▶ Pneumonia

Definitions

Pneumonia describes an infection of the lung. The range of severity can span from mild to life-threatening. It is most serious for infants and young children, people over age 65, and people with multiple comorbidities or weakened immune systems. A number of pathogens can contribute to pneumonia, including bacteria, viruses, fungi, and protozoa.

Pneumonitis, an inflammatory response, usually describes a non-infectious cause of lung inflammation. **Aspiration pneumonitis** describes a chemical injury caused by the inhalation of sterile gastric contents. **Aspiration pneumonia** is an infectious process caused by the inhalation of oropharyngeal secretions that are colonized by pathogenic bacteria.

Community-acquired pneumonia (CAP) is a pneumonia thought to have been acquired outside of a healthcare setting. The most common pathogens causing CAP include *Streptococcus pneumoniae*, *Haemophilus influenzae*, atypical bacteria (i.e., *Chlamydia pneumoniae*, *Mycoplasma pneumoniae*, *Legionella* species), and viruses. Although CAP is thought to be a simple pneumonia, the causative organism could be of a more complex origin such as Gram-negative bacteria, MRSA, or VRE.

Healthcare-associated pneumonia (HCAP) describes a nosocomial pneumonia that has occurred prior to hospital admission in patients with specific risk factors (immunosuppression, recent hospitalization, residence in a nursing facility, dialysis). Gram-negative bacteria are typically suspected in such patients.

Hospital-acquired pneumonia (HAP) is a pneumonia that was not incubating at the time of hospital admission and that presents clinically two or more days after hospitalization. Pneumonia that presents sooner should be regarded as CAP.

Ventilator-associated pneumonia (VAP) is pneumonia that develops 48 hours or longer after mechanical ventilation is initiated by means of an endotracheal tube or tracheostomy. Typical causative organisms include *Pseudomonas* species, MRSA, and other Gram-negative bacteria.

Pleural effusion is excess fluid between the layers of the pleura outside the lungs. It can be described as exudative, usually due to an etiology of trauma, infection, or neoplasm; or as transudative, due to excess fluids such as seen in heart failure.

Empyema describes a collection of pus in the pleural space. It often occurs as a complication of pneumonia, but it can occur after a thoracentesis or lung surgery, with a lung abscess, or following chest trauma.

Diagnostic criteria

Confirmation of pneumonia is obtained through imaging, usually a chest x-ray. CT is used if symptoms are present but the pneumonia is not confirmed by chest x-ray. Interpretation will describe a consolidation, infiltrate, or interstitial changes. If the infection is advanced, a pleural effusion may be noted.

Imaging may not reveal pneumonia if it is in its early stages or if the patient is dehydrated at the time of imaging. The provider can diagnose the pneumonia based on the patient's clinical presentation. The documentation should clearly state how the diagnosis was confirmed. Often the presence of infiltrate is noted within 24-48 hours in imaging.

Interpretations may offer clues to the contributing organism:

- Multilobar infiltrates may indicate an *S. pneumoniae* or *Legionella pneumophila* infection
- Interstitial pneumonia (increased interstitial markings, subpleural reticular opacities increasing from the apex to the bases of the lungs) may indicate a viral or mycoplasma etiology

- A description of a cavitating pneumonia suggests *S. aureus* or a fungal or mycobacterial etiology

Patient presentation normally includes dyspnea, pleuritic chest pain, increased sputum production, cough, fever, and chills. Physical assessment findings typically include rales, rhonchi, bronchial breath sounds, and pleural rub.

An infectious pneumonia may lead to an elevated white blood cell count (WBC), but note that leukopenia or a normal WBC does not rule out pneumonia.

Blood and sputum cultures are routinely drawn, but conclusive organism identification is rarely achieved through these cultures.

Treatment

Treatment will include support of respiratory function with monitoring of oxygen saturation, and oxygen administration therapy as needed. If the patient also has an underlying chronic lung condition, bronchodilators, steroids, and other treatments may be applied.

The provider will order antibiotic therapy directed toward the known or suspected causative organisms. The severity of symptoms, the patient's age, and comorbidities influence antibiotic choice as well. Antibiotics are generally ordered spanning 7–14 days.

Coding considerations

VAP (J95.851) should be assigned only when the provider directly links the pneumonia to the ventilator. An additional code to identify the organism should also be assigned. Do not assign an additional code from categories J12–J18 to identify the type of pneumonia. If the documentation is unclear as to whether the patient has a VAP, query the provider.

If a patient is admitted with one type of pneumonia and subsequently develops a VAP, code J95.851, Ventilator-associated pneumonia, would be assigned as a secondary diagnosis (POA N).

AHA *Coding Clinic*, First Quarter 2019, p. 10: Provider documentation must **specifically** link the pneumonia to the HIV to be identified as an HIV-related illness.

AHA *Coding Clinic*, Third Quarter 2018, p. 37: Lobar pneumonia should only be coded when the provider specifically documents "lobar pneumonia" and a causal organism is not specified. Lobar pneumonia typically involves consolidation of one or more lobes of the lung. Lobar pneumonia cannot be determined based on an imaging report that specifies pneumonia in the right upper lobe or pneumonia in multiple lobes.

AHA *Coding Clinic*, Fourth Quarter 2017, p. 96: Assign code J10.08, Influenza due to other identified influenza virus with other specified pneumonia; code J44.0, Chronic obstructive pulmonary disease with acute lower respiratory infection; code J15.9, Unspecified bacterial pneumonia; and code J44.1, Chronic obstructive pulmonary disease with (acute) exacerbation. All four codes are needed to capture the diagnostic statement. The circumstances of the admission would determine the principal diagnosis.

AHA *Coding Clinic*, Fourth Quarter 2013, p. 118: Assign code Y95, Nosocomial condition, for a documented healthcare-acquired condition.

(Note: All *Coding Clinic* references in this guide are provided in abbreviated form. We strongly encourage you to seek the complete published version from your organization's *Coding Clinic* source.)

CDI critical thinking

The etiology of the pneumonia (aspiration, radiation, or causative organism) determines ICD-10-CM code and MS-DRG assignment. Providers should be educated to clarify the etiology when known or to identify the

suspected etiology. Queries should be deployed when clinical indicators indicate a more complex pneumonia or a more specific etiology. Always review the specific antibiotic ordered and consider the patient's recent history of exposure.

Documentation of CAP, HAP, or HCAP does not influence code assignment. The provider must specifically speak to the causal organism to allow capture of the most relevant code and appropriate level of severity. Many providers will document HCAP to mean a Gram-negative or complicated pneumonia and do not understand this designation does not allow capture of the more complex condition. A query should be deployed to capture increased specificity.

Words Indicating Uncertainty	Words Indicating a Definite Diagnosis
"Suggestive of"	"Evidence of"
"Compatible with"	"Treating"
"Likely"	"Early"
"Suspicious for"	"Results demonstrate"
"Probable"	"Significant for"
"Concern for"	"Element of"

It should be rare for a patient to be admitted with a simple pneumonia, especially if there are no comorbid conditions present. Review such encounters closely to ensure accurate capture of comorbidities or possible indication of a more complex pneumonia.

Review respiratory status closely, especially for patients with COPD and/or chronic respiratory failure. Compare respiratory function to baseline, as there may be an opportunity to capture an exacerbation or acute respiratory failure.

Differentiation of aspiration pneumonia is often overlooked, but the diagnosis should be considered. See the below chart for related diagnoses and conditions that are thought to contribute to aspiration.

Functional quadriplegia	Requires assist with eating
Alcohol/substance abuse and dependence, intoxication, overdose	Esophageal disease—obstruction, cancer, motility disorders
History of CVA	History of vomiting
Neurogenerative disorders	NG tube
Gastroparesis	Dysphagia
GERD	Impaired gag reflex/coma/ unconsciousness
Morbid obesity	History of aspiration/positive swallow studies
Altered level of consciousness, delirium, encephalopathy, dementia	Imaging: Right lower lobe "infiltrate"

MRSA pneumonia (J15.12) and MSSA pneumonia (J15.211)

Populations susceptible to *Staphylococcus aureus* infections include patients in long-term care; those with IV catheters, urinary catheters, G tubes, or urostomies; patients with open wounds/ulcers; patients who have undergone recent surgical procedures; patients who are immunosuppressed or on IV drugs; and those receiving assistance via ventilator or bilateral/continuous positive airway pressure (CPAP/BiPAP).

Antibiotics would be directed toward Gram-negative organisms or staph and may be administered in combination therapy.

Gram-negative pneumonia (J15.6)

Gram-negative infections can be caused by organisms such as *E. coli* and members of the *Klebsiella*, *Proteus*, *Serratia*, *Pseudomonas*, and *Enterobacter* species.

Populations susceptible to Gram-negative infections include the elderly, those in long-term care, immunosuppressed patients, patients with chronic illness (especially respiratory illnesses such as chronic obstructive pulmonary disease or cystic fibrosis), those on ventilator status or CPAP/BiPAP assist, patients with end-stage renal disease, and those who've had a recent hospitalization or recent broad-spectrum antibiotic therapy.

Both the Hospital Readmissions Reduction Program (HRRP) and Hospital Value-Based Purchasing (HVBP) 30-day mortality measure monitor admissions with pneumonia as a principal diagnosis. These measures also include admissions with a principal diagnosis of aspiration pneumonia, and admissions with sepsis and a secondary diagnosis of pneumonia. These measures are risk adjusted, so it is very important to capture all significant secondary diagnoses.

References

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