Date: April 6, 2020
To: All Calgary Zone Physicians and Healthcare Providers; and APL Chemistry Managers and Supervisors, MLT II/III, LIC, Accessioning, Clinical Biochemists
From: Clinical Biochemistry, South Sector, Alberta Precision Laboratories (APL)
Re: Availability of high sensitivity troponin I (hs-TnI) at High River Hospital and Canmore General Hospital

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Key Message:

- Effective April 1, 2020, high sensitivity troponin I (hs-TnI) will replace the current conventional TnI assay at High River Hospital and Canmore General Hospital due to the discontinuation of the conventional TnI on the Beckman Coulter Access®.
- The use of hs-TnI will result in changes in report interpretation (new reference interval, critical value and units), an updated Rural Hospital Chest Pain Pathway Access hs-cTnI (https://insite.albertahealthservices.ca/Main/assets/tms/edc/tms-edc-access-hs-ctnI-pathway.pdf), and reporting comments (Table 1).
  o New Reference interval: 0-17 ng/L
  o New Critical Value: 50 ng/L
  o New orderable test name: Troponin OR TNIA
  o New result test name in NetCare: Troponin I Access High Sensitivity
- Calgary acute care hospitals continue to use high sensitivity troponin T (hs-TnT) and reporting will not change.
- Calgary Urgent Care Centers, as well as Okotoks Health and Wellness Centre and Banff Mineral Springs Hospital, will continue to use hs-TnI (Vidas).

Why this is Important:

- Availability of hs-TnI at these sites will better support clinicians in evidence-based interpretation of troponin results and improve patient management.
- hs-TnI (Access) results are NOT interchangeable with conventional TnI, hs-TnI (Vidas), or with hs-TnT.

Action Required:

- Be aware of the Rural Hospital Access hs-TnI Chest Pain Pathways and accompanying comments, and the differences between hs-TnI (Access), hs-TnI (Vidas) and hs-TnT for reference intervals and critical values, as result interpretation will change with the ordered test.

Inquiries and feedback may be directed to:

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This bulletin has been reviewed and approved by:

Hossein Sadrzadeh, PhD, FAACC, Clinical Section Chief, Clinical Biochemistry South Sector
Leland Baskin, MD, FCAP, FAACC, Associate Medical Director, South Sector

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<th>Current Reporting</th>
<th>New Reporting</th>
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<td><strong>Troponin I 0.01-0.06 μg/L</strong>&lt;br&gt; Troponin I value not consistent with AMI, providing the sample was collected &gt; 6h from onset of symptoms</td>
<td><strong>Troponin I Access High Sensitivity &lt; 5 ng/L</strong>&lt;br&gt; For patients with a non-ischemic ECG, a Troponin I, High Sensitivity of 5 ng/L or less on presentation AND a 2-hour change of less than 5 ng/L 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.</td>
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| **Troponin I 0.07 – 0.49 μg/L**<br> Troponin I value is inconclusive for acute MI and may be due to myocardial injury. Repeat ordering may be warranted in some clinical situations. | **Troponin I Access High Sensitivity 5-17 ng/L**<br> Troponin I, High Sensitivity is below the upper reference limit (18 ng/L) and results are not consistent with myocardial infarction (MI) or injury. Repeat troponin testing at 2-hours after the initial sample is recommended for all patients to reliably exclude MI. A 2-hour change of 20 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. |

| N/A | **Troponin I Access High Sensitivity 18-49 ng/L**<br> 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 for all patients to reliably exclude myocardial infarction (MI). A 2-hour change of 20 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. |

| **Troponin I ≥0.50 μg/L**<br> Troponin I value is consistent with acute myocardial damage. | **Troponin I Access High Sensitivity >=50 ng/L**<br> 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. |