



San Benito County Emergency Medical Services Agency

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

Policy : 5800
Effective : May 1, 2014
Reviewed : March 1, 2014

I. Purpose

Patients with respiratory compromise from pulmonary edema, chronic obstructive pulmonary disease, asthma or other pulmonary diseases suffer an increased work of breathing and ineffective gas exchange at the alveolar level.

CPAP works by increasing flow restriction during exhalation. This “splints” open patients’ airways, reducing the work of breathing and increasing gas exchange at the alveolar level. In CHF patients, CPAP also serves to force excess fluid out of the alveoli and interstitial space and back into the vascular space, and reduces venous return and subsequent cardiac workload.

II. Indications

- A. CPAP may be utilized in conscious, breathing patients with severe respiratory distress secondary to:
 - Acute pulmonary edema
 - Bronchial constriction caused by chronic obstructive pulmonary disease, asthma, or other etiologies.
 - Other causes not listed above.
- B. CPAP is authorized for use only in patients that are 8 years or older.

III. Contraindications

A. Absolute Contraindication

CPAP will not be used when the following conditions are present:

- Respiratory or cardiac arrest

- Agonal respirations
- Severely depressed level of consciousness
- Hypotension
- Signs or symptoms of a pneumothorax
- Inability to maintain airway patency
- Major trauma
- Trauma to the head with increased intracranial pressure
- Trauma to the face such as burns or fractures
- Vomiting

B. Relative Contraindications:

Use CPAP cautiously in patients with:

- Pulmonary Fibrosis
- Any decreased level of consciousness
- Claustrophobia (after first 1 – 2 minute trial)

IV. Complications

- A. Hypotension
- B. Pneumothorax
- C. Corneal Drying

V. Goals

- A. Decreased work of breathing.
- B. Decreased respiratory and heart rate.
- C. Increased SpO₂
- D. Stabilized blood pressure
- E. Improved patient comfort and decreased anxiety associated with shortness of breath.

VI. Procedure

- A. Explain procedure to patient. Stress that this mask will work better if the patient tries to breathe normally after it is applied.
- B. Size the patient for a small, medium or large anesthesia mask.

VII. Training/CQI

- A. In order to perform this skill a paramedic must demonstrate competency. No paramedic may utilize this skill without Field Training Officer approval.
- B. All CPAP cases will be subject to audit as deemed appropriate by the County EMS Quality Improvement Committee.

VIII. Notes

- Use of positive pressure ventilation with BVM, ETI, or King Tube should be considered if the patient shows signs of respiratory failure
- This procedure is very O₂ intensive. At 20 lpm, a full D tank will be drained in 14 – 16 minutes.
- Monitor the manometer to insure that the correct cm of H₂O is being maintained. It is likely that the cm H₂O may decrease as the D tank is emptied to below 500 -600 psi.
- Document patient vital signs and status changes on the PCR. In particular, note changes in SpO₂, ETCO₂, work of breathing, respiratory rate, and patient comfort.
- Watch for hypotension in particular. CPAP decreases venous return and can drop BP relatively quickly.
- Refer to Policy 4040 for further information.