▶ Bronchitis/COPD (J20.-, J44.-)

Definitions

Bronchitis is inflammation of the bronchial tubes leading to cough, often with mucus production; when acute, the patient may demonstrate shortness of breath. **Acute bronchitis** is most commonly related to a viral infection and will resolve in a few weeks. **Chronic bronchitis** is a form of COPD.

Emphysema results from destruction of the alveoli and bronchioles. The larger spaces within the lungs lead to lung overinflation. CO_2 becomes trapped, not allowing oxygen to easily enter. A component of chronic bronchitis is often present. Imaging interpretations often describe the lung tissue as "hyperinflated."

Chronic obstructive pulmonary disease (COPD) is an umbrella term used to describe progressive lung disease. COPD includes diagnoses such as emphysema, chronic bronchitis, and refractory (non-reversible) asthma. These conditions demonstrate chronic obstruction of lung airflow that interferes with normal breathing; they are not fully reversible.

Obstruction inhibits airflow in and out of the lungs, which interrupts the process of gas exchange within the alveoli. As the disease progresses, these patients with all the above conditions will demonstrate hypoxemia (a low level of oxygen in the blood—O_2 saturations below 90%) and hypercapnia (elevated CO_2).

Diagnostic criteria

Chronic bronchitis: Symptoms of bronchitis present for at least three months of two consecutive years.

COPD: The presence of a post-bronchodilator $FEV_1/FVC < 0.70$ confirms the presence of persistent airflow limitation. A history of dyspnea, chronic cough or sputum production, and/or a history of exposure to risk factors for COPD is used to confirm the presence of the disease.

COPD exacerbation: Worsening oxygen saturations; cough and sputum production beyond baseline function. Bronchospasm and fever may be present. Exacerbations of COPD can be precipitated by several factors—exposure to irritants and respiratory tract infections are the most common.

The severity of COPD is often graded using the Global Initiative for Chronic Obstructive Lung Disease (GOLD) system. A GOLD stage 4 grade supports the diagnosis of chronic respiratory failure.

GOLD Stage	FEV$_1$	Level of Severity
GOLD 1	$\geq$ 80% predicted	Mild
GOLD 2	$\geq$ 50% to < 80% predicted	Moderate
GOLD 3	$\geq$ 30% to < 50% predicted	Severe
GOLD 4	< 30% predicted	Very severe

GOLD staging is based on the FEV$_1$, the maximal amount of air a person can forcefully exhale in one second.

Treatment

The early stages of COPD may require no treatment besides efforts to limit contributing environmental factors. As the disease progresses, patients are often prescribed a combination of therapies, including oral/inhaled steroids and bronchodilators (albuterol, ipratropium inhalers). Home oxygen may be provided for those in advanced stages.

If the patient presents in an acute exacerbation, intervention could include oxygen saturations, ABG monitoring, oxygen therapy including continuous positive airway pressure (CPAP), or ventilatory support depending on the severity. Antibiotics are usually prescribed to treat an identified infection or for prophylaxis. A pulmonary consult may be ordered.

Coding considerations

The codes in category J44 (COPD) distinguish between uncomplicated cases and those in acute exacerbation (CC). Documentation should support a level of severity matching the clinical situation. If asthma is also documented as present, see **Asthma.**

AHA *Coding Clinic*, First Quarter 2019, pp. 34–36: Assign only code J43.9, Emphysema, unspecified, for an exacerbation of COPD in a patient with emphysema. Currently, codes J43.9 and J44.1 cannot be assigned together because of the Excludes1 note. If acute bronchitis is also present, assign J20.9 as well.

When documentation describes emphysema due to asthma and COPD, assign code J43.9, Emphysema, unspecified, with a specific asthma code from category J45 to fully convey the clinical diagnoses.

AHA *Coding Clinic*, Fourth Quarter 2017, p. 96: When documentation states bacterial pneumonia on top of influenza A, exacerbation of chronic obstructive pulmonary disease (COPD), 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.

(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.)

Use an additional code to identify exposure to tobacco, history of tobacco dependence, or tobacco dependence.

Coder critical thinking

Use clinical indicators to support query opportunities for chronic and acute respiratory failure as appropriate. Encourage providers to

describe presentation as compared to baseline function. Respiratory therapy assessments often provide assessments of baseline function. Interventions provided will support the capture of exacerbation or failure.

Always consider the presence of an acute respiratory infection such as pneumonia, as it often accompanies an exacerbation.

Capture of any of the above diagnoses could influence a DRG change if they meet the definition of principal diagnosis.

Common comorbidities related to advanced COPD include respiratory neoplasms, malnutrition, depression, and nicotine dependence.

Smoker's cough (J41.0), although not a CC/MCC, impacts quality metrics and hospital rankings and is HCC/HHS risk adjusted.

References

- COPD Foundation. (n.d.). What is COPD? Retrieved from *www.copd-foundation.org/What-is-COPD/Understanding-COPD/What-is-COPD.aspx*

- Global Initiative for Chronic Obstructive Lung Disease. (2017). *Pocket guide to COPD diagnosis, management, and prevention.* Retrieved from *https://goldcopd.org/wp-content/uploads/2016/12/wms-GOLD-2017-Pocket-Guide.pdf*

- Mayo Clinic. (2017, April 28). Emphysema. Retrieved from *www.mayoclinic.org/diseases-conditions/emphysema/symptoms-causes/syc-20355555*

- Medline Plus. (2019, September 11). Chronic bronchitis. Retrieved from *https://medlineplus.gov/chronicbronchitis.html*

▶ E-Cigarette, or Vaping, Product Use Associated Lung Injury (EVALI)/ Vaping-Associated Pulmonary Injury (VAPI) (J68.-, J69.-, J80.-, J81.-, J84.-)

Definitions

Vaping is the practice of inhaling and exhaling aerosols or "vapors" produced by a delivery device referred to as an e-cigarette. Aerosols are produced by the heating of substances including chemicals, nicotine, flavorings, and a combination of propellants, solvents, and oils.

These chemicals may contain heavy metals, including lead, carcinogens, ultrafine particles, and agents used for cleaning the device, which are also inhaled. To further alter the composition for enhanced effects or a "kick," users have reported adding other potentially harmful substances and oils.

There are additional devices that heat and extract cannabinoids for inhalation in a process called **dabbing.** Most individuals report vaping the cannabis compounds of THC and CBD and nicotine products.

Both vaping and dabbing have been associated with lung injury. The Centers for Disease Control and Prevention (CDC) reported in October 2019 that the cause of the lung illnesses has not been identified, but it might be related to prefilled THC cartridges.

EVALI (E-Cigarette, or Vaping Product Use Associated Lung Injury) is the name sanctioned by the CDC to describe a vaping-associated lung injury.

VAPI (Vaping-Associated Pulmonary Injury) is an umbrella term used to describe a syndrome encompassing lung disease associated with the use of vaping products.

Lipoid pneumonia is a rare condition that occurs when fat particles enter the lungs. Lipoids, also known as lipids, are fat molecules. The oils and solvents inhaled when vaping may contribute to lipoid pneumonia. Use of this term is classified as pneumonitis due to the inhalation of oils and essences (J69.1).

Diagnostic criteria

Varied substances are used in vaping (flavored oils, cannabis, nicotine, and other drugs), and each substance may influence a patient's response and presentation. The nature of the illness is related to the superheated vapors and solvents that are inhaled, leading to damage in lung function.

Patients often present with pneumonia-like symptoms, including coughing, chest pain, and shortness of breath. Other symptoms include abdominal pain, nausea, vomiting, and diarrhea—accompanied by fever, chills, and weight loss. Although the presentation mirrors pneumonia, patients do not typically respond to antibiotic therapy.

Hospitalization usually is related to hypoxia and the presence of systemic inflammatory response syndrome (SIRS). Acute respiratory distress syndrome often leads to the need for ventilatory support.

The length of stay can be days to weeks, and readmissions often occur.

Lung biopsies are not required for the diagnosis, but they are often performed to rule out the presence of infection.

Key indicators to identify EVALI include:

- History of e-cigarette use/vaping within 90 days of symptom onset
- Bilateral pulmonary infiltrates on imaging, description of ground-glass opacities
- Elevated white blood cell count, procalcitonin, and inflammatory markers

- Increased neutrophils and sparse to moderate amounts of lipid-laden alveolar macrophages in bronchoalveolar lavage specimens
- Absence of pulmonary infection on initial workup
- Rule-out of differential diagnoses (cardiac, rheumatologic, or neoplastic)
- Failed outpatient treatment (failed response to antibiotics)
- Young in age (teens to early 20s)

Treatment

In October 2019, the CDC released interim guidance for treatment of EVALI in an effort to provide a framework for healthcare providers in their initial assessment, evaluation, management, and follow-up of the condition.

In-hospital treatment should be considered for patients with a potential lung injury (as demonstrated by respiratory distress) and for patients with comorbidities that compromise pulmonary function or decrease oxygen saturation (< 95%). Outpatient management may be optimal for those demonstrating a less severe injury.

Treatment may include:

- Initiation of corticosteroids
- Early initiation of antimicrobial coverage for community-acquired pneumonia
- Ventilatory support (supplemental oxygen, bilateral positive airway pressure [BiPAP], or mechanical ventilation)

Coding considerations

In October 2019, the CDC released instruction to use the term EVALI when describing this condition. There was also a release by the National Center for Health Statistics (NCHS) providing coding guidance. This

guidance is consistent with current clinical knowledge about disorders related to e-cigarettes or vaping. Proposals for new codes that are intended to address additional detail regarding use of e-cigarette or vaping products will be presented at the March 2020 ICD-10 Coordination and Maintenance Committee meeting.

For patients documented with EVALI, assign the code for the specific condition, such as:

- J68.0, Bronchitis and pneumonitis due to chemicals, gases, fumes and vapors; includes chemical pneumonitis
- J69.1, Pneumonitis due to inhalation of oils and essences; includes lipoid pneumonia
- J80, Acute respiratory distress syndrome
- J82, Pulmonary eosinophilia, not elsewhere classified
- J84.114, Acute interstitial pneumonitis
- J84.89, Other specified interstitial pulmonary disease

For patients with acute lung injury but without further documentation identifying a specific condition (pneumonitis, bronchitis), assign code:

- J68.9, Unspecified respiratory condition due to chemicals, gases, fumes, and vapors

Acute nicotine exposure can be toxic. Children and adults have been poisoned by swallowing, breathing, or absorbing e-cigarette liquid through their skin or eyes. For these patients, assign code:

- T65.291-, Toxic effect of other nicotine and tobacco, accidental (unintentional); includes toxic effect of other tobacco and nicotine NOS

For a patient with acute tetrahydrocannabinol (THC) toxicity, assign code:

- T40.7X1-, Poisoning by cannabis (derivatives), accidental (unintentional)

If the toxic effect code is used, sequencing will follow the *Official Guidelines for Coding and Reporting*, Section I.C.19.e.5.d.

Coder critical thinking

To identify the presence of EVALI, the provider must rule out other etiologies. Coding efforts should encourage providers to identify what diagnoses have been ruled out and what diagnoses remain in consideration.

Coders should work to ensure all appropriate secondary diagnoses are captured, which may include acute respiratory distress syndrome, acute respiratory failure, SIRS, other complications related to the disease process such as infection, and other organ failures.

The record review should also capture any substance use disorder as appropriate.

References

- ACDIS Regulatory Committee (2019, October 16). *Regulatory Committee insight: E-cigarette, or vaping, product use associated lung injury.* Retrieved from *https://acdis.org/resources/regulatory-committee-insight-e-cigarette-or-vaping-product-use-associated-lung-injury*
- Minnesota Department of Health. (2019, August 13). *Health advisory: Severe acute lung disease among youth who report vaping.* Retrieved from *www.health.state.mn.us/communities/ep/han/2019/aug13lung.pdf*

- National Center for Health Statistics. (2019, October 17). *ICD-10-CM official coding guidelines – supplement: Coding encounters related to e-cigarette, or vaping, product use.* Retrieved from *www.cdc.gov/nchs/data/icd/Vapingcodingguidance2019_10_17_2019.pdf?fbclid=IwAR2zFvt8mZk61G5dWLJumXK9ZGaVy_lXry_3azYTYFeSOTJoiY7p-mTroTag*
- Siegel, D. A., Jatlaoui, T. C., Koumans, E. H., Kiernan, E. A., Layer, M., Cates, J. E., … Lung Injury Response Epidemiology/Surveillance Group. (2019, October 18). Update: Interim guidance for health care providers evaluating and caring for patients with suspected e-cigarette, or vaping, product use associated lung injury — United States, October 2019. CDC *Morbidity and Mortality Weekly Report.* Retrieved from *www.cdc.gov/mmwr/volumes/68/wr/mm6841e3.htm*