

# Vanderbilt Medical Laboratories

## CLINICAL LABORATORY CRITICAL VALUES

BLOOD BANK		
Hemolytic transfusion reactions		
Acute hemolysis detected during a Transfusion Reaction Workup		
Positive culture of a unit recently transfused (within 1 week)		
Incompatible crossmatch completed after emergency issue of uncrossmatched RBC		
Unexpected antibody in a patient in the OR		
Issue or transfusion of: <ul style="list-style-type: none"> <li>• the wrong unit</li> <li>• an incompatible unit</li> <li>• incorrectly labeled (wrong patient) unit</li> </ul>		
Positive Direct Antibody Testing on a neonatal venous or cord blood specimen		
Unacceptable sample because of wrong blood-in-tube identified by comparison with historical type.		
TEST		
CLINICAL CHEMISTRY	LOW	HIGH
ADULT		
Arterial or capillary blood pCO <sub>2</sub>		70mm Hg
Arterial or capillary blood pH	7.15	7.6
Arterial or capillary blood pO <sub>2</sub>	40 mmHg	
Bicarbonate (Total Carbon Dioxide)	≤ 10 mmol/L	≥ 40 mmol/L
Calcium	≤ 6.0 mg/dL	≥ 13.0 mg/dL
Ionized Calcium	3.0 mg/dL	6.5 mg/dL
Glucose, > 1year	≤ 50 mg/dL	≥ 500 mg/dL
Phosphorus	≤ 1.0 mg/dL	≥ 10.0 mg/dL
Potassium	≤ 2.5 mmol/L	≥ 6.2 mmol/L
Sodium	≤ 120 mmol/L	≥ 160 mmol/L
Magnesium	<1 mg/dL	>5 mg/dL
Osmolality	≤ 250 mosm/Kg	≥ 320 mosm/Kg
Glucose (tolerance)	<60 mg/dL	>500 mg/dL
CSF Glucose	< 20 mg/dL	
CSF Protein		>300 mg/dL
High Sensitivity Cardiac Troponin T		≥52 ng/L, first positive within 48 hours
Troponin I		≥0.04 mg/ml

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### PEDIATRIC

(Pediatric Critical Values are the same as adults, except for the following)

Ammonia		> 150 mcmmol/L
Total Bilirubin: Neonates only (Less than or equal to 30 days)		> 18 mg/L
Glucose, newborn <30 days	≤ 30 mg/dL	≥ 200 mg/dL
Glucose, newborn 30 days – 1 year	≤ 30 mg/dL	≥ 300 mg/dL
Potassium, newborn <10 days	≤ 2.0 mmol/L	≥ 7.0 mmol/L
Sodium, newborn <30 days	≤ 125 mmol/L	≥ 160 mmol/L

### THERAPEUTIC DRUG MONITORING/ TOXICOLOGY

Digoxin		≥ 4.0 ng/mL
Lithium		≥ 2.0 mEq/L
Ethanol (Ethanol, ETH, Blood alcohol)		≥ 400 mg/dL
Acetaminophen (ACE, Tylenol)		≥ 70 mcg/mL
Salicylates (SAL, Aspirin)		≥ 50 mg/dL
Ethylene Glycol (EG, Antifreeze)		≥ 5 mg/dL if initial sample
Iso-propanol (ISP, Rubbing alcohol)		≥ 10 mg/dL if initial sample
Methanol (MTH, Wood Alcohol)		≥ 10 mg/dL if initial sample
Theophylline (THE, Elixophyllin)		≥ 25 mcg/mL
Phenytoin (Dilantin)		≥ 40 mcg/mL
Carbamazepine (Tegretol)		≥ 20 mcg/mL
Phenobarbital		≥ 60 mcg/mL
Valproic acid (Depakene, Depakote, Valproate)		≥ 200 mcg/mL
Vancomycin Peak level		≥ 60 mcg/mL
Vancomycin Random level		≥ 60 mcg/mL
Vancomycin Trough level		≥ 30 mcg/mL
Lidocaine		>5 mg/L

### COAGULATION

Prothrombin Time/INR (PT)		INR > 6.0
PTT - Partial Thromboplastin Time (aPTT, Activated Partial Thromboplastin Time)		≥ 200 sec.
Fibrinogen	≤60 mg/dL	
Unfractionated heparin		>1 U/ml
Low molecular weight heparin		>1.7 U/ml

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### HEMATOLOGY

Hematocrit (Packed cell volume, PCV)	<18 %	>69% if <2 mo of age and >54% if >2 mo of age, when no previous critical value was reported within 7 days.
Hemoglobin	<6 gm/dL	
White Blood Cell (WBC)	<1000/ $\mu$ L and when no previous critical value was reported within 30 days.	>100,000/ $\mu$ L and no previous critical value was reported within 30 days.
Platelets (PLT)	<30,000/ $\mu$ L and no previous critical value was reported within 7 days.  <5000/ $\mu$ L always called regardless of previous critical value.	
Peripheral smear differential	Blasts $\geq$ 5%	
Peripheral smear morphology	Red cell fragments with decreased platelets on smear. (<50,000 or a 50% change)	
CSF (Cerebrospinal Fluid)	Presence of Cryptococcal-like yeast or intracellular bacteria	