In the Loop

UnityPoint Health
Des Moines

The Newsletter of UnityPoint Health – Des Moines Laboratories

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Important Testing Changes: Troponin & Brain Natriuretic Peptide (BNP)

Beginning July 6th: Troponin I will change to Troponin T BNP will change to NT Pro-BNP

Welcome to ***In the Loop,*** the newsletter from UnityPoint Health – Des Moines Laboratories.

The purpose of this newsletter is to distribute valuable information to our service area, including new test availability, test updates regarding methodology, specimen collection, and normal values.

We may also include feature topics related to laboratory diagnostics and test utilization.

If you have suggestions for topics you would like to read about in the newsletter, please email Kimberly.VonAhsen@unitypoint.org

Troponin I vs Troponin T

Troponin is a protein component of striated muscle. Of the three types (C, T, and I), troponins T and I are limited to cardiac muscle. Detection of these troponins in blood is an early indicator of myocardial injury.

Current assays can detect troponins as early as 2-4 hours after onset of myocardial damage. Extensive study has shown that troponin T and troponin I have equivalent ability to predict myocardial injury. However, the troponin T assay is standardized, while multiple assays for troponin I exist, each with differing cutoff values.

Our transition from troponin I to troponin T involves implementing a new reference range (normal of <0.01 ng/mL). This reference range is based on National Academy of Clinical Biochemistry guidance which defines an abnormal troponin as greater than the 99th percentile of a control group, with an assay imprecision of less than 10%. With older troponin assays, the lack of precision at low levels meant that cutoffs were more often based on the level at which 10% imprecision could be achieved and not the more stringent 99th percentile. The improved precision of newer assays allows us to utilize the 99th percentile cutoff. This cutoff identifies myocardial injury earlier and with greater sensitivity.

The increased sensitivity will likely increase the number of abnormal troponins. These are not "false positives", but rather a reflection of our increased ability to detect low-level myocardial injury. All patients with a detectible troponin T are at an increased risk for cardiac events. From the standpoint of acute myocardial infarction, this means an increased emphasis on the importance of serial troponin levels and integration of clinical findings.

	Siemens – Current	Roche – beginning July 6, 2016
Test Name	**Troponin I**	**Troponin T**
99th percentile	< 0.05 ng/mL	< 0.01 ng/mL
Reference range	< 0.78 ng/mL	< 0.01 ng/mL
Critical Value	0.78 ng/mL*	0.100 ng/mL*

***The First Critical Value is called.** A first value is the same account number, same admission or after a prior non critical value.

New Instrumentation Go-Live Dates

- **June 28** Methodist & Pathology Laboratory
- **July 6** Methodist West **AND TROPONIN T & NT Pro-BNP**
- **July 12** Lutheran

BNP vs NT Pro-BNP

B-type natriuretic peptide (BNP) and NT-proBNP are cardiac biomarkers that have been well-characterized for use in the diagnosis, prognosis, and management of heart failure.

BNP is the active, C-terminal form of the natriuretic peptide, whereas NT-proBNP is the inactive, N-terminal form. Although levels of BNP and NT-proBNP are similar in normal individuals, NT-proBNP levels are substantially greater than BNP levels in patients with cardiac disease due to the longer half-life of NT-proBNP in circulation. Thus, results from the 2 tests are not interchangeable. Though BNP and NT-proBNP are biologically different, their use in the diagnosis and management of heart failure is similar. NT Pro-BNP test can also be used as an aid in the diagnosis of all degrees of CHF severity including asymptomatic patients and as an aid in the diagnosis of all degrees of CHF severity including asymptomatic patients and allows for age specific reference ranges.

	Siemens – Current	Roche – beginning July 6, 2016
Test Name	**BNP**	**NT ProBNP**
All ages	< 100 pg/mL	
>18 years		< 300
15-18 years		6-207
7-14 years		10-242
3-6 years		23-327
1-3 years		39-675
1-11 months		37-1000
<30 days		263-6500

Roche BNP Comment:

Age	Comment
18-49 years	NT-proBNP values above 450 pg/mL are consistent with CHF in adults under 50 years of age.
50-75 years	NT-proBNP values above 900 pg/mL are consistent with CHF in adults 50 to 75 years of age.
76 years and older	NT-proBNP values above 1800 pg/mL are consistent with CHF in adults greater than 75 years of age.

Questions related to the lab tests/results contact:

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Have you ever had a non-patient* question about laboratory testing that you wanted to ask?

What does PCR stand for?

Can hemolysis be caused by a specimen sitting too long?

How do you determine a specimen was contaminated with IV fluid?

Now you can send these types of questions to the email DSM_AskLAB@unitypoint.org

Questions will be answered by a team of laboratory professionals along with sharing Questions & Answers through this newsletter.

*Please don't submit patient specific questions or patient protected health information with questions