CRITICAL VALUE POLICY

SCOPE
This policy is applicable to all laboratories within Marshfield Labs Laboratory Service Line.

PURPOSE
Critical values may imply a life-threatening situation for the patient and must be brought to the immediate attention of the physician and/or the patient care staff responsible for the patient. Prompt notification of potentially life threatening test results is important to ensure appropriate care is administered. Critical (panic) values are established for a normal population, though in some instances may not be considered "critical" when related to particular disease states. Interpretation of test results and determining if a result is critical to a particular disease state is the responsibility of the requesting physician. The purpose of this policy is to provide staff with the list of test values identified as potentially life-threatening.

POLICY STATEMENT
- All critical values are promptly reported to the ordering provider or designee following the applicable Critical Value notification procedure(s).

  *Note: Refer to the Critical Value Notification procedure for Hematology/Oncology and Operating Room Blood Gas notification exceptions.
- Approved designees include:
  - Nurse responsible for the patient
  - Provider's Medical Assistant (M.A.) or Health Service Coordinator
  - Nurse in the same department or unit
  - Health Unit Coordinator (HUC) on same unit, only if RN is not available.
  - Technologist in the laboratory from which the specimen was referred (Outreach only)
- Notification must include the following:
  - Patient's full name
  - Medical record number (or accession number)
  - Date and time of specimen collection
  - Test name
  - Patient test result and reference range.
  - Any additional pertinent information (i.e. hemolysis, lipemia, etc.)
- Notification and verification of read back must be electronically documented in the lab or Transfusion Service information system(s). Read back documentation must include the identity (first and last name) of the person called.
  - Point of Care Setting: *The identity of the testing individual and person notified need not be recorded when the individual performing the test is the same person who treats the*

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patient. In this circumstance, the medical record must include the critical result, date, and time.

- Critical results from tests which have not been ordered (e.g. platelet count on a hemoglobin test, parasite/fungal organisms on a body fluid smear prepared for a different test, etc.) are subject to the same notification and documentation.
- Refer to Attachment I for Critical Value List:

Chemistry	MolecularPathology
Coagulation	Microbiology
Cytogenetics	Pathology
Cytology	TherapeuticDrugs
Hematology	Transfusion Service

Critical Value List

Chemistry	Critical Low	Critical High	Units
Ammonia			
< 1 yr.	-------	>110	umol/L
≥ 1 yr.	------	>150	umol/L
Bicarbonate	< 10.0	> 40.0	mmol/L
Bilirubin	-----	> 15.0	mg/dL
Blood Gases			
pH	< 7.20	> 7.60	mm Hg
PCO_2	< 20.0	> 70.0	mm Hg
PO_2 – Arterial (ABG)			
≤ 1 day	< 35.0	-------	mm Hg
> 1 day	< 40.0	-------	mm Hg
PO_2 – Capillary (CBG)			
≤ 1 day	<35.0	-------	mm Hg
> 1 day	<40.0	-------	mm Hg
BUN	-------	>100	mg/dL
Calcium, Total	< 6.5	>13.0	mg/dL
Calcium, Ionized	< 3.0	>6.3	mg/dL
Carbon Monoxide	-------	>20.0	%
Creatinine	-------	>10.0	mg/dL
Creatine Kinase, Total	-------	>10,000	U/L
Ethanol	-------	> 300	mg/dL

Chemistry	Critical Low	Critical High	Units
Glucose			
< 30 days	< 30	> 325	mg/dL
≥ 30 days - <1 yr.	< 50	> 325	mg/dL
≥ 1 yr.	<50	>450	mg/dL
HIV rapid serology testing, employee exposure	Positive		
Hepatitis B Surface Ag (DaVita patients only)	Reactive		
Magnesium	< 1.0	>5.0	mg/dL
Phosphorus	< 1.0	-----	mg/dL
Potassium			
< 1 mo.	< 2.5	> 6.9	mmol/L
≥ 1 mo.	< 2.5	> 6.0	mmol/L
Sodium	< 120	> 160	mmol/L
Volatile (methanol and isopropanol)	Positive		

Coagulation	Critical Low	Critical High	Units
Activated Partial Thromboplastin Time (APTT)	------	> 100.0	seconds
Fibrinogen	< 50	----	mg/dL
Heparin, Unfractionated	-----	>1.50	IU/ml
INR	-----	> 6.0	

Hematology	Critical Low	Critical High	Units
Hematocrit			
≤ 1 mo.	< 20	> 78	%
> 1 mo.	< 20	> 60	%

Hematology	Critical Low	Critical High	Units
Hemoglobin			
≤ 1 mo.	< 7	> 27	g/dL
> 1 mo.	< 7	> 20	g/dL
Platelet Count	< 30.0	> 1000.0	x 10^3/uL
WBC	< 1.0	> 35.0	x 10^3/uL
Blood parasites (Babesia, Anaplasma, Ehrlichia, Malaria sp)	Positive smears		
Hematology Adult MCHS Oncology Critical Values ***Note: Only call between 1630-0700, Weekends, Holidays, and Patients Drawn at other Centers for Lab Only.**			
Hemoglobin	< 7	-----	g/dL
Platelet	< 20	-----	x 10^3/uL
WBC	< 0.5	-----	x 10^3/uL

Therapeutic Drugs	Critical Low	Critical High	Units
Acetaminophen	-----	>=50	ug/mL
Carbamazepine	-----	> 15.0	ug/mL
Cyclosporine (Transplant patients)	-----	> 700	ng/L
Digoxin	-----	>= 3.0	ng/mL
Gentamicin	-----	> 10.0	ug/mL
Lamotrigine	-----	>= 20	ug/mL
Lithium	-----	> 2.00	mmol/L
Phenobarbital	-----	> 55	ug/mL
Phenytoin	-----	> 30.0	ug/mL
Phenytoin, Free	-----	> 3.0	ug/mL

Therapeutic Drugs	Critical Low	Critical High	Units
Salicylate	-----	> 50.0	mg/dL
Tacrolimus	-----	>25	ng/mL
Theophylline			
<6 mos.	-----	> 15.0	ug/mL
≥ 6 mos.		> 25.0	ug/mL
Vancomycin	-----	> 30.0	ug/mL
Valproic Acid	-----	> 150	ug/mL
Zonisamide	-----	>= 60.0	ug/mL

Transfusion Service	Results	Units
DAT (cord blood or neonatal sample)	Positive	
Bacterial detection in a previously transfused blood product	Positive	
Transfusion reaction workup	Evidence of immune mediated hemolysis	
Emergency-released RBC unit that was issued and transfused prior to completion of testing	Evidence of incompatibility	

Cytogenetics
All 15;17 chromosome translocations, trisomy 13 and trisomy 18 results.

Microbiology	
Category	**Critical value**
Aerobic & anaerobic blood culture	• Positive culture Gram stains.(1) • Additional morphology/organism isolated in culture. (1)
Aerobic & anaerobic culture from the following sterile body fluids: • CSF • Eye (internal aqueous & vitreous)	• Positive Gram stain of the specimen. (1) • Positive culture if direct Gram stain is negative. (1) • Additional morphology/organism isolated in culture. (1) • Positive culture isolate identifications. (1)

Microbiology	
Category	**Critical value**
• Synovial • Pericardial	
Mycobacterial culture (1)	• Positive acid fast stain of the specimen. • Positive culture if direct acid fast stain is negative. • Positive nucleic acid test results of the specimen. • Positive culture isolate identifications of the *M. tuberculosis* complex.
Mycological culture (1)	• Specimen stains positive for fungi morphologically consistent with *Blastomyces, Histoplasma, Coccidioides*, *Paracoccidioides* or *Pneumocystis*. • Positive culture identifications of *Blastomyces, Histoplasma, Coccidioides*, or *Paracoccidioides.*
Film Array Respiratory Panel	• *Bordetella pertussis*
HHS/USDA Select Agents	Confirmed identifications.

(1) One positive called to provider per 72h if successive results match the first

Molecular Pathology	Results
Herpes Simplex Virus, Lyme, Enterovirus and Varicella Zoster Virus by PCR on CSF (spinal fluid)	Positive
Anaplasma/Ehrlichia/Babesia by PCR for Hospital and Emergency Department patients.	Positive
Entamoeba histolytica	Positive
Bordetella pertussis	Positive

Pathology
Significant or unexpected surgical pathology.

Cytology
All abnormal GYN Cytology results that are reported as: • Malignant cases, • Results deemed significant or unexpected All abnormal Non-GYN Cytology results that are reported as: • Blastomyces, Coccidioides Immitis, Coccidioidomycosis, Cryptococcus, or Histoplasmosis (Reported to provider or designee and Lab Communicable Disease), • Pneumocystis Jiroveci (Carinii) (Reported to provider or designee only), • Results deemed significant or unexpected