

<b>DATE:</b>	2022 September 6
<b>TO:</b>	All Central Zone Physicians and Healthcare Providers
<b>FROM:</b>	Clinical Biochemistry, South Sector, Alberta Precision Laboratories (APL)
<b>RE:</b>	Availability of High Sensitivity Troponin I (hsTnI) at Wetaskiwin Hospital and Care Centre

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### Key Message

- Effective September 13, 2022, high sensitivity troponin I (hs-TnI) on bioMérieux MINI VIDAS® will replace the current conventional (non-high sensitivity) Abbott iSTAT® TnI assay at Wetaskiwin Hospital and Care Centre.
- The use of hs-TnI will result in changes in reporting interpretation (new reference interval, critical value and units), and updated Urgent Care and Rural Hospital Vidas hs-cTnI Chest Pain Pathway (<https://insite.albertahealthservices.ca/Main/assets/tms/edc/tms-edc-vidas-hs-ctnl-pathway.pdf>) and reporting comments (Table 1)
  - New units: ng/L
  - New reference interval: 0 – 18 ng/L
  - New critical value: >= 100 ng/L
  - New Meditech test code for hs-TnI ordering in Wetaskiwin: **TROPIHST**
  - New result test name in NetCare: Troponin I (Vidas) High Sensitivity

### Why this is important

- Availability of hs-TnI in Wetaskiwin will better support clinicians in evidence-based interpretation of their troponin result and improve patient management.
- Recognize that **hs-TnI results** are **NOT interchangeable** with **conventional TnI**, or with **hsTnT**.

### Background

- While hs-TnI offers improved diagnostic performance relative to conventional troponin assays, hs-TnI results alone cannot exclude all acute coronary syndrome presentations and **high-risk clinical presentations remain high-risk, even if hs-TnI concentrations are normal**.
- Abnormal elevations in hs-TnI do not necessarily represent acute myocardial injury or coronary ischemia; clinical judgment remains essential to ensure safe patient management.

### Action Required

- All users of hs-TnI in Wetaskiwin should familiarize themselves with the Urgent Care and Rural Hospital Vidas hs-cTnI Chest Pain Pathway and accompanying comments.
- Be aware of differences between hs-TnI and hs-TnT for reference intervals and critical values, as result interpretation will change by test.

### Effective

- September 13, 2022

### Inquiries and feedback may be directed to

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**This bulletin has been reviewed and approved by**

- Heidi Paulin, MD, Regional Laboratory Medicine Site Chief for Red Deer Regional Hospital Centre
- Hossein Sadrzadeh, PhD, Section Chief, Clinical Biochemistry, South Sector
- Paul Klonowski, MD, Associate Medical Director, South Sector

**Table 1: Updated bioMérieux MINI VIDAS® hsTnl Reporting**

<b>Current Reporting</b> (Abbott iSTAT® Tnl, non-high sensitivity assay)	<b>New Reporting</b> (MINI VIDAS® hs-Tnl assay)
<p><b>N/A</b></p>	<p><b>&lt;6 ng/L:</b></p> <p>For patients with a non-ischemic ECG, a Troponin I, High Sensitivity of less than 6 on presentation AND at 2-hours is highly sensitive for excluding acute myocardial infarction (MI). Repeat troponin testing at 2-hours after the initial sample is recommended for all patients to reliably exclude MI. Please note that patients with ischemic ECG changes and /or high-risk clinical presentations should be considered for further evaluation irrespective of troponin results.</p>
<p><b>Tnl 0.02-0.04 µg/L:</b></p> <p>Troponin I value not consistent with acute myocardial infarction, providing the sample was collected more than 6h from onset of symptoms.</p> <p>Repeat troponin testing after the initial sample is recommended for all patients to reliably exclude MI.</p> <p>Please note that patients with ischemic ECG changes and/or high-risk clinical presentations should be considered for further evaluation irrespective of troponin results.</p>	<p><b>hs-Tnl 6-18 ng/L:</b></p> <p>Troponin I, High Sensitivity is below the upper reference limit (19 ng/L) and results are not consistent with myocardial infarction (MI) or injury. However, patients with acute symptoms (less than 6-hours since onset) or concerning clinical presentations should undergo repeat troponin testing at 2-hours after the initial sample. Repeat troponin testing at 2-hours after the initial sample is recommended for all patients to reliably exclude MI. A 2-hour change of 10 ng/L or more suggests an acute myocardial injury and may represent acute MI 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.</p>
<p><b>Tnl 0.05 –0.10 µg/L:</b></p> <p>Troponin I value is inconclusive for acute myocardial infarction and may be due to myocardial injury.</p> <p>Repeat troponin testing after the initial sample is recommended for all patients to reliably exclude myocardial infarction.</p> <p>Please note that patients with ischemic ECG changes and/or high-risk clinical presentations should be considered for further evaluation irrespective of troponin results.</p>	<p><b>hs-Tnl 19-99 ng/L:</b></p> <p>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. Repeat troponin testing at 2-hours after the initial sample is recommended to assess for active myocardial injury. A 2-hour change of 10 ng/L or more suggests an acute myocardial injury and may represent acute MI 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.</p>
<p><b>Tnl &gt;0.10 µg/L:</b></p> <p>Clear elevation of Troponin I consistent with acute myocardial injury or infarction in the appropriate clinical context.</p>	<p><b>hs-Tnl &gt;= 100 ng/L</b></p> <p>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</p>



Repeat troponin testing after the initial sample may be helpful to assess for ongoing myocardial injury.

TnI >0.10 µg/L may be observed in several nonthrombotic cardiac and systemic diseases (most commonly - acute PE, acute pericarditis, acute or severe HF, myocarditis, sepsis and/or shock).

helpful to assess for ongoing myocardial injury.