**Carbapenem Resistant Organisms**

1. If an organism is an Enterobacteriaceae and resistant to Meropenem (MIC ≥4) or Ertapenem (MIC>=2) by vitek, confirm result by setting up a GNX2F panel.
2. Isolates exhibiting Carbapenem resistance are forwarded to RIDOH for genetic testing to determine presence or absence of carbapenem-resistance genes when the following situations occur:
   1. Isolate recovered is:
      1. *Escherichia coli*, *Klebsiella oxytoca*, *Klebsiella pneumoniae*, or *Enterobacter* spp **AND** isolate is resistant to at least one of the following:
         1. Imipenem, Meropenem, Doripenem, Ertapenem by standard susceptibility testing methods (i.e., minimum inhibitory concentrations of >=4 µg/mL for Imipenem, Meropenem, Doripenem, or >=2 µg/mL for Ertapenem)
      2. Non-mucoid *Pseudomonas aeruginosa* or *Acinetobacter baumannii* **AND** isolate is resistant to at least one of the following:
         1. Imipenem, Meropenem, or Doripenem by standard susceptibility testing methods (i.e., minimum inhibatory concentrations of >=8 µg/mL)
   2. **In consultation with State Health Laboratory only:** Other Enterobacteriaceae that are non-susceptible to all antimicrobials tested to date (pan-resistant).
3. Reporting:
   1. If the organism is carbapenem resistant add the isolate comment: **&CRE**

**“Carbapenem Resistance Detected. Isolate**

**forwarded to RIDOH for confirmation.”**

* 1. If the organism (*E. coli*, *K. pneumoniae*, or *K. oxytoca*) was also a rule out ESBL:
     1. If the ESBL test was Positive, report out according to procedure.
     2. If the ESBL test was Negative, use the canned comment: **&ESBU**

**“Unable to confirm the presence of ESBL due to multiple**

**resistance mechanisms.”**

* 1. Subculture isolate to send to RIDOH for further testing.
  2. Stock isolate in appropriate freezer box, refer to Isolate Stocking Procedure.
  3. The provider/unit and Infection Control must be notified if isolate is a Carbapenem Resistant *Enterobacteriaceae*, refer to Critical Results Notification.

1. References
   1. January 2015 CDC surveillance definition for CRE

<http://www.cdc.gov/hai/organisms/cre/definition.html>

* 1. RIDOH specimen submissions – Carbapenem Resistant Bacteria

<http://www.health.ri.gov/programs/laboratory/biological/about/specimensubmission/>