



**EMSIA** OF SANTA CRUZ COUNTY  
EMERGENCY MEDICAL SERVICES INTEGRATION AUTHORITY



**Santa Cruz County  
Emergency Medical Services Program**

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**Core Principles  
For  
Managing Airway and Ventilation  
2012**

**Rule #1**

***Oxygenation, ventilation, and airway protection are the critical components of correct respiratory management.***

**Rule #2**

***Patients should be oxygenated only according to their need, and should not receive supplemental oxygen otherwise.***

- Most patients should only be oxygenated to a SpO<sub>2</sub> of 95%. Oxygen administration to patients should be titrated to achieve this SpO<sub>2</sub> level. If this level can be achieved on room air, no supplemental oxygenation is needed as long as the patient's respiratory distress has been adequately treated.

**Rule #3**

***Ventilation is the process by which carbon dioxide is removed from the blood by exhalation.***

- Ventilation is assessed by the clinical evaluation of respiratory rate and volume, by assessing the patient globally, and by monitoring end tidal capnography.

**Rule #4**

***End tidal quantitative capnographic monitoring is the most accurate measure of respiratory sufficiency as it provides a moment by moment snapshot of ventilation.***

- It should be used in all cases of respiratory distress, respiratory failure, and altered mentation.
- Normal capnographic measures should be between 35-45 mmHg. Numbers below this range indicate abnormal hyperventilation; numbers above this indicate abnormal hypoventilation.

- Capnography should be used to measure the efficacy of CPR, the return of spontaneous circulation, and as an endpoint for resuscitation.

### **Rule #5**

***Patients requiring positive pressure ventilation should be ventilated using the most appropriate adjunct.***

- Each adjunct has its strengths and weaknesses; the key is to choose the adjunct that best provides adequate ventilation and airway protection for the particular situation.

### **Rule #6**

***Airway protection is critical for ensuring adequate oxygenation and ventilation.***

### **Rule #7**

***Accurate airway and ventilation evaluation is critical for optimizing patient outcomes.***

- Accurate evaluation of airway patency (a noisy airway is an obstructed airway), breathing rate and depth, lung sounds, and most importantly, the patient's work of breathing, is essential.
- Increased work of breathing - evidenced by the presence of retractions and accessory muscle use – is the most sensitive and specific indicator of respiratory distress.

### **Rule #8**

***Prevent or remedy hypoxia; avoid hyperventilation and hyperoxia***

- Hyperventilation decreases the survival of nearly all patients.
- Over-oxygenation leads to greater CO<sub>2</sub> retention and decreased survival.

### **Rule #9**

***CPAP should be used for all severe respiratory distress patients who can tolerate it.***

- Caution must be used when managing patients with difficulty exhaling air, as their respiratory distress can potentially be worsened.