This protocol will focus on patients with medical causes as a source of their respiratory distress. Management of patients with dyspnea associated with trauma is not covered in this protocol. Obtain and document a pulse oximetry reading on all patients treated under this protocol.

A. Acute COPD

EMR/BLS

1. Initial Assessment/Care **Protocol 1.**
2. Position patient sitting upright to improve effort of breathing.
3. Administer supplemental oxygen as needed.

ALS

4. Administer **Albuterol 2.5 mg** mixed with **Atrovent 0.5 mg** via nebulizer **Procedure 2**.
5. Repeat **Albuterol 2.5 mg** via nebulizer if necessary.
6. If indicated by continued distress and no changes, administer a third **Albuterol 2.5 mg**.

NOTE: Because COPD patients are chronically ill, they may have poor secretion clearance, and sometimes have excessive mucus production and often have lung infections (possible pneumonia). Assessment should ascertain the presence of fever, the presence of other signs of infection (e.g. body aches, general malaise, or pain when breathing) and breath sounds are consistent with pneumonia such as rhonchi, localized or one-sided crackles. Do NOT administer Magnesium Sulfate for suspected CHF or renal failure patients.

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B. CHF/Pulmonary Edema

EMR/BLS

1. Initial Assessment/Care **Protocol 1.**
2. Position patient sitting upright to improve effort of breathing.
3. Suction as necessary.
4. Insert an oropharyngeal or nasopharyngeal airway if indicated.
5. Administer supplemental oxygen **Procedure 1** preferably via bag-mask device with positive end-expiratory pressure (PEEP) set at 10 cm H2O and assist in ventilations when the patient inhales approximately 1 breath every 5-6 seconds (10-12 breaths/min for adults).
6. The patient's respiratory status should be monitored with waveform capnography Procedure 11, if it is unavailable, the use of pulse oximetry will suffice.

ALS

7. **Systolic BP is > 110 mmHg and CPAP is indicated:**

    a) Administer **Nitroglycerin 0.4 mg** SL.

NOTE: The use of SL Nitroglycerin is important early on to reduce preload by vasodilation. At higher doses, it lowers systemic vascular resistance (afterload) and may thereby increase stroke volume and cardiac output. Additionally, NTG at this point will provide a measurement of how the patient's blood pressure responds to nitrates.

    b) Apply CPAP **Procedure 52.**

    c) Reassess blood pressure after **10 cm H2O pressure** has been achieved. If systolic BP remains ≥ 100 mmHg apply **1" (1 gm) Nitroglycerin paste**.

NOTE: NTG paste is used in place of NTG spray to maintain the seal of the CPAP mask once the patient has become acclimated to the mask.

    d) Consider **Furosemide (Lasix) 20 mg** slow IV/IO or IM, if systolic BP remains above 110 mmHg and the patient has not improved after 5 minutes on CPAP. Patients that improve with CPAP rarely need Furosemide.

8. **Systolic BP is > 110 mmHg and CPAP is contraindicated:**

    a) Administer **Nitroglycerin 0.4 mg** SL. Repeat every 3-5 minutes if systolic BP remains above 110 mmHg to a **maximum of three (3) doses.**

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b) Administer **Furosemide (Lasix) 40 mg or 80 mg (if the patient already takes diuretics)** slow IV/IO or IM, if systolic BP remains above 110 mmHg. May be repeated once as needed.

9. **If systolic BP is ≤ 90 mmHg:**

a) Administer **Dopamine 10 mcg/kg/min**. Titrate to maintain a minimum systolic BP > 90 mmHg.

NOTE: DO NOT administer Nitroglycerin if a patient is known or suspected to have taken Viagra (sildenafil), Revatio (sildenafil) or Levitra (vardenafil) within the last 24-hours OR Cialis (tadalafil), Adcirca (tadalafil) within the last 72 hours. There may be additional sexually enhancing drugs that apply. Revatio is prescribed for pulmonary hypertension.

12-Lead ECG with continuous ECG Monitoring will be performed for all CHF/Pulmonary edema patients, treatment and/or transport will not be delayed in order to obtain an ECG.

C. Acute Bronchospasms (Asthma)

EMR/BLS

1. Initial Assessment/Care **Protocol 1.**
2. Position patient upright to improve effort of breathing.
3. Administer supplemental oxygen as needed.

ALS

4. Administer **Albuterol 2.5 mg** mixed with **Atrovent 0.5 mg** via nebulizer **Procedure 2.**

a) May be repeated up to 2 additional doses of **Albuterol 2.5 mg** mixed with **Atrovent 0.5 mg** if severe bronchospasms persist.

5. If bronchospasms are still present, administer **Albuterol 2.5 mg** via a nebulizer.
6. If continued severe bronchospasms are noted after the administration of bronchodilators, administer **Magnesium Sulfate 2 grams over 8-9 minutes**. Appendix 09-4 Medication 22
7. If continued severe bronchospasms are noted after the administration of Magnesium Sulfate, consider **0.1 mg (1 mL) Epinephrine 1:10,000 (1 mg/10 mL)** slow IV/IO. Medication 15

a) If IV/IO access is not available and the patient is experiencing severe bronchospasms, consider **0.3 mg (0.3 mL) Epinephrine 1:1,000 (1 mg/mL)** IM Medication 14

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