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|  | <b>COUNTY OF SACRAMENTO</b><br>EMERGENCY MEDICAL SERVICES AGENCY              | Document #          | 8829.07  |
|   | <u>PROGRAM DOCUMENT:</u><br><b>Continuous Positive Airway Pressure (CPAP)</b> | Initial Date:       | 01/25/08 |
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 EMS Medical Director

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 EMS Administrator

**Purpose:**

- A. To serve as a guideline for the indications and application of CPAP.

**Authority:**

- A. California Health and Safety Code, Division 2.5
- B. California Code of Regulations, Title 22, Division 9

**Indications:**

- A. Adult patients in moderate to severe respiratory distress being treated under protocol #8026-Respiratory Distress: Shortness of Breath and who are:
  - 1. Spontaneously breathing
  - 2. Conscious
  - 3. Not suspected to have a pneumothorax

**Contraindications:**

- A. Apneic Patients
- B. Pediatric Patients
- C. Cardiac and/or respiratory arrest
- D. Suspected Pneumothorax
- E. Vomiting Patients
- F. Unconscious patients
- G. Uncooperative patients after coaching
- H. Inability to achieve a good seal with the CPAP facemask

**Special Precautions:**

- A. Do not delay medication administration to apply CPAP
- B. Patients must be CONTINUOUSLY monitored for the development of:
  - 1. Respiratory failure – remove CPAP circuit and use Bag Valve Mask (BVM) and/or advanced airway adjunct
  - 2. Vomiting – remove CPAP circuit to prevent aspiration.
  - 3. Suspected barotrauma – remove CPAP
- C. Monitor oxygen consumption, especially if nebulizers are being run off the same oxygen supply

- D. If staffing permits, allow one paramedic to focus on setting up, coaching and monitoring the patient's response to CPAP and another paramedic responsible for patient care.

**Equipment:**

- A. CPAP pressure generator and circuit, set between 5 and 10 cm H<sub>2</sub>O pressure
- B. Appropriate sized facemask and straps
- C. Inline nebulizer if required for bronchodilator administration
- D. Oxygen supply

**Procedure:**

- A. Assemble equipment
- B. Explain procedure to patient
- C. Assist patient to use and tolerate the mask and circuit
- D. Use straps to maintain CPAP seal if needed
- E. Patient to be transported in a position that facilitates continuous visual monitoring and minimizes aspiration risk
- F. Monitor patient and response to CPAP
- G. Notify hospital that CPAP is in use so that equipment can be made available upon arrival at the hospital to continue CPAP.

**Medication Administration:**

- A. FiO<sub>2</sub> shall be titrated to the least amount needed to maintain SAO<sub>2</sub> ≥ 94%.
- B. Albuterol 5 mg will be administered via in line nebulizer utilizing at least 8 liters per minute.
- C. Nitrates, if indicated for CHF, shall be delivered per CHF algorithm via sub lingual Nitroglycerine 0.4mg to 1.2mg prior to application of CPAP, then Nitropaste one (1) inch applied to the chest.

**Management of Hypotension on CPAP:**

- A. CPAP may introduce transient hypotension via decreased venous return
- B. If Systolic Blood Pressure (SBP) < 90 mmHg remove CPAP and any Nitropaste.
- C. If SBP < 90 mmHg, decrease CPAP to no more than 5 cm H<sub>2</sub>O pressure, and administer 500 cc normal saline bolus x 1, if SBP remains < 90 mmHg after fluid bolus then remove CPAP and any Nitropaste.

Cross Reference:      Respiratory Distress- PD# 8026