PATIENT ID: _____ DATE REPORTED TO EIP SITE: _____

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

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

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

4a. LABORATORY ID WHERE INCIDENT SPECIMEN IDENTIFIED: _____ **4b. FACILITY ID WHERE PATIENT TREATED:** _____

5. DATE OF BIRTH: _____

6. AGE: _____
○ Days ○ Mos ○ Yrs

7. SEX:
○ Male
○ Female
○ Missing value

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

9a. DATE OF INCIDENT SPECIMEN COLLECTION (DISC): _____

9b. TIME OF DISC: _____

10. ORGANISM:

☐ Carbapenem-Resistant *Enterobacterales* (CRE)
- ☐ *Escherichia coli*
- ☐ *Klebsiella pneumoniae*
- ☐ *Klebsiella oxytoca*
- ☐ *Klebsiella aerogenes*
- ☐ *Enterobacter cloacae*

☐ Extended-Spectrum Beta-Lactamase-producing Enterobacterales (ESBL-E)
- ☐ *Escherichia coli*
- ☐ *Klebsiella pneumoniae*
- ☐ *Klebsiella oxytoca*

☐ Carbapenem-Resistant *A. baumannii* (CRAB)

☐ Invasive *Escherichia coli* (iEC) (not CRE or ESBL-E)

11. SPECIMEN COLLECTION SITE(S):

☐ 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 (complete 22a–22c)
☐ 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: _____
Was the patient transferred from this hospital?
○ Yes ○ No ○ Unknown
○ LTACH
Facility ID: _____
○ Homeless
○ Incarcerated
○ Other (specify): _____
○ 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: _____

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

16. PATIENT OUTCOME:

○ Survived
○ Died
○ Unknown

DATE OF DISCHARGE: _____ 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: _____ OR ☐ Date 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 (complete 22a–22c)
☐ Sepsis
☐ Urosepsis
☐ Septic arthritis
☐ Septic emboli
☐ Septic shock
☐ Skin abscess
☐ Surgical incision infection
☐ Surgical site infection (internal)
☐ Traumatic wound
☐ Urinary tract infection (complete 22a–22c)
☐ 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: _____ **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 ☐ 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

21a. WEIGHT:

_____ lbs. _____ oz. OR _____ kg ☐ Unknown

21b. HEIGHT:

_____ ft. _____ in. OR _____ cm ☐ Unknown

21c. BMI:

_____ ☐ Unknown

Complete questions 22a-22c for all MuGSI cases from urine cultures or where UTI or pyelonephritis is marked in question 17a:

22a. WAS THE URINE COLLECTED THROUGH AN INDWELLING URETHRAL CATHETER? ○ Yes ○ No ○ Unknown

22b. RECORD THE COLONY COUNT: _____

22c. ASSOCIATED SIGNS AND SYMPTOMS:

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 PRIOR TO CRAB DISC: *(Check all that apply)*

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

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
- ☐ Carbapenemase Inactivation Method (CIM)
- ☐ CPO Detect
- ☐ 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

27c. 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

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)	
☐ 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

29. SUSCEPTIBILITY RESULTS:

Please complete the table below based on the information found in the indicated data source. ☐ No susceptibility data from the medical record are available

Antibiotic	Data source: ▼ MIC or zone diameter	Data source: ▼ Interpretation	Data source: MIC or zone diameter	Data source: Interpretation	Data source: MIC or zone diameter	Data source: 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						

30a. WAS THE CASE FIRST IDENTIFIED THROUGH AN AUDIT?

- ○ Yes
- ○ No

30b. CRF STATUS:

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

30c. SO INITIALS: _____

30d. DATE OF ABSTRACTION: _____

30e. COMMENTS: