AAPC

HEALTHCON

Pathophysiology of Respiratory Failure and Clinical Documentation Improvement

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AAPC Approved ICD 10CM Instructor

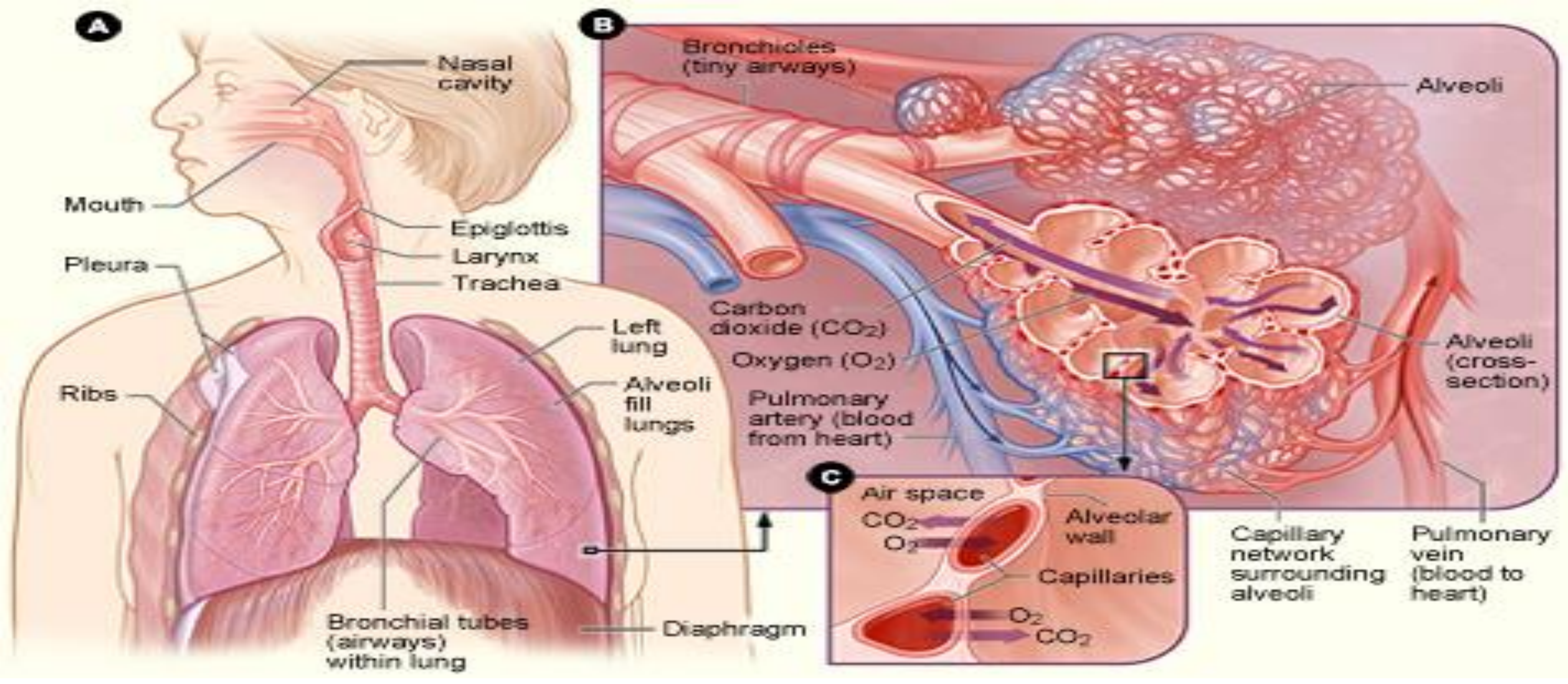
Learning Goals

- Learn the anatomy, physiology and pathophysiology associated with the respiratory system and respiratory failure
- Understand the difference between acute and chronic respiratory failure
- Gain a working knowledge of documentation required from the provider to support the diagnoses
- Become aware of the compliance risk involved

The Respiratory System

- The respiratory system is made up of organs and tissues that allow you to you breathe.
  - Upper Airways,
  - Lungs
  - Blood vessels, and
  - Muscles that enable breathing

Respiratory System



https://www.ncbi.nlm.nih.gov/pubmedhealth/PMHT0022310/

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The Lungs

- Spongy air filled organs
- 2 Lungs on each side of the Thoracic Cavity
- Covered by Pleura (visceral pleura)
- There is also a layer of Pleura on the inner chest wall (Parietal Pleura)

The Pleural Cavity

- The area between the 2 layers of Pleura is the pleural cavity
  - A hollow space which allows the lungs to expand during inspiration.
- The pleural membranes secrete a serous fluid that acts as a lubricant between the 2 layers of Pleura.
- The 2 layers can move against one another without pain or friction.

The Lungs

- There are 5 lobes of the lungs
  - The Left Upper Lobe (LUL)
  - The Left Lower Lobe (LLL)
  - The Right Lower Lobe (RLL)
  - The Right Middle Lobe (RML)
  - The Right Upper Lobe (RUL)
- The inner surface of the lung would equal approx. ½ the size of a tennis court if stretched out.

http://www.innerbody.com/anatomy/respiratory/lungs

The Lungs

- A bellows
- **Air Exchange** between our blood stream and the outside air.
  - Oxygen in
  - Carbon Dioxide Out

Airways

- Carry air between the Lungs and the exterior of the body
  - Carry oxygen-rich air to your lungs.
  - Carry carbon dioxide rich air out of your lungs.
- Heat and humidifies the air
- Help with swallowing and speech
- Allow you to cough
- Secrete Mucous

Airways

- Structures
  - Nose and linked air passages (called nasal cavities)
  - Mouth
  - Larynx
  - Trachea
  - Tubes called bronchial tubes or bronchi, and their branches

What is Mucus ?

- A Lubricant
- A Protective coating
- Works like fly paper to trap bacteria and other unwanted particulates in the airways
- Comprised of water, epithelial cells, dead leukocytes, mucin and inorganic salts.

The Role of Mucus

- The pseudostratified epithelium that lines the bronchi contains many cilia and goblet cells.

- Cilia are small hair-like cellular projections that extend from the surface of the cells.

- Goblet cells are specialized epithelial cells that secrete mucus to coat the lining of the bronchi.

- Cilia move together to push mucus secreted by the goblet cells away from the lungs.

http://www.smosh.com/smosh-pit/articles/6-cartoon-spokes-characters-would-be-horrifying-real-life

The Role of Mucous

- Particles of dust and even pathogens like viruses, bacteria and fungi in the air entering the lungs stick to the mucus and are carried out of the respiratory tract.

- In this way mucus helps to keep the lungs clean and free of disease.

- Nicotine paralyzes the Cilia causing the lower airways to become plugged and unable to exchange gases.

Lungs and Vasculature

- Your lungs and linked blood vessels deliver oxygen to your body and remove carbon dioxide from your body.
- In the lungs, the bronchi branch into thousands of smaller, thinner tubes called bronchioles.
- The bronchioles end in bunches (think grapes) of tiny round air sacs called alveoli.

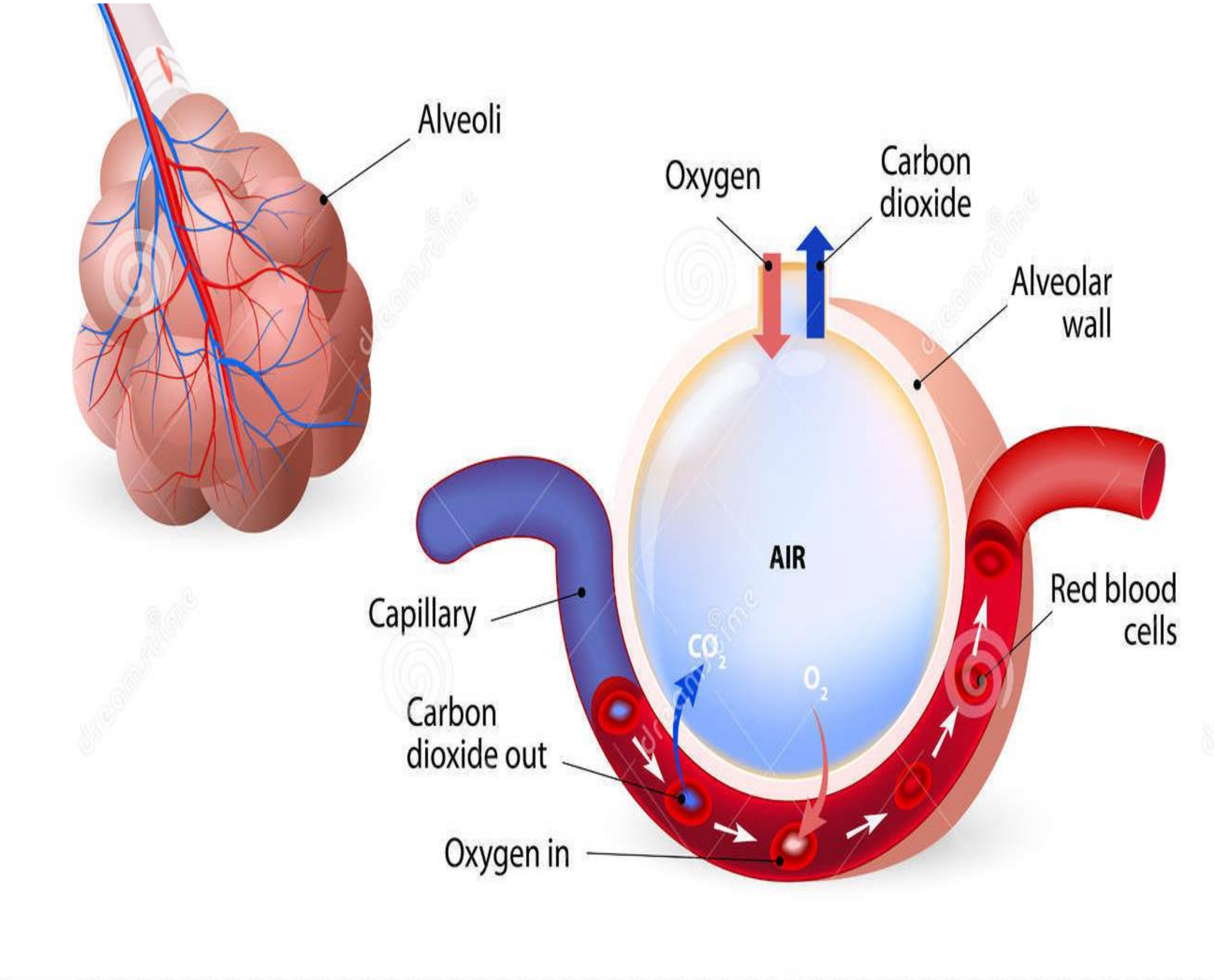
Lungs and Vasculature

- Each of these air sacs is covered in a mesh of tiny blood vessels called capillaries.
- The capillaries connect to a network of arteries and veins that move blood through your body.

The Alveoli

- Alveoli are the functional units of the lungs that permit gas exchange between the air in the lungs and the blood in the capillaries of the lungs.
- Alveoli are found in small clusters called alveolar sacs at the end of the terminal bronchiole.
- Each alveolus is a hollow, cup-shaped cavity surrounded by many tiny capillaries.

Alveolar Gas Exchange



https://www.dreamstime.com/stock-illustration-alveolus-gas-exchange-pulmonary-alveoli-capillaries-lungs-image48200122

The Alveoli

- The walls of the alveolus are lined with simple squamous epithelial cells known as alveolar cells.
- A thin layer of connective tissue underlies and supports the alveolar cells.
- Capillaries surround the connective tissue on the outer border of the alveolus.

The Alveoli

- Where the walls of a capillary touch the walls of an alveolus is referred to as the respiratory membrane.
- Gas exchange occurs freely between the air and blood at the respiratory membrane,
- The respiratory membrane and capillary membranes are a single cell layer thick.

Alveolar Septal Cells

- Produce alveolar fluid
- Coat the inside of the alveoli
- Acts as a surfactant that keeps the alveoli moist
- Helps to maintain the elasticity of the lungs and keeps thin walls from collapsing

Alveolar Macrophages

- Help keep the lung free from infections
- Capture and eat outside pathogens and other items foreign to the body
- Alveolar macrophages eat the bacteria by phagocytosis

Phagocytosis

- The white blood cell attaches its membrane to the membrane of the bacterium using molecules called surface receptors embedded in the white blood cell's membrane.
- Once attached to each other, the membrane of the white blood cell swells outward around the bacterium and engulfs it.

Phagocytosis

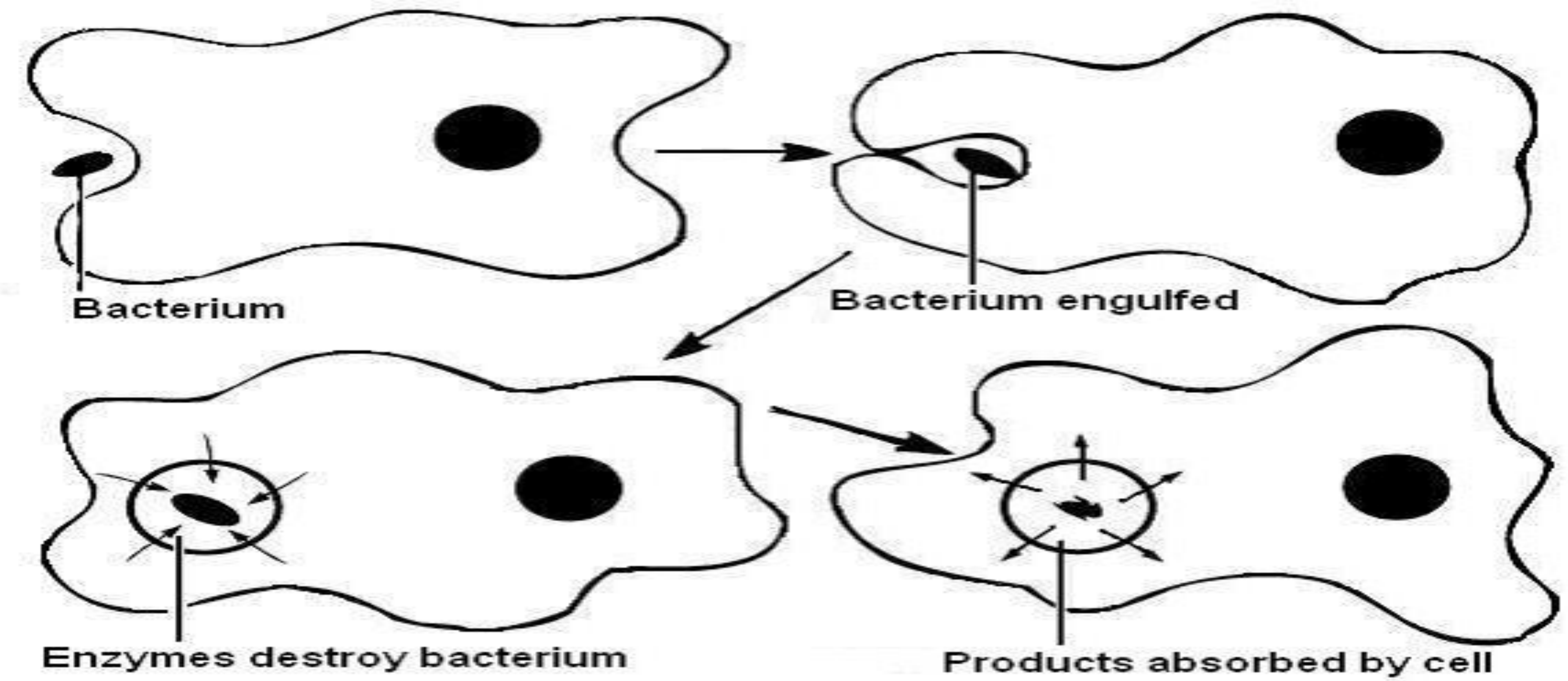
- The membrane enclosing the bacterium pinches off and the result is a little pouch, called a phagosome, that contains the offending bacterium inside of the white blood cell.

- With the bacterium safely imprisoned inside the white blood cell brings digestive enzymes into the phagosome.

Alveolar Macrophages

- The enzymes digest the bacterium resulting in harmless particles.
- The Macrophage can either use the by products of the digested bacteria or release them out of the cell.

Phagocytosis



http://study.com/academy/lesson/phagocytosis-definition-process-types.html

Muscles of Respiration

- Diaphragm
- Intercostal muscles
- Abdominal muscles
- Muscles in the neck and collarbone area

Blood Flow Through the Lungs

- The pulmonary artery and its branches deliver venous blood rich in carbon dioxide to the capillaries that surround the air sacs.
- Inside the air sacs, carbon dioxide moves from the blood into the air.
- Once the hemoglobin is free of CO_2 the oxygen moves from the air into the blood in the capillaries.

Blood Flow Through the Heart

- The oxygen-rich blood travels to the heart through the pulmonary vein and its branches.
- The heart pumps the oxygen-rich blood out to the body via the arterial system.

The Act of Ventilation

- Negative Pressure Ventilation
  - Need a pressure differential between outside air and inside the alveoli
  - Respiratory muscles expand and create a negative pressure inside the alveoli
  - Causes air to come into the lungs in the act of Inhalation
  - When Respiratory muscles contract and decrease the size of the thoracic cavity the pressure in the alveoli increases and the air is expelled or exhaled.

Lung Volumes

- Total air volume of the lungs is about 4 to 6 liters and varies with a person's size, age, gender, and respiratory health.

- Lung volumes are measured clinically by a device known as a spirometer

- Normal shallow breathing only moves a small fraction of the lungs' total volume into and out of the body with each breath. This volume of air, known as *tidal volume*, usually measures only around 0.5 liters

http://www.innerbody.com/anatomy/respiratory/lungs

Breathing

- Conscious Control
  - Cerebral Cortex of the brain
- Unconscious control
  - Controlled by the respiratory center in the brainstem
  - Monitors the concentration of gasses in the blood stream and adjusts the respiratory rate accordingly

Lung Volumes

- The volume of air exchanged during deep breathing is known as *vital capacity*
  - Ranges between 3 to 5 liters, depending on the lung capacity of the individual.
- A residual volume of around 1 liter of air remains in the lungs at all times, even during a deep exhalation.

Respiratory Failure Lay Definition

- Respiratory failure is a condition in which not enough oxygen (O_2) passes from your lungs into your blood.
  - Your body's organs, such as your heart and brain, need oxygen-rich blood to work well.

AND/OR

- Carbon Dioxide (CO_2) is not adequately removed from the lungs
  - This can cause problems with body pH such as respiratory acidosis

Etiologies

- A wide range of of etiologies can be responsible for RF
  - Primary pulmonary pathologies or
  - Initiated by extra-pulmonary pathology
  - Causes are often multifactorial

Etiologies

- Can be caused by abnormalities in:
  - Central Nervous System impairment due to *e.g. drugs, metabolic encephalopathy, CNS infections, increased ICP, OSA, Central alveolar hypoventilation*
  - Spinal cord *trauma or disease e.g. transverse myelitis*
  - Neuromuscular *diseases e.g. polio, tetanus, M.S., M.Gravis, Guillain-Barre, critical care or steroid myopathy)*

Etiologies

- Can be caused by abnormalities in:
  - Chest wall dysfunction *or deformity e.g. Kyphoscoliosis, obesity)*
  - Upper airway trauma or disease *e.g. obstruction from tissue enlargement, infection, mass; vocal cord paralysis, tracheomalacia*
  - Lower airway disease e.g. *bronchospasm, CHF, infection*
  - Lung parenchyma disease or disruption due to e.g. *infection, interstitial lung disease*
  - Impact from Cardiovascular system

Acute Versus Chronic

- Important Distinction in ICD 10CM Coding
  - Provider MUST make the statement
    - Acute Respiratory Failure
    - Chronic Respiratory Failure
  - Important in that the diagnoses here drive different DRGs.

Respiratory Failure

- Respiratory Failure is not a disease
- It is the consequence of problems interfering with the ability to breathe.
- The body is no longer to perform the functions of respiration
  - Delivering oxygen to the blood and
  - Removing Carbon Dioxide from the blood

Types of Respiratory Failure

Type		Typical Causes
Acute	Ventilatory	Drug Overdose
	Oxygenation	Pneumonia
Chronic	Ventilatory	Neuromuscular Disease
	Oxygenation	Pulmonary fibrosis

https://www.thoracic.org/patients/patient-resources/breathing-in-america/resources/chapter-20-respiratory-failure.pdf

Chronic Respiratory Failure

- Results from progressive disease process over time
- Main cause of death in COPD and Lou Gehrig's Disease
- Third leading cause of death in the US

Acute

- The sudden onset of a process resulting in loss of the ability to ventilate adequately or to provide sufficient oxygen to the blood and systemic organs.
- The pulmonary system is no longer able to meet the metabolic demands of the body with respect to oxygenation of the blood and/or CO_2 elimination.

Arterial Blood Gas

- Measures the following
  - pH
  - Level of Oxygen
  - Level of Carbon Dioxide
- Drawn from an Artery
- Lets the provider know how well the patient can move oxygen from the air into the blood stream and how well they remove Carbon Dioxide.

http://www.webmd.com/lung/arterial-blood-gases

pH

- Measures the acidic or basic (alkaline) nature of a solution.
- The pH scale ranges from 0 (most acidic) to 14 (most basic).
- A neutral solution such as water has a pH of 7.
- Acidic Solutions have a pH less than 7, with 0 being the most acidic.
- Alkaline solutions have a pH greater than 7, with 14 being the most basic.

http://www.webmd.com/hw-popup/ph

PaO2

- Refers to the partial pressure of oxygen in the blood
- Refers to the pressure of oxygen dissolved in the blood
- Tells how well oxygen is able to move from the alveoli in the lungs into the blood.

PaCO2

- Refers to the partial pressure of Carbon Dioxide dissolved in the blood
- Tells how well the Carbon Dioxide is removed from the blood stream

Physiologic pH

- Measures the number of Hydrogen ions (H+) in the blood stream
- Physiologic pH is between 7.35 and 7.45
- A pH of less than 7.35 is referred to as acidosis
- A pH of greater than 7.45 is referred to as Alkalosis
- The body is slightly alkaline

HCO3

- HCO3 is the chemical representation of Bicarbonate
- Bicarbonate in the blood stream acts as a buffer to keep the blood pH from becoming too acidic or basic (alkaline).

Oxygen Content Versus Oxygen Saturation

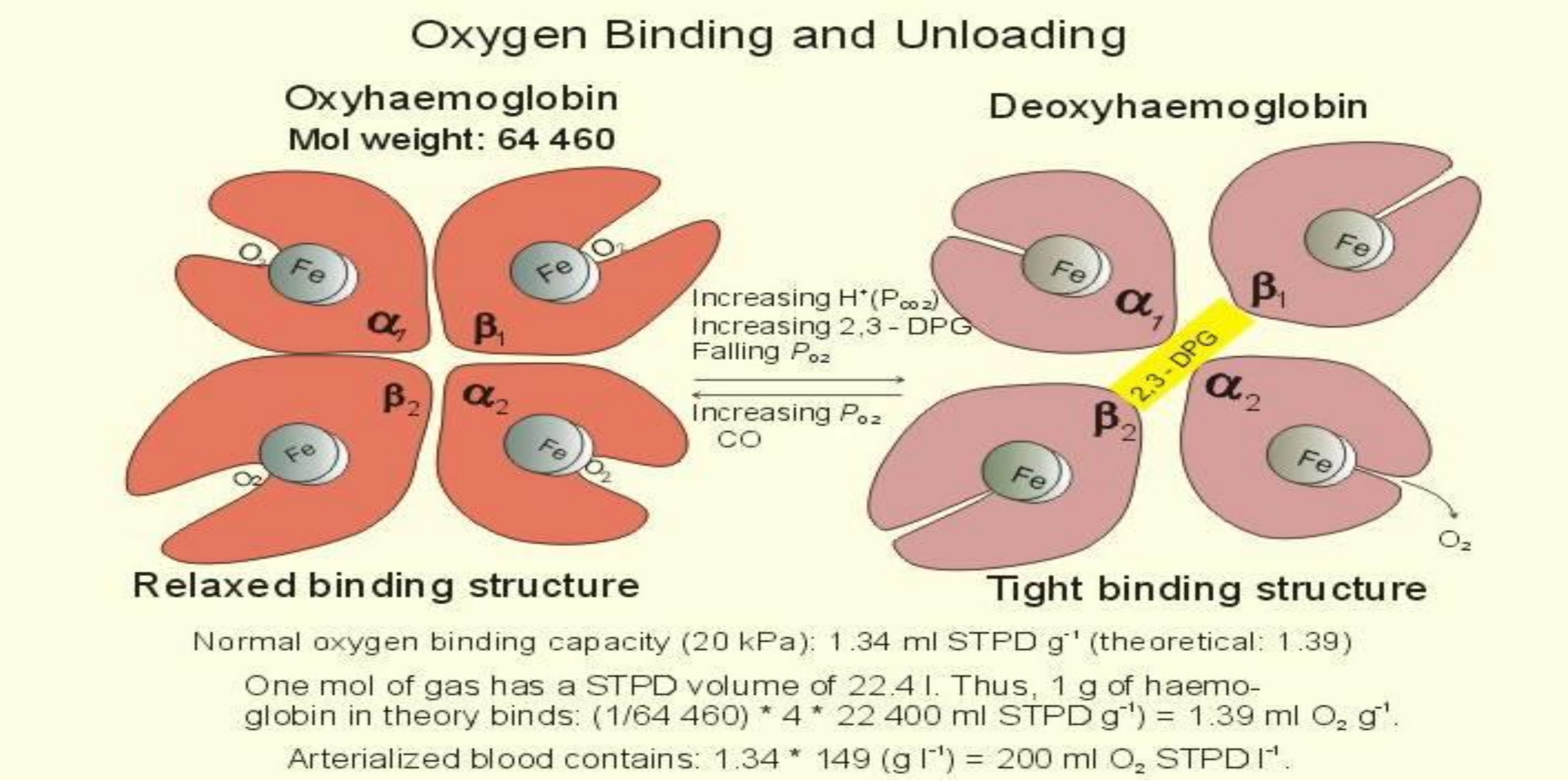
- Oxygen Content - O_2CT – Measures how much oxygen is in the blood
- Oxygen Saturation – $Sa0_2$ - Measures how much of the Hemoglobin in the red blood cells is carrying oxygen.

Hemoglobin (Hb)

- Most of the O_2 that diffuses into the pulmonary capillary blood rapidly moves into the red blood cell (RBC) and chemically attaches to hemoglobin
- Each RBC contains 280 million Hb molecules
- Each hemoglobin molecule has the ability to combine with four oxygen molecules.
- The amount of O_2 bound to hemoglobin is directly related to the partial pressure of oxygen (P_{O2}).

Terms for Hemoglobin

- Oxyhemoglobin (HbO_2)
  - Hemoglobin bound with oxygen
  - Oxygen Saturation (SO_2)
    - Four O_2 molecules bound to a Hb molecule = 100% saturated
    - Three O_2 molecules bound to a Hb molecule =75% saturated
    - Two O_2 molecules bound to a Hb molecule = 50% saturated
    - One O2 molecule bound to a Hb molecule = 25% saturated



http://www.dynapulse.com/educator/WebCurriculum/Chapter%201/Final%20Chapter%201CV%20Physiology.htm#_Transcapillary_Fluid_Exchange

ABG Normal Values at Sea Level

- Partial pressure of oxygen (PaO_2): 75 - 100 mmHg
- Partial pressure of carbon dioxide ($PaCO_2$): 38 - 42 mmHg
- Arterial bloot pH: 7.38 - 7.42
- Oxygen saturation (SaO_2): 94 - 100%
- Bicarbonate - (HCO_3): 22 - 28 mEq/L

Note:
mEq/L = milliequivalents per liter;

mmHg = millimeters of mercury

At altitudes of 3,000 feet and above, the oxygen value is lower.

https://medlineplus.gov/ency/article/003855.htm

Acute Hypercapnic Respiratory Failure

- Acute Hypercapnic Respiratory Failure
  - A rise in arterial carbon dioxide levels is called **hypercapnia (with normal or near normal Oxygen levels)**.
  - Excess CO2 causes the pH to drop, a symptom of this is a pH < 7.30

Chronic Hypercapnic Respiratory Failure

- Chronic Hypercapnic Respiratory Failure
  - pH not decreased far from baseline
  - Usually higher HCO3, due to compensation from kidneys

Chronic Hypoxemic Respiratory Failure

- Chronic Hypoxemic Respiratory Failure
  - Patient will have low oxygen levels and normal or near normal Co2 levels
  - May see polycythemia or
  - Right Sided Heart Failure (Cor Pulmonale)

Classifications

- ***Type 1 (Hypoxemic)*** - PaO_2 < 60 mmHg on room air or O2 saturation < 90%
- Usually seen in patients with acute pulmonary edema or acute lung injury.
- These disorders interfere with the lung's ability to oxygenate blood as it flows through the pulmonary vasculature.

Classifications

- ***Type 2 (Hypercapnic/ Ventilatory)*** - PCO_2 > 50 mmHg (if not a chronic CO_2 retainer).
- This is usually seen in patients with an increased work of breathing due to airflow obstruction or
  - Decreased respiratory system compliance, with decreased respiratory muscle power due to neuromuscular disease, or
  - With Central respiratory failure and decreased respiratory drive

Classifications

- ***Type 3 (Peri-operative)***. This is generally a subset of type 1 failure but is sometimes considered separately because it is so common.
- ***Type 4 (Shock)*** - secondary to cardiovascular instability.

Hypoxemic Respiratory Failure

- Physiologic Causes of Hypoxemia
  - Low FiO_2 (high altitude)
  - Hypoventilation
  - V/Q mismatch (low V/Q)
  - Shunt (Qs/Qt)
  - Diffusion abnormality
  - Venous admixture (low mixed venous oxygen)

Ventilatory / Hypercapnic Respiratory Failure

- Physiologic causes of Hypercapnia:
  - Increased CO_2 production (fever, sepsis, burns, overfeeding)
  - Decreased alveolar ventilation
  - Decreased RR
  - Decreased tidal volume (Vt)
  - Increased dead space (Vd)

Hypercapnia Independent of Hypoxemia

- Hypercapnia results from either increased CO_2 production secondary to increased metabolism resulting from issues such as:
  - sepsis,
  - fever,
  - burns,
  - Overfeeding

OR…….

Hypercapnia Independent of Hypoxemia

- Decreased CO_2 excretion.
  - CO_2 excretion is inversely proportional to alveolar ventilation (VA).
  - VA is decreased if total minute ventilation is decreased - secondary to either a decreased respiratory rate (f) or
  - A decrease in tidal volume (Vt);
  - Or if the deadspace fraction of the tidal volume is increased (Vd/ Vt).

Causes of Decreased Alveolar Ventilation

- Decreased CNS drive (CNS lesion, overdose, anesthesia).
  - The patient is unable to sense the increased PaCO2. The patient "won't breathe”.
  - The Medulla senses Carbon Dioxide levels
  - When PaCO2 is elevated it causes Co2 to pass through the blood brain barrier and this causes H+ ions to form creating an acidosis.

Causes of Decreased Alveolar Ventilation

- Neuromuscular disease
  - Myasthenia Gravis,
  - ALS,
  - Guillian-Barre ,
  - Botulism,
  - Spinal cord disease,
  - Myopathies

The patient is unable to neurologically signal the muscles of respiration or has significant intrinsic respiratory muscle weakness. The patient "can't breathe

Causes of Decreased Alveolar Ventilation

- Asthma/ COPD
- Pulmonary fibrosis
- Kyphoscoliosis

Increased Work Of Breathing leading to respiratory muscle fatigue and inadequate ventilation.

Causes of Decreased Alveolar Ventilation

- Causes of increased dead space ventilation
- Pulmonary embolus,
- Hypovolemia,
- Poor cardiac output, and
- Alveolar over distension.

Increased Physiologic Dead Space (Vd) - When blood flow to some alveoli is significantly diminished, CO2 is not transferred from the pulmonary circulation to the alveoli and CO2 rich blood is returned to the left atrium.

Documentation Requirements in the Outpatient Setting

- **Accurate documentation drives accurate reporting of ICD-10-CM diagnosis codes**

For accurate reporting of ICD-10-CM diagnosis codes, the documentation should describe the patient's condition, using terminology which includes specific diagnoses as well as symptoms, problems, or reasons for the encounter. There are ICD-10-CM codes to describe all of these.

The Golden Rule of Clinical Documentation

- If patient care is not documented by the physician or provider, it did not happen for the purposes of medico-legal challenges and coding and reimbursement.

Clinical Documentation

IN

OUT =

Lost

Documentation of Causal Relationships

- Provider must tie cause and effects together
  - Infection due to a procedure
  - Sepsis due to a specific organism
  - Heart Disease due to Hypertension
  - Renal Failure due to Heart Disease
  - Neuropathy due to Diabetes
  - Complication related to a procedure

Study Results

- Coding rules
  - Require provider to document the findings in the progress notes from diagnostic tests, e.g.
    - Pathology reports
    - Cultures
    - Radiology Reports
    - Cardiology Reports
    - ABGs

DRG

- Section 1886(d) of the Social Security Act (the Act) sets forth a system of payment for the operating costs of acute care hospital inpatient stays under Medicare Part A (Hospital Insurance) based on prospectively set rates.

- This payment system is referred to as the inpatient prospective payment system (IPPS). Under the IPPS, each case is categorized into a diagnosis-related group (DRG).

- Each DRG has a payment weight assigned to it, based on the average resources used to treat Medicare patients in that DRG.

DRG

- The base payment rate is divided into a labor-related and nonlabor share.

- The labor-related share is adjusted by the wage index applicable to the area where the hospital is located, and if the hospital is located in Alaska or Hawaii, the nonlabor share is adjusted by a cost of living adjustment factor.

- This base payment rate is multiplied by the DRG relative weight.

DRG

- Diagnosis Related Grouper - Inpatient Prospective Payment System (IPPS)

- Driven by Principal diagnosis -

  - When a patient is admitted to the hospital, the condition established after study found to be chiefly responsible for occasioning the admission to the hospital should be sequenced as the principal diagnosis.

  - Not always the same as the admitting diagnosis; e.g. Headache turns out to be brain tumor.

My Favorite Reference for MS DRGs

- http://library.ahima.org/doc?oid=106590#.WH2HMxQomLU

Medical Severity DRG's

- A new DRG system, called Medicare Severity DRGs (MS-DRGs), was adopted for use with Medicare's Inpatient Prospective Payment System. It became effective with discharges occurring on or after October 1, 2007.

- The MS-DRG structure was also adopted for use with the Long-Term Care Hospital Prospective Payment System (referred to as MS-LTC-DRGs).

MS DRG

- MS-DRGs introduced a three-tiered structure:
  - Major complication/comorbidity (MCC),
  - Complication/comorbidity (CC),
  - No complication/comorbidity (non-CC).

MS DRG

- MCCs reflect secondary diagnoses of the highest level of severity.
- CCs reflect secondary diagnoses of the next lower level of severity.

MS DRG

- Secondary diagnoses which are not MCCs or CCs (the non-CCs) are diagnoses that do not significantly affect severity of illness or resource use.
- The MS-DRGs provides better recognition of severity of illness than the traditional CMS DRG system.

APR DRGs

- Comprised of
  - A clinical model and
  - Four severity of illness subclasses
  - Four risk of mortality subclasses for each base APR DRG.

APR DRGs

- These subclasses are broken down into four levels minor,
  - Moderate,
  - Major, and
  - Extreme.
- Used by hospitals for internal quality improvement and by many states for public reporting.

DRG

- 189 - Pulmonary Edema and Respiratory Failure
- https://www.cms.gov/ICD10manual/Fullcode_cms/P0109.html

Principal Diagnoses that Drive DRG 189

- **J182** Hypostatic pneumonia, unspecified organism
- **J681** Pulmonary edema due to chemicals, gases, fumes and vapors
- **J810** Acute pulmonary edema
- **J811** Chronic pulmonary edema

Principal Diagnoses that Drive DRG 189

- **J951** Acute pulmonary insufficiency following thoracic surgery
- **J952** Acute pulmonary insufficiency following nonthoracic surgery
- **J953** Chronic pulmonary insufficiency following surgery
- **J9582** Postprocedural respiratory failure

Principal Diagnoses that Drive DRG 189

- **J9600** Acute respiratory failure, unspecified whether with hypoxia or hypercapnia
- **J9601** Acute respiratory failure with hypoxia
- **J9602** Acute respiratory failure with hypercapnia

Principal Diagnoses that Drive DRG 189

- **J9610** Chronic respiratory failure, unspecified whether with hypoxia or hypercapnia
- **J9611** Chronic respiratory failure with hypoxia
- **J9612** Chronic respiratory failure with hypercapnia

Principal Diagnoses that Drive DRG 189

- **J9620** Acute and chronic respiratory failure, unspecified whether with hypoxia or hypercapnia
- **J9621** Acute and chronic respiratory failure with hypoxia
- **J9622** Acute and chronic respiratory failure with hypercapnia

Principal Diagnoses that Drive DRG 189

- **J9690** Respiratory failure, unspecified, unspecified whether with hypoxia or hypercapnia
- **J9691** Respiratory failure, unspecified with hypoxia
- **J9692** Respiratory failure, unspecified with hypercapnia

Clinical Validation

- Clinical Documentation Improvement Specialist (CDIS or CDIP credentials are available)
- The medical record must clinically support the diagnoses listed on a claim.
- The practice of medicine is not exact but for many of the conditions in question there are key associated symptoms and treatments that must be in the record.

Clinical Findings

- Respiration >30 breaths/minute,
- Central cyanosis
- Use of accessory muscles of respiration
- Po_2 <60 mm Hg
- Pco_2 >50 mm Hg
- pH <7.35

Intensity of Management

- Medications –
- Bronchodilators
- Steroids
- Antibiotics

Additional Oxygen –

- Venti Mask
- Re-breathing mask
- biPAP, cPAP (unless on this at home)

Intubation and Ventilation

- Not required for diagnosis of respiratory failure
- BUT –
  - Does not count if to protect airway only
  - Does not count if routine post operative treatment includes vent support such as open heart surgery

Questions Regarding Documentation

- Query the provider
- Provide your findings
- Ask open ended questions
  - e.g. Are these findings associated with any pertinent diagnoses
  - Never ask a yes or no question

Case Study

- A patient presents to the emergency department with an acute exacerbation of COPD.
- Clinical Findings - RR 31, SaO_2 – 88% RA, mild use of accessory muscles of respiration, pH – 7.30
- The patient is admitted to the ICU and treated with steroids and O_2 but does not require intubation or mechanical ventilation.

Case Study

- The hospitalist documents the diagnoses as acute exacerbation of COPD with severe hypoxemia.

- This documentation is coded to *MS-DRG 192: COPD without Complication or Comorbidity.*

- The payment is $3,946, at a hospital-specific rate of $5,500. Geometric mean length of stay is 3.3 days.

Case Study

- If the circumstances and ABG measurements support it, however, the hospitalist must document acute respiratory failure, which yields a longer expected length of stay and a higher payment.

Case Study

- The diagnoses can then be documented as
  - Acute respiratory failure due to COPD
  - Acute exacerbation of COPD.
- This documentation is coded to *MS-DRG 189: Respiratory Failure.*
- The payment is $7,400, and the geometric mean length of stay is 4.7 days

Related MS DRGs

- Of the total number of 2009 Medicare claims assigned to the MS-DRGs for COPD and acute respiratory failure,
- 27% were in DRG 189—that is, acute respiratory failure as the principal diagnosis.
- The remaining 73% of claims listed COPD as the principal diagnosis, and were divided into three categories based on the presence or absence of complications or comorbidities, as follows

Related MS DRGs

- *MS-DRG 192: COPD without Complication or Comorbidity*.
  - Payment of $3,946, at a hospital-specific rate of $5,500. Geometric mean length of stay is 4.7 days.
- *MS-DRG 191: COPD with Complication or Comorbidity*
  - Payment of $5,292, at a hospital-specific rate of $5,500. Geometric mean length of stay is 4.0 days.

Related MS DRGs

- *MS-DRG 190: COPD with Major Complication or Comorbidity*.
  - Payment of $6,642, at a hospital-specific rate of $5,500. Geometric mean length of stay is 3.2 days.

Hospital Acquired Conditions (HAC)

- On February 8, 2006 the President signed the Deficit Reduction Act (DRA) of 2005. Section 5001(c) of DRA requires the Secretary to identify, by October 1, 2007, at least two conditions that are (a) high cost or high volume or both, (b) result in the assignment of a case to a DRG that has a higher payment when present as a secondary diagnosis, and (c) could reasonably have been prevented through the application of evidence based guidelines.

https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalAcqCond/icd10_hacs.html

Hospital Acquired Conditions (HAC)

- For discharges occurring on or after October 1, 2008, hospitals will not receive additional payment for cases in which one of the selected conditions was not present on admission. That is, the case would be paid as though the secondary diagnosis were not present. Section 5001(c) provides that CMS can revise the list of conditions from time to time, as long as it contains at least two conditions.

https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalAcqCond/icd10_hacs.html

POA Indicator

- Present On Admission
  - Y Diagnosis was present at the time of inpatient admission
  - N Diagnosis was not present at the time of inpatient admission
  - U Documentation insufficient to determine if the condition was present at the time of admission.
  - W Clinically undetermined. Provider unable to clinically determine whether the condition was present at the time of admission.
  - 1 Unreported/Not Used Exempt from POA reporting

Peri-Operative Respiratory Failure

- May or may not be seen as a HAC
- The Provider must document a cause and effect relationship between the surgery or a complication of surgery and the respiratory failure
- Make certain to code all applicable diagnoses

Recovery Audit Contractor Findings

- Post Payment Audit for Medicare Contractors.
- Audit for over payments
- Will change the principal diagnosis if not documented
- Will recode if clinical evidence is not supportive of documented diagnoses
- This can result in a lower paying DRG

Audit Example

- History of present illness states that patient was discharged home on Friday afternoon and then re-admitted this morning. He has a history of interstitial infiltrates and sarcoidosis, chronic anemia and renal insufficiency.

- Discharge summary lists the final diagnosis as hypoxemia, dyspnea, anxiety, anemia, and shingles

Audit Result

- **Auditor Finding:** There is no physician documentation of acute respiratory failure.
- **Action:** The auditor deleted respiratory failure code 518.81 and changed the principal diagnosis to hypoxemia code 799.02. This resulted in a MS–DRG change from 189 to 206–Other Respiratory System Diagnoses without Major Complication and Comorbidity (MCC). These changes resulted in a finding for overpayment.

RAC Audit Findings

- *An 71-year-old male was admitted with complaints of dry cough X 3 weeks. The patient was admitted through the emergency department (ER) and was assessed for wheezing, rhonchi and coughing. History and physical (H&P) assessment noted acute respiratory failure secondary to exacerbation of chronic obstructive pulmonary disease (COPD). Daily progress notes cite the diagnosis of acute respiratory failure secondary to exacerbation of COPD*

http://www.hcpro.com/HOM-272794-5728/Examine-RAC-audit-of-acute-respiratory-failure.html

Rac Audit Findings

- *Final diagnosis on the discharge summary is acute respiratory failure secondary to COPD exacerbation. Additional documentation sheet supplied in the record list the patient's diagnoses as: Principal diagnosis: COPD exacerbation; Other diagnoses: hypertension, congestive heart failure (CHF), Insulin dependent diabetes mellitus (IDDM),and Osteoarthritis.*

Auditor Recoded

- Even though the physician documented acute respiratory failure in the H&P, daily progress notes, and discharge summary, the RAC auditor removed the code for acute respiratory failure (ICD 10 code J96.00), substituting code (hypoxemia), and changed the principal diagnosis to COPD exacerbation because the RAC reviewer determined that the clinical evidence in the medical record did not support respiratory failure as a valid diagnosis as to be coded and thus could not be sequenced as the principal diagnosis.

- Therefore, the MS-DRG changed from 189 (pulmonary edema and respiratory failure) with a current relative weight of 1.2809 to 192 (chronic obstructive pulmonary disease without CC/MCC) with a current relative weight of 0.7220.

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- This clinical review judgment involves two steps:
  - The synthesis of all submitted medical record information (e.g. progress notes, diagnostic findings, medications, nursing notes, etc.) to create a longitudinal clinical picture of the patient; and
  - The application of this clinical picture to the review criteria to determine whether the clinical requirements in the relevant policy have been met.

Keep Expectations Reasonable

- Look at what is said and left unsaid
- We are not the providers
- Never force the issue
- Let the provider arrive at his or her own conclusion

Frank and Ernest

Questions