NOTE DE SERVICE
MEMORANDUM

date: **2018-05-10**

to: **All clinical laboratory clients**

from: **Dr. Susan Solymoss, Hematology Medical Chief, Optilab Montréal-CUSM**

subject: **Manual Differential - MUHC sites**

The most commonly performed test in a clinical hematology lab is a CBC or complete blood count. With an automated analyzer (Beckman Coulter in our case) one also obtains an automated white cell differential. The second most commonly performed hematology test is a differential white count or DIFF i.e. a manual smear.

A blood smear scan is usually done to verify the automated platelet count, excluding platelet clumps or fibrin strands whose presence may be the reason for pseudo thrombocytopenia. If there is an immature or variant/atypical lymphocyte flagged, a manual smear will be made.

The automated analyzer counts 10,000 white cells to arrive at the differential and if there are no flags a manual DIFF rarely adds meaningful information. A manual DIFF is performed by an experienced technologist (only 6 during the day) and involves a 100-cell DIFF with evaluation of RBC, WBC, and platelet morphology.

With the increasing number of manual differential requests in the presence of normal parameters from the automated analyzer, we have developed laboratory criteria based on numerical results and qualitative criteria generated by the automated analyzer. We know the automated analyzers have limitations in regards to some RBC and WBC morphologic abnormalities.

In pediatrics we do a manual smear on each new NICU admission to provide the clinician with another parameter i.e. the presence or absence of band neutrophils in the assessment of infection. The initial blood smears with potentially significant findings are reviewed by a hematologist.

Such a policy is a requirement for laboratory accreditation.
Reference: G Gulati et al. Criteria for Blood smear Review. Lab Med 2002; 33: 374-377
www.cap.org: Hematology and Coagulation Checklist 2015 p41