Interior Health

ST ELEVATION MI: EMERGENCY MANAGEMENT PRE-PRINTED ORDERS (PPO)

Weight (kg)

Bulleted orders are initiated by default, unless crossed out and initialed by the physician/prescriber. Boxed orders (☐) require physician/prescriber check mark (☑) to be initiated.

Please see reverse pages for supplemental information

1. ALLERGIES: See Allergy/Adverse Reaction record

2. CODE STATUS/MOST

- Refer to completed Medical Orders for Scope of Treatment (MOST) #829641

3. INITIAL MANAGEMENT

- Admit to: _____ MRP: _____
- MRP to order ST Elevation MI Admission pre-printed orders #829734
- Continuous cardiac monitoring
- Neurovitals: obtain baseline (if giving thrombolytic), then Q1H × 2 and then PRN
- HR, RR, Sp02, BP (both arms initially, then arm with highest reading) Q15min until stable, Q30MIN × 2 then Q1H
- Temp Q4H until stable, then Q12H and PRN
- Start oxygen if SpO_2 less than 90%, titrate or wean for goal SpO_2 between 90 to 94%
- Troponin, Na, K, Cl, CO_2 (lytes4), Mg, urea, creatinine, random glucose, AST, CBC, INR, PTT **STAT**
- Insert 2 large bore IVs. Avoid the right hand and wrist. Normal Saline 0.9% NaCl at 25 mL/H through one IV line. Saline Lock second IV line.
- Bed rest with bedpan/commode if ongoing chest pain or hemodynamic instability

☐ Other: _____

4. DIAGNOSTICS

- 12 lead ECG **STAT** (if ECG not completed and transmitted by ALS crew where available)

☐ 16 lead (extended lead) ECG for inferior STEMI

- 12 lead ECG 60 to 90 mins post tenecteplase (if thrombolytic given). Assess for Rescue PCI 90 min post tenecteplase *(see IH STEMI Transfer Algorithm on reverse of page 3)*
- 12 lead ECG PRN for increase or recurrence of chest discomfort, chest pain unrelieved by nitroglycerin or for sustained rhythm changes
- Chest X-ray (portable). URGENT

☐ Other: _____

5. REPERFUSION STRATEGY CHOOSE ONE OF A, B OR C

☐ **A. Primary PCI**

- Contact interventional cardiologist through KGH switchboard (1-250-862-4000)
- **acetylsalicylic acid [ASA] chewable 160 mg (2 × 80 mg TAB) chewed STAT**
- Select **ONE** of the following *(see reverse of page 1 for antiplatelet guidelines)*:
  - ☐ **ticagrelor 180 mg PO STAT** ***(FIRST CHOICE)***
    OR
  - ☐ **clopidogrel 300 mg PO STAT**
- **unfractionated heparin IV bolus (60 units/kg)** _____ **units STAT** (maximum 4,000 units)
  NO MAINTENANCE INFUSION

see page 2 for Reperfusion Strategy B: Thrombolytic, and Strategy C: Conservative Management

Date (dd/mm/yyyy)	Time	Prescriber's Signature	Printed Name or College ID#
/ /			

RISK MANAGEMENT ASSESSMENT Guidelines for STEMI

Percutaneous Coronary Intervention (PCI)

Indications for Primary PCI

- ST segment elevation MI within 12 hours of symptom onset
- Pulmonary edema (can lie flat)
- Recurrent VF / VT
- Diagnosis of STEMI in doubt (e.g., LVH with strain, pericarditis)
- Cardiogenic shock
- Contraindications to thrombolysis (see below)

Contraindications to Primary PCI / Relative to Rescue PCI

- Patient cannot lie flat
- Known terminal co-morbidities to limit lifespan to less than one year (e.g. lung disease, malignancy)
- Moderate to severe dementia
- Known severe PVD (peripheral vascular disease) without good arterial access or palpable pulses
- Known creatinine greater than 200 umol / L or dialysis (relative)
- Prior CABG (coronary artery bypass grafts) / Transcatheter Aortic Valve Implantation (TAVI) – unless contraindications to thrombolysis

Thrombolysis

Indications for Thrombolysis

- Chest pain greater than 15 minutes (but less than 12 hours in duration) consistent with myocardial ischemia ***and***
- New ST elevation at the J point in at least 2 contiguous leads of greater than or equal to 2 mm (0.2 mV) in men or greater or equal to 1.5 mm (0.15 mV) in women in leads V2–V3 ***or***
- Greater than or equal to 1 mm (0.1 mV) in other contiguous chest leads or the limb leads

Absolute Contraindications to Thrombolysis

- Any prior intracranial hemorrhage
- Known structural cerebral vascular lesion
- Known malignant intracranial neoplasm (primary or metastatic)
- Ischemic stroke within 3 months (except within 3 hours and thrombolytic indicated for treatment)
- Suspected aortic dissection
- Active bleeding or bleeding diathesis (excluding menses)
- Significant closed head or facial trauma within 3 months

Relative Contraindications to Thrombolysis

- SBP greater than180 mmHg and/or DBP greater than 110 mmHg
- History of prior ischemic stroke greater than 3 months, dementia or known intracranial pathology not covered above
- Prolonged (greater than 10 min) CPR
- Major surgery less than 3 weeks
- Recent (2 to 4 weeks) internal bleeding
- Noncompressible vascular punctures
- Pregnancy
- Active peptic ulcer
- Current use of anticoagulants

* For patients greater than 75 years of age, may consider half dose tenecteplase

ANTIPLATELET SELECTION GUIDE

Suggested Antiplatelet	Clinical Scenario
ticagrelor	• First line for Primary PCI • Allergy to clopidogrel • Previous in-stent thrombosis, recurrent myocardial infarction while on clopidogrel • History or ECG changes suggestive of left main or 3-vessel coronary artery disease requiring coronary artery bypass grafting
clopidogrel	• Use if receiving thrombolytic • Use if planned conservative management of ACS • If requiring an oral anticoagulant for atrial fibrillation, history of or active venous thromboembolism (deep vein thrombosis or pulmonary embolism), or left ventricular thrombus etc. • Use if history of medication non-compliance or cost and coverage concerns

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5. REPERFUSION STRATEGY *(cont'd)*

☐ **B. Thrombolytic (SELECT ONE COLUMN BASED ON PATIENT AGE)**

Drug	☐ **Age less than 75 years**	☐ **Age 75 years or greater**
Antiplatelet	• **acetylsalicylic acid [ASA] chewable 160 mg (2 × 80 mg) PO STAT** • **clopidogrel 300 mg PO STAT**	• **acetylsalicylic acid [ASA] chewable 160 mg (2 × 80 mg) PO STAT** • **clopidogrel 75 mg PO STAT**
Thrombolytic See dose/volume chart below	• **tenecteplase _____ mg IV over 5 seconds STAT**	• **tenecteplase _____ mg IV over 5 seconds STAT** *(*see thrombolysis section on reverse of page 1)*
Anticoagulation	☐ **enoxaparin 30 mg IV STAT, then 1 mg/kg _____ mg subcutaneously STAT** *(max 100 mg for STAT subcutaneous dose)* (eGFR greater than or equal to 30 mL/min OR unknown renal function) *****OR***** ☐ **unfractionated heparin IV bolus (60 units/kg) _____ units STAT** (maximum 4,000 units); then start infusion and adjust per site specific heparin PPO	☐ **enoxaparin 0.75 mg/kg _____ mg subcutaneously STAT** *(maximum 75 mg dose for STAT subcutaneous dose)* (eGFR greater than or equal to 30 mL/min) OR unknown renal function *****OR***** ☐ **unfractionated heparin IV bolus (60 units / kg) _____ units STAT** (maximum 4,000 units); then start infusion and adjust per site specific heparin PPO

Tenecteplase Dosing	
Weight (kg)	**Full dose (volume)**
Less than 60	30 mg (6 mL)
60 to less than 70	35 mg (7 mL)
70 to less than 80	40 mg (8 mL)
80 to less than 90	45 mg (9 mL)
greater than or equal to 90	50 mg (10 mL)

- Flush with normal saline 0.9% before and after tenecteplase administration
- Avoid IM injections within 24 hours of thrombolysis
- Assess if candidate for transfer per IH STEMI Transfer Algorithm (see reverse of page 3)

☐ **C. Conservative Management**

- **acetylsalicylic acid [ASA] chewable 160 mg (2 × 80 mg TAB) chewed STAT**
- **clopidogrel 300 mg PO STAT**
- Select **ONE** of the following based on eGFR:

eGFR greater than 30 mL/min (or unknown renal function)	eGFR less than or equal to 30 mL/min
☐ **enoxaparin 1 mg/kg _____ mg subcutaneously STAT** *****OR***** ☐ **fondaparinux 2.5 mg subcutaneously STAT**	☐ **unfractionated heparin IV bolus (60 units/kg) _____ units STAT** (maximum 4,000 units); then start infusion and adjust per site specific heparin PPO

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HOME / PRIOR ANTITHROMBOTICS: Dosing and Administration Guidelines

* Provided as a guide only and may not apply in every clinical situation. Contact cardiologist / internist for advice if additional clinical advice is required.

Patient Already On This Agent Prior to Admission	Recommendation
ASA 81 to 325 mg PO daily	• Still load with ASA 160 mg PO then 81 mg PO daily
clopidogrel 75 mg PO daily	• Still load with clopidogrel 300 mg PO then 75 mg PO daily (unless 76 years or older and receiving thrombolytic)
ticagrelor 90 mg PO BID	• Still load with ticagrelor 180 mg PO then 90 mg PO BID
warfarin	• Still give ASA and clopidogrel (suggest avoiding ticagrelor due to increased risk of bleeding) • Hold warfarin • Start selected IV or subcutaneous anticoagulant (heparin, enoxaparin, fondaparinux) when INR less than 2
Direct oral anticoagulant (DOAC): apixaban, dabigatran rivaroxaban or edoxaban	• Still give ASA and clopidogrel (suggest avoiding ticagrelor due to increased risk of bleeding) • Stop DOAC and start IV or subcutaneous anticoagulant 12 hours after last dose of dabigatran or apixaban and 24 hours after last dose of rivaroxaban or edoxaban

Use Nitroglycerin with caution if:

- SBP below 90 mmHg or if SBP drops more than 30 mmHg below baseline
- Cautious use with Inferior MI. Avoid for known / suspected Right Ventricular infarct
- Critical aortic stenosis
- Avoid if recent use of phosphodiesterase inhibitors:
  - within 24 hours of last dose of sildenafil (Viagra®) or vardenafil (Levitra®)
  - within 48 hours of last dose of tadalafil (Cialis®)

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6. DIET

- Heart Healthy diet as tolerated, if diabetic enter Diabetic diet

☐ Other: _____

7. INTRAVENOUS THERAPY AND HYDRATION

- Flush saline lock with normal saline 0.9% Q12H

☐ Other: _____

8. MEDICATIONS

Nitrates *(see reverse of page 2 for contraindications/precautions)*

☐ No nitrates [Pharmacy do not process nitroglycerin spray order below]

- **nitroglycerin spray 0.4 mg sublingual Q5MIN PRN × 3 doses** for ischemic symptoms (if unresolved after 3 doses, call physician and if ordered, start nitroglycerin infusion)

☐ **nitroglycerin IV infusion, start at 10 mcg/min** for ischemic symptoms unresolved with nitroglycerin spray and titrate per Interior Health Medication Manual (for parenteral drugs)

☐ **nitroglycerin patch** _____ **mg/hour, apply at 0800 HR and remove at 2000 HR DAILY**
(***OR*** apply at _____ HR and remove at _____ HR)

*Hold nitroglycerin patch if symptomatic hypotension (dizziness, presyncope, syncope) or if nitroglycerin infusion running

PRN Medications

- **acetaminophen 325 to 975 mg PO Q4H PRN** pain (maximum 4 g/day)
- **antacid 30 mL PO Q6H PRN** indigestion or heartburn
- **atropine 0.5 to 1 mg IV Q5MIN PRN** for symptomatic heart rate less than 50 bpm (maximum 3 mg total dose)
- **morphine 2 to 5 mg IV Q5MIN PRN** chest pain unresponsive to nitroglycerin or if nitroglycerin contraindicated (maximum 20 mg/hour)
- if tobacco user, physician to complete NICOTINE REPLACEMENT THERAPY PPO #829435
- Physician to complete site specific bowel elimination protocol

☐ **dimenhyDRINATE 50 mg PO or 25 mg IV Q6H PRN** nausea

☐ **LORazepam 0.5 mg SL Q6H PRN** anxiety

☐ **zopiclone 3.75 to 7.5 mg PO HS PRN** insomnia

9. OTHER

- Transport personnel may continue ST Elevation MI PPO during inter-facility transport

10. ADDITIONAL ORDERS

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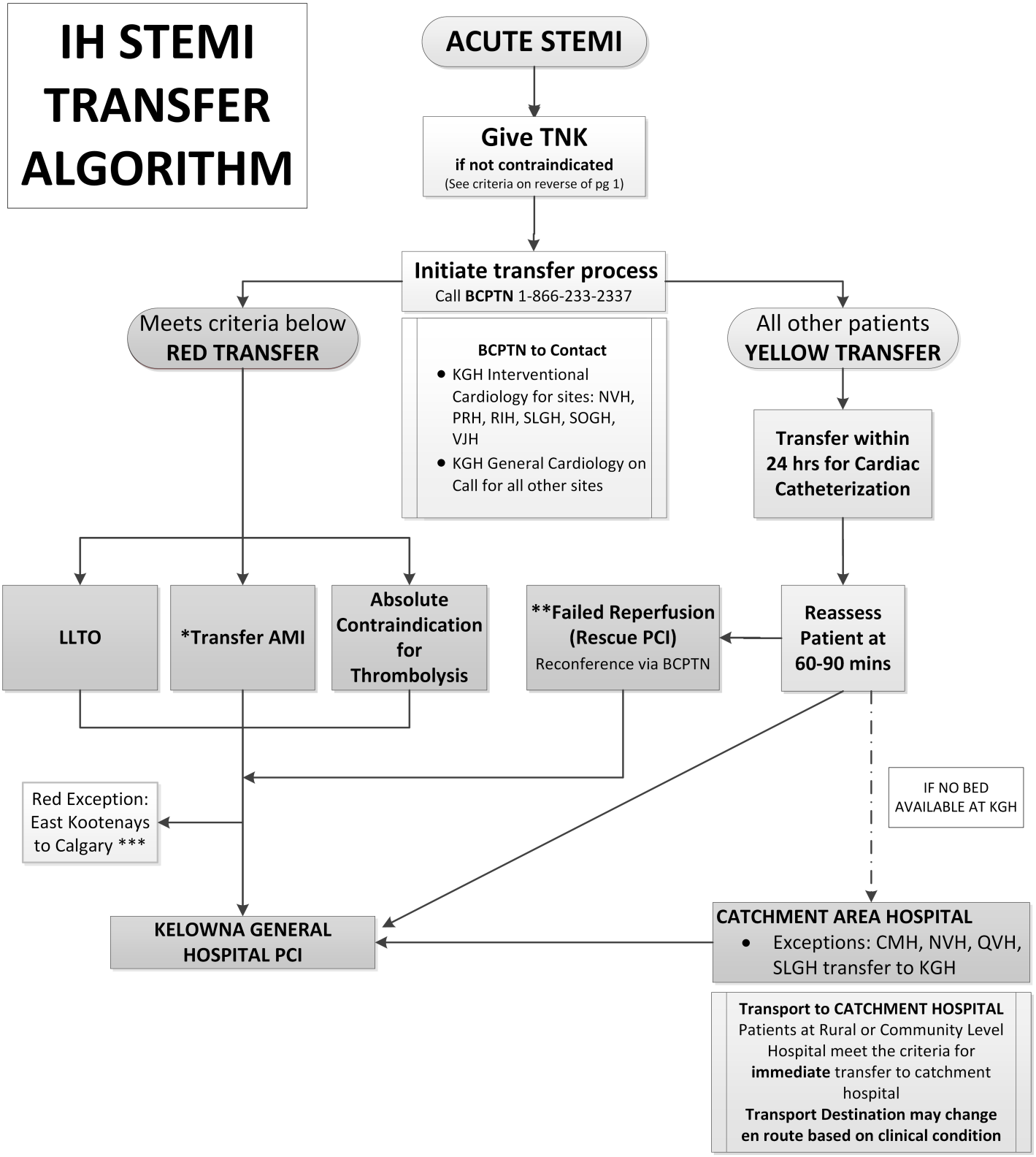
IH STEMI TRANSFER ALGORITHM



*Transfer AMI Criteria

Any of:

- Persistant Tachycardia (>100bpm)
- Persistant Hypotenstion (SBP < 100mmHg)
- Heart Failure
- Reciprocal ST segment depression (≥2mm)
- RV Infarction (> 1mm ST segment elevation in V4R)

Case by Case Discussion for Red Transport:

- Anterior MI
- Multi-Territory MI

**Criteria for Failed Reperfusion

Any of:

- <50% ST segment elevation resolution
- Persistent ischemic symptoms
- Suspected reinfarction
- No Contraindications to Rescue PCI including
  - Severe GI or systemic bleed
  - New unexplained neuro findings
  - CABG or TAVI (see exclusion criteria)

*** CVH/GDH if unable to go to KGH due to transport/weather

FEB 2021