MercyOne Des Moines Medical Center

Microbiology Department
Antibiotic Susceptibility
January – December 2019

Des Moines - Laboratory
1111 6th Avenue
Des Moines, IA 50314
Antimicrobial Stewardship Contact Information:

Antimicrobial Stewardship:
Infectious Disease Pharmacy Specialist: Office: 643-8697

Penicillin Allergy Skin Testing: Pharmacy provides allergy testing for hospitalized patients with a reported history of penicillin allergy. Consult pharmacy to evaluate if your patient is a candidate. Order in CPOE- "Pharmacy Consult" with order comments "penicillin skin testing". Call the infectious diseases pharmacist or resident with questions about this service.

Pharmacy & Therapeutics Approved Protocols:
Pharmacy has been approved to perform the following
Renal dosing of antimicrobials
IV to oral Conversion (azithromycin, clindamycin, doxycycline, fluconazole, levofloxacin, linezolid, metronidazole)
Vancomycin pharmacokinetic monitoring and dosing

This data reflects isolates of cultures from patients of
MercyOne Des Moines Medical Center and
MercyOne West Des Moines Medical Center.
<table>
<thead>
<tr>
<th>Antibiotic Susceptibility</th>
<th># Isolates tested</th>
<th>Penicillin</th>
<th>Ampicillin</th>
<th>Amp/Sul</th>
<th>Cefazolin</th>
<th>Ceftriaxone (meningitis)</th>
<th>Ceftriaxone (non-men)</th>
<th>Linezolid</th>
<th>Oxacillin</th>
<th>Vancomycin</th>
<th>Clindamycin</th>
<th>Erythromycin</th>
<th>Tetracycline</th>
<th>Levofloxacin</th>
<th>Trimeth/Sulfa</th>
<th>(Nitrofurantoin)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gram Positive Coci</strong></td>
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</tbody>
</table>

\(^{(1)}\)Nitrofurantoin results are only reported on urinary isolates. The number of isolates tested are in parenthesis.

\(^{(2)}\)Enterococcus (all) reflects data from speciated and unspeciated Enterococci. Enterococci are speciated when isolated from a sterile site, and/or when resistant to Vancomycin.

\(^{(3)}\)Of the 1143 Staphylococcus aureus isolates tested: 371 were Oxacillin Resistant (32%), and 772 were Oxacillin Sensitive (68%).

\(^{(4)}\)Of the 151 Strep. pneumoniae isolates reported: 150 were Penicillin Sensitive (99%), and 1 was Penicillin Intermediate/Resistant (1%).

\(^{(5)}\)Strep. pneumoniae susceptibility testing is performed when a screening test suggests possible Penicillin resistance or if isolated from blood or CSF. Data charted is representative of only 75 of the 151 Strep. pneumo isolates. Results should be used accordingly.

\(^{(6)}\)Strep. pneumoniae Penicillin susceptibility results are based on parenteral (nonmeningitis) breakpoints.

\(^{(7)}\)GBS statistics are based on Kirby Bauer results, and include isolates from both inpatient and outreach specimens. Kirby Bauers are performed only on request or on prenatal patients with Penicillin allergies.
<table>
<thead>
<tr>
<th>Antibiotic Susceptibility</th>
<th># Isolates tested</th>
<th>Ampicillin</th>
<th>Amp/Sul</th>
<th>Pip/Tazo</th>
<th>Cefazolin</th>
<th>Cefuroxime</th>
<th>Ceftriaxone</th>
<th>Cefepine</th>
<th>Ertapenem</th>
<th>Meropenem</th>
<th>Aztreonam</th>
<th>Gentamicin</th>
<th>Tobramycin</th>
<th>Ciprofloxacin</th>
<th>Levofloxacin</th>
<th>Trimeth/Sulfa</th>
<th>Nitrofurantoin</th>
<th>ESBL</th>
<th>CRE</th>
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<td><strong>Gram Negative Rods</strong></td>
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<td>Klebsiella oxytocca</td>
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<td>78</td>
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<td>Citrobacter spp.</td>
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<tr>
<td>Stenotrophomonas maltophilia</td>
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</tbody>
</table>

(1) Nitrofurantoin results are only reported on urinary isolates. The number of isolates tested are in parenthesis.
(2) MDR reflects percentage of isolates showing a multiple drug resistant strain.
(3) The last two columns reflect percentage of isolates showing a multiple drug resistant strain. (MDR)
(4) ESBL reflects percentage of isolates showing Extended Spectrum Beta Lactamase production.

Haemophilus influenzae: Of the 156 isolates identified in 2019, 49 were found to be Beta Lactamase positive (31%), and 107 were found to be Beta Lactamase negative (69%).

Moraxella catarrhalis: Of the 48 isolates identified in 2019, 45 were found to be Beta Lactamase positive (94%), and 3 were found to be Beta Lactamase negative (6%).

Reflects percentage of isolates meeting definition of Carbapenemase Resistant Enterobacteriaceae: An Enterobacteriaceae isolate that is intermediate or resistant to at least one carbapenem, excluding Proteus, Morganella or Providencia resistant only to Imipenem. To determine if the CRE was a CP-CRE (Carbapenemase Producing CRE), mCIM phenotypic testing and PCR testing were performed on all CRE. PCR tested for markers KPC, OXA, NDM, IMP, VIM. Of the 14 CRE in 2019, 2 were CP-CRE. One Providencia rettgeri phenotypically mCIM positive and PCR negative, and one Klebsiella pneumoniae PCR positive for KPC.
### Candida spp. Antibiogram Data 2018-2019

<table>
<thead>
<tr>
<th>Antibiotic Susceptibility</th>
<th># Isolates tested</th>
<th>Fluconazole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candida albicans</td>
<td>33</td>
<td>100</td>
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<tr>
<td>Candida glabrata</td>
<td>42</td>
<td>90 (1)</td>
</tr>
</tbody>
</table>

(1) Candida glabrata % susceptible includes both susceptible and susceptible dose dependent.
ANTI-INFECTIVE | Usual Adult Dose (a)
---|---
Amikacin | 7.5 - 15 mg/kg q12-24h
Amphotericin B | 0.5-1 mg/kg
Ampicillin | 1-2 Gm q6h
Ampicillin/Sulbactam | 1.5-3 Gm q6h
Azithromycin | 500 mg daily
Aztreonam | 1-2 Gm q8h
Cefazolin | 1-2 Gm q8h
Cefepime | 1-2 Gm q12h
Cefoxitin | 2 Gm q6h
*Ceftaroline | 600 mg q12h
Ceftazidime | 1-2 Gm q8h
*Ceftolozane/Tazobactam | 1.5 - 3 g q8h
Ceftriaxone | 1-2 Gm daily
Clindamycin | 600-900 mg q8h
Colistimethate | 2.5 mg/kg q12h
*Daptomycin | 4-6 mg/kg/day
Doxycycline | 100 mg q12h
*Ertapenem | 1 Gm daily
Erythromycin | 0.5-1 Gm q6h
Fluconazole | 200-400 mg daily
Gentamicin | 1 mg/kg q8hrs, or 5-7mg/kg q24
*Isavuconazonium sulfate | 372 mg q8h x 6 doses, then daily
Levofoxacin | 250-750 mg
*Linezolid | 600 mg q12h
*Meropenem | 1 gm q8hrs
*Meropenem/vaborbactam | 4 g q8h
Metronidazole | 500 mg q8h
*Micafungin | 100-150 mg daily
*Oritavancin | 1200 mg; single dose
Oxacillin | 2 Gm q4-6h, or 12 g continuous infusion
Penicillin G | 18-24 MU/day
Piperacillin/Tazobactam | 3.375-4.5 Gm q6h
*Tigecycline | 100 mg x 1, then 50 mg q12h
Tobramycin | 1 mg/kg q8hrs, or 5-7mg/kg q24
Trimethoprim/Sulfamethoxazole | 15-20 mg/kg/day
Vancomycin | 15 mg/kg/dose
*Voriconazole | 6 mg/kg q12h x 2 doses, then 4 mg/kg q12h

(a) may require adjustment in patients with renal or hepatic dysfunction
*USE RESTRICTED TO ID PHYSICIANS
**Formulary For Oral Anti-Infectives**

**ANTI-INFECTIVE**  
Usual Adult Dose

- **Amoxicillin**  
  250-500 mg q8h
- **Amoxicillin/Clavulanate**  
  500 mg q8h
- **Ampicillin**  
  200-500 mg q6h
- **Azithromycin**  
  250-500 mg daily
- **Cefdinir**  
  300 mg q12h
- **Cefpodoxime**  
  100-200 mg q12h
- **Cefprozil**  
  250-500 mg q12h
- **Cefuroxime**  
  500 mg q12h
- **Cephalexin**  
  250-500 mg q6h
- **Clarithromycin**  
  250-500 mg q12h
- **Clindamycin**  
  150-300 mg q6-8h
- **Dicloxacillin**  
  250-500 mg q6h
- **Doxycycline**  
  100 mg daily - q12h
- **Erythromycin**  
  250-500 mg q6-8h
- **Fidaxomicin**  
  200 mg daily
- **Fluconazole**  
  100-200 mg daily
- **Isavuconazonium sulfate**  
  372 mg q8h x 6 doses, then daily
- **Itraconazole**  
  200 mg daily
- **Levofloxacin**  
  250-750 mg daily
- **Linezolid**  
  600 mg q 12h
- **Metronidazole**  
  250-500 mg q6-8h
- **Minocycline**  
  100 mg q12h
- **Penicillin VK**  
  250-500 mg q6h
- **Posaconazole**  
  300mg - 400 mg q12-24h
- **Tetracycline**  
  250-500 mg q6h
- **Trimethoprim/Sulfamethoxazole**  
  800-160 mg q12h
- **Vancomycin**  
  125 mg q 6h
- **Voriconazole**  
  200 - 300 mg q12h

# USE RESTRICTED TO ID AND GI PHYSICIANS
* USE RESTRICTED TO ID PHYSICIANS
** USE RESTRICTED TO ID AND ONCOLOGY PHYSICIANS