Section: Adult Medical
Subject: ASTHMA
Section #: 340.04
Issue Date: March 21, 2011
Revision Date: December 1, 2017
Approved By: Michael Lozano, Jr., M.D., HCFR Medical Director

1. Basic ALS treatments
    a. Continuous capnography should be used if available, especially in severe cases.

2. ALS Treatment
    a. **Albuterol** (preferred for primary asthma patients)
        i. 5.0 mg nebulized
        ii. May be repeated q 20 minutes (not exceeding 15 mg per hour)
    b. **Albuterol and ipratroprium bromide** (preferred for COPD and emphysema patients)
        i. **Ipratroprium bromide** 0.5 mg (500 mcg) mixed with **albuterol** 2.5 mg
        ii. May be repeated up to two (2) times if there has been a response to the initial treatment [total of 1.5 mg (1500 mcg) of **ipratroprium bromide** and 7.5 mg of **albuterol**]
        iii. If the patient's tidal volume is inadequate then consider administering **ipratroprium bromide** and **albuterol** via BVM with in-line nebulizer or ETT after securing the airway.
    c. **Methylprednisolone** (if the patient has not had steroids within the past 24 hours, and is not responding to initial albuterol)
        i. 125 mg IV over 2 minutes, once.
    d. **Magnesium sulfate** (for severe symptoms)
        i. 2.0 grams in 50 mL over 20 minutes IV, once.
    e. CPAP (primarily for COPD patients)
        i. Indications: [1]
            1. Moderate to severe respiratory distress
            2. Tachypnea (RR > 24 breaths/min)
            3. Accessory muscle use or abdominal breathing
        ii. Contraindications:
            1. Respiratory arrest
            2. Medically unstable
            3. Unable to protect airway
            4. Excessive secretions
            5. Uncooperative or agitated
            6. Unable to fit mask
            7. Recent (< 30 days) upper airway or upper gastrointestinal surgery
        iii. Start at 5.0 cm H_2O
            1. Increase as tolerated.
        iv. Use waveform capnography, if available, to better monitor the clinical course.
    f. **Epinephrine** (for near-fatal asthma or COPD)
        i. If unable to nebulize the patient and the patient's tidal volume is inadequate:
            1. 0.3 mg of a 1:1,000 solution IM q 20 minutes PRN
    g. Consider **intubation** if no response to any therapy and deterioration is noted.

3. QA points
    a. In very symptomatic patients, an absence of wheezing may be a pre-terminal event.
    b. All that wheezes is not asthma.

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

Section:	Adult Medical	Page 2 of 2
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i. Adult patients without a history of pulmonary disease do not develop acute asthma overnight; evaluate the patient further for pulmonary edema.
ii. An aspirated foreign body in a pediatric patient can present as wheezing.