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To: ALS Clinicians
Highest Jurisdictional Officials
Commercial Ambulance Services
EMS Medical Directors

From: Timothy Chizmar, MD, FACEP
State EMS Medical Director

Date: April 6, 2020

RE: Terbutaline (IM) and Epinephrine (IM) for Asthma and COPD patients during COVID-19 public health emergency

In an effort to avoid the use of nebulized medications during the current COVID-19 pandemic, we are temporarily re-introducing the option of intramuscular terbutaline for treatment of patients who have moderate shortness of breath with wheezing and bronchospasm.

Mild distress

For patients in mild distress, defer treatment until arrival at the receiving facility.

If available, an albuterol meter dose inhaler (MDI) with a spacer may be used to administer 4 puffs, which may be repeated in five (5) minutes for a total of two doses (8 puffs).

Moderate distress

For patients in moderate distress who require treatment:

- Patients less than 12 years of age: **Intramuscular (IM) epinephrine** should be used as the medication (bronchodilator) of choice, as indicated in the current *Respiratory Distress: Asthma/COPD* protocol.

- Patients 12 years of age and older: **Terbutaline 0.25 mg intramuscular (IM)** should be administered as the medication (bronchodilator) of choice. This dose may be repeated one time after 15 minutes if there is not adequate improvement in the patient's symptoms. The maximum total dose of terbutaline is 0.5 mg IM per patient. Terbutaline may still be used if the patient received albuterol or Atrovent prior to our arrival.

Severe distress

For patients in severe respiratory distress or *in extremis*: **Intramuscular (IM) epinephrine** may be used instead of terbutaline (per current *Respiratory Distress: Asthma/COPD* protocol). Caution should be exercised with epinephrine IM in patients with known cardiac history (ischemic heart disease, myocardial infarction).

The addition of nebulized albuterol or Atrovent should not be considered unless the patient is in severe respiratory distress or *in extremis*. If nebulized medication is absolutely necessary, the nebulizer should be covered with a surgical mask.

5. TERBUTALINE SULFATE

a) Pharmacology
(1) Stimulates beta-2 receptors located in the smooth muscle of bronchioles
(2) Causes relaxation of bronchospasm

b) Pharmacokinetics
Relieves bronchospasm in acute and chronic airway disease with minimal cardiovascular effect

c) Indications
(1) Asthma
(2) Reversible airway obstruction associated with bronchitis or emphysema

d) Contraindications
(1) Cardiac History (ischemic heart disease or myocardial infarction)
(2) Patients under 12 years of age

e) Adverse Effects
(1) Tachycardia
(2) Palpitations
(3) Nervousness
(4) Tremors
(5) Dizziness
(6) Nausea
(7) Vomiting

f) Precautions
(1) Monitor EKG

g) Dosage
(1) Patients 12 years of age and older:
Administer 0.25 mg IM. May repeat one time after 15 minutes if there is not adequate improvement. Maximum total dose 0.5 mg IM.
(2) Patients less than 12 years of age: Not indicated