Laboratory Bulletin

Date: May 28, 2012

To: **North Zone – Bonnyville Health Centre, Northern Lights Regional Health Centre, Queen Elizabeth II Hospital, Hinton Healthcare Centre; Central Zone – Drayton Valley Hospital & Care Centre, Lacombe Hospital & Care Centre, Ponoka Hospital & Care Centre, Red Deer Regional Hospital, Rocky Mountain House Health Centre, Stettler Hospital & Care Centre; South Zone – Chinook Regional Hospital, Medicine Hat Regional Hospital: Physicians, Nurses and Laboratories**

From: **AHS Laboratory Services**

Re: ****Revised** Test Changes for Ketones – Introduction of Beta-Hydroxybutyrate**

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Key Messages:

The following changes for ketone testing will be effective as of June 5, 2012 at 10:00 am.

- The currently available qualitative test for serum/urine ketones has been discontinued by the manufacturer.
- Serum ketone testing will be replaced by a whole blood, quantitative test for beta-hydroxybutyrate (BOH). This test will be performed at the hospital laboratories in Bonnyville, Drayton Valley, Ft. McMurray, Grande Prairie, Hinton, Lacombe, Lethbridge, Medicine Hat, Ponoka, Red Deer, Rocky Mtn. House and Stettler.
- Urine ketones will continue to be available as part of "Urinalysis".

Why this is important:

The three ketone bodies made during excess fat metabolism, such as in diabetic ketoacidosis or in carbohydrate deprivation, are BOH (78%), acetoacetate (20%) and acetone (2%).

- The serum/urine ketone test being discontinued and the urine ketone test that is a part of "Urinalysis" only measure acetoacetate and acetone.
- The new test for BOH does not measure acetoacetate or acetone.

BOH steadily declines with successful treatment of ketoacidosis. Conversely, acetoacetate concentration actually increases slightly with ketoacidosis treatment before it begins to decline. Accordingly, its measurement can falsely indicate ongoing ketosis and can result in misinterpretation of successful treatment.
Due to the predominance of BOH over the other ketone bodies and its response during treatment, BOH is the most sensitive marker for detecting and monitoring ketoacidosis.

Action Required:

Sample Type for Beta-hydroxybutyrate:

- EDTA whole blood (preferred) or lithium heparin whole blood (alternate) tested within 30 minutes of collection

Reference Interval for Beta-hydroxybutyrate:

- 0.0 – 0.3 mmol/L (previously stated as – 0.3 mmol/L in error)

Order Code for Beta-hydroxybutyrate:

- Order BHYD1 in Meditech Order/Entry

Inquiries and feedback may be directed to:
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This bulletin has been reviewed and approved by:
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