



# CHF – Pulmonary Edema

## Adult Medical

Austin County  
EMS Protocol & Guideline

Version:	1.0
Date:	04/2019

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**Overview:** Congestive Heart Failure (CHF) patients can be challenging and often present with co-morbidities that complicate the physiologic challenges in the time of complaint/crisis and also complicate the treatment modalities. Ensuring a thorough assessment to identify the severity of the occurrence, the rapidness of progression, and anticipated progression based on history will help the medic dictate the treatment modalities.

**Definition:** Any patient presenting with signs and symptoms of impaired blood flow through the heart including but not limited to; pulmonary edema, pedal edema, sacral edema, shortness of breath and especially suspected in patients with known history, current hypertensive status and/or 12 lead changes/suspected MI.

### EMT

- Place patient on the **Cardiac Monitor**
- Obtain **12 Lead EKG** – if applicable
- **Oxygen** administration as appropriate to the patient presentation
- **CPAP** as appropriate to the patient presentation
- **Airway Adjuncts** (Supraglottic Airway OPA, NPA), EtCO<sub>2</sub> monitoring appropriate to patient presentation
- Obtain **BGL**
- **Identify** Source/Causes

### AEMT

- Establish IV of Normal Saline- Limit Volume

### Paramedic

- **Nitroglycerin** 0.4 mg SL every 3 to 5 minutes prior to CPAP. If CPAP in place, move to Nitroglycerin Paste.
- **Nitroglycerin** paste 1-2 inch applied to upper left chest.- (Discontinue SL Nitro)
- *Consider Morphine Sulfate* 2-10 mg IVP.

**In extreme cases refractory to CPAP with Impending Respiratory Failure, Hypoxia, Hypercarbia and/or Altered Mental Status refer to RSI Protocol**

### PEARLS

- **Nitroglycerin** must be used with caution in the patient who has taken a phosphodiesterase inhibitor (Viagra, Cialis, Levitra, etc...) within 24 hours
- Furosemide should not be given to patients that are not exhibiting volume overload in the context of congestive heart failure as evidenced by profound hypertension and orthopnea, as it may be harmful.
- Albuterol should be used in caution and closely monitored for negative/worsening status post administration. In some cases the pulmonary edema will swell the structures of the airway causing wheezing and the administration of albuterol increases the workload of the heart as an Alpha stimulant ultimately worsening the patient's condition.
- A-fib often exacerbates CHF. In the presence of A-fib RVR, treating the rate is a priority to improve cardiac blood flow and reduce congestion.