



University of Illinois, Metropolitan Group Hospitals

Resident Name:

PGY: 1 2 3 4 5

Date of Surgery:

OSAT for Ventilator Management OSCA

Pre-Procedural Skills	Components	Present	Absent
Understands indication for intubation	GCS less than 8 Massive facial injury Multisystem trauma Airway or facial burns Impending respiratory failure		
Understands need for change in ventilator settings	Able to interpret ABG Able to correctly clinically evaluate patient for respiratory status Performs a correct thoracic physical examination Able to identify significant findings on chest xray		
Checks equipment	Able to read settings on ventilator including TV, PEEP, Pressure support, FIO2, peak airway pressures, expiratory volume, mean and plateau airway pressures		
Knows how to use equipment	Able to change ventilator settings without assistance from ancillary staff		
Implements barrier precautions	Hand washing Gloves		

Procedural Skills	Components	Present	Absent
Knows appropriate initial ventilator settings	Can describe various modes of ventilation – AC, SIMV, PC, PRVC, etc Knows how to calculate appropriate tidal volume for weight of patient Appropriate oxygen level for patient’s needs Appropriate PEEP and pressure support		
Understands ventilator changes that need to be made References: Tobert DG, Simon PM, Stroetz RW, et al: The determinants of respiratory rate during mechanical ventilation. <i>Am J Respir Crit Care Med</i> 155:485, 1997.	Knows changes necessary to improve oxygenation Knows changes necessary to improve ventilation Knows changes necessary to improve acid/base status Demonstrates knowledge of pulmonary disease		
Understand need for advanced interventions References:	Knows indications for pressure control ventilation Knows indications and evidence-based guidelines for prone positioning Knows indications and evidence-based guidelines for high frequency ventilation Knows evidence-based guidelines for ARDS management		



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<p>Derdak S, Mehta S, Stewart TE, et al: High-frequency oscillatory ventilation for acute respiratory distress syndrome in adults: A randomized, controlled trial. <i>Am J Respir Crit Care Med</i> 166:801, 2002.</p> <p>Mehta S, Granton J, MacDonald RJ, et al. High frequency oscillatory ventilation in adults: The Toronto experience. <i>Chest</i> 126:518, 2004.</p> <p>Beuret P, Carton MJ, Nourdine K, et al.: Prone position as prevention of lung injury in comatose patients: A prospective, randomized, controlled study. <i>Intens Care Med</i> 28:564, 2002.</p>	<p>Knows indications for chest CT</p> <p>Knows indications for chest tube placement in ventilated patient</p> <p>Knows indications for bronchoscopy</p>		
<p>Knows timing of interventions</p>	<p>Does not attempt advanced ventilator maneuvers in middle of night or at shift changes</p>		
<p>Documents ventilator changes</p>	<p>Documents plan for ventilator management in daily progress notes</p> <p>Documents any changes in ventilator settings</p>		
<p>Follows up on ventilator changes</p>	<p>Orders repeat ABG at appropriate time from ventilator change</p> <p>Reassesses patient clinically</p>		
Post Procedural Skills	Components	Present	Absent
<p>Understand indications for extubation</p> <p>References: Esteban A, Frutos F, Tobin MJ, et al: 1995. A comparison of four methods of weaning patients from mechanical ventilation. <i>N Engl J Med</i> 332:345, 1995.</p>	<p>Patient awake and oriented</p> <p>Checks chest x-ray, checks ABG, performs thoracic physical examination, orders weaning parameters and spontaneous breathing trial</p> <p>Able to interpret weaning parameters for extubation</p>		
<p>Understand indications for prolonged intubation and tracheostomy placement</p> <p>References: Rothaar RC, Epstein SK: Extubation failure: magnitude of the problem, impact on outcomes, and prevention. <i>Curr Opin Crit Care</i> 9:59, 2003.</p>	<p>Spinal cord / head injured patient / Neurosurgical patient</p> <p>Suggests tracheostomy at appropriate timing (1 week from intubation)</p> <p>Discusses tracheostomy placement with family, if appropriate</p>		



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<p>Stauffer JL, Olson DE, Petty TL: Complications and consequences of endotracheal intubation and tracheostomy. <i>Am J Med</i> 70:65, 1981.</p> <p>Rodriguez JL, Steinberg SM, Luchetti FA, et al.: Early tracheostomy for primary airway management in the surgical critical care setting. <i>Surgery</i> 108:655, 1990.</p>			
<p>Able to wean a head injured patient with a tracheostomy</p> <p>References:</p> <p>Gehlbach BK, Kress JP: Sedation in the intensive care unit. <i>Curr Opin Crit Care</i> 8:290, 2002.</p> <p>Kress JP, Pohlman AS, O'Connor MF, et al: Daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation. <i>N Engl J Med</i> 342:1, 2000.</p>	<p>Weans sedation appropriately</p> <p>Weans rate, pressure support and PEEP appropriately</p> <p>Knows indication for tracheostomy collar</p> <p>Knows indication for capping tracheostomy</p> <p>Able to downsize a tracheostomy tube at the bedside</p>		
<p>Verifies chest X-ray daily</p>	<p>Tube placed in column of air</p> <p>Tube placed 2cm above carina</p> <p>Checks peak airway pressures</p> <p>Adjusts tube if needed</p>		
<p>Informs the staff, patient and relatives of the outcome of the procedure</p>	<p>Informs nurses and respiratory therapy of plan for ventilator management</p> <p>Daily discussions and updates with family of ventilated patients</p> <p>Attempts to establish power of attorney for ventilated patients</p>		



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The resident must demonstrate proficiency in all skills and components as specified to attain a passing grade.

Pass _____ **Fail** _____

Attending Physician Name: _____

Attending Physician Signature: _____ Date: _____

General References:

Hinson JR, Marini JJ: Principles of mechanical ventilator use in respiratory failure. *Annu Rev Med* 43:341, 1992.

Wong PW, et al.: The effect of varying inspiratory flow waveforms on pulmonary mechanics in critically ill patients. *J Crit Care* 15:133, 2000.

Collective Task Force: Evidence-based guidelines for weaning and discontinuing ventilatory support. *Chest* 6:375s, 2001.

Namen AM, et al.: Predictors of successful extubation in neurosurgical patients. *Am J Respir Crit Care Med* 163:658, 2001.

Dries DJ, McGonigal MD, Malian MS: Protocol-driven ventilator weaning reduces use of mechanical ventilation, rate of early reintubation, and ventilator-associated pneumonia. *J Trauma* 56:943, 2004.

Barquist ES, Amorteegui J, Hallal A, et al.: Tracheostomy in ventilator dependent trauma patients: A prospective, randomized intention-to-treat study. *J Trauma* 60:91, 2006.