CHF Algorithm
Review definition and pathophysiology

Assess for the presence of major risk factors
- Hypertension
- prior myocardial infarction
- Diabetes
- Valvular heart disease (Structural defect)
- Obesity

Assess for the presence of minor risk factors
- alcohol abuse
- cigarette smoking
- Dyslipidemia
- renal insufficiency
- sleep-disordered breathing
- low physical activity
- lower socioeconomic status
- Depression
- Increased dietary salt intake.

Are Risk Factors Present?

YES

Monitor for presence of signs/symptoms:
- Shortness of breath
- Activity intolerance
- Orthopnea
- Frothy sputum
- Peripheral edema
- sudden weight > 2-3 lbs
- Nocturia
- Altered mental status

Are positive findings present?

YES

Follow plan of care for Acute exacerbation of CHF

NO

NO

Initiate client education for Health Seeking Behaviors to identify:
- No smoking, limit alcohol and avoid illicit drug use
- Eat a low fat diet, rich in fruits and vegetables
- Teach s/s of known risk factors to report
- Encourage periodic evaluation of Blood pressure, cholesterol and blood glucose
- Keep BMI <25
- Encourage physical activity on most days of the week
- Signs and symptoms for early detection of disease

Box 1

Initiate the plan of care for a Risk For Ineffective Therapeutic Regimen management:
- Encourage client to collaborate with Health care team in treating known risk factors; Blood pressure control, ischemic heart disease, structural defects, diabetes management and cholesterol management
- Evaluate client at periodic intervals for s/s of heart failure
- Teach client to report changes in heart rhythm and rate or weight gain >2-3 lbs
- Instruct client to f/u with LV function testing
- Medication therapy instruction on ACEI vs. ARB
- Patient teaching from box 1

Box 2
### Collaborative Problem Template

**Outcomes/Benchmarks:**
- No gain in daily weight
- Respiration even/unlabored with pulse ox > 95%, lungs clear
- 60 < HR < 100, 100 < SBP < 140
- Urine output > 30 ml/hr

### PC: PULMONARY EDEMA / CARDIOGENIC SHOCK

<table>
<thead>
<tr>
<th>ASSESS s/s of acute pulmonary edema</th>
<th>Monitor level of oxygenation</th>
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<tbody>
<tr>
<td>Anxiety, shortness of breath, fatigue, activity intolerance; frothy sputum, cough, chest pain</td>
<td>Initiate continuous pulse oximetry and perform ABG’s for pulse &lt; 93-95% at the discretion of the MD</td>
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<tr>
<td>weight gain &gt; 2lbs overnight or &gt; 5 lbs in a week</td>
<td>Monitor ABG’s for acidosis</td>
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<tr>
<td>presence of a precipitating stressor</td>
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<tr>
<td>crackles on auscultation, presence of S3, tachycardia, peripheral edema</td>
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**Assess for contributing factors:**
- Valvular disease
- Ischemia/MI
- Cardiomyopathy
- Hypertension

**Monitor level of perfusion and fluid overload**
- CXRay to identify pulmonary edema
- Scale weight to identify fluid overload
- Hourly I/O
- Serum BNP level
- NIPB monitoring q 15 minutes until stable
- Echocardiogram

**Exclude ischemia**
- Cardiac profile, 12 lead EKG

**Additional assessment**
- Complete metabolic panel, complete blood count, bleeding times, TSH

### PC: PULMONARY EDEMA / CARDIOGENIC SHOCK

**DO**
1. If unstable follow ACLS for **Airway management** and initiate oxygen therapy & titrate sao2 > 95%
2. Prepare To **Restore Perfusion & Reduce Fluid Volume**
3. Start 2 IVs
   - Base vasoactive medication therapy on BP reading:
     - SBP > 160
     - Give IV Furosemide, IV NTG and Morphine SBP > 100:
     - As abv, prepare to administer dobutamine
     - SBP 70-100
     - As abv, add dopamine drip to keep BP > 100 SBP < 70
     - Norepinephrine drip
4. Initiate **hemodynamic monitoring**
   **If no s/s of shock:**
   - Treat arrhythmias, ACS, and/or secondary cause of exacerbation of CHF.
   - Maintain fluid and sodium restriction
   - Administer beta blockers, ACE inhibitors, aldosterone antagonists, hydralazine, nitrates and digoxin as prescribed
   - Initiate DVT prophylaxis in client with significantly impaired systolic function

**CALL**
- Call for unstable BP readings not responsive to vasoactive agents
  - Prepare to assist client in biventricular pacing, IACD to control dysrhythmia
- Call for worsening s/s of CHF not responding to medication therapy
- Call for adverse effects of medication therapy:
  - Hyper/hypokalemia, digoxin toxicity
- If hemodynamically unstable and s/s of cardiogenic shock:
  - Prepare to assist in IABP, VAD, hospice if indicated
- Prepare for cardiac procedures:
  - ICD, cardiac resynchronization