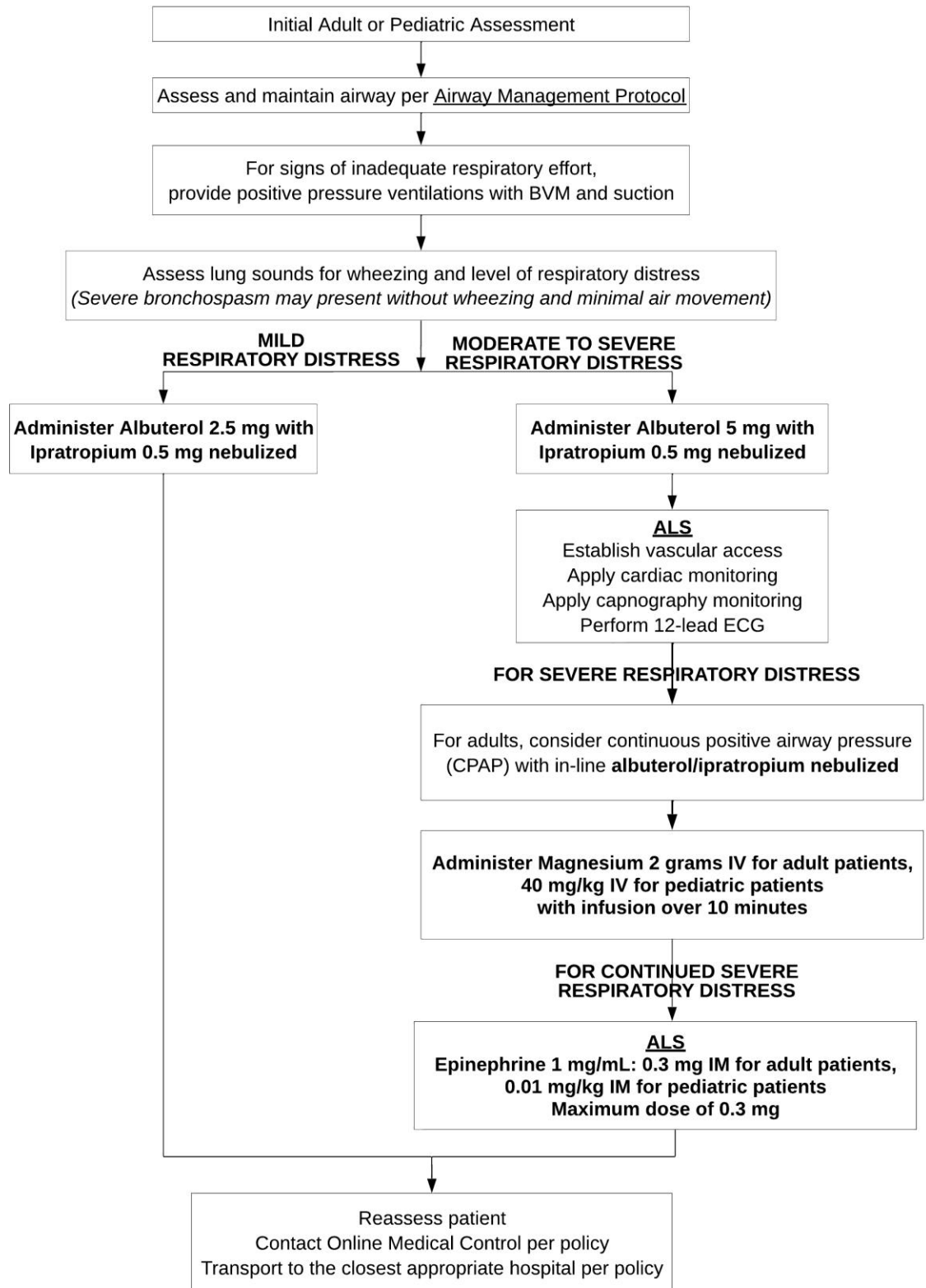




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| <b>REGION 11<br/>CHICAGO EMS SYSTEM<br/>PROTOCOL</b> | Title: Bronchospasm – BLS/ALS              |
|  | Section: Respiratory                       |
|  | Approved: EMS Medical Directors Consortium |
|  | Effective: June 1, 2026                    |

### BRONCHOSPASM - BLS/ALS





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CHICAGO EMS SYSTEM  
PROTOCOL**

Title: Bronchospasm – BLS/ALS

Section: Respiratory

Approved: EMS Medical Directors Consortium

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## **BRONCHOSPASM – BLS/ALS**

### **I. PATIENT CARE GOALS**

1. Alleviate respiratory distress due to bronchospasm for pediatric and adult patients.
2. Promptly identify and intervene for patients who require escalation of therapy.
3. Deliver appropriate therapy by differentiating other causes of respiratory distress.

### **II. PATIENT PRESENTATION**

#### **A. Inclusion Criteria**

1. Respiratory distress with wheezing, decreased air entry or no air entry, presumed to be bronchospasm from asthma, obstructive lung disease, or reactive airway disease.

#### **B. RELATIVE Exclusion Criteria**

1. Respiratory distress due to a presumed underlying cause that includes one of the following:
  - a. Anaphylaxis (see Anaphylaxis and Allergic Reaction Protocol)
  - b. Consider cardiac cause of wheezing (see Pulmonary Edema Protocol)

### **III. PATIENT MANAGEMENT**

#### **A. Assessment**

1. History
  - a. Onset of symptoms
  - b. Concurrent symptoms (fever, cough, tongue/lip swelling, rash, foreign body aspiration)
  - c. Treatments prior to EMS: Oxygen, inhaler, nebulizer, recent steroids
2. Exam
  - a. Full set of vital signs (pulse, blood pressure, respiratory rate, oxygen saturation)
  - b. Air entry (normal vs. diminished, prolonged expiratory phase)
  - c. Auscultate breath sounds (wheezes, crackles, rales, rhonchi, diminished, clear)
  - d. Skin color (pallor, cyanosis, mottling, normal)
  - e. Mental status (alert, tired, lethargic, unresponsive)
  - f. Signs of respiratory distress include:
    - Apprehension, anxiety, agitation, combativeness
    - Hypoxia (less than 90% oxygen saturation)
    - Intercostal/subcostal/supraclavicular retractions, accessory muscle use
    - Grunting, stridor, inability to speak full sentences



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- Nasal flaring
- Tripod positioning
- Diaphoresis
- Cyanosis

**B. Treatment and Interventions**

1. Airway: See Airway Management Protocol for additional specifics
  - a. Give supplemental oxygen for dyspnea to a target of 94–98% saturation. Start with a nasal cannula and escalate as needed to reach this goal.
  - b. BVM ventilation should be utilized for respiratory failure.
  - c. **ALS:** Advanced airway management with supraglottic airway or endotracheal intubation as needed for respiratory failure with in-line nebulized albuterol and ipratropium.
2. Monitoring
  - a. **ALS:** Apply end tidal CO<sub>2</sub> by nasal route or in-line with BVM or advanced airway and document.
  - b. **ALS:** Apply continuous cardiac monitoring and document cardiac rhythm.
  - c. **ALS:** Perform 12-lead ECG to assess for dysrhythmia or ischemia.
3. IV Access and Fluids
  - a. **ALS:** Obtain IV access if IV medication administration is indicated or there are clinical concerns of dehydration so that IV fluids can be administered.
4. **Suspected bronchospasm – including asthma or COPD**
  - a. Mild respiratory distress: Mild wheezing without clinical distress
    - Administer albuterol 2.5 mg nebulized and ipratropium 0.5 mg nebulized
  - b. Moderate respiratory distress: Wheezing with labored breathing
    - Administer albuterol 5 mg nebulized and ipratropium 0.5 mg nebulized
  - c. Severe respiratory distress: Severe dyspnea and tachypnea
    - **ALS:** Apply continuous positive airway pressure (CPAP) with in-line albuterol/ipratropium nebulized
    - **ALS: Magnesium sulfate:** 2 grams IV for adult patients, 40 mg/kg IV for pediatric patients with infusion over 10 minutes
  - d. For continued severe respiratory distress:
    - **ALS: Epinephrine 1 mg/ml:** 0.3 mg intramuscular for adult patients, 0.01 mg/kg intramuscular for pediatric patients, with maximum dose of 0.3 mg

**C. Patient Safety Considerations**

1. Wheezing may be absent in severe bronchospasm.
2. Positive pressure ventilation increases the risk of pneumothorax.
3. Nebulizer droplets can carry viral particles and airborne pathogens, additional PPE should be used