Chest Pain/Acute Coronary Syndrome (ACS)

STEMI (ST Elevation Myocardial Infarction)

Goal – “EMS contact to Balloon Time less than 90 minutes”

Indications for 12 lead EKG include: chest pain/discomfort, palpitations, dysrhythmias, shortness of breath, syncope, dizziness, nausea, vomiting, diaphoresis, and weakness. Be aware of atypical presentations, including: absence of chest pain in women, diabetic and geriatric patients.

**STEMI/Cardiac Alert should be initiated for:**
- QRS complex less than 0.12 seconds in length and
- ST Elevation greater than or equal to 1mm present in two or more anatomically contiguous leads. (II, III, aVF); (I, aVL, V5, V6); (V1-V6)
- Use the appropriate term (STEMI Alert or Cardiac Alert) based on the receiving hospitals procedures.

**Notify the ED to look for transmitted EKG for the following:**
- QRS complex greater than or equal to 0.12 seconds in length and ST elevation or
- Signs of ischemia with ST depression in two or more contiguous leads
- EKG just doesn’t look right

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**EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)/ ADVANCED EMT (AEMT)/ INTERMEDIATE / PARAMEDIC**

1. Perform primary medical assessment and Initial Medical Care.
2. Titrate supplemental oxygen to lowest level to maintain pulse ox greater than 93%22 (if severe underlying lung disease goal is 88-92%). Do not withhold oxygen if you do not have the ability to assess O2 saturations.

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**EMERGENCY MEDICAL TECHNICIAN (EMT)/ADVANCED EMT (AEMT)**

If trained in 12 lead EKGS and 12 lead EKG available, Obtain 12 lead EKG within 5 minutes of patient contact. Transmit to receiving hospital for interpretation.

- Contact hospital to trigger STEMI/Cardiac Alert process.
- IF STEMI, options for care:
  - Initial rapid transport to close ED.
  - Direct transport to facility with rapid cath lab access
  - Intercepting with ALS for direct transfer to cath lab facility via:
    - Air Medical Transport
    - ALS Ground Transport
- If not clear-cut situation, communication between Medical Control physician and EMS team is essential to determine receiving facility destination, and method of transport.

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22 Cyanotic Heart Disease pulse ox goal 75-85%
12 lead should be repeated if still having symptoms before initiating transport and again on arrival at the hospital\textsuperscript{23} (in addition to when first evaluating the patient).

12 lead should also be repeated for rhythm changes or significant worsening of chest pain. If trained in Cardiac Monitors and Cardiac Monitor available, apply Cardiac Monitor.

3. Aspirin 324 mg PO; if not already taken and not contraindicated by severe allergy or significant active bleeding. If patient has taken Aspirin prior to arrival, administer the difference up to 324 mg PO.

**EMERGENCY MEDICAL TECHNICIAN (EMT)**

May assist patient in taking their own NTG as long as SBP is greater than 100 mmHg.

**ADVANCED EMT (AEMT)/ INTERMEDIATE / PARAMEDIC**

4. **Nitroglycerin (NTG) 0.4mg Sublingual (SL):** If systolic BP greater than 100mmHG and chest discomfort present. *No IV required for administering Nitroglycerin.* May repeat as needed every 3-5 minutes if systolic BP greater than 100 mm HG and chest discomfort present. No maximum number of NTGs. CONTRAINDICATION: Viagra (Sildenafil male/female patients), Cialis, Levitra or similar medication.

5. If pain not relieved after 3 NTG, consider additional medications per Pain Protocol.

6. Establish IV

**INTERMEDIATE / PARAMEDIC**

Obtain 12 lead EKG within 5 minutes of patient contact. Interpret EKG and/or transmit to receiving hospital for interpretation

- Contact hospital to trigger STEMI/Cardiac Alert process.
- IF STEMI, options for care:
  - Initial rapid transport to close ED.
  - Direct transport to facility with rapid cath lab access
  - Intercepting with ALS for direct transfer via:
    - Air Medical Transport
    - ALS Ground Transport
- If not clear-cut situation, communication between Medical Control physician and EMS team is essential to determine receiving facility destination, and method of transport.

12 lead should be repeated if still having symptoms before initiating transport and again on arrival at the hospital (in addition to when first evaluating patient).

12 lead should also be repeated for rhythm changes or significant worsening of chest pain

7. Cardiac Monitor- evaluate for dysrhythmias and if present see appropriate protocol.
8. If nauseated or vomiting, see Nausea/Vomiting Protocol

\textsuperscript{23} Checking the EKG on initial evaluation and again before starting transport and upon arrival at the hospital increases the chances of identifying a STEMI by 15% over just getting the EKG once.
PARAMEDIC

9. 
10. When transporting directly to a cath lab facility and medications available, consider

<table>
<thead>
<tr>
<th>Contact Medical Control for the following:</th>
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<tbody>
<tr>
<td>• Plavix 600mg PO</td>
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<tr>
<td>• Heparin 60 units/kg IV, Max 5000 units.</td>
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EMERGENCY MEDICAL TECHNICIAN (EMT)/ADVANCED EMT (AEMT)/INTERMEDIATE / PARAMEDIC

11. Complete STEMI/Cardiac Alert worksheet and provide copy to ED/Cath lab/transport team staff.