CONGESTIVE HEART FAILURE
STATEWIDE ALS PROTOCOL

Initial Patient Contact - see Protocol #201
Manage Airway/Ventilate, if indicated
High-flow Oxygen
CPAP/BiPAP if respiratory distress

AND
SpO₂ < 90% on High-flow Oxygen
Monitor ECG & Pulse Oximetry

Unstable tachycardia / bradycardia present

YES

SBP > 100 mmHg

If not using Viagra-type drugs², Nitroglycerin 0.4 mg SL (1-3 doses every 3-5 minutes³⁴)

If wheezing or if possibility of reactive airway disease, consider Nebulized Bronchodilator
(using options in Asthma protocol #4022)

SBP > 90 mmHg

YES

Apply CPAP (if available)

Contact Medical Command

NO

SBP 90-100 mmHg

Treat any Dysrhythmias according to appropriate Cardiac Protocol or as Medical Command orders

SBP < 90 mmHg

Contact Medical Command

YES

If SBP = 70-90, Consider DOBUTamine Drip (if available)⁶

OR

If SBP < 90
DOPAmine Drip⁷

Contact Medical Command

If patient already takes a diuretic, administer Furosemide 40-100 mg IV⁵

SBP < 90 mmHg

Contact Medical Command

If SBP = 70-90, Consider DOBUTamine Drip (if available)⁶

OR

If SBP < 90
DOPAmine Drip⁷

Contact Medical Command

If patient already takes a diuretic, administer Furosemide 40-100 mg IV⁵
CONGESTIVE HEART FAILURE (CHF)
STATEWIDE ALS PROTOCOL

Criteria:

A. Patients presenting with shortness of breath from pulmonary edema/CHF, as indicted by:
   1. Severe dyspnea, tachypnea, bilateral rales, tachycardia, cough with frothy sputum, or
      orthopnea.
   2. No fever
   3. May be associated with restlessness, agitation, pedal edema, diaphoresis, or pallor.
   4. Patient may have history of diuretic or digitalis use.

Exclusion Criteria:

A. Patients presenting with shortness of breath from non-CHF etiologies:
   1. Pneumonia: WARNING - Patients with SOB from pneumonia may have symptoms similar to
      those of CHF, but these patients may be harmed by diuretics. Fever may be present in these
      patients.
   2. COPD exacerbation: These patients may take bronchodilators without a history of diuretic use.
   3. Pneumothorax: CPAP is contraindicated in these patients.

Possible MC Orders:

A. Additional Nitroglycerin
B. DOPAmine or DOBUTamine (if available) infusion
C. Captopril (if available) 25 mg sublingual or enalapril (if available) 0.625 – 1.25 mg IV
D. Endotracheal Intubation
E. Morphine sulfate

Notes:

1. Relative hypotension in pulmonary edema may indicate poor cardiac function. Aggressive use of
   diuretics and nitroglycerin may result in extreme hypotension and further reduction of cardiac
   output. Contact Medical Command to discuss individualizing treatment options in these patients.
2. WARNING: Nitroglycerin may lead to fatal hypotension if given to patients using drugs for erectile
dysfunction.
   a. DO NOT give nitroglycerin (NTG) to a patient who has taken suldenafil (Viagra/Revation) or
      vardenafil (Levitra) within 24 hours.
   b. DO NOT give NTG to a patient who has taken tadalafil (Cialis) within the last 48 hours.
   c. These medications may be used for conditions other than erectile dysfunction (e.g. Revation
      is used for pulmonary hypertension).
3. After initial single tablet/spray of NTG, give nitroglycerin dose based upon blood pressure:
   a. 3 SL tablets or sprays – for SBP > 180
   b. 2 SL tablets or sprays – for SBP 140-180
   c. 1 SL tablet or spray – for SBP 100-140
   d. For patients on CPAP who do not tolerate SL NTG, may use 1 – 2 inches of topical
      nitroglycerin paste, if available.
   e. When available, may substitute nitroglycerin IV infusion 5 – 200 mcg / min titrated to
      SBP>100.
4. NTG may be repeated every 3-5 minutes but avoid decreasing SBP below 100 or by more than
   25% of initial SBP. [Note: One NTG repeated every 5 minutes is equivalent to a NTG infusion of
   80 mcg/min]
5. If patient is taking prescription furosemide, administer IV dose equal to the patient’s daily dose.
6. Some recommendations suggest using DOBUTamine for mild cardiogenic shock (SBP 70-90)
   and DOPAmine for severe shock (SBP< 70). Mix DOBUTamine infusion using regional or
   agency prescribed concentration, and administer 5-20 mcg/kg/min. Generally start at 5
   mcg/kg/min, and increase every 10 minutes by an additional 5 mcg/kg/min until SBP > 100
   mmHg. DO NOT exceed 20 mcg/kg/min unless ordered by medical command physician.
7. Mix DOPAmine infusion using regional or agency prescribed concentration, and administer 5-20
   mcg/kg/min. Generally start at 5 mcg/kg/min, and increase every 10 minutes by an additional 5
   mcg/kg/min until SBP > 100 mmHg. DO NOT exceed 20 mcg/kg/min unless ordered by
   medical command physician.

Performance Parameters:

A. Outcomes follow-up to determine percentage of patients treated with this protocol that ultimately
   had hospital diagnoses of non-CHF conditions (e.g. pneumonia).
B. Blood pressure documented after each dose of vasoactive medication (e.g. nitroglycerine)