TRANSPORT PATIENT AS SOON AS POSSIBLE!
Fax or Transmit ECG and other pertinent records (EMS reports, allergies, past medical history, etc.)

ST Elevation Myocardial Infarction (STEMI) Protocol for Inter-Hospital Transfer

* Duluth Area STEMI Hospitals: (Both Essentia/St. Mary’s & St. Luke’s)
Please refer to the Minnesota STEMI Guideline for further information, or if transferring to a PCI hospital outside of Duluth

TRANSPORT PATIENT AS SOON AS POSSIBLE
Fax or Transmit ECG and other pertinent records (EMS reports, allergies, past medical history, etc.)

Identify / Diagnose STEMI (ST Elevation Myocardial Infarction) Diagnostic Criteria:
- ST elevation at the J point in at least 2 contiguous leads of ≥ 2 mm (0.2 mV) in men or ≥ 1.5 mm (0.15 mV) in women in leads V2–V3 and/or of ≥ 1 mm (0.1 mV) 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 consultation with PCI receiving center is recommended
- ECG demonstrates evidence of ST depression suspect of a Posterior MI...consult with PCI receiving center
- If initial ECG is not diagnostic but suspicion is high for STEMI, obtain serial 12 Lead ECG’s at 5-10 minute intervals

Primary PCI: Estimated FMC to PCI ≤ 120 minutes
Or FMC > 120 minutes, and one of the following:
- Inappropriate for Fibrinolytic
- Resuscitated out-of-hospital cardiac arrest patients whose initial ECG shows STEMI
- Evidence of either Cardiogenic Shock or Acute Severe CHF
  **Do NOT give Lytic/TNK!**
- Aspirin 81 mg x 4 chewed = 324 mg
- Ticagrelor 180 mg PO
  (If Ticagrelor not available, then give Clopidogrel 600 mg PO)
- Heparin IV Bolus 60 Units/kg, max 4,000 Units (No IV Drip)

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Fibrinolysis: Estimated FMC to PCI >120 minutes
- Establish if Fibrinolytic appropriate
  (See page 2 for contraindications)
- Goal: Door to Needle < 30 minutes
  - Aspirin 81 mg x 4 chewed = 324 mg
  - Heparin IV Bolus 60 Units/kg, max 4,000 Units
  - Heparin IV Drip 12 Units/kg/hr, max 1,000 Units/hr

For AGE ≤ 75 years old
- Clopidogrel 300 mg PO
- TNK “Full–Dose” IV

For AGE > 75 years old
- Clopidogrel 75 mg PO
- TNK “HALF–Dose” IV

Choose and Call Receiving PCI Hospital

ACTIVATE CODE STEMI / STEMI ALERT

ACTIVATE TRANSPORT
Establish availability and ETA of Air or Ground ALS EMS for Inter-Facility Transfer to Primary PCI Hospital

AIR TRANSPORT: Life Link III 1-800-328-1377 North Air 1-800-247-0229
GROUND TRANSPORT: ____________

Establish Saline Lock

Cardiac Monitor
Attach hands-free defibrillator pads

Establish Saline Lock - large bore needle (Left arm preferred)

Oxygen PRN at 2 L/min and titrate to SpO2 > 90%

Establish if Fibrinolytic appropriate
(See page 2 for contraindications)

Goal: Door to Needle < 30 minutes
- Aspirin 81 mg x 4 chewed = 324 mg
- Heparin IV Bolus 60 Units/kg, max 4,000 Units
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Tenecteplase (TNKase) Dosing Chart

| Patient Weight | "FULL–DOSE" | "HALF–DOSE"
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>59 kg or less</td>
<td>30 mg = 6 mL</td>
<td>15 mg = 3 mL</td>
</tr>
<tr>
<td>60 - 69 kg</td>
<td>35 mg = 7 mL</td>
<td>18 mg = 3.5 mL</td>
</tr>
<tr>
<td>70 - 79 kg</td>
<td>40 mg = 8 mL</td>
<td>20 mg = 4 mL</td>
</tr>
<tr>
<td>80 - 89 kg</td>
<td>45 mg = 9 mL</td>
<td>23 mg = 4.5 mL</td>
</tr>
<tr>
<td>90 kg or more</td>
<td>60 mg = 10 mL</td>
<td>26 mg = 5 mL</td>
</tr>
</tbody>
</table>

DASH Protocol Approved by St. Luke’s & Essentia/St. Mary’s – Current: May, 2017
DASH* STEMI Protocol for Inter-Hospital Transfer

* Duluth Area STEMI Hospitals: (Both St. Mary’s/Essentia & St. Luke’s)

Please refer to the Minnesota STEMI Guideline for further information, or if transferring to a PCI hospital outside of Duluth

**Page 2 of 2**

**ABSOLUTE CONTRAINDICATIONS FOR FIBRINOLYSIS (TNK) IN STEMI**
- Chest Pain / Symptom Onset > 12 hours
- Suspected aortic dissection
- Any prior intracranial hemorrhage
- Structural cerebral vascular lesion or malignant intracranial neoplasm
- Any active bleeding (excluding menses)
- Ischemic stroke within 3 months
- Significant closed-head or facial trauma within 3 months
- Pregnancy

**RELATIVE CONTRAINDICATIONS FOR FIBRINOLYSIS: (TNK) IN STEMI**
- Chest Pain / Symptom Onset > 6 hours
- Current use of oral anticoagulants (Warfarin, Dabigatran, Rivaroxaban, Apixaban, Edoxaban, etc.)
- Uncontrolled hypertension or presentation (SBP > 180 or DBP > 90 mmHg)
- History of ischemic stroke more than 3 months, dementia, or known intracranial pathology not covered in contraindications
- Traumatic or prolonged CPR (over 10 minutes)
- Major surgery within last 3 weeks
- Recent internal bleeding (within last month)
- Major surgery within last 4 weeks
- New head or facial trauma within 3 months
- Pregnancy
- Known intracranial pathology not covered in contraindications

**CONTRAINDICATION FOR METOPROLOL**
Do not give if any of the following: Signs of heart failure or shock, heart rate less than 60 bpm or more than 110 bpm, systolic blood pressure less than 120 mmHg, second or third degree heart block, asthma, or reactive airway disease.

**INDICATIONS FOR FIBRINOLYSIS: (TNK) IN STEMI**
- All eligible STEMI patients receiving a Door-to-Patch time < 10 minutes unless pre-hospital ECG obtained
- All eligible STEMI patients receiving a Reperfusion Therapy (Primary PCI or fibrinolysis)
- Fibrinolytic eligible STEMI patients with Door-to-Needle time < 30 minutes
- Primary PCI eligible patients transferred to a PCI receiving center within 45 minutes
- Referring Center ED or Pre-Hospital First Medical Contact-to-PCI time < 120 minutes (including transport time)
- All STEMI patients without a contraindication receiving Aspirin prior to referring center ED discharge

**Please Document Times:**
1. ____________ Chest Pain Onset
2. ____________ Pre-Hospital (+) ECG time (if available)
3. ____________ Regional Hospital Arrival
4. ____________ Regional Hospital 1st ECG Time
5. ____________ (+) ECG Time (if 1st is negative)
6. ____________ Time Transport Called
7. ____________ STEMI Protocol Activation (PCI Hospital 1st Called)
8. ____________ Time Transport Arrives
9. ____________ Regional Hospital Departure

**Copy** All paperwork and send with patient (ECG, Labs, Orders, etc.)

**NURSE DOCUMENTATION**
Regional Hospital Name & City:

**AHA Mission: Lifeline STEMI Recommendations:**
- FMC (First Medical Contact)-to-First ECG time ≤ 10 minutes unless pre-hospital ECG obtained
- FMC-to-First ECG time ≤ 10 minutes
- All eligible STEMI patients receiving a Reperfusion Therapy (Primary PCI or fibrinolysis)
- Fibrinolytic eligible STEMI patients with Door-to-Needle time ≤ 30 minutes
- Primary PCI eligible patients transferred to a PCI receiving center within Door-in - Door-out (Length of Stay) ≤ 45 min
- Referring Center ED or Pre-Hospital First Medical Contact-to-PCI time ≤ 120 minutes (including transport time)
- All STEMI patients without a contraindication receiving Aspirin prior to referring center ED discharge

**MEDICATIONS**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Time(s) Administered By: Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin (81 mg x 4) (Chew) Oral</td>
<td>324 mg</td>
<td></td>
</tr>
<tr>
<td>Ticagrelor (Brilinta) (For PCI only)</td>
<td>180 mg</td>
<td></td>
</tr>
<tr>
<td>Clopidogrel (Plavix) Oral</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>Heparin IV Bolus 60 U/kg (max 4000 Units)</td>
<td>Units</td>
<td></td>
</tr>
<tr>
<td>Heparin IV Infusion 12 U/kg/hr (max 1000 Units)</td>
<td>Units/hr</td>
<td></td>
</tr>
<tr>
<td>Tenecteplase (TNKase) IV</td>
<td>Full Dose for AGE ≤ 75 yo</td>
<td></td>
</tr>
<tr>
<td>Half Dose for AGE &gt; 75 yo</td>
<td>mg (– mL)</td>
<td></td>
</tr>
<tr>
<td>Notes:</td>
<td>* Do not give Brilinta with Lytic (TNK)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Do not give Brilinta and Plavix together</td>
<td></td>
</tr>
<tr>
<td>Nitroglycerin Sublingual</td>
<td>0.4 mg</td>
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</tr>
<tr>
<td>Nitroglycerin IV</td>
<td>mcg/min</td>
<td></td>
</tr>
<tr>
<td>Morphine Sulfate IV</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>Diazepam (Valium) Oral or IV</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>Ondansetron (Zofran) Oral or IV</td>
<td>4 mg</td>
<td></td>
</tr>
<tr>
<td>Metoprolol 25 mg or 50 mg Oral</td>
<td>mg</td>
<td></td>
</tr>
<tr>
<td>Metoprolol 2.5 mg or 5 mg IV</td>
<td>mg</td>
<td></td>
</tr>
</tbody>
</table>

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