TRAUMA ANTIMICROBIAL STEWARDSHIP PROTOCOL

**Purpose:** To guide appropriate antimicrobial use and decrease microbial resistance in the trauma unit.

**Background:** Appropriate empiric therapy is critical for decreasing mortality associated with severe infections. Empiric regimens should be chosen based on local antibiograms, common bacteria associated with the suspected infection, and patient specific factors. Rotation of antimicrobials is not currently recommended by the IDSA as a strategy to reduce antibiotic resistance, as data do not support its use. Guidelines for empiric antimicrobial utilization and dosing and appropriate de-escalation strategies allow for hospitals to optimize treatments of infections.

**Components:**

**Antibiotic prophylaxis protocols**
(≤ 24hrs - narrow spectrum antibiotics)

- Perioperative abdominal trauma
- Orthopedic fractures
- Craniofacial trauma

**Guideline driven diagnosis of hospital infections**

- Quantitative BAL for diagnosis of VAP
  - Quantitative culture ≥ 10⁴ CFU/mL
  - Targeted empiric therapy – only when suspected source identified

**Empiric antibiotic protocols**

- Empiric antibiotics directed by unit specific antibiogram
- Indication specific empiric antibiotic therapy
  - Pneumonia (CAP*/HAP*/VAP*)
  - Non-pneumonia – sepsis caused by a non-pneumonia source (bloodstream, intra-abdominal, or unknown)
- De-escalation therapy
- Evidence based antibiotic treatment duration

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**Indication-Specific Preferred Empiric Antibiotics:**

<table>
<thead>
<tr>
<th>Empiric Antibiotic</th>
<th>CAP*</th>
<th>VAP* or HAP*</th>
<th>Intra-abdominal Infection**</th>
<th>Bacteremia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceftriaxone (+)</td>
<td></td>
<td>Vancomycin (+)</td>
<td>Piperacillin/tazobactam (+/-) Vancomycin (+/-) Fluconazole</td>
<td>Vancomycin (+) Cefepime</td>
</tr>
<tr>
<td>Azithromycin</td>
<td></td>
<td>Cefepime</td>
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</tbody>
</table>

*Simple urinary tract infections are not included in this empiric protocol.

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**Intra-abdominal Infection Protocol Considerations:**

- Consider addition of fluconazole for:
  - Upper gastrointestinal perforations
  - Recurrent bowel perforations
  - Surgically treated pancreatitis
  - Candida growth on cultures

- Consider addition of vancomycin for:
  - Known colonization with candida
  - Immunocompromised patients
  - Prior MRSA infection
- Recent hospitalization and/or nursing facility exposure
- Intravenous antibiotic use within the past 90 days

References

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