

University of California, San Francisco – Department of Laboratory Medicine
San Francisco General Hospital
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Clinical Laboratory – Barbara Haller, MD, PhD, Director

Critical Values/Results

Critical results will be given directly to the requesting or responsible licensed care giver (physician, RN, PA, NP) or authorized Health Center contact. If the critical value or result has to be passed on to the ordering or responsible provider who can initiate appropriate action, he/she should be notified within 1 hour from verification of the result (see Hospital Policy on Communication and Documentation of Critical Results).

(Note: There may be some delay between submission of a routine specimen and telephone notification, as the abnormal result may be identified only after the entire analytical run has been completed and reviewed.)

CONSTITUENT		CONVENTIONAL UNITS
Acetaminophen	> 50	mg/L
Bilirubin, Total or Direct neonate < 30 days old	> 20.0	mg/dL
<i>Blood Gases, Arterial</i>		
pH	< 7.20 or > 7.55	
PCO ₂	< 25 or >65	mm Hg
PO ₂	< 40	mm Hg
PO ₂ , neonatal	< 40 or >100	mm Hg
<i>Blood Gases, Venous</i>		
pH	< 7.20	
PCO ₂	> 75	mm Hg
<i>Blood Gases, Infant, Capillary</i>		
pH	< 7.20 or > 7.55	
PCO ₂	< 25 or >65	mm Hg
Base Deficit	> 10	mmol/L
<i>Blood Gases, Cord (Cord Venous and Cord Arterial)</i>		
pH	< 7.0	
Base Deficit	> 10	mmol/L
Calcium	< 6.5 or > 13.5	mg/dL
Calcium, ionized	< 0.8 or > 1.55	mmol/L
Carbamazepine	> 15	mg/L
<i>Cooximetry</i>		
Carboxyhemoglobin	> 14.9	%
Methemoglobin	> 14.9	%

CONSTITUENT	CONVENTIONAL UNITS	
CO ₂ Total	< 15 or > 40	mmol/L
Digoxin	> 2.0	ug/L
Ethanol *	> 400	mg/dL
Fibrinogen	< 75	mg/dL
Gentamicin	> 12.0	mg/L
Glucose, CSF	< 30 or > 300	mg/dL
Glucose	< 50 or > 500	mg/dL
Glucose for neonates	< 50 or > 200	mg/dL
Hemoglobin	< 7 or > 20 (>30days) < 7 or > 21.5 (8-30 days) < 7 or > 22.5 (0-7 days)	g/dL
Lactate	>3.9	mmol/L
Lidocaine	>6.0	ug/mL
Lithium	> 2.0	mmol/L
Magnesium	< 1.0 or > 4.5	mg/dL
Osmolality	< 240 or > 320	mOsm/kg
Phenobarbital	> 50	mg/L
Phenytoin (Dilantin)	> 35	mg/L
Phosphorus	< 1	mg/dL
Platelets	< 25 or ≥ 1000	K/uL
Potassium	< 3.0 or > 6.0	mmol/L
PT	> 45.6	sec
PT INR	≥ 5.0	
PTT	≥ 69.0	sec
Salicylate	> 35	mg/dL
Sodium	< 125 or > 155	mmol/L
Theophylline	> 30	mg/L
Tobramycin	> 12	mg/L
Valproic Acid	> 150	mg/L
Vancomycin	> 80	mg/L
WBC**	< 1.5 OR > 100	K/uL

* As requested by the Emergency Department, critical ethanol results are not called.

** For each patient, only the first critical WBC every 30 days will be reported by telephone

For each patient unusual or potentially life-threatening microbiological findings will also be reported immediately by telephone, including positive cultures from blood, CSF, or other normally sterile body fluids. Blood Bank will call immediately whenever there are delays expected in release or unavailability of blood components, or in case a transfusion reaction work-up suggests a serious adverse effect such as hemolysis, sepsis or transfusion-related acute lung injury (TRALI). Laboratory staff who report results for critical tests or critical values verbally or by telephone will request "read-back" from the receiving party and will provide confirmation that the results were read-back accurately in accordance with Joint Commission's *National Patient Safety Goal on effectiveness in communication among care givers*.

EMERGENCY (STAT) TESTS

The tests listed below are available 24 hours a day on a priority basis, with minimum delay, after receipt in the Laboratory. Turnaround times (TAT) refer to the time interval between specimen receipt in the Laboratory to reporting of results in the electronic medical record.

Tests **in bold** have defined critical value limits and appear on the Critical Results/Values table (Appendix III). If these test results fall in the critical range, the results will be called to the ordering provider or patient care unit immediately.

EMERGENCY (STAT) TESTS	LABORATORY SECTION	PNEUMATIC TUBE STATION #	TAT
Acetaminophen (Tylenol)	Clinical Chemistry	21	1 hour
Acid Fast Stain - Direct on Sputum (do not send ETT)	Microbiology	23	ND*
Acute Stroke Coagulation Panel includes PT, aPTT	Hematology	21	30 mins
Albumin	Clinical Chemistry	21	ND*
Ammonia (on ice)	Clinical Chemistry	Do not tube	1 hour
B-type natriuretic peptide (BNP)	Clinical Chemistry	21	1 hour
β-hydroxybutyrate	Clinical Chemistry	21	1 hour
Bilirubin	Clinical Chemistry	21	1 hour
Blood Gas Analysis	Hematology	Do not tube	30 mins
Blood urea nitrogen (BUN)	Clinical Chemistry	21	1 hour
Calcium	Clinical Chemistry	21	1 hour
Calcium, ionized	Hematology	Do not tube	30 mins
Carbamazepine (Tegretol)	Clinical Chemistry	21	1 hour
Carbon Dioxide (Electrolytes)	Clinical Chemistry	21	1 hour
Cell count (CSF & body fluids with diff)	Hematology	Do not tube	ND*
Chloride (Electrolytes)	Clinical Chemistry	21	1 hour
Complete Blood Count (WBC, RBC, HGB, HCT, RBC indices & PLT)	Hematology	21	45 mins
Cooximetry	Hematology	Do not tube	ND*
Cortisol	Clinical Chemistry	21	1 hour
CoVid 19	Microbiology	Do not tube	ND*
Creatinine	Clinical Chemistry	21	1 hour
Crossmatch	Blood Bank	100	ND*

EMERGENCY (STAT) TESTS	LABORATORY SECTION	PNEUMATIC TUBE STATION #	TAT
Cryptococcal Antigen (CSF only)	Microbiology	Do not tube	ND*
Digoxin	Clinical Chemistry	21	1 hour
Dilantin (Phenytoin)	Clinical Chemistry	21	1 hour
Direct Antiglobulin (Coombs)	Blood Bank	100	ND*
Electrolytes Serum/Heparinized plasma	Clinical Chemistry	21	1 hour
Ethanol	Clinical Chemistry	21	1 hour
Ethylene glycol	Clinical Chemistry	21	ND*
Fibrinogen	Hematology	21	1 hour
Gentamicin	Clinical Chemistry	21	1 hour
Glucose, fasting or random (serum, plasma)	Clinical Chemistry	21	1 hour
Glucose, CSF	Clinical Chemistry	Do not tube	1 hour
Gram Stain	Microbiology	Do not tube	ND*
HCG (β -HCG)	Clinical Chemistry	21	1 hour
HIV-1/2 Ab/Ag Combo (for location 6C ONLY)	Microbiology	21	ND*
Influenza A and B RNA by PCR	Microbiology	23	ND*
Iron	Clinical Chemistry	21	1 hour
Lactate (on ice)	Clinical Chemistry	Do not tube	1 hour
Lithium	Clinical Chemistry	21	1 hour
Magnesium	Clinical Chemistry	21	1 hour
Malaria Smear	Microbiology	23	ND*
Metabolic Panel, Basic	Clinical Chemistry	21	1 hour
Methanol	Clinical Chemistry	21	ND*
Osmolality (serum, urine)	Clinical Chemistry	21	1 hour
Partial Thromboplastin Time, Activated (APTT)	Hematology	21	1 hour
Phenobarbital	Clinical Chemistry	21	1 hour
Phenytoin (Dilantin)	Clinical Chemistry	21	1 hour
Phosphorus	Clinical Chemistry	21	1 hour
Potassium (Electrolytes)	Clinical Chemistry	21	1 hour
Pregnancy test (urine)	Clinical Chemistry	Do not tube	ND*
Protein, CSF Screen	Clinical Chemistry	Do not tube	ND*
Prothrombin Time (PT)	Hematology	21	1 hour
Salicylate (Aspirin)	Clinical Chemistry	21	1 hour
Sodium (Electrolytes)	Clinical Chemistry	21	1 hour

EMERGENCY (STAT) TESTS	LABORATORY SECTION	PNEUMATIC TUBE STATION #	TAT
Strep Group A Antigen (Throat Swab)	Microbiology	23	1 hour
Theophylline	Clinical Chemistry	21	1 hour
Tobramycin	Clinical Chemistry	21	1 hour
Troponin	Clinical Chemistry	21	1 hour
Type and Screen	Blood Bank	100	45 mins
Uric Acid	Clinical Chemistry	21	1 hour
Urinalysis ED- Special urine vacutainer- OK to tube	Hematology	OK to tube, 21	1 hour
Urinalysis in UA Screw cap cup - Do not tube, leak hazard	Hematology	Do not tube	ND*
Valproic Acid	Clinical Chemistry	21	1 hour
Vancomycin	Clinical Chemistry	21	1 hour

* ND = Not Defined

Critical Tests

CRITICAL TEST	LABORATORY SECTION	TAT (RECEIPT – RESULT)	TAT (ORDER – RESULT)
Intraoperative Parathyroid Hormone (notify Lab one day prior to testing)	Clinical Chemistry	30 mins	45 mins
NOTE: DO NOT TUBE; these samples must be hand-delivered to the Laboratory, with verbal notification of their arrival to processing staff to ensure appropriate processing.			
Rapid Creatinine, whole blood (ED/CT/IR)	Clinical Chemistry	10 mins	25 mins
NOTE: DO NOT TUBE; these samples must be hand-delivered to the Laboratory, with verbal notification of their arrival to processing staff to ensure appropriate processing.			
TEG Trauma (ED/OR)	Hematology	30 mins (receipt to start of testing)	1 hour
NOTE: Deliver sample by pneumatic tube (Station 21) or immediately hand-deliver to the Laboratory and place in STAT tray.			