

# YNHH Laboratory Manual

## Critical Results

A critical laboratory result is a test result that is significantly outside of “normal limits” (that is, the reference range) and that has significant medical implications for the patient that might require clinical action within a very short time span. Note that these critical results may differ depending on the clinical setting in which the patient is being cared for, the age or other demographic features.

These critical results are determined by the Medical Directors of the various laboratory sections in conjunction with YNHH Medical Staff. Due to the diverse nature of our laboratory sections each area is also required to have their own detailed policy for these results and how they are handled when generated.

Regardless of the laboratory section, all critical results are called to an appropriate health care provider and must be ‘read back’ by that provider to assure accurate transmission of information. If the lab person calling panic values cannot reach anyone or if the lab feels the person reached does not understand the significance of panic data, the clinical pathology resident will be contacted. It will then be the resident’s responsibility to pursue the doctor and discuss the results.

Test		Result	Call Frequency
<b>Blood Bank</b>			
1	Urgent need for transfusion	Compatible Blood not Available	Each occurrence
2	Transfusion reaction due to labeling error or involving hematuria; positive culture or gram stain on blood involved in a transfusion reaction	Labeling error, Hematuria, Positive culture/gram stain	Each occurrence
3	Stem cells	Positive Culture	Each occurrence
<b>Blood Gas</b>			
1	pH	<7.3 or > 7.55	Each occurrence
2	pO <sub>2</sub>	55 mm or less	Each occurrence
3	pCO <sub>2</sub>	50 mm or more	Each occurrence
<b>Chemistry</b>			
1	Ammonia	>99	Each occurrence
2a	Bilirubin, Total (Pediatric: ≤1 year)	≥ 10 mg/dL	Each occurrence
2b	Bilirubin, Total (Pediatric: >1 yr)	≥ 15 mg/dL	Each occurrence
3	Calcium	≤ 6.5 mg/dL	Each occurrence
		≥ 13.0 mg/dL	Each occurrence
4	CO <sub>2</sub> , Total	≤ 12 mmol/L	Each occurrence
		≥ 45 mmol/L	Each occurrence
5	Cortisol	≤ 3mg/dL	Each occurrence
6	Creatinine	≥5.0 mg/dL	Outpatient first time only
7	Glucose	≤ 50 mg/dL	Each occurrence
		≥ 450 mg/dL	Each occurrence

## YNHH Laboratory Manual

### Critical Results

Test		Result	Call Frequency
8	Ionized Calcium	< 3.0 mg/dL	Each occurrence
		> 6.5 mg/dL	Each occurrence
9	Iron (Pediatrics)	≥ 180 mg/dL	Each occurrence
	Iron (Adults)	≥ 300 mg/dL	Each occurrence
10	Magnesium	≤ 1.0 mg/dL	Each occurrence
		≥ 5.0 mg/dL	Each occurrence
11	Phosphate	< 1.2 mg/dL	Each occurrence
12	Potassium	≤ 2.8 mmol/L	Each occurrence
		≥ 6.0 mmol/L	Each occurrence
13	Sodium	≤ 120 mmol/L	Each occurrence
		≥ 160 mmol/L	Each occurrence

#### Toxicology/Therapeutic Drug Monitoring Critical Values

1	Acetaminophen	≥ 30 ug/mL	Each occurrence
2	Acetone	≥ 100 mg/dL	Each occurrence
3	Amikacin	≥ 36 ug/mL (peak)	Each occurrence
4	Amikacin	≥ 8 ug/mL (trough)	Each occurrence
6	Caffeine	≥ 30 ug/mL	Each occurrence
7	Carbamazepine	≥ 15 ug/mL	Each occurrence
8	Carboxyhemoglobin	≥ 25%	Each occurrence
9	Cyclosporine	≥ 1500 ng/mL	Each occurrence
10	Digoxin	≥ 3 ng/mL	Each occurrence
11	Ethanol, Adult	≥ 400 mg/dL	Each occurrence
12	Ethanol, Pediatric	All positives	Each occurrence
13	Ethylene Glycol	All first time positive values	Each occurrence
14	FFN	All results	Each occurrence
15	Gentamicin	≥ 15 ug/mL (peak)	Each occurrence
16	Gentamicin	≥ 3 ug/mL (trough)	Each occurrence
17	Isopropanol	≥ 50 mg/dL	Each occurrence
18	Lead	≥ 20 mg/dL	Each occurrence
19	Lidocaine	≥ 8 ug/mL	Each occurrence
20	Lithium	≥ 2 mEq/L	Each occurrence
21	Methanol	≥ 10 mg/dL	Each occurrence
22	Methemoglobin	≥ 25%	Each occurrence
23	Methylmalonic Acid	≥ 10 umol/L	Each occurrence

# YNHH Laboratory Manual

## Critical Results

Test		Result	Call Frequency
26	Phenobarbital	≥ 45 ug/mL	Each occurrence
27	Phenytoin	≥ 30 ug/mL	Each occurrence
28	Phenytoin, Free	≥ 3.0 ug/mL	Each occurrence
30	Propylene Glycol	≥ 100 mg/dL	Each occurrence
31	Quinidine	≥ 8 ug/mL	Each occurrence
32	Salicylate	≥ 30 mg/dL	Each occurrence
33	Sirolimus (Rapamycin)	≥ 25 ng/mL	Each occurrence
34	Tacrolimus	≥ 25 ng/mL	Each occurrence
35	Theophylline	≥ 30 ug/mL	Each occurrence
37	Tobramycin	≥ 15 ug/mL (peak)	Each occurrence
38	Tobramycin	≥ 3 ug/mL (trough)	Each occurrence
39	Tricyclic Screen	≥ 300 ng/mL	Each occurrence
40	Valproic Acid	≥ 200 ug/mL	Each occurrence
41	Vancomycin	≥ 60 ug/mL (peak)	Each occurrence
42	Vancomycin	≥ 20 ug/mL (trough)	Each occurrence
43	Voriconazole	> 6.0 ug/ml	Each occurrence
44	Oxcarbazepine	>40 ug/ml	Each occurrence
<b>Hematology</b>			
1	White Blood Count (WBC)	< 1.0 or > 50.0 x10 <sup>3</sup> /uL	First occurrence, then after 5 days
1a	WBC ( <b>Smilow</b> )	<0.7 or > 50.0 x10 <sup>3</sup> /uL	First occurrence, then after 5 days
2	Hemoglobin (Hgb)	< 6.5 gm/dL	First occurrence, then after 5 days
3	Hematocrit (Hct)	< 20.0 % or > 60.0 %	First occurrence, then after 5 days
3a	Hematocrit (Hct) in newborn <7 days old	> 70.0%	First occurrence, then after 5 days
4	Platelets (Plts)	< 50 or > 1,000 x10 <sup>3</sup> /uL	First occurrence, then after 5 days
4a	Platelets (Plts) ( <b>Smilow</b> )	<10 or > 1,000.0 x10 <sup>3</sup> /uL	First occurrence, then after 5 days
5	Absolute Neutrophil Count (ANC) (ED)	≤500/uL	Each occurrence
6	<b>Manual differential containing any of the following:</b>		
	a. Blasts	Any	First occurrence, then after 7 days
	b. Bands	> 40.0%	First occurrence, then after 7 days
	c. Parasites (malaria,ehrlichia,anaplasma,babesia, etc)	Any	Each occurrence
	d. Bacteria, Yeast, Fungi	Any	Each occurrence
7	Glucose-6-Phosphate Dehydrogenase (G6PD)	≤ 2.0 IU/gm Hb	Each occurrence
8	<b>Sterile Body Fluid containing:</b>		
	a. Bacteria, Yeast, Fungi	Any	Each occurrence

# YNHH Laboratory Manual

## Critical Results

Test		Result	Call Frequency
	b. Malignant Cells / Blasts	Any	Each occurrence
9	<b>Ascites, Peritoneal and Dialysate fluids only</b>		
	a. Absolute Neutrophil Count (ANC)	≥ 250/uL	Each occurrence
10	Partial Thromboplastin Time (PTT)	>120 secs	Each occurrence
11	International Normalized Ratio (INR)	>5.00	Each occurrence
12	Fibrinogen	<100 mg/dL	Each occurrence
13	<b>Urines: Ketonuria and Glycosuria</b>		
	<b>Concurrently:</b>		
	a. Ketones	Moderate (40 mg/dL) to	Each occurrence
	b. Glucose	3+ (≥ 1000 mg/dL)	Each occurrence
<b>Microbiology</b>			
1	Blood Cultures	Positive Gram Stain	Each occurrence
2	Priority Specimens	Positive Gram Stain or Culture	Each occurrence
3	Body Fluid Specimens	Positive Gram Stain or Culture	Each occurrence
4	Requested Rapid Tests (Strep Gp A)	Positive Result	Each occurrence
5	Growth of Gp A Strep (Pediatrics) <18 yrs old	Positive Growth	Each occurrence
6	Cryptococcal Ag/ India Ink	Positive Result	Each occurrence
7	Hyphae identified in Sinus Smears	Positive Finding	Each occurrence
8	Shiga Toxin- children <10 yrs old only	Positive Finding	Each occurrence
9	AFB Smears	Positive Finding	Each occurrence
10	Growth of M.tuberculosis/Gene Expert	Positive Finding	Each occurrence
11	Suspected Agents of Bioterrorism	Any Positive or Suspected	Each occurrence
12	MRSA/VRE Screens from NBSCU	Positive Growth	Each occurrence
<b>Virology</b>			
1	HSV test	Positive CSF or Brain Biopsy	Each occurrence
2	HSV test <2 months old	Positive Findings	Each occurrence

Updated: Apr 2018