

Logan Health Medical Center

Adult and Pediatric Critical Values

Currently accepted laboratory practice is that laboratories monitor test results for exceeding critical values, so that when such occurs, appropriate notification of the responsible health care provider is completed and documented. The list of Critical Values and the procedure for reporting is submitted annually to the committee for review, revision, and approval by Logan Health Medical Center's Hospital Medical Staff.

This form should be used as a quick reference for Adult and Pediatric Critical Values.

*Always refer to the LHMC Laboratory Critical Value policy (40.G.544) for the most accurate Adult and Pediatric Critical Values.

All critical values are programmed into the LHMC Laboratory Meditech software for exact testing reference.

Mayo Medical Laboratories Critical Values are on the last page

CHEMISTRY				
Analyte	Adult Critical Values		Pediatric Critical Values	
Ammonia	----	>100µmol/dL	----	>100µmol/dL
Bilirubin, Total (newborn)	----	----	----	>20 mg/dL
Blood Gases (Arterial)	----	----	----	----
pH	<7.20	>7.60	<7.25	>7.50
pCO ₂	<20 mmHg	>70 mmHg	<30 mmHg	>50 mmHg
pO ₂	<40 mmHg	----	<50 mmHg	>90 mmHg
pH Cord (Umbilical)	----	----	<7.10	----
BE	----	----	< -9.0	----
Calcium, Total	<6.0 mg/dL	>12.0 mg/dL	<6.0 mg/dL	>12.0 mg/dL
Calcium, Ionized	<3.0 mg/dL	>6.0 mg/dL	<2.0 mg/dL	>6.0 mg/dL
Carbon Monoxide	----	>30.0%	----	>20.0 %
Creatinine Kinase (CK)	----	≥10,000 U/L	----	----
Glucose	<50 mg/dL	>500 mg/dL	----	----
< 1 month	----	----	<35 mg/dL	>150 mg/dL
≥ 1 year	----	----	<50 mg/dL	>500 mg/dL
Glucose, Challenge	<50 mg/dL	>500 mg/dL	----	----
Glucose, Tolerance, Diabetes Mellitus	<50 mg/dL	>500 mg/dL	----	----
Glucose Tolerance, Gestational	<50 mg/dL	>500 mg/dL	----	----
Lead 0-15 years (send out test)	----	----	----	>20 mcg/dL
≥16 years	----	>70 mcg/dL	----	----
Magnesium	≤1.0 mg/dL	≥6.0 mg/dL	≤1.0 mg/dL	>6.0 mg/dL
OB patients	≤1.0 mg/dL	≥10.0 mg/dL	----	----

Phosphorus	≤1.0 mg/dL	----	<1.0 mg/dL	>7.0 mg/dL
Potassium	<3.0 mmol/L	>6.0 mmol/L	----	----
0-2D	----	----	<3.0 mmol/L	>6.4 mmol/L
3D-10D	----	----	<3.0 mmol/L	>7.0 mmol/L
11D-1Y	----	----	<3.0 mmol/L	>7.4 mmol/L
Protein (CSF)	----	>100 mg/dL	----	>100 mg/dL
Sodium	<120 mmol/L	>155 mmol/L	----	----
(0-1Y)	----	----	<125mmol/L	>155 mmol/L
T4, Total	----	----	<3.5 mg/dL	>18.0 mg/dL
T4 (Throxine) Free, Serum < 50 years	----	>7.0 ng/dL	----	----
> 50 years	----	>6.0 ng/dL	----	----

HEMATOLOGY				
Analyte	Adult Critical Values		Pediatric Critical Values	
Absolute Neutrophil Count	----	----	<500	----
CSF White Cell Count	----	----	----	----
0-12 months	----	----	----	>30 WBC /mcL
1-4 years	----	----	----	>20 WBC /mcL
5 years - puberty	----	----	----	>10 WBC /mcL
Adult	----	>5 WBC /mcL	----	----
Hematocrit	<15 %	----	----	----
< 2 Month	----	----	<15 %	>69 %
> 2 Month	----	----	<15 %	>55 %
Hemoglobin, all ages	<7.0 g/dL	> 20.0 g/dL	----	----
0 – ≤ 4 months	----	----	<8.1 g/dL	>21.1 g/dL
> 4 months	----	----	<7.0 g/dL	> 20.0 g/dL
Platelet	<30,000 CMM	>1,000,000 CMM	<30,000 CMM	>1,000,000 CMM
White Blood Count	<1,000 CMM	----	<1,000 CMM	>50,000 CMM

COAGULATION				
Analyte	Adult Critical Values		Pediatric Critical Values	
FIBRINOGEN	≤ 59 mg/dL	----	≤ 59 mg/dL	----
INR (Protime)	----	≥5.0	----	>4.0
PT	----	----	----	>30 sec
PTT	----	>90 sec	----	>90 sec

DRUGS (Serum)		
Analyte	Adult Critical Values	Pediatric Critical Values
Acetaminophen	---- >60 µg/mL	---- >50 µg/mL
Carbamazepine (Tegretol)	---- >20 µg/mL	---- >15.0 mcg/mL
Digoxin	---- >2.5 ng/mL	---- >2.5 ng/mL
Gentamicin, Trough	---- >2.5 µg/mL	---- >2 µg/mL
Gentamicin, Peak	---- >16 µg/mL	---- >12 µg/mL
Lithium	---- >3.0 mmol/L	---- >1.5 mmol/L
Phenobarbital	---- >60 µg/mL	---- >40 µg/mL
Phenytoin (Dilantin)	---- >25 µg/mL	---- >25 µg/mL
Salicylate	---- >30.0 mg/dL	---- >10 mg/dL
Theophylline	---- >25 µmol/mL	---- >20 µmol/mL
Tobramycin, Trough	---- >2 mcg/mL	---- >2 mcg/mL
Tobramycin, Peak	---- >12 mcg/mL	---- >12 mcg/mL
Valproic Acid	---- >150 µg/mL	---- >120 µg/mL

MOLECULAR/MICROBIOLOGY			
TEST	SOURCE	Adult Critical Values	Pediatric Critical Values
Acanthamoeba Direct Exam	Ocular, CNS	Positive	Positive
Blood Borne Parasite Smear	Blood	Positive	Positive
Culture	Blood	Positive	Positive
	Body Fluid	Positive	Positive
	CSF	Positive	Positive
	Wound	Positive for Clostridium	Positive for Clostridium

MOLECULAR/MICROBIOLOGY			
TEST	SOURCE	Adult Critical Values	Pediatric Critical Values
Culture	Any	<u>Select Agents:</u> Bacillus anthracis Brucella Burkholderia mallei Burkholderia pseudomallei Francisella Tularensis Yersinia pestis Clostridium botulinum Smallpox	<u>Select Agents:</u> Bacillus anthracis Brucella Burkholderia mallei Burkholderia pseudomallei Francisella Tularensis Yersinia pestis Clostridium botulinum Smallpox
Gram Stain	CSF Body Fluid Cavity Blood Joint Aspirates	Bacteria Present Bacteria Present Bacteria Present Bacteria Present	Bacteria Present Bacteria Present Bacteria Present Bacteria Present
India Ink Smear	CSF	Positive for Cryptococcus	Positive for Cryptococcus
Malaria Antigen Test	Blood	Positive	Positive
Naegleria Direct Exam	Ocular, CNS	Positive	Positive
Parasitic Exam	Non intestinal	Strongyloides stercoralis	Strongyloides stercoralis
Smear, Acid Fast	Any	Positive	----

MOLECULAR PCR		Adult Critical Values	Pediatric Critical Values
Bordetella pertusis	Nasopharynx	Positive	Positive
GI Panel	Stool	<u>Positive For:</u> Vibrio Cholerae Shiga-toxin-producing E.coli Entamoeba histolytica	<u>Positive For:</u> Vibrio Cholerae Shiga-toxin-producing E.coli Entamoeba histolytica
HSV 1,2	CSF, amniotic, ocular	Positive	Positive
VZV			
Meningitis/Encephalitis Panel	CSF	Positive	Positive
Toxigenic C. Difficile	Stool	Positive	Positive
Tuberculosis	Any	Positive	Positive
Viral Respiratory Panel	infant < 12 months		Any Positive

Mayo Medical Laboratory Analyte	Adult Critical Values		Pediatric Critical Values
Acetone (Volatile Screen) all specimen types	Any Value Detected	mg/dL	
Activated Partial Thromboplastin time, Plasma	----	≥ 150 sec	
Amitriptyline/Nortriptyline, S	----	≥ 300 ng/mL	
Butalbital, S	----	≥ 10 µg/mL	
Caffeine, S	----	≥ 30 µg/mL	
Carbamazepine, Free, S	----	≥ 4.0 µg/mL	
Cyanide, Blood	----	≥ 2.0 µg/mL	
Desipramine, S	----	≥ 300 ng/mL	
Disopyramide, S	----	≥ 7.0 µg/mL	
Doxepin and Nordoxepin, S	----	≥ 300 ng/mL	
Ethosuximide, S	----	>150 µg/mL	
Ethylene Glycol, S	----	≥ 20 mg/mL	
Fibrinogen, P	≤ 60 mg/dL	----	
Imipramine/Desipramine, S	----	≥ 300 ng/mL	
INR	----	≥ 5.0	
Isopropanol (Volatile Screen) all specimen types	Any Value Detected	mg/dL	
Lead 0-15 years	----	----	----
≥ 16 years	----	>70 µg/dL	>20 µg/dL
Lidocaine, S	----	> 6.0 µg/mL	
Methanol (Volatile Screen) all specimen types	Any Value Detected	mg/dL	
Nortriptyline, S	----	≥ 300ng/mL	
Phenobarbital	----	≥ 60 µg/mL	
Phenytoin, Free	----	≥ 2.5 µg/mL	
Primidone, S	----	≥ 15 µg/mL	
Procainamide, S	----	----	

Mayo Medical Laboratory Analyte	Adult Critical Values	Pediatric Critical Values
Procainamide	---- > 12 µg/mL	
N-Acetylprocainamide	---- ≥ 40 µg/mL	
Quinidine	---- ≥ 6.0 µg/mL	
Valproic Acid Free and Total, S	---- ----	
Valproic Acid, Free	---- > 30 µg/mL	
Valproic Acid, Total	---- > 151 µg/mL	

Mayo MICROBIOLOGY Result	Specimen source and patient details
Detection (e.g., stain, culture, PCR, antigen detection) of a clinically significant bacterium, fungus, parasite, or virus (except HIV and hepatitis A through E virus)	Blood, cerebrospinal fluid, brain tissue, amniotic fluid, ocular fluid/corneal scrapings
Identification/detection of a select agent (or other highly pathogenic organism) including, but not limited to <i>Bacillus anthracis</i> , <i>Brucella</i> species, <i>Burkholderia mallei</i> , <i>Burkholderia pseudomallei</i> , <i>Clostridium botulinum</i> , <i>Corynebacterium diphtheriae</i> , <i>Coxiella burnetii</i> , <i>Francisella tularensis</i> , monkeypox virus, variola virus, <i>Vibrio cholerae</i> , or <i>Yersinia pestis</i> . In the event of an outbreak of a novel contagious microorganism, detection of such an organism may fall into this category.	Any specimen tested
Detection of clinically significant fungi including, but not limited to members of the Zygomycetes class, dimorphic fungal pathogens (<i>Histoplasma capsulatum</i> , <i>Blastomyces dermatitidis</i> , or <i>Coccidioides</i> species), <i>Cryptococcus neoformans</i> , <i>Cryptococcus gattii</i> , or <i>Pneumocystis jiroveci</i>	Any specimen tested
Detection of <i>Strongyloides stercoralis</i> larvae	Non-intestinal specimen
Detection of herpes simplex virus or <i>Bordetella pertussis</i>	Any specimen tested from a neonate (< 1 month)

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