Yukon-Kuskokwim HEALTH CORPORATION

Clinical Guideline

Acute Coronary Syndrome (ACS) Management

Box 1: Immediate Interventions

- Supplemental oxygen *pm* to maintain SpO₂ 90-96%.
- Aspirin 324 mg PO chewed (four 81 mg "baby" aspirin).
- Nitroglycerin 0.4 mg sublingual pm pain (up to three times as BP permits) unless contraindicated.
 Contraindications: recent phosphodiesterase use, sBP <90, right ventricular infarct (consider when evidence of inferior wall ischemia).

NOTE: pain relief with nitroglycerin (or lack thereof) is not diagnostic of cardiac ischemia.

Disclaimer Symptoms suggestive of acute coronary syndrome This algorithm is not intended for undifferentiated chest pain without an apparent cause. Perform 12 lead EKG. Acute coronary syndrome is defined as acute If patient in a village, see Box 3. occlusion of a coronary artery and does not include type 2 MI/demand ischemia. Perform immediate interventions. See Box 1. **Tiger Text** ĂNMC STEMI? from symptom No See Box 2 Call with picture onset? of EKG Νo Yes HS-cTnT (high sensitivity troponin), serial EKGs. · Consider critical diagnoses. See Box 5. Complete Fibrinolytic Checklist. Consider P2Y12 inhibitor Contraindications to fibrinolytics? · Consider morphine if pain not relieved by nitro and no contraindications Νo Yes Initiate fibrinolytic therapy. Do not delay fibrinolytics while awaiting troponin in STEMI. See next page for dosing. Diagnostic EKG or Tiger Text ANMC Cardiology On-Call Unclear-HS-cTnT findings? with picture of EKG. (Box 2 & 4) · Consult cardiology. Yes Discuss administration of additional medications. See table on next page. Activate medevac if appropriate. • If transfer is not within goals of care. Low/Intermediate risk for NSTE-ACS discuss management recs with cardiology. Broaden differential diagnosis.

Consulting Cardiology

- For all STEMI patients, consult PAMC Cardiology by calling the PAMC ED at (907) 212-3433 and asking for the cardiologist on call. For beneficiary patients, ANMC Cardiology should be made aware of the transfer on a non-urgent basis.
- For NSTE-ACS patients, consult ANMC Cardiology for beneficiary patients and PAMC Cardiology for non-beneficiary patients.

Box 2: EKG Criteria

STEMI:

- ST elevation in 2 contiguous leads of >0.2mV in V2-V3 OR >0.1mV in all other leads
- New or presumably new LBBB
- Positive Sgarbossa criteria for pre-existing LBBB

High risk Non-ST elevation ACS (NSTE-ACS):

- Dynamic T wave inversions
- Transient ST elevation

- Consider a validated risk-stratification scoring tool (like **GRACE** or **TIM**).
- If patient is high-risk for coronary disease, consult cardiologist for discharge and follow up recs, including timing and location of stress testing.
- If patient is considered low-risk for coronary disease, secure outpatient follow up to re-evaluate symptoms and optimize primary prevention (i.e. lipid/A1c testing, aspirin).

Box 3: Village Management

High risk NSTE-ACS

- If EKG meets high risk criteria in Box 2, review with ED Physician and activate medevac. Perform interventions in Box 1.
- ED physician coordinates with ANMC/PAMC regarding whether to have LifeMed give lytics and whether to stop in Bethel or ramp transfer to Anchorage.
- If EKG or health aide not available, use clinical history and validated tool such as <u>EDACS</u> to stratify risk for ACS. Consult with ED Physician and/or CD on call regarding appropriateness of medevac for risk factors alone.

Box 4: HS-cTnT Evaluation for Acute Cardiac Injury

The lowest reported value is "<6 ng/L," which equates to "undetectable." FDA-approved normal values (99th percentiles in healthy subjects) are:

- Men: <22
- Women: <14
- Change in one hour (Δ 1h): <3

Cutoffs are arbitrary and do not correspond to any evidence-based positive-predictive value for

For patients with elevated troponins and clinical history consistent with ACS, consult cardiology. This information is from data available February 2020. Please see wiki-page for further information

Box 5: Critical Differential Diagnosis

- Aortic dissection
- Tension pneumothorax
- Pulmonary embolism
- Perforated peptic ulcer

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.

Approved by Clinical Guideline Committee 9/29/25.

Click here to see the supplemental resources for this guideline.

If comments about this guideline, please contact clinical_guidelines@ykhc.org.



Clinical Guideline

Acute Coronary Syndrome (ACS) Management

At time of Dx unless contraindicated

Nitroglycerin (NTG)

• Contraindications:
PDE-inhibitor use,
cardiogenic shock, RV
infa rct, sBP<90,
marked tachycardia or
bradycardia.

• Sublingual dosing:
0.4 mg SL Q5 minutes
up to three doses
• IV dosing: start at
10-20 mcg/min, titrate
Q3-4 minutes to
typical range 60-100
mcg/min

	Emergency Department Medication Summary				
		STEMI <12 hours	STEMI >12 hours	NSTE-ACS	
	Oxygen	Maintain SpO ₂ 90-96%	Maintain SpO ₂ 90-96%	Maintain SpO ₂ 90-96%	
→	Nitrates (prn pain, HTN)	Sublingual or drip	Sublingual or drip	Sublingual or drip	
Antiplatelet agents	Fibrinolytic	Tenecteplase See below.	Not indicated	Not indicated	
	Aspirin	Aspirin 324 mg PO chewed (four 81 mg "baby" aspirin)	Aspirin 324 mg PO chewed (four 81 mg "baby" aspirin)	Aspirin 324 mg PO chewed (four 81 mg "baby" aspirin)	
	P2Y ₁₂ receptor blocker	Clopidogrel Age ≤75: 300 mg PO Age >75: 75 mg PO	Clopidogrel 600 mg PO	Consult cardiology.	
	Anticoagulation	Consult cardiology. See dosing considerations below.			
	Beta-blocker Consult cardiology. Not routinely recommended as part of ED n			rt of ED management.	

Fibrinolytic Therapy (Tenecteplase)

Goal: administer ≤ 30 minutes from arrival.

Rapidly complete the fibrinolytic checklist and consent.

Dosing:

- <60 kg: tenecteplase 30 mg IV bolus
- ≥60 kg to <70 kg: tenecteplase 35 mg IV bolus
- ≥70 kg to <80 kg: tenecteplase 40 mg IV bolus
- ≥80 kg to <90 kg: tenecteplase 45 mg IV bolus
- ≥90 kg: tenecteplase 50 mg IV bolus

Administer concurrent aspirin, clopidogrel, and anticoagulant therapy, per table above.

Enoxaparin Dosing					
	Age <75 years and STEMI	Age ≥75 years and STEMI	Any age and NSTE-ACS		
Creatinine clearance	30 mg IV + (1 mg/kg SC now then Q12h)	0.75 mg/kg SC Q12h	1 mg/kg SC now then Q12h		
≥30 mL/min	Max dose 100 mg	Max dose 75 mg			
Creatinine clearance	30 mg IV + (1 mg/kg SC now then Q24h)	1 mg/kg SC Q24h	1 mg/kg SC now then Q24h		
<30 mL/min	Max dose 100 mg	Max dose 100 mg			

NOTE: Enoxaparin and unfractionated heparin are NOT dialyzable; ESRD/dialysis patients should receive fondaparinux, which is not on the YKHC formulary. Discuss with cardiologist if appropriate.

Heparin Dosing

If available, consult inpatient pharmacy for assistance.

If pharmacy not available, recommend:

Bolus 60 units/kg IV (maximum 5,000 units), followed by 12 units/kg/hr (maximum 1,000 units/hr). Continued until transfer.



Fibrinolytic Checklist					
INDICATIONS (initial yes or no)					
YES	NO				
		Presentation consistent with acute coronary syndrome (coronary artery occlusion)			
		AND at least one of the following: • 1 mm J-point elevation in two contiguous leads (other than V₂-V₃) • In leads V2-V3 Men ≥ 40 years: ≥ 2 mm J-point elevation Men <40: ≥ 2.5 mm J-point elevation Women: ≥ 1.5 mm J-point elevation			
ABSOLUTE CONTRAINDICATIONS (initial yes or no)					
YES	NO				
		History of any intracranial hemorrhage			
		History of prior ischemic stroke, significant closed head injury or facial trauma, or intracranial or spinal surgery in the previous three months			
		Presence of a cerebral vascular malformation			
		Presence of a primary or metastatic intracranial malignancy			
		Symptoms or signs suggestive of an aortic dissection			
		Any bleeding diathesis			
		Any active bleeding that is severe or has high potential for life-threatening blood loss; this does not include menstrual bleeding			
		sBP > 180 and/or dBP >110 at presentation in patient at low risk of cardiac death (age < 55, no prior MI, and Killip class I).			
		Terminal illness, defined as end of life care or documented/expressed patient wish to abstain from high risk or invasive procedures			
RELATIVE CO	ONTRAINDICATI	ONS (initial yes or no) – If any of below are present, used shared decision making with patient.			
YES	NO				
		Age 65-74 (ICH relative risk 3.12 [2.54-3.83]); Age ≥ 75 years (ICH relative risk 5.40 [4.40-6.63])			
		History of chronic severe poorly controlled HTN			
		sBP > 180 and/or dBP >110 at presentation in patient at high risk of cardiac death (age ≥ 55, Hx prior MI, or Killip class ≥ II).			
		History of ischemic stroke more than three months ago			
		Dementia OR any known intracranial disease that is not an absolute contraindication			
		Traumatic or prolonged (>10 minutes) cardiopulmonary resuscitation			
		Major surgery in the previous three weeks			
		Internal bleeding in the previous 2-4 weeks			
		Active peptic ulcer			
		Non-compressible vascular punctures			
		Pregnancy			
		Current warfarin therapy (the risk of bleeding increases as the INR increases)			

This checklist is advisory for clinical decision-making and may not be all-inclusive. Risks and benefits will need to be assessed individually.

Physician signature:		
	Date and time:	Place patient ID sticker here.



PROCEDURE CONSENT				
I hereby authorize following operation or procedure	:	and such assistants as he/she may designate, to perform the		
TECHNICAL DESCRIPTION	Intravenous thrombolytic therapy for acute STEMI (ST-elevation myocardial infarction).			
LAY DESCRIPTION	Give clot-dissolving medication through an IV to dissolve the clot which is causing a heart attack.			
	has discussed with me the information briefly	summarized below:		
BENEFITS	 When PCI is not available within two hours, thrombolytic medication is the "standard of care" for achieving coronary reperfusion within 12 hours of acute STEMI onset. When administered within 6 hours of pain onset, about 1 in 40 persons will have their life saved. When administered between 6-12 hours after pain onset, about 1 in 60 persons will have their life saved. Decreased risk of developing heart failure. A STEMI patient who receives thrombolytic medication is about 3-5 times more likely to have their life saved than to have brain bleeding (see below). 			
	 About 1 in 100 persons will experience non-life-threatening bleeding. About 1 in 100-250 persons will experience bleeding into the brain which usually results in either death or significant disability. 			
RISKS OF NOT HAVING THE PROCEDURE	IAVING THE • Higher risk of death. ROCEDURE • Higher risk of developing heart failure.			
ALTERNATIVE TREATMENTS None are available at this facility.				
, and the second	Date and time:	Witness signature: Printed name: Date and time:		
Physician signature:		Witness signature:		
Printed name:	Date and time:	Printed name: Date and time:		

Place patient ID sticker here.