

Critical and Alert Laboratory Test Results – British Columbia

LifeLabs is committed to the confidential timely release of accurate results consistent with the requirements of our patients, Health Care Providers (HCP) and public health.

>>> Critical Values

A critical value is identified as a result that may indicate that a patient is in a life-threatening condition in which immediate medical action is necessary. These critical reporting limits have been defined specifically for a community laboratory environment and are based on published literature as well as laboratory experience.

Laboratories are obligated to communicate critical results. The ordering Health Care Provider has the professional responsibility to receive critical laboratory results. The Health Care Provider must provide the laboratory with contact information, which allows direct telephone communication of critical results to the HCP (or delegate providing coverage during absences) both during and after office hours. Health Care Providers can contact LifeLabs at 604-431-7206 or toll free 1-800-431-7206 to provide contact information or to update existing contact information.

Critical values are flagged as abnormal on the report but are communicated as soon as they are available to the ordering physician, 24 hours a day.

>>> Alert Results

An alert value is identified as a result that deviates significantly from the reference interval and may suggest the need to re-evaluate the clinical situation prior to the arrival of a report by routine channels. These results are called to the ordering HCP between 08:00 and 20:00 hours, 7 days a week.

Recurrent Critical and Alert Values

There may be situations when a markedly abnormal result is not unexpected. Certain critical values may be frequently expected in certain types of specialist practice. Under these circumstances an exception to the critical result calling protocol may be made; subject to approval by the LifeLabs Medical Director. The HCP must complete the *Doctors Special Handling Request Form*. Contact LifeLabs at 604-431-7206 or toll free 1-800-431-7206 for more information.

Reporting Exceptions: Microbiology

When a preliminary report which is considered critical is successfully communicated by the laboratory, further preliminary and the final microbiology report will not be communicated as a second critical value. It is the responsibility of the ordering Health Care Provider to obtain additional information from the final report to confirm the appropriateness of treatment.

Critical Values are updated periodically and may change without notification. Critical values on the patient report are deemed to be correct.

Chemistry and Urinalysis Routine		
Test	Critical Values <i>Notification 24 hours a day</i>	Alert Values <i>Notification between 8:00am and 8:00pm</i>
AM Cortisol	if <1 y: Less than 100 nmol/L	
Bilirubin	if < 4 d*: Greater than 290 µmol/L if 4 - 28 d*: Greater than 300 µmol/L	
Calcium, Total	Less than 1.50 mmol/L Greater than 3.25 mmol/L	
Calcium, Ionized	Less than 0.80 mmol/L Greater than 1.60 mmol/L	
CO2	Less than 10 mmol/L Greater than 40 mmol/L	
Glucose	if <17 y: Less than 2.5 mmol/L Greater than 11.1 mmol/L if ≥17 y: Less than 2.5 mmol/L Greater than 30.0 mmol/L	
Lactate		Greater than 4.00 mmol/L
Magnesium	Less than 0.3 mmol/L Greater than 3.0 mmol/L	
Phosphate	Less than 0.32 mmol/L	
Potassium	Less than 2.5 mmol/L Greater than 6.5 mmol/L	Less than 2.8 mmol/L Greater than 6.2 mmol/L
Sodium	Less than 120 mmol/L Greater than 160 mmol/L	
Troponin	Greater than 50.0 ng/L	
TSH		Greater than 10.00 mU/L
Urinalysis Glucose and Ketones	if ≤ 16 y: Glucose is greater than or equal to 14 mmol/L and Ketones is greater than or equal to 1.5 mmol/L if >16 y: Glucose is greater than or equal to 55 mmol/L and Ketones is greater than or equal to 7.8 mmol/L	if >16 y: Glucose is 28 mmol/L and Ketones is greater than or equal to 3.9 mmol/L

Chemistry Therapeutic Drug	
Test	Critical Values <i>Notification 24 hours a day</i>
Carbamazepine	Greater than 65 µmol/L
Digoxin	Less than 3.5 nmol/L
>>> Lithium	if <66 y: Greater than 2.0 mmol/L if ≥66 y: Greater than 1.5 mmol/L
Phenobarbital	Greater than 260 µmol/L
Phenytoin	Greater than 120 µmol/L
>>> Theophylline	Greater than 165 µmol/L
Valproic Acid	Greater than 1000 µmol/L

Hematology and Coagulation	
Test	Critical Values <i>Notification 24 hours a day</i>
Hemoglobin	if 1d – 29 d: Less than 80 g/L Greater than 250 g/L if >30 d: Less than 60 g/L
Platelet count	Less than 20 x 10 ⁹ /L
Absolute Neutrophil Count	Less than 0.5 x 10 ⁹ /L Greater than 100.0 x 10 ⁹ /L
Absolute Lymphocyte Count	Greater than 250.0 x 10 ⁹ /L
Fibrinogen	Less than 1.00 g/L
PT (INR)	Greater than 6.0
PTT	Greater than 100 sec
Joint Fluid Neutrophils	Greater than 25,000 x 10 ⁶ /L
Blood Film Review	New findings of malaria

Microbiology List of Results Phoned (alphabetical order)
Bioterrorism or biosafety level 3 organisms (potential)
<i>Chlamydia trachomatis</i>
<i>Clostridium difficile</i> (positive by PCR and EIA)
<i>Clostridium perfringens</i>
<i>Corynebacterium diphtheriae</i> from eye, nose, and throat
<i>Entamoeba histolytica</i> /dispar
<i>E. coli</i> O157 or ST-pos <i>E. coli</i>
Group A Streptococcus from throats
<i>N. gonorrhoeae</i>
<i>N. meningitidis</i> from eye
Positive <i>Chlamydia trachomatis</i> / <i>N. gonorrhoeae</i> , Trichomonas for patients < 13 years from any site
<i>Pseudomonas aeruginosa</i> from eye
<i>Salmonella typhi</i> or <i>Salmonella paratyphi</i> A.
<i>Sarcoptes scabiei</i>
Sterile site (blood culture, joint fluid, etc) - positive Gram stain or culture
Strongyloides (only new cases, i.e. not positive before)
<i>Vibrio cholerae</i>
VRSA

References:

- ISO 15189:2022 clause 7.4.1.3
- College of Physicians and Surgeons of British Columbia Practice Standard: Care Coverage Outside of Office Hours Version 5.0 June 4, 2018