

CRITICAL RESULTS

POLICY STATEMENT

Physicians rely on accurate and timely responses by laboratorians for abnormal lab values to make critical patient care decisions. The Laboratory has a plan of action to respond to those needs 24 hours a day. To ensure that necessary treatment is rendered to a patient, specific test results are considered to be Alert or Critical Values. Alert or Critical Values will be defined by the Laboratory Medical Director with consultation from the Medical Staff. These values have been established as being among those that should be immediately called to the physician’s office or the nursing unit so that the appropriate physician may be notified.

If the Laboratory is unable to contact the appropriate care giver on the first call, the Laboratory will continue to make contact until there is a successful notification. If for some reason the appropriate caregiver is not reached within 60 minutes, the Pathologist on call will be notified. When Alert or Critical results are communicated verbally or by phone the Laboratory will ask for a verification “read back” of the results. Verification of the discussion will include the correct spelling of the caregiver’s name, and the lab will also ask for and document credentials of the person accepting the results. This information will be documented in the patient report. The results from any test, of course, should be reviewed with the patient’s welfare in mind.

PROCEDURE

BLOOD BANK		
Positive transfusion reaction investigation findings, such as positive direct antiglobulin test, discrepancy in ABO/Rh typing, clerical discrepancies, or post transfusion hemolysis, are reported immediately to the Medical Director or on call pathologist. The Medical Director or assigned pathologist will assess the investigation and decide on further course of action.		
BLOOD GAS		
Blood Gas		
Ph, Arterial, Venous, Capillary	Less than 7.20 or Greater than 7.55	
pO ₂ Arterial	Less than 50 mm Hg	
Methemoglobin Arterial and Venous	Greater than or Equal to 5%	
Carboxyhemoglobin Arterial and Venous	Greater than or Equal to 20%	
Total Hemoglobin (THb) Arterial and Venous	Less than or Equal to 6.5 g/dL	
Oxyhemoglobin (O ₂ Hb) Arterial and Venous	Less than 85%	
Ionized Calcium (Ca ⁺⁺) Arterial and Venous	Less than 3.2 or Greater than 6.48	
Cord Gas, Arterial/Venous pH	Less than 7.1	
Cord Gas, Arterial/Venous or Capillary Base Excess	Less than -12	
Sepsis Lactate	Greater than or equal to 4.0 mmol/L	
CHEMISTRY		
Acetaminophen	Greater than or equal to 100 mcg/mL – <i>first time only*</i>	
Bilirubin, Total	Adults (Greater than or equal to 15 days): Greater than 40 mg/dL	Neonates (Less than or equal to 14 days): Greater than 15 mg/dL

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Carbamazepine (Tegretol)	Greater than 12 mcg/mL – first time only*	
Carbon Dioxide	Less than 15 mmol/L	
Digoxin	Greater than 2.5 ng/mL	
Gentamicin	Random: Greater than or equal to 45 ug/mL	Trough: Greater than or equal to 2.1 ug/mL
Glucose	Patients 0-3 days: Less than or equal to 44 or Greater than or equal to 450 mg/dL	Patients 4 days and older: Less than or equal to 54 or Greater than or equal to 450 mg/dL
Hepatitis B Surface Antigen	Reactive - Called to Labor and Delivery Only	
Human Immunodeficiency Virus (HIV)	Reactive - Called to Labor and Delivery Only	
HIV Immunoassay or Rapid HIV	Reactive - Called to Labor and Delivery Only	
Lactate	Greater than or equal to 4.0 mmol/L	
Lidocaine	Greater than 6.0 ug/mL	
Lithium	Greater than 1.5 mmol/L	
Magnesium	Less than 1.0 mg/dL and Greater than 4.8 mg/dL	
Phenobarbital	Greater than 40 mcg/ml	
Phenytoin (Dilantin)	Greater than 30 mcg/mL	
Potassium	Less than 2.8 and Greater than 5.6 mmol/L Greater than or equal to 7.0 for patients 0 minutes - 1 year	
Salicylate	Greater than 30 mg/dL	
Sodium	Less than 120 or Greater than 155 mmol/L - first time only*	
Theophylline	Greater than 25 mcg/mL	
Tobramycin	Random: Greater than or equal to 45 ug/mL	Trough: Greater than or equal to 2.1 ug/mL
High Sensitivity Troponin T	Greater than 200 ng/L (absolute hs Trop T value) + /- 10 ng/L (2-hour delta) + /- 11 ng/L (4-hour delta) + /- 12 ng/L (6-hour delta) + /- 20% (2,4 or 6-hour delta %) Interpretive value = Significant	
*Critical values will be called every 48 hours when a new alert is defined		
Valproic Acid	Greater than 100 mcg/mL	
Vancomycin	Random: Greater than or equal to 60 ug/mL	Trough: Greater than or equal to 25 ug/mL
COAGULATION		
Anti Xa	Greater than 2.0 U/mL	
Fibrinogen	Less than 100 mg/dL – first time only*	
Partial Thromboplastin Time (PTT)	Greater than 120 seconds	
Prothrombin Time (PT)/INR	Greater than 5.0	

HEMATOLOGY	
White Blood Cells (WBC) Alerts:	
Patients less than 3 days	Less than 2.0 or greater than 50.0, call every 72 hours
Patients greater than 3 days through 18 years	Less than 1.0 or greater than 50.0, call every 72 hours
Patients greater than 18 years old	Greater than 250,000, call every 72 hours
Absolute neutrophil count	Less than 0.5, call every 96 hours
Hemoglobin Alerts:	
Patients less than 12 years old	Less than 7.5 g/dL, call every 72 hours
Patients greater than 12 years & less than 18 years	Less than 6.0 g/dL, call every 72 hours
Patients greater than 18 years old	Less than 6.5 g/dL, call every time
Platelet Alerts:	
Patients greater than 18 years old	Less than 20, call every 72 hours Greater than 1,000, call every 72 hours
Labor & Delivery patients	Less than 50, call every 48 hours
Patients less than 18 years old	Less than 25, call every 72 hours Greater than 1,000, call every 72 hours
Critical Blast	If blasts are identified on a smear review, a critical is called when blasts are greater than 3%, call every 72 hours
Malaria Smears	Any positive malarial smear
MICROBIOLOGY	
Positive India Ink or Cryptococcal antigen	All
Legionella antigen (urinary)	All
Positive AFB culture or smear	first time only*
Positive culture or gram stain from normally sterile body sites (Blood, joint fluid, pleural, synovial, bone marrow, tissue, CSF, etc.)	All
Stool Culture (Enteric) Positive for <i>Salmonella</i> , <i>Shigella</i> , <i>Campylobacter</i> , <i>Escherichia coli</i> O157:H7, <i>Yersinia</i> , or Shiga toxin-producing <i>Escherichia coli</i> , or <i>Vibrio</i>	All
MDRO-Multiple drug resistant organisms (MRSA, VRE, CRE, ESBL etc.)	First isolate per admission on all cultures or PCR - Inpatients only
Diseases/infections/conditions as listed by the Missouri Department of Health as a communicable disease or Bioterrorism agent	All
Positive Giardia/Cryptosporidium Antigen	All
Positive Respiratory Pathogen Panel	only need to call <i>Bordetella pertussis</i> , <i>Chlamydophila pneumoniae</i> and <i>Mycoplasma pneumoniae</i> - Inpatients only
SENDOUTS	
Reference Laboratory Results Flagged as Alert Value	All

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DEFINITIONS

***First Time Only** – Those tests denoted by “first time only” indicate that a call will be made only for the initial alert (critical) value obtained during each admission. Subsequent alert (critical) values will not be called. Results that fluctuate from alert (critical) to normal back to alert (critical) level will prompt a call by laboratory staff.

RELATED POLICIES, STATUTES OR STANDARDS

All inpatient alert (critical) values will be called to the appropriate licensed personnel. Whenever possible these calls will be made directly to the nurse taking care of the patient. If the primary nurse cannot be reached the floor charge nurse/nurse manager will be notified. Outpatient alert (critical) values and discharged patient alert (critical) values will be called to the physician office. When a physician office is closed the physician will be notified through the appropriate exchange. Critical or alert values for specimens received from sister laboratories will be called directly to those laboratories. Notification to the physician will then belong to the accepting lab.

All alert (critical) values for the Select Medical Team (LTACH) located on the 5th floor main tower of Missouri Baptist Medical Center will be called directly to the Select Medical (LTACH) House Supervisor direct phone at 314-302-9796.

All alert (critical) values for TRISL (The Rehabilitation Institute of St. Louis) located off campus will be called to the TRISL Nursing Station at 636-591-1192. Should someone not be available at the TRISL nurses station, the TRISL nursing supervisor can be reached at 636-487-2179.

All notifications will be documented. All results must be read back to notifier to verify accuracy. Documentation will include, first initial and last name of person taking results, verification of results, time of notification, initials of person making phone call and credentials of the person taking the call. All information will be documented on the appropriate worksheet and/or in the patient report/electronic record. If unable to contact the appropriate person, contact the department supervisor or Laboratory Medical Director.