

DASH* 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

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Adapted in support of the 2014 Minnesota Mission:Lifeline™ Statewide STEMI Inter-Facility Transfer Guideline (November 2021)

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

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:

ACTIVATE YOUR INTERNAL STEMI ALERT

Alert appropriate provider(s) and team members

ESTABLISH KEY TIMES:

Symptom Onset:
First Medical Contact (FMC):
ETA to Duluth PCI Hospital:

Choose
Primary PCI or Fibrinolysis

Estimate First Medical Contact (FMC) to Potential PCI:

(Allow approximately 20 min after arrival in Duluth to PCI)
Consider if PCI is possible within 120 minutes?
If not, is patient a good candidate for Fibrinolysis?

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)

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

Tenecteplase (TNKase) Dosing Chart

Patient Weight	** FULL-DOSE **	** HALF-DOSE **
59 kg or less	30 mg = 6 mL	15 mg = 3 mL
60 - 69 kg	35 mg = 7 mL	18 mg = 3.5 mL
70 - 79 kg	40 mg = 8 mL	20 mg = 4 mL
80 - 89 kg	45 mg = 9 mL	23 mg = 4.5 mL
90 kg or more	50 mg = 10 mL	25 mg = 5 mL

- Essentia/St. Mary's Call: 1-877-786-4944**
Fax records to Cath Lab: **218-786-4248**
Call nursing report & updated ETA: **1-877-786-4944**

- ST. LUKE'S Call: 218-249-4444**
Fax records to: **218-249-2330**
Call nursing report to SLH: **218-249-4444**

TRANSPORT PATIENT AS SOON AS POSSIBLE!

Fax or Transmit ECG and other pertinent records (EMS reports, allergies, past medical history, etc.)

Top Patient Care Priorities:

- Establish DNR / Resuscitation Status
- Obtain vital signs and assess pain level on scale of 1-10
- 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 $> 90\%$
- Assess Allergies (Note if reaction to IV Contrast?)

Patient Care When Time Allows:

- Establish 2nd large bore IV with Normal Saline @TKO (Left arm preferred)
- Obtain Appropriate Labs: Troponin, CBC, Potassium, Creatinine, PT/ INR, aPTT
- Nitroglycerin 0.4 mg SL every 5 min or Nitropaste PRN for chest pain (hold for SBP < 90)
- Evaluate if erectile dysfunction or pulmonary hypertension medications taken in the past 48 hours including: Sildenafil (Viagra, Revatio), Vardenafil (Levitra, Staxyn), Avanafil (Stendra), or Tadalafil (Cialis, Adcirca), and if so, hold nitrates for 48 hours

Regional Hospital Name & City:

Other Orders:

MD Signature: _____ Date: _____

Patient Name:

DASH Protocol Approved by St. Luke's & Essentia/St. Mary's – Current: November, 2021

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MISSION:
LIFELINE

Adapted in support of the 2014 Minnesota Mission:Lifeline™
Statewide STEMI Inter-Facility Transfer Guideline (Nov. 2021)

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 on 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 2-4 weeks)

Patient Weight	** FULL-DOSE **	** HALF-DOSE **
59 kg or less	30 mg = 6 mL	15 mg = 3 mL
60 - 69 kg	35 mg = 7 mL	18 mg = 3.5 mL
70 - 79 kg	40 mg = 8 mL	20 mg = 4 mL
80 - 89 kg	45 mg = 9 mL	23 mg = 4.5 mL
90 kg or more	50 mg = 10 mL	25 mg = 5 mL

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.

Weight:	kg	Height:	in.	Age:	yrs
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Medication	Dose	Time(s)	Administered By: (Initials)
Aspirin (81 mg x 4) (Chew) Oral	324 mg		
Ticagrelor (Brilinta) Oral (For PPCI only)	180 mg		
Clopidogrel (Plavix) Oral	mg		
Heparin IV Bolus 60 U/kg (max 4000 Units)	Units		
Heparin IV Infusion 12 U/kg/hr (max 1000 U/hr)	Units/hr		
Tenecteplase (TNKase) IV Full Dose for AGE ≤ 75 yo Half Dose for AGE > 75 yo	mg (= mL)		
* Do not give Brilinta with Lytic (TNK) * Do not give Brilinta and Plavix together			
Nitroglycerin Sublingual	0.4 mg		
Nitroglycerin IV	mcg/min		
Morphine Sulfate IV	mg		
Diazepam (Valium) Oral or IV	mg		
Ondansetron (Zofran) Oral or IV	4 mg		
Metoprolol 25 mg or 50 mg Oral	mg		
Metoprolol 2.5 mg or 5 mg IV	mg		

Notes:

AHA Mission: Lifeline STEMI Recommendations:

- **FMC (First Medical Contact)-to-First ECG** 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 **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

Please Document Times:

- _____ Chest Pain Onset
- _____ Pre-Hospital (+) ECG time (if available)
- _____ Regional Hospital Arrival
- _____ Regional Hospital 1st ECG Time
_____ (+) ECG Time (if 1st is negative)
- _____ Time Transport Called
- _____ STEMI Protocol Activation (PCI Hospital 1st Called)
- _____ Time Transport Arrives
- _____ Regional Hospital Departure

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

NURSE DOCUMENTATION

Regional Hospital Name & City:

RN to:	RN Initials:
1.) Apply cardiac monitor	
2.) Start (2) peripheral IV's (TKO/saline lock)	
3.) Verify routine labs & medications were ordered	

Other documentation, labs, allergies, or information:

RN Name(s):	RN Initials:
Date: _____	

Patient Name:
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