

# SUMMARY OF THE 2010 STD TREATMENT GUIDELINES

These recommendations for the treatment of STDs reflect the **2010 CDC STD Treatment Guidelines**. The focus is primarily on STDs encountered in outpatient practice. This table is intended as a source of clinical guidance and is not a comprehensive list of all effective regimens. For more information, please refer to the complete CDC document at <http://www.cdc.gov/std/treatment/2010/default.htm> or <http://www.cdc.gov/std/Gonorrhea/treatment.htm>. Clinical and epidemiological services are available through the ISDH's STD Prevention Program. For assistance please call 317-233-7499. For more information about STDs please utilize the state's website <http://www.in.gov/isdh/17440.htm>

**DOSING ABBREVIATIONS:** d=day; qd=once each day; bid= twice daily; tid=three times a day; qid=four times a day; po=by mouth; IM=intramuscular injection; IV=intravenous; mg-milligram; g=gram; hs=hour of sleep; prn=as needed.

| DISEASE  | RECOMMENDED REGIMENS   | ALTERNATIVE REGIMENS  |
|--|--|---|
| <b>CHLAMYDIA<sup>1</sup></b>   |  |   |
| Uncomplicated Genital/Rectal/Pharyngeal Infections   | <ul style="list-style-type: none"> <li>Azithromycin 1g po x 1 or</li> <li>Doxycycline<sup>5</sup> 100mg po bid x 7 d</li> </ul>  | <ul style="list-style-type: none"> <li>Erythromycin base 500mg po qid x 7 d or Erythromycin ethylsuccinate 800mg po qid x 7 d or</li> <li>Ofloxacin<sup>8</sup> 300mg po bid x 7 d or</li> <li>Levofloxacin<sup>8</sup> 500mg po qd x 7 d</li> </ul>  |
| Pregnant Women <sup>2</sup>  | <ul style="list-style-type: none"> <li>Azithromycin 1g po x 1 or</li> <li>Amoxicillin 500mg po tid x 7 d</li> </ul>  | <ul style="list-style-type: none"> <li>Erythromycin base 500mg po qid x 7 d or Erythromycin base 250mg po qid x 14 d or</li> <li>Erythromycin ethylsuccinate 800mg po qid x 7 d or</li> <li>Erythromycin ethylsuccinate 400mg po qid x 14 d</li> </ul>  |
| <b>GONORRHEA<sup>3, 4</sup></b> Ceftriaxone 250mg IM is the preferred treatment for adults and adolescents with uncomplicated gonorrhea infection and is the only recommended regimen for pharyngeal infections. Dual therapy with a regimen effective against <i>C. trachomatis</i> is routinely recommended, regardless of chlamydia test results. |  |   |
| Uncomplicated Genital/Rectal Infections  | <ul style="list-style-type: none"> <li>Ceftriaxone 250mg IM x 1</li> <li><b>PLUS</b></li> <li>Azithromycin 1g po x 1 or Doxycycline<sup>5</sup> 100mg po BID x 7 d</li> </ul>  | <ul style="list-style-type: none"> <li>Cefpodoxime 400mg po x 1 or Cefuroxime axetil 1g po x 1 or</li> <li>Azithromycin 2g po x 1<sup>6</sup></li> <li>Cefixime 400mg po x 1,</li> </ul> <p><sup>2</sup>Return for test of cure is prescribed for GC cases treated with alternative regimens.</p>   |
| Pharyngeal Infections  | <ul style="list-style-type: none"> <li>Ceftriaxone 250mg IM x 1</li> <li><b>PLUS</b></li> <li>Azithromycin 1g po x 1 or Doxycycline<sup>5</sup> 100mg po BID x 7 d</li> </ul>  |   |
| <b>PELVIC INFLAMMATORY DISEASE</b><br>Oral regimens<br>(For parenteral regimens, see <a href="http://www.cdc.gov/std/treatment/2010/">www.cdc.gov/std/treatment/2010/</a> )  | <ul style="list-style-type: none"> <li>Ceftriaxone 250 mg IM x 1 or</li> <li>Cefoxitin 2g IM x 1 with Probenecid 1g po x 1</li> <li><b>PLUS</b></li> <li>Doxycycline<sup>5</sup> 100mg po BID x 14 d <b>with or without</b></li> <li>Metronidazole<sup>7</sup> 500mg po bid x 14 d</li> </ul>  | <ul style="list-style-type: none"> <li>Ofloxacin<sup>8, 8</sup> 400mg po bid x 14 d or Levofloxacin<sup>8, 8</sup> 500mg po qd x 14 d <b>with or without</b></li> <li>Metronidazole<sup>7</sup> 500mg po bid x 14 d</li> <li>Ceftriaxone 250mg IM x 1 <b>plus</b></li> <li>Azithromycin 1g po q week x 2 <b>with or without</b></li> <li>Metronidazole<sup>7</sup> 500mg po bid x 14 d</li> </ul> |
| <b>CERVICITIS<sup>9</sup></b>  | <ul style="list-style-type: none"> <li>Azithromycin 1g po x 1 or Doxycycline<sup>5</sup>100mg po bid x 7d</li> </ul>   |   |
| <b>NONGONOCOCCAL URETHRITIS</b>  | <ul style="list-style-type: none"> <li>Azithromycin 1g po x 1 or Doxycycline 100mg po bid x 7 d</li> </ul>   | <ul style="list-style-type: none"> <li>Erythromycin base 500mg po qid x 7 d or Erythromycin ethylsuccinate 800mg po qid x 7 d or</li> <li>Levofloxacin 500mg po qd x 7 d or Ofloxacin 300mg po bid x 7 d</li> </ul>   |
| <b>RECURRENT AND PERSISTENT URETHRITIS<sup>10</sup></b>  | <ul style="list-style-type: none"> <li>Metronidazole 2g po x 1 or Tinidazole 2g po x 1</li> <li><b>PLUS</b></li> <li>Azithromycin 1g po x 1 (if not used initially)</li> </ul>   |   |
| <b>ACUTE EPIDIDYMITIS</b>  | <p><u>Likely due to gonorrhea or chlamydia<sup>11</sup>:</u></p> <ul style="list-style-type: none"> <li>Ceftriaxone 250mg IM x 1</li> <li><b>PLUS</b></li> <li>Doxycycline 100mg po bid x 10 d</li> </ul> <p><u>Likely due to enteric organisms or with a negative GC culture or NAAT<sup>11</sup>:</u></p> <ul style="list-style-type: none"> <li>Levofloxacin 500mg po qd x 10 d or Ofloxacin 300mg po bid x 10 d</li> </ul> | <p><u>For men at risk for both sexually transmitted and enteric organisms.</u></p> <ul style="list-style-type: none"> <li>Ceftriaxone 250mg IM x 1 <b>plus</b></li> <li>Levofloxacin 500mg po qd x 10 d or Ofloxacin 300mg po bid x 10 d</li> </ul>   |
| <b>TRICHOMONIASIS</b>  |  |   |
| Non-pregnant women <sup>12</sup>   | <ul style="list-style-type: none"> <li>Metronidazole 2g po x 1 or Tinidazole<sup>13</sup> 2g po x 1</li> </ul>   | <ul style="list-style-type: none"> <li>Metronidazole 500mg po bid x 7 d</li> </ul>  |
| Pregnant Women   | <ul style="list-style-type: none"> <li>Metronidazole 2g po x 1</li> </ul>  | <ul style="list-style-type: none"> <li>Metronidazole 500mg po bid x 7 d</li> </ul>  |
| <b>BACTERIAL VAGINOSIS</b>   |  |   |
| Adults/Adolescents   | <ul style="list-style-type: none"> <li>Metronidazole 500mg po bid x 7 d or Metronidazole gel 0.75%, one full applicator (5g) intra-vaginally qd x 5 d or Clindamycin cream<sup>14</sup> 2%, one full applicator (5g) intra-vaginally qhs x 7 d</li> </ul>  | <ul style="list-style-type: none"> <li>Tinidazole<sup>13</sup> 2g po qd x 2 d or Tinidazole<sup>13</sup> 1g po qd x 5 d or</li> <li>Clindamycin 300mg po bid x 7 d or Clindamycin ovules 100mg intravaginally qhs x 3d</li> </ul>   |
| Pregnant Women   | <ul style="list-style-type: none"> <li>Metronidazole 500mg po bid x 7 d or Metronidazole 250mg tid x 7 d or Clindamycin 300mg po bid x 7d</li> </ul>   |   |

<sup>5</sup> Contraindicated in pregnant and nursing women

<sup>1</sup> Annual screening for women aged 25 years or younger. Reinfection is common; retest 3 months after treatment.

<sup>2</sup> Test-of-cure (preferably by NAAT) 1 week after completion of therapy is recommended. Pregnant women also should be retested 3 months after treatment.

<sup>3</sup> Annual screening for women at increased risk, e.g. aged 25 years or younger. Reinfection is common; retest 3 months after treatment.

<sup>4</sup> For suspected treatment failure or *in vitro* resistance to cephalosporins: Report to the local health department ([http://www.in.gov/isdh/files/STD\\_DIS\\_map-fax\\_numbers\(3\).pdf](http://www.in.gov/isdh/files/STD_DIS_map-fax_numbers(3).pdf)) Consult with an ID specialist and CDC regarding re-treatment; perform test-of-cure using culture; ensure partner treatment. For further guidance, go to [www.cdc.gov/std/Gonorrhea/treatment.htm](http://www.cdc.gov/std/Gonorrhea/treatment.htm).

<sup>5</sup> Ceftizoxime 500mg IM; or cefoxitin 2g IM with probenecid 1g PO; or cefotaxime 500mg IM

<sup>6</sup> Due to concerns over emerging antimicrobial resistance, use should be limited to those with severe cephalosporin allergy or history of severe reaction to penicillin. Heterosexual partner of a patient cannot be linked to evaluation and treatment in a timely fashion, then expedited partner therapy should be considered, using oral combination

<sup>7</sup> Metronidazole offers additional anaerobic coverage and will treat BV and trichomoniasis, if present.

<sup>8</sup> A quinolone-based regimen can be considered if a cephalosporin is not feasible and if individual risk and local prevalence of gonorrhea are low. If the test for gonorrhea is positive, the addition of azithromycin 2g po as a single dose is recommended.

<sup>9</sup> Presumptive regimen. Co-treat for gonorrhea if local prevalence is high (>5%). Treat for BV and trichomoniasis, if present.

<sup>10</sup> Recommended treatment for patients with persistent symptoms if compliant with initial regimen and re-exposure can be excluded. Consider testing for *T. vaginalis* infection.

<sup>11</sup> Among sexually-active men aged <35 yrs, epididymitis is more likely caused by *C. trachomatis* or *N. gonorrhoeae*. For men who practice insertive anal intercourse or men aged >35 yrs, epididymitis may be caused by enteric organisms.

<sup>12</sup> 7-day Metronidazole regimen may be more effective in HIV-infected women

<sup>13</sup> Safety during pregnancy has not been established (Pregnancy Category C); interruption of breastfeeding is recommended during treatment and for 3 days after last dose.

<sup>14</sup> Oil-based; might weaken latex condoms and diaphragms for up to 5 days after use

| DISEASE   | RECOMMENDED REGIMENS   | ALTERNATIVE REGIMENS  |
|---|--|---|
| ACUTE PROCTITIS <sup>15, 16</sup>   | <ul style="list-style-type: none"> <li>Ceftriaxone 250mg IM x 1</li> <li><b>PLUS</b></li> <li>Doxycycline<sup>§</sup> 100mg po bid x 7 d</li> </ul>  |   |
| LYMPHOGRANULOMA VENEREUM  | <ul style="list-style-type: none"> <li>Doxycycline<sup>§</sup> 100mg po bid x 21 d</li> </ul>  | <ul style="list-style-type: none"> <li>Erythromycin base 500mg po qid x 21 d or</li> <li>Azithromycin 1g po q week x 3 weeks</li> </ul>   |
| CHANCROID   | <ul style="list-style-type: none"> <li>Azithromycin 1g po x 1 or Ceftriaxone 250mg IM x 1 or Ciprofloxacin<sup>§</sup> 500mg po bid x 3 d</li> <li>Erythromycin base 500mg po tid x 7 d</li> </ul>   |   |
| <b>SYPHILIS</b> Benzathine penicillin G, Bicillin® L-A, (trade name), is the preferred drug for treatment of all stages of syphilis and is the only treatment with documented efficacy for syphilis during pregnancy. <sup>17</sup> |  |   |
| <b>Adults (including HIV-Co-infected)<sup>18</sup></b>  |  |   |
| Primary, Secondary, and Early Latent  | <ul style="list-style-type: none"> <li>Benzathine penicillin G 2.4 million units IM x1</li> </ul>  | <ul style="list-style-type: none"> <li>Doxycycline<sup>19,§</sup> 100mg po bid x 14 d or</li> <li>Tetracycline<sup>19,§</sup> 500mg po qid x 14 d or</li> <li>Ceftriaxone<sup>19</sup> 1g IM or IV qd x 10-14 d</li> </ul>  |
| Late Latent and Latent of Unknown duration <sup>20</sup>  | <ul style="list-style-type: none"> <li>Benzathine penicillin G 7.2 million units, administered as 3 doses of 2.4 million units IM each, at 1-week intervals<sup>21</sup></li> </ul>  | <ul style="list-style-type: none"> <li>Doxycycline<sup>19,§</sup> 100mg po bid x 28 d or</li> <li>Tetracycline<sup>19,§</sup> 500mg po qid x 28 d</li> </ul>  |
| Neurosyphilis   | <ul style="list-style-type: none"> <li>Aqueous crystalline penicillin G 18-24 million units qd, administered as 3-4 million units IV q 4 hrs or continuous infusion x 10-14 d<sup>22</sup></li> </ul>  | <ul style="list-style-type: none"> <li>Procaine penicillin G, 2.4 million units IM qd x 10-14 d <b>plus</b> Probenecid 500mg po qid x 10-14 d<sup>22</sup> or</li> <li>Ceftriaxone<sup>19</sup> 2g IM or IV qd x 10-14 d<sup>22</sup></li> </ul>  |
| <b>Pregnant Women</b>   |  |   |
| Primary, Secondary, and Early Latent  | <ul style="list-style-type: none"> <li>Benzathine penicillin G 2.4 million units IM x1</li> </ul>  | <ul style="list-style-type: none"> <li>None. If PCN allergic, desensitize and treat.</li> </ul>   |
| Late Latent and Latent of Unknown duration <sup>20</sup>  | <ul style="list-style-type: none"> <li>Benzathine penicillin G 7.2 million units, administered as doses of 2.4 million units IM each, at 1-week intervals</li> </ul>   | <ul style="list-style-type: none"> <li>None. If PCN allergic, desensitize and treat.</li> </ul>   |
| Neurosyphilis   | <ul style="list-style-type: none"> <li>Aqueous crystalline penicillin G 18-24 million units qd, administered as 3-4 million units IV q 4 hrs or continuous infusion x 10-14 d<sup>22</sup></li> </ul>  | <ul style="list-style-type: none"> <li>Procaine penicillin G, 2.4 million units IM qd x10-14 d <b>plus</b> Probenecid 500mg po qid x 10-14 d<sup>22</sup></li> <li>If PCN allergic, desensitize and treat</li> </ul>  |
| DISEASE   | RECOMMENDED REGIMENS   |   |
| <b>ANOGENITAL WARTS (Human Papilloma Virus)</b>   |  |   |
| External Genital/Perianal <sup>23</sup>   | <b>Patient Applied</b> <ul style="list-style-type: none"> <li>Podofilox 0.5% solution/gel<sup>24,25</sup>: apply bid x 3 d followed by 4 d no treatment; use for up to 4 cycles. Total area treated not to exceed 10cm<sup>2</sup> and total volume used ≤ 0.5mL per day or</li> <li>Imiquimod 5% cream<sup>24,26</sup>: apply qhs 3x/week for up to 16 weeks; wash off after 6-10 hours or</li> <li>Sinecatechin 15% ointment<sup>24,25,26,27</sup>: apply tid (0.5cm strand of ointment per wart) for a maximum of 16 weeks</li> </ul> | <b>Provider Administered</b> <ul style="list-style-type: none"> <li>Cryotherapy: repeat applications q1-2 weeks or</li> <li>Podophyllin resin<sup>§</sup> 10%-25%: apply q1-2 weeks prn; wash off after 1-4 hours. Total area treated not to exceed 10cm<sup>2</sup> and total volume used ≤ 0.5mL per day or</li> <li>Trichloroacetic acid (TCA) 80%- 90% or Bichloroacetic acid (BCA) 80%- 90%: apply q week prn</li> <li>Surgery—electrocautery, excision, laser, curettage</li> </ul> |
| <b>ANOGENITAL HERPES (HSV-2 and HSV-1)</b>  |  |   |
| First Clinical Episode  | <ul style="list-style-type: none"> <li>Acyclovir 400mg po tid x 7-10 d or 200mg po 5x/day x 7-10 d or</li> <li>Famciclovir 250mg po tid x 7-10 d or</li> <li>Valacyclovir 1g po bid x 7-10 d</li> </ul>  |   |
| Established Infection   | <b>Suppressive Therapy</b> <ul style="list-style-type: none"> <li>Acyclovir 400mg po bid or</li> <li>Famciclovir 250mg po bid or</li> <li>Valacyclovir 500mg po qd or 1g po qd</li> </ul>  | <b>Episodic Therapy for Recurrent Episodes</b> <ul style="list-style-type: none"> <li>Acyclovir 400mg po tid x 5 d or 800mg po bid x 5 d or 800mg po tid x 2 d or</li> <li>Famciclovir 125mg po bid x 5 d or 1g po bid x 1 d or 500mg po x1, then 250 mg bid x 2d or</li> <li>Valacyclovir 500mg po bid x 3d or 1g po qd x 5 days</li> </ul>  |
| <b>HIV Co-Infected<sup>28</sup></b>   |  |   |
|   | <b>Suppressive Therapy</b> <ul style="list-style-type: none"> <li>Acyclovir 400-800mg po bid or tid or</li> <li>Famciclovir 500mg po bid or</li> <li>Valacyclovir 500mg po bid</li> </ul>  | <b>Episodic Therapy for Recurrent Episodes</b> <ul style="list-style-type: none"> <li>Acyclovir 400mg po tid x 5-10 d or</li> <li>Famciclovir 500mg po bid x 5-10 d or</li> <li>Valacyclovir 1g po bid x 5-10 d</li> </ul>  |

<sup>§</sup> Contraindicated in pregnant and nursing women

<sup>15</sup> Examine patients by anoscopy and evaluate for infection with HSV, gonorrhea, chlamydia and syphilis

<sup>16</sup> If painful perianal ulcers are present or mucosal ulcers detected on anoscopy, presumptive therapy should include a regimen for genital herpes and LGV.

<sup>17</sup> Benzathine penicillin G is available in one long-acting formulation, Bicillin® L-A, which contains only benzathine penicillin G. Combination penicillin drug products, such as Bicillin® C-R, contain both long- and short-acting penicillins and should not be used to treat syphilis.

<sup>18</sup> Most HIV-infected persons respond appropriately to standard benzathine penicillin regimens. HIV-infected patients with syphilis should be treated according to the stage-specific recommendations for HIV-negative persons.

<sup>19</sup> Use alternative regimens for penicillin-allergic, non-pregnant patients only. Data to support the use of alternatives to penicillin are limited. If compliance or follow-up cannot be ensured, the patient should be desensitized and treated with benzathine penicillin.

<sup>20</sup> Patients diagnosed with latent syphilis who demonstrate any of the following should have a prompt CSF exam to evaluate for neurosyphilis: 1) neurologic or ophthalmic signs or symptoms; 2) evidence of active tertiary syphilis; or 3) serologic or treatment failure.

<sup>21</sup> An interval of 10-14 days between doses of benzathine penicillin for late or latent syphilis of unknown duration might be acceptable before restarting the sequence of injections.

<sup>22</sup> Some specialists recommend an additional 2.4 million units of benzathine penicillin G IM qweek for up to 3 weeks after completion of neurosyphilis treatment.

<sup>23</sup> Mucosal genital warts (cervical, vaginal, anorectal, urethral meatus) should be managed in consultation with a specialist.

<sup>24</sup> Safety profile during pregnancy not established; Pregnancy Category C.

<sup>25</sup> Do not wash off after initial application.

<sup>26</sup> May weaken condoms and diaphragms.

<sup>27</sup> Use is not recommended for HIV-infected or other immunocompromised persons, or those with clinical genital herpes.

<sup>28</sup> If HSV lesions persist or recur while receiving antiviral treatment, suspect antiviral resistance. Obtain a viral isolate for sensitivity testing and consult with an HIV specialist.