Section: ALS Protocols
Subject: CPAP (CONTINUOUS POSITIVE AIR PRESSURE)
Section #: 345.05
Issue Date: March 21, 2011
Revision Date:
Approved By: Michael Lozano, Jr., M.D., HCFR Medical Director

1. The use of CPAP, when available, will be at the discretion of the Medic-in-Charge.

2. CPAP therapy may be used for the following situations in conscious adult patients:
    a. CHF with adequate tidal volume.
    b. Exacerbation of COPD or asthma.
    c. Near-drowning with adequate tidal volume.
    d. Non-cardiogenic pulmonary edema with adequate tidal volume.

3. CPAP therapy:
    a. Thoroughly explain the procedure to the patient.
    b. Coach the patient as needed.
    c. Indications: [1]
        i. Moderate to severe respiratory distress
        ii. Tachypnea (RR > 24 breaths/min)
        iii. Accessory muscle use or abdominal breathing
    d. Contraindications: [1]
        i. Respiratory arrest
        ii. Medically unstable
        iii. Unable to protect airway
        iv. Excessive secretions
        v. Uncooperative or agitated
        vi. Unable to fit mask
        vii. Recent (< 30 days) upper airway or upper gastrointestinal surgery
    e. Predictors of success for CPAP in the acute setting: [2]
        i. Able to cooperate
            1. Good neurologic status
            2. Patient's acceptance of the technique
        ii. Able to protect airway
            1. Low secretions
            2. Minimal amount of air leak
            3. Dentition intact (either their own or dentures in place)
        iii. Not too acutely ill
            1. No pneumonia
            2. Not too elevated $ETCO_2$

[1] Adapted from Liesching T, Kwok H, Hill NS: Acute applications of noninvasive positive pressure ventilation. Chest 124:699–713, 2003.

[2] Adapted from Ambrosino N, Foglio K, Rubini F, et al: Non-invasive mechanical ventilation in acute respiratory failure due to chronic obstructive pulmonary disease: Correlates for success. Thorax 50:755–757, 1995; and Soo Hoo GW, Santiago S, Williams AJ: Nasal mechanical ventilation for hypercapnic respiratory failure in chronic obstructive pulmonary disease: Determinants of success and failure. Crit Care Med 22:1253–1261, 1994.

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iv. Good initial response
1. Reduction in respiratory rate
2. Improving $ETCO_2$
3. Improving level of consciousness

f. Start at 5 cm H_2O
i. Increase as tolerated for COPD, near drowning and non-cardiogenic pulmonary edema.
ii. Keep at 5 cm H_2O for asthma, and discontinue of no response.

g. Use continuous wave capnography, if available, to better monitor the clinical course.

h. If the patient's condition deteriorates, discontinue immediately.