HEALTH INFORMATION ASSOCIATES

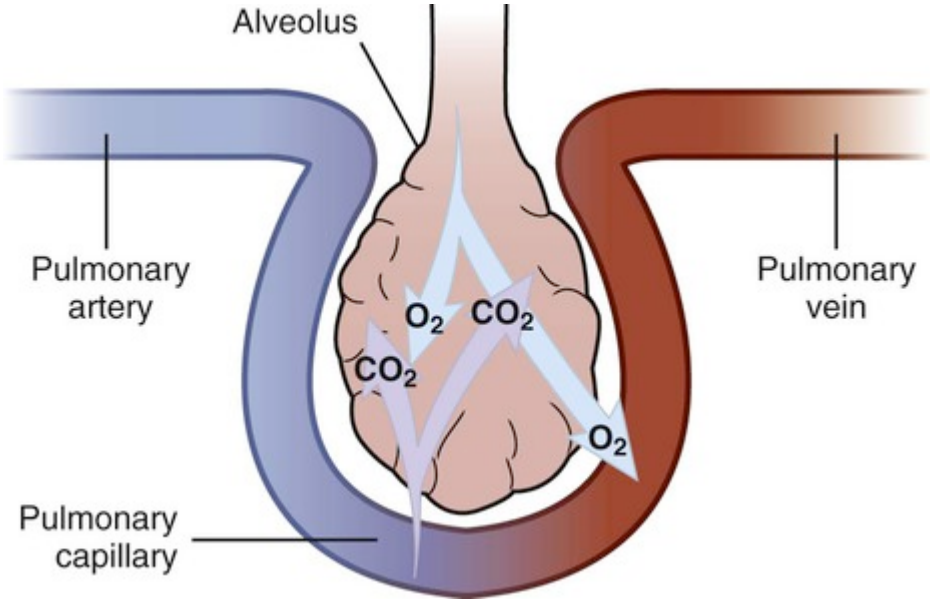
RESPIRATORY FAILURE DIAGNOSIS CODING

Action Plans are designed to cover topic areas that impact coding, have been the frequent source of errors by coders and usually affect DRG assignments. They are meant to expand your learning, clinical and coding knowledge base.

INTRODUCTION

Please refer to the reading assignments below. You may wish to print this document. You can use your encoder to read the Coding Clinics and/or bookmark those you find helpful. Be sure to read all of the information provided in the links. You are required to take a quiz after reading the assigned documents, clinical information and the Coding Clinic information below. The quiz will test you on clinical information, coding scenarios and sequencing rules.

Watch this video on basics of "What is respiration?"
https://www.youtube.com/watch?v=hc1YtXc_84A (3:28)

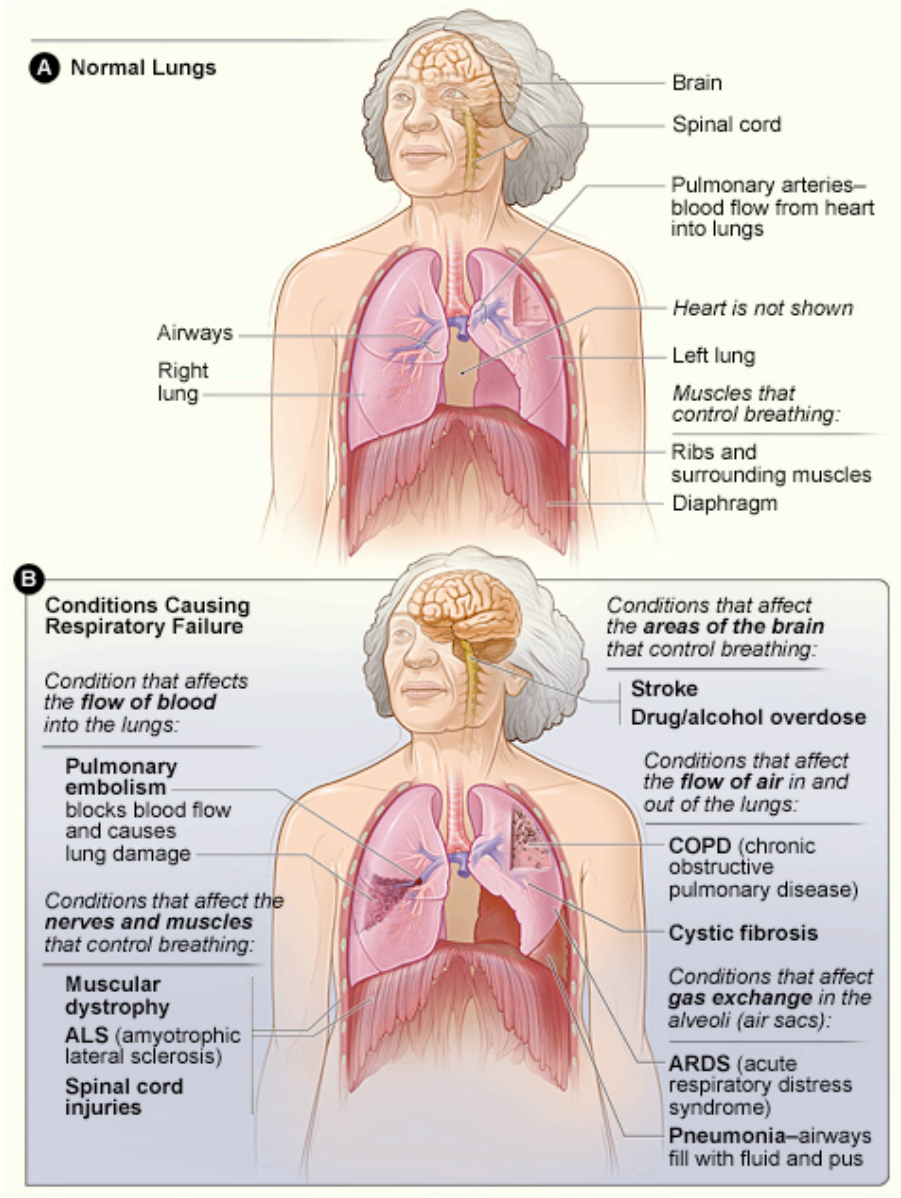


WHAT IS RESPIRATORY FAILURE?

Acute respiratory failure (ARF) is a respiratory dysfunction resulting in abnormalities of tissue oxygenation or carbon dioxide elimination that is severe enough to threaten and impair vital organ functions. There are many causes of acute respiratory failure to include acute exacerbation of COPD, CHF, asthma, pneumonia, pneumothorax, pulmonary embolus, trauma to the chest, drug or alcohol overdose, myocardial infarction and neuromuscular disorders.

The photo on the next page can be accessed at the link. This link also has complete information on respiratory failure. Please read the information contained on this website link by NIH.

http://www.nhlbi.nih.gov/health/health-topics/topics/rf/causes.html



The signs of symptoms of acute respiratory failure can include:

- ABG (arterial blood gas) values of:
  - PO2 < 60 mm Hg (hypoxemia)(confusion)
  - PCO2 > 50 mm Hg (hypercapnia)(somnolent)
  - pH < 7.35 (respiratory acidosis)
  - HCO3 < 22 mEq/liter
  - O2 saturation < 89%
- Dyspnea
- Tachycardia (HR > 120 bpm)
- Rapid deep breathing (Respiratory Rate (RR) > 24 per minute)
- Use of accessory muscles to breathe

- Cyanosis
- Restlessness, confusion, anxiety, delirium, tremor

Please watch this video at the link in which a doctor explains respiratory failure (acute and chronic) in layman's terms. http://www.youtube.com/watch?v=I7u9GvwkMxw (8:42)

TYPES OF RESPIRATORY FAILURE INCLUDING HYPOXEMIA/HYPOXIA AND HYPERCAPNIA

There are several "types" of respiratory failure that you may see documented. Code assignment is going to be based on whether or not the respiratory failure is documented as acute, chronic, acute and/on chronic, AND whether the patient also has hypoxia, hypercapnia or both. Here is a brief description of the codes that can be assigned.

Respiratory failure, NOS, is assigned to category J96.9- which is an MCC in many cases. The last character specifies with hypoxia, with hypercapnia, or unspecified
Acute respiratory failure is assigned to subcategory J96.0- which is an MCC in many cases. The last character specifies with hypoxia, with hypercapnia, or unspecified
Chronic respiratory failure is assigned to subcategory J96.1- which is a CC in many cases. The last character specifies with hypoxia, with hypercapnia, or unspecified
Acute and chronic respiratory failure is assigned to subcategory J96.2- which is an MCC in many cases. The last character specifies with hypoxia, with hypercapnia, or unspecified

Coders must also be aware that **postprocedural respiratory failure (acute is nonessential modifier) due to surgery is coded to J95.821. ACUTE ON CHRONIC postprocedural respiratory failure that is due to surgery is coded to J95.822.** It is important to note that in the index, referencing is Failure, respiratory, postprocedural (acute) J95.821; acute on chronic J95.822.

Physicians need to be **specific** in documentation of acuity and type of respiratory failure. Many times, physicians use various terms to describe the same thing. The different types of respiratory failure are discussed clinically below.

1. The first type we will discuss that the coder may see documented is **Type I respiratory failure** or otherwise called "hypoxic respiratory failure." Type I involves low oxygen, and normal or low carbon dioxide levels or poor oxygen exchange. **It is the most common type of respiratory failure.** When the process of gas exchange is faulty and there is not enough oxygen in the blood, this is called hypoxia. This type involves PO2 (Partial pressure of oxygen): low (usually lower than 60); PCO2: normal or low and PAO2 – PaO2 gradient: increased.

- The **PO2 (Partial pressure of oxygen in a given environment)** is obtained from the ABG
- The **PAO2 gradient (Partial pressure of oxygen in arterial blood of alveoli)** is obtained from the Alveolar Gas equation
- The **PCO2** is obtained from the ABG

2. **Type II respiratory failure**, also called "hypercapnic respiratory failure" and involves low **oxygen but high carbon dioxide levels** or poor carbon dioxide exchange. Hypercapnic respiratory failure is due to a disease of the muscles used for breathing, which may also be referred to as "pump or ventilatory apparatus failure." Although the lungs of these patients are normal, there is a loss or decrease in neuromuscular function, inefficient breathing and limitation of the flow of air into the lungs. Hypercapnia makes the blood more acidic,

which is called **acidemia.** Coders may see hypercapnic respiratory failure patients who also are hypoxic. This type of respiratory failure occurs in patients with diseases such as myasthenia gravis, stroke, cerebral palsy, amyotrophic lateral sclerosis, muscular dystrophy, poliomyelitis, postoperative situations that limit the ability to take deep breaths, and in depressant drug overdoses. This type reveals PO2: low; PCO2: high; and PAO2-PaO2 gradient: unchanged. pH is usually less than 7.3 in acute hypercapnic respiratory failure. For chronic hypercapnic respiratory failure, the pH is only slightly decreased from normal. Be aware also that there is a new ICD-10-PCS code for extracorporeal carbon dioxide removal (ECCO2R).

3. **Type III respiratory failure** is also known as **perioperative respiratory failure**. It involves increased atelectasis due to low functional residual capacity (FRC) in the setting of abnormal abdominal wall mechanic. It also involves a combination of oxygenation and ventilation failure. This type reveals PO2: low; PCO2: high; and PAO2-PaO2 gradient: increased. **This third type CLINICALLY includes adult respiratory distress syndrome (ARDS),** which is also known as *acute* respiratory distress syndrome. It is a form of respiratory insufficiency caused by extensive lung injury following various catastrophic events such as severe infection, aspiration, massive blood transfusion, alcohol or drug abuse, acute pancreatitis, shock and burns. It can be life threatening because organs need oxygen rich blood for proper functioning.

So essentially, Type III could clinically be respiratory failure following surgery, or acute respiratory distress syndrome following surgery. Code assignment will be based on what the physician documents and is clinically supported.

Coding of ARDs is assigned to code **J80, Acute respiratory distress syndrome** when the ARDS is not further specified and affects an adult or child. For ARDS in a newborn (perinatal) assign code P22.0.

Adult respiratory distress syndrome (ARDS) due to surgery is assigned based on the type of surgery that the ARDS is associated with. And, the coder must look at subterm "pulmonary insufficiency" for postoperative, respiratory insufficiency. It may be that the coder must query the physician to determine if the patient has respiratory insufficiency or failure complicating a procedure, and if it is acute or chronic. There is no subterm for "postoperative" under Syndrome, respiratory, distress. The coder must understand that "respiratory insufficiency" is clinically a different diagnosis than "respiratory failure" and may be different clinically than "respiratory distress." And ARDS may be a type of respiratory insufficiency. Respiratory insufficiency differs from respiratory failure in that respiratory or pulmonary insufficiency does not imply that the respiratory system is completely unable to supply adequate oxygen to maintain metabolism and/or eliminate sufficient carbon dioxide to avoid respiratory failure. ARDS is a less severe respiratory condition than respiratory failure and only requires supplemental oxygen or intensified observation. Respiratory failure results when oxygen levels in the bloodstream become too low (hypoxemia) and/or carbon dioxide is to high (hypercapnia), causing damage to tissues and organs

The bottom line is that if ARDS is documented as due to surgery, best practice is for the coder to query if this is acute or chronic respiratory insufficiency or acute and/or chronic respiratory failure based on clinical indicators as currently, the index does not have an entry for ARDS complicating surgery. The coder would then look at the specific complication codes for respiratory failure respiratory insufficiency depending on query response.

The only choice for ARDS due to surgery without being further specified would be to assign J95.89 and J80. Codes J95.1, J95.2, and J95.3 are all MCCs J95.89 is a CC. See the tabular below. Query recommended.

J95.89 Other postprocedural complications and disorders of respiratory system, not elsewhere classified

Use additional code to identify disorder, such as:

aspiration pneumonia (J69.-)

bacterial or viral pneumonia (J12-J18)
EXCLUDES2

acute pulmonary insufficiency following thoracic surgery (J95.1)

postprocedural subglottic stenosis (J95.5)

If the coder queries, and the physician agrees that the ARDS due to surgery is actually pulmonary insufficiency due to surgery, the next decision is if the surgery was a non-thoracic surgery and either acute or chronic, or thoracic surgery. See the highlighted index entries below.

Complication, respiratory system J98.9

device, implant or graft- see Complication, prosthetic device or implant, specified NEC

lung transplant- see Complications, prosthetic device or implant, lung transplant

postoperative J95.89

air leak J95.812

Mendelson's syndrome(chemical pneumonitis) J95.4

pneumothorax J95.811

pulmonary insufficiency(acute) (after non-thoracic surgery) J95.2

chronic J95.3

following thoracic surgery J95.1

respiratory failure(acute) J95.821

acute and chronic J95.822

specified NEC J95.89

subglottic stenosis J95.5

tracheostomy complication- see Complications, tracheostomy

Clinical terms that may be synonymous with **ARDS** the may result in a query:

Acute respiratory failure	Capillary leak syndrome
Da Nang Lung	Shock Lung
Traumatic wet Lung	Adult hyaline membrane disease

The coder must carefully evaluate the clinical indicators and query if there is any conflicting documentation as the above synonymous terms cannot be substituted for ARDS without supporting documentation of the condition.

Clinical Criteria for the diagnosis of ARDS

- Clinical history of catastrophic event such as pulmonary or non-pulmonary (shock, multi system trauma)
- Physician must exclude chronic pulmonary diseases and left ventricular failure
- Must have respiratory distress

tachypnea >20 breath/minute	Labored breathing
central cyanosis	CXR- diffuse infiltrates
PaO_2 <50mmHg FiO_2 >O.6	Compliance <50 ml/cm H_2O increased shunt and dead space

The coder must peruse medical record documentation to insure the ARDS is not clinically respiratory failure. If there is any question regarding the cause of ARDS, query the physician for clarification and include all clinical indicators.

4. **Type IV respiratory failure** is due to hypoperfusion of respiratory muscles. Type IV describes patients who are intubated and ventilated in the process of resuscitation for shock. **This occurs in cardiogenic shock.**

CLINICALLY UNSUPPORTED RESPIRATORY FAILURE

In some cases, the coder may see either acute or chronic respiratory failure documented however there is no clinical information within the medical record to support it. This can happen for several reasons. One is when there is mechanical ventilation and intubation for protection of airway. There was an older ICD-9-CM Coding Clinic 3Q2012 page 21 that addressed this issue and suggested that NO code be assigned for airway protection only. If there is any question as to whether or not a patient does have respiratory failure query the physician. Even though this issue has not yet been addressed in Coding Clinic for ICD-10-CM, it would be wise to follow the same advice.

Also at times, some ICU physicians, critical care consultants or those managing patients on mechanical ventilator will document “acute respiratory failure” after surgery when in reality, the patient is still on the ventilation post surgery and is about to begin the weaning process off the ventilator after a thoracic surgery. It is speculated that these physicians may be documenting “acute respiratory failure” only to support their own professional fee billing, as they need a diagnosis to code for their ventilation management. It could also be they simply want a diagnosis to support the continued postoperative ventilation management. When this situation occurs the best recommendation is to refer this to a physician liaison or coding manager so that possibly a peer physician can discuss the case with this physician. At times the coder may be asked to submit a query. An example of a query to use would be as below, listing all the record clinical information before it:

"QUERY: In your clinical judgment, does the term acute respiratory failure in this instance refer to

___an unexpected post operative outcome

___expected inability to breathe independently due to still being sedated

___other diagnosis_____

___undetermined?"

CHRONIC RESPIRATORY FAILURE

Chronic respiratory failure may simulate acute respiratory failure in some patients with chronic respiratory diseases. Usually chronic respiratory failure starts slowly and lasts longer than acute respiratory failure. Chronic respiratory failure is common for patients with chronic respiratory diseases such as COPD, emphysema, pulmonary fibrosis and cystic fibrosis. Clinical indicators can be similar to that of acute respiratory failure. Many times since the patient has a chronic respiratory disease, the ABGs are already abnormal. Here is an example of a clinical picture of a patient with chronic respiratory failure:

A 63-year-old patient complained of increasing fatigue and sleepiness over several months. He became short of breath when walking but had no problem breathing at rest. He did not feel rested when he awoke in the morning and often had morning headaches. When he was five years old he had polio and was treated with an iron lung. A physical examination showed that his chest wall movement was diminished. He had severe curvature of the spine, and his abdomen did not rise during inspiration, which indicated a weak diaphragm. His pulmonary function (breathing) tests showed a sharply reduced lung volume and an inability to sustain a maximal breathing effort. His blood carbon dioxide was high and his oxygen low. A sleep study showed that his breathing slowed down even more at night, which was associated with a severe decrease in his oxygen level. He was prescribed a ventilator to use when he slept that delivered pressurized air to his lungs via a mask strapped over his nose and mouth. His sleep improved and his morning headaches went away, but he still became short of breath when he walked fast. Diagnosis: Chronic respiratory failure.

TREATMENT OF ACUTE AND CHRONIC RESPIRATORY FAILURE

Treatment includes:

- Establishing or maintenance of clear airways by suction, bronchodilators or tracheostomy
- Therapy to address the underlying disease or cause
- Antibiotics for infections or coverage for any that may be present
- Oxygen supplementation
- Monitoring respiratory status with serial ABGs and O2 saturation levels
- Anticoagulants if the suspected cause is pulmonary emboli
- Endotracheal intubation and mechanical ventilation
- CPAP or BiPAP to try to avoid invasive mechanical ventilation

The assessment and immediate management of hypercapnia is dependent on the pH as well as an elevated $PaCO_2$. The pH level and appropriate management are listed below.

- pH greater than 7.45: correct metabolic alkalosis
- pH between 7.45 and 7.30: Monitor the patient
- pH between 7.30 and 7.25: consider ventilatory support

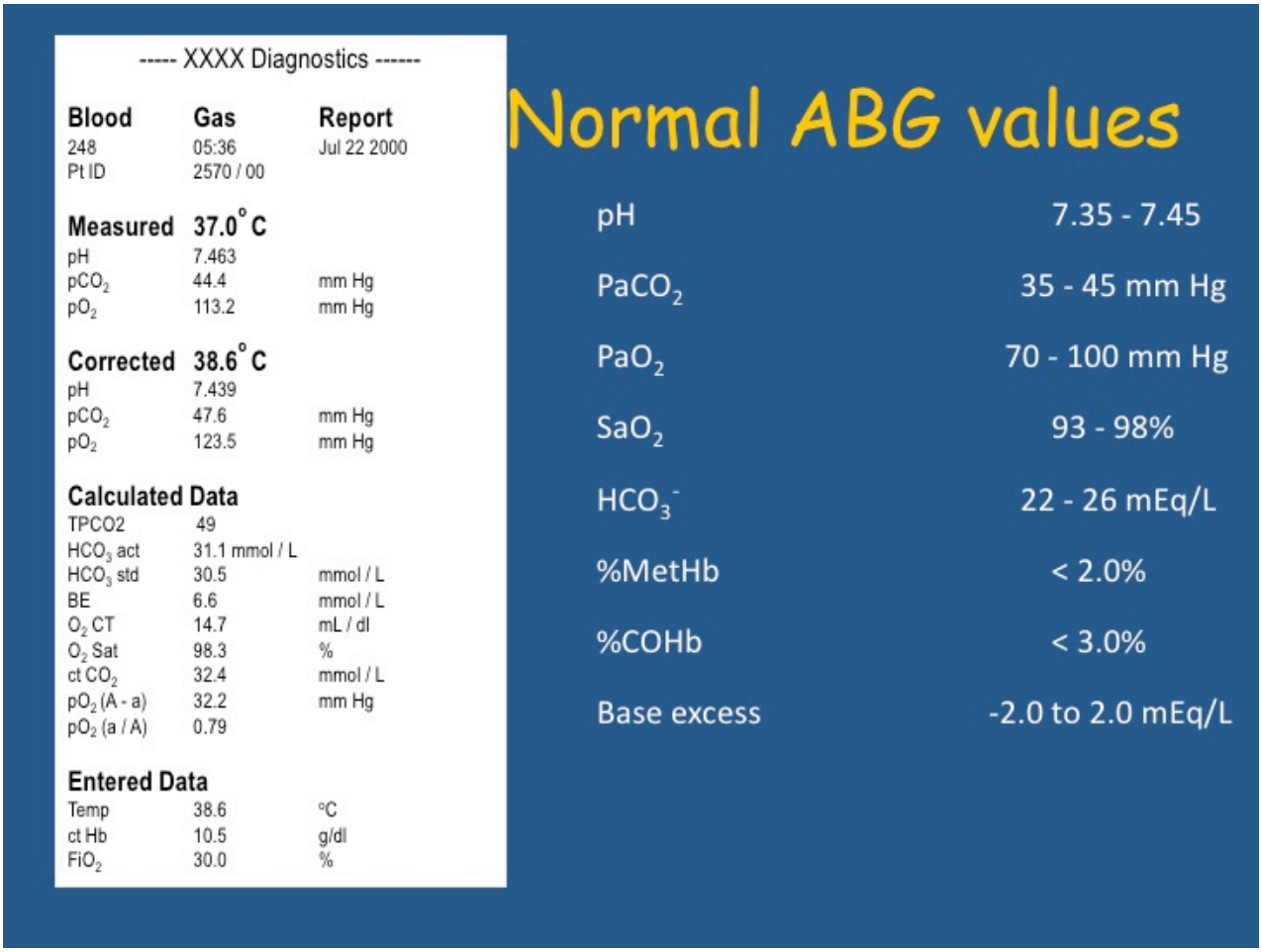
- pH less than or equal to 7.25: if not readily reversed support the patient and use ventilatory support

Treatment of increased PCO_2 is aimed at enhancing alveolar ventilation (bronchodilators, increase respiratory rate) or decreasing CO_2 (metabolic production of CO_2 production (bring fever down).

The **r**ole of blood gas measurements and coding acute respiratory failure usually include:

- PaO2 (or PO2) less than 60 mm Hg
- PaCO2 (or PCO2) more than 50 mm Hg
- pH is usually 7.35 or less.
- O2 saturation (SaO2) < 89%
- HCO3 is 22 mEq/liter or less

Arterial Blood Gas Analysis explanation can be found here:
https://www.slideshare.net/VishalGolay/interpretation-of-the-arterial-blood-gas-analysis



Coders must **not** use ABGs solely in the diagnosis of acute respiratory failure. These are guides and a physician can make a clinical diagnosis for a particular patient outside the ABG criteria. Many times COPD patients may already have ABGs that are altered. COPD patients usually have chronic low PA02 and chronic high PAC02.
In COPD patients, the drop of 10-15 mm can signify respiratory failure. Do not base it on blood gases alone, however. Always query the physician for any questions.

CLINICAL INDICATORS IN ACUTE RESPIRATORY FAILURE FOR QUERIES

Many times, clinical indicators for acute respiratory failure are documented within the record, however the diagnosis of acute respiratory failure is not documented. There may be "acute respiratory insufficiency," "chronic respiratory failure," "exacerbation of COPD," "Severe CHF," "respiratory insufficiency," or other respiratory conditions that may be contributing to undocumented acute respiratory failure. The coder can use the below clinical indicators as a guide for querying:

However, Coding Clinic 2Q1990 pages 20-21 caution the coder not to use blood gases strictly as a rule in diagnosing acute respiratory failure. The entire clinical picture of the patient must be taken into consideration.

Clinical Indicators for Acute Respiratory failure for query use <u>may</u> include:

(all on Room Air or 21% oxygen)

Respiratory Rate > 35 resp. per minute: _____
PO2 < 60 mm Hgb or PO2 findings of 10-15 mmHg below a COPD patient's normal level
Acute drop of 10 mm Hgb in PaO2
PCO2 > 50 mm Hgb or PCO2 findings of 10-15 mmHg above a COPD patient's normal level
Arterial Blood Gas pH < 7.35
SpO2 < 88% by Hgb saturation
Labored respirations (use of accessory muscles)
Diffuse bilateral pulmonary infiltrates
Hypotension
Cyanosis
Hypoxemia (confusion)
Hypercapnia (somnolent)
Treatment with minimum of 40% O2
Respiratory Treatments

SEQUENCING OF ACUTE RESPIRATORY FAILURE AND CODING CLINICS

The sequencing rules have changed over the years. Coders are CAUTIONED to really review the recent Coding Clinics and to be aware that older Coding Clinic advice may no longer be in effect.

Clarification: Chronic Respiratory Failure due to Poisoning
Coding Clinic, First Quarter 2016: Page 38

This *Coding Clinic*, addresses sequencing issues in First Quarter 2015, page 21. Code J96.10, Chronic respiratory failure, unspecified whether with hypoxia or hypercapnia, as the principal diagnosis. The chronic respiratory failure is a sequela, not a manifestation of the poisoning so the poisoning is not the PDX. In this circumstance, the sequela guideline is more relevant than the poisoning guideline. Therefore J96.10 is PDX followed by the poisoning code sequenced as an additional diagnosis.

Coding Clinic First Quarter 2008 page 18-19:

States that if patient has ARF and aspiration pneumonia, either of the conditions can be sequenced first.

OUTDATED: **Coding Clinic Second Quarter 2003 page 21-22:**

Old advice regarding sequencing of acute respiratory failure and pneumonia that has been updated with Coding Clinic First Quarter 2008 page 18-19

Coding Clinic First Quarter 2005 page 3-8:

Clarifies sequencing of acute respiratory failure with other conditions and supersedes Coding Clinic second Quarter 1991 page 3
Good solid examples of sequencing

Coding Clinic First Quarter 2003 page 15
Coding Clinic Second Quarter 2000 pages 21
Coding Clinic First Quarter 1993 page 25
Coding Clinic Third Quarter 1991 page 14
Coding Clinic Second Quarter 1990 pp 11-12
Coding Clinic November-December 1987

When a patient presents as overdosing on crack and is admitted with respiratory failure, the principal diagnosis is the poisoning code, 970.8, Poisoning by other specified central nervous stimulant followed by 518.81 and 305.60:

Coding Clinic, First Quarter 1993 Page: 25, Coding Clinic First Quarter 2005 page 3-8

When a patient presents with acute respiratory failure due to Pneumocystis carinii that is due to AIDS, the principal diagnosis is 042, AIDS followed by 518.81 and 136.3:

Coding Clinic First Quarter 2005 page 7

When a patient is admitted with sepsis and respiratory failure, the sepsis is sequenced first followed by the respiratory failure unless the physician documents that the respiratory failure is not in any way associated with the sepsis:

Coding Clinic First Quarter 2005 page 7-8

COMMON RESPIRATORY ABBREVIATIONS

ABG	**Arterial blood gas**
A/C	**A mechanical ventilation mode, assist/control**
AMV	**Assisted mechanical ventilation**
APRV	**Airway pressure release ventilation**
BiPAP	**Bi-Level positive airway pressure**
CaO2	**Arterial oxygen content**
CC	**Closing capacity**
CMV	**Continuous mechanical ventilation (specific rate for apneic patients)**
CO	**Carbon Monoxide**
CO2	**Carbon Dioxide**
CPAP	**Continuous positive airway pressure**
ECMO	**Extracorporeal membrane oxygenation**
EPAP	**End positive airway pressure**

ETS	**Endotracheal suction**
FEF	**Forced expiratory flowrate**
FVC	**Forced vital capacity**
IPPB	**Intermittent positive pressure breathing**
IMV	**Intermittent mandatory ventilation (vent breaths delivered between the patient's spontaneous breaths)**
IPS	**Inspiratory pressure support**
NPPV	**Noninvasive positive pressure ventilation**
PA	**Alveolar pressure, Pulmonary artery, Posterior-anterior**
PaACO2	**Arterial-alveolar carbon dioxide partial pressure difference**
PAaO2	**Alveolar-arterial oxygen partial pressure difference**
PAO2	**Is obtained from alveolar gas equation**
PaO2	**Is obtained from the ABGs**
PAP	**Pulmonary artery pressure, Positive airway pressure**
Peak expiratory flow	**Measurement of the ability to blow air out of the lungs that is used to diagnose asthma**
PEEP	**Positive end expiratory pressure (delivered at end of exhalation) (ARDS patients)**
PEP	**Positive expiratory pressure, Peak expiratory pressure**
PIMV	**Pressure intermittent mandatory ventilation**
PRVC	**Pressure Regulated Volume Control (A mechanical ventilation)** • Pressure-limited • Time cycled – Adaptive Pressure Ventilation (Galileo) – Autoflow (Evita 4) • Automatically adjusts pressure support level to minimum needed to maintain constant set TV.
PO2	**Oxygen partial pressure**
PSV	**Pressure Support Ventilation**
SaO2	**Arterial oxygen saturation**
SIMV	**Synchronized intermittent lung ventilation (mechanical ventilation)**

REFERENCES

AHA Coding Clinic
Official Guidelines for Coding and Reporting
https://www.nhlbi.nih.gov/health/health-topics/topics/rf/causes