

SECTION: M-2

PROTOCOL TITLE: Adult Reactive Airway Emergencies

REVISED: September 28, 2010

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**GENERAL COMMENTS:** This protocol includes asthma, COPD, pneumonia and bronchitis, as well as the myriad of similar conditions. As such it is imperative that the provider attempt to differentiate between a true reactive airway disorder and other respiratory emergencies such as pneumonia and CHF and treat appropriately.

**BLS SPECIFIC CARE:** See adult General Medical Care Protocol M-1

- Assist the patient with their prescribed “rescue inhaler.” Use a spacer if the patient is prescribed one and has it available.
  - Assisted Inhaler: 2 puffs or a specific number of puffs as prescribed
  - Repeat every 5-10 minutes to a maximum of 6 puffs or as prescribed
  - Hold for HR >150/min.
- As an alternative, the patient may be allowed to use their own nebulized medication. The QRU will offer to hook up oxygen in lieu of a room air “condenser” and run at 6-8 lpm with the patient’s hand held nebulizer (HHN). The patient must prepare it himself

**ILS SPECIFIC CARE:** See adult General Medical Care Protocol M-1

**ALS SPECIFIC CARE:** See adult General Medical Care Protocol M-1

*Bronchodilators*

- Nebulizer
  - Albuterol 2.5 mg (0.83% in 3 cc)/ Atrovent 0.5 mg (0.02% in 2.5 cc) nebulized
    - May use DuoNeb™ preparation for initial nebulizer.
  - Repeat as needed with Albuterol Only
  - Do not dilute
- Magnesium Sulfate for refractory patients in extremis
  - Magnesium sulfate: IV/IO (for severe episodes)
    - 2 g over 5 minutes
    - IV: 2 g given SLOWLY. Take 2g (4cc), dilute to 20 to make 10% solution.
    - Rapid administration of magnesium sulfate (i.e. rates >1 g/min) can cause hypotension and respiratory depression. Carefully monitor both during infusion
    - Do don’t give faster than faster than 1 g/minute

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## ADULT REACTIVE AIRWAY

- Brethine (terbutaline): IM \*\*\* (for the severe episodes)
  - 0.25 mg (0.25 ml) to repeat one time in 30 minutes if needed
  - Consider IM Brethine over IM epinephrine in patients of advanced age and/or with cardiac history
- Epinephrine: IM: 1:1,000 (for severe episodes)
  - 0.3-0.5 mg IM for severe refractory bronchospasm
  - Use Epinephrine with caution on patients over 65 or with cardiac history

### *Steroidal Therapy*

- Solu-medrol (methylprednisolone): IV/IO \*\*\* (for severe episodes.)
  - IV/IO/IM: 125 mg
  - Hold for fever, new onset productive cough, suspicion of CHF etiology.

### *CPAP*

- CPAP: See also *Appendix E*
  - **Medical Control Required if BP less than 90 systolic.**
  - Initial setting at 0-2 cmH<sub>2</sub>O, **MAX: 5 cmH<sub>2</sub>O (10 cmH<sub>2</sub>O for CHF)**
  - Coaching will be required to reduce anxiety
  - If coaching is unsuccessful, then consider low dose sedation. See the Adult Pain Control and Sedation protocol M-12 for medications and doses

**PHYSICIAN PEARLS:**

- It is important to note, “not all asthma wheezes” and “not all that wheezes is asthma.”
- Magnesium Sulfate and Epinephrine (IM/SQ) should be used only on severe patients who are refractory to initial treatments

**Regarding CPAP:**

- If CPAP is not otherwise available, and the patient has a C-PAP or a Bi-PAP device, and if the ambulance is equipped with an inverter or other means to power device is available, use of the patient’s own C-PAP /Bi-PAP is a viable option in addition to other therapies
- Advise receiving hospital as soon as possible so they can prepare for the patient’s arrival
- Do not remove CPAP until hospital therapy is ready to be placed on the patient
- Monitor patient for gastric distension which may lead to vomiting
- Once CPAP headset is in place, consider early administration of nitro-paste, as nitro spray may be impractical to use
- Success is highly dependent upon patient tolerance, and EMT-P ability to coach the patient. Instruct patient to breath in through nose and exhale through mouth as long as possible
- Monitor closely for development of pneumothorax and or hypotension
- Monitor patients closely for vomiting and or gastric distention
- Most patients will improve in 5-10 minutes. If no improvement within this time, assess for other causes and problems. Re-evaluate for intermittent positive pressure ventilation or intubation
- CPAP may be the treatment of choice in a patient with a DNR order in respiratory failure
- CPAP therapy needs to be continuous and should not be removed unless the patient can not tolerate the mask or experiences continued or worsening respiratory failure. Intermittent positive pressure ventilation and/or intubation should be considered if patient is removed from CPAP therapy

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**ADULT REACTIVE AIRWAY**