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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:**

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| Agent | MIC Interpretive Standard (μg/mL) |
| Ertapenem | ≥2 |  |  |
| Imipenem\*\*\* | ≥4 | \*\*\*see note above\*\*\* |
| Meropenem | ≥4 |  |  |
| Doripenem | ≥4 |  |  |
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|  | 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:**

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| Carbapenem non-susceptible breakpoints |
| Agent | MIC Interpretive Standard(μg/mL) |
| Imipenem | ≥8 |
| Meropenem | ≥8 |
| Doripenem | ≥8 |
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|  | 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:**

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| Carbapenem non-susceptible breakpoints |
| Agent | MIC Interpretive Standard(μg/mL) |
| Imipenem | ≥8 |
| Meropenem | ≥8 |
| Doripenem | >8 |

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|  | 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** |

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| 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 | 1/13/20161/312016 | 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. |