LifeLabs®

Health Care Providers' Newsletter

April 2017

Hematology Testing & Critical Results

Anil Mangal DSM,ABIM,FRCPC, Hematopathologist

LifeLabs recently reached an important integration milestone in that all former BC Biomedical Patient Service Centres (PSCs) have now been converted to LifeLabs Medical Laboratories' systems. Chemistry and Hematology Laboratory testing in the Lower Mainland has also been consolidated at the Burnaby testing facility (BRL). This involves patient samples coming from 80 PSCs, with 65% from north of the Fraser (Vancouver including North Van, Richmond, Burnaby, New West, Coquitlam, PoCo, Port Moody) and the remainder south of the Fraser (Surrey, Delta, Abbotford, Chilliwack, Pitt Meadows, Langley, White Rock).

Due to the geography and logistics resulting in patient samples arriving later than usual to BRL, some testing may be performed later in the evening or early hours of the morning. LifeLabs adheres to the BC College of Physicians and Surgeons Professional Standards and Guidelines and the Guiding Ethical Principles of the CMA Code of Ethics, which mandate our responsibilities to the patient and require that we consider first the well-being of each patient. Therefore, LifeLabs endeavours to deliver all critical results (based on "Critical Values Consensus Statement" Guidelines developed by the BCALP), as soon as these are discovered by the laboratory. This may result in patient's physician being called during early hours of the morning with critical results. Critical Values Guidelines are noted below:

Analyte	Critical Value
Hemoglobin (g/L)	< 60 > 230 (except neonates)
WBC (x 10^9/L)	< 1 > 100 (adults and children)
Platelets (x 10^9/L)	< 20
Neutrophils (x 10^9/L)	< 0.5
Blood Film	Malaria parasites, *falciparum* or unspeciated
Prothrombin time, INR	> 5
Fibrinogen (g/L)	< 0.6

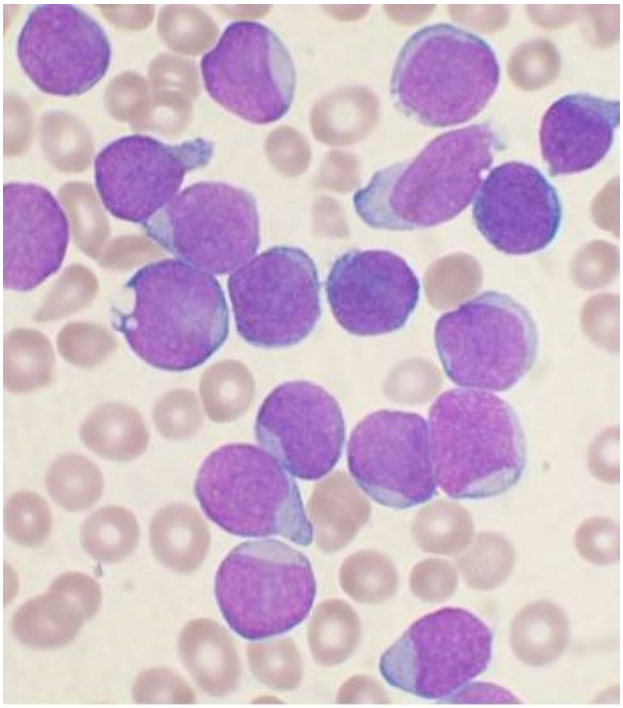
At LifeLabs, we feel "critical results" for out-patients need to be more flexible and allow for lead time to be able to deal with these abnormalities, compared to in-hospital patients, where levels can be set lower since patients are already in a secure environment. Therefore we have made the following modifications to critical levels for adults at LifeLabs:

Hgb ≤ 60g/L or > 200g/L (since out-patients may take longer time to receive appropriate therapy, compared to in-patients)

Hematocrit <0.18 or >0.70

3) Platelets ≤20 or >1,500
4) Blast cells – new findings or significant change (esp. increased)
5) Neutrophils <0.6 or >99.9
6) Lymphocyte >300
7) INR ≥5.0
8) PTT ≥70
9) Fibrinogen <1 g/L

We request each Healthcare Provider to ensure after-hours contact numbers (home or cell phone) are identified on the requisition or made available to LifeLabs. This will allow us to communicate critical results in a timely manner so that each such patient is handled appropriately and in compliance with the BC College of Physicians and Surgeons Professional Standards and Guidelines.



Blood Grouping / Rh typing / DAT

Suseela Reddy, MD, FRCPC, Hematopathologist
Ayesha Vawda, MD, FRCPC, Hematopathologist

As of March 27, 2017, Blood grouping, Rh typing and Direct Antiglobulin Test (DAT) are performed by the gel card methodology, which is a sensitive method widely used by many laboratories.

Positive DAT results will now be graded (4+, 3+, 2+, 1+, weak positive) and sub-classified using mono-specific antisera that differentiate IgG positivity from complement (C3d) positivity. This will help distinguish warm auto-immune hemolytic anemia (AIHA; IgG ± C3d) from cold hemagglutinin disease (C3d) and mixed cold / warm antibody type (IgG + C3d).

In a transfusion reaction investigation, DAT may be positive for IgG and/or C3d depending on the specificity of the recipient antibody.

In hemolytic disease of the newborn, a positive DAT result is presumably due to maternal IgG sensitizing the neonatal RBCs. DAT strength has been reported to be the best diagnostic indicator for AIHA.

There is no change in the reporting of ABO/Rh results.

Opioid Testing Quiz

Jan Palaty, PhD, FCACB, Clinical Biochemist

Which of the following is/are detected by <u>any</u> urine Opiate screen, whether performed in your office or in any lab?
Answer at bottom of page.

1. **Codeine**
2. **Oxycodone**
3. **Fentanyl**
4. **Tramadol**

Human Papillomavirus (HPV) Testing

Romina Reyes, MD, FRCPC, Medical Microbiologist

LifeLabs now offers private-pay HPV Genotype PCR testing on a new platform, the Roche Cobas® 4800. Testing on the Digene DML 200 testing platform will be discontinued. Samples must be collected using the BD SurePath® containers with the Rovers Cervex-Brush®. Collection supplies will be distributed upon request.

Health care providers may order supplies through our Courier Department at 604-412-4481 (Option #1 for supplies; Lower Mainland only) or 1-250-881-3111 ext. 72124, as well as via fax 1-250-727-0344. Reporting will change to reflect genotyping results that were not previously available. Results will be available within 2 weeks.

The HPV Test is a patient-pay test with a list price of $90. Patients will be invoiced for the cost of testing. Invoice payments can be made online by patients at www.lifelabs.com/patients/Pages/Pay-an-Invoice.

For more information please visit the HPV information page on the HealthCare Providers Section of our website.

New CBC Parameters

Ekram Zayed, MD, FRCPC, Hematopathologist

A few years ago, two new CBC indices became available. We would like to briefly review their background and utility.

1) **Immature Platelet Fraction (IPF)** : may also be referred to in the literature as reticulated platelets. This population of platelets represents the youngest circulating platelets. IPF provides an estimate of thrombopoiesis in the same way as the reticulocyte count is a measure of erythropoiesis.

It is now part of accepted hematological practice and provides useful information for the investigation and monitoring of platelet production in various thrombocytopenic conditions.

The clinical utility of this parameter was established in the laboratory diagnosis of thrombocytopenia due to increased peripheral platelet destruction, particularly autoimmune thrombocytopenic purpura.

It is also used for monitoring platelet recovery after chemotherapy and stem cell transplants, as well as timing for prophylactic platelet transfusion.

2) **Reticulocyte hemoglobin content (Ret-He)**: determination of the reticulocyte hemoglobin content provides an early measure of functional iron deficiency because reticulocytes are the earliest erythrocytes released into blood and circulate for only 1 to 2 days. It is used as a sensitive and specific indicator of functional iron deficiency in clinical situations with otherwise normal red cell indices.

Reticulocyte hemoglobin content level is the strongest predictor of iron deficiency and iron deficiency anemia in children. It is also used to monitor response to iron supplements in iron deficiency and erythropoietin treatment during dialysis.

These two new parameters are available from the reticulocyte channel on the analyzer. If you need these two parameters reported, please ensure that a reticulocyte count is ordered.