

## ADMN.5.03.A1 Critical Results and Tests

Effective date: 09/09/2021

**Policy:** All critical results are communicated as specified in UWH Policy 3.3.6.

All instances are called unless noted differently in the condition column.

### Definitions:

- Critical Results** are laboratory results that indicate the presence of a life-threatening condition that may be corrected by appropriate and timely intervention.
- Critical Tests** are those which have been identified as needing to be performed and reported as quickly as test procedure permits from the time the specimen is collected and results are important regardless of whether they are normal or abnormal.
- Inpatients - First Instance** rule definition.
  - For inpatients, the laboratory calls critical values the first time the limit is exceeded.
  - A new call is made every 7 days if the value for the test continues to be critical.
  - Whenever a value falls outside the critical range and then becomes critical again, a new call is made.
  - Every call for a critical value starts a new 7 day period.
  - Considered an inpatient until they are discharged
- Outpatients & Emergency Department**
  - All outpatient critical values are called unless an exception is noted in the table below.

General Chemistry and Blood Gas				
TEST	Units	Low Value	High Value	Condition
Ammonia	umol/L	N/A	>140	0-17 years old only
Base Excess (BE) Cord Blood	mmol/L	≤ -12	N/A	Arterial or Venous, Cord blood ONLY
Bilirubin, Total	mg/dL	N/A	>15.0	0-30 days old only
BUN	mg/dL	N/A	> 90	Inpatients-First instance rule applies. Called to select units: B6/6, F6/6, and all pediatric inpatients (<18 yo) Outpatients - Call all Except: Renal/Kidney Clinics (UWH TRANSPLANT MED, UWH DIALYSIS, EAST DIALYSIS, EAST PEDIATRIC RENAL DIALYSIS, KIDNEY CLINIC, FITCHBURG NEPHROLOGY, C5/3) ED – Always called
Calcium	mg/dL	< 6.0	> 12.0	
Calcium, Ionized	mg/dL	< 3.00	> 6.50	
Carbon Monoxide	%	N/A	> 10	
CK, Total	U/L	N/A	≥5000	*First instance rule applies
Glucose	mg/dL	< 40	> 400	
Lactate	mmol/L	N/A	> 4.0 (ED) > 10.0 (All Others)	
Magnesium	mg/dL	< 1.0	> 5.0	
Methemoglobin	%	N/A	> 3.0	
pCO2	mmHg	< 20	> 70	
pH	units	< 7.25	> 7.65	
pH Cord Blood	units	<7.0	N/A	Arterial or Venous, Cord blood ONLY
pO2	mmHg	< 55	N/A	Arterial ONLY
Potassium	mmol/L	< 3 .0	> 6.0	
Phosphate	mg/dL	< 1.0	N/A	
Sodium	mmol/L	< 120	> 165*	*First instance rule applies
Troponin	ng/mL	N/A	> 0.03	Inpatients - First Instance rule applies Outpatients - Called
Troponin (Urgent Care)	ng/mL	N/A	> 0.05	

<b>Hematology and Coagulation</b>				
<b>TEST</b>	<b>Units</b>	<b>Low Value</b>	<b>High Value</b>	<b>Condition</b>
INR		N/A	≥ 5.0 (≥ 18 yo) > 4.0 (< 18 yo)	
Activated Partial Thromboplastin	seconds	N/A	≥ 110.0	Inpatients-First Instance rule applies Outpatients-Called
Fibrinogen	mg/dL	≤ 100	N/A	Inpatients-First Instance rule applies Outpatients - Called
Heparin level, by anti-Xa	IU/mL	N/A	≥ 2.0	
WBC	K/uL	≤ 2.0	≥ 50.0	Inpatients-Not called Outpatients - Call all Except: - Hematology/Oncology Clinics - Pediatric Diagnostic and Therapy Center
Hemoglobin	g/dL	0–29 Days ≤ 7.0 ≥ 30 Days ≤ 7.0	0–29 Days ≥ 24.0 ≥ 30 Days ≥ 20.0	Inpatients-First Instance rule applies Outpatients - Called
Hematocrit	%	0–29 Days ≤ 20 ≥ 30 Days ≤ 20	0–29 Days ≥ 72 ≥ 30 Days ≥ 60	Inpatients-First Instance rule applies Outpatients - Called
Platelets	K/uL	≤ 20	≥ 1000	Inpatients-First Instance rule applies Outpatients - Call all Except - Hematology/Oncology Clinics
Blasts seen on WBC Differential				Inpatients-called first time per admission Outpatients - Call all Except: - Hematology/Oncology Clinics and Pre-Stem Transplants
Malaria, other organisms and intracellular bacteria seen on slides (with the exception of Ehrlichia/Anaplasma)				Inpatients-First Instance rule applies Outpatients - Called
<b>Body Fluids and Urinalysis</b>				
<b>TEST</b>	<b>Units</b>	<b>Low Value</b>	<b>High Value</b>	<b>Condition</b>
CSF Nucleated Cells	cells/uL	N/A	≥ 25	Not called on ventricular fluids.
CSF Glucose	mg/dL	< 20	N/A	
Microorganisms seen in CSF, Vent, synovial or intraocular fluids				
Urine Chemistry	N/A	N/A	≥ 500 mg/dL Glucose	University Health Services only
Urine Microscopic pH, Urine (Methotrexate Protocol)	N/A	N/A	Waxy Casts	
	N/A	<7.0	N/A	
<b>Toxicology and Immunosuppressants</b>				
<b>TEST</b>	<b>Units</b>	<b>Low Value</b>	<b>High Value</b>	<b>Condition</b>
Acetone	mg/dL	N/A	>100	
Acetaminophen	mcg/mL	N/A	≥ 150	
Amitriptyline	ng/mL	N/A	> 500	Also called if total tricyclic is >500
Carbamazepine	mcg/mL	N/A	> 15.0	
Clomipramine	ng/mL	N/A	> 500	Also called if total tricyclic is >500
Cyclosporine	ng/mL	N/A	> 300	Inpatients - Not called to B4/6 (Abdominal transplant) Outpatients - Called
Digoxin	ng/mL	N/A	> 2.0	
Ethosuximide	mcg/mL	N/A	> 150.0	
Ethylene Glycol	mg/dL	N/A	>2.0	
Felbamate	mcg/mL	N/A	> 100	
Gentamicin	mcg/mL	N/A	> 10.0	
Isopropanol	mg/dL	N/A	>5.0	
Lamotrigine	mcg/mL	N/A	> 20.0	
Lithium	mmol/L	N/A	≥ 1.50	
Methanol	mg/dL	N/A	>10.0	
Nortriptyline	ng/mL	N/A	> 500	Also called if total tricyclic is >500
Pentobarbital	mg/dL	N/A	> 3.0	
Phenobarbital	mcg/mL	N/A	> 50.0	
Phenytoin	mcg/mL	N/A	> 20.0	

Salicylate	mg/dL	N/A	> 30	
Sirolimus	ng/mL	N/A	> 20	Inpatients - Not called to B4/6 (Abdominal transplant) Outpatients - Called
Tacrolimus	ng/mL	N/A	> 15	Inpatients - Not called to B4/6 (Abdominal transplant)
Theophylline	mcg/mL	N/A	> 20.0	
Tobramycin	mcg/mL	N/A	> 10.0	
Vancomycin	mcg/mL	N/A	> 30.0	
Valproate	mcg/mL	N/A	> 150.0	
<b>Microbiology / Infectious Disease</b>				
<b>Positive culture / Gram stain / Microscopy - All positive results - Each instance</b>				
Blood				
Blood related sites (e.g. heart valves)				
Bone Marrow				
Pre- and Post-infusion donor Lymphocytes				
Stem Cell Products				
<b>Positive culture / Gram stain / Microscopy - Inpatients: First Instance rule applies if same organism. Outpatients: Called each instance.</b>				
Brain				
CSF				
Intraocular Fluid				
Pericardial Fluid				
Synovial Fluid/Joint Tissue Gram stain from OR				
<b>Positive culture / Gram stain / Microscopy - Inpatients: First Specimen per inpatient admission. Outpatients: Called each instance.</b>				
<i>Acanthamoeba</i> spp.				
<i>Coccidioides</i> , <i>Blastomyces</i> , <i>Cryptococcus</i> , or <i>Histoplasma</i> from any site				
Fungi other than <i>Candida</i> from all sites except hair, skin, nails, and CF patient sputum -* <b>Microscopy Only</b>				
Non-septate hyphae / Zygomycete from any site				
<i>Entamoeba histolytica/dispar</i> from any site				
<i>Pneumocystis</i> from any site				
Presumptive <i>Staphylococcus aureus</i> from blood culture				
<b>Positive culture / Gram stain / Microscopy - All positive results - Each instance</b>				
Coronavirus Disease 2019 (COVID-19) Inpatient and Emergency Department admits always called; Emergency Department non-admits/Ambulatory/Urgent Care/Employee Health/External Submitters (VA, Meriter, etc): not called				
Cryptococcal Antigen - First positive				
<i>Pneumocystis jirovecii</i> by PCR - Each instance				
<i>Salmonella typhi</i> from any site - First positive				
<b>PCR/Antigen - Detected result on spinal fluid - Each instance</b>				
<i>Cytomegalovirus</i> , <i>Enterovirus</i> , <i>Epstein-Barr virus</i> , <i>Streptococcus pneumoniae</i>				
<b>PCR - Detected result on spinal fluid, ocular fluid, Blood specimens - Each instance.</b>				
<i>Herpes Simplex Virus</i> , <i>Varicella Zoster Virus (VZV)</i> Also called to infection control)				
<b>Transfusion Service</b>				
Suspected ABO incompatible transfusion reaction.				
<b>Referral Laboratory Testing</b>				
Any result identified as critical by a reference laboratory and for which we receive telephone notification will be called.				
<b>Bone Marrow, Immunology, Flow Cytometry, Histocompatibility, Cytopathology and Surgical Pathology</b>				
No test results are considered critical. Courtesy calls will be made as appropriate.				
<b>Critical Tests</b>				
Frozen Section	Called to the appropriate caregiver within 20 minutes of receipt of sample			