

MC 6.018 *H. influenzae* and *H. parainfluenzae* Susceptibility Reporting

Purpose This procedure provides instruction and guidance for routine testing and selective and cascade susceptibility reporting on *Haemophilus influenzae* and *Haemophilus parainfluenzae*.

Principal and Clinical Significance The decisions for the most appropriate antimicrobial agents to test and report are made with input from Pharmacy, Infectious Disease and the Clinical Laboratory. The goal is to provide clinically relevant information that will decrease the chance of developing antibiotic resistance, harmful effects of inappropriate antimicrobial use and avoid reporting results that could adversely affect patient care using selective and cascade reporting rules.

Policy Statements This procedure applies to Microbiologists who perform susceptibility testing.

Special Safety Precautions Microbiologists are subject to occupational risks associated with specimen handling.

- [Biohazard Containment](#)
- [Biohazardous Spills](#)
- [Safety in the Microbiology Laboratory](#)

Procedure

1. Antibiotics appropriate for routine testing and reporting for *H. influenzae* and *H. parainfluenzae* include:
 - Ampicillin
 - Ceftriaxone
 - Ceftazidime
 - Cefotaxime
 - Ampicillin Sulbactam
 - Ciprofloxacin
 - Levofloxacin
 - Trimethoprim Sulfamethoxazole
 - Meropenem
 - Imipenem
2. Susceptibility are sent to the U of M for *H. influenzae* and *H. parainfluenzae*.
3. MIC results will be entered manually under the **MMIC** keyboards under the Susceptibility tab.

Selective Reporting

1. Antibiotics will be reported in a specific order indicating the first and subsequent preferences of the Antimicrobial Stewardship Committee and Infectious Disease physicians.
2. Antibiotics will be reported depending on the source, if the sample is blood/CSF or not blood or CSF.
3. For **blood and CSF** these 2 antibiotics will be reported routinely, in this order.
 1. Ampicillin
 2. Ceftriaxone

Figure 1 Blood isolate, only Ampicillin and Ceftriaxone reported

Organism #1 - (C)HAEMOPHILUS INFLUENZAE		
- MMIC -		
SS	AM(1),CAX(2)	
HIDE	MERO(0.5-SS),CP(1-SS),LEVO(2-SS),TS(0.5-SS)	

4. For **non-blood and non-CSF**, these 3 antibiotics will be reported routinely, in this order.
1. Ampicillin
 2. Ceftriaxone
 3. Ciprofloxacin

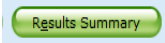
Figure 2 Tissue isolate, only Ampicillin, Ceftriaxone and Ciprofloxacin are reported.

Organism #1 - (A)HAEMOPHILUS PARAINFLUENZAE		
- MMIC -		
SS	AM(1),CAX(2),CP(1)	
HIDE	MERO(0.5-SS),LEVO(2-SS),TS(0.5-SS),AS(2-SS)	

Cascade Reporting- MIC method

If resistance is encountered, additional antibiotics will automatically be released.

1. For the MIC method, hidden antibiotics will be released when File  is clicked.

The released Results will be visible in Results Summary. 

2. Enter **all** results manually under the **MMIC** keyboard. Antibiotics will be released following the cascade rules.

Method: MIC - blood/CSF

- If Ceftriaxone is R → report Meropenem

Figure 4 Blood isolate with resistant Ceftriaxone, Meropenem is reported

Organism #1 - (C)HAEMOPHILUS INFLUENZAE		
- MMIC -		
SS	AM(1),MERO(0.5)	
R	CAX(4)	
HIDE	CP(1-SS),LEVO(2-SS),TS(0.5-SS)	

Method: MIC - non-blood/CSF

- If Ampicillin is R → report Ampicillin Sulbactam

Figure 5 Tissue isolate with resistant Ampicillin, Ampicillin Sulbactam is reported

Organism #1 - (A)HAEMOPHILUS PARAINFLUENZAE		
- MMIC -		
SS	CAX(2),CP(1),AS(2)	
R	AM(4)	
HIDE	MERO(0.5-SS),LEVO(2-SS),TS(0.5-SS)	

1. All other antibiotics are not part of the cascade are hidden. Do not release and report. Hidden antibiotics include:
 - Levofloxacin
 - Trimethoprim Sulfamethoxazole
2. Requested antibiotics may be released with a provider request.

**Method
Performance
Specifications**

1. Excluded from this group are *Haemophilus* species, other than *H. influenzae* and *H. parainfluenzae*.
2. Susceptibilities are sent to the U of M for MIC testing.

Appendix

Flowsheets

H. influenzae/parainfluenzae-blood and CSF	
Antibiotics that are reported	
Sunquest code	Drug Name
AM	Ampicillin
CAX	Ceftriaxone
Hidden Antibiotics	
Mero	Meropenem
LEVO	Levofloxacin
TS	Trimeth-Sulfa
CP	Ciprofloxacin

→ If Ceftriaxone is R
Report Meropenem

H. influenzae/parainfluenzae-non blood, non-CSF	
Antibiotics that are reported	
Sunquest code	Drug Name
AM	Ampicillin
CAX	Ceftriaxone
CP	Ciprofloxacin
Hidden Antibiotics	
AS	Ampicillin Sulbactam
LEVO	Levofloxacin
MERO	Meropenem
TS	Trimeth-Sulfa

→ If Ampicillin is R
Report Ampicillin Sulbactam

References

1. CLSI M100 edition 35 Performance Standards for Antimicrobial Susceptibility Testing 2025

Training Plan/ Competency Assessment

Training Plan	Initial Competency Assessment
<ol style="list-style-type: none">1. Employee must read the procedure.2. Employee will observe trainer performing the procedure.3. Employee will demonstrate the ability to perform procedure, record results and document corrective action after instruction by the trainer.	<ol style="list-style-type: none">1. Direct observation.

Historical Record

Version	Written/Revised by:	Effective Date:	Summary of Revisions
1	Susan DeMeyere	4/8/2025	Initial version