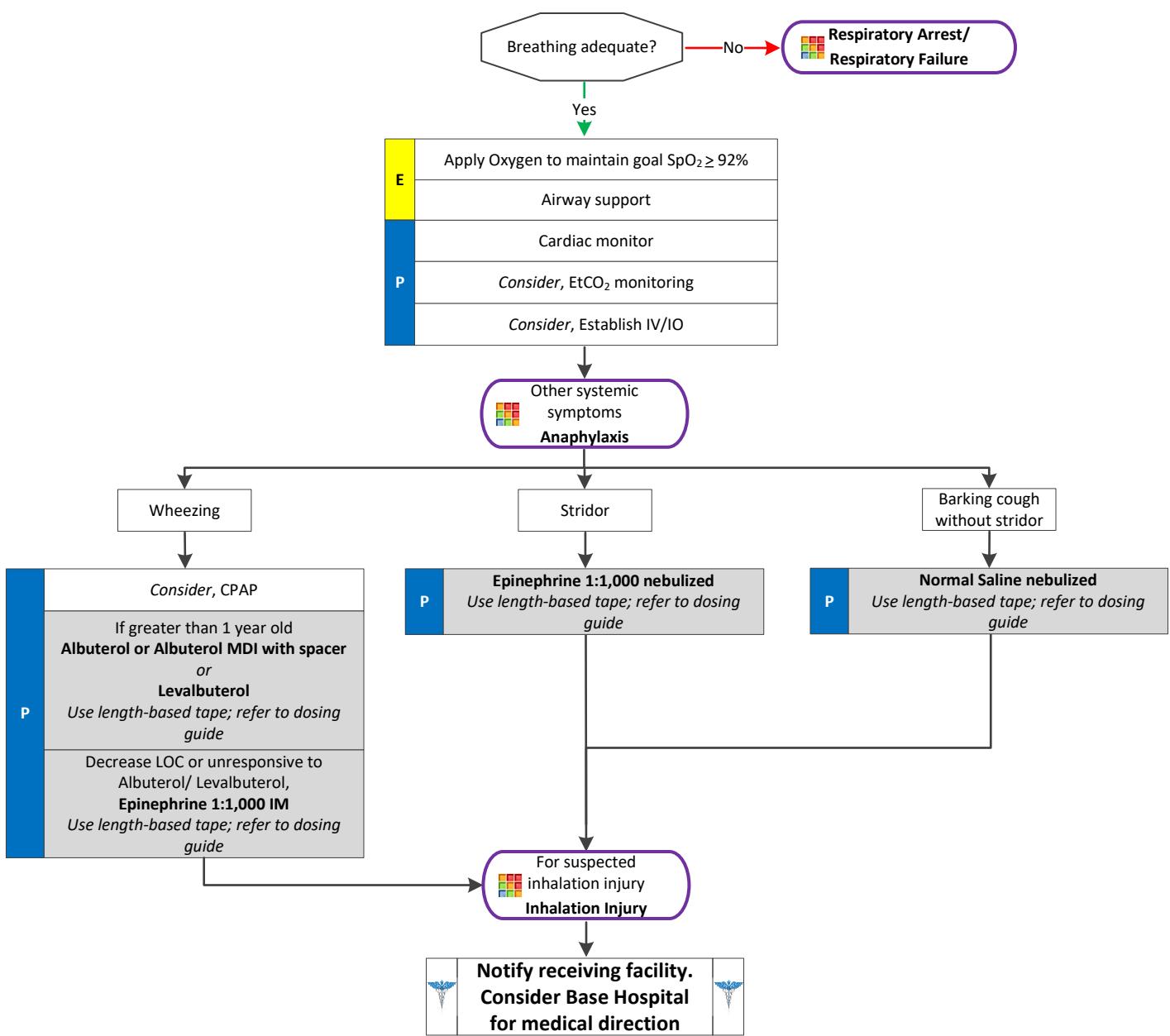


# Pediatric Respiratory Distress/Bronchospasm

For asthma exacerbations, epiglottis and any bronchospasms/wheezing not from pulmonary edema

History	Signs and Symptoms	Differential
<ul style="list-style-type: none"> <li>Asthma</li> <li>COPD – chronic bronchitis, emphysema</li> <li>Home treatment (e.g., oxygen or nebulizer)</li> <li>Medications (e.g., Theophylline, steroids, inhalers)</li> <li>Frequency of inhaler use</li> </ul>	<ul style="list-style-type: none"> <li>Shortness of breath</li> <li>Pursed lip breathing</li> <li>Decreased ability to speak</li> <li>Increased respiratory rate and effort</li> <li>Wheezing or rhonchi/diminished breath sounds</li> <li>Use of accessory muscles</li> <li>Cough</li> <li>Tachycardia</li> </ul>	<ul style="list-style-type: none"> <li>Asthma</li> <li>Anaphylaxis</li> <li>Foreign body aspiration</li> <li>Partial airway obstruction (i.e. epiglottitis)</li> <li>Croup</li> <li>Pleural effusion</li> <li>Pneumonia</li> <li>Pulmonary embolus</li> <li>Pneumothorax</li> <li>Cardiac (MI or CHF)</li> <li>Pericardial tamponade</li> <li>Hyperventilation</li> <li>Inhaled toxin (e.g., carbon monoxide, etc.)</li> </ul>



# Pediatric Respiratory Distress/Bronchospasm

For asthma exacerbations, epiglottis and any bronchospasms/wheezing not from pulmonary edema

**Sudden loss of waveform**

- ET tube disconnected, dislodged, kinked or obstructed
- Loss of circulatory function


**Decreasing EtCO<sub>2</sub>**

- ET tube cuff leak
- ET tube in hypopharynx
- Partial obstruction


**CPR Assessment**

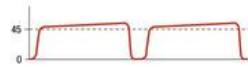
- Attempt to maintain minimum of 10mmHg


**Sudden increase in EtCO<sub>2</sub>**

- Return of spontaneous circulation (ROSC)


**Bronchospasm ("Shark-fin" appearance)**

- Asthma
- COPD


**Hypoventilation**

**Hyperventilation**

**Decreased EtCO<sub>2</sub>**

- Apnea
- Sedation



## Factors Affecting EtCO<sub>2</sub>

Causes of Elevated EtCO <sub>2</sub>	Causes of Decreased EtCO <sub>2</sub>
<b>METABOLISM</b> Pain Hyperthermia Shivering	<b>METABOLISM</b> Hypothermia Metabolic acidosis
<b>RESPIRATORY SYSTEM</b> Respiratory insufficiency Respiratory depression COPD Analgesia/ sedation	<b>RESPIRATORY SYSTEM</b> Alveolar hyperventilation Bronchospasm Mucus plugging
<b>CIRCULATORY SYSTEM</b> Increased cardiac output	<b>CIRCULATORY SYSTEM</b> Hypotension Sudden hypovolemia Cardiac arrest Pulmonary emboli
<b>MEDICATIONS</b> Bicarbonate administration	

**Pearls**

- A silent chest in respiratory distress is a pre-respiratory arrest sign.
- Diffuse wheezing in patients < 1 year, it is almost always bronchiolitis, not asthma. For these patients, suctioning and supplemental oxygen are appropriate treatments.
- Pulse oximetry monitoring is required for all respiratory patients.

