

Nebraska Mission: Lifeline

Statewide STEMI Guideline for Non-PCI Hospitals



STEMI Criteria:

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

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

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

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
- 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)

Then administer one of the following:

- Clopidogrel (Plavix) 600 mg PO or;
- Ticagrelor (Brilinta) - 180mg PO

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
8. Current use of oral anticoagulants (Warfarin, Dabigatran, Rivaroxaban, Apixaban, etc.)

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

If Patient is contraindicated for Fibrinolysis, Follow Transport Guidelines for Primary PCI

PRIMARY PCI Pathway – FMC to PCI less than 120 minutes – ACTIVATE CATH LAB (continued)

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

Patient Care when time allows — Do Not Delay Transport

- Establish large bore IV with NS @TKO, left arm preferred
- Heparin IV Drip (15 Units/kg/hr - max 1,000 units/hr)
- 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) if patient hypertensive (>160/90).
 - 50 mg PO or;
 - 5mg IV x 1
 May consider additional doses if clinically indicated. Hold if SBP < 120, Pulse ox < 92%, HR < 60 or active CHF or Asthma
- Atorvastatin (Lipitor) 80 mg PO

Goal: Door-in to Door-out in < 30 minutes
Transport to Closest PCI Hospital Immediately

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

List and contact info for Primary PCI Hospitals:

Bellevue, NE	Bellevue Nebraska Medicine	402-552-3444
Cheyenne, WY	Cheyenne Regional Medical Center	307-633-2203
Council Bluffs, IA	CHI Health Alegent Mercy	844-577-0577
Grand Island, NE	CHI Health St. Francis Medical Center	308-398-5560
Kearney, NE	CHI Health Good Samaritan	800-474-7911
Kearney, NE	Kearney Regional Medical Center	844-367-5762
Lincoln, NE	Bryan Medical Center	402-481-1111
Lincoln, NE	CHI Health - Nebraska Heart Institute	800-644-9627
Lincoln, NE	CHI Health St. Elizabeth	800-644-9627
Loveland, CO	Medical Center of the Rockies (MCR)	888-853-4900
Norfolk, NE	Faith Regional Health Services	402-371-4880
North Platte, NE	Great Plains Health	308-568-8760
Omaha, NE	CHI Health Alegent Bergan Mercy	844-577-0577
Omaha, NE	CHI Health Alegent Creighton	844-577-0577
Omaha, NE	CHI Health Alegent Lakeside	844-577-0577
Omaha, NE	CHI Health Immanuel Bergan Mercy	844-577-0577
Omaha, NE	Methodist Hospital	402-354-3444
Omaha, NE	Nebraska Medicine	402-552-3444
Papillion, NE	CHI Health Midlands	844-577-0577
Rapid City, SD	Rapid City Regional Hospital	605-755-8222
Sioux City, IA	Mercy Medical Center	712-560-6529
Sioux City, IA	Unity Point Health St. Luke's	712-635-2022

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

Goal: Door to Needle < 30 minutes

Tenecteplase (TNKase) IV over 5 seconds:

Patient Weight		TNKase Reconstituted	
kg	lbs	mg	Volume
<60	<132	30	6
60 to <70	132 to <154	35	7
70 to <80	154 to <176	40	8
80 to <90	176 to <198	45	9
≥90	≥198	50	10

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

Transport to Closest PCI Hospital Immediately