



## Complete Summary

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### TITLE

Pneumonia: percent of immunocompetent patients with community-acquired pneumonia who receive an initial antibiotic regimen during the first 24 hours that is consistent with current guidelines.

### SOURCE(S)

Centers for Medicare and Medicaid Services (CMS). 7th statement of work (SOW). Quality of care measure specifications: Pneumonia (PNE). Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2002 Sep 30. Various p.

## Brief Abstract

### DESCRIPTION

Immunocompetent patients with community-acquired pneumonia (CAP) who receive an initial antibiotic regimen during the first 24 hours that is consistent with current guidelines

### RATIONALE

The current North American antibiotic guidelines for community-acquired pneumonia (CAP) in immunocompetent patients are from the Centers for Disease Control and Prevention (CDC), the Infectious Diseases Society of America (IDSA), the Canadian Infectious Disease Society/Canadian Thoracic Society (CIDS/CTS), and the American Thoracic Society (ATS). All four reflect that *Streptococcus pneumoniae* is the most common cause of CAP, that treatment that covers "atypical" pathogens (e.g. *Legionella* species, *Chlamydia pneumoniae*, *Mycoplasma pneumoniae*) can be associated with improved survival, and that the prevalence of antibiotic-resistant *S. pneumoniae* is increasing.

For specific antibiotic regimens consistent with these guidelines, refer to the original measure documentation.

### PRIMARY CLINICAL COMPONENT

Pneumonia; antibiotic selection

### DENOMINATOR DESCRIPTION

All pneumonia patients (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

## NUMERATOR DESCRIPTION

Number of pneumonia patients who received an initial antibiotic regimen consistent with current guidelines (refer to the original measure documentation for specific antibiotic regimens) during the first 24 hours of their hospitalization

### Evidence Supporting the Measure

#### PRIMARY MEASURE DOMAIN

Process

#### SECONDARY MEASURE DOMAIN

Not applicable

#### EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence

A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

### Evidence Supporting Need for the Measure

#### NEED FOR THE MEASURE

Wide variation in quality for the performance measured

#### EVIDENCE SUPPORTING NEED FOR THE MEASURE

Centers for Medicare and Medicaid Services (CMS). 7th statement of work (SOW). Quality of care measure specifications: Pneumonia (PNE). Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2002 Sep 30. Various p.

### State of Use of the Measure

#### STATE OF USE

Current routine use

#### CURRENT USE

Collaborative inter-organizational quality improvement  
Internal quality improvement

## Application of Measure in its Current Use

### CARE SETTING

Hospitals

### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

### TARGET POPULATION AGE

Unspecified

### TARGET POPULATION GENDER

Either male or female

### STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### INCIDENCE/PREVALENCE

Unspecified

### ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

### BURDEN OF ILLNESS

In the United States (U.S.) pneumonia is the sixth most common cause of death. From 1979-1994, the overall rates of death due to pneumonia and influenza increased by 59%. Much of this increase is due to a greater population of persons aged 65 years or older, and a changing epidemiology of pneumonia, including a greater proportion of the population with underlying medical conditions at increased risk of respiratory infection. More than 1.1 million hospitalizations due to pneumonia each year in the U.S.

### EVIDENCE FOR BURDEN OF ILLNESS

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis 2000 Aug; 31(2): 347-82. [218 references] [PubMed](#)

Niederman MS, Mandell LA, Anzueto A, Bass JB, Broughton WA, Campbell GD, Dean N, File T, Fine MJ, Gross PA, Martinez F, Marrie TJ, Plouffe JF, Ramirez J, Sarosi GA, Torres A, Wilson R, Yu VL. Guidelines for the management of adults with community-acquired pneumonia. Diagnosis, assessment of severity, antimicrobial therapy, and prevention. Am J Respir Crit Care Med 2001 Jun; 163(7): 1730-54. [PubMed](#)

## UTILIZATION

Pneumonia accounts for nearly 600,000 Medicare patient hospitalizations utilizing more than 4.5 million inpatient days each year. In 1993, more than \$3.5 billion was spent on inpatient care of Medicare patients with pneumonia. Pneumonia is also the principal reason for more than 500,000 emergency department visits by Medicare patients each year. The incidence of pneumonia increases with age, and more than 90 percent of deaths due to this condition are in the population aged 65 and older.

## EVIDENCE FOR UTILIZATION

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis 2000 Aug; 31(2): 347-82. [218 references] [PubMed](#)

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## COSTS

See "Utilization" field.

Institute of Medicine National Healthcare Quality Report Categories

## IOM CARE NEED

Getting Better

## IOM DOMAIN

Effectiveness  
Timeliness

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Medicare discharges with a principal diagnosis of pneumonia or a principal diagnosis of respiratory failure or sepsis with a secondary diagnosis of pneumonia

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR (INDEX) EVENT

Clinical Condition  
Institutionalization

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

Medicare discharges with:

- A principal diagnosis of pneumonia (International Classification of Disease, Ninth Edition, Clinical Modification [ICD-9-CM] codes of 480.0 through 483.8, 485 through 486, or 487.0) OR
- A principal diagnosis of septicemia, or respiratory failure (acute or chronic) failure (ICD-9-CM codes 038.XX or 518.81), AND a secondary diagnosis of pneumonia.

Exclusions

- Patients who were transferred from another acute care or critical access hospital
- Patients who had no working diagnosis of pneumonia at the time of admission
- Patients who received comfort measures only
- Patients who did not receive antibiotics during the hospitalization or within 36 hours of arrival to the hospital
- Patients who were immunocompromised (based on comorbidities)
- Patients who potentially had nosocomial pneumonia (indexed admission within 14 days of a previous admission)
- Patients who had insufficient arrival or antibiotic timing data (i.e., missing date and/or time) in their medical record

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions

Number of pneumonia patients who received an initial antibiotic regimen

consistent with current guidelines (refer to the original measure documentation for specific antibiotic regimens) during the first 24 hours of their hospitalization

Exclusions  
Unspecified

#### DENOMINATOR TIME WINDOW

Time window is a single point in time

#### NUMERATOR TIME WINDOW

Fixed time period

#### DATA SOURCE

Administrative and medical records data

#### LEVEL OF DETERMINATION OF QUALITY

Individual Case

#### PRE-EXISTING INSTRUMENT USED

Unspecified

### Computation of the Measure

#### SCORING

Rate

#### INTERPRETATION OF SCORE

Better quality is associated with a higher score

#### ALLOWANCE FOR PATIENT FACTORS

Unspecified

#### STANDARD OF COMPARISON

External comparison at a point in time  
External comparison of time trends

### Evaluation of Measure Properties

#### EXTENT OF MEASURE TESTING

In order to test the reliability of the Centers for Medicare and Medicaid Services (CMS) data abstraction in the 7th Statement of Work (SoW), 80 medical records were randomly selected each month from 2000 to 2001. Using 12 months of data, we calculated the kappa statistic and total agreement rate (AR) for abstraction (Kappa = 0.80, AR = 90.6%).

#### EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Bratzler DW. (Principal Clinical Coordinator, Oklahoma Foundation for Medical Quality, Oklahoma City). Personal communication. 2003 Mar 5. 1p.

### Identifying Information

#### ORIGINAL TITLE

Initial antibiotic selection for community-acquired pneumonia (CAP) in immunocompetent patients.

#### MEASURE COLLECTION

[7th Statement of Work Quality of Care Measure Specifications](#)

#### MEASURE SET NAME

[Pneumonia \(PNE\)](#)

#### DEVELOPER

Centers for Medicare and Medicaid Services

#### ENDORSER

National Quality Forum

#### INCLUDED IN

National Healthcare Disparities Report (NHDR)  
National Healthcare Quality Report (NHQR)

#### ADAPTATION

Measure was not adapted from another source.

#### RELEASE DATE

2002 Sep

#### MEASURE STATUS

This is the current release of the measure.

#### SOURCE(S)

Centers for Medicare and Medicaid Services (CMS). 7th statement of work (SOW). Quality of care measure specifications: Pneumonia (PNE). Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2002 Sep 30. Various p.

#### MEASURE AVAILABILITY

The individual measure, "PNE-2: Initial Antibiotic Selection for Community-Acquired Pneumonia (CAP) in Immunocompetent Patients," is published in "Centers for Medicare/Medicaid Services, 7th Statement of Work, Quality of Care Measure Specifications: Pneumonia."

For more information, e-mail CMS PROINQUIRIES at [proinquiries@cms.hhs.gov](mailto:proinquiries@cms.hhs.gov).

#### COMPANION DOCUMENTS

A software application designed for the collection and analysis of quality improvement data, the CMS Abstraction and Reporting Tool (CART), is available from the [CMS CART Web site](#). Supporting documentation is also available.

For more information, e-mail CMS PROINQUIRIES at [proinquiries@cms.hhs.gov](mailto:proinquiries@cms.hhs.gov).

#### NQMC STATUS

This NQMC summary was completed by ECRI on January 6, 2003. The information was verified by the Centers for Medicare/Medicaid Services on March 14, 2003.

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Date Modified: 11/1/2004



