



**2024 Multi-site Gram-Negative Surveillance Initiative (MuGSI)  
Healthcare-Associated Infections Community Interface (HAIC) Case Report**

Form Approved  
OMB No. 0920-XXXX

**NOTE: Enter all dates as mm/dd/yyyy**

PATIENT'S NAME: _____		PHONE NO.: _____
ADDRESS: _____		MRN: _____
ADDRESS TYPE: _____		HOSPITAL: _____
----Patient Identifier information is not transmitted to CDC----		

DEMOGRAPHICS		
1. STATE: _____	2a. COUNTY: _____	2b. PLANNING REGION: _____
		3. STATE ID: _____

4a. LABORATORY ID WHERE INCIDENT SPECIMEN IDENTIFIED: _____	4b. FACILITY ID WHERE PATIENT TREATED: _____
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5. DATE OF BIRTH: _____ Days Mos Yrs	7. SEX AT BIRTH:	8a. ETHNIC ORIGIN:	8b. RACE: (Check all that apply)
	Male Female Unknown Check if transgender	Hispanic or Latino Not Hispanic or Latino Unknown	American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White Unknown

9a. DATE OF INCIDENT SPECIMEN COLLECTION (DISC): _____	10. ORGANISM:		
	Carbapenem-Resistant <i>Enterobacteriales</i> (CRE) <i>Escherichia coli</i> <i>Klebsiella pneumoniae</i> <i>Klebsiella oxytoca</i> <i>Klebsiella aerogenes</i> <i>Enterobacter cloacae</i>	Extended-Spectrum Beta-Lactamase-producing <i>Enterobacteriales</i> (ESBL-E) <i>Escherichia coli</i> <i>Klebsiella pneumoniae</i> <i>Klebsiella oxytoca</i>	Carbapenem-Resistant <i>A. baumannii</i> (CRAB) Invasive <i>Escherichia coli</i> (iEC) (not CRE or ESBL-E)
9b. TIME OF DISC: _____			

11. INCIDENT SPECIMEN COLLECTION SITE:

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

12. LOCATION OF SPECIMEN COLLECTION:	13. WHERE WAS THE PATIENT LOCATED ON THE 3RD CALENDAR DAY BEFORE THE DISC?																											
<table style="width:100%;"> <tr> <th>OUTPATIENT</th> <th>INPATIENT</th> <th>LTCF</th> </tr> <tr> <td>Facility ID: _____</td> <td>Facility ID: _____</td> <td>Facility ID: _____</td> </tr> <tr> <td>Emergency room</td> <td>ICU</td> <td><b>LTACH</b></td> </tr> <tr> <td>Clinic/Doctor's office</td> <td>OR</td> <td>Facility ID: _____</td> </tr> <tr> <td>Dialysis center</td> <td>Radiology</td> <td></td> </tr> <tr> <td>Surgery</td> <td>Other inpatient</td> <td><b>Autopsy</b></td> </tr> <tr> <td>Observational/ Clinical decision unit</td> <td></td> <td><b>Other (Specify):</b></td> </tr> <tr> <td>Other outpatient</td> <td></td> <td><div style="border: 1px solid black; width: 100px; height: 40px; margin: 5px;"></div></td> </tr> <tr> <td></td> <td></td> <td align="center"><b>Unknown</b></td> </tr> </table>	OUTPATIENT	INPATIENT	LTCF	Facility ID: _____	Facility ID: _____	Facility ID: _____	Emergency room	ICU	<b>LTACH</b>	Clinic/Doctor's office	OR	Facility ID: _____	Dialysis center	Radiology		Surgery	Other inpatient	<b>Autopsy</b>	Observational/ Clinical decision unit		<b>Other (Specify):</b>	Other outpatient		<div style="border: 1px solid black; width: 100px; height: 40px; margin: 5px;"></div>			<b>Unknown</b>	Private residence LTCF Facility ID: _____  Hospital inpatient Facility ID: _____  Was the patient transferred from this hospital? Yes      No      Unknown  <div style="border: 1px solid black; width: 100px; height: 40px; margin: 5px;"></div> Unknown
OUTPATIENT	INPATIENT	LTCF																										
Facility ID: _____	Facility ID: _____	Facility ID: _____																										
Emergency room	ICU	<b>LTACH</b>																										
Clinic/Doctor's office	OR	Facility ID: _____																										
Dialysis center	Radiology																											
Surgery	Other inpatient	<b>Autopsy</b>																										
Observational/ Clinical decision unit		<b>Other (Specify):</b>																										
Other outpatient		<div style="border: 1px solid black; width: 100px; height: 40px; margin: 5px;"></div>																										
		<b>Unknown</b>																										

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: \_\_\_\_\_

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

IF YES, DATE OF ICU ADMISSION: \_\_\_\_\_ 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: \_\_\_\_\_ OR      Date 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-XXXX).

**16. PATIENT OUTCOME:**

Survived                      **DATE OF DISCHARGE:** \_\_\_\_\_ OR                      **IF SURVIVED, DISCHARGED TO:**

Died                              Date unknown                              Private residence                              Other (specify): \_\_\_\_\_

Unknown                        Left against medical advice (AMA)                              LTCF, Facility ID: \_\_\_\_\_                              Unknown

**DATE OF DEATH:** \_\_\_\_\_ OR                      Date unknown                              LTACH, Facility ID: \_\_\_\_\_

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

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

<b>17b. RECURRENT UTI:</b>	<b>17c. WAS THE PATIENT TREATED FOR THE MUGSI ORGANISM?</b>
Yes      No      Unknown	Yes      No      Unknown

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

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

**19. SUBSTANCE USE**

<b>SMOKING:</b> (Check all that apply)	None	Tobacco	Marijuana	<b>ALCOHOL ABUSE:</b>
	Unknown	E-nicotine delivery system		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)

<b>20. RISK FACTORS:</b> <i>(Check all that apply)</i>		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
OVERNIGHT STAY IN LTACH IN THE YEAR BEFORE DISC:		Yes	No	Unknown
SURGERY IN THE YEAR BEFORE DISC:		Yes	No	Unknown
<b>INVASIVE OR DIAGNOSTIC UROLOGIC PROCEDURE IN THE YEAR BEFORE DISC:</b>		Yes	No	Unknown
IF YES, CHECK ALL THAT APPLY:		Prostate procedure	Cystoscopy	Other
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	NG Tube	Nephrostomy Tube
		Gastrostomy Tube	Tracheostomy	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
<b>21a. WEIGHT:</b>		<b>21b. HEIGHT:</b>		<b>21c. BMI:</b>
_____ lbs. _____ oz. OR _____ kg		_____ ft. _____ in. OR _____ cm		_____ Unknown
<b>URINE CULTURES ONLY:</b>				
<b>22a. WAS THE URINE COLLECTED THROUGH AN INDWELLING URETHRAL CATHETER?</b>		Yes	No	Unknown
<b>URINE CULTURES ONLY:</b>				
<b>22b. RECORD THE COLONY COUNT:</b> _____				
<b>URINE CULTURES ONLY:</b>				
<b>22c. SIGNS AND SYMPTOMS ASSOCIATED WITH URINE CULTURE</b>				
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	Fever [temperature ≥ 100.4 °F (38 °C)]	<b>Symptoms for patients ≤ 1 year of age only:</b>		
Unknown	Frequency	Apnea	Lethargy	
Costovertebral angle pain or tenderness	Suprapubic tenderness	Bradycardia	Vomiting	
Dysuria	Urgency			
<b>Complete questions 23a-23b ONLY for A. BAUMANNII cases:</b>				
<b>23a. DID THE PATIENT HAVE A SPUTUM CULTURE POSITIVE FOR CRAB IN THE 30 DAYS BEFORE THE DISC?</b>		Yes	No	Unknown
				N/A
<b>23b. RISK FACTORS PRIOR TO CRAB DISC:</b> <i>(Check all that apply)</i>				
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				
Visited a wound care clinic at any time in the year before the DISC				
None of the above				

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

**24a. IS ANTIMICROBIAL USE (IV OR ORAL) IN THE 30 DAYS BEFORE THE DISC DOCUMENTED?** Yes No Unknown

**24b. IF YES, CHECK ALL ANTIMICROBIALS USED IN THE 30 DAYS BEFORE THE DISC:** (Check all that apply) Unknown

Amikacin	Ceftazidime	Fidaxomicin	Rifaximin
Amoxicillin	Ceftazidime/avibactam	Fosfomycin	Tedizolid
Amoxicillin/clavulanic acid	Ceftizoxime	Gentamicin	Telavancin
Ampicillin	Ceftolozane/tazobactam	Imipenem/cilastatin	Tigecycline
Ampicillin/sulbactam	Ceftriaxone	Levofloxacin	Tobramycin
Azithromycin	Cefuroxime	Linezolid	Trimethoprim
Aztreonam	Cephalexin	Meropenem	Trimethoprim/sulfamethoxazole
Cefadroxil	Ciprofloxacin	Meropenem/vaborbactam	Vancomycin
Cefazolin	Clarithromycin	Metronidazole	IV
Cefdinir	Clindamycin	Moxifloxacin	PO
Cefepime	Dalbavancin	Nitrofurantoin	Other (specify):
Cefiderocol	Daptomycin	Omadacycline	_____
Cefixime	Delafloxacin	Oritavancin	Other (specify):
Cefotaxime	Doripenem	Penicillin	_____
Cefoxitin	Doxycycline	Piperacillin/tazobactam	
Cefpodoxime	Ertapenem	Polymyxin B	
Ceftaroline	Eravacycline	Polymyxin E (colistin)	

**REMINDER:** Any prior antimicrobial use that is not noted above should be documented in the other (specify) field.

**25a. DID THE PATIENT HAVE A POSITIVE TEST(S) FOR SARS-CoV-2 (MOLECULAR ASSAY, ANTIGEN, OR OTHER VIRAL TEST, EXCLUDING SEROLOGY) IN THE 90 DAYS BEFORE OR DAY OF THE DISC?**

Yes No Unknown

**25b. SPECIMEN COLLECTION DATES FOR POSITIVE TESTS IN THE 90 DAYS BEFORE OR THE DAY OF THE DISC:**

**First positive test:** \_\_\_\_\_ or Date unknown **Most recent positive test:** \_\_\_\_\_ or Date unknown

**25c. COVID-NET CASE ID IN THE YEAR BEFORE OR DAY OF DISC:** \_\_\_\_\_ None or N/A

**26. WAS THE INCIDENT SPECIMEN POLYMICROBIAL?** Yes No Unknown

**27a. WAS THE INCIDENT SPECIMEN TESTED FOR CARBAPENEMASE GENES?** Yes No Laboratory not testing Unknown

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

**Non-Molecular Test Methods:**

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

**Molecular Test Methods:**

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

**27c. 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
Pos	Neg	Ind	Unk

**28a. WAS THE INCIDENT SPECIMEN TESTED FOR ESBL PRODUCTION OR OTHER BETA-LACTAMASE GENES?**

- Yes
- No
- Laboratory not testing
- Unknown

**28b. IF TESTED, WHAT TESTING METHOD WAS USED? (Check all that apply):**

**28c. IF TESTED, WHAT WAS THE RESULT?**

Broth Microdilution (ATI detection)	Pos	Neg	Ind	Unk
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): _____	Pos	Neg	Ind	Unk
Other non-molecular test (specify): _____	Pos	Neg	Ind	Unk

**29. SUSCEPTIBILITY RESULTS:**

Please complete the table below based on the information found in the indicated data source.

Antibiotic	Data source:	Data source:	Data source:	Data source:	Data source:	Data source:
	MIC or zone diameter	Interpretation	MIC or zone diameter	Interpretation	MIC or zone diameter	Interpretation
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						
Tigecycline						
Tobramycin						
Trimethoprim-sulfamethoxazole						

<p><b>30a. WAS THE CASE FIRST IDENTIFIED THROUGH AN AUDIT?</b></p> <p>Yes No</p>	<p><b>30b. CRF STATUS:</b></p> <p>Complete Pending Chart unavailable after 3 requests Complete – pending data</p>	<p><b>30c. SO INITIALS:</b></p> <p>_____</p>	<p><b>30d. DATE OF ABSTRACTION:</b></p> <p>_____</p>
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**30e. COMMENTS:**

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