



## MEMORANDUM

Date: April 14, 2009

To: All Manitoba Physicians sending microbiology to WRL, HSC, and SBGH  
Clinical Microbiology Labs, Diagnostic Services of Manitoba

From: Dr. Michelle Alfa, Medical Director, Clinical Microbiology Discipline, *Michelle Alfa*  
Shirley Hoban, Technical Director, Clinical Microbiology Discipline *Shirley Hoban*

Re: **Streptococcus pneumoniae changed reporting for Penicillin and Ceftriaxone**

### **Effective April 20, 2009 – Antimicrobial Susceptibility Reports for *S. pneumoniae* will be changed.**

Recently there have been changes in the guidelines used to determine if bacterial isolates are sensitive or resistant to penicillin and ceftriaxone for *Streptococcus pneumoniae*. These changes were required because the penicillin and ceftriaxone levels in CSF can be 40 – 30 times lower than in serum. Because of this, the North American laboratory standards guidance document (Clinical and Laboratory Standards Institute document M100-S19 (2009)) currently recommends the use of two breakpoints for interpreting the susceptibility of *Streptococcus pneumoniae* to these antibiotics.

Reports going out on *S. pneumoniae* for isolates from cerebral spinal fluid will use the new interpretations, but will only have one set of interpretations indicated on the report. Isolates from sterile body sites and/or respiratory or other sites will have reports indicating two interpretations for penicillin as well as two interpretations for ceftriaxone. This summary of reporting of antibiotics is indicated below in Table 1.

#### **Take Home Message:**

If you suspect your patient has symptoms consistent with meningitis and *Streptococcus pneumoniae* isolated from blood or respiratory secretions, even if the CSF is sterile or a CSF specimen wasn't cultured, you should use the "meningitis" interpretations.



**Table 1:**

**Summary of Penicillin and Ceftriaxone Reporting Based Upon Specimen Source and Breakpoint Type.**

| Antibiotic (breakpoint type)          | CSF (Meningitis) | Blood/Sterile Site <sup>1</sup> | Respiratory/Other Sites <sup>1</sup> |
|---------------------------------------|------------------|---------------------------------|--------------------------------------|
| Penicillin parenteral (nonmeningitis) |                  | ✓                               | ✓                                    |
| Penicillin parenteral (meningitis)    | ✓                | ✓                               | ✓                                    |
| Penicillin (oral penicillin V)        |                  |                                 | (✓) <sup>2</sup>                     |
| Ceftriaxone (meningitis)              | ✓                | ✓                               | (✓) <sup>3</sup>                     |
| Ceftriaxone (non-meningitis)          |                  | ✓                               | (✓) <sup>3</sup>                     |

(✓): Indicates that the antibiotic is only reported under certain conditions as outlined under the comment section.

<sup>1</sup>Append comment:

“Different penicillin and ceftriaxone MIC interpretative criteria exist for meningeal and non-meningeal isolates of *S. pneumoniae* and may result in different interpretations for the same isolate. Reported results assume use of parenteral therapy for penicillin. If meningitis is suspected, meningitis interpretations should be used for penicillin and ceftriaxone. When meningitis is not present, susceptibility to parenteral penicillin predicts susceptibility to oral amoxicillin but not oral penicillin. Please consult a Medical Microbiologist or Infectious Diseases specialist if clarification is required.”

<sup>2</sup>Do not routinely report Penicillin (oral penicillin V) interpretations unless requested by physician.

<sup>3</sup>For respiratory/other site isolates only report ceftriaxone result if isolate is resistant to penicillin (MIC,  $\geq 0.12$   $\mu\text{g/mL}$ ; CSF [meningitis] breakpoint).