HAMILTON REGIONAL LABORATORY MEDICINE PROGRAM

TO: All Physicians, Residents, Clinical Managers and Educators
at St. Joseph's Healthcare and Hamilton Health Sciences

FROM: Drs. J. Kelton and D. Arnold, Directors, McMaster Platelet Immunology Laboratory
Dr. I. Nazi, Manager, McMaster Platelet Immunology Laboratory
Ms. J. Moore, Technical Advisor to McMaster Platelet Immunology Laboratory

DATE: November 16th 2015

RE: **New Two-Step Testing Protocol for Heparin Induced Thrombocytopenia (HIT) – Effective December 1st 2015**

HIT is a life-threatening complication of the anticoagulant, heparin. Up to 50% of patients with HIT develop thrombotic complications, of which 10% are severe and result in limb loss, amputation, or death. Failure to identify patients with HIT can lead to severe thrombotic complications, while failure to exclude patients who do not have HIT can lead to treatment with unfamiliar anticoagulants and bleeding complications.

Although there are different assays that can be used to measure HIT antibodies, using the enzyme immunoassay (EIA) and serotonin release assay (SRA) in combination optimizes sensitivity and specificity, while minimizing cost and turn-around time. The EIA is a quantitative test that detects circulating antibodies against complexes of platelet factor 4 (PF4) and heparin (PF4/heparin). The EIA is 97% sensitive but only 50% specific and, therefore, is most useful in excluding HIT when the test is negative. The SRA is a functional test that can identify samples with anti-PF4/heparin antibodies that can activate platelets and cause HIT. A positive SRA has a high specificity for HIT (95%), while a negative SRA virtually excludes the diagnosis.

Beginning December 1st 2015, the McMaster Platelet Immunology Laboratory will offer a daily Monday to Friday anti-PF4 EIA screen. If this is negative, no further testing will be done and the result will be reported. This method will exclude HIT in approximately 65% of all referred samples. If the EIA is positive, the sample will be tested with the functional HIT SRA assay, which will continue to be run on Tuesdays and Thursdays. The only exception to this two-step protocol will occur when local Hamilton samples arrive on Tuesday or Thursday after the daily EIA screen has been performed but before the SRA has been set-up – in order to minimize turn-around time, these samples will be directly tested using the SRA.

Testing requires 4 mL of serum (4 red top tubes) and 2 mL of sodium citrate (2 blue top tubes). **The test ordering mnemonic on Meditech (HIT) will not change.** Turnaround time for the EIA is 24 hours following arrival in the McMaster Platelet Immunology Laboratory (Monday – Friday) and for the SRA is 24 to 72 hours (Monday – Friday). A written interpretation from experts in the field of HIT testing and management (Drs. Kelton, Warkentin, and Arnold) will be provided with each laboratory report.

If you have any questions or concerns about any of these changes, please contact Ms. Jane Moore at 905 525 9140 x 22414 or Dr. Ishac Nazi at 905 525 9140 x20242.