

Expanded Antimicrobial Susceptibility Testing for Hard-to-Treat Infections

Antimicrobial susceptibility testing for Enterobacteriaceae producing a metallo-beta-lactamase (MBL)

Clinicians, hospital laboratories, and public health labs can request expanded antimicrobial susceptibility testing (ExAST) from CDC's Antibiotic Resistance Lab Network (AR Lab Network) to find new, effective treatment options for their patients' most resistant infections.

- Enterobacteriaceae are resistant to new drugs for carbapenem-resistant Enterobacteriaceae (CRE) treatment, specifically ceftazidime-avibactam and meropenem-vaborbactam. However, these bacteria may be susceptible to the combination therapy ceftazidime + avibactam + aztreonam*.
*Ceftazidime + avibactam + aztreonam is a combination of drugs recommended by the 2018 Sanford Guide for treatment of serious infections caused by MBL-producing Enterobacteriaceae.
- Susceptibility testing is CLIA-compliant and results will be reported for ceftazidime + avibactam, aztreonam; and aztreonam + avibactam to help assess utility of combination therapy.
- CDC plans to expand testing as new antimicrobial treatment options become available for other hard-to-treat bacterial infections.
- There is no cost for this service.

1 What isolates can I submit?

Hospital laboratories and clinicians are encouraged to submit Enterobacteriaceae isolates that:

- Test non-susceptible to all beta-lactams, including either ceftazidime-avibactam or meropenem-vaborbactam. These isolates may be MBL-producing isolates with few effective treatment options.

-OR-

- Enterobacteriaceae with NDM, VIM, or IMP genes confirmed by a molecular test.

2 What is the testing process?

- AST turn-around time is 3 business days (once isolate received) for therapy decisions.
- Isolates will be tested to confirm carbapenem resistance, carbapenemase production, and to identify carbapenemase gene-coded resistance.
- Isolates that meet the inclusion criteria will be tested for susceptibility to ceftazidime + avibactam, aztreonam and avibactam + aztreonam.

3 How do I request the test and receive results?

- Healthcare providers, hospital laboratories, and public health labs should email their regional lab to request testing and instructions for submitting the bacterial isolate.
- Provide preliminary lab testing results and confirm that the facility's infection control department has been notified and/or infectious disease physician has been consulted.

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As part of the AR Lab Network, your state and regional lab work to:

Detect resistant species & new threats | Perform susceptibility testing to track resistance | Help respond to outbreaks

[AR Lab Network Testing & Resources](https://www.cdc.gov/drugresistance/laboratories.html)
(<https://www.cdc.gov/drugresistance/laboratories.html>)



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