

SECTION: Airway and Respiratory

GUIDELINE TITLE: Asthma/COPD during COVID-19 crisis

REVISED: 06/2020

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 SpO₂ to >90%.

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

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

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<u>For use in patients with suspected COVID-19 infections or during times of documented or suspected community spread.</u>	FR	EMT	A	I	P
1. <u>Wear appropriate PPE</u> and perform general patient management .	•	•	•	•	•
2. Support life-threatening problems associated with airway, breathing, and circulation. Administer oxygen to maintain SPO ₂ 94-99%. Support respirations as necessary with a BVM. If on oxygen via mask, place surgical mask over oxygen mask	•	•	•	•	•
3. Place patient in a position of comfort, typically sitting upright.	•	•	•	•	•
4. Monitor pulse oximetry and capnography, if available.	•	•	•	•	•
5. If patient is wheezing and Albuterol METERED DOSE INHALER (MDI) available, administer 4-8 puffs every 20 minutes. No nebulized treatments.		•	•	•	•
6. For patients 15 years of age and older with wheezing and Albuterol MDI is not available, consider administration of Terbutaline 0.25 mg subcutaneous every 15 minutes (Max of 2 doses)			•	•	•
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 Terbutaline, consider administration of <ul style="list-style-type: none"> 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. 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. c. EPINEPHRINE 1mg/ml concentration (1:1000) 0.01 mg/kg up to 0.3mg <u>IM</u> for patients 15 years and older. 			•	•	•
7. If respiratory failure, 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 intubation [Level I and P only]. Ideally, HEPA filter should be used. <i>Video assisted intubation strongly preferred over direct laryngoscopy.</i>		•	•	•	•

RESPIRATORY DISTRESS - ASTHMA / COPD

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RESPIRATORY DISTRESS - ASTHMA / COPD

<u>For use in patients with suspected COVID-19 infections or during times of documented or suspected community spread.</u>	FR	EMT	A	I	P
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. Administer steroids if appropriate. No restrictions in patients less than 15 years of age. Patients 15 years or older must have: <ul style="list-style-type: none"> • Past history of COPD and/or asthma • Present with stridor and/or wheezing • No suspicion of COVID-19 (afebrile and no upper respiratory infection symptoms preceding exacerbation (cough, congestion)) If between 1 and 14 years of age, administer Dexamethasone 0.6 mg/kg IV/IM/PO to max dose of 10 mg. In patients 15 years ad older, 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.		•	•	•	•

Severe **asthma** exacerbation can present without wheezing (ie, the **silent chest**). Such patients may have such severe airway obstruction or be so fatigued that they are unable to generate enough airflow to wheeze. This is an ominous sign of impending respiratory failure. Administer Albuterol MDI 4 to 8 puffs (all ages) every 20 minutes or Terbutaline 0.25 mg every 15 minutes with max of 2 doses (15 years and older only). Epinephrine IM can also be administered if no significant improvement after Albuterol MDI or Terbutaline

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PEARLS:

1. Status asthmaticus is defined as a severe prolonged asthma attack non-responsive to therapy.
2. Magnesium Sulfate and Epinephrine should only be used for patients in severe, non-responsive distress that is refractory to initial treatments.
3. 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.
4. 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.
5. 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.

RESPIRATORY DISTRESS - ASTHMA / COPD