## Atrium Health ADULT ED/Outpatient Empiric Antibiotic Guideline

These guidelines cannot account for all factors in an individual patient and should be used in conjunction with clinical judgment. All doses reflect normal renal and hepatic function. These recommendations do not apply if microbiologic data show resistant pathogens.

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<tbody>
<tr>
<td><strong>COPD exacerbation</strong></td>
<td>amoxicillin-clavulanate 875-125 mg PO BID x 7 d</td>
<td>Severe penicillin allergy (anaphylaxis): doxycycline 100 mg PO BID x 7 d; Third-line (unable to tolerate other options): azithromycin 500 mg PO daily 3 x d; If <em>Pseudomonas</em> spp. risk factors (see Clinical Pearls): levofloxacin 750 mg PO daily 1,2 x 5 d</td>
<td>COPD exacerbations are often viral; consider influenza</td>
</tr>
<tr>
<td><strong>Community-acquired pneumonia: patients without comorbidities</strong>*</td>
<td>amoxicillin 1000 mg PO TID x 5-7 d</td>
<td>doxycycline 100 mg PO BID x 5-7 d*</td>
<td>Consider influenza and COVID-19 during respiratory viral season</td>
</tr>
<tr>
<td>*Comorbidities include chronic heart, lung, liver or renal disease; diabetes mellitus; alcoholism; malignancy; or asplenia</td>
<td>amoxicillin 1000 mg PO TID x 5-7 d</td>
<td>Severe penicillin allergy (anaphylaxis) and allergy to doxycycline: levofloxacin 750 mg PO daily 1,2 x 5 d</td>
<td>The presence of an infiltrate alone is not diagnostic for pneumonia</td>
</tr>
<tr>
<td><strong>Community-acquired pneumonia: patients with comorbidities</strong>* or concern for atypical pneumonia</td>
<td>amoxicillin-clavulanate 875-125 mg PO BID x 5-7 d*; azithromycin 500 mg PO daily x 3 d; -OR- amoxicillin-clavulanate 875-125 mg PO BID x 5-7 d*; -PLUS- doxycycline 100 mg PO BID x 5-7 d</td>
<td>Penicillin allergy NOT anaphylaxis (rash): cefpodoxime 200 mg PO BID x 5-7 d; -PLUS- azithromycin 500 mg PO daily x 3 d; -OR- cefpodoxime 200 mg PO BID x 5-7 d; -PLUS- doxycycline 100 mg PO BID x 5-7 d</td>
<td>Consider influenza and COVID-19 during respiratory viral season</td>
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<td>*Comorbidities include chronic heart, lung, liver or renal disease; diabetes mellitus; alcoholism; malignancy; or asplenia</td>
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<td>Severe penicillin allergy (anaphylaxis); levofloxacin 750 mg PO daily 1,2 x 5 d</td>
<td>The presence of an infiltrate alone is not diagnostic for pneumonia</td>
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<tr>
<td><strong>Acute uncomplicated bronchitis</strong></td>
<td>antibiotics not indicated; supportive care</td>
<td>antibiotics not indicated; supportive care</td>
<td>For acute uncomplicated bronchitis diagnostic criteria: <a href="https://physicianconnect.carolinas.org/Docs/InfDis/Guidelines/Adult-Acute-Bronchitis-Outpatient-Treatment-Guidelines.pdf">https://physicianconnect.carolinas.org/Docs/InfDis/Guidelines/Adult-Acute-Bronchitis-Outpatient-Treatment-Guidelines.pdf</a></td>
</tr>
<tr>
<td>Usually viral; self-limiting</td>
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<tr>
<td><strong>Acute bacterial rhinosinusitis</strong></td>
<td>amoxicillin-clavulanate 875-125 mg PO BID x 5-7 d</td>
<td>Severe penicillin allergy (anaphylaxis) or failure of 1st-line therapy: doxycycline 100 mg PO BID x 5-7 d; -OR- levofloxacin 500 mg PO daily 1,2 x 5-7 d</td>
<td>Most cases of rhinosinusitis are viral. Consider watchful waiting for mild, uncomplicated cases (not severe &amp; without worsening symptoms) with reliable follow-up within 48-72 hrs.</td>
</tr>
<tr>
<td>(Duration of illness less than 4 weeks)</td>
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<td></td>
<td>Fluoroquinolones are not 1st-line due to risk of collateral damage, <em>C. difficile</em> colitis, &amp; potential serious side effects.</td>
</tr>
<tr>
<td>For bacterial rhinosinusitis diagnostic criteria: <a href="https://physicianconnect.carolinas.org/Docs/InfDis/Guidelines/Sinusitis-Outpatient-Treatment-Guidelines.pdf">https://physicianconnect.carolinas.org/Docs/InfDis/Guidelines/Sinusitis-Outpatient-Treatment-Guidelines.pdf</a></td>
<td></td>
<td></td>
<td>Consider sinus CT if cranial nerve palsy, pain with eye movement, altered mental status, immunocompromised, or diabetes</td>
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</tbody>
</table>

*1 Doses are for normal renal function; *2 Avoid in pregnancy
### Atrium Health ADULT ED/Outpatient Empiric Antibiotic Guideline (Continued)

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</table>
| **Pharyngitis**                    | penicillin VK 500 mg PO BID\(^1\) x 10 d  
- OR-  
amoxicillin 500 mg PO BID\(^1\) x 10 d | Penicillin allergy NOT anaphylaxis (rash):  
cephalexin 500 mg PO BID\(^1\) x 10 d  
Severe penicillin allergy (anaphylaxis):  
azithromycin 500 mg PO daily x 5 d | Most case of pharyngitis are viral. The presence of cough, rhinorrhea, conjunctivitis, & lack of fever suggests a viral etiology.  
Throat cultures are not routinely recommended for adults.  
Consider gonorrhea if severe pharyngitis is present  
Antibiotics are only recommended if rapid antigen detection test (RADT) for GAS is positive |
| **Acute otitis media (AOM)**       | amoxicillin-clavulanate 875-125 mg PO BID\(^1\) x 5-10 d\(^*\)                      | Penicillin allergy NOT anaphylaxis (rash):  
cephdinir 300 mg PO BID\(^1\) x 5-10 d  
Severe penicillin allergy (anaphylaxis):  
levofloxacin 500 mg PO daily\(^{1,2}\) x 5-7 d\(^*\) | *Consider 5-7 days of therapy if mild to moderate AOM  
A persistent middle ear effusion is common after resolution of AOM  
Otitis media with effusion (OME, non-suppurative OM) is defined as the presence of a middle ear effusion without pain or fever. In contrast to AOM, antibiotics are not indicated for OME. |
| **Diverticulitis**                 | If decision is made to treat:  
cephalexin 500 mg PO 4x/day\(^1\) x 7 d  
- PLUS-  
metronidazole 500 mg PO TID x 7 d | Severe penicillin allergy (anaphylaxis):  
ciprofloxacin 500 mg PO BID\(^{1,2}\) x 7 d  
PLUS-  
metronidazole 500 mg PO TID x 7 d | Consider observation without antibiotics if uncomplicated diverticulitis (no evidence of abscess or perforation on imaging)  
Consider CT if fever or peritoneal signs |
| **Acute uncomplicated cystitis**   | nitrofurantoin 100 mg PO BID x 5 d (do not use if CrCl <30 mL/min)  
- OR-  
cephalexin 500 mg PO BID\(^1\) x 7 d  
(if urine culture & susceptibilities will be followed)  
- OR-  
cefdinorxime 100 mg PO BID\(^1\) x 7 d ($$$)* | Allergy/contraindication to other options:  
sulfamethoxazole-trimethoprim (SMX-TMP)  
1 DS tab PO BID\(^{1,3}\) x 3 d  
- OR-  
ciprofloxacin 500 mg PO BID\(^{1,2}\) x 3 d | Fluoroquinolones are not 1st-line due to risk of collateral damage, C. difficile colitis & local resistance rates  
SMX-TMP is not 1st-line due to local resistance rates  
If available, prior cultures can help guide antibiotic selection  
*Broader than cephalaxin - covers possible resistant pathogens (e.g., if history of UTI due to resistant organisms) |
| **Acute cystitis during pregnancy**| Any trimester:  
cephalexin 500 mg PO BID\(^1\) x 7 d  
(if urine culture & susceptibilities will be followed)  
- OR-  
cefpodoxime 100 mg PO BID\(^1\) x 7 d ($$$)*  
2nd & 3rd trimester (avoid near-term),*  
nitrofurantoin 100 mg PO BID x 5-7 d (do not use if CrCl <30 mL/min) | 1st trimester:  
severe β-lactam allergy (anaphylaxis) or non-susceptible pathogen & no suitable alternative**  
nitrofurantoin 100 mg PO BID x 5-7 d (do not use if CrCl <30 mL/min)  
Any trimester:  
severe β-lactam allergy (anaphylaxis) & inability to use nitrofurantoin:  
fosfomycin 3 g PO x 1 | *Avoid use in pregnancy near-term (<38 weeks) due to potential risk of hemolytic anemia in the infant  
**ACOG notes that the evidence regarding an association between nitrofurantoin & birth defects is mixed, & that its use in the 1st trimester is considered appropriate when no other suitable alternative antibiotics are available (ref 15).  
Cefpodoxime is broader than cephalaxin & covers possible resistant pathogens; cephalaxin has more safety data in pregnancy |
| **Acute uncomplicated pyelonephritis** | ceftriaxone 1000 mg IV x 1 in ED, then  
ciprofloxacin 500 mg PO BID\(^{1,2}\) x 7 d | ceftriaxone 1000 mg IV x 1 in ED, then  
cefixime 400 mg PO daily\(^1\) x 10 d | SMX-TMP should not be used empirically due to local rates of resistance  
Nitrofurantoin & fosfomycin do not penetrate the renal parenchyma & should not be used for pyelonephritis  
*Close follow-up recommended to determine clinical response & if extension of therapy is needed  
β-lactam antibiotics do not adequately penetrate the prostate  
Consider coverage of gonorrhea & chlamydia if STI suspected |
| **Bacterial Prostatitis**          | Acute: ciprofloxacin 500 mg PO BID\(^{1,2}\) x 14 d\(^*\)  
Chronic: ciprofloxacin 500 mg PO BID\(^{1,2}\) x 4 weeks\(^*\) | Acute: SMX-TMP 1 DS tab PO BID\(^{1,3}\) x 14 days\(^*\)  
Chronic: SMX-TMP 1 DS tab PO BID\(^{1,3}\) x 4 weeks\(^*\) | |

\(^1\)Doses are for normal renal function;  
\(^2\)Avoid in pregnancy;  
\(^3\)SMX-TMP = sulfamethoxazole-trimethoprim (avoid in 1st trimester & near-term  

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**Pharyngitis**

Group A streptococcal (GAS) pharyngitis diagnostic criteria:  

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**Acute uncomplicated pyelonephritis**

Inpatient initial IV therapy usually recommended in pregnancy

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**Acute cystitis during pregnancy**

Inpatient initial IV therapy usually recommended in pregnancy

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**Bacterial Prostatitis**

Acute: ciprofloxacin 500 mg PO BID\(^{1,2}\) x 14 d\(^*\)  
Chronic: ciprofloxacin 500 mg PO BID\(^{1,2}\) x 4 weeks\(^*\)
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<tr>
<td><strong>Urethritis, cervicitis</strong> Neisseria gonorrhoeae</td>
<td>ceftriaxone 500 mg IM x 1 if &lt;150 Kg or ceftriaxone 1000 mg IM x 1 if ≥150 Kg</td>
<td><em>If severe β-lactam allergy (anaphylaxis):</em> azithromycin 2000 mg PO x 1**</td>
<td><strong>Compliance is recommended except during pregnancy due to increasing resistance or if concern for compliance.</strong> Consult Infectious Diseases for guidance.</td>
</tr>
<tr>
<td><strong>Gonococcal infections of the pharynx</strong> Neisseria gonorrhoeae</td>
<td>ceftriaxone 500 mg IM x 1 if &lt;150 Kg or ceftriaxone 1000 mg IM x 1 if ≥150 Kg</td>
<td><em>If severe β-lactam allergy (anaphylaxis):</em> Consult Infectious Diseases for guidance***</td>
<td><strong>No reliable treatment alternatives are available for pharyngeal gonorrhea.</strong> Consult Infectious Diseases for guidance.</td>
</tr>
<tr>
<td><strong>Gonococcal infections of the rectum</strong> Neisseria gonorrhoeae</td>
<td>ceftriaxone 500 mg IM x 1 if &lt;150 Kg or ceftriaxone 1000 mg IM x 1 if ≥150 Kg</td>
<td><em>If severe β-lactam allergy (anaphylaxis):</em> azithromycin 2000 mg PO x 1**</td>
<td>Test for HIV &amp; other STIs</td>
</tr>
</tbody>
</table>
| **Acute epididymitis** Pain, swelling, & inflammation of epididymis lasting < 6 weeks | If *N. gonorrhoeae* & *C. trachomatis* most likely:* 
  ceftriaxone 500 mg IM x 1 if <150 Kg or ceftriaxone 1000 mg IM x 1 if ≥150 Kg 
  -PLUS- 
  1 of the following if chlamydial infection not excluded: 
  doxycycline 100 mg PO BID x 7 d (first line)** 
  -OR- 
  azithromycin 1000 mg PO x 1 (at provider discretion if concern for compliance with doxycycline) 
If *N. gonorrhoeae* & *C. trachomatis* & enteric pathogens most likely:** 
  ceftriaxone 500 mg IM x 1 if <150 Kg or ceftriaxone 1000 mg IM x 1 if ≥150 Kg 
  -PLUS- 
  levofloxacin 500 mg PO daily1-2 x 10 d 
If enteric pathogens likely & gonorrhea excluded:6 
  levofloxacin 500 mg PO daily1-2 x 10 d | *Most frequently due to *N. gonorrhoeae* or *C. trachomatis* in sexually active men < 35 yrs. of age.** Consult Infectious Diseases for guidance. |
| **Pelvic inflammatory disease (PID)** If appropriate for oral therapy (nonpregnant, non-severe, no complication such as pelvic abscess, etc.) | ceftriaxone 500 mg IM x 1 if <150 Kg or ceftriaxone 1000 mg IM x 1 if ≥150 Kg 
  -PLUS- 
  doxycycline 100 mg PO BID x 14 d 
  -PLUS- 
  metronidazole 500 mg PO BID x 14 d* | *Adding azithromycin for *Chlamydia* coverage is no longer recommended except during pregnancy due to increasing resistance or if concern for compliance. Consult Infectious Diseases for guidance.*** Consult Infectious Diseases for guidance. |

*1Doses are for normal renal function; 2 Avoid in pregnancy

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<th>Second-Line Therapy</th>
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<tr>
<td>Vaginitis: bacterial vaginosis</td>
<td>metronidazole 500 mg PO BID x 7 d</td>
<td>clindamycin 300 mg PO BID x 7 d</td>
<td>*If intolerance but not a bona fide allergy to metronidazole Test for HIV &amp; other STIs</td>
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<tr>
<td></td>
<td>-OR- metronidazole vaginal gel 0.75%; one applicator (5 g) intravaginally daily x 5 d*</td>
<td>OR- clindamycin ovules 100 mg intravaginally x 3 d</td>
<td>New guidelines recommend 7-day course of therapy regardless of HIV status Test for HIV &amp; other STIs</td>
</tr>
<tr>
<td>Vaginitis: <em>Trichomonas vaginalis</em></td>
<td>metronidazole 500 mg PO BID x 7 d</td>
<td>If severe metronidazole allergy, consult Infectious Disease for guidance</td>
<td>Test for HIV &amp; other STIs *No proven alternatives to penicillin are available for treating neurosyphilis or syphilis in pregnancy. Consult Infectious Diseases for guidance. **This guideline does not apply to late latent or latent of unknown duration, tertiary syphilis or neurosyphilis: consult with Infectious Diseases for guidance in these scenarios</td>
</tr>
<tr>
<td>Syphilis: Primary, secondary, or early latent</td>
<td>benzathine penicillin G 2.4 million units IM x 1</td>
<td>Severe penicillin allergy (anaphylaxis): doxycycline 100 mg PO BID x 14 d (only for non-pregnant patients)*</td>
<td>Test for HIV &amp; other STIs</td>
</tr>
<tr>
<td>Primary: ulcers or chancre at infection site</td>
<td></td>
<td>canonical Lexington G.2.4 million units IM x 1</td>
<td></td>
</tr>
<tr>
<td>Secondary: manifestations include but not limited to skin rash, mucocutaneous lesions, &amp; lymphadenopathy</td>
<td></td>
<td>canonical Lexington G.2.4 million units IM x 1</td>
<td></td>
</tr>
<tr>
<td>Latent syphilis lacks above clinical manifestations &amp; is detected by serologic testing*</td>
<td></td>
<td>canonical Lexington G.2.4 million units IM x 1</td>
<td></td>
</tr>
<tr>
<td>Genital herpes simplex (HSV)</td>
<td>acyclovir 400 mg PO 3x/day1 x 7-10 days</td>
<td>Severe penicillin allergy (anaphylaxis): clindamycin 300 mg PO TID x 5-10 d</td>
<td>Test for HIV &amp; other STIs See CDC guidelines (ref 21) for management of HSV during pregnancy</td>
</tr>
<tr>
<td>Non-purulent cellulitis (no abscess), uncomplicated</td>
<td>cephalaxin 500 mg PO 4x/day1 x 5-7 d</td>
<td>Severe penicillin allergy (anaphylaxis): clindamycin 300 mg PO TID x 5-10 d</td>
<td>Most commonly due to group A Streptococcus (GAS); Doxycycline &amp; SMX-TMP provide poor coverage against GAS; these agents should not be used alone for typical cellulitis. Consider 5 days of therapy if clinical improvement by that time</td>
</tr>
<tr>
<td>For diagnostic criteria &amp; exclusions: <a href="https://physicianconnect.carolinas.org/docs/InDis/Guidelines/Skin-Soft-Tissue-Infection-Guidelines.pdf">https://physicianconnect.carolinas.org/docs/InDis/Guidelines/Skin-Soft-Tissue-Infection-Guidelines.pdf</a></td>
<td>-OR- dicloxacillin 500 mg PO 4x/day1 x 5-7 d</td>
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<tr>
<td>Skin abscess/purulent cellulitis, uncomplicated</td>
<td>I&amp;D, if drainable abscess*</td>
<td>I&amp;D, if drainable abscess*</td>
<td><em>Antibiotics are not indicated (use I&amp;D alone) if drainable abscess &lt;5 cm &amp; no systemic signs of infection</em></td>
</tr>
<tr>
<td>For diagnostic criteria &amp; exclusions: <a href="https://physicianconnect.carolinas.org/docs/InDis/Guidelines/Skin-Soft-Tissue-Infection-Guidelines.pdf">https://physicianconnect.carolinas.org/docs/InDis/Guidelines/Skin-Soft-Tissue-Infection-Guidelines.pdf</a></td>
<td>+/SMX-TMP1,3</td>
<td>+/SMX-TMP1,3</td>
<td>*If abscess &gt;5 cm, treat with I&amp;D &amp; antibiotics</td>
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<tr>
<td></td>
<td>If &lt;70 Kg: 1 DS tab PO BID x 5-10 d</td>
<td>If &lt;70 Kg: 1 DS tab PO BID x 5-10 d</td>
<td>*If no drainable abscess, treat with antibiotics</td>
</tr>
<tr>
<td></td>
<td>If &gt;70 Kg: 2 DS tab PO BID x 5-10 d</td>
<td>If &gt;70 Kg: 2 DS tab PO BID x 5-10 d</td>
<td>Consider 5 days of therapy if clinical improvement by that time</td>
</tr>
<tr>
<td>Most commonly due to S. aureus</td>
<td></td>
<td>I&amp;D, if drainable abscess*</td>
<td>Clindamycin may increase risk of <em>C. difficile</em> colitis &amp; is not 1st-line due to local resistance rates against MRSA</td>
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<tr>
<td></td>
<td></td>
<td>+/SMX-TMP &amp; doxycycline 100 mg PO BID x 5-10 d</td>
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<tr>
<td>C. difficile colitis: initial episode</td>
<td>vancomycin 125 mg PO q 6h x 10 d</td>
<td></td>
<td>NOTE that PO metronidazole no longer recommended due to inferior outcomes &amp; side effects</td>
</tr>
<tr>
<td>Non-severe: WBC ≤15K AND SCR &lt;1.5 mg/dL</td>
<td>-OR- fiaxamicin 200 mg PO q 12h x 10 d*</td>
<td></td>
<td>*Consider fidaxomicin first line in high-risk patients: immunocompromised (hematopoietic stem cell transplant recipient, solid organ transplant recipient, malignancy, patients on immunosuppressive medications), age &gt;65 years</td>
</tr>
<tr>
<td>Severe: WBC ≥15K OR SCR &gt;1.5 mg/dL</td>
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<tr>
<td>C. difficile colitis: first recurrence</td>
<td>If vancomycin given initially: 200 mg PO q 12h x 10d</td>
<td></td>
<td>*Vancomycin PO taper: 125 mg q 6h x 14d, then 125 mg q 12h x 2 weeks</td>
</tr>
<tr>
<td>Treatment should be based on the therapy that was given during the initial episode</td>
<td>-OR- vancomycin PO taper*</td>
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<tr>
<td></td>
<td>If fidaxomicin given initially:</td>
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<tr>
<td></td>
<td>vancomycin PO taper*</td>
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<td></td>
<td>-OR- fidaxomicin 200 mg PO q 12h x 10d</td>
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<tr>
<td></td>
<td>If metronidazole given initially: 200 mg PO q 6h x 10 d</td>
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<tr>
<td></td>
<td>-OR- fidaxomicin 200 mg PO q 12h x 10d</td>
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<tr>
<td>C. difficile colitis: ≥2 recurrences</td>
<td>Consult with Infectious Diseases or Gastroenterology for guidance</td>
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</tbody>
</table>

*Doses are for normal renal function; *Avoid in pregnancy; **SMX-TMP = sulfamethoxazole-trimethoprim (avoid in 1st trimester & near-term); *Systemic signs of infection: T >38 °C or <36 °C, HR >90 beats/min, RR >24 breaths/min or PaCO2 <32 mm Hg, WBC >12,000 or <4000 cells/µL or >10% bands, acute hypotension
References