



**2023 Extended-Spectrum Beta-Lactamase (ESBL)-Producing
Enterobacteriaceae / Invasive *Escherichia coli*
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:
_____	_____	_____	_____
5. DATE OF BIRTH: (mm/dd/yyyy)		7. SEX AT BIRTH:	8a. ETHNIC ORIGIN:
_____		<input type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Unknown <input type="checkbox"/> Check if transgender	<input type="radio"/> Hispanic or Latino <input type="radio"/> Not Hispanic or Latino <input type="radio"/> Unknown
6. AGE: _____ <input type="radio"/> Days <input type="radio"/> Mos <input type="radio"/> Yrs		8b. RACE: (Check all that apply)	
		<input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African American <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> White <input type="checkbox"/> Unknown	
9a. DATE OF INCIDENT SPECIMEN COLLECTION (DISC): (mm/dd/yyyy)	10. ORGANISM:		
_____	<input type="radio"/> <i>Escherichia coli</i> If <i>E. coli</i> , select one of the following: <input type="radio"/> Extended-spectrum cephalosporin-resistant <input type="radio"/> Non-extended spectrum cephalosporin-resistant <input type="radio"/> Extended-spectrum cephalosporin-resistant <i>Klebsiella pneumoniae</i> <input type="radio"/> Extended-spectrum cephalosporin-resistant <i>Klebsiella oxytoca</i>		
9b. TIME OF DISC: (HH:MM-Military Format)			

11. INCIDENT SPECIMEN COLLECTION SITE:			
<input type="checkbox"/> Blood <input type="checkbox"/> Bone <input type="checkbox"/> CSF		<input type="checkbox"/> Internal body site (specify): _____ <input type="checkbox"/> Joint/synovial fluid <input type="checkbox"/> Muscle	
		<input type="checkbox"/> Peritoneal fluid <input type="checkbox"/> Pleural fluid	
		<input type="checkbox"/> Urine <input type="checkbox"/> Pericardial fluid <input type="checkbox"/> Other normally sterile site (specify): _____	
12. LOCATION OF SPECIMEN COLLECTION:		13. WHERE WAS THE PATIENT LOCATED ON THE 3RD CALENDAR DAY BEFORE THE DISC?	
<input type="radio"/> OUTPATIENT Facility ID: _____ <input type="radio"/> Emergency room <input type="radio"/> Clinic/Doctor's office <input type="radio"/> Dialysis center <input type="radio"/> Surgery <input type="radio"/> Observational/Clinical decision unit <input type="radio"/> Other outpatient		<input type="radio"/> Private residence <input type="radio"/> LTACH Facility ID: _____ <input type="radio"/> Hospital inpatient Facility ID: _____ Was the patient transferred from this hospital? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown	
<input type="radio"/> INPATIENT Facility ID: _____ <input type="radio"/> ICU <input type="radio"/> OR <input type="radio"/> Radiology <input type="radio"/> Other inpatient		<input type="radio"/> LTACH Facility ID: _____ <input type="radio"/> Homeless <input type="radio"/> Incarcerated <input type="radio"/> Other (specify): _____ <input type="radio"/> Unknown	
<input type="radio"/> LTCF Facility ID: _____ <input type="radio"/> Autopsy <input type="radio"/> Other (Specify): _____ <input type="radio"/> 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="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown IF YES, DATE OF ADMISSION: (mm/dd/yyyy) _____		<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown IF YES, DATE OF ICU ADMISSION: (mm/dd/yyyy) _____ 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="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown IF YES, DATE OF ICU ADMISSION: (mm/dd/yyyy) _____ OR <input type="checkbox"/> Date unknown	
16. PATIENT OUTCOME: <input type="radio"/> Survived <input type="radio"/> Died <input type="radio"/> Unknown			
DATE OF DISCHARGE: (mm/dd/yyyy) _____ OR <input type="radio"/> Date unknown		DATE OF DEATH: (mm/dd/yyyy) _____ OR <input type="checkbox"/> Date unknown	
<input type="radio"/> Left against medical advice (AMA) IF SURVIVED, DISCHARGED TO: <input type="radio"/> Private residence <input type="radio"/> LTACH, Facility ID: _____ <input type="radio"/> LTACH, Facility ID: _____		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="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown	
<input type="radio"/> Other (specify): _____ <input type="radio"/> 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"/> Decubitus/pressure ulcer	<input type="checkbox"/> Pneumonia	<input type="checkbox"/> Surgical site infection (internal)
<input type="checkbox"/> AV fistula/graft infection	<input type="checkbox"/> Empyema	<input type="checkbox"/> Pyelonephritis	<input type="checkbox"/> Traumatic wound
<input type="checkbox"/> Bacteremia	<input type="checkbox"/> Endocarditis	<input type="checkbox"/> Septic arthritis	<input type="checkbox"/> Urinary tract infection
<input type="checkbox"/> Bursitis	<input type="checkbox"/> Epidural abscess	<input type="checkbox"/> Septic emboli	<input type="checkbox"/> Other (specify): _____
<input type="checkbox"/> Catheter site infection (CVC)	<input type="checkbox"/> Meningitis	<input type="checkbox"/> Septic shock	
<input type="checkbox"/> Cellulitis	<input type="checkbox"/> Osteomyelitis	<input type="checkbox"/> Skin abscess	
<input type="checkbox"/> Chronic ulcer/wound (not decubitus)	<input type="checkbox"/> Peritonitis	<input type="checkbox"/> Surgical incision infection	

17b. RECURRENT UTI: Yes No Unknown

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

CHRONIC LUNG DISEASE <input type="checkbox"/> Cystic fibrosis <input type="checkbox"/> Chronic pulmonary disease	IMMUNOCOMPROMISED CONDITION <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	NEUROLOGIC CONDITION <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): _____	SKIN CONDITION <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): _____
CHRONIC METABOLIC DISEASE <input type="checkbox"/> Diabetes mellitus <input type="checkbox"/> With chronic complications	LIVER DISEASE <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	PLEGIAS/PARALYSIS <input type="checkbox"/> Hemiplegia <input type="checkbox"/> Paraplegia <input type="checkbox"/> Quadriplegia	OTHER <input type="checkbox"/> Connective tissue disease <input type="checkbox"/> Obesity or morbid obesity <input type="checkbox"/> Pregnant
CARDIOVASCULAR DISEASE <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)	MALIGNANCY <input type="checkbox"/> Malignancy, hematologic <input type="checkbox"/> Malignancy, solid organ (non-metastatic) <input type="checkbox"/> Malignancy, solid organ (metastatic)	RENAL DISEASE <input type="checkbox"/> Chronic kidney disease Lowest serum creatinine: _____ mg/DL <input type="checkbox"/> Unknown or not done	MUGSI CONDITIONS <input type="checkbox"/> Urinary tract problems/abnormalities <input type="checkbox"/> Premature birth <input type="checkbox"/> Spina bifida
GASTROINTESTINAL DISEASE <input type="checkbox"/> Diverticular disease <input type="checkbox"/> Inflammatory bowel disease <input type="checkbox"/> Peptic ulcer disease <input type="checkbox"/> Short gut syndrome			

19. SUBSTANCE USE

SMOKING: (Check all that apply) None Unknown

<input type="checkbox"/> None <input type="checkbox"/> Unknown <input type="checkbox"/> Tobacco <input type="checkbox"/> E-nicotine delivery system <input type="checkbox"/> Marijuana	OTHER SUBSTANCES: (Check all that apply) <input type="radio"/> None <input type="radio"/> Unknown	DUD/ ABUSE	MODE OF DELIVERY (Check all that apply)
<input type="checkbox"/> Marijuana, cannabinoid (other than smoking)	<input type="checkbox"/> Opioid, DEA schedule I (e.g., heroin)	<input type="checkbox"/> DUD or abuse	<input type="checkbox"/> IDU <input type="checkbox"/> Skin popping <input type="checkbox"/> Non-IDU <input type="checkbox"/> Unknown
<input type="checkbox"/> Opioid, DEA schedule II-IV (e.g., methadone, oxycodone)	<input type="checkbox"/> Opioid, NOS	<input type="checkbox"/> DUD or abuse	<input type="checkbox"/> IDU <input type="checkbox"/> Skin popping <input type="checkbox"/> Non-IDU <input type="checkbox"/> Unknown
<input type="checkbox"/> Cocaine	<input type="checkbox"/> Methamphetamine	<input type="checkbox"/> DUD or abuse	<input type="checkbox"/> IDU <input type="checkbox"/> Skin popping <input type="checkbox"/> Non-IDU <input type="checkbox"/> Unknown
<input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> Unknown substance	<input type="checkbox"/> DUD or abuse	<input type="checkbox"/> IDU <input type="checkbox"/> Skin popping <input type="checkbox"/> Non-IDU <input type="checkbox"/> Unknown
		<input type="checkbox"/> DUD or abuse	<input type="checkbox"/> IDU <input type="checkbox"/> Skin popping <input type="checkbox"/> Non-IDU <input type="checkbox"/> Unknown

ALCOHOL ABUSE
 Yes No 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:
22. RECORD THE COLONY COUNT:

URINE CULTURES ONLY:
23. 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
 Bradycardia
 Lethargy
 Vomiting

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

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

REMEMINDER: 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, SEROLOGY OR OTHER CONFIRMATORY TEST) IN THE YEAR BEFORE OR DAY OF THE DISC?

- Yes No Unknown

25b. 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
_____	<input type="checkbox"/> Molecular assay <input type="checkbox"/> Antigen <input type="checkbox"/> Serology <input type="checkbox"/> Unknown <input type="checkbox"/> Other (specify): _____
<input type="checkbox"/> Unknown	

25c. COVID-NET CASE ID: _____

25d. 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: _____

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

Complete questions 26b-26d ONLY for ESBL cases:

26b. WAS THE INCIDENT SPECIMEN TESTED FOR ESBL PRODUCTION OR OTHER BETA-LACTAMASE GENES?

- Yes
 No
 Laboratory not testing
 Unknown

26c. IF TESTED, WHAT TESTING METHOD WAS USED? (Check all that apply):

- 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): _____

26d. IF TESTED, WHAT WAS THE RESULT?

- | | | | | |
|-------|---------------------------|---------------------------|---------------------------|---------------------------|
| _____ | <input type="radio"/> Pos | <input type="radio"/> Neg | <input type="radio"/> Ind | <input type="radio"/> Unk |
| _____ | <input type="radio"/> Pos | <input type="radio"/> Neg | <input type="radio"/> Ind | <input type="radio"/> Unk |
| _____ | <input type="radio"/> Pos | <input type="radio"/> Neg | <input type="radio"/> Ind | <input type="radio"/> Unk |
| _____ | <input type="radio"/> Pos | <input type="radio"/> Neg | <input type="radio"/> Ind | <input type="radio"/> Unk |
| _____ | <input type="radio"/> Pos | <input type="radio"/> Neg | <input type="radio"/> Ind | <input type="radio"/> Unk |
| _____ | <input type="radio"/> Pos | <input type="radio"/> Neg | <input type="radio"/> Ind | <input type="radio"/> Unk |
| _____ | <input type="radio"/> Pos | <input type="radio"/> Neg | <input type="radio"/> Ind | <input type="radio"/> Unk |

27. SUSCEPTIBILITY RESULTS:

Please complete the table below based on the information found in the indicated data source. (Accelerate Pheno System, E-test, Kirby Bauer, Microscan, Phoenix, Sensititre, Vitek, or Medical Record).

Antibiotic	Data Source	Interpretation	Data Source	Interpretation	Data Source:	Interpretation
	MIC or Zone diameter		MIC or Zone diameter		MIC or Zone diameter	
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						

28a. WAS THE CASE FIRST IDENTIFIED THROUGH AN AUDIT?

- Yes
- No

28b. CRF STATUS:

- Complete
- Complete-Pending
- Pending
- Chart unavailable after 3 requests

28c. SO INITIALS: _____

28d. DATE OF ABSTRACTION: (mm/dd/yyyy) _____

28e. COMMENTS: