CENTRACARE Laboratory Services

MEMO

TO: **CCLS Clients**

FROM: **CentraCare Laboratory Services**

DATE: **4/19/18**

SUBJECT: **Troponin Reference Range**

On May 1, 2018, CentraCare Health (CCH) will be standardizing the reference range for troponin testing performed on the Abbott Architect instrument system-wide. Some facilities are currently reporting the standardized reference range and will not see any adjustment; however, CentraCare Laboratory Services (CCLS), including St Cloud Hospital (SCH) and the CentraCare Health Plaza, will experience a change in the reported reference range.

This initiative was started as part of a process to improve acute chest pain care throughout all CCH facilities. For troponin testing in acute chest pain care, it was determined that having a standardized troponin reference range would improve communication between care providers, especially between facilities, and reinforce understanding of the clinical interpretation of troponin test values. The standardized reference range considers the criteria for the diagnosis of a myocardial infarction (MI) using the Third Universal Definition of a Myocardial Infarction (UDMI). This definition classifies an abnormal troponin value as higher than the 99th percentile of a healthy patient population. Additionally, later this year the EPIC laboratory information system module, which is named "Beaker", will go-live throughout the CCH system. This go-live will necessitate a common reference ranges for the entire system.

- New normal reference range: Normal <0.04 ng/mL

Comments on Interpreting Troponin values:

Most patients with normal cardiac status will have troponin-I values below 0.04 ng/mL.

Levels between 0.04 and 0.29 ng/mL are nonspecific and may be encountered in a variety of cardiac conditions such as myocarditis, arrhythmias, congestive heart failure, ischemia, angina, invasive cardiac procedures, and developing or resolving myocardial infarction.

Elevations above 0.29 ng/mL are usually associated with infarction, although mild elevations above 0.29 ng/mL may be present in patients with non-infarction cardiac abnormalities.

These changes will bring our lab ranges in line with other facilities in our area including Allina, Mayo Clinic, North Memorial and Hennepin County Medical Center.

For the assay used at CCH, the 99th percentile value is 0.035; therefore, a value over 0.04 will be identified as abnormally elevated.

The CCLS and SCH current normal reference range is less than 0.30 ng/mL. This value is termed by the assay manufacturer as the “diagnostic value” and represents the point at which the combination of both sensitivity and specificity for an acute myocardial infarction are maximized.

Using the standardized reference range, a troponin value greater than the 99th percentile value (0.04 ng/mL) in a clinical scenario consistent with acute myocardial ischemia/infarction is classified as an “acute MI”, termed by the UDMI as a Type 1 MI.

A troponin elevation greater than the 99th percentile value (0.04 ng/mL) without clinical evidence of acute infarction/ischemia, due to another cause is not an “acute MI” but is termed by the UDMI as a “Type 2 MI”. Common reasons for a Type 2 MI are CHF, pulmonary embolus, sepsis, and uncontrolled arrhythmia such as atrial fibrillation with rapid ventricular response.

If you have any questions or comments, please contact one of the project champions listed below:

Mark Bonneville, M.D.	Medical Director, Monticello ER
Matt Zieske, M.D.	Chairman, Lab Utilization Review Committee
Rick Jolkovsky, M.D.	Cardiology, Chairman - Clinical Practice Council