

**\*\*NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE\*\***

## **Measure Information Form**

**Measure Set:** Pneumonia (PN)

**Set Measure ID #:** PN-3b

**Performance Measure Name:** Blood Cultures Performed in the Emergency Department Prior to Initial Antibiotic Received in Hospital

**Description:** Pneumonia patients whose initial emergency room blood culture specimen was collected prior to first hospital dose of antibiotics

**Rationale:** Published pneumonia treatment guidelines recommend performance of blood cultures for all inpatients to optimize therapy. Improved survival has been associated with optimal therapy. In addition, the yield of clinically useful information is greater if the culture is collected before antibiotics are administered.

**Type of Measure:** Process

**Improvement Noted as:** An increase in the rate

**Numerator Statement:** Number of pneumonia patients whose initial emergency room blood culture was performed prior to the administration of the first hospital dose of antibiotics

**Included Populations:** Not Applicable

**Excluded Populations:** None

**Data Elements:**

- *Antibiotic Administration Date*
- *Antibiotic Administration Time*
- *Antibiotic Name*
- *Arrival Date*
- *Arrival Time*
- *Blood Culture Prior to Arrival*
- *Initial Blood Culture Collection Date*
- *Initial Blood Culture Collection Time*

**Denominator Statement:** Pneumonia patients 18 years of age and older who have an initial blood culture collected in the emergency department

**Included Populations:** Discharges with:

- An *ICD-9-CM Principal Diagnosis Code* of pneumonia as defined in Appendix A, Table 3.1 OR *ICD-9-CM Principal Diagnosis Code* of septicemia or respiratory failure (acute or chronic) as defined in Appendix A, Tables 3.2 or 3.3  
AND
- An *ICD-9-CM Other Diagnosis Code* of pneumonia (Appendix A, Table 3.1)

**Excluded Populations:**

- Patients received in transfer from another acute care or critical care access hospital, including another emergency department
- Patients who had no working diagnosis of pneumonia at the time of admission
- Patients receiving *Comfort Measures Only*
- Patients less than 18 years of age
- Patients who do not receive antibiotics or a blood culture
- Patients who had no chest x-ray or CT scan that indicated positive infiltrate within 24 hours prior to hospital arrival or anytime during this hospitalization

**Data Elements:**

- *Admission Date*
- *Admission Source*
- *Antibiotic Received*
- *Arrival Date*
- *Arrival Time*
- *Birthdate*
- *Blood Culture Collected After Arrival*
- *Chest X-ray*
- *Comfort Measures Only*
- *ICD-9-CM Other Diagnosis Codes*
- *ICD-9-CM Principal Diagnosis Code*
- *Initial Blood Culture Collected in Emergency Department (ED)*
- *Pneumonia Working Diagnosis on Admission*
- *Transfer From Another ED*

**Risk Adjustment:** No

**Data Collection Approach:** Retrospective, data sources for required data elements include administrative data and medical record documents. Some hospitals may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunities for improvement at the point of care/service. However, complete documentation includes the principal or other ICD-9-CM diagnosis and procedure codes, which require retrospective data entry.

**Data Accuracy:**

- Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.
- To be part of the measure population, a patient must have received an antibiotic either during the hospitalization or within 24 hours prior to hospital arrival plus during the hospitalization. Measure specifications do not require documentation of the exact date and time of the antibiotic taken prior to hospitalization.

**Measure Analysis Suggestions:** None

**Sampling:** Yes, for additional information see the Sampling Section.

**Data Reported As:** Aggregate rate generated from count data reported as a proportion

**Selected References:**

- Bartlett JG, Dowell SF, Mandell LA, et al. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. *Clin Infect Dis.* 2000;31:347-382.
- Heffelfinger JD, Dowell SF, Jorgensen JH, Klugman KP, et al. Management of community-acquired pneumonia in the era of pneumococcal resistance: a report from the Drug-Resistant Streptococcus Pneumoniae Therapeutic Working Group. *Archives of Internal Medicine.* 2000, 160:1399-1408.
- Mandell LA, Bartlett JG, Dowell SF, et al. Update of practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. *Clin Infect Dis.* 2003;37:1405-1433.
- Mandell LA, Marrie TJ, Grossman RF, et al. Canadian guidelines for the initial management of community-acquired pneumonia: an evidence-based update by the Canadian Infectious Disease Society and the Canadian Thoracic Society. *Clin Infect Dis* 2000;31:383-421.
- Metersky ML, Ma A, Bratzler DW, et al. Predicting bacteremia in patients with community-acquired pneumonia. *Am J Respir Crit Care Med* 2004; 169: 342-347
- Niederman MS, Mandell LA, Anzueto A, et al. Guidelines for the management of adults with community-acquired pneumonia. *Am J Respir Crit Care Med.* 2001; 163: 1730-1754.

# PN-3b: Blood Cultures Performed in the Emergency Department Prior to Initial Antibiotic Received in Hospital

**Numerator:** Number of pneumonia patients whose initial ED blood culture was performed prior to the administration of the first hospital dose of antibiotics .

**Denominator:** Pneumonia patients 18 years of age and older who have initial blood culture collected in the ED .







