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# NPHL ALERT

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To better serve submitting laboratories and hospital systems across the state of Nebraska the results of modified carbapenem inactivation method (mCIM) testing will begin flowing back to submitting facilities. This change will go into effect September 1, 2023, and results will be viewable in the submitting facility's NUIrt account.

The testing for carbapenem resistant Enterobacterales is a surveillance program to monitor for increasing carbapenem resistance across the state of Nebraska. Modified carbapenem inactivation method, ordered under code MCIMAR, is the initial test performed by the Nebraska Public Health Laboratory (NPHL) as part of the Nebraska testing algorithm for carbapenem resistant Enterobacterales (CRE) and *Pseudomonas aeruginosa* (CRPA). This phenotypic assay allows for the detection of a wide range of carbapenem resistance mechanisms. If the mCIM testing results in either a Positive or Indeterminate finding, the isolate will automatically reflex to a molecular assay (order code CARBAR) which will subsequently be reported in NUIrt. This molecular assay rapidly detects the presence of *bla*<sub>KPC</sub>, *bla*<sub>NDM</sub>, *bla*<sub>VIM</sub>, *bla*<sub>OXA-48</sub>, and *bla*<sub>IMP</sub> gene sequences, which are the genes most associated with carbapenem resistance. The NPHL will also sequence any isolate that results as either Positive or Indeterminate via mCIM testing for epidemiological purposes. A representative from the Nebraska Department of Health and Human Services will be reaching out to provide further guidance as needed. The reflex test ordering will automatically occur and does not require further action by the submitting facility.

This change will only affect submitting facility's ability to view mCIM testing results. Thus, there is no change in Specimen Guidelines for CRE and CRPA, which are outlined below for reference as well as located at [www.nphl.org](http://www.nphl.org). As with before, carbapenem-resistant *Acinetobacter baumannii* complex will undergo molecular testing (CARBAR) and mCIM testing will not be performed.

**Effective Date:** September 1, 2023  
**Test Name:** Modified Carbapenem Inactivation Method  
**Test Code:** MCIMAR

### Specimen Guidelines:

Submit isolates of Enterobacterales and/or *Pseudomonas aeruginosa* that are non-susceptible (intermediate or resistant) to carbapenems as mentioned below:

- Enterobacterales: Ertapenem MIC  $\geq 1$   $\mu\text{g/mL}$  or meropenem MIC  $\geq 2$   $\mu\text{g/mL}$  or imipenem MIC  $\geq 2$   $\mu\text{g/mL}$  or non-susceptible by disc diffusion method (see rare exceptions below)
- *Pseudomonas aeruginosa*: Meropenem or imipenem MIC  $\geq 4$   $\mu\text{g/mL}$ , or non-susceptible by disc diffusion method and in each case also non-susceptible to both cefepime and ceftazidime at MIC  $\geq 16$   $\mu\text{g/mL}$
- Submit all isolates of in-house or reference laboratory confirmed carbapenemase-producing Enterobacterales (CPE) or *Pseudomonas aeruginosa* (CP-PA)

Exceptions: DO NOT submit the following isolates:

- *Proteus* species, *Providencia* species, and *Morganella morganii* non-susceptible only to imipenem but susceptible to meropenem and ertapenem
- *Pseudomonas aeruginosa* isolates that are mucoid or from cystic fibrosis patients