



Respiratory Failure and COVID-19 DETERMINING THE PRINCIPAL DIAGNOSIS CODE

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A patient is admitted through the emergency department (ED) after a cardiac arrest. In the ED, the patient is intubated and placed on mechanical ventilation. The ED notes and the history and physical exam document acute respiratory failure. Blood gases show an oxygen level of 75, a pCO₂ level of 40 and a blood pH of 7.40. A chest x-ray shows ground glass infiltrates, and the patient is found to be positive for COVID-19. The patient remains on mechanical ventilation and is treated with Remdesivir. Despite these efforts the patient suffers another cardiac arrest, is resuscitated, but does not regain consciousness. At this point the family decides to make the patient a do not resuscitate and the patient expires. The discharge summary gives a final diagnosis of cardiac arrest and COVID-19 pneumonia without mention of respiratory failure.

What should be the principal diagnosis code? Some would argue that the reason for admission is the cardiac arrest and that should be the final diagnosis code, however the patient was also found to have COVID-19 pneumonia. Treatment was focused on the pneumonia, no investigation was done to determine the cause of the cardiac arrest, but it could be related to the COVID-19 condition. If the pneumonia is chosen as the principal diagnosis code, Official Coding Guidelines for COVID-19, effective April 1, 2020, require that the COVID-19 code must be sequenced as principal.

But should acute respiratory failure also be coded?

This coding scenario is seen frequently in the acute care setting. Respiratory failure in this situation and when other conditions are present has long caused confusion

EXPLORE THE CLINICAL INDICATORS FOR RESPIRATORY FAILURE, EXAMINE THE CURRENT CODING GUIDELINES AND LOOK AT CODING SCENARIOS

for coding professionals. ICD-10-CM brought about more specificity to identify variations in the condition, however coding guidance has remained consistent with ICD-9-CM guidelines.

Let's explore the clinical indicators for respiratory failure, examine the current coding guidelines and look at this and other related coding scenarios.

The Definition

Respiratory failure is the result of inadequate gas exchange by the respiratory system presenting with abnormal oxygen and carbon dioxide levels. The condition is life-threatening and is usually due to an underlying cause. Symptoms of acute respiratory failure include extreme shortness of breath, rapid respiratory rate using accessory muscles of respiration, including intercostals muscles retraction or possibly paradoxical breathing and/or cyanosis, loss of consciousness, increased heart rate and a decrease of oxygenated blood, with blood gas measurements of pO₂ less than 60, a pCO₂ greater than 50, arterial blood pH less than 7.35. A pO₂ decrease of 15 mm Hg from the patient's normal pO₂ or an arterial blood pH less than 7.35 in a patient with chronic lung disease may be an indicator of respiratory failure. Further, the definition of respiratory failure in clinical trials usually includes increased respiratory rate, abnormal blood gases and evidence of increased work of breathing.

- **Hypoxemia:** A drop in the oxygen carried in blood, showing a pO₂ of less than 8kPa
- **Hypercapnia:** A rise in arterial carbon dioxide levels in the blood showing a pCO₂ of greater than 6.0kPa.

Respiratory failure is classified as either Type I or Type II, depending on the levels of carbon dioxide present. Type I respiratory failure shows low oxygen and normal or low carbon dioxide levels. Type II shows hypoxemia with hypercapnia. It is caused by inadequate alveolar ventilation and both oxygen and carbon dioxide are affected. There is

a buildup of carbon dioxide levels generated by the body which cannot be eliminated.

Acute respiratory failure requires close patient monitoring and evaluation with aggressive respiratory therapy and/or mechanical ventilation. The absence of mechanical ventilation does not preclude the diagnosis of respiratory failure.

Respiratory Failure as the Principal Diagnosis

To report respiratory failure as the principal diagnosis code, the failure must be present on admission and be the main reason for treatment after study, except in a few limited situations, such as:

- Acute respiratory failure due to COVID-19 is coded with the COVID-19 sequenced first, and the acute respiratory failure second.
- Poisoning causing respiratory failure when the patient is admitted with respiratory failure due to an intentional drug overdose, or due to drug abuse/dependence, the poisoning code is listed as the principal diagnosis code.
- An obstetrics (during pregnancy, delivery, or postpartum) condition which causes respiratory failure, the obstetrics complication code is sequenced first, with the code for the respiratory failure as second.
- Human Immunodeficiency Virus (HIV) related condition, such as pneumonia in HIV causing respiratory failure, the HIV code is listed as the principal, with the related condition and respiratory failure listed second.
- Sepsis with respiratory failure, the sepsis is listed as the principal diagnosis, with the underlying disease and respiratory failure listed second. To apply this guideline, the sepsis must be present or suspected on admission. If the sepsis develops later during hospitalization, the sepsis is listed as the secondary diagnosis code.

Two or More Conditions that Equally Qualify as Principal

When respiratory failure is one of two or more conditions that equally qualify as the principal diagnosis code, either can be listed as the principal diagnosis code, except in any of the situations listed above.

This situation is typified when congestive heart failure (CHF) causes acute respiratory failure. The criteria for principal diagnosis as determined by the circumstances of admission, diagnostic workup and/or therapy provided, should dictate which condition is selected as the principal diagnosis code. If both conditions are considered to be equally treated, either can be sequenced as the principal diagnosis code. If there is any doubt, the attending physician should be queried.

Respiratory Failure with Respiratory Condition

Similar to the analogy above, when two or more conditions equally qualify as the principal diagnosis code, the same is applied to acute respiratory failure and a respiratory

condition such as pneumonia, COPD with exacerbation or other respiratory conditions. In a situation where the patient is emergently admitted with acute respiratory failure, requires intubation and mechanical ventilator support, and it is later determined that the patient has aspiration pneumonia, coding guidelines say that the criteria for principal diagnosis as determined by the circumstances of admission, diagnostic workup and/or therapy provided, should dictate which condition is selected as the principal diagnosis code. In this case, it may be more appropriate to list the acute respiratory failure as principal.

In another example, the patient is admitted with respiratory failure, and is found to have a pulmonary embolus, which is treated with a vena cava filter. The pulmonary embolus should be considered as the principal diagnosis code. In this case, the respiratory failure is of secondary importance to the pulmonary embolus which requires invasive measures.

Coding in ICD-10-CM

ICD-10-CM provides for a distinction between acute respiratory failure and unspecified respiratory failure, and further allows for the coding of respiratory failure with hypercapnia or hypoxia. Coding principals for ICD-10-CM are the same as in ICD-9-CM. More comprehensive instruction is now given in the Official Coding Guidelines that include instruction previously given only in Coding Clinic. Coding and clinical documentation improvement (CDI) specialists must recognize and acknowledge that all prior coding instruction given for ICD-9-CM applies to ICD-10-CM and should be very familiar with all the guidelines.

Coding Scenario

In the coding example at the beginning of this article, the patient's blood gases and blood pH are not consistent with acute respiratory failure, so the physician would need to be queried to properly code the visit. If the coding scenario above did not show positive COVID-19 and no pneumonia was present, the clinical information still does not quite support a diagnosis of acute respiratory failure, therefore the physician would nevertheless need to be queried.

Resources

Centers for Medicare and Medicaid Services. (2019). ICD-10-CM Official Guidelines for Coding and Reporting FY 2020

Centers for Medicare and Medicaid Services. (2020). ICD-10-CM Official Coding and Reporting Guidelines for COVID-19.

HealthEngine. (n.d.). Respiratory failure (types I and II). Retrieved from healthengine.com.au/info/respiratory-failure-types-i-and-ii

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