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| **MDH CRE/CRA/CRPA Project 1380**  **CRE/CRA/CRPA Definition and MDH Submission Protocol** | | | | | | | |
| **Purpose** | This procedure defines the MDH CRE/CRA/CRPA Project 1380 and provides definition and instruction for laboratory specific protocol for CRE/CRA/CRPA submission to MDH.  This procedure also provides instructions for | | | | | | |
| **Policies** | This procedure applies to microbiology laboratory staff preparing documentation and submitting isolates to send to MDH for Project 1380  --Carbapenem Resistant Enterobacteriaceae **(CRE)**  --Carbapenem Resistant *Acinetobacter* **(CRA)**  --Carbapenem Resistant *Pseudomonas aeruginosa* **(CRPA)** | | | | | | |
| **Protocol for**  **CRE/CRA/CRPA**  **Isolate Submission to MDH** | **Submit isolates based on the definitions**  Submit isolates from **ALL** body sites (sterile/non-sterile) | | | | | | |
|  | 1. |  | **MDH 2016 CRE case definition: (using CLSI breakpoints):**  ***Klebsiella* spp., *Enterobacter* spp., *Escherichia coli*, and *Citrobacter* spp.**isolates that are non susceptible to any 1 carbapenem, and any other Enterobacteriaceae spp. that test resistant to any carbapenem antibiotic.  \*\*\*Note: Imipenem MICS for *Proteus* sp., *Providencia* sp, and *Morganella morganii,* tend to be higher and therefore, a carbapenem other than Imipenem must be resistant for these organisms to meet the CRE definition. | | | |  |
|  | 2. |  | **MDH (CLSI) CRE breakpoints are listed in the table below:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Agent | MIC Interpretive Standard (μg/mL) | | | | | Ertapenem | ≥2 |  |  | | Imipenem\*\*\* | ≥4 | \*\*\*see note above\*\*\* | | | Meropenem | ≥4 |  |  | | Doripenem | ≥4 |  |  | |  |  |  |  | | | | |  |
|  | 3. |  | **MDH CRA definition: (using MDH/CLSI breakpoints)**  **Acinetobacter** (*A. baumanii, A. calcoaceticus baumanii, A. baumanii* complex, *A.calcoaceticus baumannii* complex, and *A. calcoaceticus*) isolates that are non-susceptible:  **I or R to Imipenem, Meropenem, or Doripenem** | | | |  |
|  | 4. |  | **MDH (CLSI) CRA breakpoints are listed in the table below:**   |  |  |  |  | | --- | --- | --- | --- | | Carbapenem non-susceptible breakpoints | | | | | Agent | MIC Interpretive Standard(μg/mL) | | | Imipenem | ≥8 | | | Meropenem | ≥8 | | | Doripenem | ≥8 | |  | | |  | | | | | |  |
|  | 5. |  | **MDH CRPA definition: (using MDH/CLSI breakpoints)**  Any *Pseudomonas aeruginosa* isolate that is carbapenem resistant and/or demonstrates the production of a carbapenemase:  **I or R to Imipenem, Meropenem, or Doripenem** | | | |  |
|  | 6. |  | **MDH (CLSI) CRPA breakpoints are listed in the table below:**   |  |  |  |  | | --- | --- | --- | --- | | Carbapenem non-susceptible breakpoints | | | | | Agent | MIC Interpretive Standard(μg/mL) | | | Imipenem | ≥8 | | | Meropenem | ≥8 | | | Doripenem | >8 | | | | |  |
|  | 7. |  | Isolates fitting the **CRE, CRA and CRPA** definitions should be submitted to MDH as they are identified. | | | |  |
|  | 8. |  | **When submitting isolates please include:**   * + the usual MDH *“Clinical Testing and Submission Form”* (please fill out patient info as completely as possible)   + the *“CRE/CRPA Isolate Submission Form”*   + a copy of the AST report from the Vitek, and MicroScan NC68 if performed   **Please staple all the forms together**. | | | | [**MDH form**](http://www.health.state.mn.us/divs/phl/clin/fillable_mdh.pdf)  [**CRE/CRA/ CRPA form**](http://www.health.state.mn.us/divs/phl/clin/MDHCREisolateform.pdf) |
|  | 9. |  | Subculture the isolate to a nutrient agar for next day shipment to MDH. | | | |  |
| **References** | “MDH MDR-GNB Laboratory-specific Protocol.” St. Paul: Minnesota Department of Health, 2011.  “Changes to CRE Surveillance” St. Paul: Minnesota Department of Health, 1/6/2016.  “CRPA Surveillance” St. Paul: Minnesota Department of Health, 7/6/2016. | | | | | | |
| **Training Plan/**  **Competency**  **Assessment** | |  |  | | --- | --- | | Training Plan | Employee must read the procedure | | Employee will observe trainer performing the procedure. | | Employee will demonstrate the ability to perform procedure, record results and document corrective action after instruction by the trainer. | | Competency | Direct observation | | Proficiency Testing | | | | | | | |
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| **Historical Record** | **Version** | | | **Written/Revised by:** | **Effective Date:** | **Summary of Revisions** | |
| 1 | | | Jessica Sova, MLS(ASCP)cm | 12/27/2011 | Initial Version | |
| 1.1 | | | Becky Carlson, MLS(ASCP)cm | 3/4/2012 | Included MDH Submission Criteria and forms | |
| 1.2 | | | Becky Carlson, MLS(ASCP)cm | 3/11/2013 | Revised the frequency of the searches to monthly. Added instructions for denominator search. | |
| 2 | | | Becky Carlson, MLS(ASCP)cm | 7/30/2015 | Added to CMS application on Children’s Starnet. | |
| 3 | | | Becky Carlson, MLS(ASCP)cm | 1/13/2016  1/312016 | Revised the MDH CRE Case definition to no longer include resistance to third-generation cephalosporins. Added Ertapenem to the list of carbapenem antibiotics.  Revised and renamed Observa™CRE/CRA searches. | |
|  | 4 | | | Becky Carlson, MLS(ASCP)cm | 4/5/2017 | Added CRPA isolate submission | |
|  | 5 | | | Susan DeMeyere | 4/20/2018 | Removed performing monthly carbapenem resistance numerator and denominator searches for MDH. | |