

## SECTION: Airway and Respiratory

### GUIDELINE TITLE: Asthma/COPD during COVID-19 crisis

REVISED: 03/2020

#### OVERVIEW:

For use on patients during COVID-19 crisis

Respiratory distress or dyspnea is one of the most common medical complaints witnessed in pre-hospital medicine. Most patients describe it as a sensation of shortness of breath or a feeling of “air hunger” accompanied by labored breathing. Dyspnea may be caused by pulmonary or cardiac disease or by any mechanism that causes hypoxia. It may be mild, manifesting only on exertion, or severe, occurring at rest. The most common causes of non-cardiac dyspnea in the pre-hospital environment involve asthma, chronic obstructive pulmonary disease (COPD), pneumonia, and bronchitis. The wheezing patient may present in different ways, some may not even complain of wheezing, but rather just with shortness of breath, cough, or chest tightness. Wheezing patients are often apprehensive and distressed and, at times, so severe that they may not be able to speak in complete sentences. Oxygenation may be compromised to the point that there is a decrease in the patient’s level of consciousness. These signs are clues that the patient needs immediate and aggressive therapy. Treatment is aimed at maintaining the patient’s SpO<sub>2</sub> to >90%.

Remember, **not all wheezing is from asthma.**

HPI	Signs and Symptoms	Considerations
<ul style="list-style-type: none"> <li>Asthma, COPD, chronic bronchitis, emphysema, congestive heart failure</li> <li>Home treatment (oxygen, inhaler, nebulizer)</li> <li>Medications (theophylline, steroids, bronchodilators)</li> <li>Toxic exposure, smoke inhalation</li> </ul>	<ul style="list-style-type: none"> <li>Shortness of breath</li> <li>Purse lip respirations</li> <li>Decreased ability to speak</li> <li>Increased respiratory rate and effort</li> <li>Use of accessory muscles</li> <li>Tripoding</li> <li>Wheezing, rhonchi, rales</li> <li>Fever, cough</li> <li>Tachycardia</li> <li><u>Hypoxia may be early indication of COVID infection</u></li> </ul>	<ul style="list-style-type: none"> <li>Asthma</li> <li>Anaphylaxis</li> <li>Aspiration</li> <li>COPD (emphysema, bronchitis)</li> <li>Pleural effusion</li> <li>Pulmonary embolism</li> <li>Pneumothorax</li> <li>Cardiac (MI, HF)</li> <li>Pericardial Tamponade</li> <li>Upper respiratory infection</li> <li>Hyperventilation, anxiety</li> <li>Inhaled toxins</li> </ul>

	A	B	EN	I	P
1. Perform general patient management .	•	•	•	•	•
2. Support life-threatening problems associated with airway, breathing, and circulation.	•	•	•	•	•

# Section 3-11

Continued

	A	B	EN	I	P
<b>3.</b> Administer oxygen to maintain SPO <sub>2</sub> 94-99%. Support respirations as necessary with a BVM.	•	•	•	•	•
<b>4.</b> Determine risk for COVID-19 infection. If suspicion, go to COVID asthma/COPD guideline (See guideline below). Risk factors include: <b>a.</b> Asthma or COPD preceded by upper respiratory infection (fever, cough, congestion, runny nose) <b>b.</b> Exposure to known or suspected COVID-19 case <b>c.</b> Travel past 21 days <b>d.</b> Documented or suspected community spread	•	•	•	•	•
<b>5.</b> Monitor pulse oximetry and capnography, if available.		•	•	•	•
<b>6.</b> If in critical respiratory distress, provide BVM ventilation with patient's spontaneous efforts. If patient becomes unresponsive, perform BVM ventilation with an airway adjunct. If BVM ventilation is inadequate, secure airway with a definitive airway (supraglottic) or ENDOTRACHEAL TUBE [Level I and P only].		•	•	•	•
<b>7.</b> Administer BRONCHODILATOR METERED DOSE INHALER (MDI) 4-8 puffs every 20 minutes  OR  Albuterol 2.5 to 5.0 mg and Ipratropium 0.25 to 0.5 mg via small volume nebulizer (2.5 mg albuterol and 0.25 mg Ipratropium if pt <10 kg). Repeat Albuterol and Ipratropium in 5 to 10 minutes as needed.		•	•	•	•
<b>8.</b> In the asthmatic patient, for severe respiratory distress that is non-responsive to standard medications, consider administration of Magnesium Sulfate 40 mg/kg IV over 5 to 10 minutes (max dose of 2 grams).			•	•	•
<b>9.</b> Establish venous access as needed. If greater than 1 year of age, administer Dexamethasone 0.6 mg/kg IV/IM/PO to max dose of 10 mg. In adults, administer dexamethasone 10 mg IV/IM/PO			•	•	•
<b>10.</b> Administer CPAP with 5 cm H <sub>2</sub> O PEEP or BiPAP (9/5 cm H <sub>2</sub> O) for moderate to severe dyspnea. Titrate to effect		•	•	•	•
<b>11.</b> Place on cardiac monitor and obtain 12 lead ECG per				•	•

# Section 3-11

Continued

	A	B	EN	I	P
assessment.					
12. Transport and perform ongoing assessment as indicated. Stop all nebulized treatments during transfer into hospital.				•	•

<b>For use in patients with suspected COVID-19 infections or during times of documented or suspected community spread.</b>	A	B	EN	I	P
1. <b>Wear appropriate PPE</b> and perform general patient management .	•	•	•	•	•
2. Support life-threatening problems associated with airway, breathing, and circulation.	•	•	•	•	•
3. Administer oxygen to maintain SPO <sub>2</sub> 94-99%. Support respirations as necessary with a BVM. If on oxygen via mask, place surgical mask over oxygen mask	•	•	•	•	•
4. Place patient in a position of comfort, typically sitting upright.	•	•	•	•	•
5. Monitor pulse oximetry and capnography, if available.		•	•	•	•
6. If available, administer Albuterol METERED DOSE INHALER 4-8 puffs every 20 minutes(MDI). No nebulized treatments.		•	•	•	•
7. Avoid nebulized treatments. CPAP, and BiPAP should be used as a treatment of last resort (ideally with HEPA filter in place)		•	•	•	•
8. If non-responsive to albuterol MDI or if not available, consider administration of <ul style="list-style-type: none"> <li>a. EPINEPHRINE 1mg/ml concentration (1:1000) 0.01 mg/kg up to 0.15 mg <u>IM</u> in patients less than 15 years of age.</li> <li>b. EPINEPHRINE 1mg/ml concentration (1:1000) 0.01 mg/kg up to 0.15 mg <u>IM</u> for patients with history of coronary artery disease.</li> <li>c. EPINEPHRINE 1mg/ml concentration (1:1000) 0.01 mg/kg up to 0.3mg <u>IM</u> for patients 15 years and older.</li> </ul>			•	•	•
7. If respiratory failure, provide BVM ventilation with patient's spontaneous efforts. If patient becomes		•	•	•	•

# Section 3-11

Continued

<u>For use in patients with suspected COVID-19 infections or during times of documented or suspected community spread.</u>	A	B	EN	I	P
unresponsive, perform BVM ventilation with an airway adjunct. If BVM ventilation is inadequate, secure airway with a definitive airway (supraglottic) or endotracheal intubation [Level I and P only]. Ideally, HEPA filter should be used. <i>Video assisted intubation preferred over direct laryngoscopy.</i>					
8. In the asthmatic patient, for severe respiratory distress that is non-responsive to standard medications, consider administration of Magnesium Sulfate 40 mg/kg IV over 5 to 10 minutes (max dose of 2 grams).				•	•
9. If greater than 1 year of age, administer Dexamethasone 0.6 mg/kg IV/IM/PO to max dose of 10 mg. In adults, administer dexamethasone 10 mg IV/IM/PO				•	•
10. Place on cardiac monitor and obtain 12 lead ECG per assessment.				•	•
11. Transport and perform ongoing assessment as indicated. Stop all nebulized treatments during transfer into hospital.		•	•	•	•

## PEARLS:

- Status asthmaticus is defined as a severe prolonged asthma attack non-responsive to therapy.
- A silent chest in respiratory distress is a pre-respiratory arrest sign.
- Magnesium Sulfate and Epinephrine should only be used for patients in severe, non-responsive distress that is refractory to initial treatments.
- Patients with COPD, emphysema, and chronic bronchitis usually have a lowered baseline level of pulmonary function. These patients often have a history of chronic cough, sputum production, and dyspnea on exertion.
- The classic presentation of a patient with emphysema is the appearance of the “pink puffer,” with rapid, shallow breathing through pursed lips, with a thin body habitus, a barrel chest, and the use of accessory muscles with respirations.
- The classic presentation of a patient with bronchitis is the appearance of the “blue bloater”, with slow, deep, and labored breathing, a overweight body habitus, and, at times, cyanotic.