

## Mechanical ventilation coding an Office of Inspector General target

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**T**he Office of Inspector General (OIG) included coding of Mechanical Ventilation 96 Hours or Greater as a work plan initiative for both 2013 and 2014. Mechanical ventilation is performed in the inpatient setting for specific clinical reasons. Official ICD-9-CM coding guidelines address documentation requirements and proper coding for mechanical ventilation. Specific codes for mechanical ventilation can significantly impact Medicare-Severity Diagnostic Related Groups (MS-DRG) assignment and reimbursement. This article will provide an overview of these concepts.

### **Clinical background on mechanical ventilation and when it is used**

Mechanical ventilation assists or replaces spontaneous breathing in a patient. The main indication for initiating mechanical ventilation is to treat acute respiratory failure, commonly caused by conditions such as acute respiratory distress syndrome, heart failure with pulmonary edema, pneumonia, sepsis, and complications of surgery and trauma. Other conditions leading to acute respiratory failure requiring mechanical ventilation may include coma, exacerbation of chronic obstructive pulmonary disease, and neuromuscular disease. Mechanical ventilation decreases the patient's work of breathing, prevents respiratory muscle fatigue, and reverses hypoxemia and progressive respiratory acidosis which can threaten the patient's life.

Mechanical ventilation may also be performed as an adjunct to other therapy or as assistance in the care of critically ill patients.

There are two main categories of mechanical ventilation, noninvasive ventilation and invasive ventilation. Invasive ventilation is also known as conventional mechanical ventilation. While noninvasive mechanical ventilation is gaining more acceptance in use; the focus of OIG work plan initiatives, and the basis of this discussion, is invasive mechanical ventilation.

Conventional, or invasive mechanical ventilation occurs when an endotracheal tube is placed in the trachea to allow the passage of warmed, oxygenated and humidified gas to be delivered to the patient's airways at pressures above atmospheric pressure. Mild sedation usually is administered to perform the procedure. Patients with tracheostomies may also be able to connect to a mechanical ventilator via their own tracheostomy tube.

There are a number of various techniques to administer mechanical ventilation, depending on whether the respiration cycle is begun by the patient's own effort, or if it is signaled by a timer within the ventilator. The medical professional operating the mechanical ventilator controls a variety of settings to deliver the respiratory support appropriate to the patient's condition.

There are some types of ventilator support that are not considered true mechanical ventilation, such as, continuous positive airway pressure (CPAP) or bi-level positive airway pressure (BiPap). Official coding and documentation guidelines below spell out which ventilator support is used for mechanical ventilation coding, and which is not.

When the patient's gas exchange has stabilized on the mechanical ventilator, treatment for the underlying disease can begin. Ventilator therapy will be adapted in relationship to changes in the patient's clinical status. When the patient's respiratory function improves, the level of mechanical ventilatory support will be reduced and weaning will be achieved when feasible.

### **Official coding guidelines for mechanical ventilation**

The following official coding guideline citations are found at the end of this article.

Mechanical ventilation start time, duration, and end time is specifically defined in the official coding guidelines. Mechanical ventilation duration includes the time the patient is on the ventilator and the weaning period. It ends when the mechanical ventilation is turned off.

Noninvasive ventilatory support (such as CPAP or BiPAP) is not considered continuous invasive mechanical ventilation.

After surgery, if a patient develops a specific problem and is maintained on a ventilator longer than expected, it is appropriate to code as invasive mechanical ventilation.

If mechanical ventilation started in the emergency department and the patient is subsequently admitted to the hospital, the duration time begins at the time the patient is intubated.

For patients on mechanical ventilation via tracheostomy at the point of admission, ventilation start time is the time of admission to the facility.

### **Mechanical ventilation codes impact MS-DRG assignment**

There are four categories of MS-DRG pairs that are impacted by the ICD-9-CM procedure code for mechanical ventilation: 1) MS-DRG 3 and 4; 2) MS-DRG 207 and 208; 3) MS-DRG 870, 871, and 872; and 4) MS-DRG 927 and 933.

### **MS-DRG Pairs**

<b>MS-DRG</b>	<b>Title</b>
MS-DRG 3	Extracorporeal Membrane Oxygenation (ECMO) or Tracheostomy with Mechanical Ventilation 96+ Hours or Principal Diagnosis Except Face, Mouth, and Neck with Major O.R.
MS-DRG 4	Tracheostomy with Mechanical Ventilation 96+ Hours or Principal Diagnosis Except Face, Mouth and Neck without Major O.R.
MS-DRG 207	Respiratory System Diagnosis with Ventilator Support 96+ Hours
MS-DRG 208	Respiratory System Diagnosis with Ventilator Support <96 Hours
MS-DRG 870	Septicemia or Severe Sepsis with Mechanical Ventilation 96+ Hours
MS-DRG 871	Septicemia or Severe Sepsis without Mechanical Ventilation 96+ Hours
MS-DRG	Septicemia or Severe Sepsis without Mechanical Ventilation 96+ Hours without MCC

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MS-DRG 927	Extensive Burns or Full Thickness Burns with Mechanical Ventilation 96+ Hours with Skin Graft
MS-DRG 933	Extensive Burns or Full Thickness Burns with Mechanical Ventilation 96+ Hours without Skin Graft

### **MS-DRG 3 and 4**

MS-DRG 3 Geometric Mean Length of Stay (GMLOS) 27.2, Arithmetic Mean Length of Stay (AMLOS) 33.2, Relative Weight (RW) 17.6369

MS-DRG 4 GMLOS 20.3, AMLOS 24.7, RW 10.9288

It is possible to group to MS-DRG 3 or 4, even if mechanical ventilation is less than 96 hours, because multiple options may be followed to group to these MS-DRGs. MS-DRGs 3 and 4, are included in the Pre Major Diagnostic Category (MDC) groupings; meaning that they do not group primarily by principal diagnosis or operating room procedure. Instead, pre MDC MS-DRGs use other grouping criteria.

To group to MS-DRG 3, ICD-9-CM procedure codes for ECMO (39.65) or tracheostomy (31.1, 31.21, 31.29) are required in association with either 1) Any principal diagnosis except mouth, larynx, and pharynx disorders listed under MS-DRG 11 or 2) 96.72 Continuous mechanical ventilation for 96 consecutive hours or more. In addition, MS-DRG 3 requires the presence of another operating room (O.R.) procedure not listed in MS-DRGs 984-989.

To group to MS-DRG 4, ECMO 39.65 is not an option. Also, MS-DRG 4 does not require additional operating room (O.R.) procedures.

One of the cautions of these particular MS-DRGs, when they are based on tracheostomy, is that the tracheostomy must be coded correctly based on the documentation. A temporary, permanent, or mediastinal tracheostomy must be performed. Replacement of a tracheostomy tube is not sufficient for the assignment of the tracheostomy codes that are required for MS-DRG 3 and 4.

### **MS-DRG 207 and 208**

MS-DRG 207 GMLOS 12.1, AMLOS 14.1, RW 5.2556

MS-DRG 208 GMLOS 5.0, AMLOS 6.8, RW 2.2871

MS-DRG 207 and 208 are straightforward groupings for mechanical ventilation. To group to these MS-DRGs, a respiratory principal diagnosis is required from MS-MDC 4. For MS-DRG 207, ICD-9-CM procedure code 96.72 is used for continuous invasive mechanical ventilation for 96 consecutive hours or more. For MS-DRG 208, the procedure code assignment is 96.70 for continuous invasive mechanical ventilation of unspecified duration [or 96.7 continuous mechanical ventilation for less than 96 consecutive hours].

The caution for these MS-DRG pairs is that the higher weighted MS-DRG 207 must be supported by documentation in the medical record that continuous mechanical ventilation occurred, uninterrupted, for 96 continuous hours or more. Ventilation flow sheets must be reviewed for mechanical ventilation start and stop times. Continuous mechanical ventilation must reach at least 96 hours. If the duration is even one hour less at 96 hours, neither 96.72 nor MS-DRG 207 can be assigned. Hospital coding professionals must take the time to review the ventilation flow sheets carefully in order to accurately code the cases for correct reimbursement for these MS-DRG pairs.

### **MS-DRG 870, 871, and 872**

MS-DRG 870 GMLOS 12.5, AMLOS 14.6, RW 5.9187

MS-DRG 871 GMLOS 5.1, AMLOS 6.7, RW 1.8527

MS-DRG 872 GMLOS 4.1, AMLOS 4.9, RW 1.0687

MS-DRG 870, 871, and 872 are another set of groupings for mechanical ventilation, with a principal diagnosis category of Septicemia or Severe Sepsis. To group to MS-DRG 870, a principal diagnosis of Septicemia or Severe Sepsis is required, and procedure code 96.72 is also needed for continuous invasive mechanical ventilation for 96 consecutive hours or more.

To group to MS-DRG 871, principal diagnosis of Septicemia or Severe Sepsis is required, with the addition of a secondary diagnosis that is a Major Complication Comorbidity (MCC). However, MS-DRG 871 does not use a procedure code for mechanical ventilation. MS-DRG 872 is assigned for Septicemia or Severe Sepsis without a MCC, and without a procedure code for mechanical ventilation.

### **MS-DRG 927 and 933**

MS-DRG 927 GMLOS 22.3, AMLOS 30.7, RW) 16.4534

MS-DRG 933 GMLOS 2.6, AMLOS 8.2, RW 3.2785

MS-DRGs 927 and 933 are a final category of MS-DRGs that relate to mechanical ventilation performed as part of burn treatment.

To group to MS-DRG 927, a principal or secondary diagnosis of third-degree burn is required in addition to the following criteria: 1) Association with procedure code 96.72 for continuous invasive mechanical ventilation for 96 consecutive hours or more, and 2A) Operating room procedures for skin graft, or 2B) Principal or secondary diagnosis of burn any degree involving 20 percent or more of body surface.

To group to MS-DRG 933, a principal or secondary diagnosis of third-degree burn is required in addition to the following criteria: 1) Association with procedure code 96.72 for continuous

invasive mechanical ventilation for 96 consecutive hours or more[ or 2) Principal or secondary diagnosis of burn any degree involving 20 percent or more of body surface.

### **Mechanical ventilation extubation/reintubation or self-extubation, clinical background**

Discontinuing mechanical ventilation will be considered by the physician once a patient's underlying respiratory disease or disorder begins to improve. Weaning will be planned when lung function becomes stable or resolving, the patient's gas exchange is satisfactory, the patient's hemodynamics are stable; and, when it is determined that the patient is capable of starting spontaneous breaths. When the physician feels the patient is ready for weaning, a spontaneous breathing trial will be initiated with noninvasive ventilatory or no other respiratory support.

Specific weaning techniques will be applied, and the patient will be carefully monitored during the spontaneous breathing trial. Despite careful weaning methods and close attention, 10-15 percent of extubated patients require reintubation.

### **Self-extubation**

Critically ill adult patients are at risk for developing delirium in the intensive care units (ICU), and delirium is recognized as a complication of the ICU patient experience. Documentation may refer to this condition as "ICU psychosis." Patients may also arrive in the intensive unit already in a delirious state. Central nervous system organ dysfunction is the cause of these types of delirium which can lead to situations of patient self-extubation. Physicians will assess and manage intensive unit delirium, and when self-extubation occurs, the patient may be reintubated and placed back on the mechanical ventilator.

Similar self-extubation problems can also occur in pediatric intensive care patients. Infants and older pediatric patients on mechanical ventilators may self-extubate. Pediatric intensive care physicians will assess and manage these situations. When the pediatric patient self-extubates, the patient may be reintubated and placed back on the mechanical ventilator.

### **Official coding guidelines on extubation, reintubation, and self-extubation**

Mechanical ventilation start time, duration, and end time is specifically defined in the official coding guidelines. Mechanical ventilation duration includes the time the patient is on the ventilator and the weaning period. Review the guidelines for various examples of when mechanical ventilation start time occurs. Stop time occurs when the mechanical ventilation is turned off and the weaning period is complete. [*AHA Coding Clinic on ICD-9-CM*, Fourth Quarter 1992, page 16- 21, Third Quarter 2010, page 3-4.]

Mechanical ventilation is calculated in a special way when a patient self-extubates. Patients may self-extubate several times during a hospitalization. In all self-extubation cases, the physician did not intend to stop the mechanical ventilation. As long as the patient is placed back on the ventilator, the entire duration is counted. Discontinuation of mechanical ventilation, or extubation, is based on the physician order and/or clinical indicators. (*AHA Coding Clinic on ICD-9- CM*, First Quarter 2013, page 12-13.)

In addition to a physician order, phrases in a progress note such as "discontinue mechanical ventilation" or "extubate the patient" would suffice as a clinical indicator for discontinuation of

mechanical ventilation. If a physician orders discontinuation of mechanical ventilation or extubation, the mechanical ventilation end time occurs when the mechanical ventilation is turned off and the weaning period is complete. If the physician subsequently determines that it is clinically important to re-intubate a patient to restart mechanical ventilation, a new start time will be clocked according to the mechanical ventilation guidelines in *Coding Clinic*. When planned extubation and subsequent re-intubation occurs, the intubation times cannot be added together.

## Summary

For compliant coding of mechanical ventilation: 1) Know the clinical background of patients requiring mechanical ventilation; 2) Always follow official coding guidelines pertaining to mechanical ventilation; and 3) Be aware of the MS-DRGs associated with mechanical ventilation and how correct coding affects reimbursement.

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### **Specific References from AHA Coding Clinic**

*AHA Coding Clinic on ICD-9-CM, Chicago, Illinois. American Hospital Association (AHA). Third Quarter 2010, pages: 3-4, Effective with discharges October 1, 2010; Fourth Quarter 2008, page: 187 to 190, Effective with discharges: October 1, 2008; Second Quarter 2006, page: 8 to 9 Effective with discharges: July 15, 2006; Second Quarter 1992, page: 13 to 14 Effective with discharges: April 1, 1992; Fourth Quarter 1991, page: 16 to 21 Effective with discharges: October 1, 1991.*

*AHA Coding Clinic on ICD-9-CM, Chicago, Illinois. American Hospital Association (AHA). Third Quarter 2010, pages: 3-4 Effective with discharges: October 1, 2010; First Quarter 1991, page 16-21, Effective with discharges: October 1, 1991; First Quarter 2013, page 12-13, Effective with discharges: March 27, 2013.*

### **General References**

*Current Diagnosis and Treatment. Pediatrics. Twenty-first edition. William W. Hay, Jr., Myron J. Levin, Robin R. Deterdins, Mark J. Abzug, and Judith M. Sondheimer. Chapter 14. Critical Care:DRG Expert 2014. Chicago, Illinois.*

*Harrison's Principles of Internal Medicine, 18th edition. Chapter 269. Mechanical Ventilatory Support. The McGraw-Hill Companies:*

*Principles of Critical Care, Third Edition. Jesse B. Hall, Gregory A. Schmidt, Lawrence D. H. Wood, Chapter 62. Delirium in the Intensive Care Unit. The McGraw-Hill Companies:*

*Tintanalli's Emergency Medicine, a Comprehensive Study, 7th Edition. Chapter 21. Trauma in Children. The McGraw-Hill Companies:*

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