



Chest Pain: Cardiac and STEMI

History

- Age
- Medications (Viagra / sildenafil, Levitra / vardenafil, Cialis / tadalafil)
- Past medical history (MI, Angina, Diabetes, post menopausal)
- Allergies
- Recent physical exertion
- Onset / Palliation / Provocation
- Quality (crampy, constant, sharp, dull, etc.)
- Region / Radiation / Referred
- Severity (1-10)
- Time (onset /duration / repetition)

Signs and Symptoms

- 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**
- Women:
 - More likely to have dyspnea, N/V, weakness, back or jaw pain

Differential

- Trauma vs. Medical
- Angina vs. Myocardial infarction
- Pericarditis
- Pulmonary embolism
- Asthma / COPD
- Pneumothorax
- Aortic dissection or aneurysm
- GE reflux or Hiatal hernia
- Esophageal spasm
- Chest wall injury or pain
- Pleural pain
- Overdose: Cocaine or Methamphetamine

	12 Lead ECG Procedure
B	Aspirin 81 mg x 4 PO (chewed) Or 325 mg PO
	Nitroglycerin 0.3 / 0.4 mg Sublingual Repeat every 5 minutes x 3 <i>if prescribed to patient and (BP ≥ 100)</i>
P	Cardiac Monitor

Acute MI / STEMI
See box to right

Transport based on:
STEMI
EMS Triage and Destination Plan
Immediate Notification of Facility
Immediate Transmission of ECG
if capable
Keep Scene Time to ≤ 15 Minutes

B *If transporting to Non PCI Center*
Reperfusion Checklist

Acute MI / STEMI

STEMI Definition:

- ≥ 1 mm ST Segment elevation in ≥ 2 contiguous leads
- ≥ 2 mm ST/J point elevation in V2-V3 for men
- ≥ 1.5 mm ST/J point elevation in V2-V3 for women
- ECG software diagnoses Acute MI (symptomatic)

	IV / IO Protocol UP 6
A	Nitroglycerin 0.3 / 0.4 mg SL Repeat every 5 minutes as needed
	Nitroglycerin Paste
P	Morphine 2 – 4 mg IV / IO Repeat every 5 minutes as needed Maximum 10 mg Or Fentanyl 50 – 75 mcg IV / IO Repeat 25 mcg every 20 minutes as needed Maximum 200 mcg
	Hypotension / Shock Protocol AM 5 <i>if indicated</i>
	CHF / Pulmonary Edema Protocol AC 5 <i>if indicated</i>

Notify Destination or Contact Medical Control



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Pearls

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro**
- **Items in Red Text are the key performance indicators for the EMS Acute Cardiac (STEMI) Care Toolkit**
- **Nitroglycerin:**
 - Avoid Nitroglycerin in any patient who has used Viagra (sildenafil) or Levitra (vardenafil) in the past 24 hours or Cialis (tadalafil) in the past 36 hours due to potential severe hypotension.
 - Nitroglycerin may cause hypotension during any type myocardial infarction. It is NOT more likely to cause hypotension in an inferior MI and should NOT be avoided unless already hypotensive.
- **STEMI (ST-Elevation Myocardial Infarction)**
 - Positive Reperfusion Checklist should be transported to the appropriate facility based on STEMI EMS Triage and Destination Plan.
 - Consider placing 2 IV sites in the left arm: Many PCI centers use the right radial artery for intervention.
 - Consider placing defibrillator pads on patient as a precaution.
 - Consider Normal Saline or Lactated Ringers bolus of 250 – 500 mL as pre-cath hydration.
 - Scene time goal is < 15 minutes.
 - Document and time-stamp facility STEMI notification and make notification as soon as possible.
 - Document the time of the 12-Lead ECG in the PCR as a Procedure along with the interpretation (Paramedic).
- **Cardiac related symptoms in men and women:**
 - Pressure, squeezing, fullness, or pain in the chest.
 - Pain or discomfort in one or both arms, the back, neck, jaw, or stomach.
 - Shortness of breath with or without chest pain.
 - Sweating, nausea, weakness, and/or lightheadedness.
 - **Women, diabetic patients, and the elderly often experience only weakness, shortness of breath, nausea/vomiting, and back or jaw pain.**

EMT:

- **EMT administration of Nitroglycerin is limited to patients currently prescribed the medication, unless approved by the Agency Medical Director and the NC office of EMS.**
- If patient has taken nitroglycerin without relief, consider potency of the medication.
- Monitor for hypotension after administration of nitroglycerin and opioids.
- Agency medical director may require Contact of Medical Control prior to administration.