Patient ID: _____

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DEPARTMENT OF
HEALTH & HUMAN SERVICES
CENTERS FOR DISEASE CONTROL
AND PREVENTION
ATLANTA, GA 30333

2017–2018 Carbapenem-resistant *Pseudomonas aeruginosa* Multi-Site Gram-Negative Surveillance (MuGSI) Case Report

Patient's Name _____ **Phone no.** (_____)_____
(Last, First, MI)

Address _____ **MRN** _____

City _____ **State** _____ **Zip** _____ **Hospital** _____

— Patient identifier information is NOT transmitted to CDC —

1. STATE ☐☐

2. COUNTY: _____

3. STATE ID: ☐☐☐☐☐☐☐

4. LABORATORY ID WHERE CULTURE IDENTIFIED: ☐☐☐☐☐

5. FACILITY ID WHERE PATIENT TREATED: ☐☐☐☐☐

6. DATE OF BIRTH: ☐☐/☐☐/☐☐☐☐

7a. AGE: ☐☐☐

7b. Is age in day/mo/year?
❑ Days ❑ Mos ❑ Yrs

8a. SEX:
❑ Male
❑ Female
❑ Unknown

8b. ETHNIC ORIGIN:
❑ Hispanic or Latino
❑ Not Hispanic or Latino
❑ Unknown

8c. RACE *(check all that apply)*:
❑ White
❑ Black or African American
❑ American Indian or Alaska Native
❑ Asian
❑ Native Hawaiian or Other Pacific Islander
❑ Unknown

9a. DATE OF INITIAL CULTURE: ☐☐/☐☐/☐☐☐☐

9c. Where was the patient located on the 4th calendar day prior to the date of initial culture?
❑ Private residence
❑ LTCF Facility ID: _____
❑ LTACH Facility ID: _____
❑ Homeless
❑ Incarcerated
❑ Hospital Inpatient
Was the patient transferred from this hospital? ❑ Yes ❑ No ❑ Unknown
Facility ID: _____
❑ Other (specify): _____
❑ Unknown

9b. LOCATION OF CULTURE COLLECTION:

Hospital Inpatient
☐ ICU
☐ Surgery/OR
☐ Radiology
☐ Other Unit

Outpatient
☐ Clinic/Doctors Office
☐ Surgery
☐ Other Outpatient
☐ Dialysis Center

☐ LTCF Facility ID: _____
☐ LTACH Facility ID: _____
☐ Autopsy
☐ Unknown

☐ Emergency Room
☐ Observational Unit/Clinical Decision Unit

10. WAS PATIENT HOSPITALIZED AT THE TIME OF, OR WITHIN 30 CALENDAR DAYS AFTER, INITIAL CULTURE?
❑ Yes ❑ No ❑ Unknown
If YES:
Date of admission ☐☐/☐☐/☐☐☐☐
Date of discharge ☐☐/☐☐/☐☐☐☐

11a. Was the patient in the ICU in the 7 days prior to their initial culture?
❑ Yes ❑ No ❑ Unknown

11b. Was the patient in the ICU on the date of or in the 7 days after the date of initial culture?
❑ Yes ❑ No ❑ Unknown

12a. PATIENT OUTCOME:
❑ Survived ❑ Died ❑ Unknown

12b. If survived, transferred to:
❑ Private residence
❑ LTCF Facility ID: _____
❑ LTACH Facility ID: _____
❑ Unknown
❑ Other (specify): _____

12c. If died, date of death: ☐☐/☐☐/☐☐☐☐

12d. Was CR-PA cultured from a normally sterile site, urine, wound, CF throat swab, or LRT site, ≤ calendar day 7 before death (Day 1 = date of initial culture)?
❑ Yes ❑ No ❑ Unknown

13. INITIAL CULTURE SITE:
❑ Blood
❑ Bone
❑ Bronchoalveolar lavage ***(LRT site, complete Q19a–d)***
❑ CSF
❑ Internal abscess (specify site) _____
❑ Pleural fluid
❑ Peritoneal fluid
❑ Pericardial fluid
❑ Joint/synovial fluid
❑ Sputum ***(LRT site, complete Q19a–d)***
❑ Tracheal aspirate ***(LRT site, complete Q19a–d)***
❑ Urine ***(complete Q18a–c)***
❑ Wound (specify site) _____
❑ Throat swab (***CF patient only, complete Q19a–d***)
❑ Other LRT site (specify site) _____ ***(complete Q19a–d)***
❑ Other normally sterile site (specify site) _____

14a. Was the initial culture polymicrobial?

- ❑ Yes
- ❑ No
- ❑ Unknown

14b. Were any of the following organisms cultured from the initial culture *(check all that apply)*?

- ❑ >1 CR *P. aeruginosa* with two distinct antibiograms
- ❑ Vancomycin-resistant *Enterococci* (VRE)
- ❑ Methicillin-resistant *Staphylococcus aureus* (MRSA)
- ❑ Carbapenem-resistant *Enterobacteriaceae* (CRE)
- ❑ Carbapenem-resistant *Acinetobacter* (CRAB)
- ❑ None of the listed organisms cultured

15. 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		Kirby-Bauer		E-test	
Antibiotic	**MIC**	**Interp**	**MIC**	**Interp**	**MIC**	**Interp**	**MIC**	**Interp**	**Zone Diam**	**Interp**	**MIC**	**Interp**
Amikacin												
Aztreonam												
CEFEPIME												
CEFTAZIDIME												
Ceftazidime-avibactam												
Ceftolozane-tazobactam												
Ciprofloxacin												
COLISTIN												
DORIPENEM												
Gentamicin												
IMIPENEM												
Levofloxacin												
MEROPENEM												
Piperacillin-Tazobactam												
POLYMYXIN B												
Tobramycin												

16. TYPES OF INFECTION ASSOCIATED WITH CULTURE(S) *(check all that apply):* ❑ None ❑ Unknown

- ❑ Abscess, not skin
- ❑ AV fistula/graft infection
- ❑ Bacteremia
- ❑ Bronchitis (Acute/Chronic)
- ❑ Bursitis
- ❑ Catheter site infection (CVC)
- ❑ Cellulitis
- ❑ CF exacerbation
- ❑ Chronic ulcer/wound (not decubitus)
- ❑ Decubitus/pressure ulcer
- ❑ Ecthyma gangrenosum
- ❑ Empyema
- ❑ Endocarditis
- ❑ Epidural abscess
- ❑ Meningitis
- ❑ Osteomyelitis
- ❑ Peritonitis
- ❑ Pneumonia ***(complete Q19a–d)***
- ❑ Pyelonephritis
- ❑ Septic arthritis
- ❑ Septic emboli
- ❑ Septic shock
- ❑ Skin abscess
- ❑ Surgical incision infection
- ❑ Surgical site infection (internal)
- ❑ Traumatic wound
- ❑ Upper respiratory infection
- ❑ Urinary tract infection
- ❑ Other _____

17. UNDERLYING CONDITIONS *(check all that apply)*: ❑ None ❑ Unknown

- ❑ AIDS/CD4 count < 200
- ❑ Alcohol abuse
- ❑ Chronic Bronchiectasis
- ❑ Chronic Liver Disease
- ❑ Chronic Pulmonary Disease
- ❑ Chronic Renal Insufficiency
- ❑ Chronic Skin Breakdown

(Check all that apply):

- ❑ Burn
- ❑ Prolonged surgical wound
- ❑ Other (specify) _____
- ❑ Unknown

- ❑ Congestive Heart Failure
- ❑ Connective Tissue Disease
- ❑ Current Smoker
- ❑ CVA/Stroke
- ❑ Cystic Fibrosis
- ❑ Decubitus/Pressure Ulcer
- ❑ Dementia/Chronic cognitive deficit
- ❑ Diabetes
- ❑ Hemiplegia/Paraplegia
- ❑ HIV
- ❑ Hematologic Malignancy
- ❑ IVDU
- ❑ Inflammatory Bowel Disease/Crohns
- ❑ Liver Failure
- ❑ Metastatic Solid Tumor
- ❑ Myocardial Infarct
- ❑ Neurological Problems
- ❑ Obesity or Morbid Obesity
- ❑ Peptic Ulcer Disease
- ❑ Peripheral Vascular Disease (PVD)
- ❑ Premature Birth
- ❑ Solid Tumor (non metastatic)
- ❑ Spina bifida
- ❑ Transplant Recipient
- ❑ Urinary Tract Problems/Abnormalities

Complete questions 18a–18d for URINE cultures ONLY.

URINE Cultures ONLY:

18a. Was the urine collected through an indwelling urethral catheter?

- ❑ Yes
- ❑ No
- ❑ Unknown

URINE Cultures ONLY:

18b. Record the colony count for *P. aeruginosa:*

_____

18c. 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 and the 2 calendar days after the date of initial culture. *Then go to question 18d.*

- ❑ **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

18d. Was a blood culture positive in the 3 calendar days before through the 3 calendar days after the initial urine culture?

- ❑ Yes
- ❑ No
- ❑ Unknown

Complete questions 19a-19d ONLY for LRT site cultures, CF throat swabs, or for non-LRT cultures where pneumonia is marked in question 16.

19a. Chest Radiology source of results: ❑ CT ❑ X-Ray ❑ Not Done

19b. Chest Radiology Findings *(check all that apply):*

- ❑ **None** ❑ **Not available**
- ❑ Air space density/opacity
- ❑ Bronchopneumonia/pneumonia
- ❑ Cannot rule out pneumonia
- ❑ Cavitation
- ❑ Consolidation
- ❑ Interstitial infiltrate
- ❑ Multiple lobar infiltrate (unilateral)
- ❑ Multiple lobar infiltrate (bilateral)
- ❑ New or changed infiltrate
- ❑ No evidence of pneumonia
- ❑ Pleural effusion
- ❑ Single lobar infiltrate
- ❑ Other (specify): _____

19c. Signs and Symptoms associated with lower respiratory tract culture.

Please indicate if any of the following symptoms were reported during the 5 day time period including the 2 calendar days before and the 2 calendar days after the date of initial culture. *Then go to question 19d.*

- ❑ **None** ❑ **Unknown**
- ❑ Altered mental status
- ❑ Apnea (new onset or worsening)
- ❑ Change in character of sputum
- ❑ Cough (new onset or worsening)
- ❑ Dyspnea (new onset or worsening)
- ❑ Fever [temperature ≥100.4 °F (38 °C)]
- ❑ Hemoptysis
- ❑ Increased O_2 requirements
- ❑ Increased respiratory secretions
- ❑ Increased suctioning requirements
- ❑ Increased ventilator demand
- ❑ Leukocytosis
- ❑ Leukopenia
- ❑ Low body temperature/hypothermia [≤ 95ºF (35ºC)]
- ❑ Low O_2 desaturation [pulse oximetry <94% or PaO_2/FiO_2 ≤240]
- ❑ New onset purulent sputum
- ❑ Rales/crackles/bronchial breath sounds
- ❑ Tachypnea (new onset or worsening)

19d. Risk factors for LRT or for non-LRT culture where pneumonia is marked in Q16.

- ❑ Non-invasive positive pressure ventilation (CPAP or BiPAP) at any time in the 7 calendar days prior to the date of initial culture
- ❑ Nebulizer treatment at any time in the 7 calendar days prior to the date of initial culture
- ❑ Mechanical ventilation at any time in the 7 calendar days prior to the date of initial culture

20. RISK FACTORS OF INTEREST *(Check all that apply):* ❑ **None** ❑ **Unknown**

- ❑ Culture collected ≥ calendar day 3 after hospital admission

Hospitalized within year before date of initial culture:

❑ Yes ❑ No ❑ Unknown

If YES: Enter number of hospitalizations in year before date of initial culture. If patient is hospitalized at time of initial culture, do not count that hospitalization here.

Number of hospitalizations: _____ If known, prior hospital ID: _____

- ❑ Surgery within year before date of initial culture
- ❑ Residence in LTCF within year before date of initial culture
  If known, Facility ID _____
- ❑ Admitted to a LTACH within year before date of initial culture
  If known, Facility ID _____
- ❑ Current chronic dialysis: ❑ Peritoneal ❑ Hemodialysis ❑ Unknown
  Hemodialysis Access: ❑ AV fistula/graft ❑ CVC ❑ Unknown
- ❑ Indwelling device in place at any time in the 2 calendar days prior to the date of initial culture. **If checked, indicate all that apply:**
  - ❑ Central venous catheter
  - ❑ Implanted ventricular assist device
  - ❑ Urinary catheter
  - ❑ ET/NT Tube
  - ❑ NG Tube
  - ❑ Tracheostomy
  - ❑ Gastrostomy Tube
  - ❑ Jejunostomy Tube
  - ❑ Nephrostomy Tube
  - ❑ Other: _____
  - ❑ Other: _____
- ❑ Patient traveled internationally in the two months prior to the date of initial culture.

  Country: _____, _____, _____

Complete 21a-21b for patients who had cultures collected as a hospital inpatient, in the ER, or when at a LTCF or LTACH.

21a. Is antimicrobial use (IV or oral) in the 14 days before the date of initial culture collection documented in the H&P or medical administration record?

❑ Yes ***(go to Q21b)*** ❑ No ***(go to Q22)*** ❑ Unknown ***(go to Q22)***

21b. If yes, indicate all antibiotics given in the 14 days before the date of initial culture collection:

❑ Amikacin (Amikin)	❑ Cefoxitin	❑ Clarithromycin	❑ Linezolid	❑ Telavancin
❑ Amoxicillin	❑ Cefpodoxime	❑ Clindamycin	❑ Meropenem	❑ Tetracycline
❑ Amoxicillin-Clavulanic Acid	❑ Cefprozil	❑ Colistin	❑ Metronidazole	❑ Ticarcillin-Clavulanic Acid
❑ Ampicillin	❑ Ceftaroline	❑ Dalbavancin	❑ Minocycline	❑ Tigecycline
❑ Ampicillin-sulbactam	❑ Ceftazidime	❑ Daptomycin	❑ Moxifloxacin	❑ Tobramycin
❑ Azithromycin	❑ Ceftazidime-avibactam	❑ Doripenem	❑ Nafcillin/Dicloxcillin/Oxacillin	❑ Trimethoprim-Sulfamethoxazole
❑ Aztreonam	❑ Ceftizoxime	❑ Doxycycline	❑ Nitrofurantoin	❑ Vancomycin
❑ Cefaclor	❑ Ceftriaxone	❑ Ertapenem	❑ Ofloxacin	❑ Other (specify): _____
❑ Cefazolin	❑ Ceftolozane-tazobactam	❑ Erythromycin	❑ Penicillin	
❑ Cefdinir	❑ Cefuroxime	❑ Fosfomycin	❑ Piperacillin-Tazobactam	❑ Other (specify): _____
❑ Cefepime	❑ Cephalexin	❑ Gentamicin	❑ Polymyxin B	
❑ Cefixime	❑ Chloroamphenicol	❑ Imipenem	❑ Quinupristin-dalfopristin	❑ Other (specify): _____
❑ Cefotaxime	❑ Ciprofloxacin	❑ Levofloxacin	❑ Rifampin	

22. Was case identified through an audit?

❑ Yes
❑ No
❑ Unknown

23. CRF status:

❑ Complete
❑ Pending
❑ Chart unavailable

24. Date reported to EIP site:

☐☐/☐☐/☐☐☐☐

25. SO initials:

26. Comments: