# RECOMMENDED TREATMENT FOR SEXUALLY TRANSMITTED DISEASES IN HIV-INFECTED ADULTS

This table reflects the Centers for Disease Control and Prevention (CDC) 2010 STD Treatment Guidelines and focuses on STDs encountered among HIV-infected adults in an outpatient setting.

<table>
<thead>
<tr>
<th>DISEASE</th>
<th>RECOMMENDED TREATMENT</th>
<th>ALTERNATIVE TREATMENTS / COMMENTS</th>
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<tbody>
<tr>
<td><strong>SYphilis</strong> (see CDC guidelines for follow-up recommendations and treatment of syphilis in pregnancy)</td>
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</table>
| **PRIMARY, SECONDARY OR EARLY LATENT (< 1 YEAR)** | - Benzathine penicillin G 2.4 million units IM in a single dose (Bicillin® L-A) | If history of allergy to penicillin:  
  - Doxycycline 100mg orally 2 times a day for 14 days OR  
  - Tetracycline 500 mg orally 4 times a day for 14 days OR  
  - Ceftriaxone 1g IM or IV once a day for 10-14 days  
Efficacy of non-penicillin regimens in HIV-infected patients is not well studied. If compliance or follow-up cannot be ensured, patients should be desensitized and treated with penicillin. Close serologic and clinical follow-up is recommended. |
| **LATE LATENT (> 1 YEAR) OR LATENT OF UNKNOWN DURATION** | - Benzathine penicillin G 2.4 million units IM for 3 doses, 1 week apart (total 7.2 million units) | If history of allergy to penicillin:  
  - Doxycycline 100mg orally 2 times a day for 28 days OR  
  - Tetracycline 500 mg orally 4 times a day for 28 days  
See treatment considerations above for use of non-penicillin regimens. |
| **NEUROSYphilis** | - Aqueous crystalline penicillin G 18-24 million units per day, administered as 3-4 million units IV every 4 hours or continuous infusion, for 10-14 days  
  - For late syphilis, consider adding benzathine penicillin G 2.4 million units IM one time per week for up to 3 weeks after completion of treatment for neurosyphilis, | Procaine penicillin 2.4 million units IM once daily plus probenecid 500 mg orally 4 times a day, both for 10-14 days (use only if compliance with therapy ensured)  
  - For late syphilis consider adding benzathine penicillin G 2.4 million units IM one time per week for up to 3 weeks after completion of treatment for neurosyphilis. |
| **GONOCOCCAL INFECTIONS** | Dual antibiotic therapy is now recommended for all patients with gonorrhea regardless of Chlamydia trachomatis test results.  
DUAL THERAPY WITH:  
- Ceftriaxone 250 mg IM single dose (preferred for treatment at all anatomic sites)  
PLUS  
- Azithromycin 1 g orally single dose  
- Doxycycline 100mg orally twice a day for 7 days² | Dual antibiotic therapy with  
  - Cefixime 400 mg PO orally single dose (NOT for pharyngeal infection)  
PLUS  
  - Azithromycin 1 g orally single dose OR  
  - Doxycycline 100mg orally twice a day for 7 days²  
If allergic to cephalosporins or history of severe allergy to penicillin:  
  - Azithromycin 2 g orally single dose²  
If treatment failure suspected, refer to www.std.ca.gov for the latest gonorrhea treatment failure guidelines or call the CA STD Control Branch at 510-620-3400. |
| **CONJUNCTIVA** | - Ceftriaxone 1 g IM once, plus consider lavage of infected eye with saline solution once |  |
| **CHLAMYDIAL INFECTIONS** | |  |
| **ADULT** | - Azithromycin 1 g orally single dose OR  
  - Doxycycline 100 mg orally 2 times a day for 7 days² | - Erythromycin base 500 mg orally 4 times a day for 7 days OR  
  - Erythromycin ethylsuccinate 800 mg orally 4 times a day for 7 days OR  
  - Levofoxacin² 500 mg orally once a day for 7 days  
  - Ofloxacin² 300 mg orally 2 times a day for 7 days OR  
Prolonged therapy may be required. |
| **LYMPHOGRANULOMA VENEREUM (LGV)** | - Doxycycline 100 mg orally 2 times a day for 21 days²  
  - Prolonged therapy may be required. | - Erythromycin base 500 mg orally 4 times a day for 21 days OR  
  - Azithromycin 1 g orally once weekly for 3 weeks |
| **NONGONOCOCcal URETHRITIS (NGU)** | - Azithromycin 1 g orally single dose OR  
  - Doxycycline 100 mg orally 2 times a day for 7 days  
  - See 2010 CDC STD Treatment Guidelines for guidance in treatment of recurrent and persistent urethritis | - Erythromycin base 500 mg orally 4 times a day for 7 days OR  
  - Erythromycin ethylsuccinate 800 mg orally 4 times a day for 7 days OR  
  - Levofoxacin 500 mg orally once a day for 7 days OR  
  - Ofloxacin 300 mg orally 2 times a day for 7 days |
| **EPIDIDymitis²** | - Ceftriaxone 250 mg IM single dose PLUS  
  - Doxycycline 100 mg orally 2 times a day for 10 days | For acute epididymitis most likely caused by enteric organisms  
  - Levofoxacin 500 mg orally once a day for 10 days OR  
  - Ofloxacin 300 mg orally 2 times a day for 10 days |
| **PELVIC INFLAMMATORY DISEASE (PID)² (non-pregnant adults)** | - Ceftriaxone 250 mg IM single dose OR  
  - Cefoxitin 2 g IM single dose plus probenecid 1 g orally single dose PLUS  
  - Doxycycline 100 mg orally 2 times a day for 14 days² PLUS  
  - Metronidazole 500 mg orally 2 times a day for 14 days (if BV present or cannot be ruled out) | If parenteral cephalosporin therapy is not feasible and risk of gonorrhea is low:  
  - Levofoxacin 500 mg orally once a day for 14 days² OR  
  - Ofloxacin 400 mg orally 2 times a day for 14 days² PLUS  
  - Metronidazole 500mg orally 2 times a day for 14 days (if BV present or cannot be ruled out) |

² Only if recommended regimens are contraindicated — check for allergy, and refer to California STD/HIV Prevention Training Center www.std.ca.gov if necessary.

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<td><strong>HERPES SIMPLEX VIRUS (HSV)-non-pregnant adults</strong> (See <a href="http://www.cdc.gov/std">www.cdc.gov/std</a> for the management of herpes in pregnancy)</td>
<td></td>
<td>No data to differentiate therapeutic response between HIV-infected and uninfected patients</td>
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<td></td>
<td>• Acyclovir 400 mg orally 3 times a day for 7-10 days OR • Acyclovir 200 mg orally 5 times a day for 7-10 days OR • Famciclovir 250 mg orally 3 times a day for 7-10 days OR • Valacyclovir 1 g orally 2 times a day for 7-10 days</td>
<td>One study found famciclovir was less effective in reducing viral shedding compared to valacyclovir.</td>
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<tr>
<td>Daily Suppressive Therapy</td>
<td>• Acyclovir 400–800 mg orally 2 to 3 times a day OR • Famciclovir 500 mg orally 2 times a day OR • Valacyclovir 500 mg orally 2 times a day</td>
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<td>Episodic Recurrent Infection</td>
<td>• Acyclovir 400 mg orally 3 times a day for 5-10 days OR • Famciclovir 500 mg orally 2 times a day for 5-10 days OR • Valacyclovir 1 g orally 2 times a day for 5-10 days</td>
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<tr>
<td><strong>PEDICULOSIS PUBIS</strong></td>
<td>Permethrin 1% cream rinse applied to affected area and washed off after 10 minutes OR Pyrethrins with piperonyl butoxide applied to affected area and washed off after 10 minutes</td>
<td>Metronidazole 0.5% lotion applied for 8-12 hours and washed off OR Ivermectin 250 mcg/kg orally, repeated in 2 weeks</td>
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<td><strong>BACTERIAL VAGINOSIS (BV)</strong></td>
<td>• Metronidazole gel 0.75% intravaginally once a day for 5 days OR • Clindamycin cream 2% intravaginally at bedtime for 7 days</td>
<td>• Tinidazole 2 g orally once daily for 2 days OR • Tinidazole 1 g orally once daily for 5 days OR • Clindamycin 300 mg orally 2 times a day for 7 days OR • Clindamycin ovules 100 mg intravaginally at bedtime for 3 days</td>
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<td><strong>TRICHOMEONIASIS</strong></td>
<td>Metronidazole 2 g orally single dose OR Tinidazole 2 g orally single dose</td>
<td>Metronidazole 500 mg orally 2 times a day for 7 days (in one clinical trial in HIV-infected women, 7 day regimen was more effective than a single dose of metronidazole 2 g)</td>
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<td><strong>HUMAN PAPILLOMAVIRUS (HPV)-ANOGENITAL WARTS</strong></td>
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<td><strong>EXTERNAL WARTS PROVIDER-ADMINISTERED THERAPY</strong> (repeat every 1-2 weeks as necessary)</td>
<td>• Cryotherapy with liquid nitrogen or cryoprobe OR • Podophyllin resin 10%-25% in a compound tincture of benzoic acid and allow to air dry. Wash off 1-4 hours after application OR • Trichloroacetic acid (TCA) or bichloroacetic acid (BCA) 80%-90%. Apply small amount to warts. Allow to dry. If excess applied, powder with talc/baking soda OR • Surgical Removal</td>
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<tr>
<td><strong>PATIENT-APPLIED THERAPY</strong></td>
<td>Podoflox 0.5% solution or gel 2%—Apply 2 times a day for 3 days, followed by 4 days off. Repeat cycle as necessary up to 4 times. Total wart area should not exceed 10 cm² and total volume applied daily should not exceed 0.5 ml OR Imiquimod 5% cream 2%—Apply once daily at bedtime 3 times a week for up to 16 weeks. Wash treatment area with soap and water 6-10 hours after application.</td>
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| **URETHRAL MEATUS WARTS** | • Cryotherapy with liquid nitrogen OR • Podophyllin 10%-25% in a compound tincture of benzoic acid OR | | |
| **VAGINAL WARTS** | • Cryotherapy with liquid nitrogen. Cryoprobe not recommended (risk of perforation/fistula) OR • TCA or BCA 80%-90% (see left for instructions) OR | | |
| **EXTERNAL ANAL WARTS** | • Cryotherapy with liquid nitrogen OR • TCA or BCA 80%-90% (see left for instructions) OR • Surgical removal | | |
| **ORAL WARTS** | • Cryotherapy with liquid nitrogen OR • Surgical removal | | |

**FOOTNOTES**

1. For patients with cephalosporin allergy, or severe penicillin allergy, (e.g., anaphylaxis, Stevens Johnson syndrome, and toxic epidermal necrolysis), azithromycin is an option. However, because of GI intolerance and concerns regarding emerging resistance, it should be used with caution. Test-of-cure is prudent because efficacy data are limited and because of concerns over emerging resistance.
2. Contraindicated in pregnancy.
3. Ceftriaxone and doxycycline are recommended for epididymitis most likely caused by gonococcal or chlamydial infection. Levofloxacin or ofloxacin is recommended if epididymitis is most likely caused by enteric organisms.
4. Quinolones can be considered for PID if the risk of GC is low, a NAAT test for GC is performed, and follow-up of the patient can be assured. If GC is documented, re-treat with recommended ceftriaxone and doxycycline regimen. If cephalosporin therapy is not an option, add azithromycin 2 g orally as a single dose to a quinolone-based PID regimen. It is not known whether HIV-infected women require more intensive treatment for PID.
5. Multiple studies and meta-analysis have not demonstrated a consistent association between metronidazole use during pregnancy and teratogenic or mutagenic effects in newborns.
6. Pregnancy category C. Tinidazole is contraindicated in the first trimester of pregnancy and should only be used in the second/third trimester if no other treatment options exist and benefits of treatment outweigh the risks.
7. May weaken latex condoms and contraceptive diaphragms.
8. For suspected drug-resistant trichomoniasis, see 2010 CDC Guidelines under Trichomonas Follow-up-p. 60, or http://www.cdc.gov/std for other treatment options. For laboratory/clinical consultations, contact CDC at 404-718-4141.
9. Safety in pregnancy has not been established. Pregnancy category C.
10. Sinecaterchins 15% ointment applied topically three times a day for up to 16 weeks has been FDA approved for genital warts but is not currently recommended in HIV-infected populations due to lack of clinical efficacy data.

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