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SUBJECT: Present and Future Troponin Assays

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Recently, two large, multicenter studies published in the *New England Journal of Medicine* (1,2) showed the improvement of high sensitivity troponin assays over current standard assays in the early diagnosis of myocardial infarction for chest pain patients in the emergency department. The accompanying editorial (3) points out that these findings support current professional guidelines for the use of troponin assays - in the appropriate clinical context, an elevated troponin level greater than the 99th percentile of a reference population should be considered an abnormal result, and that the troponin assay should have a sensitivity capable of accurate and precise measurement at the 99th percentile cutoff (4,5).

Since the publication of these two papers, we have had inquires about the current troponin assays being performed at both URMCLabs locations, Strong Memorial Hospital and Highland Hospital, and whether these assays were of the high sensitivity variety. We would like to use this communication to inform our providers about the troponin assays that are currently in use, as well as future plans.

Currently, Strong and Highland Laboratories use two different troponin assays: the Siemens Troponin I Ultra at Strong, which is one of the high sensitivity assays used in the two NEJM papers; and the Roche 4th Generation Troponin T assay at Highland, which is the standard troponin assay used in the papers. URMCLabs as a whole is in the process of implementing a common chemistry instrument platform with the goal that for all tests the same instruments, methodologies, and reference ranges will be used for all inpatients and outpatients within our health care system. The plan is to implement the Roche high sensitivity Troponin T assay used in one of the papers (1). This assay, while available in Europe, is awaiting FDA clearance in the U.S. It is anticipated that it will be available for clinical use in the first quarter of 2010. In the meantime, Strong will continue to use the Siemens Troponin I Ultra assay, and Highland the standard Roche Troponin T assay.

We are excited about the new Roche troponin high sensitivity assay and that the same cardiac biochemical marker will be used across the University of Rochester Medical Center system. There will be a joint Pathology and Laboratory Medicine/Cardiology communication on the new high sensitivity troponin T assay when it becomes available for use.

Please direct any questions concerning this announcement to either Dr. Tai Kwong or Dr. Julietta Fiscella via the methods listed above.

1. Reichlin T et al. Early diagnosis of myocardial infarction with sensitive cardiac troponin assays *N Engl J Med* 2009;361:858-67
2. Keller T, et al. Sensitive troponin I assay in early diagnosis of acute myocardial infarction. *N Engl J Med* 2009;361:868-77
3. Morrow D. Clinical application of sensitive troponin assays. *N Engl J Med* 2009;361:913-5
4. Thygesen K. Universal definition of myocardial infarction. *Eur Heart J* 2007;28:2525-38
5. Morrow D, et al. National Academy of Clinical Biochemistry Laboratory Medicine Practice Guidelines: clinical characteristics and utilization of biochemical markers in acute coronary syndromes. *Clin Chem* 2007;53:552-74.