

2021 Carbapenem Resistant Enterobacteriaceae (CRE)/ Carbapenem Resistant *A. baumannii* (CRAB)

Multi-site Gram-Negative Surveillance Initiative (MuGSI)

Healthcare-Associated Infections Community Interface (HAIC) Case Report



Patient's Name:		Phone no. ()	
Address:		MRN:	
City:	State	ZIP:	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:	7. SEX AT BIRTH:	8a. ETHNIC ORIGIN:	8b. RACE: (Check all that apply)
____-____-____	<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE	<input type="checkbox"/> Hispanic or Latino	<input type="checkbox"/> American Indian or Alaska Native
	<input type="checkbox"/> Unknown	<input type="checkbox"/> Not Hispanic or Latino	<input type="checkbox"/> Native Hawaiian or Other Pacific Islander
6. AGE: _____ <input type="checkbox"/> Days <input type="checkbox"/> Mos. <input type="checkbox"/> Yrs.	<input type="checkbox"/> Check if transgender	<input type="checkbox"/> Unknown	<input type="checkbox"/> Asian
			<input type="checkbox"/> Black or African American <input type="checkbox"/> Unknown
9. DATE OF INCIDENT SPECIMEN COLLECTION (DISC):	10. ORGANISM: <input type="checkbox"/> CRE <input type="checkbox"/> CRAB		
____-____-____	If CRE, select one of the following: <input type="checkbox"/> <i>Escherichia coli</i> <input type="checkbox"/> <i>Klebsiella aerogenes</i> <input type="checkbox"/> <i>Klebsiella oxytoca</i> <input type="checkbox"/> <i>Enterobacter cloacae</i> <input type="checkbox"/> <i>Klebsiella pneumoniae</i>		
11. INCIDENT SPECIMEN COLLECTION SITE:			
<input type="checkbox"/> Blood	<input type="checkbox"/> Peritoneal fluid	<input type="checkbox"/> Urine	
<input type="checkbox"/> Bone	<input type="checkbox"/> Pericardial fluid	<input type="checkbox"/> Wound (specify): _____	
<input type="checkbox"/> Bronchoalveolar lavage (CRAB only, complete Q23c)	<input type="checkbox"/> Pleural fluid	(CRAB only)	
<input type="checkbox"/> CSF	<input type="checkbox"/> Joint/synovial fluid	<input type="checkbox"/> Other LRT site (specify): _____	
<input type="checkbox"/> Internal body site (specify): _____	<input type="checkbox"/> Sputum (CRAB only, complete Q23c)	(CRAB only, complete Q23c)	
<input type="checkbox"/> Muscle	<input type="checkbox"/> Tracheal aspirate (CRAB only, complete Q23c)	<input type="checkbox"/> Other normally sterile site (specify): _____	
12. LOCATION OF SPECIMEN COLLECTION:		13. WHERE WAS THE PATIENT LOCATED ON THE 3 RD CALENDAR DAY BEFORE THE DISC?	
<input type="checkbox"/> OUTPATIENT:	<input type="checkbox"/> INPATIENT:	<input type="checkbox"/> Private residence	
Facility ID: _____	Facility ID: _____	<input type="checkbox"/> LTACH	
<input type="checkbox"/> Emergency room	<input type="checkbox"/> ICU	Facility ID: _____	
<input type="checkbox"/> Clinic/Doctor's office	<input type="checkbox"/> OR	<input type="checkbox"/> Homeless	
<input type="checkbox"/> Dialysis center	<input type="checkbox"/> Radiology	<input type="checkbox"/> Hospital inpatient	
<input type="checkbox"/> Surgery	<input type="checkbox"/> Other inpatient	Facility ID: _____	
<input type="checkbox"/> Observational/ Clinical decision unit	<input type="checkbox"/> Autopsy	<input type="checkbox"/> Incarcerated	
<input type="checkbox"/> Other outpatient	<input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> Other (specify): _____	
	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown	
14. WAS THE PATIENT HOSPITALIZED ON THE DAY OF OR IN THE 29 CALENDAR DAYS AFTER THE DISC?		15a. WAS THE PATIENT IN AN ICU IN THE 7 DAYS BEFORE THE DISC?	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
IF YES, DATE OF ADMISSION: ____-____-____		IF YES, DATE OF ICU ADMISSION: ____-____-____ OR <input type="checkbox"/> Date unknown	
		15b. WAS THE PATIENT IN AN ICU ON THE DAY OF INCIDENT SPECIMEN COLLECTION OR IN THE 6 DAYS AFTER THE DISC?	
		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
		IF YES, DATE OF ICU ADMISSION: ____-____-____ OR <input type="checkbox"/> Date unknown	
16. PATIENT OUTCOME: <input type="checkbox"/> Survived		<input type="checkbox"/> Died	
<input type="checkbox"/> Unknown		<input type="checkbox"/> Unknown	
DATE OF DISCHARGE: ____-____-____ OR		DATE OF DEATH: ____-____-____ OR <input type="checkbox"/> Date unknown	
<input type="checkbox"/> Date unknown <input type="checkbox"/> Left against medical advice (AMA)			
IF SURVIVED, DISCHARGED TO:		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?	
<input type="checkbox"/> Private residence <input type="checkbox"/> LTACH Facility ID: _____ <input type="checkbox"/> LTACH Facility ID: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
<input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unknown			

Public reporting burden of this collection of information is estimated to average 28 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Information Collection Review Office, 1600 Clifton Road NE, MS D-74, Atlanta, Georgia 30329; ATTN: PRA (0920-0978).



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

<input type="checkbox"/> Abscess, not skin	<input type="checkbox"/> Cellulitis	<input type="checkbox"/> Epidural abscess	<input type="checkbox"/> Pyelonephritis	<input type="checkbox"/> Surgical incision infection
<input type="checkbox"/> AV fistula/graft infection	<input type="checkbox"/> Chronic ulcer/wound (not decubitus)	<input type="checkbox"/> Meningitis	<input type="checkbox"/> Septic arthritis	<input type="checkbox"/> Surgical site infection (internal)
<input type="checkbox"/> Bacteremia	<input type="checkbox"/> Decubitus/pressure ulcer	<input type="checkbox"/> Osteomyelitis	<input type="checkbox"/> Septic emboli	<input type="checkbox"/> Traumatic wound
<input type="checkbox"/> Bursitis	<input type="checkbox"/> Empyema	<input type="checkbox"/> Peritonitis	<input type="checkbox"/> Septic shock	<input type="checkbox"/> Urinary tract infection
<input type="checkbox"/> Catheter site infection (CVC)	<input type="checkbox"/> Endocarditis	<input type="checkbox"/> Pneumonia (CRAB cases, complete Q23c)	<input type="checkbox"/> Skin abscess	<input type="checkbox"/> 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

<p>CHRONIC LUNG DISEASE</p> <input type="checkbox"/> Cystic fibrosis <input type="checkbox"/> Chronic pulmonary disease <p>CHRONIC METABOLIC DISEASE</p> <input type="checkbox"/> Diabetes mellitus <input type="checkbox"/> With chronic complications <p>CARDIOVASCULAR DISEASE</p> <input type="checkbox"/> CVA/Stroke/TIA <input type="checkbox"/> Congenital heart disease <input type="checkbox"/> Congestive heart failure <input type="checkbox"/> Myocardial infarction <input type="checkbox"/> Peripheral vascular disease (PVD) <p>GASTROINTESTINAL DISEASE</p> <input type="checkbox"/> Diverticular disease <input type="checkbox"/> Inflammatory bowel disease <input type="checkbox"/> Peptic ulcer disease <input type="checkbox"/> Short gut syndrome	<p>IMMUNOCOMPROMISED CONDITION</p> <input type="checkbox"/> HIV infection <input type="checkbox"/> AIDS/CD4 count < 200 <input type="checkbox"/> Primary immunodeficiency <input type="checkbox"/> Transplant, hematopoietic stem cell <input type="checkbox"/> Transplant, solid organ <p>LIVER DISEASE</p> <input type="checkbox"/> Chronic liver disease <input type="checkbox"/> Ascites <input type="checkbox"/> Cirrhosis <input type="checkbox"/> Hepatic encephalopathy <input type="checkbox"/> Variceal bleeding <input type="checkbox"/> Hepatitis C <input type="checkbox"/> Treated, in SVR <input type="checkbox"/> Current, chronic <p>MALIGNANCY</p> <input type="checkbox"/> Malignancy, hematologic <input type="checkbox"/> Malignancy, solid organ (non-metastatic) <input type="checkbox"/> Malignancy, solid organ (metastatic)	<p>NEUROLOGIC CONDITION</p> <input type="checkbox"/> Cerebral palsy <input type="checkbox"/> Chronic cognitive deficit <input type="checkbox"/> Dementia <input type="checkbox"/> Epilepsy/seizure/seizure disorder <input type="checkbox"/> Multiple sclerosis <input type="checkbox"/> Neuropathy <input type="checkbox"/> Parkinson's disease <input type="checkbox"/> Other (specify): _____ <p>PLEGIAS/PARALYSIS</p> <input type="checkbox"/> Hemiplegia <input type="checkbox"/> Paraplegia <input type="checkbox"/> Quadriplegia <p>RENAL DISEASE</p> <input type="checkbox"/> Chronic kidney disease Lowest serum creatinine: _____ mg/DL <input type="checkbox"/> Unknown or not done	<p>SKIN CONDITION</p> <input type="checkbox"/> Burn <input type="checkbox"/> Decubitus/pressure ulcer <input type="checkbox"/> Surgical wound <input type="checkbox"/> Other chronic ulcer or chronic wound <input type="checkbox"/> Other (specify): _____ <p>OTHER</p> <input type="checkbox"/> Connective tissue disease <input type="checkbox"/> Obesity or morbid obesity <input type="checkbox"/> Pregnant <p>MUGSI CONDITIONS</p> <input type="checkbox"/> Urinary tract problems/abnormalities <input type="checkbox"/> Premature birth <input type="checkbox"/> Spina bifida
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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

DOCUMENTED USE DISORDER (DUD)/ABUSE:

<input type="checkbox"/> Marijuana, cannabinoid (other than smoking)	<input type="checkbox"/> DUD or abuse
<input type="checkbox"/> Opioid, DEA schedule I (e.g., heroin)	<input type="checkbox"/> DUD or abuse
<input type="checkbox"/> Opioid, DEA schedule II-IV (e.g., methadone, oxycodone)	<input type="checkbox"/> DUD or abuse
<input type="checkbox"/> Opioid, NOS	<input type="checkbox"/> DUD or abuse
<input type="checkbox"/> Cocaine	<input type="checkbox"/> DUD or abuse
<input type="checkbox"/> Methamphetamine	<input type="checkbox"/> DUD or abuse
<input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> DUD or abuse
<input type="checkbox"/> Unknown substance	<input type="checkbox"/> DUD or abuse

MODE OF DELIVERY: (Check all that apply)

<input type="checkbox"/> IDU	<input type="checkbox"/> Skin popping	<input type="checkbox"/> Non-IDU	<input type="checkbox"/> Unknown
<input type="checkbox"/> IDU	<input type="checkbox"/> Skin popping	<input type="checkbox"/> Non-IDU	<input type="checkbox"/> Unknown
<input type="checkbox"/> IDU	<input type="checkbox"/> Skin popping	<input type="checkbox"/> Non-IDU	<input type="checkbox"/> Unknown
<input type="checkbox"/> IDU	<input type="checkbox"/> Skin popping	<input type="checkbox"/> Non-IDU	<input type="checkbox"/> Unknown
<input type="checkbox"/> IDU	<input type="checkbox"/> Skin popping	<input type="checkbox"/> Non-IDU	<input type="checkbox"/> Unknown
<input type="checkbox"/> IDU	<input type="checkbox"/> Skin popping	<input type="checkbox"/> Non-IDU	<input type="checkbox"/> Unknown
<input type="checkbox"/> IDU	<input type="checkbox"/> Skin popping	<input type="checkbox"/> Non-IDU	<input type="checkbox"/> Unknown
<input type="checkbox"/> IDU	<input type="checkbox"/> Skin popping	<input type="checkbox"/> Non-IDU	<input type="checkbox"/> 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: _____ - _____ - _____

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 Suprapubic Catheter

Condom 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 Gastrostomy Tube NG Tube

Tracheostomy Nephrostomy Tube Other (specify): _____

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

COUNTRY: _____, _____, _____

21a. WEIGHT: _____ lbs. _____ oz. OR _____ kg <input type="checkbox"/> Unknown	21b. HEIGHT: _____ ft. _____ in. OR _____ cm <input type="checkbox"/> Unknown	21c. BMI: _____ <input type="checkbox"/> Unknown
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PATIENT HOSPITALIZED WHILE VISITING COUNTRY(IES) ABOVE: Yes No 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 Frequency
Dysuria Suprapubic tenderness
Fever [temperature >= 100.4 °F (38 °C)] 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) Cavitation
Air space density/opacity Consolidation
Ground glass opacities/infiltrates Infiltrate
Bronchopneumonia/pneumonia Pleural effusion
Cannot rule out pneumonia Nodules

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

Yes No Unknown

24b. IF YES, COMPLETE TABLE BELOW:

Table with 3 columns: Test description, Specimen collection date, Test type. Rows for FIRST and MOST RECENT positive tests.

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 KPC OXA (specify): VIM IMP Other carbapenemase gene (specify):
Pos Neg Ind Unk
Pos Neg Ind Unk
Pos Neg Ind Unk
Pos Neg Ind Unk
Pos Neg Ind Unk

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

Yes No Laboratory not testing Unknown

Broth Microdilution (ATI detection)

- ESBL well
Expert rule (ATI flag)
Unknown

Broth Microdilution (Manual)

- Disk Diffusion
E-test
Molecular test (specify):
Gene variant (specify):
Other non-molecular test (specify):

27c. IF TESTED, WHAT WAS THE RESULT?

- Positive Negative Indeterminate Unknown
Positive Negative Indeterminate Unknown
Positive Negative Indeterminate Unknown
Positive Negative Indeterminate Unknown
Positive Negative Indeterminate Unknown
Positive Negative Indeterminate Unknown
Positive Negative Indeterminate Unknown

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



28. SUSCEPTIBILITY RESULTS:

Please complete the table below based on the information found in the indicated data source. Shaded antibiotics are required to have the MIC entered into the MuGSI-CM system, if available.

Data Source	Medical Record		Microscan		Vitek		Phoenix		Sensititre		Kirby-Bauer		E-test	
	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														
CEFTRIAZONE														
Cephalothin														
Ciprofloxacin														
COLISTIN														
DORIPENEM														
Doxycycline														
Eravacycline														
ERTAPENEM														
Fosfomycin														
Gentamicin														
IMIPENEM														
Imipenem-relebactam														
Levofloxacin														
MEROPENEM														
Meropenem-vaborbactam														
Minocycline														
Nitrofurantoin														
Omadacycline														
Piperacillin/Tazobactam														
Plazomicin														
POLYMYXIN B														
Rifampin														
Tetracycline														
TIGECYCLINE														
Tobramycin														
Trimethoprim-sulfamethoxazole														

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

- Yes
- No

29b. CRF STATUS:

- Complete
- Pending
- Chart unavailable after 3 requests

29c. SO INITIALS:

29d. DATE OF ABSTRACTION:

_____ - _____ - _____

29e. COMMENTS:
