## STEMI Criteria:

- **ST elevation at the J point in**
  - **Men:** at least 2 contiguous leads of $\geq 2 \text{ mm (0.2 mV)}$ in leads V2–V3 and/or $\geq 1 \text{ mm (0.1mV)}$ in other contiguous chest leads or the limb leads.
  - **Women:** $\geq 1.5 \text{ mm (0.15 mV)}$ in leads V2–V3 and/or $\geq 1 \text{ mm (0.1mV)}$ in other contiguous chest leads or the limb leads.

- **Signs & Symptoms of discomfort suspect for AMI (Acute Myocardial Infarction) or STEMI with a duration $>15$ minutes $<12$ hours.

- Although new, or presumably new, LBBB at presentation occurs infrequently and may interfere with ST-elevation analysis, care should be exercised in not considering this an acute myocardial infarction (MI) in isolation. If in doubt, immediate consult with PCI receiving center is recommended.

- If initial ECG is not diagnostic but suspicion is high for STEMI, obtain serial ECG at 5-10 minute intervals.

### If ECG is transmitted from the field (EMS) and a STEMI is identified, the following should be done prior to patient arrival:

- Alert on-call provider if not in-house
- Activate Transferring agency (Air or Ground)
- Notify Receiving PCI Hospital Emergency Dept. Physician
- If Arrived by EMS, Leave Patient on Ambulance Cot

**1st ECG time goal: 10 minutes from patient arrival**

### PRIMARY PCI Pathway – FMC to PCI less than 120 minutes – ACTIVATE CATH LAB

**Goal: Door-in to Door-out in < 30 minutes**

#### Patient Care Priorities Prior to Transport or During Transport:

- Titrate oxygen (starting at 2L/min) to maintain SpO2 between 90%-94%
- Aspirin 324 mg PO chewable
- Cardiac Monitor & attach hands-free defibrillator pads
- Obtain vital signs and pain scale
- NTG 0.4mg SL every 5 min or Nitropaste PRN for chest pain (hold for SBP < 90)
- Analgesia (Morphine sulfate or Fentanyl) IV PRN for pain
- Establish Saline Lock #1 large bore needle

**Administer one of the following:**

- **Heparin - IV loading dose (70 Units/kg - max 4,000 units)**
  - **Optional to Heparin:** Enoxaparin (Lovenox):
    - Age < 75: 30mg IV plus 1 mg/kg SC (max 100mg)
    - Age > 75: No bolus. 0.75 mg/kg SC (max 75mg)

**Optional to Brilinta:**

- Ticagrelor (Brilinta) - 180mg PO or
- Clopidogrel (Plavix) 600 mg PO or
- Prasugrel (Effient) 60 mg PO. (Precautions with Prasugrel: Do not use in patients with active bleeding, history of TIA or stroke, age > 75 years, body weight less than 60 kg or 132 lbs.)

### FIBRINOLYSIS Pathway - FMC to PCI anticipated to be > 120 min

**Goal: Door to Needle < 30 minutes followed by immediate transfer to PCI hospital**

#### ABSOLUTE CONTRAINDICATIONS FOR FIBRINOLYSIS (TNK) IN STEMI

1. Any prior intracranial hemorrhage
2. Known structural cerebral vascular lesion (e.g., arteriovenous malformation)
3. Known malignant intracranial neoplasm (primary or metastatic)
4. Ischemic stroke within 3 months EXCEPT acute ischemic stroke within 3 hours
5. Suspected aortic dissection
6. Active bleeding or bleeding diathesis (excluding menses)
7. Significant closed-head or facial trauma within 3 months

#### RELATIVE CONTRAINDICATIONS FOR FIBRINOLYSIS: (TNK) IN STEMI

1. History of chronic severe, poorly controlled hypertension
2. Severe uncontrolled hypertension on presentation (SBP more than 180 mm Hg or DBP more than 110 mm Hg)
3. History of prior ischemic stroke more than 3 months, dementia, or known intracranial pathology not covered in contraindications
4. Traumatic or prolonged CPR (over 10 minutes)
5. Major surgery (within last 3 weeks)
6. Recent internal bleeding (within last 2-4 weeks)
7. Noncompressible vascular punctures
8. For streptokinase/anistreplase: prior exposure (more than 5 days ago) or prior allergic reaction to these agents
9. Pregnancy
10. Active peptic ulcer
11. Current use of oral anticoagulants (Warfarin, Dabigatran, Rivaroxaban, Apixaban, etc.)

**If Patient is contraindicated for Fibrinolysis, Follow Transport Guidelines for Primary PCI**
**Patient Care when time allows — Do Not Delay Transport**

- Establish large bore IV with NS @TKO, left arm preferred
- Atorvastatin (Lipitor) 80 mg PO
- Obtain Labs: cardiac markers (CKMB, Trop I), CBC, BMP, PT/INR, PTT, and pregnancy serum if childbearing age (do not delay transport waiting for results)
- NTG 0.4mg SL every 5 min or Nitropaste PRN for chest pain (hold for SBP < 90)
- Analgesia (Morphine sulfate or Fentanyl) IV PRN for pain
- Consider Metoprolol (Lopressor) 50 mg PO if patient hypertensive (>160/90). May consider additional doses if clinically indicated. Hold if SBP < 120, Pulse ox < 92%, HR < 60 or active CHF or Asthma

**Goal: Door-in to Door-out in < 30 minutes**

Immediately Transport to PCI Hospital

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**Do not give Fibrinolytics (TNKase, rPA, or TPA) for Primary PCI Patients**

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**Fibrinolysis Pathway - FMC to PCI anticipated to be > 120 min (continued)**

**Goal: Door to Needle < 30 minutes**

Tenecteplase (TNKase) IV over 5 seconds:
- Patient age ≤75 – FULL DOSE
- Patient age >75 – Contact Cardiologist for Consideration of HALF DOSE

<table>
<thead>
<tr>
<th>Patient Weight</th>
<th>FULL-DOSE</th>
<th>HALF-DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>59 kg or less</td>
<td>30 mg x 8 mL</td>
<td>15 mg x 3 mL</td>
</tr>
<tr>
<td>60 - 69 kg</td>
<td>35 mg x 7 mL</td>
<td>18 mg x 5.5 mL</td>
</tr>
<tr>
<td>70 - 79 kg</td>
<td>40 mg x 8 mL</td>
<td>20 mg x 4 mL</td>
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<tr>
<td>80 - 89 kg</td>
<td>45 mg x 9 mL</td>
<td>23 mg x 4.5 mL</td>
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<tr>
<td>90 kg or more</td>
<td>50 mg x 10 mL</td>
<td>25 mg x 5 mL</td>
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</tbody>
</table>

- UFH:
  - Heparin IV Bolus (60 Units/kg, max 4,000 Units)
  - Heparin IV Drip (12 Units/kg/hr, max 1,000 Units/hr)

Optional to UFH:
- Enoxaparin (Lovenox):
  - Age < 75: 30mg IV plus 1 mg/kg SC (max 100mg)
  - Age > 75: No bolus. 0.75 mg/kg SC (max 75mg)

- Unfractionated Heparin (UFH):
  - Heparin IV Bolus (60 Units/kg, max 4,000 Units)
  - Heparin IV Drip (12 Units/kg/hr, max 1,000 Units/hr)

- Optional to Heparin:
  - Enoxaparin (Lovenox):
    - Age < 75: 30mg IV plus 1 mg/kg SC (max 100mg)
    - Age > 75: No bolus. 0.75 mg/kg SC (max 75mg)

- Titrate oxygen (starting at 2L/min) to maintain SpO2 between 90%-94%
- Aspirin 324 mg PO chewable times 1 dose (if not already given)
- Clopidogrel (Plavix)
  - age ≤75: 300 mg loading dose
  - age >75: only 75 mg total
- Repeat EKG 30 minutes after fibrinolytics administration if possible

Immediately Transport to PCI Hospital

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**List and contact info for Primary PCI Hospitals:**

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<thead>
<tr>
<th>City</th>
<th>Hospital Name</th>
<th>Phone</th>
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<tbody>
<tr>
<td>Ames</td>
<td>Mary Greeley Medical Center</td>
<td>515-239-2251</td>
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<tr>
<td>Bettendorf</td>
<td>UnityPoint Trinity Regional Health System</td>
<td>563-742-3200</td>
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<tr>
<td>Cedar Rapids</td>
<td>UnityPoint St. Luke’s Hospital</td>
<td>888-369-7105</td>
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<td>Cedar Rapids</td>
<td>Mercy Medical Center</td>
<td>866-583-0896</td>
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<td>Clinton</td>
<td>Mercy Medical Center</td>
<td>563-244-3641</td>
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<tr>
<td>Council Bluffs</td>
<td>CHI Health Mercy Hospital</td>
<td>844-577-0577</td>
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<td>Methodist Jennie Edmundson</td>
<td>844-536-6431</td>
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<td>Genesis Medical Center</td>
<td>563-421-7681</td>
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<td>Des Moines</td>
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<td>Trinity Regional Medical Center</td>
<td>515-574-6684</td>
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<td>319-467-6666</td>
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<td>641-754-5040</td>
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<td>712-635-2022</td>
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<td>Sioux Falls, SD</td>
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<td>West Des Moines</td>
<td>Mercy West Lakes</td>
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http://www.heart.org/missionlifelineia

03/08/2016