

STAT and Critical Tests

I. AVAILABILITY AND EXPECTED TURNAROUND TIMES (TAT)

Specified STAT services are available at all times. Any test not specifically listed in the following table requires prior approval by a Laboratory Medicine Resident for STAT analysis.

II. DEFINITIONS

STAT laboratory tests and services are those that are needed immediately in order to manage medical emergencies. STAT test requests are given the highest priority by the Clinical Laboratory for processing, analysis and reporting. If less urgent tests are also ordered STAT, a backlog may develop and each specimen will be processed in order of receipt, thereby delaying the reports for true emergencies.

A CRITICAL laboratory test is a test that is vital to patient management, requiring adherence to a defined rapid turnaround time from test ordering to results reporting. Results are reported to a responsible, licensed care giver.

A critical laboratory test is distinguished from a CRITICAL VALUE or CRITICAL RESULT, which is defined as a test result that exceeds reference limits to an extreme degree that may indicate a life-threatening condition. See below [Critical Values](#), for a complete list of defined critical values that trigger efforts to report immediately upon identification of a critical result.

III. PROCEDURE

Each test on the requisition and the biohazard bag containing the specimen must be marked "STAT." In unusually critical circumstances, it is best to hand deliver the specimen to the laboratory.

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 lifetime medical record (LCR). Double bag all sample sent through the tube system.

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

EMERGENCY (STAT) TESTS	LABORATORY	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 (ASCP) 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

EMERGENCY (STAT) TESTS	LABORATORY	PNEUMATIC TUBE STATION #	TAT
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
Creatinine	Clinical Chemistry	21	1 hour
Crossmatch	Blood Bank	100	ND
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

EMERGENCY (STAT) TESTS	LABORATORY	PNEUMATIC TUBE STATION #	TAT
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)	Hematology	Do not tube	ND
Protein, CSF Screen	Clinical Chemistry	Do not tube	ND
Prothrombin Time (PT)	Hematology	21	1 hour
RSV antigen	Microbiology	23	ND
Salicylate (Aspirin)	Clinical Chemistry	21	1 hour
Sodium (Electrolytes)	Clinical Chemistry	21	1 hour
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 Locations - Special urine vacutainer OK to tube	Hematology	OK to tube, 21	1 hour
Other locations - 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 TEST RESULTS / VALUES (APRIL 2017)

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		SI UNITS	
Acetaminophen	> 50	mg/L	> 331	mcmmol/L
Bilirubin, Total or Direct neonate < 30 days old	> 19.9	mg/dL	> 340	mmol/L
Blood Gases, Arterial				

CONSTITUENT	CONVENTIONAL UNITS		SI UNITS	
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		
Blood Gases, Infant, Capillary				
pH	< 7.20 or > 7.55			
PCO ₂	< 25 or >65	mm Hg		
Base Deficit	> 10	mmol/L		
Blood Gases, Cord, Venous and Arterial				
pH	< 7.0			
Base Deficit	> 10	mmol/L		
Calcium	< 6.5 or > 13.5	mg/dL	< 1.62 or > 3.37	mmol/L
Calcium, ionized	< 0.8 or > 1.55	mmol/L		
Carbamazepine	> 15	mg/L	>51	mcmol/L
Cooximetry				
Carboxyhemoglobin	> 14.9	%		
Methemoglobin	> 14.9	%		
CO ₂ Total	< 15 or > 40	mmol/L		
Digoxin	> 2.0	mcg/L	> 2.6	nmol/L
Ethanol *	> 400	mg/dL	> 87	nmol/L
Fibrinogen	< 75	mg/dL		
Gentamicin	> 12.0	mg/L	25.1	mcmol/L
Glucose, CSF	< 30 or > 300	mg/dL	< 1.65 or > 16.53	mmol/L
Glucose	< 50 or > 500	mg/dL	< 2.76 or > 27.55	mmol/L
Glucose for neonates	< 30 or > 170	mg/dL	< 1.65 or > 16.53	mmol/L
Hemoglobin	< 7 or > 20	g/dL	< 70	g/L
Lactate	>3.9	mmol/L		
Lithium	> 2.0	mmol/L		
Magnesium	< 1.0 or > 4.5	mg/dL	< 0.41 or > 1.85	mmol/L
Osmolality	< 240 or > 320	mOsm/kg		
Phenobarbital	> 50	mg/L	> 216	mcmol/L
Phenytoin (Dilantin)	> 35	mg/L	> 139	mcmol/L
Phosphorus	< 1	mg/dL	< 0.32	mmol/L
Platelets	< 25 or ≥ 1000	10 ³ /mcL	< 25 or ≥ 1000	x10 ⁹ /L
Potassium	< 3.0 or > 6.0	mmol/L		
PT	> 44	sec		
PTT	≥ 69	sec		
Salicylate	> 35	mg/dL	>2.53	mmol/L
Sodium	< 125 or > 155	mmol/L		
Theophylline	> 30	mg/L	> 167	mcmol/L
Tobramycin	> 12	mg/L	> 47.6	mcmol/L
Valproic Acid	> 150	mg/L	> 1040	mcmol/L
Vancomycin	> 80	mg/L	> 55	mcmol/L
WBC**	< 1.5	10 ³ /mcL	< 1.5	x10 ⁹ /L
	≥ 100	10 ³ /mcL	≥ 100	x10 ⁹ /L

* 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*.