Sexually Transmitted Disease Treatment Tables

Federal Bureau of Prisons Clinical Practice Guidelines

November 2008

Contents

Table 1. Gonorrhea, Chlamydia, Nongonococcal Urethritis and PID
Table 2. Herpes Simplex Virus, Vaginitis and Genital Warts
Table 3. Syphilis Stages and Classification
Table 4. Syphilis Screening Guidelines and Diagnostic Tests
Table 5. Syphilis Treatment and Monitoring
References
Patient Educational Materials

What's New in this Document?

- Quinolones are no longer recommended for treatment of gonorrhea or pelvic inflammatory disease due to widespread quinolone resistance.
- Information on diagnosis and treatment of STDs expanded.
- More detailed overview on syphilis provided.

Table 1. Gonorrhea, Chlamydia, Nongonococcal Urethritis and PID

Treatment (directly observed)	Comments
Gonorrhea (GC) (*N. gonorrhoeae*) of the cervix, urethra, rectum, pharynx	
• **Ceftriaxone** 125 mg IM x1 **or** • ***Alternative:*** Cefixime 400 mg orally x1 ***PLUS*** • **Treatment for chlamydia infection** (unless chlamydial infection ruled out with sensitive test—nucleic acid amplification test). Treat with: • **Azithromycin** 1 gram orally x1 **or** • **Doxycycline** 100 mg twice daily orally x7 days ***Pharyngeal gonorrhea:*** Treat with ceftriaxone. ***HIV infection:*** Treatment regimens are the same for inmates without HIV co-infection. ***Pregnant women:*** Treat GC with ceftriaxone **or** cefixime; treat chlamydia with azithromycin **or** amoxicillin ***Other alternative treatments:*** Spectinomycin 2 g IM in a single dose **or** other single-dose cephalosporins. See CDC guidelines at: http://www.cdc.gov/std/treatment/.	***Screening:*** No routine screening at intake unless symptoms of gonorrhea are present, or unless syphilis or chlamydia have been diagnosed. ***Diagnosis:*** Nucleic acid amplification tests (NAAT) for symptomatic inmates. Follow-up tests to prove cure are not indicated unless symptoms persist. ***Contacts:*** Sex partners of patients with *N. gonorrhoae* infections whose last sexual contact with the patient was within 60 days before onset of symptoms or diagnosis should be evaluated and treated for *N. gonorrhoeae* and *C. trachomatis.* Note: Ceftriaxone available in 250 mg, 500mg, 1 and 2 gram vials. Titration necessary to attain 125 mg dose. **Note: Quinolones are no longer recommended for treatment of gonorrhea.**
Chlamydia (*C. trachomatis*)	
• **Azithromycin** 1 gram orally x1 **or** • **Doxycycline** 100 mg orally twice daily orally x7 days ***Pregnant women:*** Azithromycin 1 gram orally x1 **or** Amoxacillin 500 mg orally 3 times daily for 7 days. ***Alternative treatments:*** See CDC guidelines at: http://www.cdc.gov/std/treatment/.	***Screening:*** Routine intake screening for females who: • are 25 and under and/or • have HIV infection and/or • have history of syphilis, gonorrhea, or chlamydia ***Diagnosis:*** For symptomatic inmates, confirm infection by culture, NAAT or other assay whenever feasible. Asymptomatic infection is common in men and women. Testing for cure is not indicated following treatment with azithromycin or doxycycline unless symptoms recur. ***Contacts:*** All sex partners in the 60 days preceding symptom onset should be evaluated & treated. Most recent sexual contact should be evaluated and treated, even if contact was >60 days after symptom onset.
Nongonococcal Urethritis	
• **Azithromycin** 1 g orally x1 **or** • **Doxycycline** 100 mg orally twice daily orally x7 days ***Alternative treatments:*** See CDC guidelines at: http://www.cdc.gov/std/treatment/.	***Diagnosis:*** All patients with confirmed or suspected urethritis should be tested for gonorrhea & chlamydia. ***Treatment:*** *M. genitalium* may respond better to azithromycin. ***Contacts:*** Refer all sex partners within preceding 60 days for treatment.
Pelvic Inflammatory Disease (PID) -- Outpatient Management	
Recommended Regimen: **Ceftriaxone** 250 mg IM **plus** **Doxycycline** 100 mg orally twice daily x7 days ***Alternative Regimen:*** **Cefoxitin** 2 g IM x 1 **or** other third generation cephalosporin **plus** **Probenicid** 1 g orally **plus** **Doxycycline** 100 mg orally twice daily for 14 days **Note:** Both regimens *can be given* **with or without** **metronidazole** 500 mg orally twice daily x14 days.	***Diagnosis:*** Minimum criteria based on pelvic exam finding: cervical motion tenderness or uterine tenderness or adnexal tenderness. The following additional evidence support a PID diagnosis: temperature >101F, abnormal cervical or vaginal mucopurulent discharge, elevated erythrocyte sedimentation rate, elevated C-reactive protein, and laboratory documentation of cervical infection with *N. gonorrhoeae* or *C. trachomatis*. ***Hospitalize:*** if surgical emergencies cannot be excluded, pregnancy, lack of clinical response to oral therapy, or severe illness.

Table 2. Herpes Simplex Virus, Vaginitis and Genital Warts

Treatment	Comments
Herpes Simplex Virus (HSV)	
First episode: **Acyclovir** 400 mg 3x daily orally x7–10 days **Recurrent episodes:** **Acyclovir** 400 mg 3x daily orally x5 days **Suppressive therapy:** **Acyclovir** 400 mg 2x daily orally x1 year	***General:*** Genital herpes is a recurrent, lifelong infection. Sexual transmission of HSV occurs in asymptomatic persons. ***Treatment*:*** ***First episode:*** Treat with acyclovir, since treatment may reduce symptoms. Treatment does not eradicate herpes virus or affect the risk, severity, or frequency of recurrences. ***Recurrent episodes:*** Treatment must be initiated within one day of lesion onset or during the prodrome that precedes some outbreaks. ***Suppressive therapy:*** Consider on case-by-case basis, depending on the severity and frequency of recurrences. Reconsider continuation of suppressive therapy after 1 year of therapy. Suppressive therapy does not eliminate asymptomatic viral shedding. *Note: Topical acyclovir is ineffective. ***Immunosuppression:*** Inmates with HIV infection or immunocompromised conditions may require higher doses of oral acyclovir or intravenous therapy for herpes infections. ***Pregnancy:*** Consult with obstetrician.
Vaginitis	
Bacterial Vaginosis (BV)	
Metronidazole 500 mg orally 2x daily x7 days	***Diagnosis:*** Clinical criteria require three of following: 1) homogenous, thin, white discharge; 2) presence of clue cells on microscopic exam; 3) pH of vaginal fluid >4.5; and 4) fishy odor of vaginal discharge before or after addition of 10% KOH ("whiff test") ***Pregnancy:*** BV is associated with adverse pregnancy outcomes. Test if symptomatic. Treat if appropriate. Asymptomatic women at high risk of premature delivery should be screened during the earliest part of the second trimester and treated with metronidazole 500 mg orally twice daily x 7 days .
Candidiasis	
Clotrimazole 100 mg vaginal tablets (2 tablets for 3 days) **or** other intravaginal agent per package instructions	***Diagnosis:*** Clinical diagnosis suggested by external dysuria, vulvar pruritis, pain, redness, vulvar edema, or thick curdy vaginal discharge. Diagnosis can be made by wet prep or gram stain demonstrating yeast or pseudohyphae or culture for yeast species. ***Treatment:*** Uncomplicated vulvovaginal candidiasis (VVC) usually responds to short course intravaginal therapy. Complicated VVC (e.g., recurrent or severe disease, non-albicans candidiasis, or presence of diabetes or other immunocompromised condition) usually requires more intensive treatment regimen sometimes with oral agents (i.e., fluconazole). ***Pregnancy:*** Use only topical agents.
Trichomoniasis *(T. vaginalis)*	
Metronidazole 2 gm orally x1 Note: Metronidazole gel has a <50% cure rate and should not be used.	***Diagnosis:*** Clinical diagnosis suggested by diffuse, malodorous, yellow-green vaginal discharge with vulvar irritation. Diagnosis made via microscopy of vaginal secretions and several new rapid tests. Culture is most sensitive & specific available method of diagnosis. ***Pregnancy:*** Vaginal trichomoniasis is associated with adverse pregnancy outcomes; however, metronidazole treatment does not appear to reduce perinatal morbidity. Clinicians should counsel patients about potential risks and benefits of treatment. Some specialists would defer treatment until after 37 weeks' gestation using metronidazole 2 gm orally x1.
External Genital Warts	
Topical agents **or** **Cryotherapy** **or** **Surgical excision**	***Diagnosis:*** is made by visual inspection and may be confirmed by biopsy. ***Treatment:*** Response to treatment is often poor. Side effects of treatment are often worse than the condition itself. Treatment does not eliminate infectivity. Visible warts may resolve spontaneously. *Therefore, within the BOP treatment for genital warts is generally NOT provided.* Large warts which require debulking (e.g., perianal warts which are interfering with hygiene) should be removed using electrocautery. Inmate education regarding the facts of this condition is critical. Patients should be periodically evaluated for possible neoplasias. ***Pregnancy:*** Imiquimod, podophyllin and podofilox should not be used in pregnancy. However, because genital warts can proliferate and become friable during pregnancy, many specialists advocate their removal during pregnancy. Consult obstetrician.

Table 3. Syphilis Stages and Classification

Syphilis, primary (1^{o})

Clinical description: A stage of infection with *Treponema pallidum* characterized by one or more chancres (ulcers); chancres might differ considerably in clinical appearance. Primary syphilis is highly contagious. The disease can be transmitted from any contact with one of the ulcers.

Laboratory criteria for diagnosis: Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, direct fluorescent antibody (DFA-TP), or equivalent methods.

Case classification:

- **Confirmed:** a clinically compatible case that is laboratory confirmed

Syphilis, secondary (2^{o})

Clinical description: A stage of infection caused by *T. pallidum* and characterized by localized or diffuse mucocutaneous lesions, often with generalized lymphadenopathy. The primary chancre may still be present. Approximately 25 percent of syphilis cases proceed to secondary syphilis, which lasts four to six weeks. This phase can include hair loss; a sore throat; white patches in the nose, mouth, and vagina; fever; headaches; and a skin rash. There can be lesions on the genitals that look like genital warts, but are caused by spirochetes rather than the wart virus. These wart-like lesions, as well as the skin rash, are highly contagious. Rash can occur on palms of hands. Infection can be transmitted by casual contact.

Laboratory criteria for diagnosis: Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, DFA-TP, or equivalent methods.

Case classification:

- **Probable:** a clinically compatible case with a nontreponemal (VDRL or RPR) titer greater than or equal to 4.
- **Confirmed:** a clinically compatible case that is laboratory confirmed.

Syphilis, latent

Clinical description: A stage of infection caused by *T. pallidum* in which organisms persist in the body of the infected person without causing symptoms or signs. Latent syphilis is subdivided into early, late, and unknown categories based on the duration of infection.

Case classification:

- **Probable:** no clinical signs or symptoms of syphilis and the presence of *one of the following*:
  - No past diagnosis of syphilis, a reactive nontreponemal test (i.e., VDRL or RPR), and a reactive treponemal test (i.e., FTA-ABS or MHA-TP)
  - A past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer

Syphilis, early latent

Clinical description: A subcategory of latent syphilis. When initial infection has occurred within the previous 12 months, latent syphilis is classified as early latent.

Case classification:

- **Probable:** latent syphilis (see Syphilis, latent) in a person who has evidence of having acquired the infection within the previous 12 months based on *one or more of the following* criteria:
  - Documented seroconversion or fourfold or greater increase in titer of a nontreponemal test during the previous 12 months
  - A history of symptoms consistent with primary or secondary syphilis during the previous 12 months
  - A history of sexual exposure to a partner who had confirmed or probable primary or secondary syphilis or probable early latent syphilis (documented independently as duration less than 1 year)
  - Reactive nontreponemal and treponemal tests from a person whose only possible exposure occurred within the preceding 12 months

continued

Table 3. Syphilis Stages and Classification (continued)

Syphilis, late latent

Clinical description: A subcategory of latent syphilis. When initial infection has occurred greater than 1 year previously, latent syphilis is classified as late latent.

Case classification:

- **Probable:** latent syphilis (see Syphilis, latent) in a patient who has no evidence of having acquired the disease within the preceding 12 months (see Syphilis, early latent) and whose age and titer do not meet the criteria specified for latent syphilis of unknown duration.

Syphilis, latent, of unknown duration

Clinical description: A subcategory of latent syphilis. When the date of initial infection cannot be established as having occurred within the previous year and the patient's age and titer meet criteria described below, latent syphilis is classified as latent syphilis of unknown duration.

Case classification:

- **Probable:** latent syphilis (see Syphilis, latent) that does not meet the criteria for early latent syphilis, and the patient is aged 13-35 years and has a nontreponemal titer greater than or equal to 32.

Neurosyphilis

Clinical description: Evidence of central nervous system infection with *T. pallidum.*

Laboratory criteria for diagnosis: A reactive serologic test for syphilis and reactive VDRL in cerebrospinal fluid (CSF).

Case classification:

- **Probable:** syphilis of any stage, a negative VDRL in CSF, and *both the following*:
  - Elevated CSF protein or leukocyte count in the absence of other known causes of these abnormalities.
  - Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities.
- **Confirmed:** syphilis of any stage that meets the laboratory criteria for neurosyphilis.

Syphilis, late, with clinical manifestations other than neurosyphilis

(late benign syphilis and cardiovascular syphilis)

Clinical description: Clinical manifestations of late syphilis other than neurosyphilis may include inflammatory lesions of the cardiovascular system, skin, and bone. Rarely, other structures (e.g., the upper and lower respiratory tracts, mouth, eye, abdominal organs, reproductive organs, lymph nodes, and skeletal muscle) may be involved. Late syphilis usually becomes clinically manifest only after a period of 15-30 years of untreated infection. The term "**tertiary syphilis"** refers to gumma and cardiovascular syphilis (but not to neurosyphilis). Gumma are soft rubbery tumors often occurring in the mouth which are characteristic of tertiary syphilis.

Laboratory criteria for diagnosis: Demonstration of *T. pallidum* in late lesions by fluorescent antibody or special stains (although organisms are rarely visualized in late lesions).
Note: Analyze CSF for evidence of neurosyphilis when evaluating late syphilis with clinical manifestations.

Case classification:

- **Probable:** characteristic abnormalities or lesions of the cardiovascular system, skin, bone, or other structures with a reactive treponemal test, in the absence of other known causes of these abnormalities, and without CSF abnormalities and clinical symptoms or signs consistent with neurosyphilis.
- **Confirmed:** a clinically compatible case that is laboratory confirmed.

References:

CDC (home page on the internet). *Syphilis (treponema pallidum)—1996 case definition.* Accessed November 6, 2008. Available from: http://www.cdc.gov/ncphi/disss/nndss/casedef/syphiliscurrent.htm#primary

CDC. STD treatment guidelines. *MMWR* 2006;55(No. RR-11). Available from: http://www.cdc.gov/STD/treatment/.

Table 4. Syphilis Screening Guidelines and Diagnostic Tests

BOP Syphilis Screening Guidelines

Syphilis intake screening:
- all females
- any males who either have had sex with another man, are HIV-infected, or have a history of syphilis, gonorrhea, or chlamydia.

Syphilis screening tests: Syphilis screening is performed utilizing nontreponemal titers (e.g., RPR or VDRL). Note that these screening tests have relatively low sensitivity in patients with early primary syphilis and for tertiary syphilis. Nontreponemal tests must be confirmed with a treponemal test (e.g., FTA-ABS).

Note: All inmates diagnosed with syphilis should be HIV tested.

Syphilis Diagnostic Tests

Direct Methods: Used with skin lesions or pathologic specimens. Includes darkfield microscopy and the direct fluorescent-antibody (DFA-TP) test

Serologic Tests: A presumptive diagnosis of syphilis can be made by two different types of serologic, diagnostic tests: quantitative nontreponemal tests and confirmatory treponemal assays.

Note: Serologic tests for syphilis in persons with HIV infection are often more variable, but are still helpful diagnostically and for evaluating treatment response.

- **Quantitative nontreponemal tests**
  - **VDRL**: Venereal Disease Research Laboratory and
    RPR: Rapid Plasmin Reagin
  - Nontreponemal assays correlate with disease activity. A clinically significant difference between two tests requires at least a fourfold change in titer, e.g., 1:4 to 1:16; or 1:32 to 1:8. The same test should be used for comparisons, e.g., RPR to RPR. The RPR or VDRL titer should become non-reactive with treatment. However, some people will remain “serofast” with a low titer despite adequate treatment. Serologic titers may decline more slowly for persons with recurrent syphilis.
  - Nontreponemal tests must be confirmed by a treponemal assay because non-treponemal assays can be false-positive.

- **Treponemal assays**
  - **FTA-ABS**: Fluorescent treponemal antibody absorbed and
    TP-PA: *T. pallidum* particle agglutination.
  - Treponemal assays (e.g., FTA-ABS) usually remain positive for life; however, 15–25% of persons treated during primary syphilis may revert to a nonreactive status after 2–3 years.

- **Cerebrospinal fluid tests**
  - Neurosyphilis is diagnosed by clinical or laboratory findings.
  - A positive CSF-VDRL (in the absence of significant blood contamination) is considered diagnostic of neurosyphilis; however, certain persons with neurosyphilis will have a negative CSF-VDRL.
  - A negative CSF-FTA-ABS excludes nearly all cases of neurosyphilis.
  - The CSF leukocyte count is usually elevated (>5 WBCs/mm3) in patients with neurosyphilis and is a helpful measure to assess treatment response.

Table 5. Syphilis Treatment and Monitoring

Treatment	Monitoring
Stage: Primary/Secondary	
Standard: Benzathine penicillin G 2.4 million units IM x1. **Penicillin allergy:** Doxycycline 100 mg orally twice daily for 14 days. **If pregnant:** Desensitize & treat with penicillin. Needs closer follow-up. **HIV:** Same treatment as above. Lower threshold for CSF exam. **Retreatment:** Administer benzathine penicillin G 2.4 million units IM once weekly x3 weeks, unless CSF exam indicates that neurosyphilis present.	**HIV-negative:** Clinical evaluation & RPR at 6 & 12 months **HIV-infected:** Clinical evaluation & RPR at 3, 6, 9, 12 & 24 months **Comments:** • Inmates who have persistent or recurrent signs or symptoms or who have a sustained fourfold increase in RPR titer should be retreated. Repeat HIV testing and perform a CSF analysis. • Failure of RPR to decline fourfold in 6 months after initial treatment suggests possible treatment failure. Repeat HIV serology. If HIV negative, consider CSF exam and consider re-treatment as above.
Stage: Latent	

Early Latent: Benzathine penicillin G 2.4 million units IM x1
 	
Late Latent: Benzathine penicillin G 2.4 million units IM x3 doses that are administered 1 week apart (for a total of 7.2 million units).
 	
Penicillin allergy: Doxycycline 100 mg orally twice daily x14 days.
 	
If pregnant: Desensitize & treat with penicillin.
 	
HIV: Same treatment as above.
	HIV-negative: Clinical evaluation & RPR at 6, 12 & 24 months
	HIV-infected: Clinical evaluation & RPR at 6, 12, 18 & 24 months. If early latent, then use lower threshold for CSF exam. If late latent, then perform CSF exam.
	Comments:
	• Inmates should be retreated & evaluated for neurosyphilis if:
	  • titers increase fourfold;
	  • an initially high titer (≥1:32) fails to decline fourfold within 12-24 months; or
	  • signs & symptoms of syphilis develop.
	• HIV-infected: Have low threshold for re-evaluating CSF.

Stage: Tertiary (gumma and cardiovascular syphilis)	
Refer to specialist for treatment & follow-up of tertiary syphilis.	
Neurosyphilis and Syphilitic Eye Involvement	
Standard: Aqueous crystalline penicillin G 3–4 million units IV every 4 hours for 10–14 days. **If penicillin allergy:** Skin test to confirm allergy. Ceftriaxone may be an alternative. **If pregnant:** Desensitize & treat with penicillin.	• If pleocytosis was present initially, repeat CSF exam every 6 months until the cell count is normal. • Monitor RPR titers periodically. • If the cell count is not normal in 2-3 years consider retreatment. • HIV-infected persons may have persistent CSF abnormalities and warrant close clinical follow-up.
Management of Contacts	
Sexual transmission of *T. pallidum* occurs when lesions are present (usually in 1st year after infection). Syphilis cases whose partners are at-risk and thus merit evaluation include: • **Primary syphilis:** partners exposed 3 months prior to treatment plus duration of symptoms. • **Secondary syphilis**: partners exposed 6 months prior to treatment plus duration of symptoms. • **Early latent**: partners exposed 1 year prior to treatment. • **Latent syphilis:** long-term partners. Examine contacts clinically and serologically. If contact was exposed within previous 90 days treat presumptively. If exposure occurred greater than 90 days ago, then treat based upon serologies.	

References

Centers for Disease Control and Prevention. Sexually transmitted disease treatment guidelines - 2006. *MMWR* 2006;55(No. RR-11). Available from: http://www.cdc.gov/STD/treatment/.

Centers for Disease Control and Prevention (homepage on the internet). *Syphilis (treponema pallidum)—1996 case definition*. Accessed November 6, 2008. Available from: http://www.cdc.gov/ncphi/disss/nndss/casedef/syphiliscurrent.htm#primary

Centers for Disease Control and Prevention. Update to CDC's sexually transmitted diseases treatment guidelines, 2006: fluoroquinolones no longer recommended for treatment of gonococcal infections. *MMWR*. 2007;56:332-336. Available from: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5614a3.htm?s_cid=mm5614a3_e

Patient Educational Materials

The Centers for Disease Control and Prevention provides STD fact sheets in both English and Spanish (see http://www.cdc.gov/STD/HealthComm/fact_sheets.htm).

Available CDC Fact Sheets:

- Bacterial Vaginosis
- Chlamydia
- Genital HPV Infection
    - HPV and Men
    - HPV Vaccine Information for Young Women
    - HPV Vaccine Information for Clinicians
- Genital Herpes
- Gonorrhea
    - Antibiotic Resistant Gonorrhea
- Lymphogranuloma venereum (LGV)
- Pelvic Inflammatory Disease
- STD Detection and Treatment in HIV Prevention
- STDs and Pregnancy
- Syphilis
    - Syphilis and Men Who Have Sex with Men