

# *Coding for Respiratory Services*

**Audio Seminar/Webinar**  
*June 18, 2009*

***Practical Tools for Seminar Learning***

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The faculty has reported no vested interests or disclosures regarding this presentation.

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## **Objectives**



- ◆ Review the ICD-9-CM coding classification to report respiratory diagnoses
- ◆ Review CPT coding guidelines related to outpatient respiratory procedures (bronchoscopy, lung biopsy, etc.)
- ◆ Discuss challenging coding cases related to outpatient respiratory procedures consistent with CPT coding guidelines

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## **Alveolar-arterial Pressure Gradient**

- ◆ Alveolar-arterial pressure gradient (A-a gradient)
  - Difference between the partial pressure of oxygen within the alveoli and partial pressure of oxygen within the arterial blood
  - Measures the adequacy of oxygen transfer from alveoli to the pulmonary capillary blood

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## *Hypoxemia*

- ◆ Determine the causative mechanism
- ◆ Evaluate A-a gradient levels
  - Hypoventilation does not increase A-a gradient levels
  - V/Q mismatch or shunting present with low PaO<sub>2</sub> levels increases A-a gradient levels
- ◆ Evaluate patient response to supplemental oxygen

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## *Hypoxemia*

- ◆ What mechanism is responsible?
  - Hypoventilation is responsible when:
    - A-a gradient levels are normal, and
    - PaO<sub>2</sub> levels are low
  - V/Q mismatch is responsible when:
    - PaO<sub>2</sub> levels respond favorably to supplemental oxygen
  - Shunting is responsible when:
    - PaO<sub>2</sub> levels don't respond favorably to supplemental oxygen

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## ***Dead Space***

- ◆ **Respiratory components not involved in gas exchange**
- ◆ **Anatomy**
  - Upper respiratory structures extending to terminal bronchioles
- ◆ **Physiology**
  - Ventilated alveoli does not come into contact with pulmonary capillary blood flow

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## ***Key Respiratory Failure Terms***

- ◆ **Hypoxemia: pathologically decreased level of  $CaO_2$ ,  $PaO_2$ , and/or  $SaO_2$  in arterial blood**
- ◆ **Hypercapnia: pathologically increased level of  $PaCO_2$  in arterial blood**
- ◆ **Tidal Volume: the volume of air moved into and out of the lungs in one breath**
- ◆ **Minute Ventilation: the tidal volume multiplied by the number of breaths per minute**

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## ***Key Respiratory Failure Terms***

- ♦ **CaO<sub>2</sub>: total oxygen content of arterial blood**
- ♦ **PaO<sub>2</sub>: partial pressure of oxygen tension in arterial blood**
- ♦ **PaCO<sub>2</sub>: partial pressure of carbon dioxide in arterial blood**
- ♦ **SaO<sub>2</sub>: percentage of oxygen saturating hemoglobin in arterial blood or the oxygen saturation rate**

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## ***Definition of Respiratory Failure***

- ♦ **Impairment of gas exchange**
- ♦ **Decreased blood oxygen levels**
  - (**<60 mm Hg PaO<sub>2</sub>**)
- ♦ **Increased blood carbon dioxide levels**
  - (**>50 mm Hg PaCO<sub>2</sub>**)

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## ***Three Processes of Respiration***

- 1. Transfer of oxygen across the alveolus and into arterial blood**
- 2. Transport of oxygen to the tissues**
- 3. Removal of carbon dioxide (CO<sub>2</sub>) from blood into alveolus and then exhaled out into external environment**

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## ***Respiratory Failure – Type 1***

- ♦ Hypoxemic Respiratory Failure**
  - Decreased arterial oxygen level *with***
  - Normal or low arterial carbon dioxide level *and***
  - Normal or elevated pH level**

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## ***Respiratory Failure – Type 2***

- ♦ **Hypercapnic Respiratory Failure**
  - Increased arterial carbon dioxide level and decreased pH level ***with or without*** decreased arterial oxygen level
  - Also known as ventilatory failure or pump failure

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## ***Acute or Chronic?***



- ♦ **Type 1 (Hypoxemic)**
  - Virtually always acute
  - Rarely chronic
- ♦ **Type 2 (Hypercapnic)**
  - May be acute or chronic
  - Acute
    - Elevated PaCO<sub>2</sub> and low pH levels
  - Chronic
    - pH levels higher than expected

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## ***Five Major Mechanisms Contributing to Respiratory Failure***

- 1. Ventilation-Perfusion Mismatch (V/Q mismatch)**
- 2. Shunt (intrapulmonary or extrapulmonary)**
- 3. Alveolar hypoventilation**
- 4. Diffusion impairment**
- 5. Low inspired partial pressure of oxygen**

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## ***Ventilation-Perfusion Mismatch***

- 1. For normal gas exchange, there should be equitable balance between perfusion and ventilation within the lung**
- 2. Imbalance can occur from areas of lung being ventilated but not perfused (increased physiologic dead space) or perfused but not ventilated (shunting)**
- 3. Most common mechanism underlying respiratory failure**

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## ***Ventilation-Perfusion Mismatch***

4. Some degree of V/Q mismatch occurs in nearly all respiratory disorders (e.g., asthma, emphysema, pneumonia, pulmonary embolism, atelectasis, ARDS, pneumothorax, etc.)
5. Generally responds well to oxygen supplementation except in severe cases

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## ***Pulmonary Shunting***

- ◆ Occurs when deoxygenated venous blood bypasses ventilated alveoli and mixes with oxygenated arterial blood that has flowed through ventilated alveoli, leading to reduction of PaO<sub>2</sub>
  - Intrapulmonary shunt
  - Extrapulmonary shunt

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## ***Alveolar Hypoventilation***

- 1. Results from reduction in minute ventilation or increase in proportion of dead space**
- 2. Major primary cause of hypercapnia, which may then lead secondarily to hypoxemia**
- 3. Unlike V/Q mismatch or shunt, alveolar hypoventilation alone does not increase the A-a gradient**

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## ***Coding of Respiratory Failure due to Procedure, Trauma, or Shock***

- ♦ Acute respiratory failure (or ARDS) documented as due to procedure or trauma or due to shock related to procedure or trauma would be coded to **518.5****
- ♦ Acute respiratory failure documented as due to shock from a disease process (e.g., septic shock, hypovolemic shock, distributive shock, etc.) would be coded to **518.81**, comparable to how acute respiratory failure from any other disease process would typically be coded**

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## ***Acute Respiratory Distress Syndrome (ARDS)***

- ◆ A diffuse inflammatory process involving both lungs
- ◆ Considered a variant of hypoxemic respiratory failure
- ◆ Sometimes referred to as “capillary leak syndrome”
- ◆ Causes summarized in CC 3<sup>rd</sup> Qtr 1988, page 8 (coded to **518.82** if unrelated to trauma or px)

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## ***Criteria for Diagnosing ARDS***

1. Hypoxemia due to massive intrapulmonary shunting refractory to oxygen therapy
2. Formula for measuring hypoxemia in ARDS is the PaO<sub>2</sub> divided by the fraction of inspired oxygen (FIO<sub>2</sub>). Measurements equal to or below 200 are indicative of ARDS
3. Bilateral diffuse noncardiogenic pulmonary edema (NPE) from capillary leak into alveoli
4. Pulmonary capillary wedge pressure at or below 18 to exclude CHF as cause of edema

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## ***Acute Lung Injury (ALI)***

- ♦ Acute lung injury is part of the same continuum of disease as ARDS with a lower level of severity
- ♦  $\text{PaO}_2/\text{FIO}_2$  would be between 200 and 300
  - The lower the  $\text{PaO}_2/\text{FIO}_2$  the more severe the ARDS/ALI disorder
- ♦ Since it is part of the same disease continuum as ARDS, Acute lung injury would also be coded to **518.82**

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## ***Transfusion Related Acute Lung Injury (TRALI)***

- ♦ ICD-9-CM has a separate code for acute lung injury in the specific context of an inflammatory lung reaction to blood transfusion: **518.7**
- ♦ This is sometimes referred to as transfusion-related acute lung injury (TRALI)

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### ***Polling Question #1***

Chronic pain patient has overdosed on his narcotic medication and is brought to the ER with AMS and SOB. Work-up reveals PaCO<sub>2</sub> of 70 mmHg, PaO<sub>2</sub> of 45 mmHg, and pH level of 7.20 but with no significant increase in the A-a gradient. Patient responds favorably to oxygen therapy and administration of narcotic antagonist. Final Dx is "mild Type II acute respiratory failure due to narcotic overdose."

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### ***Polling Question #1***



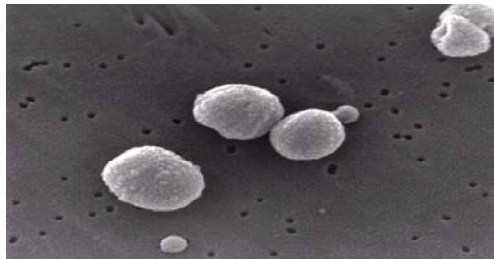
Based on the information provided, which mechanism is most likely responsible for the respiratory failure in the above scenario:

- [\*1] V/Q Mismatch**
- [\*2] Alveolar Hypoventilation**
- [\*3] Shunt**
- [\*4] Diffusion Impairment**

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## *Pneumonia and Pneumonitis*

- ♦ **Pneumonia**
  - infectious inflammation of lung tissue
- ♦ **Pneumonitis**
  - noninfectious inflammation of lung tissue



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## *Radiographic Infiltrate Patterns and Code Assignment*

- ♦ **Lobar Pattern**
  - Diffuse consolidated infiltrate of all or most of a particular lobe
  - Respects anatomic boundaries and does not cross pulmonary fissures
  - In ICD-9-CM index, the term “lobar pneumonia” defaults to pneumococcal pneumonia (code **481**)

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## ***Radiographic Infiltrate Patterns and Code Assignment***

- Also known as bronchopneumonia pattern
  - Bronchopneumonia defaults to code **485** in ICD-9-CM index if no specific pathogen is identified
- Characterized by patchy infiltrates in multiple areas of lung
- Often originating in terminal bronchioles and spreading to their adjacent lobular alveoli but not involving the entire lobe
- Not confined by pulmonary fissures

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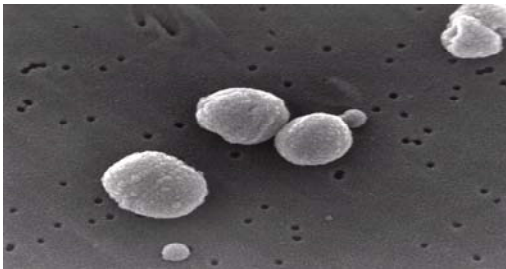
## ***Radiographic Infiltrate Patterns and Code Assignment***

- ♦ **Interstitial Pattern**
  - Diffuse pattern arising within alveolar walls (i.e., interstitial tissue of lung) rather than the alveolar spaces
  - Often seen in viral pneumonias
  - Don't assign noninfectious interstitial pneumonitis codes (categories **515-516**) for acute infectious interstitial pneumonias

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## ***Community-acquired Pneumonia (CAP)***

- ♦ Lung infection developing in a patient who has not been hospitalized or resided in chronic care facility for at least 14 days



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## ***Typical CAP***

- ♦ **Typical CAP**
  - Characterized by:
    - Rapid onset and greater severity of symptoms
    - Densely consolidated infiltrates on chest x-ray
    - Productive cough
    - Large number of polymorphonuclear neutrophils (PMN)

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## *Typical CAP Pathogens*

- ◆ **Streptococcus pneumoniae (pneumococcus)**
  - ICD-9-CM code **481**
- ◆ **Haemophilus influenza**
  - ICD-9-CM code **482.2**
- ◆ **Moraxella catarrhalis**
  - ICD-9-CM code **482.83**

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## *Atypical CAP*

- ◆ **Atypical CAP**
  - **Characterized by:**
    - A more gradual onset and lesser severity of symptoms
    - Patchy interstitial infiltrates on chest x-ray
    - Nonproductive cough
    - Fewer PMNs but more mononuclear inflammatory cells (e.g., lymphocytes)

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## *Atypical CAP Pathogens*

- ♦ **Mycoplasma pneumoniae**
  - ICD-9-CM code **483.0**
- ♦ **Chlamydia (or Chlamydophila) pneumoniae**
  - ICD-9-CM code **483.1**
- ♦ **Legionella**
  - ICD-9-CM code **482.84**
- ♦ **Viral Pneumonias**
  - ICD-9-CM category **480** and **487.0** codes 33

## *Cautionary Note*



- ♦ **Pneumonias don't always follow a predictable pattern. Pathogens associated with typical CAP may follow a more atypical course, and pathogens associated with atypical CAP may present more like typical CAP.**

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## Coding Note



- ◆ In ICD-9 CM index, the phrases “atypical” or “primary atypical” as subterms for pneumonia are classified only to **486** for unspecified pneumonia. The specific pathogen must be identified and causally linked to the pneumonia in order to assign a more specific pneumonia code.

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## Hospital-acquired Pneumonia (HAP)

- ◆ Two types
  - Nosocomial Pneumonia
  - Ventilator-acquired (or Ventilator-associated) Pneumonia (VAP)



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## ***Nosocomial Pneumonia***

- ♦ Pneumonia occurring at least 48 hours subsequent to hospital admission
- ♦ Early onset (first 4 days of hospitalization)
  - pathogens tend to be same as with CAP
- ♦ Late onset (after 4 days of hospitalization)
  - pathogens tend to be more virulent (e.g., Pseudomonas, E. coli, MRSA, Acinetobacter)
- ♦ Caused by inhalation of infected aerosols
- ♦ Spread from different infection site, aspiration of oropharyngeal or GI contents, or reaction to a procedure
- ♦ If nosocomial pneumonia is documented as complication of procedure, then assign **997.39** plus the appropriate pneumonia code

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## ***Ventilator-associated Pneumonia (VAP)***

- ♦ Pneumonia occurring at least 48 hours after tracheal intubation and initiation of mechanical ventilation
- ♦ Frequently associated with aspiration of oropharyngeal or GI contents
- ♦ Bronchoscopic sampling involving protected brushings or bronchoalveolar lavage is considered the most accurate method for diagnosing VAP

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## *Coding VAP*

- ◆ Effective 10/1/08, **997.31** is the appropriate code for VAP
- ◆ Physician must state that the mechanical ventilation is the cause of pneumonia or use the term “ventilator-acquired” or “ventilator-associated” pneumonia in order for coder to report **997.31**
- ◆ Mere fact that patient develops pneumonia after being placed on mechanical ventilation does not justify assigning **997.31**
- ◆ If there is superimposed infectious pneumonia resulting from the VAP, report **997.31** first, followed by code for the pathogen. Do not assign a code from categories **480-484** for the pneumonia

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## *Coding VAP – Example*

- ◆ Pseudomonas pneumonia due to ventilator-acquired pneumonia would be coded as **997.31** & **041.7**

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## *Coding Note*

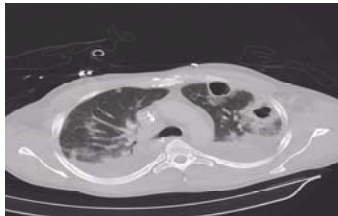


- ◆ Whether pneumonia is community or hospital acquired, do **NOT** report a specific infectious pneumonia code based solely on pathogens found via Gram-staining or cultures. Any pathogen discovered must be causally linked to the pneumonia in physician documentation.

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## *Common Complications of Pneumonia*

- ◆ Parapneumonic Pleural Effusion & Empyema
- ◆ Lung Abscess



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## ***Parapneumonic Effusion & Empyema***

- ♦ **Parapneumonic effusion**
  - Develops as inflammatory reaction to pneumonia
  - Occurs in roughly half of all pneumonia cases
  - Larger effusion or effusion associated with pneumonia that goes untreated may progress to complicated parapneumonic effusion and/or empyema
- ♦ **Empyema**
  - Pus in the pleural space

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## ***Stages of Parapneumonic Effusion & Empyema***

- ♦ **Exudative Stage (Acute)**
  - Free-flowing pleural exudative fluid as inflammatory reaction to pneumonia
  - Fluid is usually sterile during this stage
  - If underlying pneumonia is treated, many effusions will resolve and not progress to later two stages
  - Coded to **511.9** in ICD-9 CM

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## ***Stages of Parapneumonic Effusion & Empyema***

- ◆ **Fibropurulent Stage (Intermediate)**
  - Fluid thickens and fibrin deposits develop in pleural space, typically accompanied by bacterial invasion and/or frank pus (i.e., early empyema)
  - Effusion may be characterized as “complicated” parapneumonic effusion at this point
  - Infected pleural effusion without mention of empyema codes to **511.0**
  - Infected pleural effusion with pus in pleural space or mention of empyema is coded to **510.9** if no fistula is documented

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## ***Stages of Parapneumonic Effusion & Empyema***

- ◆ **Organizational Stage (Chronic)**
  - Empyema has reached chronic stage
  - Fibrin deposits organize into thick, non-elastic peels, and adhesive scar tissue
  - Fibrothorax, or “trapped lung,” may develop as the fibrin peel causes inadequate lung expansion and consequent gas exchange impairment
  - Empyema in this stage may lead to bronchopleural fistula or bronchocutaneous fistula (aka empyema necessitans) with skin of chest wall
  - Any empyema-induced fistula would code to **510.0**

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### ***When to Code Parapneumonic Effusion***

- ◆ No specific advice in Coding Clinic as to whether pleural effusion would be considered inherent to pneumonia as it is to CHF
- ◆ Pleural effusion is common, but not universal, complication of pneumonia
- ◆ Small, uncomplicated parapneumonic effusions in the exudative stage typically resolve as the pneumonia is treated and usually don't require separate diagnostic or therapeutic work-up; thus, these effusions probably should not be separately reported with the pneumonia

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### ***When to Code Parapneumonic Effusion***

- ◆ Parapneumonic effusions in the exudative stage that are large or thick (greater than 1 cm in diameter on lateral decubitus chest x-ray) will nearly always be worked up with diagnostic thoracentesis to check for possible infection. If so, it would then meet the criteria for reporting secondary diagnoses contained in Coding Clinic 4th QTR 2008 pages 305-306 and could be additionally reported

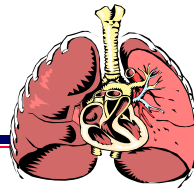
48

## ***When to Code Parapneumonic Effusion***

- ◆ Parapneumonic effusions that progress to fibropurulent or organizational stages will typically require therapeutic measures and increased clinical monitoring; thus, they too, would meet the aforementioned criteria for reporting an additional diagnosis.

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## ***Lung Abscess***



- ◆ Coded to **513.0**
- ◆ Defined as necrotic lung parenchyma with formation of pus filled cavities, each greater than 2 cm in diameter
- ◆ Lung abscess due to pneumonia may be referred to as necrotic pneumonia or acute necrotizing pneumonia.

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## ***Coding Note***



- ♦ Both empyema and lung abscess are commonly the result of superimposed infectious pneumonia in the setting of aspiration pneumonia. As a result, organisms typically found in the oropharyngeal area (e.g., Pneumococcus or such anaerobes as Peptostreptococcus, Prevotella, Bacteroides, and Fusobacterium) are often responsible for these infections. Check for documentation of aspiration pneumonia if empyema or lung abscess is present.

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## ***Chronic Obstructive Pulmonary Disease (COPD)***

- ♦ Chronic, progressive pulmonary disorder involving largely irreversible obstructive airflow limitation and inflammatory response to noxious gases and particles

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## ***Key COPD Terms***

- ◆ **FEV1: the volume of air expired within the first second of maximal expiration following a maximal inspiration**
  - FEV (Forced Expiratory Volume)
- ◆ **FVC: the maximum volume of air that can be expired during a forced expiratory maneuver**
  - FVC (Forced Vital Capacity)
- ◆ **FEV1/FVC: the percentage of the maximum volume of air that is expired within the first second of maximal expiration following a maximal inspiration**

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## ***Major Forms of COPD***

- ◆ **Emphysema**
  - Permanent enlargement of air spaces distal to terminal bronchioles accompanied by destruction of alveolar walls without obvious fibrosis
  - These changes are linked to excess protease (e.g., elastase) activity or reduction in antiprotease activity
  - Tobacco smoke is most common precipitant
  - Tobacco increases neutrophil and macrophage proliferation, leading to increased elastase and inhibition of antiprotease activity

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## ***Major Forms of COPD***

### **♦ Chronic Bronchitis**

- Productive cough for at least 3 months in at least two consecutive years when all other causes of productive cough have been excluded
- Neutrophil-induced elastase hyperactivity increases mucus secretions and mucus gland hyperplasia

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## ***Is Asthma a Form of COPD?***



- ♦ Asthma involves different inflammatory mechanisms and therapeutic response compared to COPD
- ♦ In asthmatic airway inflammation, CD4+ lymphocytes and eosinophilia predominate
- ♦ In COPD airway inflammation, CD8+ lymphocytes and neutrophilia and macrophage proliferation predominate. Inflammatory mediators are also different

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## *Is Asthma a Form of COPD?*

- ♦ Asthma displays positive response to bronchodilator and steroid therapy, whereas COPD, at least in its stable form, does not. However, acute exacerbations of COPD produce greater eosinophil production, similar to asthma, and may show more favorable response to therapeutic bronchodilation
- ♦ Unlike COPD, there is little or no destruction of parenchymal tissue in asthma
- ♦ Airway hypersensitivity may or may not be present in COPD but is always a component of asthma

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## *Asthma & COPD*

- ♦ In acute asthma, airflow limitation is reversible, but chronic asthma may develop and display irreversible component of airflow limitation similar to COPD. Since the clinical course and presentation in chronic asthma is comparable to COPD, some physicians consider chronic asthma to be a form of COPD or at least deem the distinction between the two to be negligible. ICD-9-CM classifies chronic asthma (**493.2x**) as a form of COPD, but there must be documentation of COPD and asthma together, chronic obstructive asthma, or chronic asthmatic bronchitis to justify assigning **493.2x**.

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### ***Is Bronchiectasis a Form of COPD?***

- ♦ **Bronchiectasis is an irreversible dilation of airways caused by a variety of conditions involving bronchial obstruction, impairment of drainage, and inflammatory destruction of airway walls**
- ♦ **Because of its obstructive and irreversible components, bronchiectasis is sometimes viewed as a form of COPD**

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### ***Is Bronchiectasis a Form of COPD?***

- ♦ **Others point out that true COPD (i.e., emphysema, chronic bronchitis) is a primary pulmonary disorder, whereas bronchiectasis represents secondary dilational changes from other primary pulmonary pathologies; as a result, these clinicians prefer to categorize bronchiectasis as a potential complication or sequela of COPD rather than as an actual type of COPD**
- ♦ **ICD-9-CM classifies bronchiectasis to category 494 as an “allied condition” of COPD**

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## ***Guidelines for Definition & Classification of COPD***

- ◆ **The Global Initiative for Chronic Obstructive Lung Disease (GOLD)**
  - Joint effort overseen by the National Heart, Lung, and Blood Institute, the National Institutes of Health, and the World Health Organization to increase international awareness of COPD
  - Project was initially launched in 1997 and has been publishing annually updated COPD guidelines since 2001
  - GOLD criteria does not define chronic bronchitis and emphysema as separate disorders but as part of a continuum of COPD pathology since these two disorders occur together so often

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## ***Guidelines for Definition & Classification of COPD***

- ◆ **American Thoracic Society (ATS)**
  - ATS guidelines provide separate definitions for emphysema and chronic bronchitis (see above)
  - Guidelines published in 2004

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## ***Spirometric Classification of COPD***

- ◆ **Severity Stages from GOLD**
  - Based on post bronchodilator measurements of FEV1 and FEV1/FVC
  - For healthy individuals, normal value of FEV1/FVC is between 70%-80%
  - COPD patients have FEV1/FVC level below 70% and are staged according to the following FEV1 measurements:
    - Stage I (mild): FEV1 at or greater than 80%
    - Stage II (moderate): FEV1 at 50% to 79%
    - Stage III (severe): FEV1 at 30% to 49% without chronic respiratory failure
    - Stage IV (very severe): FEV1 at <30% or <50% plus chronic respiratory failure

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## ***COPD Exacerbation***

- ◆ **GOLD & ATS Definition**
  - Event characterized by change in baseline dyspnea, cough, and/or sputum beyond normal variations, acute in onset, and may require change in regular medication

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## ***Three Cardinal Symptoms of COPD***



- 1. Worsening dyspnea**
- 2. Increase in sputum purulence**
- 3. Increase in sputum volume**

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## ***COPD Exacerbation***

- ♦ **Type I Exacerbation (severe)**
  - All three cardinal symptoms
- ♦ **Type II Exacerbation (moderate)**
  - Two cardinal symptoms
- ♦ **Type III Exacerbation (mild)**
  - One cardinal symptom plus any one of the following:
    - 1. Upper respiratory infection within past 5 days**
    - 2. Fever without other apparent cause**
    - 3. Increased wheezing**
    - 4. Increased cough**
    - 5. Increased respiratory rate or heart rate by 20% or more above baseline**

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## ***Indications for Mechanical Ventilation in COPD Exacerbation***

- ◆ PaO<sub>2</sub> < 60mmHg
- ◆ SaO<sub>2</sub> < 90%
- ◆ pH < 7.36 plus hypercapnia (PaCO<sub>2</sub> > 50mmHg)

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## ***COPD Coding Issues***

- ◆ **Emphysema exacerbation**
  - Most emphysema exacerbation involves superimposed acute bronchitis, which would take coder to **466.0** & **492.8** if there is emphysema with acute bronchitis but no mention of chronic bronchitis.
  - If there is mention of emphysematous bronchitis or chronic bronchitis with emphysema and superimposed acute bronchitis, then only code **491.22** is needed
  - Some emphysema exacerbations represent only progressive worsening of emphysematous changes without superimposed bronchitis. Emphysema exacerbation without further specification should probably be assigned to **492.8** emphysema code only (unofficial advice) <sup>68</sup>

## ***COPD Coding Issues***

- ♦ **COPD exacerbation with acute bronchitis and acute asthma exacerbation**
  - **Coding Clinic 3rd QTR 2006 page 20 recommends 491.22 and 493.22 for this scenario**
    - **Some have taken issue with this advice because these codes are excluded from each other in the ICD-9-CM tabular list**
  - **Acute bronchitis and acute asthma exacerbation are separately indented at equal levels beneath main term of obstructive lung disease in the ICD-9-CM index, which would indicate that both codes may be reported per coding conventions** 69

## ***COPD Coding Issues***

- **Exclusion note in tabular list could just mean that the disease process contained within chronic obstructive asthma is not captured by the chronic obstructive bronchitis code, not that the two are mutually exclusive. Both codes would be needed to capture the full range of the COPD exacerbation in this scenario. Although asthma and COPD involve distinct inflammatory mechanisms, as described earlier, elements of emphysema, asthma, and chronic bronchitis can still overlap in some patients, particularly when the COPD is in exacerbation.** 70



***COPD Coding Issues continued***

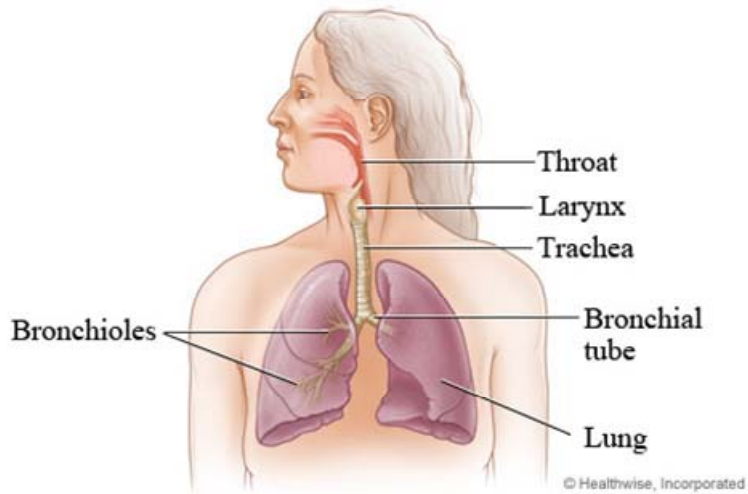
- ♦ **Sequencing of COPD exacerbation code and the code for condition triggering the exacerbation**
  - **Determined by the circumstances of admission**
  - **The condition triggering the exacerbation (e.g., pneumonia, CHF, etc.) would need to be brought under control in order to completely stabilize the COPD, which would favor the precipitating condition being sequenced first, but this will not universally be the case**

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***PROCEDURES***

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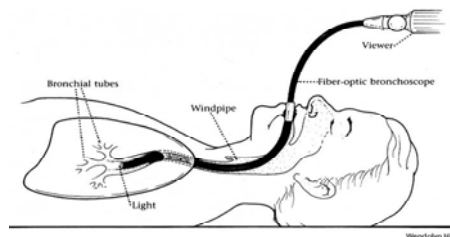
## Respiratory System



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## Bronchoscopy

- ◆ Inspection of the lung and airway for diagnostic and therapeutic purposes
  - Flexible fiberoptic bronchoscopy
  - Rigid bronchoscopy



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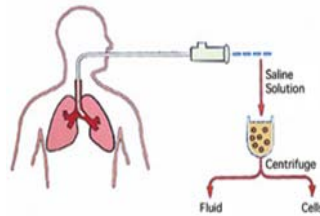
## ***Bronchoscopy with Bronchial Alveolar Lavage (BAL)***

### ◆ Instillation of saline into distal airways with aspiration for analysis

- CPT code **31624**
- Append -50 modifier if performed bilaterally

- Endobronchial biopsy (**31625**), transbronchial biopsy (**31628**), and transbronchial needle biopsy (**31629/31633**)

Performed during the same session are reported separately



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## ***Bronchoscopy with Biopsy***

### ◆ Brush Biopsy/Brushing or Washing of Bronchus (Lung)

- Endobronchial suction aspiration (by saline)
- Code **31622**, designated 'separate procedure' and included in any surgical bronchoscopy
- Code **31623**, protected brushings
  - Report separately if performed in addition to a biopsy from code range **31625-31629**

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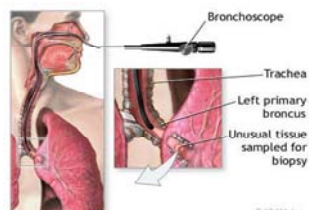
## ***Bronchoscopy with Biopsy***

- ◆ **Endobronchial biopsy**
  - Tissue samples obtained from within the lumen of the trachea and bronchus
    - **31625**, Bronchial or endobronchial biopsy(s), single or multiple sites

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## ***Bronchoscopy with Biopsy***

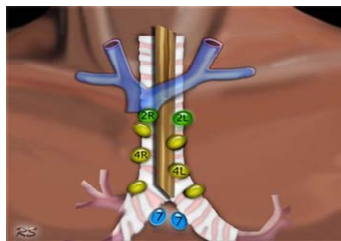
- ◆ **Transbronchial biopsy**
  - Punctures through terminal bronchus
  - lung tissue samples are obtained (e.g., peribronchial alveoli)
    - **31628**, Transbronchial lung biopsy(s), single lobe Transbronchial biopsy



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## ***Bronchoscopy with Biopsy of Lymph Nodes***

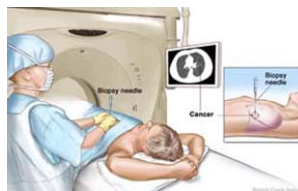
- ♦ **Lymph node biopsy considered transbronchial biopsy**
  - Code **31629**, transbronchial needle aspiration
    - CPT Assistant, September, 2004, pg. 10



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## ***Lung Biopsy***

- ♦ **FNA (fine needle aspiration)**
  - Code **10021/10022** (with imaging)
  - 22 or 25 gauge needle



- ♦ **Biopsy, lung or mediastinum, percutaneous needle**
  - Code **32405**

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***Polling Question #2***

Patient presents with hemoptysis. Physician performs a diagnostic bronchoscopy with transbronchial biopsy with washings and brushings of the upper and lower lobes. Path report reveals endobronchial tissue changes consistent with squamous cell carcinoma.

81

***Polling Question #2***

Based on the documentation select the appropriate CPT code combination:

- [\*1]** 31625, 31623
- [\*2]** 31623, 31628, 31632
- [\*3]** 31628, 31632

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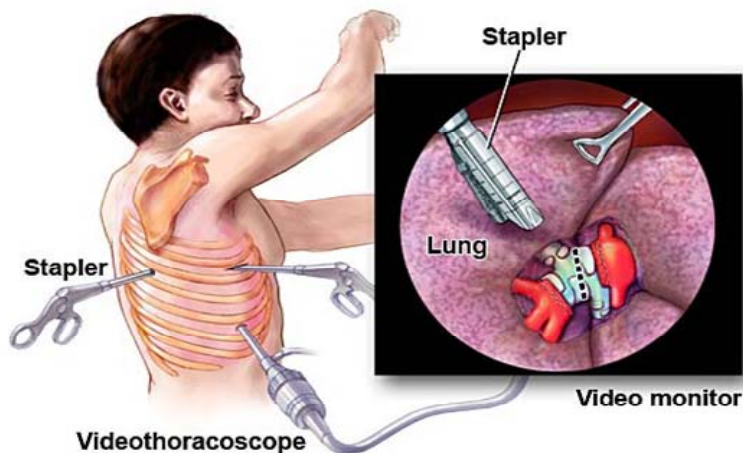
## Bronchoscopy with Bronchial/Tracheal Stents

- ♦ Tracheal stents
  - Code **31631**
- ♦ Bronchial stents
  - Code **31636**, initial bronchus
  - Code **31637**, each additional major bronchus stented
- ♦ Dilation inherent (not reported separately)
  - Code **31630**
- ♦ Revision/adjustment of tracheal/bronchial stent
  - Code **31638**



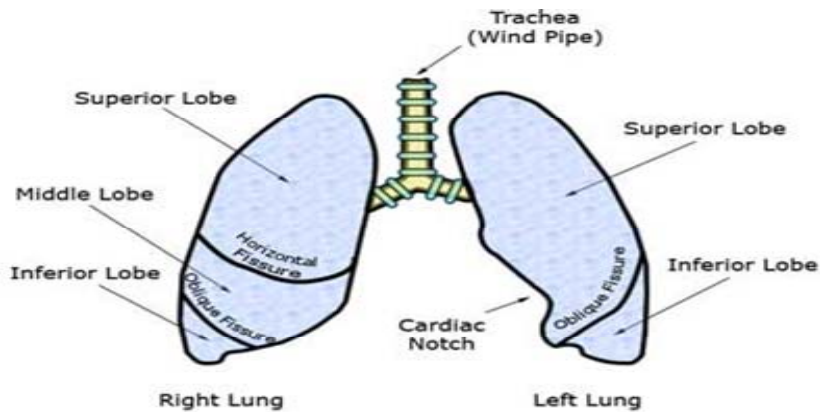
83

## Thoracoscopy



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## Thoracoscopy with Lung Resection



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## Thoracoscopy with Lung Resection

### ♦ Lobectomy

- Code **32663**
- Common indications:
  - Non-small cell lung cancer
  - Fungal infections
  - Localized bleeding
  - Lung abscess
- Removal of all or a segment of Lung



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## *Thoracoscopy with Lung Resection*

- ♦ **Wedge resection**
  - Excision of lung tissue, single/multiple (32657)
  - Biopsy (32602)



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## *Thoracoscopy with Pleurodesis*

- ♦ **Pleurodesis performed in treatment of recurrent pleural effusions/pneumothorax**
- ♦ **Surgical pleurodesis**
  - Mechanical irritation of pleura
    - Rough pad/dry gauze sponge
- ♦ **Chemical pleurodesis**
  - Instillation of chemical irritant into pleural space
    - Sclerosants agents:
      - Talc
      - Nitrogen mustard
      - Doxycycline
      - Bleomycin
      - Quinacrine

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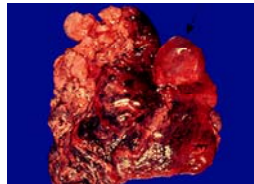
## Thoracoscopy

- ◆ Lung decortication
  - Common indications:
    - Empyema
    - Fibrothorax
    - Mesothelioma
  - Removal of pleural lining
  - Partial (**32651**)
  - Total (**32652**)
- ◆ Removal of fibrin deposits (intrapleural)
  - Code **32653**

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## Thoracoscopy

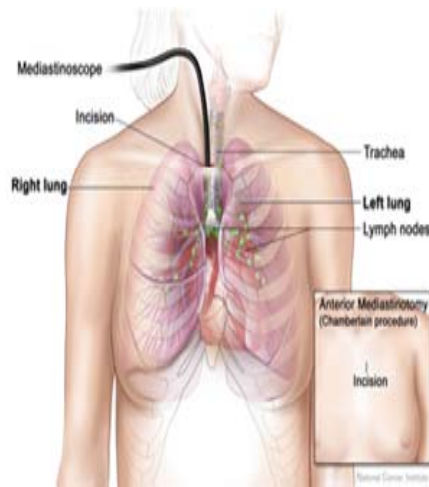
- ◆ Bleb/Bullae (Emphysematous)
  - Localized air pocket underneath the parietal pleura
    - Stages of a bleb
      - Group I: Single large bullae with normal lung
      - Group II: Multiple bullae with underlying normal lung
      - Group III: Multiple bullae with underlying lung diffusely emphysematous
      - Group IV: Multiple bullae with underlying lung affected by other diseases
  - Plicated
    - Rolled/folded over itself
  - Excised
  - Code **32655**



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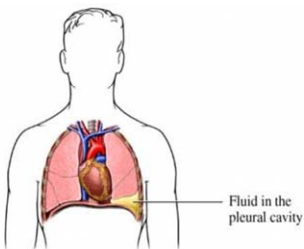
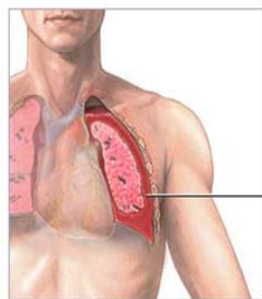
## Mediastinoscopy with Biopsy

- ◆ Lymph node
- ◆ Mediastinum
- ◆ CPT code **39400**



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## Thoracostomy

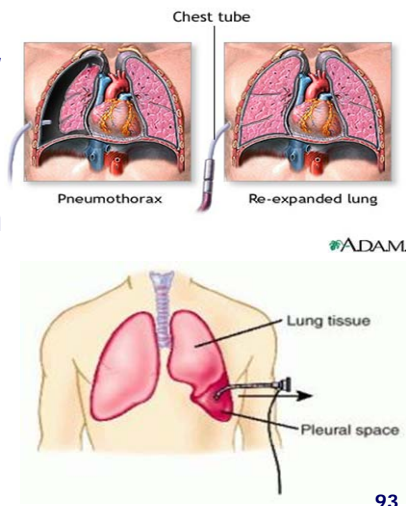


ADAM

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## Tube Thoracostomy

- ◆ Thoracentesis with insertion of tube with or without water seal (32422)
- ◆ Tube thoracostomy with or without water seal (32551)
  - Bilateral chest tubes, append -50 modifier



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## Resource/Reference List

- ◆ **AHA Coding Clinics:**
  - 3rd QTR 1988 pages 7-9
  - 2nd QTR 1990 pages 20-21
  - 2nd QTR 1998 pages 3-7
  - 3rd QTR 1998 pages 5-6
  - 2nd QTR 2005 pages 19-20
  - 3rd QTR 2006 page 20
  - 4th QTR 2006 pages 91-92
  - 4th QTR 2008 pages 148-149, 168-169
  - 4th Qtr 2008 pages 305-306
- ◆ **AMA**
  - CPT Book 2009
  - CPT Assistant, January 2002, pg. 10
  - CPT Assistant, November 2003, pg. 14
  - CPT Assistant, September 2004, pg. 8-9
  - CPT Assistant, September 2004, pg. 10
  - CPT Assistant, April 2007, pg. 11,12

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Des Jardins T, Burton GG. *Clinical Manifestations and Assessment of Respiratory Disease*. 5<sup>th</sup> ed. St. Louis, MO: Mosby Elsevier; 2006

Shifren A, ed. *The Washington Manual Pulmonary Medicine Subspecialty Consult*. Baltimore, MD: Lippincott Williams & Wilkins; 2006

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American Thoracic Society. Guidelines for the management of adults with hospital-acquired, ventilator-associated, and Healthcare-associated pneumonia. *American Journal of Respiratory and Critical Care Medicine* Vol 171. pp. 388-416, (2005). Available at: <http://ajrccm.atsjournals.org/cgi/content/full/171/4/388>

American Academy of Family Physicians. Pneumonia severity index for community-acquired pneumonia. Available at: <http://www.aafp.org/fpm/20060400/pneumoniaseverityindex.pdf>

American Academy of Family Physicians. CURB-65 and CRB-65 severity scores for community-acquired pneumonia. Available at: <http://www.aafp.org/fpm/20060400/CURB65.pdf>

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106:196-204**

**American Thoracic Society & European Respiratory  
Society. Standards for the diagnosis and  
management of patients with COPD (2004). Available  
at: <http://www.thoracic.org/sections/copd/resources/copddoc.pdf>**

**Global Initiative for Chronic Obstructive Lung  
Disease. Global strategy for diagnosis, management,  
and prevention of COPD. Updated 2008. Available at:  
<http://www.goldcopd.com/Guidelineitem.asp?l1=2&l2=1&intId=2003>**

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**MedicineNet.com. "Bronchoscopy  
Procedure." MedicineNet, Inc.  
<http://www.medicinenet.com/bronchoscopy/article.htm>**

**The Merck Manuals Online Medical  
Library**

**<http://www.merck.com/mmhe/index.html>**

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# Appendix

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CE Certificate Instructions	

## Appendix

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### Resource/Reference List

<http://www.stbarnabashospital.org/training/surgery/Lectures/ABG%20InterpretationCorrected8.10.06.ppt>

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<http://ajrccm.atsjournals.org/cgi/content/full/171/4/388>

<http://www.goldcopd.com/Guidelineitem.asp?l1=2&l2=1&intId=2003>

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<http://www.thoracic.org/sections/copd/resources/copddoc.pdf>

<http://www.aafp.org/fpm/20060400/CURB65.pdf>



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