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Laboratory Bulletin

DATE:	23 June 2025
TO:	Edmonton Zone – All Physicians, Nurses and Managers
FROM:	Clinical Biochemistry, Alberta Precision Laboratories (APL)
RE:	**Implementation of New Backup Testing Method for High Sensitivity Troponin I (hs-TnI) on the Quidel TriageTrue with 2-hr Chest Pain Pathway in Edmonton Zone**

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Key Message

- Effective **June 24, 2025**, the backup method for troponin at eight Edmonton Zone sites with Beckman Access2 high sensitivity troponin I (hs-TnI) will change from Abbott iSTAT troponin to Quidel TriageTrue high hs-TnI. Sites impacted are listed in Table 1.

Table 1. Site implementing TriageTrue high sensitivity troponin I as backup troponin method

Devon General Hospital
East Edmonton Heatlh Centre
Fort Saskatchewan Community Hospital
Leduc Community Hospital
Northeast Community Health Centre
Redwater Health Centre
Strathcona Community Hospital (Sherwood Park)
WestView Health Centre (Stony Plain)

- Results from Beckman Access2 hs-TnI and the TriageTrue hs-TnI assays cannot be interpreted interchangeably. No delta value is reported if initial and serial troponin results are not from the same assay.
- The TriageTrue hs-TnI assay requires sample collection in lavender EDTA blood collection tubes. No other sample collection tubes are acceptable.
    - For additional information refer to the APL reference: Order of Draw and Order of Transfer
- In conjunction with implementation of TriageTrue hs-TnI, a new *2-Hour Chest Pain Pathway for Quidel TriageTrue High Sensitivity Troponin-I Assay* is also being implemented (Appendix 1).
- TriageTrue hs-TnI has different units of measure, reference interval (99th percentile upper reference limit of the assay), reporting limits, rule-in/rule-out chest pain pathway, delta values, critical limits and interpretative comments then Beckman Access2 hs-TnI and Abbott iSTAT troponin (Table 2, 3).
- For TriageTrue, critical hs-TnI (≥ 60 ng/L) will be phoned to the ordering provider ONLY for troponin samples collected in the outpatient/community setting.
    - Lab will **not** phone troponin results for hospital patients (including ER patients and inpatients).

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Background

- 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 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.

Why this is important

- The provincial rural immunoassay analyzer project is a large-scale provincial project that will improve access to vital laboratory testing in many of Alberta's rural hospitals and will improve standardization in instrumentation and reporting.
- Adoption of the 2-hour hs-TnI chest pain pathway with rapid rule-in/rule-out is gradually expanding across the province and improving flow of patients through emergency rooms.
    - This initiative will reduce the variation of troponin assays and chest pain protocols in the province.
    - These changes will assist clinicians with evidence-based interpretation of troponin results and guide optimal patient management.

Action Required

- During downtime of Beckman Access2 analyzer, collect samples for TriageTrue hs-TnI in lavender EDTA tubes. The laboratory will communicate when this is required.
- Be familiar with changes in assay reporting, container type and the new 2-hour chest pain pathway for this back up method.
- Be aware of different troponin assays used within the Edmonton Zone.
- Do not interpret results across sites with different assays.

Questions/Concerns

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Approved by

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- Dr. Michael Mengel, Medical Director, North Sector, APL

Table 2: Summary of new reporting changes for the TriageTrue hs-TnI assay

	Beckman Access 2 hs-TnI	i-STAT conventional TnI (Current backup method)	TriageTrue hs-TnI	Notes
Collection Tube	Barricor lithium heparin (lime green)	Lithium heparin PST (light green)	Lavender EDTA	
Rapid Chest Pain Pathway	2- hour	N/A	2-hour	
Reporting Units	ng/L (whole number)	ug/L (2 decimals)	ng/L (whole number)	
Reference Interval	<18 ng/L	<0.04 ug/L	< 21 ng/L	
Critical Value	≥ 50 ng/L	>0.10 ug/L	≥ 60 ng/L	
Reporting Limits	3 to 220 000 ng/L	0.02 to 50 ug/L	2 to 1000 ng/L	
Delta Value	Reported for 0-2 hour delta	None	Reported for 0-2 hour delta	
Comments	Pathway interpretative comments and method identification comments	Interpretive comments And method identification comments	Pathway interpretative comments and method identification comments	Interpretative comments have changed (Table 3)

Table 3: 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.	High

	- 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	
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

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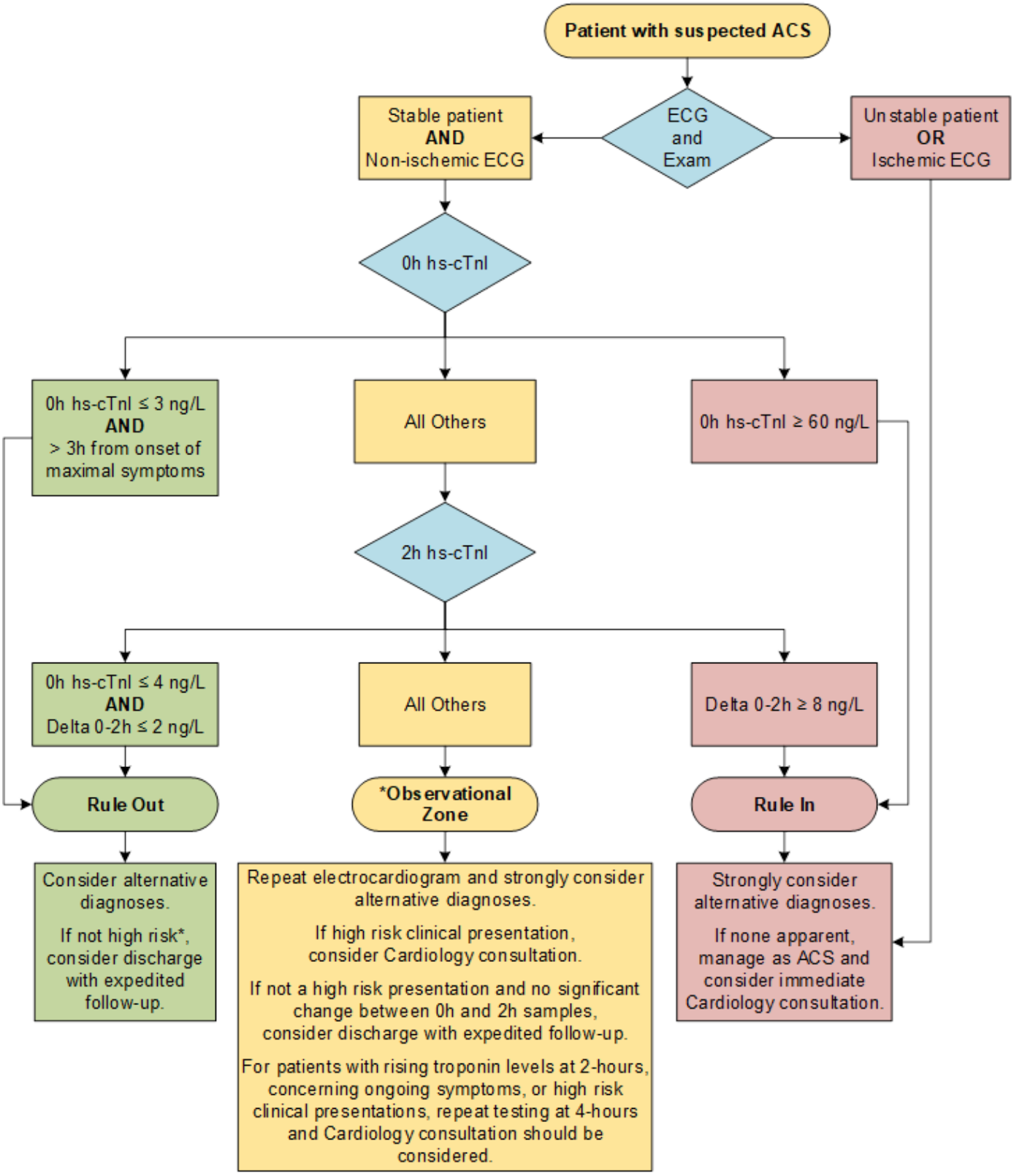
Appendix 1: 2-Hour Chest Pain Pathway for Quidel TriageTrue High Sensitivity Troponin-I Assay



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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**