

News

Clinical Laboratory

System-Wide Laboratory Critical Value Standardization

To promote system-wide standardization, the UCHealth Medical Executive Committee approved a standardized set of laboratory values defined as “critical” for pediatric and adult patients. While implementation will be consistent across all sites, the impact will vary depending on each site’s existing baseline and may include the addition of new critical values, adjustment of thresholds, or removal of critical values for certain assays.

CRITICAL VALUE CHANGES EFFECTIVE 2/17/2026

Department	Test	Age Range	Critical Value	
			Low	High
Chemistry	Ammonia	<18 years	none	>108 umol/L
	Bilirubin, Total Outpatient Only	36-48 hours	none	>14.6 mg/dL
		49-72 hours	none	>16.0 mg/dL
		73 hours-30 days	none	>18.0 mg/dL
	Calcium, Ionized (Whole Blood: Arterial and Venous)	< 18 years	<1.00 mmol/L	>1.60 mmol/L
		≥ 18 years	≤0.75 mmol/L	≥1.66 mmol/L
	CK (CPK)	< 18 years	none	>10,000 IU/L
	CK-MB	< 18 years	none	>3.6 index
	CO2 (Serum/Plasma)	< 18 years	<8 mmol/L	none
		≥ 18 years	≤9 mmol/L	≥40 mmol/L
	Lactate	All Ages	none	≥4.0 mmol/L
	Magnesium	All Ages	≤1.2 mg/dL	≥6.0 mg/dL
	Phosphorus	All Ages	≤1.0 mg/dL	none

CRITICAL VALUE CHANGES EFFECTIVE 2/17/2026

Department	Test	Age Range	Critical Value	
			Low	High
Toxicology & Therapeutic Drugs	Acetaminophen	All Ages	none	>30 ug/mL
	Alcohol (Ethanol)	< 18 years	none	>10 mg/dL
		≥18 years	none	≥400 mg/dL
	Carbamazepine	All Ages	none	>15 ug/mL
	Digoxin	All Ages	none	≥3.0 ng/mL
	Gentamicin (Peak/Random)	All Ages	none	>12 ug/mL
	Gentamicin (Trough)	All Ages	none	>2 ug/mL
	Lithium	< 18 years	none	>2.0 mmol/L
		≥18 years	none	>1.5 mmol/L
	Phenytoin (Dilantin)	All Ages	none	≥30 ug/mL
	Salicylate	< 18 years	none	>30 mg/dL
		≥18 years	none	≥40 mg/dL
	Valproic Acid	< 18 years	none	>175 ug/mL
		≥18 years	none	≥150 ug/mL
	Vancomycin (Peak/Random)	< 18 years	<5 ug/mL	>45 ug/mL
		≥18 years	none	≥80 ug/mL
	Vancomycin (Trough)	< 18 years	none	>20 ug/mL
		≥18 years	none	≥35 ug/mL

Department	Test	Age Range	Critical Value	Critical Value
			Low	High
Coagulation	Fibrinogen	All Ages	<100 mg/dL	none

Department	Test	Age Range	Critical Value	Critical Value
			Low	High
Hematology	Malaria Screen	All Ages	none	Positive
	White Blood Cell (WBC) Count, CSF	< 18 years	none	>10 cells/uL

CRITICAL VALUE CHANGES EFFECTIVE 2/17/2026

Department	Test	Age Range	Critical Value	
			Low	High
Blood Gases	Arterial Blood Gas			
	Methemoglobin	All Ages	none	≥3.0 %
	Carboxyhemoglobin (CO)	All Ages	none	>12%
	Bicarbonate (HCO3)	<18 years	<8 mmol/L	none
		≥18 years	≤12 mmol/L	≥40 mmol/L
	tCO ₂	<18 years	<9 mmol/L	none
		≥18 years	≤12 mmol/L	≥40 mmol/L
	pO2	All Ages	<40 mmHg	none
	Venous Blood Gas			
	Methemoglobin	All Ages	none	≥3.0 %
	Base Excess (BE)	All Ages	<-10 mmol/L	none
	Carboxyhemoglobin (CO)	All Ages	none	>12%
	pH	<18 years	<7.0	none
	Capillary Blood Gas			
	Methemoglobin	All Ages	none	≥3.0 %
	Carboxyhemoglobin (CO)	All Ages	none	>12%
	Bicarbonate (HCO3)	<18 years	<8 mmol/L	none
	tCO ₂	<18 years	<9 mmol/L	none
	pH	<18 years	<7.0	none
	Cord Blood Gas			
	pH	All Ages	<7.0	none
	Base Excess (BE)	All Ages	<-10	none

CRITICAL VALUE CHANGES EFFECTIVE 2/17/2026

Assays that no longer have critical values at any sites:

Department	Test
Chemistry	Troponin
	Thyroxin (T4)
	Triglycerides
	Glucose, CSF
	Protein, CSF
	Treponemal Antibody (Syphilis)
	Osmolality, Serum
Coagulation	D-dimer
	Low Molecular Weight Heparin (LMWH)
	Factor VIII
Hematology	Absolute Neutrophil Count (ANC)
	Peripheral Smear, Parasite
	Blast% (≥18 years)
	CSF/Body Fluid Cell Counts, except WBC, CSF >10 cells/uL (<18 years)
Blood Gases	Base Excess (BE), Arterial
	Base Excess (BE), Capillary
	pO2, Capillary

NOTE: These were generally rare exceptions at individual sites

The Joint Commission requires clinical caregivers to be notified of critical values and that notification to be documented in the patient chart. In the case of POCT, if the clinical caregiver is the testing operator, there still needs to be documentation that action was taken in response to the critical value(s). Please visit <https://www.testmenu.com/universityhospital> or scan QR code for a Tip Sheet on the documentation process.



For any questions, please contact Gregory Bocsi, DO at 303-848-7050.