

- b. Suction airway: for significantly contaminated airways, consider utilizing a **suction assisted laryngeal airway decontamination (SALAD)** technique
 - c. Oropharyngeal airways (OPA) or nasopharyngeal airways (NPA) can be placed if needed to maintain a patent airway and make BVM ventilation more effective
 - i. OPA are used for patients without gag reflex
 - ii. NPA are used for patients with gag reflex
 - d. Patient positioning can significantly impact respiratory mechanics. Patients with severe bronchospasm should be left in the position of comfort (perhaps tripod) whenever possible. Elevating the head or padding (shoulders, occiput) can assist with opening airway and respiratory mechanics. This can both improve the ability to ventilate and limit aspiration
 - e. For patients with **tracheostomy** in respiratory distress, see [Tracheostomy Management Guideline](#)
4. Use **bag-valve-mask (BVM) ventilation** in the setting of respiratory failure or arrest. Whenever possible, the patient's head should be elevated up to 30 degrees
 - a. Two-person, two-thumbs-up BVM ventilation is preferred
 - b. **PEEP** should be used with BVM
 - i. 5 cmH₂O is generally an appropriate initial PEEP setting
 - ii. Increase PEEP in stepwise fashion (2–3 cmH₂O at a time) as necessary, allowing time for the patient to equilibrate with each change before further adjustments are made. The goal is to reach the lowest PEEP needed to adequately ventilate the patient. Higher PEEP results in greater negative hemodynamic impact. Generally, physician consultation should be considered for higher PEEP levels (greater than 10–15 cmH₂O)
 - c. Continuous wave-form capnography monitoring should be placed in line
 - i. In patients without primary pulmonary pathology (i.e., acute respiratory distress syndrome (ARDS), COPD), maintain EtCO₂ of no less than 35 and up to 40 mmHg. Patients with specific disease processes such as acute acid-base disorders (i.e., DKA, lactic acidosis due to severe sepsis or trauma), acute respiratory failure due to primary pulmonary pathology, or post-cardiac arrest will have different EtCO₂ parameters due to their underlying disease
 - ii. In patients with severe head injury with signs of herniation (unilateral dilated pupil or decerebrate posturing), modest hyperventilation to EtCO₂ no less than 30 mmHg may be considered for a brief time
 - d. Tidal volume:
 - i. Ventilate with just enough volume to see chest rise, approximately 6–8 mL/kg ideal body weight
 - ii. Over-inflation (e.g., excessive tidal volume) and overventilation (e.g., excessive minute ventilation) are both undesirable and potentially harmful
 - e. Rate
 - i. **Adult:** 10–12 breaths/minute
 - ii. **Child:** 20–30 breaths/minute
 - iii. **Infant:** 20–30 breaths/minute
 - f. Continuously monitor EtCO₂ to guide tidal volume and minute ventilation
5. **Non-invasive ventilation (NIV)** should be considered early for severe respiratory distress or impending respiratory failure