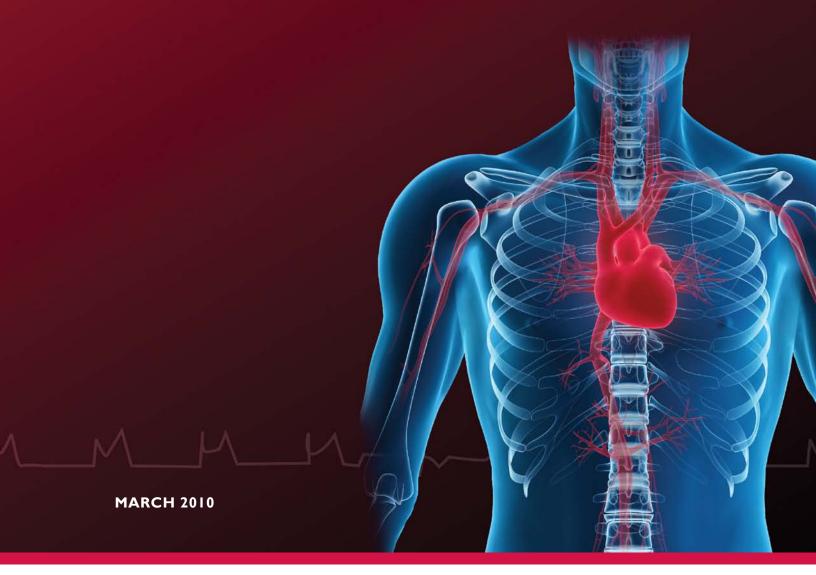


**Nova Scotia Guidelines for Acute Coronary Syndromes (2008)** 

## **ALGORITHM AND CHECKLISTS**























# Nova Scotia Algorithm for Emergency Care of Acute Coronary Syndromes

### Chest pain or suspicion of ACS at triage

✓ STAT or EHS ECG completed & interpreted by MD within 10 minutes

#### ST segment changes or new LBBB?

NO |

YES

- ✓ Triage as per CTAS (Canadian ED Triage Acuity Scale)
- ✓ Initiate chest pain workup

ACS Suspected

- ✓ Move to ED monitored bed
- ✓ MD assessment & diagnosis

Diagnosis of

UA/NSTEMI ST

STEMI

#### Definite UA/NSTEMI

- ✓ Vital signs
- ✓ IV x 1
- ✓ Oxygen
- ✓ ASA 160-325 mg po
- ✓ Clopidogrel 300 mg po
- ✓ Nitroglycerin sl or IV prn
- Opiates prn
- Beta blocker prn, if hemodynamically stable and no heart failure
- ✓ Fondaparinux 2.5 mg subcut
   or UFH 60 IU per kg bolus (max 4000 IU)
   + 12 IU per kg per hr (max 1000 IU per hr)
   if Creatinine Clearance (CrCl) <30 mL per min, mechanical heart valves, or cardiac cath within 12 h</li>
- ✓ CBC, Lytes, BUN, Cr, Glucose, INR, PTT, Troponin
- ✔ Repeat ECG, consider 15 lead
- ✔ Portable CXR

### STEMI

- ✓ Vital signs
- ✓ IV x 2
- ✔ Oxygen
- ✓ ASA 160-325 mg po
- Clopidogrel 300 mg po (reduce dose to 75 mg if ≥75 yrs & receiving TNK)
- ✓ Nitroglycerin sl or IV prn
- Opiates prn
- Beta blocker prn, **if** hemodynamically stable **and** no heart failure
- ✓ CBC, Lytes, BUN, Cr, Glucose, INR, PTT, Troponin, type & screen
- ✓ Repeat ECG, consider 15 lead
- ✔ Portable CXR

## Eligible for Primary PCI?

- Door to balloon time <90 min
  - Cardiogenic Shock

#### 3 Primary PCI Contraindications

- Terminal co-morbidities limiting lifespan <1 year
- Severe dementia

Discuss options with interventional cardiologist **if**:

- Previous CABG
- Significant PVD

# Is the UA/NSTEMI patient high risk?

YES

#### UA/NSTEMI High Risk

- Hypotension (with other supportive evidence of ischemia) or definite evidence of heart failure
- Recurrent ventricular arrhythmias
- Transient ST elevation
- New ST depression
- ≥ 2 mm in ≥ 3 leads
- Recurrent or refractory ischemia despite initial therapy
- despite initial ther
   TIMI risk score 5-7

#### Consider TNK

NO

- Goal: Door to needle time <30 min
- Onset of pain should be <12 h</li>
- ✓ Assess contraindications 1
- $\checkmark$  If contraindications consider PCI
- ✓ Obtain consent

lesion

neoplasm

- ✓ Antithrombin selection <sup>2</sup> ASAP after TNK
- ECG at 90 min post administration and review with Cardiologist/ Internist for reperfusion failure

Thrombolytic Therapy

**Absolute Contraindications** 

Any prior intracranial hemorrhage

Known structural cerebral vascular

Known malignant intracranial

#### Consider Primary PCI

- Onset of pain should be <12 h</li>
- ✓ Assess contraindications <sup>3</sup>
- ✓ **If** contraindications consider TNK
- ✓ Discuss with interventional cardiologist

**Antithrombin Options** 

- ✓ Obtain consent
- ✓ Arrange transfer to cath lab \*

#### Consult Cardiologist/Internist

✓ Cath ± PCI within 24-48 hours

### for TNK Patients

### CHOOSE ONE ✓ Enoxaparin

- Contraindicated if CrCl <30 mL per min or concerned about bleeding
- <75 yrs—30 mg IV bolus followed by 1 mg per kg subcut bid (max 100 mg per dose)
- ≥75 yrs—0.75 mg per kg subcut bid (max 75 mg per dose)

#### ✓ Unfractionated Heparin

if Enoxaparin Contraindicated:

• 60 IU per kg bolus (max 4000 IU) + 12 IU per kg per hr (max 1000 IU per hr); target aPTT: 50-70 (use local nomogram).

### \* Cath Lab Contact Numbers

Daytime

902-473-6532 or 902-473-6633

#### Evening/Weekend/Holiday

QEII can activate Primary PCI via 473-2222/2220

All others page the on-call Interventional Cardiologist: 902-473-2222/2220

Suspected aortic dissectionActive bleeding or bleeding diathesis

Significant closed head or facial trauma within 3 months

Ischemic stroke within 3 months
 except acute ischemic stroke within
 4.5 hours

This algorithm is intended to serve as a guide and cannot replace clinical judgement.

Nova Scotia Guidelines for Acute Coronary Syndromes. Cardiovascular Health Nova Scotia 2008. For complete guidelines, refer to www.gov.ns.ca/health/cvhns
Supported by educational grants from:

















# QUICK EMERGENCY DEPARTMENT CHECKLIST FOR STEMI CARE

TIMES IN 24 hr clock		
Data Collection:		Height:cm
		Weight:kg
		Time of onset of pain:::
		Did the patient arrive with EHS? ☐ Yes ☐ No
		Arrival time at ED triage:::
		Time of first diagnostic ECG::
		Cath lab activation time (if applicable)::
Nursing Care:		Vital Signs q 30 min
		2 IV's Inserted
		Monitored bed
Testing:		12 lead ECG q 30 min x3
		Troponin immediately and q 8h x2
		CBC, electrolytes, BUN, CR, glucose, INR, PTT
		Estimate CrCl (mL/min): Male: (140 - age) (IBW kg) (60) (Serum creatinine umol/L) (50)
		Female: 0.85 x male CrCl value
		Portable CXR
Treatment/Medications:		Oxygen to maintain sats >95%
		ASA 160 - 325 mg po
	Rep	perfusion strategy. Choose ONE of the following:
		Option I: Primary PCI Choose ONLY
		if Door - Balloon time <90 min (<60 min to cath lab door)
		<ul> <li>Absence of Contraindications:</li> <li>Lifespan limited &lt; I year</li> <li>Severe dementia</li> </ul>
		<ul> <li>MD to contact interventional cardiologist</li> <li>Day: (902) 473-6532/6633</li> <li>Evenings/Nights/Weekends/Holidays:         <ul> <li>Page through locating (902) 473-2222</li> </ul> </li> </ul>

▶ See Over ◀



# QUICK EMERGENCY DEPARTMENT CHECKLIST FOR STEMI CARE (continued)

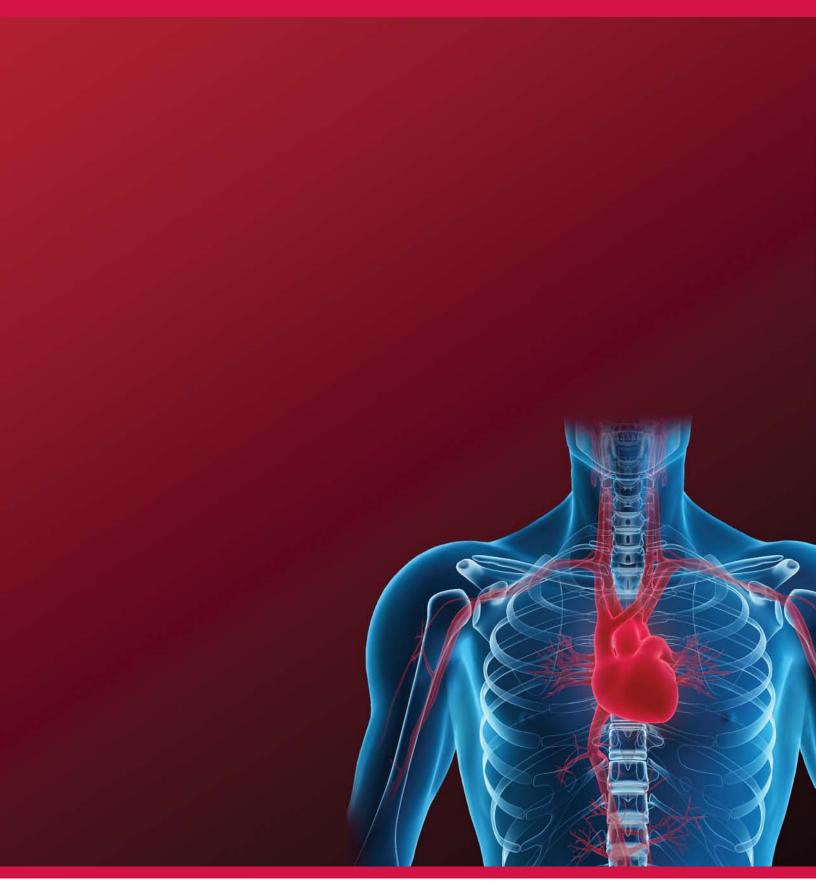
Treatment/Medications:	Option 2:Thrombolysis
Continued	Goal: Door-Needle time <30min.
	<ul> <li>Absolute contraindications:</li> <li>Any prior intracranial hemorrhage</li> <li>Known structural cerebral vascular lesion (e.g. arteriovenous malformation)</li> <li>Known malignant intracranial neoplasm (primary or metastasic)</li> <li>Ischemic stroke &lt;3 months, except acute ischemic stroke within 4 hours</li> <li>Suspected aortic dissection</li> <li>Active bleeding or bleeding diathesis (excluding menses)</li> <li>Significant closed head or facial trauma within 3 months</li> </ul>
	☐ TNK IV infused over 5 seconds based on weight:
	☐ 30 mg for <60 kg
	☐ 35 mg for 60 - 69 kg
	☐ 40 mg for 70 - 79 mg
	☐ 45 mg for 80 - 89 kg
	50 mg for ≥ 90 kg
	☐ At 90 min post TNK, assess for resolution of pain, ST elevation, and
	hemodynamic stability.
	Anticoagulant. Choose <b>ONE</b> of the following:
	☐ Enoxaparin (preferred anticoagulant but <b>contraindicated IF</b> CrCl <30 mL/min):
	<75 years old: 30 mg IV bolus followed by subcut I mg/kg bid (max 100 mg/dose)
	□ ≥75 years old: 0.75 mg/kg subcut bid (max 75 mg/dose)
	Unfractionated heparin (use IF CrCl < 30 ml/min or concern re: bleeding risk) per IV protocol: 60 IU/kg bolus (max 4000 IU); IV infusion 12 IU/kg/hr (max 1000 IU/hr)
	Clopidogrel 300 mg po (IF ≥75 years of age + receiving TNK reduce dose to 75 mg)
	Nitro 0.3 - 0.6 mg SL q 5min prn until pain free or SBP ≤100
	Morphine 2 - 4 mg IV or subcut q 30 min prn pain
	Fentanyl 50 - 100 mcg IV q 30 min prn pain
	If pain is persistent despite nitro SL and IV narcotics, AND IF SBP > 110, begin nitro infusion @ 10 mcg/min. Titrate per protocol until patient is pain free or SBP is <100
	Metoprolol 5mg IV q 5 min prn x3 if HR > 100 and SBP > 110 and no heart failure
Disposition:	Consult Cardiology/Internal Medicine
Patient Education:	Explain condition and therapy
	MD obtains patient consent for reperfusion strategy



# QUICK EMERGENCY DEPARTMENT CHECKLIST FOR UA/NSTEMI CARE

TIMES IN 24 hr clock		
Data Collection:		Patient arrival time at triage:::
		□ ECG:::
		Height:cm
		□ Weight:kg
Nursing Care:		☐ Vital Signs q1h
		☐ IV Insertion
	I	☐ Monitored bed
Testing:		12 lead ECG (completed & interpreted) then q1h x3
		☐ Troponin immediately and q 8h ×2
		CBC, electrolytes, BUN, CR, glucose, INR, PT/aPTT
		Estimate CrCl (mL/min): Male: (140 - age) (IBW kg) (60) (Serum creatinine umol/L) (50)
		Female: 0.85 x male CrCl value
		☐ Chest X-ray
Treatment/Medications:		Oxygen to maintain sats >95%
		☐ ASA 160 - 325 mg chew
		Clopidogrel 300 mg po
		Nitro 0.3 - 0.6 mg SL q 5 min prn until pain free or SBP ≤100
		☐ Morphine 2 - 4 mg IV or subcut q 30 min prn pain
		Fentanyl 50 - 100 mcg IV q 30 min prn pain
		If pain is persistent despite nitro SL and IV narcotics, AND IF SBP > 110, begin nitro infusion @ 10 mcg/min. Titrate per protocol until patient is pain free or until SBP is ≤100.
		☐ Metoprolol 5mg IV q 5min prn x3 if HR >100 and SBP >110 & no heart failure
		Anticoagulant. Choose <b>ONE</b> of the following:
		☐ Fondaparinux 2.5 mg subcut (contraindicated IF CrCl <30 ml/min
		CrCl, prosthetic heart valve, or if going to the cath lab: use UFH)
		Unfractionated heparin (UFH) IV per protocol (60 IU/kg bolus (max 4000 IU) + 12 IU/kg/hr IV infusion (max 1000 IU/hr); target aPTT: 60 - 80 sec
Disposition:		Consult Cardiology/Internal Medicine
Patient Education:		Explain condition and therapy







#### Cardiovascular Health Nova Scotia

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Visit our website at www.gov.ns.ca/health/cvhns

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