

## Memorandum

Date: September 30, 2019

To: ED and RETU PAs, Residents, and Attendings

From: Jolion McGreevy, MD, ED Medical Director; Jonathan Yeo, MD, RETU Medical Director

Re: New Troponin Reference Range

### **New Troponin Reference Range**

As of April, 22<sup>nd</sup>, 2019, the definition of a positive troponin I level has been changed from  $> 0.5$  ng/mL to  $> 0.03$  ng/mL. This modification changes the level for the presence of myocardial injury to the 99<sup>th</sup> percentile of upper reference limit of the assay. The criteria for MI include detection of a rise and/or fall of troponin with at least one value above the 99th percentile and at least one of the following:

- Symptoms of acute myocardial ischemia
- New ischemic ECG changes
- Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality

### **Interpreting a Positive Troponin**

The Departments of Cardiology, Medicine, Emergency Medicine, and Laboratory Medicine have developed the following algorithm to interpret positive troponin values:

1. For any positive troponin value (i.e.,  $> 0.03$ ) a second troponin should be checked at 3 hours.
2. If the index troponin is in the "low positive range" ( $0.04 - 0.09$ ), an absolute change in the second troponin of 0.02 or more should be considered a clinically significant change.
3. If the index troponin is  $\geq 0.1$  ( $> 3x$  the upper limit of normal) the percent difference between the index and second troponin may be used to determine whether a change is clinically meaningful. Ischemia is suggested if the 2nd troponin has increased by more than 20% and there are symptoms and/or ECG changes suggestive of ischemia.

### **Can a Patient with a Low-positive Troponin Go to RETU?**

Yes, if the troponin is low-positive ( $< 0.1$ ) and the patient does not have a concerning story, the patient may go to RETU and have the second troponin drawn there in 3 hours.

- Negative troponin ( $\leq 0.03$ ) can go to RETU.
- Troponin 0.04 to 0.09 ( $3x$  upper limit of normal) without a concerning story can go to RETU after first troponin. RETU will send second troponin.
- Troponin 0.04 to 0.09 with a concerning story needs second troponin in ED prior to RETU. Or consider other disposition.
- Trop  $\geq 0.1$  cannot go to RETU.

### **When Can a Patient with a Trop $\geq 0.1$ Go to RETU?**

- If it has been established that the troponin is the patient's baseline (i.e., end-stage renal disease). A concerning story needs second troponin in ED prior to RETU.
- If it is down-trending from a recent event with elevated troponin. A concerning story needs second troponin in ED prior to RETU.