

Critical Values

Critical values are defined as any result which has been determined to be medically significant and potentially life-threatening unless prompt and correct action is taken.

Critical values policies and procedures are required by many licensing and accrediting organizations including the College of American Pathologists (CAP) which is the accrediting agency for the Clinical Laboratories at UnityPoint – Health Des Moines.

At UnityPoint Health – Des Moines the Process for the approval, change, and/or removal of a Critical Value is as follows:

Providers should request the addition, change, and/or removal of a critical value to the Laboratory Medical Director, Dr. Larry Anderson

- The Medical Director will research best practice for validity of the request
- The Medical Director and/or Executive Director of the Laboratory will then present the request to the following:
 - Adult populations: The UnityPoint Health – Des Moines Continuous Quality Improvement team (CQI) will review and approve critical values for adult populations. This team is composed of a cross section of providers from different services lines as well as nursing staff, pharmacy, and the Laboratory Medical Director. Approval will be in the meeting notes of that committee.
 - Pediatric and Newborn populations: The Pediatric Quality Team will review and approve all changes for pediatric patients to the test list that qualify for critical values. Approval will be in the meeting notes of that committee.

Once a request is approved, the policy – LabD.UPHDM.GEN.006: Laboratory Critical Values is updated to reflect current laboratory practice along with laboratory staff training and laboratory computer system updates to alert staff to a critical value that requires notification.

Laboratory Critical Values as of March 01, 2018

Test	Units	Age D = Days, W = Weeks M = Month, Y = Years	Critical Values	
			Low	High
Chemistry				
Bicarbonate	mmol/L	0-13 Y	< 10	>35
	mmol/L	>13 Y	<10	>40
Bilirubin Total	mg/dL	< 1 D	n/a	> 5.0
	mg/dL	1-2 D	n/a	> 10.0
	mg/dL	3-30 D	n/a	>15.0
Calcium	mg/dL	0-30 D	<7.0	>11.0
Glucose	mg/dL	0-1 D	< 45	>200
	mg/dL	2 - 30 D	< 60	>200
	mg/dL	> 30 D	<55	> 450
Lactic Acid**	mmo/L	All Ages	n/a	>4.0
Phosphorus	mg/dL	0-30 D	< 3.0	n/a
	mg/dL	>30 D	<1.0	n/a



Critical Values

Test	Units	Age D = Days, W = Weeks M = Month, Y = Years	Critical Values	
			Low	High
Chemistry				
Potassium	mmol/L	0-6 M	<2.5	>7.0
	mmol/L	>6 M	<2.5	>6.0
Sodium	mmol/L	0-1 D	<125	>155
	mmol/L	> 1 D	<120	>160
Troponin **	ng/mL	All Ages	n/a	>/= 0.100
Coagulation				
aPTT	Sec	All Ages	n/a	>150
INR		All Ages	n/a	> 5.0
Drug Monitoring				
Carbamazepine	mcg/mL	All Ages	n/a	>20
Digoxin	ng/mL	All Ages	n/a	> 2.5
Gentamicin, Trough	mcg/mL	0-18 Y	n/a	>2
Lithium	mmol/L	All Ages	n/a	>2.0
Phenytoin	mcg/mL	All Ages	n/a	>30
Salicylate	mg/dL	All Ages	n/a	>30
Theophylline	mcg/mL	All Ages	n/a	>25
Tobramycin, Trough	mcg/mL	0-18 Y	n/a	>2.0
Vancomycin, Trough	mcg/mL	0-18 Y	n/a	>20
Hematology				
Hematocrit	%	0-30 D	<24	>64
Hematocrit **	%	31 D to 18 Y	</= 21.0	n/a
Hemoglobin	g/dL	0-7 D	<11.0	>22.0
	g/dL	8-30 D	< 8.0	> 22.0
Hemoglobin**	g/dL	31 D to 18 Y	≤ 7.0	n/a
	g/dL	> 18 Y	< 6.0	n/a
Platelet Count	10 ³ /μl	<3 W	< 20	>1000
	10 ³ /μl	> 3 W to < 18 Y	< 20	>1000
Platelet Count **	10 ³ /μl	> 18 Y	< 20	n/a
WBC	10 ³ /μl	<3 W	<5.0	>30.0
WBC **	10 ³ /μl	<18 Y	n/a	>30.0
Microbiology				
Test	Units	Age D = Days, W = Weeks M = Month, Y = Years	Critical Values	
			Low	High
Blood Cultures	n/a	All Ages	n/a	All Positives
CSF Culture/Gram Stain	n/a	All Ages	n/a	All Positives
Sterile Body Fluid Culture/Gram Stain	n/a	All Ages	n/a	All Positives