# Pediatric Respiratory Distress/Bronchospasm

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

#### History

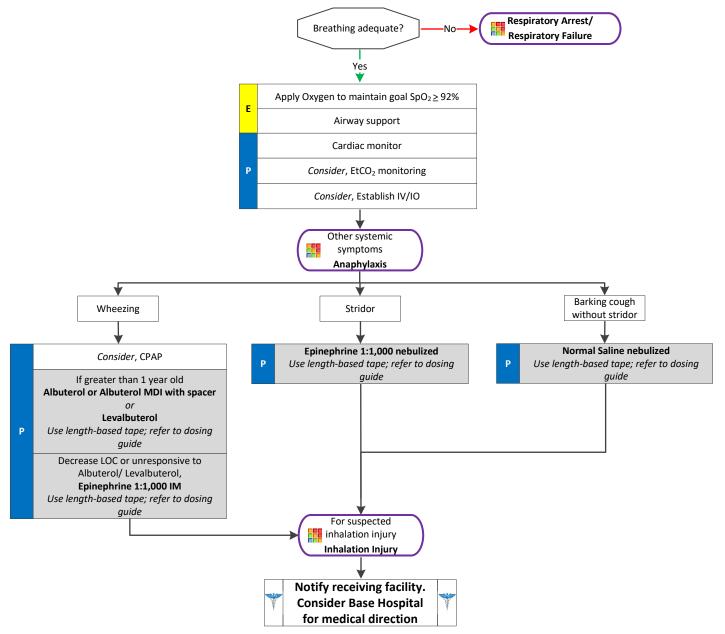
- Asthma
- COPD chronic bronchitis, emphysema
- Home treatment (e.g., oxygen or nebulizer)
- Medications (e.g., Theophylline, steroids, inhalers)
- Frequency of inhaler use

#### Signs and Symptoms

- · Shortness of breath
- Pursed lip breathing
- Decreased ability to speak
- · Increased respiratory rate and effort
- · Wheezing or rhonchi/diminished breath sounds
- Use of accessory muscles
- Cough
- Tachycardia

#### Differential

- Asthma
- Anaphylaxis
- Foreign body aspiration
- Partial airway obstruction (i.e. epiglottitis)
- Croup
- Pleural effusion
- Pneumonia
- Pulmonary embolus
- Pneumothorax
- Cardiac (MI or CHF)
- · Pericardial tamponade
- Hyperventilation
- Inhaled toxin (e.g., carbon monoxide, etc.)





Treatment Protocol PR

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#### 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



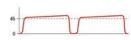
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### Bronchospasm ("Shark-fin" appearance)

- Asthma
- COPD



#### Hypoventilation



#### Hyperventilation



#### Decreased EtCO<sub>2</sub>

- Apnea
- Sedation



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

 Return of spontaneous circulation (ROSC)



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

# METABOLISM Pain

Hyperthermia

Shivering

# METABOLISM Hypothermia

Metabolic acidosis

# **RESPIRATORY SYSTEM**

Respiratory insufficiency Respiratory depression COPD

Analgesia/ sedation

# **RESPIRATORY SYSTEM**

Alveolar hyperventilation Bronchospasm

Mucus plugging

#### **CIRCULATORY SYSTEM**

Increased cardiac output

#### **MEDICATIONS**

Bicarbonate administration

#### CIRCULATORY SYSTEM

Hypotension

Sudden hypovolemia

Cardiac arrest

Pulmonary emboli

#### 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.



Treatment Protocol PR03