

# EMPIRIC ANTIBIOTIC GUIDELINES FOR COMMON INFECTIONS IN ADULT PATIENTS AT BH/BHMC 2022

- Developed based upon published recommendations and BH/MC susceptibility data
- Doses listed below are for normal renal function; pharmacists will adjust doses per renal function as per the YNHH Renal Dose Adjustment Protocol
- IV antibiotics will be converted to PO equivalents when patients meet conversion criteria as per the Intravenous (IV) to Enteral Medication Conversion Protocol for Adult Patients
- Empiric therapy should be streamlined pending identification and susceptibilities of identified pathogens
- Clinical Care Signature Pathways are available for select diseases states to help guide patient care. Pathways are listed for reference as available. Please consult the Clinical Care Signature Pathways tab in Epic for the most updated list of available pathways.

| INFECTION  | RECOMMENDED TREATMENT   | TRUE ALLERGY TO BETA-LACTAMS <sup>A</sup>  | RECOMMENDED ORAL STEPDOWN  |
|--|---|--|--|
| <p><b>Skin and Soft Tissue: Cellulitis</b></p> <p>Available Pathways:</p> <ol style="list-style-type: none"> <li>1. <i>Cellulitis: Adult ED</i></li> <li>2. <i>Cellulitis Initial Management: Adult Inpatient</i></li> <li>3. <i>Cellulitis Subsequent Day and Discharge: Adult Inpatient</i></li> <li>4. <i>Pre-Septal (Pre-Orbital) Cellulitis: Adult Inpatient</i></li> </ol>   | <p><b><u>Nonpurulent (No MRSA Suspected):</u></b><br/>                     Penicillin G 3 million units IV q4H<br/>                     OR<br/>                     Cefazolin 1-2g IV q8H</p> <p><b><u>Purulent (MRSA Suspected):</u></b><br/>                     Vancomycin IV per pharmacy to dose protocol</p>  | <p>Vancomycin IV per pharmacy to dose protocol</p>   | <p>Dicloxacillin 500mg PO q6H<br/>                     OR<br/>                     Cephalexin 500mg PO q6H<br/>                     OR<br/>                     Doxycycline 100mg PO BID</p>   |
| <p><b>Skin and Soft Tissue: Decubitus Ulcer or Diabetic Foot Infection</b></p> <p>Available Pathways:</p> <ol style="list-style-type: none"> <li>1. <i>Ulcer of Foot or Ankle: Adult Inpatient</i></li> </ol>  | <p>Ampicillin/sulbactam 1.5g IV q6H +<br/>                     Vancomycin IV per pharmacy to dose protocol</p>  | <p>Vancomycin IV per pharmacy to dose protocol +<br/>                     Ciprofloxacin IV/PO q12H +<br/>                     Metronidazole 500mg IV/PO q12H</p> | <p>Amoxicillin/clavulanate 875mg PO q12H +/-<br/>                     Doxycycline 100mg PO q12H<br/>                     OR<br/>                     Ciprofloxacin 500mg PO q12H +<br/>                     Metronidazole 500mg PO q12H +/-<br/>                     Doxycycline 100mg PO q12H</p> |
| <p><b>Skin and Soft Tissue: Osteomyelitis</b></p>  | <p>Vancomycin IV per pharmacy to dose protocol +<br/>                     Ampicillin/sulbactam 1.5g IV q6H<br/>                     OR<br/>                     Vancomycin IV per pharmacy to dose protocol +<br/>                     Cefepime 2g IV q8H +<br/>                     Metronidazole 500mg IV/PO q12H<br/>                     (if <i>Pseudomonas aeruginosa</i> concern)</p> | <p>Vancomycin IV per pharmacy to dose protocol +<br/>                     Ciprofloxacin IV/PO q12H +<br/>                     Metronidazole 500mg IV/PO q12H</p> | <p>Oral stepdown therapy not recommended without ID consult. Streamline IV antibiotics to sensitivity of pathogen.</p>   |
| <p><b>Gallbladder (cholecystitis, cholangitis, biliary sepsis or common duct obstruction OR Intra-abdominal)</b></p> <p>Available Pathways:</p> <ol style="list-style-type: none"> <li>1. <i>Acute Appendicitis: Adult Inpatient</i></li> <li>2. <i>Diverticulitis: Adult Inpatient</i></li> <li>3. <i>Diverticulitis – Complicated: Adult Inpatient</i></li> <li>4. <i>Diverticulitis – Uncomplicated: Adult Inpatient</i></li> <li>5. <i>Spontaneous Bacterial Peritonitis Diagnosis and Treatment: Adult Inpatient</i></li> </ol> | <p>Ceftriaxone 1g IV q24H +<br/>                     Metronidazole 500mg IV/PO q12H</p>   | <p>Ciprofloxacin IV/PO q12H +<br/>                     Metronidazole 500mg IV/PO q12H</p>  | <p>Cefuroxime 500mg PO q12H +<br/>                     Metronidazole 500mg PO q12H<br/>                     OR<br/>                     Ciprofloxacin 500mg PO q12H +<br/>                     Metronidazole 500mg PO q12H</p>   |

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|--|---|---|---|
| <b>Line-Related Infection</b>  | Vancomycin IV per pharmacy to dose protocol   | Vancomycin IV per pharmacy to dose protocol   | Oral stepdown therapy not recommended without ID consult. Streamline IV antibiotics to sensitivity of pathogen. |
| <b>Meningitis</b><br>Non-immunocompromised host<br>Age 18-49 yo  | Ceftriaxone 2g IV q12H<br><b>ID Consult Recommended</b>   | <b>ID Consult Recommended</b>   | Oral stepdown therapy not recommended without ID consult. Streamline IV antibiotics to sensitivity of pathogen. |
| <b>Meningitis</b><br>Immunocompromised Host<br>Age > 50 yo   | Ceftriaxone 2g IV q12H +<br>Ampicillin 2g IV q4H +<br>Vancomycin IV per pharmacy to dose protocol<br><b>ID Consult Recommended</b>  | <b>ID Consult Recommended</b>   | Oral stepdown therapy not recommended without ID consult. Streamline IV antibiotics to sensitivity of pathogen. |
| <b>Neutropenic Fever</b>   | Vancomycin IV per pharmacy to dose protocol +<br>Cefepime 2g IV q8H ±<br>Aminoglycoside IV per pharmacy to dose protocol  | Vancomycin IV per pharmacy to dose protocol +<br>Ciprofloxacin 400mg IV q12H ±<br>Aminoglycoside IV per pharmacy to dose protocol | Ciprofloxacin 750mg PO q12H   |
| <b>Pancreatitis</b><br>(severe or necrotizing ONLY*)<br><br><i>*In absence of infected and severe or necrotizing infection, antibiotic therapy is not indicated</i>  | Meropenem 1g IV q8H<br><b>OR</b><br>Piperacillin/tazobactam 4.5g IV q6H   | Ciprofloxacin 400mg IV q12H +<br>Metronidazole 500mg IV q12H  | Ciprofloxacin 500mg PO q12H +<br>Metronidazole 500mg PO q12H  |
| <b>Pneumonia: Aspiration (community-acquired)</b><br><br>Available Pathways:<br>1. <i>Pneumonia: Adult ED</i><br>2. <i>Pneumonia Initial Management: Adult Inpatient</i><br>3. <i>Pneumonia Subsequent Day Management: Adult Inpatient</i> | Ampicillin/sulbactam 1.5g IV q6H  | Moxifloxacin 400mg PO q24H<br><i>(IV formulation restricted to pharmacy entry only)</i>   | Amoxicillin-clavulanate 875mg PO q12H<br><b>OR</b><br>Moxifloxacin 400mg PO q24H                                |
| <b>Pneumonia: Aspiration (nosocomial)</b>  | Cefepime 2g IV q8H ±<br>Vancomycin IV per pharmacy to dose protocol<br><b>OR</b><br>Piperacillin/tazobactam 4.5g IV q6H (ICU only) +<br>Vancomycin IV per pharmacy to dose protocol | Ciprofloxacin IV/PO q12H ±<br>Vancomycin IV per pharmacy to dose protocol   | Ciprofloxacin 500mg PO q12H   |
| <b>Pneumonia: Community Acquired</b>   | <b>For ICU and non-ICU:</b><br><br>Ceftriaxone 1g IV q24H +<br>Azithromycin 500mg IV/PO q24H<br><b>OR</b><br>Ampicillin/sulbactam 1.5g IV q6H +<br>Azithromycin 500mg IV/PO q24H    | Moxifloxacin 400mg PO q24H<br><i>(IV formulation restricted to pharmacy entry only)</i>   | Cefuroxime axetil 500mg PO q12H<br><b>OR</b><br>Moxifloxacin 400mg PO q24H                                      |

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|--|--|--|--|
| <p><b>Pneumonia: ICU Admit, Hospital Acquired or Ventilator Associated</b></p>   | <p><b>ICU Admission:</b><br/>                     Vancomycin IV per pharmacy to dose protocol +<br/>                     Piperacillin/tazobactam 4.5g IV q6H ±<br/>                     Aminoglycoside IV per pharmacy to dose protocol</p> <p><b>Non-ICU Admission:</b><br/>                     Vancomycin IV per pharmacy to dose protocol +<br/>                     Cefepime 2g IV q8H</p>  | <p>Vancomycin IV per pharmacy to dose protocol +<br/>                     Ciprofloxacin 400mg IV q12H ±<br/>                     Aminoglycoside IV per pharmacy to dose protocol</p> | <p>Streamline antibiotics to sensitivity of pathogen</p>   |
| <p><b>Pelvic Inflammatory Disease</b></p> <p>Available Pathways:<br/>                     1. Sexually transmitted Infections (STI): Adult ED<br/>                     2. Sexual Assault Evaluation: Adult ED</p> | <p><b>Outpatients:</b><br/>                     Ceftriaxone* +<br/>                     Doxycycline 100mg PO BID x 14 days +<br/>                     Metronidazole 500mg PO BID x 14 days</p> <p>*Ceftriaxone dose:<br/>                     ≥150kg: 1g IM x 1 dose<br/>                     &lt;150kg: 500mg IM x 1 dose</p> <p><b>Inpatients:</b><br/>                     Ceftriaxone 1g IV q24H +<br/>                     Doxycycline 100mg IV/PO q12H +<br/>                     Metronidazole 500mg IV/PO q12H</p> | <p>Clindamycin 900mg IV q8H +<br/>                     Gentamicin IV per pharmacy to dose protocol</p>   | <p>Doxycycline 100mg PO q12H +<br/>                     Metronidazole 500mg PO q12H<br/>                     to complete 14 day course</p>   |
| <p><b>Post-Operative Wound Infection</b></p>   | <p>Vancomycin IV per pharmacy to dose protocol</p>   | <p>Vancomycin IV per pharmacy to dose protocol</p>   | <p>Streamline antibiotics to sensitivity of pathogen</p>   |
| <p><b>Post-Operative Intra-abdominal Infection</b></p>   | <p>Vancomycin IV per pharmacy to dose protocol +<br/>                     Ceftriaxone 1g IV q12H +<br/>                     Metronidazole 500mg IV q12H</p>  | <p>Vancomycin IV per pharmacy to dose protocol +<br/>                     Ciprofloxacin 500mg q12H +<br/>                     Metronidazole 500mg IV q12H</p>                        | <p>Cefuroxime axetil 500mg PO q12H +<br/>                     Metronidazole 500mg PO q12H<br/> <b>OR</b><br/>                     Ciprofloxacin 400mg PO q12H +<br/>                     Metronidazole 500mg PO q12H</p> |
| <p><b>Sepsis (without obvious source)</b></p> <p>Available Pathways:<br/>                     1. Sepsis suspected: Adult Inpatient</p>   | <p><b>ICU Admit:</b><br/>                     Vancomycin IV per pharmacy to dose protocol +<br/>                     Piperacillin/tazobactam 4.5g IV q6H ±<br/>                     Aminoglycoside IV pharmacy to dose protocol</p> <p><b>Non-ICU Admit:</b><br/>                     Vancomycin IV per pharmacy to dose protocol +<br/>                     Cefepime 2g IV q8H ±<br/>                     Aminoglycoside IV pharmacy to dose protocol</p>   | <p>Vancomycin IV per pharmacy to dose protocol +<br/>                     Ciprofloxacin 400mg IV q12H ±<br/>                     Aminoglycoside IV pharmacy to dose protocol</p>     | <p>Ciprofloxacin 500mg PO q12H</p>   |

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|--|--|--|---|
| <p style="text-align: center;"><b>Urinary Tract Infections</b><br/>(community acquired)</p>  | <p style="text-align: center;"><b>IV Therapy:</b><br/>Cefazolin 1g IV q8H<br/><b>OR</b><br/>Ceftriaxone 1g IV q24H</p> <p style="text-align: center;"><b>PO Therapy:</b><br/>Cefuroxime axetil 500mg PO q12H</p> | <p style="text-align: center;">Ciprofloxacin IV/PO q12H<br/><b>OR</b><br/>TMP/SMX PO<br/>(1-2 tabs q12H or liquid equivalent)<br/><b>OR</b><br/>Nitrofurantoin 100mg PO q12H</p> | <p style="text-align: center;">Streamline antibiotics to sensitivity of pathogen</p> <p style="text-align: center;">Cefuroxime axetil 500mg PO q12H<br/><b>OR</b><br/>Nitrofurantoin 100mg PO q12H<br/><b>OR</b><br/>Ciprofloxacin 500mg PO q12H<br/><b>OR</b><br/>TMP/SMX PO<br/>(1-2 tabs q12 hours or liquid equivalent)</p> |
| <p style="text-align: center;"><b>Urinary Tract Infections</b><br/>(nosocomial/acquired)</p> <p>Review patient-specific culture history to help guide empiric therapy</p>  | <p style="text-align: center;">Cefepime 2g IV q8H ±<br/>Aminoglycoside IV per pharmacy to dose protocol<br/>(if resistant organism suspected)</p>  | <p style="text-align: center;">Ciprofloxacin 400mg IV q12H ±<br/>Aminoglycoside IV per pharmacy to dose protocol<br/>(if resistant organism suspected)</p>                       | <p style="text-align: center;">Streamline antibiotics to sensitivity of pathogen</p> <p style="text-align: center;">Cefuroxime axetil 500mg PO q12H<br/><b>OR</b><br/>Nitrofurantoin 100mg PO q12H<br/><b>OR</b><br/>Ciprofloxacin 500mg PO q12H<br/><b>OR</b><br/>TMP/SMX PO<br/>(1-2 tabs q12 hours or liquid equivalent)</p> |
| <p style="text-align: center;"><b>Uncomplicated cervicitis, urethritis</b><br/>(Treat for both gonococcal and non-gonococcal infections)</p> <p>Available Pathways:<br/>3. <i>Sexually transmitted Infections (STI): Adult ED</i><br/><i>Sexual Assault Evaluation: Adult ED</i></p>   | <p style="text-align: center;">Ceftriaxone* +<br/>Doxycycline 100mg PO BID x 7 days</p> <p style="text-align: center;">*Ceftriaxone dose:<br/>≥150kg: 1g IM x 1 dose<br/>&lt;150kg: 500mg IM x 1 dose</p>        | <p style="text-align: center;">Gentamicin 240mg IM x 1 +<br/>Azithromycin 2,000mg PO x 1</p>   | <p style="text-align: center;">None</p>   |
| <p><sup>A</sup>True allergy to beta-lactams: True and severe drug allergies to penicillin and beta-lactam antibiotics are rare. Please investigate allergy history thoroughly prior to using second-line antibiotics. Second-line antibiotics are associated with increased adverse effects, emergence of drug resistance and reduced clinical efficacy as compared with first-line beta-lactam antibiotics. Consider contacting the pharmacy department as needed for a review of previously administered antibiotics for patients with documented penicillin or beta-lactam allergies to evaluate past tolerance of beta-lactam antibiotics.</p> |  |  |   |