Adult COPD/ Asthma Respiratory Distress

History
- Asthma; COPD -- chronic bronchitis, emphysema, congestive heart failure
- Home treatment (oxygen, nebulizer)
- Medications (theophylline, steroids, inhalers)
- Toxic exposure, smoke inhalation

Signs and Symptoms
- Shortness of breath
- Pursed lip breathing
- Decreased ability to speak
- Increased respiratory rate and effort
- Wheezing, rhonchi
- Use of accessory muscles
- Fever, cough
- Tachycardia

Differential
- Asthma
- Anaphylaxis
- Aspiration
- COPD (Emphysema, Bronchitis)
- Pleural effusion
- Pneumonia
- Pulmonary embolus
- Pneumothorax
- Cardiac (MI or CHF)
- Pericardial tamponade
- Hyperventilation
- Inhaled toxin (Carbon monoxide, etc.)

Adult Airway Protocol(s) ***as indicated***

Adult Allergic Reaction/ Anaphylaxis Protocol AM 1 ***as indicated***

B 12 Lead ECG Procedure

IV or IO Access Protocol UP 6

P Cardiac Monitor

Following Assessment

WHEEZING

B **Albuterol Nebulizer 2.5 – 5 mg**
Repeat as needed x 3

STRIDOR

B **Albuterol Nebulizer 2.5 – 5 mg**
Repeat as needed x 3

A **Epinephrine Nebulizer 1 mg (1:1000) / 2 mL NS**
May repeat x 1

Adult Airway Protocol(s) ***as indicated***

B Airway NIPPV Procedure

A **Albuterol Nebulizer 2.5 – 5 mg**
+/- Ipratropium 0.5 mg (DuoNeb)
Repeat as needed x 3
if indicated

Consider
Epinephrine 1:1000
0.3 – 0.5 mg IM

P **Methylprednisolone 125 mg IV / IO / IM**
Or
Dexamethasone 10 mg IV / IO / IM

Magnesium Sulfate 2g IV / IO
Infuse over 10 – 20 minutes

Notify Destination or Contact Medical Control

Airway Respiratory Protocol Section

Adult COPD/ Asthma Respiratory Distress

COPD

- Most patients who have COPD have other comorbidities that are often significant medical problems such as cardiac problems.
- A COPD exacerbation is a change in the course of the disease marked by change in patient's baseline work of breathing, cough and/ or sputum which is different from their day-to-day variations.

Diseases that may mimic acute COPD exacerbations:

Decompensated CHF	Acute MI
Cardiac dysrhythmia	Pulmonary embolism (PE)
Acute asthma	Pneumothorax
Pneumonia	Pericardial or pleural effusion

Oxygen therapy in COPD Exacerbations:

- Goal oxygen saturation is ≥ 92 %. However, saturations between 88 and 92 % are acceptable and you should ask the patient what their typical saturations are (when well) in order to determine their normal range. If using EtCO2 monitoring and escalation of oxygen therapy is needed, change EtCO2 over to, or add nasal cannula, and add NRB or NIPPV to augment oxygenation as needed.
- If you anticipate the patient may need intubation, then maximize oxygenation to near 100% to optimize pre-oxygenation.
- Use NIPPV early in COPD exacerbations not immediately responsive to 1 – 2 nebulizer treatments.

ASTHMA

- Asthma is really two diseases with a chronic inflammatory component and also an acute airflow obstruction component.

Treatment in Asthma Exacerbations:

- Epinephrine is an important adjunct in patients not responding to first line therapies. Magnesium sulfate may offer some benefit in the severe asthma or COPD attack, but shows better efficacy in the pediatric population with severe asthma.
- Intubation should be avoided in the asthma exacerbation patient unless severity dictates. Signs which may signal intubation need include: Worsening dyspnea despite therapy, decreasing pulse oximetry and increasing side-stream capnography, declining mental status and progressive agitation.
- Follow AR 11 Mechanical Ventilation Adult Protocol Asthma/ COPD arm.

Methylprednisolone or Dexamethasone:

- Administer to patients who require two (2) or more breathing treatments only.
- If declining transport, you may administer IM as well.

Pearls

- **Recommended Exam: Mental Status, HEENT, Skin, Neck, Heart, Lungs, Abdomen, Extremities, Neuro**
- **Items in Red Text are key performance measures used to evaluate protocol compliance and care.**
- **This protocol includes all patients with respiratory distress, COPD, Asthma, Reactive Airway Disease, or bronchospasm.**
- **Patients may also have wheezing and respiratory distress with viral upper respiratory tract infections and pneumonia.**
- **Pulse oximetry should be monitored continuously and consider End-tidal CO_2 monitoring if available.**
- **Combination nebulizers containing albuterol and ipratropium (DuoNeb):**
  - **Patients may require more than 3 nebulizer treatments, treatments should continue until improvement.**
  - **Following 3 combination nebulizers (DuoNeb), it is preferable to continue albuterol solely with subsequent treatments as there is no proven benefit to continual use of ipratropium.**
- **Epinephrine:**
  - **If allergic reaction or anaphylaxis is suspected, give immediately and repeat until improvement.**
  - **If allergic reaction is not suspected, administer with failure to improve and/ or impending respiratory failure.**
- **Consider Magnesium Sulfate with no improvement and/ or impending respiratory failure. Likely more effective with asthmatic exacerbation and less so with COPD exacerbation.**
- **Non-Invasive Positive Pressure Ventilation (NIPPV: CPAP or Bi-Level/ BiPap):**
  - **May be used with COPD, Asthma, Allergic reactions, and/ or CHF.**
  - **Consider early in treatment course.**
  - **Consider removal if SBP remains < 100 mmHg and not responding to other treatments.**
- In patients using levalbuterol (Xopenex) you may use Albuterol for the first treatment then use the patient's supply for repeat nebulizers or agency's supply.
- A silent chest in respiratory distress is a pre-respiratory arrest sign.
- **EMR/ EMT:**
  - **The use of Epinephrine IM is limited to the treatment of anaphylaxis and may be given only by autoinjector,** unless manual draw-up is approved by the Agency Medical Director and the NC office of EMS.
  - **Administration of diphenhydramine is limited to the oral route only**.
- **EMT administration of beta-agonist is limited to only patients currently prescribed the medication,** unless approved by the Agency Medical Director and the NC office of EMS.
- Agency Medical Director may require contact of medical control prior to EMT/ EMR administering any medication(s).