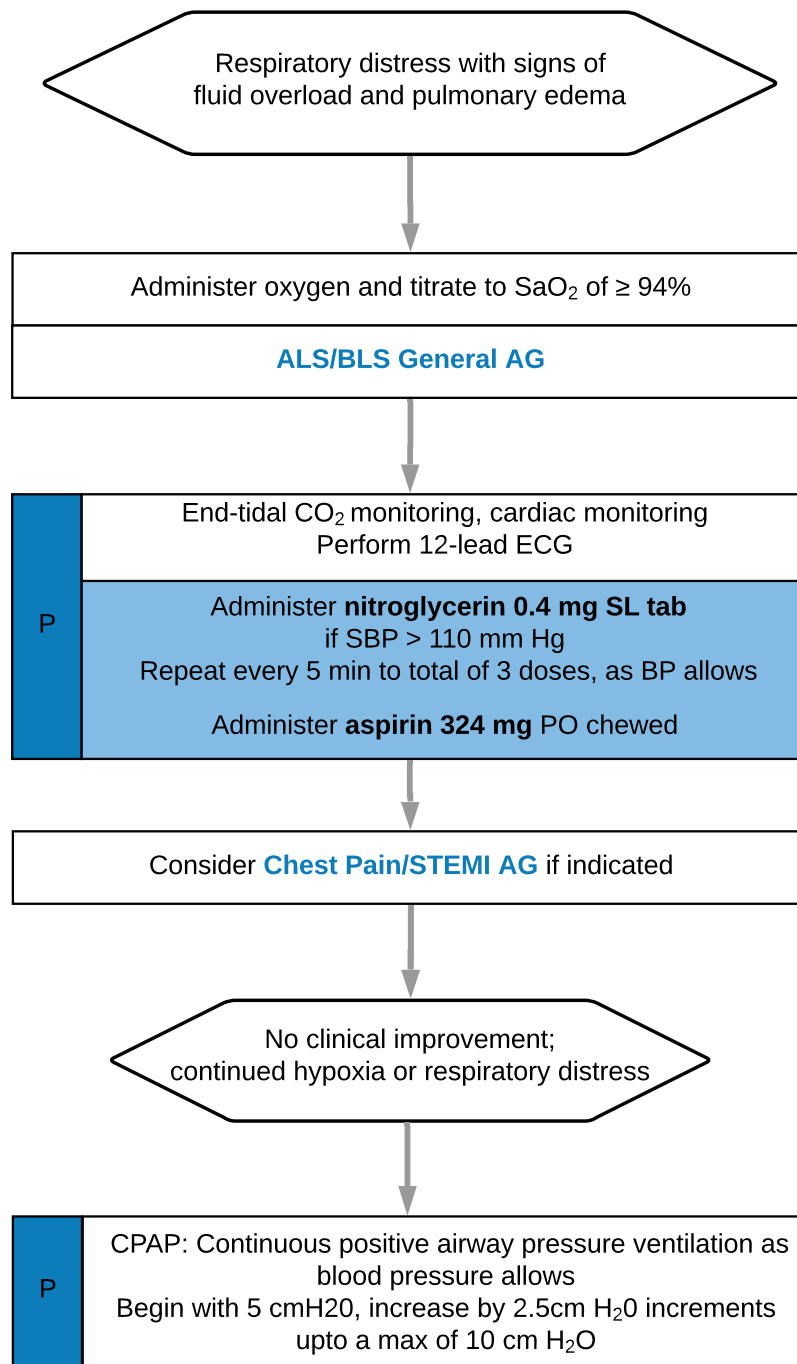


# CHF/Pulmonary Edema Administrative Guideline

History	Signs and Symptom	Differential
<ul style="list-style-type: none"> <li>• Congestive heart failure</li> <li>• Medications (digoxin, Lasix, Viagra / sildenafil, Levitra / vardenafil, Cialis / tadalafil)</li> <li>• Cardiac history -past myocardial infarction</li> </ul>	<ul style="list-style-type: none"> <li>• Respiratory distress</li> <li>• Crackles on lung exam</li> <li>• Jugular vein distention</li> <li>• Frothy/pink sputum</li> <li>• Peripheral edema, diaphoresis</li> <li>• Hypotension, shock</li> <li>• Chest pain</li> </ul>	<ul style="list-style-type: none"> <li>• CHF exacerbation</li> <li>• MI</li> <li>• Asthma/COPD/Pneumonia/PE</li> <li>• Pericardial effusion/tamponade</li> <li>• Aspiration</li> <li>• Noncardiogenic pulmonary edema</li> </ul>



## Education/Pearls

Heart failure describes a clinical syndrome in which the heart's ability to pump is impaired. When a patient experiences an increase in their fluid status (ingestion of fluid or salt) or a decrease in their heart's ability to pump (such as a myocardial infarction or valve failure), a heart failure exacerbation may occur and fluid may build up in the body. Pulmonary edema is a dangerous consequence and can impair breathing and gas exchange. Commonly, patients with heart failure may not tolerate lying supine and may complain of chest pain, shortness of breath, or sudden night-time awakening. Treatment goals include nitroglycerin, providing ventilatory support with CPAP, and determining the underlying cause (such as a myocardial infarction).

- Patients with heart failure should receive an ECG.
- Use care in administration of fluid in hypotension, as this may worsen respiratory status.

Nitroglycerin: By dilating vasculature, nitroglycerin may improve the left ventricle's ability to function.

- The use of **nitroglycerine is contraindicated** within 24-48 hours of the use of erectile dysfunction medication (sildenafil, tadalafil).
- Use caution when providing nitroglycerin to patients that demonstrate inferior STEMI patterns (II, III, aVF), as this may represent a right-sided MI that is preload dependent, leading to sudden and severe hypotension when given nitroglycerine.
- Nitroglycerin may be repeated per dosing guidelines.
- Monitor for hypotension after administration.

Continuous Positive Airway Pressure (CPAP): Noninvasive Positive Pressure Ventilation (NIPPV), such as CPAP, supports respiratory status in patients with evidence of pulmonary edema.

- Patients who receive CPAP may experience a decrease in mental status and blood pressure. Closely monitor vitals and mental status, and discontinue CPAP for shock, vomiting, or altered LOC.
- Patients with a decreased GCS or inability to protect their airway are at risk for aspiration and should not receive NIPPV.
- Consider Midazolam to assist with CPAP compliance. Benzodiazepines may precipitate respiratory depression or may worsen compliance with CPAP in patients who are already tired, already have altered LOC, or who have recent history of alcohol or drug ingestion. All efforts at verbal coaching should be utilized prior to giving benzodiazepines for patients in respiratory distress.