Molecular Detection of Carbapenemase (CARBAR)

**Guidelines:**
- A fresh subculture (<18 hours) is optimal to avoid a delay in testing.
- Submission of all isolates of Enterobacteriaceae and/or *Pseudomonas aeruginosa* that are non-susceptible (intermediate or resistant) to any of the carbapenems
  - Enterobacteriaceae: Ertapenem MIC \( \geq 1 \) µg/ml and/or meropenem or imipenem MIC \( \geq 2 \) µg/ml, or non-susceptible by disc diffusion method
  - *Pseudomonas aeruginosa*: Meropenem or imipenem MIC \( \geq 4 \) µg/ml, or non-susceptible by disc diffusion method
  - Submission of all isolates of in-house or reference laboratory confirmed carbapenemase-producing Enterobacteriaceae (CPE) or *Pseudomonas aeruginosa* (CP-PA)
- Rejection criteria: DO NOT submit the following isolates
  - *Enterobacter cloacae* and *E. (Klebsiella) aerogenes* isolates non-susceptible only to ertapenem but susceptible to imipenem and meropenem
  - *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
- Organism ID: ________________________________
- Organism Identification Method:
  - **Vitek**  **MicroScan**  **MALDI-TOF**  **Other:**
- Susceptibility:
  - Imipenem MIC: \( \) Interp: \( \)
  - Meropenem MIC: \( \) Interp: \( \)
  - Ertapenem MIC: \( \) Interp: \( \)
  - Doripenem MIC: \( \) Interp: \( \)
- Susceptibility Method:
  - **Vitek**  **MicroScan**  **Kirby Bauer**  **Other:**
- Has the isolate been confirmed as a CPE or CP-PA?
  - **Yes**  **No**
  - If yes: Method used ________________________
  - List CPE gene(s) detected __________________________

**Attach MIC report if available**

For questions regarding proper ordering or sample submission requirements contact: NPHL at 402.559.9444 or Fax at 402.559.7799.
Packaging and Shipping to Nebraska Public Health Laboratory
Category A Infectious Substances, Affective Humans UN2814
Category B Biological Substances, UN3373

Specimen Handling:
• Practice universal blood and body fluid precautions when handling specimens, including appropriate PPE for specimen being collected. Advanced PPE including face shield or goggles must be worn for more communicable pathogens such as Influenzae, Measles/Mumps or Viral Hemorrhagic Fever pathogens (call NPHL before collection of VHF).
• Specimens must be collected in or transferred to leak-proof primary containers. The container must have at least two patient identifiers (first and last name and DOB) and be placed into a secondary sealed biohazard bag to prevent contamination. The biohazard bag should be equipped with an absorbent material, large enough to absorb the entire contents if spilled.
• Appropriate Requisition and Supplemental Forms must be completed in entirety and placed in the pocket of the biohazard bag - do NOT place inside the bag with the specimen.
• The shipper must determine if specimens are shipped as exempt, Category B or Category A (must be trained in the classification process).
• All organism isolates or specimens must be triple packaged (outer container can be a courier bag or other rigid box).
• Contact Karen Stiles at 402.598.2348 or page 402.888.5588 for additional shipping material or instructions.

Shipping Certification:
• To ensure the safety of laboratory personnel and the public, proper handling of specimens and propagated organisms is mandatory. The shipper is legally responsible to comply with the rules and guidelines for transport of Division 6.2 infectious substances, which is regulated as a hazardous material under the U.S. Department of Transportation’s (DOT) Hazardous Materials Regulations (HMR; 49 CFR Parts 171-178).
• Purpose of adherence to these regulations and requirements is to minimize the potential for damage to the contents of the package during transport and to reduce the exposure of the shipper to the risks of criminal and civil liability associated with the improper shipment of dangerous goods. Specimens and organism isolates will be rejected if submitted improperly.
• Persons who pack and ship Category A infectious substances of >5 kg Dry ice must receive the aforementioned training for all functions involved in packing and shipping more hazardous Category A substances, and be certified to do so.

Transport Instructions:
• After classifying type of shipment, the shipper must follow the appropriate packing instructions, provided by Nebraska Public Health.

Courier Services:
• Category A Infectious Substance UN2814 shipped from Omaha and Lincoln area must be transported to NPHL by exclusive couriers, as they are only courier specifically trained and licensed to transport Category A. Do not use routine NPHL courier. Call Client Services to arrange an exclusive courier. All greater Nebraska laboratories must first notify NPHL and ship all Category A Infectious Substances via FedEx, to include airbill and shippers declaration.
• Category B specimens in sealed biohazard bag (with absorbent material) can be placed in courier cooler for ground transport.
• To inquire about scheduled stops and after hours ground courier service, call client services Toll Free 866.290.1406 or 402.559.2440.

Packages going by FedEx or NPHL Ground, ship to address:

**CATEGORY A**
Client Services
Nebraska Public Health Laboratory
4400 Emile Street MSB 3500
Omaha, NE 68105
Phone: 866.290.1406

**CATEGORY B**
Client Services
Nebraska Public Health Laboratory
601 S Saddle Creek Rd, MSB 3500
Omaha, NE 68106
Phone: 866.290.1406

*Courier must be specifically trained and licensed to transport Category A. Do not use routine NPHL courier.*