PATIENT ID: _____ DATE REPORTED TO EIP SITE: *(mm/dd/yyyy)* _____

2022 Carbapenem Resistant Enterobacteriaceae (CRE)/ Carbapenem Resistant *A. baumannii* (CRAB) Multi-site Gram-Negative Surveillance Initiative (MuGSI) Healthcare-Associated Infections Community Interface (HAIC) Case Report

Form Approved
OMB No. 0920-0978

Patient's Name: Phone no.:

Address: MRN:

Address Type: Hospital:

----Patient Identifier information is not transmitted to CDC----

DEMOGRAPHICS

1. STATE: _____ **2. COUNTY:** _____ **3. STATE ID:** _____ **4a. LABORATORY ID WHERE INCIDENT SPECIMEN IDENTIFIED:** _____ **4b. FACILITY ID WHERE PATIENT TREATED:** _____

5. DATE OF BIRTH: *(mm/dd/yyyy)* _____

6. AGE: _____
○ Days ○ Mos ○ Yrs

7. SEX AT BIRTH:
○ Male
○ Female
○ Unknown
☐ Check if transgender

8a. ETHNIC ORIGIN:
○ Hispanic or Latino
○ Not Hispanic or Latino
○ Unknown

8b. RACE: (Check all that apply)
☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Native Hawaiian or Other Pacific Islander
☐ White
☐ Unknown

9. DATE OF INCIDENT SPECIMEN COLLECTION (DISC): *(mm/dd/yyyy)* _____

10. ORGANISM: ○ CRE ○ CRAB

If CRE, select one of the following:
○ *Escherichia coli*
○ *Enterobacter cloacae*
○ *Klebsiella aerogenes*
○ *Klebsiella pneumoniae*
○ *Klebsiella oxytoca*

11. INCIDENT SPECIMEN COLLECTION SITE:
☐ Blood
☐ Bone
☐ Bronchoalveolar lavage *(CRAB only, complete Q23c)*
☐ CSF
☐ Internal body site (specify): _____
☐ Muscle
☐ Peritoneal fluid
☐ Pericardial fluid
☐ Pleural fluid
☐ Joint/synovial fluid
☐ Sputum *(CRAB only, complete Q23c)*
☐ Tracheal aspirate *(CRAB only, complete Q23c)*
☐ Urine
☐ Wound (specify): _____ (CRAB only)
☐ Other LRT site (specify): _____ (CRAB only, complete Q23c)
☐ Other normally sterile site (specify): _____

12. LOCATION OF SPECIMEN COLLECTION:

○ **OUTPATIENT** Facility ID: _____
○ Emergency room
○ Clinic/Doctor's office
○ Dialysis center
○ Surgery
○ Observational/ Clinical decision unit
○ Other outpatient

○ **INPATIENT** Facility ID: _____
○ ICU
○ OR
○ Radiology
○ Other inpatient

○ **LTCF** Facility ID: _____

○ **LTACH** Facility ID: _____

○ **Autopsy**
○ **Other** (Specify): _____

○ **Unknown**

13. WHERE WAS THE PATIENT LOCATED ON THE 3RD CALENDAR DAY BEFORE THE DISC?
○ Private residence
○ LTCF Facility ID: _____
○ Hospital inpatient Facility ID: _____
○ LTACH Facility ID: _____
○ Homeless
○ Incarcerated
○ Other (specify): _____
○ Unknown

Was the patient transferred from this hospital?
○ Yes ○ No ○ Unknown

14. WAS THE PATIENT HOSPITALIZED ON THE DAY OF OR IN THE 29 CALENDAR DAYS AFTER THE DISC?
○ Yes ○ No ○ Unknown

IF YES, DATE OF ADMISSION: *(mm/dd/yyyy)* _____

15a. WAS THE PATIENT IN AN ICU IN THE 7 DAYS BEFORE THE DISC?
○ Yes ○ No ○ Unknown

IF YES, DATE OF ICU ADMISSION: *(mm/dd/yyyy)* _____ OR ☐ Date unknown

15b. WAS THE PATIENT IN AN ICU ON THE DAY OF INCIDENT SPECIMEN COLLECTION OR IN THE 6 DAYS AFTER THE DISC?
○ Yes ○ No ○ Unknown

IF YES, DATE OF ICU ADMISSION: *(mm/dd/yyyy)* _____ OR ☐ Date unknown

16. PATIENT OUTCOME: ○ Survived ○ Died ○ Unknown

DATE OF DISCHARGE: *(mm/dd/yyyy)* _____ OR
○ Date unknown
○ Left against medical advice (AMA)

IF SURVIVED, DISCHARGED TO:
○ Private residence
○ LTCF, Facility ID: _____
○ LTACH, Facility ID: _____
○ Other (specify): _____
○ Unknown

DATE OF DEATH: *(mm/dd/yyyy)* _____ OR ☐ Date unknown

ON THE DAY OF OR IN THE 6 CALENDAR DAYS BEFORE DEATH, WAS THE PATHOGEN OF INTEREST ISOLATED FROM A SITE THAT MEETS THE CASE DEFINITION?
○ Yes ○ No ○ Unknown

17a. TYPES OF INFECTION ASSOCIATED WITH CULTURE(S): (Check all that apply): ○ None ○ Colonized ○ Unknown

- ☐ Abscess, not skin
- ☐ AV fistula/graft infection
- ☐ Bacteremia
- ☐ Bursitis
- ☐ Catheter site infection (CVC)
- ☐ Cellulitis
- ☐ Chronic ulcer/wound (not decubitus)
- ☐ Decubitus/pressure ulcer
- ☐ Empyema
- ☐ Endocarditis
- ☐ Epidural abscess
- ☐ Meningitis
- ☐ Osteomyelitis
- ☐ Peritonitis
- ☐ Pneumonia (CRAB cases, complete Q23c)
- ☐ Pyelonephritis
- ☐ Septic arthritis
- ☐ Septic emboli
- ☐ Septic shock
- ☐ Skin abscess
- ☐ Surgical incision infection
- ☐ Surgical site infection (internal)
- ☐ Traumatic wound
- ☐ Urinary tract infection
- ☐ Other (specify): _____

17b. RECURRENT UTI ○ Yes ○ No ○ Unknown

17c. WAS THE PATIENT TREATED FOR THE MUGSI ORGANISM? ○ Yes ○ No ○ Unknown

18. UNDERLYING CONDITIONS: (Check all that apply) ○ None ○ Unknown

CHRONIC LUNG DISEASE
- ☐ Cystic fibrosis
- ☐ Chronic pulmonary disease

CHRONIC METABOLIC DISEASE
- ☐ Diabetes mellitus
  - ☐ With chronic complications

CARDIOVASCULAR DISEASE
- ☐ CVA/Stroke/TIA
- ☐ Congenital heart disease
- ☐ Congestive heart failure
- ☐ Myocardial infarction
- ☐ Peripheral vascular disease (PVD)

GASTROINTESTINAL DISEASE
- ☐ Diverticular disease
- ☐ Inflammatory bowel disease
- ☐ Peptic ulcer disease
- ☐ Short gut syndrome

IMMUNOCOMPROMISED CONDITION
- ☐ HIV infection
  - ☐ AIDS/CD4 count < 200
- ☐ Primary immunodeficiency
- ☐ Transplant, hematopoietic stem cell
- ☐ Transplant, solid organ

LIVER DISEASE
- ☐ Chronic liver disease
  - ☐ Ascites
  - ☐ Cirrhosis
  - ☐ Hepatic encephalopathy
  - ☐ Variceal bleeding
- ☐ Hepatitis C
  - ☐ Treated, in SVR
  - ☐ Current, chronic

MALIGNANCY
- ☐ Malignancy, hematologic
- ☐ Malignancy, solid organ (non-metastatic)
- ☐ Malignancy, solid organ (metastatic)

NEUROLOGIC CONDITION
- ☐ Cerebral palsy
- ☐ Chronic cognitive deficit
- ☐ Dementia
- ☐ Epilepsy/seizure/seizure disorder
- ☐ Multiple sclerosis
- ☐ Neuropathy
- ☐ Parkinson's disease
- ☐ Other (specify): _____

PLEGIAS/PARALYSIS
- ☐ Hemiplegia
- ☐ Paraplegia
- ☐ Quadriplegia

RENAL DISEASE
- ☐ Chronic kidney disease
  - Lowest serum creatinine: _____ mg/DL
  - ☐ Unknown or not done

SKIN CONDITION
- ☐ Burn
- ☐ Decubitus/pressure ulcer
- ☐ Surgical wound
- ☐ Other chronic ulcer or chronic wound
- ☐ Other (specify): _____

OTHER
- ☐ Connective tissue disease
- ☐ Obesity or morbid obesity
- ☐ Pregnant

MuGSI CONDITIONS
- ☐ Urinary tract problems/abnormalities
- ☐ Premature birth
- ☐ Spina bifida

19. SUBSTANCE USE

SMOKING: (Check all that apply)
- ☐ None
- ☐ Unknown
- ☐ Tobacco
- ☐ E-nicotine delivery system
- ☐ Marijuana

ALCOHOL ABUSE
- ○ Yes
- ○ No
- ○ Unknown

OTHER SUBSTANCES: (Check all that apply) ○ None ○ Unknown

	DUD/ ABUSE	MODE OF DELIVERY (Check all that apply)			
☐ Marijuana, cannabinoid (other than smoking)	☐ DUD or abuse	☐ IDU	☐ Skin popping	☐ Non-IDU	☐ Unknown
☐ Opioid, DEA schedule I (e.g., heroin)	☐ DUD or abuse	☐ IDU	☐ Skin popping	☐ Non-IDU	☐ Unknown
☐ Opioid, DEA schedule II-IV (e.g., methadone, oxycodone)	☐ DUD or abuse	☐ IDU	☐ Skin popping	☐ Non-IDU	☐ Unknown
☐ Opioid, NOS	☐ DUD or abuse	☐ IDU	☐ Skin popping	☐ Non-IDU	☐ Unknown
☐ Cocaine	☐ DUD or abuse	☐ IDU	☐ Skin popping	☐ Non-IDU	☐ Unknown
☐ Methamphetamine	☐ DUD or abuse	☐ IDU	☐ Skin popping	☐ Non-IDU	☐ Unknown
☐ Other (specify): _____	☐ DUD or abuse	☐ IDU	☐ Skin popping	☐ Non-IDU	☐ Unknown
☐ Unknown substance	☐ DUD or abuse	☐ IDU	☐ Skin popping	☐ Non-IDU	☐ Unknown

DURING THE CURRENT HOSPITALIZATION, DID THE PATIENT RECEIVE MEDICATION ASSISTED TREATMENT (MAT) FOR OPIOID USE DISORDER?
○ Yes ○ No ○ N/A (patient not hospitalized or did not have DUD)

20. RISK FACTORS: (Check all that apply) ○ None ○ Unknown

WAS INCIDENT SPECIMEN COLLECTED 3 OR MORE CALENDAR DAYS AFTER HOSPITAL ADMISSION? ○ Yes ○ No

PREVIOUS HOSPITALIZATION IN THE YEAR BEFORE DISC ○ Yes ○ No ○ Unknown

IF YES, DATE OF DISCHARGE CLOSEST TO DISC: *(mm/dd/yyyy)* _____ OR, ☐ DATE UNKNOWN

Facility ID: _____

OVERNIGHT STAY IN LTCF IN THE YEAR BEFORE DISC: ○ Yes ○ No ○ Unknown

Facility ID: _____

OVERNIGHT STAY IN LTACH IN THE YEAR BEFORE DISC: ○ Yes ○ No ○ Unknown

Facility ID: _____

SURGERY IN THE YEAR BEFORE DISC: ○ Yes ○ No ○ Unknown

CURRENT CHRONIC DIALYSIS: ○ Yes ○ No ○ Unknown

IF YES, TYPE
○ Hemodialysis ○ Peritoneal ○ Unknown

IF HEMODIALYSIS, TYPE OF VASCULAR ACCESS:
○ AV fistula/graft ○ Hemodialysis central line ○ Unknown

CENTRAL LINE IN PLACE ON THE DISC (UP TO THE TIME OF COLLECTION), OR AT ANY TIME IN THE 2 CALENDAR DAYS BEFORE DISC: ○ Yes ○ No ○ Unknown

☐ Check here if central line in place for > 2 calendar days

URINARY CATHETER IN PLACE ON THE DISC (UP TO THE TIME OF COLLECTION), OR AT ANY TIME IN THE 2 CALENDAR DAYS BEFORE DISC
○ Yes ○ No ○ Unknown

IF YES, CHECK ALL THAT APPLY:
- ☐ Indwelling Urethral Catheter
- ☐ Condom Catheter
- ☐ Suprapubic Catheter
- ☐ Other (specify): _____

ANY OTHER INDWELLING DEVICE IN PLACE ON THE DISC UP TO THE TIME OF COLLECTION), OR AT ANY TIME IN THE 2 CALENDAR DAYS BEFORE DISC:
○ Yes ○ No ○ Unknown

IF YES, CHECK ALL THAT APPLY:
- ☐ ET/NT Tube
- ☐ Tracheostomy
- ☐ Gastrostomy Tube
- ☐ Nephrostomy Tube
- ☐ NG Tube
- ☐ Other (specify): _____

PATIENT TRAVELED INTERNATIONALLY IN THE YEAR BEFORE DISC:
○ Yes ○ No ○ Unknown

COUNTRY(IES): _____

PATIENT HOSPITALIZED WHILE VISITING COUNTRY(IES) ABOVE:
○ Yes ○ No ○ Unknown

21a. WEIGHT:
_____ lbs. _____ oz. OR
_____ kg ☐ Unknown

21b. HEIGHT:
_____ ft. _____ in. OR
_____ cm ☐ Unknown

21c. BMI:
_____
☐ Unknown

URINE CULTURES ONLY:

22a. WAS THE URINE COLLECTED THROUGH AN INDWELLING URETHRAL CATHETER?

○ Yes ○ No ○ Unknown

URINE CULTURES ONLY:

22b. RECORD THE COLONY COUNT:

_____

URINE CULTURES ONLY:

22c. SIGNS AND SYMPTOMS ASSOCIATED WITH URINE CULTURE

Please indicate if any of the following symptoms were reported during the 5 day time period including the 2 calendar days before through the 2 calendar days after the DISC.

☐ None
☐ Unknown
☐ Costovertebral angle pain or tenderness
☐ Dysuria
☐ Fever [temperature ≥ 100.4 °F (38 °C)]
☐ Frequency
☐ Suprapubic tenderness
☐ Urgency

Symptoms for patients ≤ 1 year of age only:

☐ Apnea ☐ Lethargy
☐ Bradycardia ☐ Vomiting

Complete questions 23a-23b ONLY for *A. BAUMANNII* cases:

23a. DID THE PATIENT HAVE A SPUTUM CULTURE POSITIVE FOR CRAB IN THE 30 DAYS BEFORE THE DISC?

○ Yes ○ No ○ Unknown ○ N/A

23b. RISK FACTORS IN THE 7 DAYS BEFORE THE DISC:

☐ Non-invasive positive pressure ventilation (CPAP or BiPAP) at any time in the 7 calendar days before the DISC
☐ Nebulizer treatment at any time in the 7 calendar days before the DISC
☐ Mechanical ventilation at any time in the 7 calendar days before the DISC

Complete question 23c ONLY for A. BAUMANNII cases from LRT site cultures or for non-LRT cultures where pneumonia is marked in question 17a.

23c. CHEST RADIOLOGY FINDINGS: (Check all that apply)

☐ Not done
☐ No report available
☐ Acute respiratory distress syndrome (ARDS)
☐ Air space density/opacity
☐ Ground glass opacities/infiltrates
☐ Bronchopneumonia/pneumonia
☐ Cannot rule out pneumonia
☐ Cavitation
☐ Consolidation
☐ Infiltrate
☐ Pleural effusion
☐ Nodules
☐ No evidence of pneumonia

24a. DID THE PATIENT HAVE A POSITIVE TEST(S) FOR SARS-CoV-2 (MOLECULAR ASSAY, SEROLOGY OR OTHER CONFIRMATORY TEST) IN THE YEAR BEFORE OR DAY OF THE DISC?

○ Yes ○ No ○ Unknown

24b. IF YES, COMPLETE THE TABLE BELOW FOR THE MOST RECENT POSITIVE SARS-COV-2 TEST IN THE YEAR BEFORE OR DAY OF THE DISC:

SPECIMEN COLLECTION DATE	TEST TYPE
_____ ☐ Unknown	☐ Molecular assay ☐ Antigen ☐ Serology ☐ Unknown ☐ Other (specify): _____

24c.COVID-NET CASE ID: _____

24d. NNDSS IDs: (please provide at least one of the following when applicable)

Local case ID: _____ Local record ID: _____ State case identifier: _____

Legacy case identifier: _____ CDC 2019-nCOV ID: _____

25. WAS THE INCIDENT SPECIMEN POLYMICROBIAL?

○ Yes ○ No ○ Unknown

26a. WAS THE INCIDENT SPECIMEN TESTED FOR CARBAPENEMASE GENES?

○ Yes ○ No ○ Laboratory not testing ○ Unknown

26b. IF YES, WHAT TESTING METHOD WAS USED? (Check all that apply)

Non-Molecular Test Methods:

☐ CarbaNP
☐ Carbapenemase Inactivation Method (CIM)
☐ Disk Diffusion/ROSCO Disk
☐ E-test
☐ Modified Carbapenemase Inactivation Method (mCIM)
☐ Modified Hodge Test (MHT)
☐ RAPIDEC
☐ Other (specify): _____
☐ Unknown

Molecular Test Methods:

☐ Automated Molecular Assay
☐ Carba-R
☐ Check Points
☐ MALDI-TOF MS
☐ Next Generation Nucleic Acid Sequencing
☐ PCR
☐ Streck ARM-D
☐ Other (specify): _____
☐ Unknown

26c. IF TESTED, WHAT WAS THE TESTING RESULT?

Non-Molecular Test Results:

○ Positive ○ Indeterminate ○ Negative ○ Unknown

MOLECULAR TEST RESULTS:

☐ NDM	○ Pos	○ Neg	○ Ind	○ Unk
☐ KPC	○ Pos	○ Neg	○ Ind	○ Unk
☐ OXA (specify): _____	○ Pos	○ Neg	○ Ind	○ Unk
☐ VIM	○ Pos	○ Neg	○ Ind	○ Unk
☐ IMP	○ Pos	○ Neg	○ Ind	○ Unk
☐ Other carbapenemase gene (specify): _____	○ Pos	○ Neg	○ Ind	○ Unk

27a. WAS THE INCIDENT SPECIMEN TESTED FOR ESBL PRODUCTION OR OTHER BETA-LACTAMASE GENES?

○ Yes
○ No
○ Laboratory not testing
○ Unknown

27b. IF TESTED, WHAT TESTING METHOD WAS USED? (Check all that apply):

27c. IF TESTED, WHAT WAS THE RESULT?

☐ Broth Microdilution (ATI detection)				
☐ ESBL well	○ Pos	○ Neg	○ Ind	○ Unk
☐ Expert rule (ATI flag)	○ Pos	○ Neg	○ Ind	○ Unk
☐ Unknown	○ Pos	○ Neg	○ Ind	○ Unk
☐ Broth Microdilution (Manual)	○ Pos	○ Neg	○ Ind	○ Unk
☐ Disk Diffusion	○ Pos	○ Neg	○ Ind	○ Unk
☐ E-test	○ Pos	○ Neg	○ Ind	○ Unk
☐ Molecular test (specify): _____	○ Pos	○ Neg	○ Ind	○ Unk
☐ Gene variant (specify): _____				
☐ Other non-molecular test (specify): _____	○ Pos	○ Neg	○ Ind	○ Unk

28. SUSCEPTIBILITY RESULTS:
Please complete the table below based on the information found in the indicated data source.

	Medical Record	Medical Record	Microscan	Microscan	Vitek	Vitek	Phoenix	Phoenix	Sensititre	Sensititre	Kirby-Bauer	Kirby-Bauer	E-test	E-test
Antibiotic	MIC	Interp	MIC	Interp	MIC	Interp	MIC	Interp	MIC	Interp	Zone Diam	Interp	MIC	Interp
Amikacin														
Amoxicillin/Clavulanate														
Ampicillin														
Ampicillin/Sulbactam														
Aztreonam														
Cefazolin														
Cefepime														
Cefiderocol														
Cefotaxime														
Cefoxitin														
Ceftazidime														
Ceftazidime/Avibactam														
Ceftolozane/Tazobactam														
Ceftriaxone														
Cephalothin														
Ciprofloxacin														
Colistin														
Doripenem														
Doxycycline														
Eravacycline														
Ertapenem														
Fosfomycin														
Gentamicin														
Imipenem														
Imipenem-relebactam														
Levofloxacin														
Meropenem														
Meropenem-vaborbactam														
Minocycline														
Moxifloxacin														
Nitrofurantoin														
Omadacycline														
Piperacillin/Tazobactam														
Plazomicin														
Polymyxin B														
Rifampin														
Tetracycline														
Tigcycline														
Tobramycin														
Trimethoprim-sulfamethoxazole														

29a. WAS THE CASE FIRST IDENTIFIED THROUGH AN AUDIT?

- ○ Yes
- ○ No

29b. CRF STATUS:

- ○ Complete
- ○ Pending
- ○ Chart unavailable after 3 requests
- ○ Complete - pending data

29c. SO INITIALS: _____

29d. DATE OF ABSTRACTION: *(mm/dd/yyyy)* _____

29e. COMMENTS: