the prevalence differs by age group, with lower prevalence among older men. Complications of NGU include epididymitis and reactive arthritis. *Mycoplasma genitalium* is another cause of NGU. While FDA approved diagnostic tests for *Mycoplasma genitalium* are not yet available, current standard treatments for NGU are effective against both chlamydia and mycoplasma. Enteric bacteria are an uncommon cause of NGU in MSM who have insertive anal sex. Other less common causes of NGU include *Trichomonas vaginalis* and HSV. Diagnostic and treatment procedures for these organisms are reserved for situations in which NGU is unresponsive to therapy.

In addition, there is increasing evidence that oral sex can be associated with NGU, and that adenovirus and normal oral flora may also be causative organisms. Therefore, it is possible that a patient in a monogamous relationship may develop NGU due to receiving oral sex from his partner.

In addition to partner referral for evaluation and treatment, patient-delivered partner therapy (PDPT) is important in the clinical management of NGU.

A. Diagnosis

1. History
   a. Patients present with pain or burning with urination with or without urethral discharge; if the patient complains of discharge, it is usually mucoid, scant, and may only be present in the morning.
   b. In general, the symptoms are similar to those of gonococcal urethritis but milder. On occasion the discharge may be quite purulent and indistinguishable from gonorrhea on clinical grounds.
   c. Patients may also present with minimal symptoms of itching/irritation at the urethral meatus.

2. Examination
   a. Examine the urethra for discharge.
      If discharge is not present, “milk” the penis to see if an exudate can be expressed.
3. Laboratory
   a. If a discharge is present, a Gram stain should be done to look for white blood cells and Gram-negative diplococci.
   b. If discharge is present, a swab of the discharge should be streaked on a modified Thayer-Martin (MTM) plate for GC culture.
   c. Urine NAAT for chlamydia and gonorrhea.
   d. If discharge is absent, evaluate the urine for leukocyte esterase (LE).
   e. If LE test is negative, proceed to microscopic examination, if available, of spun urine sediment for WBCs. (Urine centrifuged 2000 rpm x 3 minutes).

4. Diagnostic Criteria
   Urethritis can be documented by the presence of any of the following signs:
   a. Mucopurulent or purulent discharge.
   b. Gram stain of urethral secretions demonstrating ≥ 5 WBCs per high power field (100x). The Gram stain is the preferred rapid diagnostic test for evaluating urethritis. It is highly sensitive and specific for documenting both urethritis and the presence or absence of gonococcal infection.
   c. Positive leukocyte esterase test on first-void urine ("small" or greater).
   d. ≥ 10 WBCs per high power field (40x) on spun urine sediment.

If none of these criteria are present, treatment should be deferred, and the patient should be tested for *N. gonorrhoeae* and *C. trachomatis* and followed closely. If the results demonstrate infection with *N. gonorrhoeae* or *C. trachomatis*, the appropriate treatment should be given and sex partners referred for evaluation and given patient-delivered partner therapy (PDPT).

Empiric treatment of symptoms without documentation of urethritis is recommended only for patients at high-risk for infection who are unlikely to return for a follow-up evaluation (e.g., adolescents and men who have sex with men who have multiple partners). Such patients should be treated for chlamydia/NGU. Partners of patients treated empirically should be referred for evaluation and treatment and given PDPT.

5. Further Testing
   a. In patients reporting significant urethral discomfort without discharge, consider performing a swab of the meatus for HSV PCR.
   b. Additional STD testing, including screening for syphilis and HIV, should be done if indicated per clinic screening guidelines.
B. Treatment

Treatment should be initiated as soon as possible after diagnosis. Single-dose regimens offer the advantage of directly observed therapy and should be used if the risk of nonadherence is high. If multiple-dose regimens are used, the full course of medication should be provided in the clinic or health care provider’s office.

Recommended regimens:
1. **Azithromycin** 1 g orally in a single dose OR
2. **Doxycycline** 100 mg orally twice daily for 7 days

Alternative regimens:
1. **Ofloxacin** 300 mg orally twice daily for 7 days OR
2. **Levofloxacin** 500 mg orally daily for 7 days OR
3. **Erythromycin base** 500 mg orally four times daily for 7 days

C. Follow-up

Patients should be instructed to return for evaluation if symptoms persist or recur after completion of therapy. Symptoms alone without documentation of urethral inflammation are not a sufficient basis for re-treatment. Refer to section on **recurrent and persistent urethritis** for additional details.

All patients who are diagnosed with GC or CT urethritis should return in 3 months for repeat testing for these organisms, since these individuals are at high-risk for repeat infection.

D. Counseling/Education

Patients should:
1. Be counseled about urethritis.
2. Understand how to take prescribed oral medications.
3. Return for evaluation if symptoms persist or recur after treatment.
4. Refer sex partner(s) for examination and be given treatment for partners.
5. Avoid sex for at least 7 days and until partner(s) are treated (include the period when both partners are taking medication).
6. Understand that oral flora may cause urethritis, so they a man may develop NGU after oral sex with a monogamous partner.
7. Use condoms to prevent future infections.
E. Evaluation and Treatment of Sex Partners

Patient-delivered partner therapy should be offered to all patients diagnosed and treated for NGU. Patients should be encouraged to refer partner(s) in the past 60 days for evaluation. A specific diagnosis may facilitate partner referral; therefore, testing patients with NGU for both gonorrhea and chlamydia is recommended.
Recurrent and Persistent Urethritis

Recurrent NGU is a common problem. Objective signs of urethritis should be confirmed by the clinician before initiation of antimicrobial therapy. Optimal regimens for treating patients who have persistent symptoms or frequent recurrences after treatment of NGU have not been identified. Patients can be re-treated with the initial regimen if they did not adhere with the treatment or are likely to have been re-exposed to an untreated sex partner. If re-infection is unlikely, treatment should be directed against other, less common causes of urethritis, for instance, trichomonas. There is increasing evidence that oral sex can be associated with NGU, and that HSV, adenovirus and normal oral flora may also be causative organisms. Some of these causative organisms do not have specific treatment and may also contribute to recurrent or persistent urethritis. Persistent perineal, penile or pelvic pain, pain with urination, or pain during or after ejaculation may be secondary to chronic prostatitis or chronic pelvic pain syndrome and should prompt referral to a urologist if it persists despite evaluation and management as outlined below.

A. Evaluation

Verify diagnosis of urethritis by presence of discharge and microscopic evaluation of urethral swab, by leukocyte esterase urine test, or examination of urine sediment.

B. Treatment

If the patient has persistent urethritis and is believed to have correctly completed a recommended regimen, has had his partner(s) treated appropriately, and denies re-exposure, the following approach is recommended:

1. **Azithromycin** 1 g orally once *OR*

2. **Doxycycline** 100 mg twice daily x 7 days

*Use whichever regimen (azithromycin or doxycycline) not given previously plus,*

**Metronidazole** 2 g orally once for possible trichomonas infection in men who have sex with women.

In patients reporting significant urethral discomfort without discharge, obtain a HSV PCR of urethral meatus and consider a trial of treatment for HSV.

Alternate treatment for recurrent/persistent urethritis:

1. **Moxifloxacin** 400 mg once daily x 7 days may be effective for recurrent or persistent urethritis caused by *Mycoplasma genitalium*, however this regimen is expensive and not currently available at City Clinic.
C. Counseling/Education

Patients should:

1. Be counseled about urethritis.
2. Understand how to take prescribed oral medications.
3. Return for evaluation if symptoms persist or recur after treatment.
4. Refer sex partner(s) for examination and treatment.
5. Avoid sex for at least 7 days and until partner(s) are treated (include the period when both partners are taking medication).
6. Use condoms to prevent future infections.

Specific messages to stress:

1. Urethritis is likely to be a sexually transmitted disease.
2. Laboratory tests are not 100% accurate.
3. Laboratory tests to identify all pathogens that can cause urethritis are not available.
4. Adenoviruses and oral flora obtained by receiving oral sex may also be associated with NGU and there is no specific therapy for these organisms.
5. It is important for female partners to be examined as pathogens may be more easily identified in the partner (e.g., trichomonas).

D. Evaluation of Sex Partners

1. Patients should be instructed to refrain from having sex with their partner(s) until both they and their partner(s) have completed taking all of their medication. Some patients think that it is safe to have unprotected sex if both they and their partner(s) are taking medication simultaneously. The risk of re-infection needs to be explained. Even if a one-time dose of medication is prescribed patients need to be instructed to avoid sex for 7 full days.

2. If a patient decides to have sex before completing their medication, instruct them to always use a condom.

3. Patients should be advised to confirm/verify that their partner(s) have been adequately treated before engaging in unprotected sex with that partner again.
Pelvic Inflammatory Disease

Pelvic inflammatory disease is a clinical syndrome resulting from the ascending spread of microorganisms from the vagina and the endocervix to the endometrium, the fallopian tubes or to contiguous structures. The resulting infection may include endometritis, salpingitis, oophoritis, tubo-ovarian abscess, perihepatitis and pelvic peritonitis. Much is still unknown regarding the microbiology of PID. Neisseria gonorrhoeae and Chlamydia trachomatis are implicated in one third of cases, but many other organisms including Haemophilus influenzae, Gardenerella vaginalis, enteric Gram-negative rods, Streptococcus agalactiae, M. genitalium, M. hominis, and U. urealyticum have been associated with PID as well. Regardless of laboratory findings, PID should always be treated as a mixed, polymicrobial infection.

Many women with PID have no symptoms, nonspecific symptoms (dyspareunia, abnormal vaginal bleeding, vaginal discharge) or just mild-to-moderate lower abdominal pain and tenderness; indeed, many women with late complications of PID (e.g., infertility or ectopic pregnancy) report no known history of PID. Occasionally, acute infection becomes life threatening because of extensive peritonitis, which is usually caused by a rupture of a tubo-ovarian abscess. Other complications and medical consequences include chronic pelvic pain, and pelvic adhesions requiring subsequent surgery.

Absolute diagnostic criteria for PID remain uncertain. The "gold standard" has been laparoscopic evidence of tubal inflammation. Routine use of laparoscopy to diagnose PID is impractical. Therefore, less reliable clinical criteria must be used. In the past PID has been described as "mild" or "severe". These are very poor descriptors since PID reflects the site(s) of infection, not the degree of symptomatology. As stated above, women with very mild symptoms may have extensive disease and resultant infertility. A patient who meets the criteria for PID may be treated as outpatient if she appears to be clinically stable, is reliable and does not fall into one or more of the categories listed below.

A. Diagnosis

Although the clinical diagnosis of PID is imprecise, given the risk of significant reproductive sequelae, providers should maintain a low clinical threshold for diagnosis. PID should always be considered in women with cervical, uterine or adnexal tenderness.

1. History

Patients may complain of focal or diffuse lower abdominal pain, fever, vaginal discharge, or pain with intercourse. Menstrual abnormalities are common. Nausea and vomiting may be present but are nonspecific. Right upper quadrant pain is rare, but important to elicit. It may indicate the presence of generalized peritonitis and perihepatitis (Fitz-Hugh-Curtis syndrome).
2. Examination
   a. Check temperature in patients suspected of having PID.
   b. Complete pelvic exam should be performed to assess for vaginal or cervical discharge, and cervical, uterine or adnexal tenderness.
   c. Abdominal exam to assess for peritoneal signs (rebound, guarding) or right upper quadrant tenderness.

3. Laboratory
   a. Perform pregnancy test in all patients with suspected PID.
   b. Wet prep of vaginal secretions to assess for bacterial vaginosis:
      - Evaluate KOH whiff test
      - Evaluate for clue cells
      - Quantify WBC/HPF
   c. Check vaginal pH.
   d. Gram stain of cervical discharge to look for white blood cells and gonococci.
   e. Vaginal or cervical swab for GC and CT NAAT (nucleic acid amplification test).
   f. Test for syphilis and HIV if indicated by exposure history and clinic screening guidelines.

4. Diagnostic Criteria
   Empiric treatment of PID should be initiated in sexually active young women and other women at risk for STDs if the following minimum criteria are present:
   a. Lower abdominal pain and
   b. Cervical motion tenderness or uterine tenderness or adnexal tenderness
   c. Absence of other causes of pelvic pain (e.g., ectopic pregnancy, appendicitis)
   Additional criteria useful in diagnosing PID:
   a. Oral temperature > 38.3°C (101°F).
   b. Abnormal cervical or vaginal discharge.
   c. Presence of white blood cells (> 10 WBC/HPF) on saline microscopy of vaginal secretions.
   d. Evidence of cervical infection with *N. gonorrhoeae* or *C. trachomatis*.
   Other diagnostic criteria (not available at City Clinic):
   a. Elevated erythrocyte sedimentation rate (ESR) or c-reactive protein (CRP).
   b. Histopathologic evidence of PID on endometrial biopsy.
c. Characteristic findings with transvaginal sonography, CT, MRI, or during laparoscopy.

B. Treatment

1. Outpatient treatment is standard in those patients with mild to moderate symptoms, able to tolerate the medications, and willing to return for frequent assessments.

   All patients who begin outpatient treatment should be clinically re-evaluated within 72 hours and if not improved should start parenteral therapy on either an outpatient or inpatient basis.

   a. Regimen A
   
      Ceftriaxone 250 mg IM once AND
      Doxycycline 100 mg orally twice daily for 14 days

      PLUS, if patient is diagnosed with bacterial vaginosis:
      Metronidazole 500 mg orally twice daily for 14 days

   b. Regimen B (not available at City Clinic)
      Cefoxitin 2 g IM once AND
      Probenecid 1 g orally once AND
      Doxycycline 100 mg orally twice daily for 14 days

      PLUS, if patient is diagnosed with bacterial vaginosis:
      Metronidazole 500 mg orally twice daily for 14 days

   c. Regimen C (not available at City Clinic)
      Other parenteral third-generation cephalosporin (e.g., ceftizoxime or cefotaxime) AND Doxycycline PLUS Metronidazole if BV is present.

   d. Alternative Oral Regimens

      Information regarding other outpatient regimens is limited, but one other regimen has undergone at least one clinical trial and has broad-spectrum coverage. Amoxicillin/clavulanic acid plus doxycycline was effective in obtaining short-term clinical response in a single clinical trial. Gastrointestinal symptoms might limit the overall success of this regimen. Several recent investigations have evaluated the use of azithromycin in the treatment of upper-reproductive tract infections; however, the data are limited. Ceftriaxone plus azithromycin instead of doxycycline is an option in potentially nonadherent patients; the suggested dose is azithromycin 1 g orally x 1 followed by a second 1 g dose one week later.
e. **Alternative Oral Regimens with Quinolones**

Given the prevalence of quinolone-resistant GC, the use of quinolones is no longer recommended for PID treatment. However, if parenteral cephalosporin treatment is not possible the following can be used if the risk of GC is low:

**Levofloxacin** 500 mg once daily OR **Ofloxacin** 400 mg twice daily for 14 days (with or without Metronidazole)

If a quinolone regimen is used diagnostic testing for GC is critical and, if GC is diagnosed, treatment should be based on antimicrobial susceptibility, when possible. If quinolone-resistance is found or if susceptibility testing is not possible, parenteral cephalosporin treatment is recommended. If this is not feasible, Azithromycin 2 g orally as a single dose is the recommended alternative.

2. **Hospitalization** is recommended in the following situations:* 
   
a. Surgical emergencies such as appendicitis or ectopic pregnancy cannot be excluded.
   b. A pelvic abscess is suspected.
   c. The patient is pregnant.
   d. Patient compliance is uncertain.
   e. Severe illness precludes outpatient management (e.g., temp > 38.3°C, moderate or severe dehydration, vomiting, peritoneal signs present).
   f. The patient has failed to respond to outpatient therapy (defined below).

   *If the patient is referred for evaluation to SFGH ER, treatment should be instituted before patient leaves SF City Clinic as failure to follow-up at SFGH ER is often a problem.

C. **Follow-up**

Patients should be rechecked three days after diagnosis (or within 2-4 days depending on which day of the week she was diagnosed).

Follow-up at three days should establish:

1. Patient adherence to medications.
2. Symptomatic improvement.
3. Clinical improvement as documented by a repeat bimanual examination.

Patients who have not improved or are worse at the initial follow-up visit should be reported to the attending physician and referred for hospitalization. Patients may need IV antibiotics or evaluation for other abdominal or pelvic conditions.
D. Counseling/Education

Patients should:

1. Be counseled about the risks of PID and routes of transmission.
2. Understand how to take prescribed oral medications.
3. Return three days after initiation of therapy for repeat evaluation.
4. Return for GC/CT screening 3 months after treatment.
5. Receive patient-delivered partner therapy for GC/CT and refer sex partner(s) for examination and treatment.
6. Avoid sex until patient and partner(s) have completed treatment (at least 14 days).
7. Receive contraceptive counseling, if an IUD was removed (see below).
8. Use condoms to prevent future infections.
9. Understand the health risks of current and future episodes of PID.
10. Be advised to seek care at an ER if there is sudden worsening of symptoms and SFCC is not open.

E. Evaluation and Treatment of Sex Partners

Patient-delivered therapy for \( C. \ trachomatis \) and \( N. \ gonorrhoeae \) should be given for all partners in the past 60 days. Partners should also be referred for evaluation for other STDs.

F. Special Considerations

Intrauterine device: The risk for IUD-associated PID is limited to the first three weeks after insertion and evidence is insufficient to routinely recommend IUD removal in women diagnosed with PID. In compliant patients with uncomplicated PID, the IUD may be left in place during antimicrobial treatment if the woman desires to continue with the IUD as a contraceptive method. Reinforce with the patient that this approach requires close follow-up with a repeat exam in 2 to 3 days. If the IUD is removed, contraceptive counseling is necessary.
Proctitis

Sexually transmitted gastrointestinal syndromes include proctitis, proctocolitis, and enteritis. While rectal gonococcal, chlamydial, and herpetic infections are acquired through receptive anal intercourse, sexually transmitted enteric infections occur primarily as a result of sexual practices that involve fecal-oral transmission (anilingus). For all these syndromes, the majority of patients are men who have sex with men. This protocol will only present the diagnostic workup and treatments for proctitis. Patients who present with enteric symptoms (e.g., diarrhea or abdominal cramps) should be referred to the San Francisco General Hospital Emergency Room, Tom Waddell Clinic, district health centers, or their private providers where they can receive an evaluation that includes a stool analysis for ova, parasites, and bacteria.

Proctitis is inflammation limited to the rectum and is associated with anorectal pain, tenesmus, and discharge. *Neisseria gonorrhoeae, Chlamydia trachomatis* (including LGV serovars L1-L3), Herpes simplex virus types I and II and syphilis are the most common sexually transmitted pathogens involved. Inflammatory STDs such as CT or GC and ulcerative STDs such as HSV greatly increase the risk of HIV transmission. If infectious proctitis is diagnosed in an HIV-negative patient, they should receive enhanced risk reductive counseling from a health worker or disease control investigator (DCI).

A. Diagnosis

1. History
   a. Patients present with symptoms referable to the rectum: rectal pain, tenesmus, and discharge.
   b. Patients will typically have a remote or recent history of receptive anal intercourse.

2. Examination
   a. With the patient on a proctology table, first examine the external perianal area and visible anal canal looking for lesions, ulcers, or rash.
   b. Using the anoscope examine the rectal mucosa. Sample either the mucosal wall or any discharge with a swab to obtain material for Gram stain and NAAT. Note any friability or frank bleeding.

3. Laboratory
   a. Gram stain rectal discharge from anoscopy.
   b. Obtain rectal gonococcal NAAT or culture.
   c. Obtain a rectal chlamydia NAAT.
   d. Obtain a HSV PCR even if no obvious lesions are present.
   e. Serum VDRL.
f. HSV-2 serology, if no prior record.
g. Rapid HIV antibody test (if not known to be HIV-positive).
h. Additional STD testing (e.g., pharyngeal and urine GC/CT NAAT) as indicated per clinic screening guidelines.

4. Diagnostic Criteria

A positive rectal gonorrhea, chlamydia or herpes test or history of rectal contact to a patient with gonorrhea, chlamydia, or NGU and compatible symptoms and signs. Gram-negative intracellular diplococci or any WBCs on Gram stain of rectal discharge provide presumptive evidence of proctitis.

B. Treatment

Treatment should cover *N. gonorrhoea* and *C. trachomatis*. Consider additional empiric treatment for HSV or LGV if clinical suspicion is high.

Recommended regimen:

1. **Ceftriaxone** 250 mg IM in a single dose once and **azithromycin** 1 g orally once OR
2. **Ceftriaxone** 250 mg IM in a single dose once and **doxycycline** 100 mg orally twice daily for 7 days

If there is a high suspicion for **HSV infection** (painful perianal or rectal mucosal ulcers), consider adding:

**Acyclovir** 400 mg orally three times daily for 7-10 days for HSV infection

If there is a high suspicion for **LGV infection** (severe bloody or ulcerative proctitis, particularly if the rectal CT NAAT is positive and other causes of proctitis, e.g., gonorrhea and HSV, have been ruled-out): *

**Doxycycline** 100 mg orally twice daily x 21 days

*The attending physician should be notified of possible LGV cases.*

C. Follow-up

Patients diagnosed with GC or CT should return for repeat testing (by rectal NAATs) in 3 months due to high rates of repeat infection in these individuals.

D. Counseling/Education

Patients should:

1. Understand how to take prescribed medication.
2. Refer their sex partners for evaluation or provide them with patient-delivered partner therapy.
3. Avoid rectal intercourse x 7 days, and then only with condoms.
4. Avoid receptive anilingus x 7 days.

5. Patients with rectal GC and other forms of proctitis should be counseled about their HIV risk and tested for HIV. HIV-positive clients with proctitis should be counseled about their increased infectiousness to anal insertive partners who are HIV-negative.

6. Patients should repeat HIV-testing at 3 months.

E. Evaluation and Treatment of Sex Partners

Sex partners in the past 60 days of patients with proctitis should be given patient-delivered partner therapy for gonorrhea and chlamydia and referred for further evaluation.
**Pubic Lice (Crabs)**

Crab lice, *Phthirus pubis*, usually infest the hairy parts of the pubic area but may also infest facial hair and eyelashes. Men may have crab lice ascend onto the chest and axillary hair. Typically, crab lice are transmitted between sexual partners; rarely, they may be transmitted by sharing clothing, bedding, etc. Lice deposit nits (eggs) on the hair shaft; nits hatch in one week. Lice are sexually mature in eight to ten days and take blood meals from the skin in the pubic area, resulting in itching and excoriation. Secondary infection with skin pathogens (e.g., staphylococcus or streptococcus) may occur.

**A. Diagnosis**

1. **History**
   a. Patients generally present with pruritus in the pubic region.
   b. Often, patients have been able to visualize the lice or the nits.

2. **Examination**
   a. The pubic hair should be carefully examined for the presence of lice and/or nits.
   b. Excoriation may be present but otherwise the skin should appear normal.

3. **Laboratory**
   a. Light microscopy will identify lice or nits.
   b. If any type of unusual rash is present in the genital area, the patient should have a stat RPR as well as VDRL to assess for syphilis.
   c. Additional STD testing as indicated by exposure history and clinic screening guidelines.

4. **Diagnostic Criteria**
   a. Identification of lice or nits either grossly or microscopically attached to genital hairs.
   b. Pruritic erythematous macules or papules or secondary excoriations in the genital area and sexual exposure or close physical contact to a person infested with pubic lice.
B. Treatment

Resistance to permethrin and pyrethrins and piperonyl butoxide has been increasing. All treatments should be followed by combing the affected area with a fine-toothed comb – this step is critical because it removes eggs that would otherwise hatch and prolong infestation. Do not use for infestation of the eyelashes; see section F: special considerations for recommended treatment.

1. **Permethrin** (1%) creme (Nix) rinse applied to the affected area and rinsed off in 10 minutes. This is the treatment of choice as permethrin is the most studied and least toxic to humans. Has residual activity even after rinsing.

2. **Pyrethrins and piperonyl butoxide** (RID, Triple X, A-200) applied to the affected area and washed off in 10 minutes. No residual activity after rinsing, so repeat application in 1 week.

Alternative regimens:

1. **Malathion** 0.5% lotion applied for 8-12 hours and washed off
2. **Ivermectin** 250 mcg/kg orally, repeated in 2 weeks (contraindicated in pregnancy)

C. Follow-up

Patients should be re-evaluated after one week if symptoms persist. Re-treatment may be necessary if lice are found or nits are observed at the hair-skin junction. Due to possible resistance re-treatment should be with a different regimen.

D. Counseling/Education

Patients should:

1. Understand how to apply prescribed medication.
2. Return after one week for evaluation if symptoms persist.
3. Refer sex partner(s) for treatment.
4. Avoid sex for at least 7 days and until partner(s) are treated.

E. Evaluation and Treatment of Sex Partners

Individuals with sexual, household or close physical contact should be referred for treatment. Patient-delivered partner therapy (PDPT) can be offered for current or recent partners.
F. Special Considerations

1. Clothing, bed linens, and towels should be washed and dried by machine (hot cycle in each) or dry-cleaned. Articles that cannot be washed or dry-cleaned can be sealed in a plastic bag and placed in storage for 72 hours.

2. Pediculosis of the eyelashes should be treated by the application of occlusive ophthalmic ointment (by prescription) or Vaseline (may be more irritating than the prescription ointment) to the eyelid margins, twice daily for ten days to smother lice and nits.
Scabies

The itch mite, *Sarcoptes scabiei*, can penetrate the skin, creating visible papules, or small, linear burrows, which contain the mites and their eggs. Common sites of infection include the flexor surface of the wrists, webbing between fingers, anterior axillary folds, the inner aspects of the upper thigh, and the belt line. Nodules are likely on the penis and scrotum. Scabies is rarely found on the head in adults. Two to six weeks after infection, pruritus, which is usually worse at night, begins. The itching represents a hypersensitivity reaction to the mite and will persist for 1-2 weeks even after mites are dead. Individuals with a prior history of scabies may have more rapid onset of symptoms due to prior sensitization. Complications include secondary infections due to scratching.

A. Diagnosis

1. History
   a. Patients complain of a pruritic rash.
   b. Classically, the pruritus is so severe that it wakes the patient at night. (If it is not worse at night, another diagnosis should be considered).
   c. There may be known contact to a partner with scabies.

2. Examination
   a. Small papular rash with or without burrows in the webs of the fingers, wrists, the genitalia, the buttocks, the waist, the inner aspects of the thighs, and the axilla. Look for nodules on the male genitals. The rash is generally bilaterally symmetrical.
   b. Excoriations may be present; some may be secondarily infected.

3. Laboratory
   a. Although the mite can at times be extruded from a burrow, this requires a fair amount of experience and is not necessary to make a diagnosis. Scrape linear skin lesion with scalpel with oil on it so skin scrapings stay on scalpel. Roll onto slide – examine under low and high power look for mite, eggs or feces of mite. Hand lesions are more likely to be positive.
   b. Patients who have genital lesions should have a stat RPR done to rule out syphilis before establishing a diagnosis of scabies.

4. Diagnostic Criteria
   a. History of pruritic rash (itching wakes patient up at night).
   b. Characteristic rash: burrows in skin or characteristic pruritic, erythematous, papular eruptions on typical sites.
   c. Sexual exposure or close physical contact to a person infested with scabies mites.
d. Exclusion of syphilis, if necessary.

B. Treatment

1. **Permethrin** cream 5% applied from the neck down and washed off after 8-14 hours. Medication comes in a 60 g tube and is not contraindicated in pregnancy or during lactation. Patients should be informed that pruritus may persist for 1-2 weeks after therapy.

2. The presence of lindane-resistant scabies makes **lindane 1%** a secondary therapeutic choice. **Lindane is contraindicated in pregnant or lactating women.**

C. Counseling/Education

Patients should:

1. Understand how to apply prescribed medication.

2. Return after two weeks for evaluation if symptoms persist (patients should be informed that pruritus is a hypersensitivity reaction and so may persist for several weeks even after successful treatment).

3. Refer sex partner(s) for treatment.

4. Avoid sexual or intimate contact until patient and partner(s) are fully treated.

D. Evaluation and Treatment of Sex Partners

All sex partners and household contacts of patients who have scabies infection should be promptly treated.

Patients with scabies should be offered patient-delivered partner therapy (PDPT) to take to partners.

E. Special Considerations

Decontamination of articles: clothing, bed linens, and towels that may have been contaminated by the patient within the past one to two weeks should be washed and dried by machine (hot cycle in each) or dry-cleaned. Articles that cannot be washed or dry-cleaned can be sealed in a plastic bag or placed in storage for 72 hours.
Syphilis

Syphilis is caused by the spirochete, *Treponema pallidum*. Syphilis has been divided into four stages (primary, secondary, latent, and tertiary), which reflect the clinical progression of disease.

**Primary syphilis** is characterized by a painless, indurated ulcer (chancre) that appears at the site of infection by *T. pallidum* about 21 days (the range is 10-90 days) after exposure and lasts from one to five weeks. The regional lymph nodes may become mildly to moderately enlarged but are not tender.

**Secondary syphilis**, which usually appears one to five weeks after the primary chancre has healed, is characterized by a skin rash, mucous patches, and *condyloma lata* sometimes accompanied by generalized lymphadenopathy, headache, and fever. These manifestations disappear spontaneously within two to six weeks but may recur within the first year after infection.

**Latent syphilis** is characterized by the absence of symptoms or signs in the presence of reactive nontreponemal and treponemal serologic tests. The onset of latent syphilis is considered to occur when secondary recurrences become much less likely, and has arbitrarily been divided into early latent syphilis (duration of less than one year) and late latent syphilis (duration of more than one year).

**Tertiary syphilis** includes cardiovascular syphilis (thoracic aortic aneurysm, aortic valve disease), neurologic disease (general paresis, tabes dorsalis), and gumma formation.

**Neurosyphilis** may occur at any stage of the disease. There is no commercially available test for neurosyphilis that is both sensitive and specific. A reactive VDRL of the cerebrospinal fluid is confirmatory but studies show a variable sensitivity for this test of 30-70%. Lumbar puncture should be done if there are symptoms or signs suggestive of CNS involvement no matter what the stage of infection.

**Syphilis in Special Populations**

**HIV-Infected Persons:**

Unusual serologic responses have been observed among HIV-infected individuals who are co-infected with syphilis. Most reports have involved titers that were higher than expected, but false negative results or delayed responses have also been reported. Nevertheless, both treponemal and nontreponemal serologic tests for syphilis are accurate for the majority of patients with syphilis and HIV co-infection.

**Pregnancy:**

Due to the devastating impact of syphilis on the fetus, special precautions must be taken with women of childbearing age with syphilis. All women diagnosed with any stage of syphilis must have a stat urine pregnancy test. If the test is positive, she must be counseled concerning syphilis, pregnancy and risk to the fetus. She should be treated with penicillin as indicated by
stage of infection and a prenatal care appointment should be made for her. Pregnant women with syphilis are a high priority for the department of public health. The health department must be contacted within 24 hours of any suspected or confirmed syphilis case and can assist providers in ensuring that pregnant women with syphilis are adequately treated.

A. Stages of Syphilis

Primary Syphilis

1. History
   a. Patients may present with a genital, anal, or oral ulcer, called a chancre; classically this is painless, with rolled, indurated borders, although atypical lesions are possible. The chancre appears 10-90 days (average 21 days) after contact with an infected partner, so the date of the last sexual exposure should be documented. Multiple chancre are more likely to be seen in HIV-positive individuals.
   b. Patients should be questioned regarding neurologic symptoms. Patients with early syphilis complicated by acute syphilitic meningitis may present with headache, fever, photophobia, neck stiffness, nausea, vomiting, papilledema, seizures, dizziness, focal weakness, trouble speaking, changes in hearing, or vision. Any neurologic symptom may be consistent with neurosyphilis.
   c. Refer to the genital ulcer protocol for other features to elicit from the history.

2. Examination
   a. All possible exposed sites should be carefully examined.
   b. Refer to the genital ulcer protocol for the characteristics of the ulcer(s) and lymph nodes that should be evaluated and noted.
   c. Note that multiple chancre are more likely in HIV-positive individuals.
   d. Chancre may be atypical: for example they may lack induration, have flat rather than rolled edges, and be painful.
   e. A neurological exam should be performed. If there are symptoms or signs suggestive of neurosyphilis, the patient should be referred to SFGH Emergency Department for CSF analysis, evaluation and treatment. If the patient has insurance and a primary care provider the patient can follow-up there for the neurosyphilis evaluation. It is appropriate to call that provider with the patient’s permission to facilitate this follow-up. The attending physician should be notified of possible neurosyphilis cases.

3. Laboratory
   a. A darkfield microscopic exam of the ulcer should be done. Darkfield microscopy is a highly sensitive method by which to diagnose primary syphilis (up to 95% sensitive in experienced hands). Do not perform darkfield on oral cavity lesions because exams at this site are difficult to interpret due to the presence of non-pathogenic
spirochetes. Lesions on the lips may be successfully evaluated with the darkfield exam.

To identify spirochetes by darkfield microscopy:

i. The lesion should be cleaned and gently abraded with a gauze pad moistened with saline and gently squeezed until a small amount of serous fluid is expelled.

ii. The serous fluid should be placed on the underside of a cover slip and then firmly pressed onto a glass slide for darkfield microscopy.

iii. The specimen should be examined immediately.

iv. A minimum of 25 or more fields should be examined before determining that spirochetes are not present; performing second and third darkfield exams on all lesions is indicated if there is a strong suspicion of syphilis.

v. All positive, and whenever possible, all negative, darkfield exams should be reviewed by the attending physician.

vi. *T. pallidum* has 6 to 14 regular spirals, rotates smoothly, may move forward and backward through the field, and usually gently bends at right angles along the longitudinal axis.

vii. Many patients with genital lesions apply topical treatments to their lesions, which may produce a negative darkfield exam.

b. All ulcerative lesions should be swabbed for HSV PCR. At present the Public Health Lab does not perform culture for *H. ducreyi* (the agent of chancroid).

c. All patients must have a stat RPR, except for those with a positive darkfield exam.

d. Both a nontreponemal test (RPR or VDRL) and treponemal test (TPPA) should be performed. Nontreponemal tests may be nonreactive in the primary stage (70-75% sensitivity) for up to 10 days after the appearance of the chancre. Among treponemal tests in untreated primary syphilis, the FTA-ABS (90-95% sensitive) is first to become reactive, followed by the TPPA (90-95% sensitive). Treponemal tests may become reactive earlier than nontreponemal tests.

Because the TPPA may turn positive before the VDRL in primary syphilis, the TPPA should be specifically ordered in patients with a lesion suspicion for primary syphilis such that it is still performed even if the VDRL is negative.

e. Because syphilis is associated with an increased risk of HIV infection, HIV counseling and testing should be strongly encouraged.

f. Patients who have neurologic symptoms or signs should have a lumbar puncture as outlined above. CSF should be sent for cell count, differential, CSF VDRL, protein and glucose.
4. Diagnostic Criteria
   a. Individuals with reactive nontreponemal tests and nonreactive treponemal tests are considered to be biologic false-positives (BFP). They do not have syphilis and do not require treatment.
   b. Identification of *T. pallidum* from an ulcer (i.e., chancre) by darkfield microscopy.
   c. Clinical findings consistent with primary syphilis (i.e., chancre) in a patient with a positive treponemal antibody test (nontreponemal tests may be negative in primary syphilis).

Secondary Syphilis

1. History
   a. Patients may present with a rash (may be on the genitals, the palms and soles, or generalized), patchy hair loss (moth-eaten appearance), or white, grey or flesh-colored lesions in the oral cavity (mucous patches) or in the anogenital region (*condyloma lata*). The rash is rarely pruritic and is never vesicular.
   b. Constitutional symptoms may be present, especially in HIV-positive persons. Assess the patient for fever, headache, fatigue, sore throat, or night sweats.
   c. Be sure to ask the patient about recent sores in genital, oral, and anal regions, and swollen lymph nodes.
   d. Patients should be questioned regarding neurologic symptoms. Patients with early syphilis complicated by acute syphilitic meningitis may present with headache, fever, photophobia, neck stiffness, nausea, vomiting, seizures, dizziness, focal weakness, trouble speaking, changes in hearing, or vision. Any neurologic symptom may be consistent with neurosyphilis.

2. Examination
   a. A complete exam including the oral cavity (mucous patches, chancre), anogenital region (*condyloma lata*, chancre, mucous patches, rash), skin (including chest, back, palms and soles), and lymph nodes (including neck, axilla, epitrochlear and inguinal) should be done. Any rash on the genitals, especially the scrotum should be suspect for syphilis.
   b. The rash of secondary syphilis is bilaterally symmetrical, and can often be varied, presenting as maculopapular, moist papules or pustules, or as dry and psoriasiform lesions. The only manifestation not consistent with secondary syphilis is a vesicular rash (except in congenital syphilis which may include a bulbo-vesicular rash).
   c. A neurological exam should be performed. If there are symptoms and signs suggestive of neurosyphilis, the patient should be referred to the SFGH Emergency Room for lumbar puncture.
3. Laboratory
   a. Moist lesions of secondary syphilis (e.g., *condyloma lata*) should be examined by darkfield microscopy. Do not attempt to perform a darkfield exam on dry lesions.
   b. All patients must have a stat RPR (100% sensitive in secondary syphilis), unless there is a positive darkfield from a *condyloma lata*. There have been case reports of patients who have secondary lesions, but negative serologies. Such rare cases should undergo biopsy of a typical lesion to evaluate for *T. pallidum*.
   c. Patients who have neurologic symptoms or signs should have a lumbar puncture for CSF analyses, including cell count with differential, VDRL, protein, and glucose.

4. Diagnostic Criteria
   a. Identification of *T. pallidum* from material from cutaneous or mucous membrane lesions by darkfield microscopy.
   b. Reactive nontreponemal (VDRL or RPR) and treponemal tests and no history of syphilis or a fourfold or greater increase in titer on a nontreponemal test compared with the most recent test for persons with a history of syphilis (compare the same test method, i.e., VDRL for both, or RPR for both) and any one of the following skin or mucous membrane lesions of secondary syphilis:
      i. Skin lesions (bilaterally symmetrical, macular, papular, follicular, papulosquamous, or pustular). There may also be lesions on the face known as nickel and dime lesions (annular syphilids) or split papules in the nasolabial folds, commissures of the mouth or under the ear lobes.
      ii. *Condyloma lata* (moist papules, usually in anogenital region or other moist skin areas).
      iii. Mucous patches of the oropharynx, labia, vagina, cervix or the glans or prepuce of uncircumcised men.
      iv. Alopecia of head hair or loss of the eyelashes and lateral third of the eyebrows.

**Early Latent Syphilis**

No signs of syphilis on exam, and date of infection thought to be within the past year.

1. History
   a. Patient may have a history of contact to syphilis or may be able to recall recent ulcer or rash.
   b. More often, however, patient cannot recall contact or symptoms.
2. Examination
   a. Patient must have complete physical exam to assess for signs of primary or secondary syphilis.
   b. A neurological exam should be performed. If there are symptoms and signs suggestive of neurosyphilis, the patient should be referred to the SFGH Emergency Department for lumbar puncture.

3. Laboratory
   Reactive VDRL (or RPR) with a positive TPPA (or FTA-ABS).

4. Diagnostic Criteria
   a. Absence of symptoms and signs of primary or secondary syphilis with reactive nontreponemal (VDRL or RPR) and treponemal tests in a patient with no prior history of syphilis and documentation of a nonreactive nontreponemal test during the past year.
   b. In a patient with a history of syphilis, a sustained fourfold or greater increase in titer on the nontreponemal (VDRL or RPR) test compared with the prior test performed within the past year. Compare the same test method: i.e., VDRL for both, or RPR for both.
   c. Patient who is asymptomatic and is a contact to early syphilis or syphilis of undetermined stage and who has a reactive VDRL (or RPR) and no prior history of syphilis.

**Late Latent Syphilis**

No signs of syphilis on exam, and date of infection thought to be a year or more prior.

1. History
   a. Patient may have history of contact to syphilis or may be able to recall ulcer or rash.
   b. More often, however, patient cannot recall contact or symptoms.
   c. Patient may have a history of inadequately treated syphilis in the past or incomplete documentation of treatment.
   d. Patient should be questioned regarding the presence of neurologic symptoms.

2. Examination
   a. Patient must have complete exam to carefully evaluate for signs of primary and secondary syphilis.
   b. A neurological exam should be performed. If there are symptoms and signs suggestive of neurosyphilis, the patient should be referred to SFGH ED for lumbar puncture.
3. Laboratory
   a. The only laboratory evidence of latent syphilis is a reactive VDRL (or RPR) with a positive TPPA. On occasion the nontreponemal test may be nonreactive.
   b. CDC recommends that lumbar puncture be done in late latent syphilis if a patient has any of the following:
      i. Neurologic or ophthalmologic symptoms or signs
      ii. Evidence of active disease, such as aortitis, gumma, or iritis
      iii. Treatment failure

If patients consent to lumbar puncture, inform the attending physician who can assist with scheduling. Lumbar punctures are generally done at SFGH Emergency Department. In general, benzathine penicillin therapy is often initiated prior to LP, but LP should be done as soon as possible.

4. Diagnostic Criteria
   a. A reactive treponemal test in a patient with no prior history of syphilis, absence of symptoms and signs of syphilis, and no documentation of a nonreactive syphilis test in the past year.
   b. A fourfold or greater rise in titer of a nontreponemal (VDRL, RPR) test in a patient with a history of syphilis whose last known nontreponemal test was more than one year before. This may represent early latent disease; consult with attending physician on case-by-case basis.

**Neurosyphilis**

Can occur at any stage of disease.

1. History
   a. Patients with acute syphilitic meningitis, which usually occurs in patients with early syphilis, may complain of headache, fever, photophobia, neck stiffness, nausea, vomiting, blurred vision, seizures, aphasia, focal weakness, hemiplegia, or cranial nerve palsies (including hearing loss).
   b. Patients with general paresis or tabes dorsalis, which are neurologic complications of late syphilis, may present with dementia, psychosis, gait disturbances, lightning pains, or incontinence.

2. Examination

   Neurologic examination, including cranial nerves.
3. Laboratory
   a. Obtain nontreponemal (VDRL or RPR) and treponemal (TPPA) tests.
   b. A lumbar puncture should be performed. CSF should be sent for cell count with differential, glucose, total protein and CSF VDRL.

4. Diagnostic Criteria
   a. Reactive VDRL (or RPR) with a positive TPPA and
   b. Abnormal CSF WBC > 5 cells/μl; CSF protein > 40 mg/dl, or positive CSF VDRL*, or
   c. Identification of T. pallidum in CSF or CNS tissue by PCR, animal inoculation, DFA, or histology (not done in routine clinical practice).

   *Note: In HIV-positive patients, there may be a mild elevation of CSF WBC due to HIV itself, so a more appropriate diagnostic criterion for neurosyphilis is > 20 WBC/μl. Cases of suspected neurosyphilis should be discussed with the attending physician, or call (415) 487-5595 for expert consultation.

B. Treatment

1. Early Syphilis (less than 1 year duration)
   a. Benzathine penicillin G 2.4 million units IM once.
   b. For nonpregnant patients who are penicillin-allergic or refuse penicillin therapy, doxycycline 100 mg orally twice daily for 14 days may be substituted. This includes HIV-positive individuals.
   c. Pregnant women with early syphilis must be treated with 2.4 million units of benzathine penicillin G (desensitization is necessary if the patient is allergic to penicillin).

2. Late Syphilis (greater than 1 year duration or of unknown duration)
   a. Benzathine penicillin G 2.4 million units IM once each week for three weeks. Patients who are receiving three doses of penicillin must restart their treatment if more than 10 days elapse since the last dose. They should also receive each dose no sooner than five days since the preceding one.
   b. For nonpregnant penicillin-allergic patients, doxycycline 100 mg orally twice daily for 30 days may be substituted. This should be given to patients in 2 two-week packets so that mid-point VDRL and clinical evaluation can be repeated to rule out early latent syphilis and to assess adherence with the therapy.

3. Neurosyphilis
   a. Aqueous penicillin G 3-4 million units IV q4h for 10-14 days.
   b. If there is a high suspicion for neurosyphilis and the patient is being referred elsewhere for lumbar puncture, we recommend giving benzathine penicillin G 2.4
million units IM once before the patient leaves clinic, in case she/he is lost to follow-up. This renders the patient noninfectious.

c. For neurosyphilis that occurs in the setting of late syphilis or syphilis of unknown duration, benzathine penicillin G 2.4 million units IM weekly for 3 weeks should be administered after completion of neurosyphilis treatment.

4. Contacts/Clusters
   a. Benzathine penicillin G 2.4 million units IM once.
   b. Doxycycline 100 mg orally twice daily x 14 days for nonpregnant patients who are penicillin allergic or refuse penicillin.
   c. Treatment may be given in the field by trained personnel.

Notes: Pregnant patients with syphilis may ONLY be treated with penicillin. No other treatment should be given. Pregnant women with a history of true penicillin allergy should be seen by the attending physician and referred for desensitization and treatment. The UCSF Immunology fellow should be paged to arrange evaluation.

All patients should be alerted to the possibility of a Jarisch-Herxheimer reaction. This is characterized by flu-like symptoms that can be severe and are most likely to occur in primary and (especially) secondary syphilis, within hours after treatment. Patients should be told that this is not a drug allergy, but related to the death of the treponemes following treatment. In pregnant women this reaction may be associated with early labor, so consider admitting for inpatient observation if in the second or third trimester. Any pregnant woman treated for early syphilis as an outpatient should be advised to go to the emergency room if contractions occur.

Patients who are treated with doxycycline because of penicillin allergy or who refuse penicillin therapy should be cautioned regarding possible treatment failure and should be followed closely.

C. Follow-up

1. Early Syphilis
   a. Patients should return for examination one week, 3 months, 6 months and 12 months after treatment. At the initial follow-up visit, document whether or not the patient experienced a Jarisch-Herxheimer reaction and document the healing of lesions, diminution in extent of rash, etc. At all syphilis follow-up visits patient should be asked about any new neurological symptoms. If patients have neurological symptoms, they should be evaluated and referred promptly.
   b. Repeat VDRL titers should be done at 3, 6, 12 and 24 months after diagnosis.
   c. Pregnant patients should be evaluated monthly and should have a complete obstetric history documented at the initial visit to determine if there are other children who may have congenital syphilis. If this is a possibility, the City Clinic surveillance unit should be notified.
d. If nontreponemal antibody titers have not declined fourfold by 12-18 months for secondary and early latent syphilis, or if they increase fourfold, the patient should be evaluated for re-infection or treatment failure and should be treated accordingly. Titers may decline more slowly in patients with HIV infection. The attending physician should be consulted for such cases.

2. Late Syphilis
   a. Patients should be seen by a clinician every week for three weeks if the patient is receiving penicillin therapy. All patients should be evaluated after the initial therapy to assess whether or not the patient had a Jarisch-Herxheimer reaction. A repeat VDRL should be done at the second treatment. At follow-up visits, if titers increase fourfold, or an initially high titer (> 1:32) fails to decline after one year, or the patient has symptoms or signs attributable to syphilis, the patient should be evaluated for re-infection and neurosyphilis, and be re-treated. The attending physician should be consulted for such cases.
   
   b. Pregnant patients should be evaluated by a clinician during their weekly treatment visits, then monthly and should have a complete obstetric history to determine if they have other children who may need to be evaluated for congenital syphilis. Referral to the surveillance unit is indicated if other children are involved.

D. Counseling/Education
   1. All early syphilis cases should be referred to a DCI for counseling, clustering and names of partner(s). DCI should also be informed of cases of latent syphilis for which the nontreponemal antibody titer is > 1:32 so that the DCI can interview the patient as they would an early latent case.
   
   2. Understand the importance of returning for follow-up treatment.
   
   3. Be aware that the Jarisch-Herxheimer reaction may occur.
   
   4. Return for follow-up serologic tests as indicated.
   
   5. Refer sex partners(s) for examination and treatment.
   
   6. Avoid sexual activity until 1 week after they and partner(s) complete all treatment.
   
   7. Use condoms to prevent future infections.
   
   8. Understand that syphilis has been associated with an increased risk of HIV transmission and that City Clinic strongly urges syphilis patients to be HIV-tested.
   
   9. Understand that in individuals with prior, known HIV infection, syphilis may increase HIV viral load and therefore increase HIV transmission risk to an HIV-negative partner. It may also decrease CD4 count in HIV-infected patients not treated for HIV.
E. Evaluation and Treatment of Sex Partners

All sex partners of patients with early syphilis (or late syphilis with a nontreponemal antibody titer of > 1:32) should be evaluated clinically and should have a stat RPR and a VDRL. Contacts who are serofast, i.e., who have a known history of past treated syphilis and a persistently reactive RPR or VDRL titer, do not need to have a stat RPR performed. For early syphilis, if the estimated exposure date(s) occurred within the preceding 90 days the person may be infected yet seronegative; therefore, the person should be presumptively treated, regardless of reported sexual history. Contacts whose RPR is reactive should be diagnosed as having syphilis, staged, and be treated appropriately. If the sexual exposure of the contact occurred more than 90 days before the evaluation and the RPR is nonreactive, prophylactic treatment is not necessary. Contacts to patients with true late latent disease and who have a negative stat RPR need not be treated. We do not recommend routine treatment of an asymptomatic contact to an uninfected partner of a known syphilis case.

Syphilis partners/clusters should:

1. Be referred to a DCI for counseling and clustering.
2. Be aware that the Jarisch-Herxheimer reaction may occur.
3. Avoid sexual activity until 1 week after they and partner(s) complete all treatment.
4. Use condoms to prevent future infections.

Understand that syphilis has been associated with an increased risk of HIV transmission and that City Clinic strongly urges syphilis patients to be HIV-tested.

Note: If there are any questions concerning any aspect of syphilis diagnosis, treatment, follow-up, LP, etc., ask the attending physician for advice. The City Clinic Clinician’s line is available for telephone consult in difficult syphilis cases as well: (415) 487-5595.
Trichomoniasis

Trichomoniasis is a sexually transmitted infection caused by the single-celled protozoan parasite *Trichomonas vaginalis*. Female patients may be asymptomatic, or they may present with itching and malodorous vaginal discharge. Male sex partners are usually asymptomatic, but urethritis may develop. There is a strong association with other STDs, particularly gonorrhea, so STD screening is indicated. There may be an association between trichomoniasis and adverse pregnancy outcomes, particularly premature rupture of the membranes and preterm delivery.

A. Diagnosis

1. History
   a. Patients may be asymptomatic.
   b. If symptomatic, patients typically present with a malodorous vaginal discharge and vaginal itching.
   c. Men may present with dysuria or penile discomfort.

2. Examination
   a. Profuse, malodorous frothy, gray or greenish discharge is typical although, the discharge may be scant and thin and white.
   b. The cervix may have punctate hemorrhages (strawberry cervix).

3. Laboratory
   a. Vaginal pH > 4.5 or normal.
   b. Identification of motile trichomonads on a saline preparation (note that trichomonads die quickly so the saline preparation should be evaluated immediately after the pelvic exam has been completed). There will also be many white cells so close examination is necessary. Screen on low power for movement of organism.
   c. Culture using the InPouch TV culture system may be done for trichomonads in the SFCC on-site lab when the diagnosis is in question.

4. Diagnostic Criteria
   a. Identification of the motile *T. vaginalis* organism (that has a characteristic undulating membrane and flagella) by microscopic examination of a wet mount of vaginal discharge, urethral discharge, urine sediment or Pap smear or
   b. Identification of *T. vaginalis* by InPouch culture system or
   c. Trichomonads on liquid-based Pap.
d. Since trichomonads die quickly, the sensitivity of wet mount is approximately 60%. Therefore, the diagnosis may have to be made on clinical grounds alone.

B. Treatment

**Initial infection:**
1. **Metronidazole** 2 g orally once *OR*
2. **Tinidazole** 2 g orally once (more costly) *OR*
3. **Metronidazole** 500 mg twice daily for 7 days

**Persistent infection/treatment failure:**
Rarely, resistance of trichomoniasis to metronidazole occurs. In evaluating a female or male patient for possible metronidazole-resistant trichomoniasis obtain a careful history to assess for re-infection.
1. If re-infection is likely, re-treat with primary regimens above.
2. Patients who fail to respond to single-dose therapy should be re-treated with
   **Metronidazole** 500 mg orally twice daily for 7 days
3. Patients who fail with the 7-day therapy should be treated with
   **Metronidazole** 2 g orally daily for 5 days or **tinidazole** 2 g orally for 5 days
4. Recalcitrant or possible metronidazole-resistant trichomonas infections (i.e., wet mount confirmed trichomoniasis after escalating dose regimens listed above) can have trichomoniasis confirmed by culture, using the InPouch culture system. Culture can be obtained from vaginal specimen or a spun urine sediment. Consultation and *T. vaginalis* susceptibility testing is available from CDC.

C. Treatment in Pregnancy

**Metronidazole** 2 g orally once can be used at any stage of pregnancy, but treatment of trichomoniasis during pregnancy has not been shown to reduce perinatal morbidity. The patient should be counseled that treating trichomoniasis might reduce symptoms and might decrease risk of respiratory or genital infection of the newborn, and that deferral of treatment until 37 weeks is an option. Tinidazole should not be used in pregnancy as the safety is unknown.

D. Follow-up

Consider re-testing in 3 months.
E. Counseling/Education

Patients should:

1. Be counseled about the sexual transmission of trichomoniasis.
2. Understand how to take or use prescribed medications (e.g., alcohol should be avoided during and for 24 hours after treatment with metronidazole).
3. Return for evaluation if symptoms persist or recur after treatment.
4. Refer sex partner(s) for evaluation and treatment or provide them with patient-delivered partner therapy.
5. Avoid sex for at least 7 days after patient AND partner(s) are treated.
6. Use condoms to prevent future infections.
7. Know that males frequently are asymptomatic even if infected.
8. Know that trichomoniasis, like other STDs, increases the risk of HIV transmission.

F. Evaluation and Treatment of Sex Partners

Patient-delivered therapy should be given to all patients with *T. vaginalis* infections, with recommendation that partners also present for complete evaluation.

Sex partners should also be screened for gonorrhea, chlamydia and syphilis and counseled as above.

G. Special Considerations

Consider treatment with longer course (Metronidazole 500 mg twice daily for 7 days) in HIV-positive women and re-test in 3 months.
Urinary Tract Infections

Urinary tract infections (UTI) may be limited to the lower urinary tract (cystitis) or may include both the upper and lower tracts (pyelonephritis). The most common uropathogen is *Escherichia coli* (75-95%), followed by other species of Enterobacteriaceae, such as *Proteus mirabilis*, *Klebsiella pneumoniae*, and *Staphylococcus saprophyticus*. Uropathogens originate primarily from the bowel. Lower urinary tract infections appear to be limited to the mucosal surfaces of the lower urinary tract, which makes them relatively easy to cure with a short course of antimicrobial therapy. Symptoms generally include pain with urination, frequency, and urgency. These symptoms may occur from urethritis in the absence of bladder infection. Therefore, it is important to distinguish between urethritis (typically caused by gonorrhea or chlamydia) and cystitis, particularly in a sexually active population.

In young females, factors associated with increased risk of urinary tract infection include sexual intercourse, use of spermicide with or without diaphragm, history of a recent urinary tract infection and pregnancy. Most uncomplicated urinary tract infections in young females present with pain with urination, frequency, and urgency but without fever or flank pain. Females with sexually transmitted urethritis often have milder symptoms of longer duration, may have cervical infection, and often a history of a new sexual partner.

Pyelonephritis is an upper urinary tract infection involving the kidney parenchyma. The infection usually ascends from the lower urinary tract and is characterized by fever, flank pain, chills as well as lower urinary tract symptoms. Nausea, vomiting and diarrhea are not uncommon. While uncomplicated pyelonephritis can be treated in the outpatient setting with close follow-up, hospitalization may be necessary for pregnant patients, and patients with nausea, vomiting, or lethargy.

A. Diagnosis

1. History
   a. Patients often present with acute onset (< 4 days) of pain with urination, urgency, and frequency. There may also be a history of hematuria.
   b. Patients should be carefully questioned regarding the presence of flank pain, nausea/vomiting, and fever or chills.
   c. Any history of chronic or recurrent UTIs or UTIs with a resistant organism as well as risk factors (e.g., pregnancy, diabetes, use of spermicide) should be elicited.
   d. Take a thorough sexual history because urethritis, vaginitis and cystitis can have a similar presentation. A recent new partner should raise suspicion of STD, and not necessarily a UTI, although UTIs can be associated with inadequate emptying of bladder and with intercourse (“honeymoon cystitis”).
2. Examination
   a. There may be suprapubic tenderness.
   b. A careful evaluation for flank (costovertebral angle) tenderness (CVAT) must be done. If present, take the patient's temperature.
   c. A pelvic exam to rule out vaginitis, cervicitis, and other STDs is an important part of the evaluation.

3. Laboratory
   a. Vaginal swab for GC and CT NAAT.
   b. The patient should provide a clean catch urine specimen, to reduce the likelihood of contamination. The provider should explain the proper technique before sending the patient to the bathroom.
   c. Urine dipstick to assess for leukocyte esterase and nitrite.
   d. Urine microscopy to assess for number of WBC/HPF.

4. Diagnostic Criteria
   a. Positive leukocyte esterase and nitrite on a urine dipstick from a midstream clean catch urine in a patient with a compatible clinical presentation. The absence of leukocyte esterase substantially reduces the likelihood of cystitis, but false negative dipstick tests do occur, therefore examination of spun urine sediment is useful.
   b. The presence of > 10 WBCs per HPF from spun urine correlates with UTI. The presence of more than a few vaginal epithelial cells per high power field represents contamination and a poor urine collection. Repeat the clean catch urine collection before making diagnosis.
   c. Clinical symptoms (e.g., dysuria, urgency, frequency).
   d. The patient should have a negative pelvic exam except for possible bladder wall tenderness.
   e. Urine culture and sensitivity should be ordered if a patient does not respond to therapy, has pyelonephritis, has recurrent infections, or is male.

B. Treatment

1. Uncomplicated Lower UTI (cystitis)
   a. May be treated with short course therapy.
   b. Does not require urine culture prior to treatment.
   c. Patients should follow-up if symptoms recur, persist, worsen and/or signs or symptoms of upper tract involvement occur.
Recommended (nonpregnant):

i. Nitrofurantoin (Macrobid) 100 mg orally four times daily for 5 days OR

ii. TMP-SMX SS One tab orally twice daily for 3 days

Note: Nitrofurantoin should not be used if early pyelonephritis suspected due to poor absorption in renal parenchyma.

TMP/SMX should not be used if resistance prevalence is known to exceed 20% or if used for UTI in previous 3 months.

Alternate (nonpregnant):

Ciprofloxacin 250 mg orally twice daily for 3 days

Note: Fluoroquinolones such as ciprofloxacin should not be used in pregnancy.

Recommended (pregnant):

i. Nitrofurantoin (Macrobid) 100 mg orally four times daily for 5 days OR

ii. Cefpodoxime 100 mg orally twice daily for 3-7 days

2. Complicated Lower UTI

A lower UTI is considered “complicated” if any of the following are present:

a. Recurrent infection within two weeks of completion of therapy.

b. History of UTI with antibiotic-resistant organism.

c. History of multiple serious antibiotic allergic reactions.

d. History of multiple UTIs (> 5 UTIs, avoid TMP/SMX use).

e. Male with UTI.

f. Symptoms greater than 7 days.

g. Pregnancy.

h. Diabetes.

i. Recent hospitalization or instrumentation.

j. Other significant underlying medical conditions.

Treatment:

Must be tailored to patient history and presentation and typically requires a 7 day course of treatment – consult with the attending physician.

3. Upper UTI (pyelonephritis)

Notify attending physician and hospitalize for:

a. Hemodynamically unstable (high pulse, low blood pressure).

b. Pregnant.
c. Vomiting and unable to tolerate oral meds.

d. Unlikely to adhere to outpatient regimen, or to follow-up in clinic.

**Outpatient management** – if do not meet criteria for hospitalization above:

i. Send urine culture.

ii. **Ciprofloxacin** 500 mg orally twice daily x 7 days

*Note: If the prevalence of fluoroquinolone resistance is thought to exceed 10%, an initial 1-time intravenous dose of a long-acting parenteral such as 1 g ceftriaxone should be considered.*

iii. Patient must return to clinic for repeat evaluation in 72 hours and 7 days.

iv. Patient should be told to present to clinic or the Emergency Department if symptoms worsen or unable to tolerate oral meds.
Patient-Delivered Partner Therapy (PDPT)

Effective clinical management of patients diagnosed with treatable STDs requires treatment of their sex partners as well. Current state law in California allows clinicians to provide additional courses of STD treatment for partners of patients.

There have been three randomized controlled clinical trials that demonstrate that partner treatment reduces rates of repeat infection in the original patient. The CDC supports PDPT, and recommendations for its use are incorporated in its 2010 STD Treatment Guidelines.

Patients diagnosed with the following STDs should be offered PDPT to give to all partners in the 60 days prior to diagnosis:

1. Chlamydia
2. Gonorrhea*
3. Nongonococcal urethritis (NGU)
4. Trichomonas

*The recommended treatment regimen for gonorrhea includes an intramuscular injection of ceftriaxone, therefore partners of patients with gonorrhea should be strongly encouraged to come to clinic or see their primary care doctor for gonorrhea treatment. Providing a patient with gonorrhea a “partner pack” that includes an oral 3rd generation cephalosporin and azithromycin could be used as part of a harm reduction approach, if the patient’s sex partners are very unlikely to seek care.

For current partners of patients with:

1. Pubic lice
2. Scabies

Optimally, a “partner pack” should be given to the patient for each partner. At City Clinic this includes:

1. Medication
2. Instructions for taking the medication
3. An information sheet about the STD for which they are receiving treatment
4. Condoms
5. Cards for City Clinic and InSpot, an online partner-notification resource.

Patients should always be encouraged to advise partners to present to a medical provider for a full evaluation, including assessment for other possible STDs. PDPT does not replace the need for this individual evaluation.
Events Requiring Attending Physician Notification

1. Patient must be sent to urgent care or the emergency department for further evaluation.
2. Pelvic examination cannot be conducted satisfactorily.
3. Uterine enlargement or pelvic masses are found on exam.
4. Acute salpingitis or acute abdomen in a pregnant patient.
5. First episode genital herpes is found in a pregnant woman.
6. Testicles are painful, tender, or enlarged.
7. The diagnosis is uncertain or disease is severe.
8. If any of the following diseases are suspected:
   a. Pelvic actinomycosis
   b. Resistant candidiasis
   c. Chancroid
   d. Epididymitis
   e. Disseminated zoster
   f. Presence of a bubo
   g. Genital ulcer disease of uncertain etiology despite evaluation
   h. Complicated syphilis cases including: syphilis in pregnancy, neurosyphilis, questions regarding syphilis staging or for assistance/confirmation of darkfield examinations
   i. Gonorrhea treatment failure
   j. Disseminated gonococcal infection (DGI)
   k. Lymphogranuloma venereum (LGV)
   l. Pelvic inflammatory disease (PID) not improved 72 hours after treatment
   m. Complicated urinary tract infection (UTI) or pyelonephritis
10. Serious sign of adverse reaction to treatment occurs, such as anaphylaxis (angioedema, urticaria, bronchospasm, hypotension, pruritis), skin rash, or anxiety.
11. Needed STD treatment or procedure is not specified in the preceding protocols (e.g., drainage of a bubo).
12. A serious surgical problem such as acute abdomen.
## Common Medications Used for STDs

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<tr>
<th>Generic Name</th>
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<th>Category in Pregnancy</th>
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<tbody>
<tr>
<td>Acyclovir</td>
<td>Zovirax</td>
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<td>Clindamycin</td>
<td>Cleocin po</td>
<td>B</td>
</tr>
<tr>
<td>Clindamycin cream 2%</td>
<td>Cleocin</td>
<td>Avoid in pregnancy</td>
</tr>
<tr>
<td>Clotrimazole</td>
<td>Lotrimin</td>
<td>topical ok in pregnancy</td>
</tr>
<tr>
<td>Doxycycline</td>
<td>Doxy-caps (and others)</td>
<td>D (avoid)</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>EES (and others)</td>
<td>B</td>
</tr>
<tr>
<td>Famciclovir</td>
<td>Famvir</td>
<td>B</td>
</tr>
<tr>
<td>Fluconazole</td>
<td>Diflucan</td>
<td>C (avoid)</td>
</tr>
<tr>
<td>Imiquimod</td>
<td>Aldara</td>
<td>Avoid in pregnancy</td>
</tr>
<tr>
<td>Levofloxacin</td>
<td>Levaquin</td>
<td>C (avoid)</td>
</tr>
<tr>
<td>Metronidazole</td>
<td>Flagyl</td>
<td>B (avoid in 1st trimester)</td>
</tr>
<tr>
<td>Metronidazole gel</td>
<td>Metrogel</td>
<td>B</td>
</tr>
<tr>
<td>Miconazole</td>
<td>Monistat</td>
<td>B</td>
</tr>
<tr>
<td>Nitrofurantoin</td>
<td>Macrobid</td>
<td>B</td>
</tr>
<tr>
<td>Ofloxacin</td>
<td>Floxin</td>
<td>C (avoid)</td>
</tr>
<tr>
<td>Permethrin</td>
<td>Elimite</td>
<td>B</td>
</tr>
<tr>
<td>Podofilox</td>
<td>Podofilox</td>
<td>Avoid in pregnancy</td>
</tr>
<tr>
<td>Podophyllin (25%)</td>
<td>Podocon-25</td>
<td>Avoid in pregnancy</td>
</tr>
<tr>
<td>Tinidazole</td>
<td>Tindamax</td>
<td>C (avoid)</td>
</tr>
<tr>
<td>TMP-SMX</td>
<td>Septra</td>
<td>C (avoid)</td>
</tr>
<tr>
<td>Valacyclovir</td>
<td>Valtrex</td>
<td>B</td>
</tr>
</tbody>
</table>
Select STD Resources

- San Francisco City Clinic website: updated alerts, fact sheets, epidemiology reports and an electronic copy of clinical protocols: [http://www.sfcityclinic.org](http://www.sfcityclinic.org) then click on providers
