ALBERTA PRECISION LABORATORIES
Leaders in Laboratory Medicine

Laboratory Bulletin

DATE:	15 September 2025
TO:	Cross Cancer Institute Healthcare Providers
FROM:	Clinical Biochemistry, Alberta Precision Laboratories (APL)
RE:	**Implementation of High Sensitivity Troponin I (hs-TnI) and BNP on the Quidel Triage Meter**

PLEASE POST OR DISTRIBUTE AS WIDELY AS APPROPRIATE

Key Message

- Effective 16 September 2025, high sensitivity troponin I (hs-TnI) and B-natriuretic peptide (BNP) will be added to the test menu at the Cross Cancer Institute lab on the Quidel Triage Meter. This will improve the turnaround time for these tests.

<u>hsTnI</u>

- The Triage True hs-TnI assay requires sample collection in lavender EDTA blood collection tubes
    - No other sample collection tubes are acceptable.
- Triage True hs-TnI assay includes a different reference interval (99th percentile upper reference limit), reporting limits, rule-in/rule-out chest pain pathway, delta values, critical limits and interpretative comments than the hs-TnT assay used at the University of Alberta Hospital lab (Table 1, Table 2).
- TriageTrue hs-TnI assay will offer the new 2-Hour Chest Pain Pathway for Quidel TriageTrue High Sensitivity Troponin-I Assay (Appendix 1).
- Outside of the Cross Cancer Institute lab operational hours, testing will continue to be performed at the University of Alberta Hospital Lab. Results cannot be compared between methods.
- If hs-TnT is required, this can be ordered with the test orderable: Troponin High Sensitivity Send Out.

<u>BNP</u>

- The Triage BNP assay requires sample collection in lavender EDTA blood collection tubes.
    - No other sample collection tubes are acceptable.
- Triage BNP assay has different units of measure, reporting limits, reference intervals, and interpretative comments than NT-proBNP assay used at the University of Alberta Hospital lab (Table 3).
- Outside of the Cross Cancer Institute lab operational hours, testing will continue to be performed at the University of Alberta Hospital Lab. Numerical results cannot be compared between methods.

Background

- Currently these tests are referred out to the University of Alberta Hospital. Addition of these tests to the onsite test menu supports patient care.
- The Ortho Quidel Triage Meter is used across the province in smaller hospital laboratories for troponin and BNP testing.

- Evidence supports that a 2-hour chest pain pathway for TriageTrue hs-TnI is effective and safe for rule-in/rule-out of acute myocardial infarction (AMI). • The recommended pathway for TriageTrue hs-TnI is consistent with clinical practice guidelines and is recommended by the Cardiovascular Program Improvement and Integration Network (PIN) in consultation with Emergency Medicine PIN and Laboratory Medicine provincially.

How this will impact you

- Turnaround time will be improved for these tests, supporting patient care at the Cross Cancer Institute.
- There is no change to ordering in ConnectCare.

Action Required

- Ensure sample collection in correct tube type. This will vary depending on Cross Cancer Laboratory operational hours
- Be aware of differences in testing, reporting and interpretation for these tests.

Effective 16 September 2025

Questions/Concerns

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Approved by

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- Dr. Michael Mengel, Medical Director, North Sector

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Table 1: Summary of new reporting changes for troponin at the Cross Cancer Institute

Testing location	University of Alberta Hospital Lab	Cross Cancer Institute Lab
Test orderable	Troponin	Troponin
Test method	Roche hs-TnT	Quidel TriageTrue hs-TnI
Collection Tube	Barricor lithium heparin PST (lime green)	Lavendar EDTA
Reporting units	ng/L	ng/L
Reference interval (99th percentile)	<14 ng/L	<21 ng/L
Critical value	≥ 52 ng/L	≥ 60 ng/L
Reporting limits	3 to 500 000 ng/L	2 to 1000 ng/L
Delta Value	Reported for 0-2 hour delta	Reported for 0-2 hour delta
Rapid Chest Pain Pathway	2-Hour Chest Pain Pathway for Troponin T-High Sensitivity hs-TNT - Roche - Edmonton	2-Hour Chest Pain Pathway for Quidel TriageTrue High Sensitivity Troponin-1 Assay

Table 2: Interpretative comments reported with Quidel TriageTrue hs-TnI

hs-TnI result (ng/L)	Comment	Flagging
<4	For patients with a non-ischemic ECG, a Troponin I, High Sensitivity of 3 ng/L or less on presentation is highly sensitive for excluding acute myocardial infarction, provided the specimen was collected more than 3-hours from symptom onset. However, for patients with symptoms less than 3-hours duration or concerning clinical presentations, repeat troponin testing at 2-hours after the initial sample is recommended. Please note that patients with ischemic ECG changes and/or high-risk clinical presentations should be considered for further evaluation irrespective of troponin results.	Normal
4-20	Troponin I, High Sensitivity is below the upper reference limit (21 ng/L) and results are not consistent with myocardial infarction (MI) or injury. However, patients with acute symptoms (less than 6-hours) or concerning clinical presentations should undergo repeat troponin testing at 2-hours after the initial sample. - Troponin I, High Sensitivity of 4 ng/L or less on presentation AND a 2-hour delta(change) of 2 ng/L or less is highly sensitive for excluding acute myocardial infarction (MI). - A 2-hour delta (change) of 3-7 ng/L may indicate acute myocardial injury and suggest an additional troponin measurement 4 hours after the initial sample, serial ECG testing and clinical re-evaluation. - A 2-hour delta (change) of 8 ng/L or more suggests an acute myocardial injury and may represent acute myocardial infarction in the appropriate clinical scenario. Please note that patients with ischemic ECG changes and /or high-risk clinical presentations should be considered for further evaluation irrespective of troponin results	Normal
21-59	Troponin I, High Sensitivity has a non-specific/non-diagnostic elevation. Interpretation is highly dependent on clinical presentation and patient history. New elevations are concerning; however, many patients have chronic elevations in troponin and measured concentrations near the patient's baseline are reassuring. However, patients with acute symptoms (less than 6-hours) or concerning clinical presentations should undergo repeat troponin testing at 2-hours after the initial sample. - A 2-hour delta (change) of 2 ng/L or less is highly sensitive for excluding acute myocardial infarction. - A 2-hour delta (change) of 3-7 ng/L may indicate acute myocardial injury and suggest an additional troponin measurement 4 hours after the initial sample, serial ECG testing and clinical re-evaluation. - A 2-hour delta (change) of 8 ng/L or more suggests an acute myocardial injury and may represent acute myocardial infarction in the appropriate clinical scenario. Please note that patients with ischemic ECG changes and /or high-risk clinical presentations should be considered for further evaluation irrespective of troponin results	High
60	Clear elevation of Troponin I, High Sensitivity consistent with acute myocardial injury or infarction in the appropriate clinical context Repeat troponin testing at 2-hours after the initial sample may be helpful to assess for ongoing myocardial injury	Critical

Table 3. Summary of new reporting changes for BNP at the Cross Cancer Institute

Testing location	University of Alberta Hospital Lab	Cross Cancer Institute Lab
Test orderable	B-Natriuretic Peptide (BNP OR NT-proBNP)	B-Natriuretic Peptide (BNP OR NT-proBNP)
Test method	NT-proBNP	BNP
Collection Tube(s)	Mint lithium heparin PST Red Lavendar EDTA Gold SST	Lavendar EDTA
Reporting units	ng/L	ng/L
Reporting comments (interpretation)	In an acute setting, Heart Failure is unlikely if NT-proBNP <300 ng/L Heart Failure is likely if: NT-proBNP >450 ng/L for patients <50 years of age NT-proBNP >900 ng/L for patients 50-75 years of age NT-proBNP >1800 ng/L for patients >75 years of age 2017 CCS HF Guidelines, CJC 2017	In an acute setting in the presence of appropriate clinical evaluation, the diagnosis of heart failure is: BNP < 100 ng/L: Unlikely BNP 100-400 ng/L: Possible, but other diagnoses must be considered. BNP > 400 ng/L: Very likely. 2017 CCS HF Guidelines, CJC 2017

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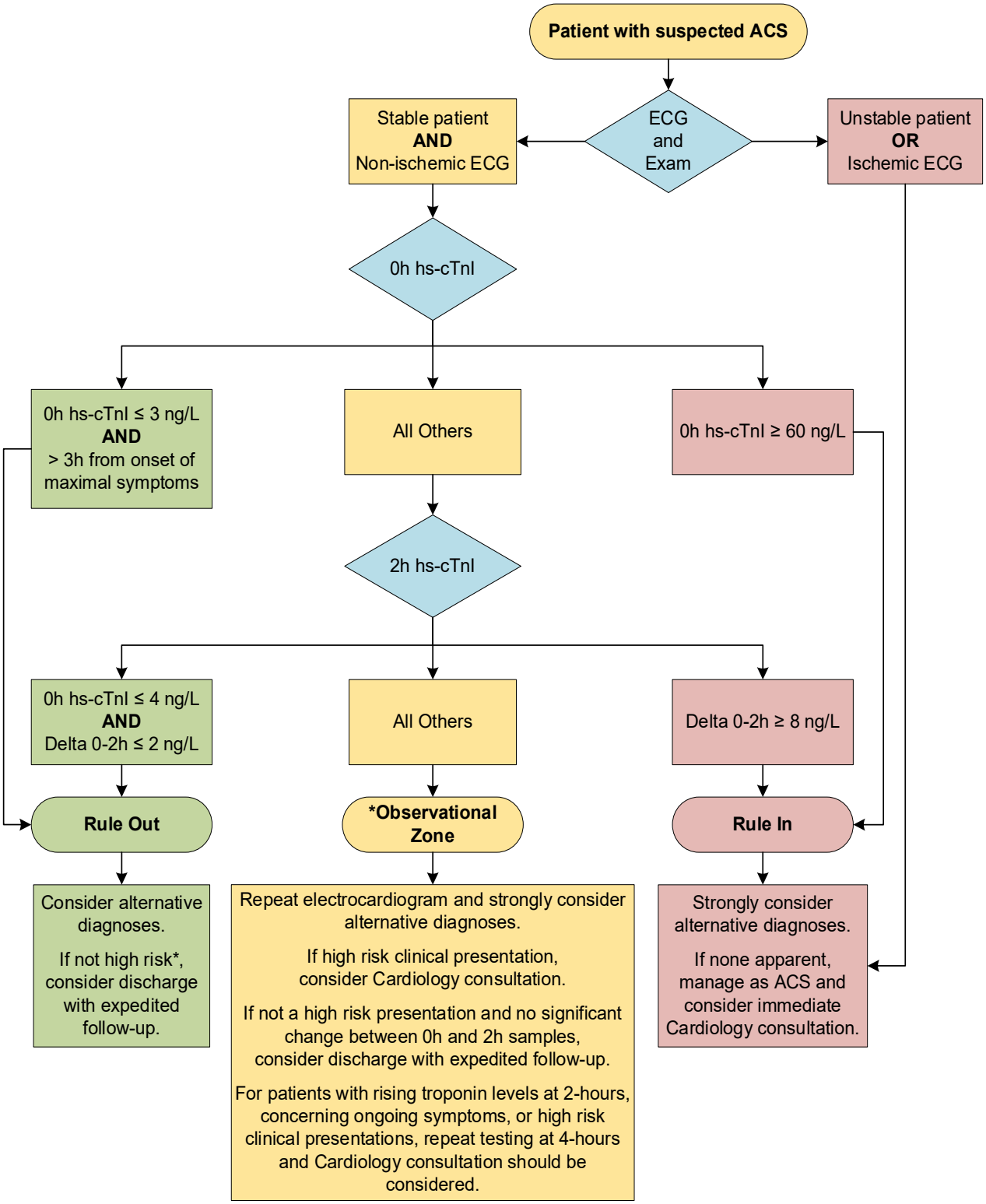
Appendix 1: 2-Hour Chest Pain Pathway for Quidel® TriageTrue® High Sensitivity Troponin-I Assay



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Note:
*For all patients with abnormal hs-cTnI results, check the medical record for prior results. Many patients have stable abnormalities in hs-cTnI and measured concentrations similar to the patient's baseline are reassuring.

Per European Society of Cardiology (ESC) Guidelines and 4th universal definition of MI, if the patient is >6h from symptom onset, has a hs-cTnI <21 ng/L (99th percentile upper reference limit), are pain-free, and have a low-risk presentation, they can be considered ruled out.

However, coronary ischemia has not been definitively excluded and unstable angina must be considered. Disposition after a single hs-cTnI <21 ng/L should only be considered for patients with low-risk clinical presentations who are >6 hours since symptoms onset, and should be used cautiously.

Troponin concentration may be elevated in the presence of kidney dysfunction. Patients with an eGFR <60 and an elevated troponin concentration should undergo serial testing to confirm a rising troponin concentration consistent with myocardial injury. Patients with an eGFR <60 who have troponin concentrations in the rule-out zone can be considered to have myocardial injury safely excluded.

HEART Score Calculation				
History		Highly suspicious	**2**	
		Moderately suspicious	**1**	
		Slightly suspicious	**0**	
ECG		Significant ST-depression	**2**	
		Non-specific repolarization disturbance, LBBB, LVH, Paced	**1**	
		Normal	**0**	
Age		≥ 65 years	**2**	
		45-64 years	**1**	
		≤ 44 years	**0**	
Risk Factors	☐ Diabetes ☐ Current smoker ☐ Obesity ☐ Family hx CAD ☐ HTN (diagnosed) ☐ HL (diagnosed)	≥ 3 risk factors or history of atherosclerotic disease	**2**	
		1 or 2 risk factors	**1**	
		No risk factors known	**0**	
hs-cTnI (peak)		> 3x normal limit (64 ng/L or greater)	**2**	
		1-3x normal limit (21-63 ng/L)	**1**	
		< normal limit (< 21 ng/L)	**0**	
			Total (10 maximum)	
HEART Score Interpretation				
			Low Risk	**0-3**
			Moderate Risk	**4-6**
			High Risk	**7-10**