Chest Pain/STEMI Administrative Guideline

History	Signs and Symptoms	Differential
• Age • Medications (Viagra / sildenafil, • Levitra / vardenafil, Cialis / tadalafil) • Past medical history (MI, Angina, • Diabetes, post menopausal) • Recent physical exertion	• CP (pain, pressure, aching, vice-like • tightness) • Location (substernal, epigastric, arm, • jaw, neck, shoulder) • Radiation of pain • Pale, diaphoresis • Shortness of breath • Nausea, vomiting, dizziness • Time of onset	• Angina vs. Myocardial infarction • Pericarditis • Pulmonary embolism • Asthma / COPD • Pneumothorax • Aortic dissection or aneurysm • GE reflux • Chest wall injury or pain • Pleural pain

Nontraumatic chest pain or anginal equivalent

Age <18

Obtain 12 Lead ECG and consider transport per **SAEMS Critical Pediatric Triage Protocol**

B

If dyspnea or hypoxemic administer oxygen and titrate to maintain SaO_2 of 94%

Administer **aspirin** 324 mg PO (chewed)

Consider assisting patient with administration of own **nitroglycerin 0.4 mg** SL tablets or one full spay if SBP > 110 mm Hg
Repeat every 5 minutes until pain relieved or to a max of 3 doses

P

IV access
Obtain 12 lead ECG and transmit, when available

Consider administration of **nitroglycerin 0.4 mg** SL tablets if SBP > 110 mm Hg

Repeat every 5 minutes until pain relieved or to a max of 3 doses

Consider **morphine 0.1 mg/kg** IV/IO **2-5 mg** increments every 5 minutes, to a max total dose 20 mg.
Hold for hypotension

Administer **250 mL NS/LR fluid bolus** for SBP < 110
May repeat as needed

If nauseated administer **ondansetron 4 mg** IV

STEMI ALERT
(STEMI = 1 mm ST segment elevation in ≥ 2 contiguous limb leads or 2 mm elevation in precordial leads

CHF exacerbation/ pulmonary edema on exam

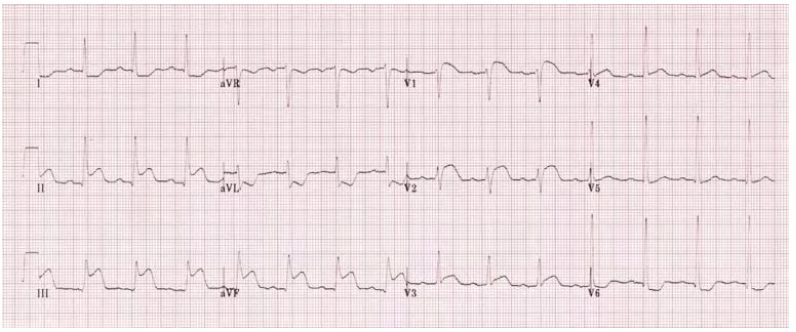
Consider **CHF/Fluid Overload AG** if indicated

Obtain second IV
Transport patient to **Cardiac Receiving Center**

Education /Pearls

Acute Coronary Syndrome (ACS) is a common cause of chest pain. ACS occurs when the blood supply of the heart cannot meet the demand of the heart, leading to cardiac ischemia. Coronary artery blockages may cause ischemia and infarction of territories of the heart, which presents as angina. Angina is typically described as chest pain radiating to the jaw or arm(s), diaphoresis, nausea/vomiting, and shortness of breath. Additional atypical symptoms may include epigastric/retrosternal pain or dizziness, and are commonly seen in the elderly, diabetics, and women; have a low threshold to perform a 12 lead EKG in these patients.

- Risk factors for ACS include diabetes, smoking, hypertension, hyperlipidemia, family history of cardiac disease, and atherosclerotic disease (prior stroke, heart attack, or peripheral vascular disease).
- Consider ACS as the cause of chest pain in patients >35 y with risk factors or in younger patients with recent cocaine/methamphetamine use.
- If presentation is severe or delayed, patients may present with acute heart failure, syncope and/or shock.
- Performance of serial ECGs is recommended if not diagnostic or change in patient condition



Nitroglycerin: Nitroglycerin dilates vasculature and may ease pain caused by myocardial ischemia.

- Do not withhold nitroglycerine while obtaining IV access.
- 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 (see EKG). In these STEMIs, nitroglycerine is also **contraindicated.**
- Nitroglycerin may be repeated per dosing guidelines.
- Monitor for hypotension after administration.

Morphine: Morphine provides analgesia but offers no survival benefit. Morphine should be used with caution in unstable angina/non-STEMI due to an association with increased mortality.

- Monitor for hypotension after administration.
- Opioids may be repeated per dosing guidelines.

ST Elevation Myocardial Infarction (STEMI):

- Diagnostic criteria: Anginal symptoms plus one of the following:
  - 1 mm ST elevation in 2 or more contiguous limb leads (I, II, III, avF, aVR, aVL) and reciprocal ST depressions.
  - 2 mm ST elevation in 2 or more precordial leads (V1-V6) and reciprocal ST depressions.
- Treatment timing goals:
  - Obtain and transmit ECG within 5 minutes
  - Provide STEMI alert within 10 minutes
  - Time at scene less than 15 minutes

Local Cardiac Receiving Centers:

- BUMC-T
- BUMC-SC
- NWMC
- OVH
- SJH
- SMH
- TMC
- VAMC