



EMSIA OF SANTA CRUZ COUNTY
EMERGENCY MEDICAL SERVICES INTEGRATION AUTHORITY



**Santa Cruz County
Emergency Medical Services Program**

**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 SpO₂ of 95%. Oxygen administration to patients should be titrated to achieve this SpO₂ 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 CO₂ 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.