

## Notes/Educational Pearls

### **Key Considerations**

1. It is important to understand the patient's underlying pulmonary status to choose the appropriate type of ventilation (volume or pressure) and mode (AC or SIMV most common)
  - a. Volume control ventilation is generally preferred initially in adults with compliant lungs (Pplat less than 30) because of better control of minute ventilation
  - b. Pressure control ventilation can be used in patients with non-compliant lungs and elevated Pplat
  - c. Assist Control (AC) mode is acceptable for most patients and provides best control of minute ventilation. Synchronized Intermittent Mandatory Ventilation (SIMV) is an alternative option

### **Pertinent Assessment Findings**

1. Perform a pre-ventilator use inspection including a circuit check on the ventilator prior to placing it on a patient
2. Assess values during transport, including:
  - a. Peak inspiratory pressure (PIP) Compare against baseline value to monitor for compliance changes or obstruction in the circuit
  - b. Respiratory rate. Compare with baseline value, rapid increases could indicate leaks. Overbreathing may require vent setting adjustment
  - c. Exhaled tidal volume. Compare against baseline, if extreme fluctuations, check for leaks in circuit and in ET tube
  - d. Monitor the I:E ratio. 1:2 or 1:3 for normal lungs, longer E times may be needed for patients with obstructive or restrictive lung disease

## **Quality Improvement**

### **Associated NEMSIS Protocol(s) (eProtocol.01)** (for additional information, go to [www.nemsis.org](http://www.nemsis.org))

None noted

### **Key Documentation Elements**

Documentation of ventilator settings and monitored values should include:

1. Ventilator Settings: Volume or pressure breaths; mode; respiratory rate; inspiratory time; tidal volume or pressure, PEEP, FiO<sub>2</sub>; sensitivity
2. Patient Values (baseline and repeated): Peak inspiratory pressure (PIP); exhaled tidal volume; respiratory rate; I:E ratio; minute volume; EtCO<sub>2</sub>; SPO<sub>2</sub>

### **Performance Measures**

None noted