

Fairview Health Services
Department Laboratory

Subject **CRITICAL VALUES**

Purpose To ensure prompt notification of tests results that are deemed critical, even if they occur from routine testing, and to define what is an acceptable length of time between availability of the results and their reporting to the licensed caregiver or their agent.

Policy **Definition:** Critical values are results that are outside predetermined parameters. Critical values require rapid reporting, even if they result from routine testing. A result is not identified as being “critical” until after the result has been identified to be outside the predetermined parameters.

Critical values require rapid communication due to their impact upon the patient’s care and the need for prompt patient-management decision-making. The acceptable length of time between identification of the critical value and reporting of critical value is 30 minutes.

See current list of identified critical values below.

- Procedure**
1. Critical results, including those determined by reference laboratories, are telephoned to the patient care provider (i.e., physician, nurse or charge nurse) or referring institution immediately. Staff accepting results must repeat values back to verify accuracy. This is documented in the LIS including time of call; person called to and read back by; and initials of caller.
 2. Critical results not specifically ordered but noted at the time of testing (e.g., electrolytes with blood gases), will be reported as a critical value.
 3. Some critical values are called at first occurrence rather than every occurrence as determined by individual site policy:
 - Fairview Lakes Medical Center: Only initial critical values are telephoned. All subsequent critical values are commented as consistent with previous results.
 - Fairview Southdale Hospital: Only initial critical values are telephoned for calcium, CO₂ (Total), phosphorus, troponin, WBC and platelet count. In addition, all platelet counts <10 x 10⁹/L are telephoned with the exception of Station 88 and ICU. All other critical values are called.
 - University of Minnesota Medical Center: Only initial critical values are telephoned for: troponin, WBC, platelet and absolute neutrophil. All other critical values are called.
 - All other sites: All critical values are called.

CHEMISTRY (Blood)	Less than	Greater than
Ammonia		>100 µmol/L
Bilirubin, Neonatal		>19.9 mg/dL
Calcium, Ionized, 0-1 y	<3.5 mg/dL	>7 mg/dL
Calcium, Ionized, 1 y and up	<3 mg/dL	>7 mg/dL
Calcium, Total	<6 mg/dL	>14 mg/dL
Carboxyhemoglobin		>10%
CO ₂ , Total	<11 mol/L	>45 mol/L
Creatine Kinase, Total		>1000 U/L
Glucose (0-71 h)	<40 mg/dL	>200 mg/dL
Glucose (3 d-5 mo)	<50 mg/dL	>200 mg/dL
Glucose (6 mo and up)	<40 mg/dL	>500 mg/dL
Ketone		>1.5 mmol/L
Lactate		none
Magnesium	none	>7 mg/dL
Methemoglobin		>35%
Osmolality	<250 mmol/L	>340 mmol/L
Phosphorus	<1 mg/dL	none
pH	<7.1	>7.6
pCO ₂	<20 mmHg	>75 mmHg
pO ₂ , Arterial	<40 mmHg	
pO ₂ , Capillary	<30 mmHg	
Bicarbonate	<11 mol/L	>45 mol/L
Potassium	<2.7 mmol/L	>6 mmol/L
Sodium	<120 mmol/L	>160 mmol/L
Troponin		>0.120 µg/L
Urea Nitrogen (BUN)		none
CHEMISTRY (CSF)		
Glucose - CSF	< 40 mg/dL	
COAGULATION		
INR		>6.0
PTT		>105 sec
Fibrinogen Activity	<100 mg/dL	
Heparin (Xa) Level		> 1.0 IU/mL; does not apply if patient is on low molecular weight heparin
HEMATOLOGY		
Hemoglobin	<7 g/dL	
WBC	<1 10 ⁹ /L	>50 10 ⁹ /L
Platelet	<50 10 ⁹ /L	>1000 10 ⁹ /L
Absolute Neutrophil	<0.5 10 ⁹ /L	

DRUGS (Blood)	Greater than
Acetaminophen	>20 mg/L
Amikacin	>50 mg/L
Cyclosporin	> 400 µg/L
Carbamazepine	>15 mg/L
Digoxin	>2.5 µg/L
Ethanol	>0.10 g/dL
Gentamicin	>16 mg/L for traditional dosing; >35 for single daily dosing
Lithium	>2 mmol/L
Mycophenolic Acid	>10 mg/L
Phenobarbital	>50 mg/L
Phenytoin	>30 mg/L
Phenytoin, Free	>4 mg/L
Rapamycin	>20 µg/L
Salicylate	>30 mg/L
Tacrolimus	>20 µg/L
Theophylline	>25 mg/L
Tobramycin	>16 mg/L for traditional dosing; >35 for single daily dosing
Valproic Acid, Free	>25 mg/L
Valproic Acid	>150 mg/L
Vancomycin	>60 mg/L
URINALYSIS	
Ketones, 0-7 days	positive with acid pH
BLOOD BANK	
Antibody Screen	positive
Fetal Hemoglobin/ Kleihauer Betke	positive
MICROBIOLOGY AND VIROLOGY	
Acid Fast Culture and/or Smear	positive
Blood Culture	positive
CSF Gram Stain/Culture	positive
CSF Cryptococcal Antigen	positive
CSF Cryptococcal Culture * Unless the patient had a positive Cryptococcal antigen from the same specimen	positive*
Enterovirus PCR	positive
Malarial Smears	positive

Note: For critical values on Sendout testing, please consult the Lab Guide.

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Approval