
	Critical Laboratory Values	Department:	Pathology
		Effective Date:	June 4, 2019
		Revised Date:	Oct. 14, 2019
		Contact:	Laboratory Compliance, QA and Safety
Name & Title: Gregory Pomper, MD, Laboratory Director, Department of Pathology			
Signature: 		Date Approved: 10/15/19	

1) General Policy Statement:

It is the policy of the Wake Forest Baptist Health to define the critical values and critical results that are appropriate for the patient population served. The critical values have been developed by the laboratory in consultation with relevant clinical teams and are defined for each laboratory in the Wake Forest Baptist Health Online Test Directory.

- a) **Scope:** All WFBH Department of Pathology employees, faculty and staff are responsible for complying with this policy.
- b) **Responsible Department/Party/Parties:**
 - i. Policy Owner: Department of Pathology
 - ii. Procedure: Laboratory Compliance, QA and Safety
 - iii. Supervision: Department of Pathology Section Managers
 - iv. Implementation: Department of Pathology

2) Definitions: For purposes of this procedure, the following terms and definitions apply:

- a) **WFBH:** Wake Forest Baptist Health and all affiliated organizations including, WFBMC and all on-site subsidiaries as well as those off-site governed by WFBH policies and procedures.
- b) **Policy:** As defined in the Policy on Creating and Amending Policy, a statement of principle that is developed for the purpose of guiding decisions and activities related to governance, administration, or management of care, treatment, services or other activities of WFBH. A policy may help to ensure compliance with applicable laws and regulations, promote one or more of the missions of WFBH, contain guidelines for governance, and set parameters within which faculty, staff, students, visitors and others are expected to operate.
- c) **Critical Value:** A value at such variance with normal as to represent a pathophysiologic state that may be life-threatening unless some action is taken in a very short time for which an appropriate action is possible.
- d) **Online Test Directory:** The information here includes a directory of organizational listings, services provided and helpful tables. The Online Test Directory outlines the policies and services of the laboratories. This online version includes a directory with organizational listings for all divisions of the anatomic and clinical departments, with key locations, personnel, and phone numbers and a complete test list. There is also a listing of helpful tables covering items such as Reference Ranges, Critical Laboratory Values, order of draw, tube types and other useful information.

3) Policy Guidelines:

a) Critical Value List Update Procedure

1. The WFBMC CLIA Laboratory Director and the Laboratory Compliance, QA and Safety will oversee changes to the list of Critical Laboratory Values. Changes may originate from a variety of sources including but not limited to request from clinical providers.
2. The CLIA Laboratory Director will approve all critical value requests and will communicate the approval to the testing laboratory and the Laboratory Compliance, QA and Safety.
3. The testing laboratory will be responsible for the processes involved in the change including but not limited to open an IT ticket, perform IT testing activities, update laboratory procedures and communicate the change system-wide through the SBAR notification process.
4. The Lab Compliance, QA and Safety will update the Critical Values List in this document and will work with the IT Pathology Research Team to update the Critical Values List on the Online Test Directory (Pathology Handbook).
5. Biannually, the Lab Compliance, QA and Safety will email the list of Critical Laboratory Values to the Section Managers for review. If a change is identified, steps (3) and (4) above apply.

b) List of Critical Laboratory Values

The Critical Values for each hospital and affiliate laboratories are listed in this document and are published in the Online Test Directory (Pathology Handbook). The link to the Online Test Directory is <http://pathoweb01pv:8080/labhandbook/index.html>.

Note: Exceptions to the Critical Values listed in this document are indicated below. These only apply to the following Hematology-Oncology Ambulatory Clinics and are defined in Policy: [Critical Results of Tests and Diagnostic Procedures](#) under Number 3, Section J: Policy Guideline.

1. Hematology Oncology – Elkin
2. Hematology Oncology – Mt. Airy
3. Hematology Oncology – Statesville

Values that are excluded as below will not be entered on the Provider Notification Flowsheet and will not be called to a provider.

- ANC ≤ 500 ($\leq 0.5 \times 10^3/\mu\text{L}$) if most recent ANC ≤ 500 ($\leq 0.5 \times 10^3/\mu\text{L}$)
- Platelets $\leq 30,000$ ($\leq 30 \times 10^3/\mu\text{L}$) if most recent platelet count $\leq 30,000$ ($\leq 30 \times 10^3/\mu\text{L}$)
- Platelet count $\leq 20,000$ ($\leq 20 \times 10^3/\mu\text{L}$) in a patient with a Platelet Transfusion Plan in the electronic medical record.

4) Review/Revision/Implementation:

- a) **Review Cycle:** The policy itself shall be reviewed every two years. The critical values shall be reviewed by the Laboratory Director annually.
- b) **Office of Record:** Laboratory Compliance, QA and Safety.

5) **Related Policies:**

- Calling Critical and/or Corrected Values*
- Critical Results of Tests and Diagnostic Procedures*
- Communication of Significant or Unexpected Findings*
- Online Directory Additions and Modifications Policy*

6) **Governing Law or Regulations:**

- a) COM.30000, COM.30100 and GEN.41316. CAP Accreditation Program, All Common and Laboratory General Checklist, 08.22.2018.
- b) National Patient Safety Goals - NPSG.02.03.01. The Joint Commission E-dition, January 1, 2019.
- c) 493.1291(g) - Standard: Test Report. Clinical Laboratory Improvement Act of 1988 (CLIA), Rev. 166, 02-03-17.

7) **Attachments:**

List of Critical Laboratory Values

8) **Revision:**

Review/ Revision Date	Revision	Signature
June 3, 2019	<p>1/5/2019: Chemistry: Added Troponin I critical value of >0.040 ng/ml (Adult & Pediatric) for ED only. Notification of implementation to Core Lab via email on 1/24/2019.</p> <p>1/7/2019: (a) Point of Care: Added NOVA Glucose Meter critical value of <50 or >400 for Adult & Pediatric and <50 or >200 for Neonate by POC Department. (b) Removed Anatomic Pathology section and transferred to SOP: <i>Communication of Significant or Unexpected Findings</i> by Lab Compliance, QA and Safety.</p> <p>3/7/2019: Retired "CriticalValuesAllcampuses092916updated010719" excel file.</p> <p>WFBMC:</p> <p>(c) Chemistry: Section/Formatting changes. Moved Serum Osmolality from Hematology to Chemistry. (d) Coagulation: Deleted Derived Fibrinogen. Added Not Calculated to Fibrinogen. Email dated 02/19/2019 from Hematology Manager. (e) Critical Care Blood Gas: Added to Critical Value list. Reviewed by Critical Care Department Manager email dated 3/8/2019. (f) Hematology: Removed Peripheral Smear from list and moved to <i>Communication of Significant or Unexpected Findings Policy</i>. CLIA Laboratory Director and Hematology Manager on 2/20/2019. (g) Microbiology: Added Meningitis-Encephalitis Panel (ME Panel). Added Rapid Malaria Antigen. Removed Blood Culture (ANA). Email dated 02/22/2019 and 3/18/2019 from Microbiology Manager. (h) Serology: Updated CMV-PCR (Quantitative) critical to First+ at >1000 IU/ml. Deleted Rocky Mountain Spotted Fever. Streamlined HSV 1 and 2 PCR and separated critical value by age group and sample site. Email dated 02/22/2019 from Microbiology Manager. (i) Urinalysis: Section/Formatting changes. Created Urinalysis Section and moved Urine Ketones from Hematology to Urinalysis. (j) Point of Care: Changed i-STAT Glucose from <40 to <50 on the low end for all age group. Added PCV to i-Stat Hematocrit. Deleted duplicate listing for pCO2 and pH. Email dated 02/28/2019 from POC.</p>	MB 06/12/2019

	<p>Davie Medical Center: (a) Coagulation: Added Heparin PTT critical value of ≥ 120.0 seconds. Email from DMC Laboratory Manager dated 03/07/2019. (b) Urinalysis: Section/Formatting changes. Created Urinalysis Section and moved Urine Ketones from Hematology to Urinalysis.</p> <p>May 30, 2019: Lexington Medical Center Email dated 03/14/2019 from LMC Laboratory Manager. (a) Chemistry: Updated Acetaminophen from ≥ 40 to $\geq 20 \mu\text{g/ml}$, Total Bilirubin from ≥ 16.0 to $\geq 18.0 \text{ mg/dl}$, Calcium from ≥ 12.0 to $\geq 13.0 \text{ mg/dl}$, Valproic Acid from ≥ 120 to $\geq 150 \mu\text{g/ml}$ and Vancomycin Trough from ≥ 40.0 to $\geq 25.0 \mu\text{g/ml}$. Added Phosphorous, Salicylate, Lithium critical value. Added critical high for Magnesium. Deleted BUN, Total Carbamazepine, Creatinine. Creatinine for CRCL, Phenobarbital and Theophylline. (b) Hematology: Added Fibrinogen critical value of 100 mg/dl. Updated Hemoglobin – Age $\leq 1\text{M}$ from 8.0% to 7.0% and Hematocrit from $\leq 24.0\%$ to $\leq 21.0\%$. (c) Added critical values for Critical Care Blood Gas.</p> <p>June 3, 2019: Added Critical Laboratory Values for Cornerstone Westchester Lab and Cornerstone Lab West.</p>	
<p>October 14, 2019</p>	<p>Added Critical Laboratory Values Medical Plaza - Clemmons. Added Critical Laboratory Values High Point Medical Center.</p> <p>Lexington Medical Center: Corrected Phosphorous critical value typo error. Removed Culture Body Fluid/CSF due to test being performed in WFBMC. Added Not Calculated to INR.</p> <p>Added a NOTE under Number 3, Section B: Policy Guideline and listed the exceptions to the critical value in this document for Elkin, Mt. Airy and Statesville Hematology-Oncology Clinic.</p> <p>Indicated and listed the exceptions for Neutrophil Absolute Count, Seg Neutrophil Absolute Count and Platelet Count after each table for each site.</p>	<p><i>MP Morgan</i> 10/15/2019</p>

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Critical Laboratory Values Wake Forest Baptist Medical Center

REVISION: 03/2019

Test	Low	High	Comments
Chemistry (Core Lab)			
Acetaminophen		>20 µg/mL	
Amikacin Peak		>30.0 µg/mL	for outpatients
Amikacin Trough		>10.0 µg/mL	for outpatients
Bilirubin Total - Age <1M		>18.0 mg/dL	
Calcium	<6.0 mg/dL	>13.0 mg/dL	
Carbamazepine Total		>20.0 µg/mL	
CO2 Total	<10 mmol/L	>40 mmol/L	
Digoxin		>2.0 ng/mL	
Gentamicin Peak		>10.0 µg/mL	for outpatients
Gentamicin Trough		>2.5 µg/mL	for outpatients
Glucose - Age ≥18Y	<50 mg/dL	>600 mg/dL	
Glucose - Age 7D-18Y	<50 mg/dL	>300 mg/dL	
Glucose - Age 0D-7D	<45 mg/dL	>300 mg/dL	
Lactic Acid		>4.0 mmol/L	
Lithium		>2.0 mmol/L	
Magnesium	<1.0 mg/dL	>6.0 mg/dL	
Osmolality, Serum	<246 mOsm/kg	>334 mOsm/kg	
Phenobarbital		>40.0 µg/mL	
Phenytoin/Dilantin - Age ≥18Y		>30.0 µg/mL	
Phenytoin/Dilantin - Age 0D-18Y		>20.0 µg/mL	
Phosphorus	<1.0 mg/dL	>12.0 mg/dL	
Posaconazole, LC, Tandem Mass Spec		≥4.00 µg/mL	
Potassium - Age ≥1Y	<3.0 mmol/L	>6.0 mmol/L	
Potassium - Age 3M-1Y	<3.0 mmol/L	>6.5 mmol/L	
Potassium - Age 1M-3M	<3.0 mmol/L	>7.5 mmol/L	
Potassium - Age 7D-1M	<3.0 mmol/L	>7.0 mmol/L	
Potassium - Age 0D-7D	<3.0 mmol/L	>6.2 mmol/L	
Salicylate		≥30.0 mg/dL	
Sodium	<120 mmol/L	>160 mmol/L	
Theophylline		>30.0 µg/mL	
Tobramycin Peak		>10.0 µg/mL	for outpatients
Tobramycin Trough		>2.5 µg/mL	for outpatients
Troponin I		>0.040 ng/ml	ED only (Adult and Pediatric)
Valproic Acid - Age ≥18Y		>150 µg/mL	
Valproic Acid - Age 0D-18Y		>120 µg/mL	
Vancomycin Trough		>25.0 µg/mL	
Voriconazole, LC, Tandem Mass Spec		≥5.6 µg/mL	

Test	Low	High	Comments
Coagulation (Hematology)			
Fibrinogen	<=100 or Not Calculated mg/dL		
PTT		>=120.0 seconds	
Heparin PTT	<40.0 seconds	>120.0 seconds	
INR		>=5.00 or Not Calculated	
Critical Care Blood Gas			
Ionized Calcium	<0.75 mmol/L	>1.40 mmol/L	
PCO2, Arterial	<25.0 mmHg	>60.0 mmHg	
PCO2, Venous	<25.0 mmHg	>60.0 mmHg	
pH, Arterial	<7.200	>7.600	
pH, Venous	<7.200	>7.600	
PO2, Arterial	<50.0 mmHg		
Temperature Corrected pH, Arterial	<7.200	>7.600	
Temperature Corrected pH, Venous	<7.200	>7.600	
Total Hemoglobin Whole Blood - Age >=1M	<=6.0 g/dL	>=20.0 g/dL	
Total Hemoglobin Whole Blood - Age 14D-1M	<=6.0 g/dL	>20.5 g/dL	
Total Hemoglobin Whole Blood - Age 7D-14D	<=6.0 g/dL	>21.5 g/dL	
Total Hemoglobin Whole Blood - Age 1D-7D	<=6.0 g/dL	>22.5 g/dL	
Total Hemoglobin Whole Blood - Age 0D-1D	<=6.0 g/dL	>=20.0 g/dL	
Total Hemoglobin, Arterial - Age >=1M	<=6.0 g/dL	>=20.0 g/dL	
Total Hemoglobin, Arterial - Age 14D up to 1M	<=6.0 g/dL	>=20.5 g/dL	
Total Hemoglobin, Arterial - Age 7D up to 14D	<=6.0 g/dL	>=21.5 g/dL	
Total Hemoglobin, Arterial - Age 1D up to 7D	<=6.0 g/dL	>=22.5 g/dL	
Total Hemoglobin, Arterial - Age 0D up to 1D	<=6.0 g/dL	>=20.0 g/dL	
Total Hemoglobin, Venous - Age >=1M	<=6.0 g/dL	>=20.0 g/dL	
Total Hemoglobin, Venous - Age 14D up to 1M	<=6.0 g/dL	>=20.5 g/dL	
Total Hemoglobin, Venous - Age 7D up to 14D	<=6.0 g/dL	>=21.5 g/dL	
Total Hemoglobin, Venous - Age 1D up to 7D	<=6.0 g/dL	>=22.5 g/dL	
Total Hemoglobin, Venous - Age 0D up to 1D	<=6.0 g/dL	>=20.0 g/dL	
TPCO2, Arterial	<25.0 mmHg	>60.0 mmHg	
TPCO2, Venous	<25.0 mmHg	>60.0 mmHg	
TPO2, Arterial	<50.0 mmHg		
Wh Bld Glucose - Age >=18Y	<50 mg/dL	>600 mg/dL	
Wh Bld Glucose - Age 7D-18Y	<50 mg/dL	>300 mg/dL	
Wh Bld Glucose - Age 0D-7D	<45 mg/dL	>300 mg/dL	
Whole Blood Potassium - Age >=1Y	<3.0 mmol/L	>6.0 mmol/L	
Whole Blood Potassium - Age 3M-1Y	<3.0 mmol/L	>6.5 mmol/L	
Whole Blood Potassium - Age 1M-3M	<3.0 mmol/L	>7.5 mmol/L	
Whole Blood Potassium - Age 7D-1M	<3.0 mmol/L	>7.0 mmol/L	
Whole Blood Potassium - Age 0D-7D	<3.0 mmol/L	>6.2 mmol/L	
Whole Blood Sodium	<120 mmol/L	>160 mmol/L	

Test	Low	High	Comments
Hematology (Core Lab)			
Hematocrit - Age >=1M	<=18.0 %	>=60.0 %	
Hematocrit - Age 14D-1M	<=18.0 %	>63.0 %	
Hematocrit - Age 7D-14D	<=18.0 %	>66.0 %	
Hematocrit - Age 1D-7D	<=18.0 %	>67.0 %	
Hematocrit - Age 0D-1D	<=18.0 %	>=60.0 %	
Hemoglobin - Age >=1M	<=6.0 g/dL	>=20.0 g/dL	
Hemoglobin - Age 14D-1M	<=6.0 g/dL	>20.5 g/dL	
Hemoglobin - Age 7D-14D	<=6.0 g/dL	>21.5 g/dL	
Hemoglobin - Age 1D-7D	<=6.0 g/dL	>22.5 g/dL	
Hemoglobin - Age 0D-1D	<=6.0 g/dL	>=20.0 g/dL	
Neutrophil Absolute Count	<=0.5 x 10 ³ /μL		on admission or outpatient ¹ see exception below
Seg Neutrophil Absolute Count	<=0.5 x 10 ³ /μL		on admission or outpatient ² see exception below
Platelet Count	<30 x 10 ³ /μL	>1000 x 10 ³ /μL	on admission or outpatient ³ see exception below
White Blood Count		>=50.0 x 10 ³ /μL	on admission or outpatient
Microbiology			
Culture, AFB	First +	First +	
Culture, Blood	+	+	
Culture, Body Fluid/CSF	+	+	
Malaria Smear	First +	First +	
Rapid Malaria Antigen	First +	First +	
Pneumocystis Direct (aka PNDFA)	First +	First +	
Serology			
Adenovirus Qualitative PCR	+	+	
B. Pertussis/Parapertussis PCR	First +	First +	
BK Virus, DNA, Quantitative PCR (Blood)	First +	First +	
CMV DNA PCR, Qualitative	+	+	
CMV-PCR (Quantitative)	First+	First+	>1000 IU/ml
Cryptococcal Antigen	First +	First +	
EBV-PCR (Quantitative)	First +	First +	
Enterovirus PCR	+	+	blood/sterile sites only
HSV 1 and 2 PCR	+	+	blood/sterile sites only
HSV 1 and 2 PCR - Age Newborn	+	+	from ANY site
Meningitis-Encephalitis Panel (ME Panel)	Any +	Any +	
Varicella Zoster PCR	+	+	blood/sterile sites only
Urinalysis			
Ketones Urine - Age <1Y		>=80 mg/dL	

The exceptions listed below apply to tests performed in Hematology Oncology-Elkin, Hematology-Oncology Mt. Airy and Hematology-Oncology-Statesville as defined in the Policy: [Critical Results of Tests and Diagnostic Procedures](#) under Number 3, Section J: Policy Guideline.

^{1,2} ANC ≤ 500 ($\leq 0.5 \times 10^3/\mu\text{L}$) if most recent ANC ≤ 500 ($\leq 0.5 \times 10^3/\mu\text{L}$).

³ Platelets $\leq 30,000$ ($\leq 30 \times 10^3/\mu\text{L}$) if most recent platelet count $\leq 30,000$ ($\leq 30 \times 10^3/\mu\text{L}$)

³ Platelet count $\leq 20,000$ ($\leq 20 \times 10^3/\mu\text{L}$) in a patient with a Platelet Transfusion Plan in the electronic medical record.

Referral Laboratory Results

All referral laboratory results received in Pathology will be reviewed by a medical technologist or equivalent for the purpose of Identifying those results which are designated as critical values by the referral laboratory. These values will be communicated to the appropriate caregiver, per our policy.

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Point-of-Care Testing (POCT) Critical Value Limits

Defined for Point of Care Testing by the Clinical Laboratory
in Conjunction with the Medical Directors for POCT User Sites

REVISION: 03/2019

Analyte	Method	Adult	Pediatric	Neonate	Comments
Glucose mg/dL	Abbott Precision Xceed Pro	<50 or >400	<50 or >400	<50 or >180	
Glucose mg/dL	NOVA	<50 or >400	<50 or >400	<50 or >200	
Glucose mg/dL	i-STAT	<50 or >600	<50 or >300	<50 or >300	
Hematocrit % PCV	i-STAT	<=18 or >=60	<=18 or >=60	<=18 or >=60	
Hemoglobin g/dL	i-STAT	<=6 or >=20	<=6 or >=20	<=6 or >=20	
INR Value (PT/INR)	i-STAT	>=5 or value not calculated	>=5 or value not calculated	>=5 or value not calculated	INR values equal to or greater than 4.0, as reported by i-STAT will have a reflex venous PT/INR ordered and sent to the Clinical Laboratory for confirmatory testing.
Ionized Calcium mmol/L	i-STAT	<0.75 or >1.40	<0.75 or >1.40	<0.80 or >1.40	
pCO2 mmHg	i-STAT	<25 or >60	<30 or >80	<35 or >80	
pH	i-STAT	<7.2 or >7.6	<7.15 or >7.6	<7.20 or >7.45	
pO2 mmHg	i-STAT	<50	<30	<30	Arterial
Potassium mmol/L	i-STAT	<3.0 or >6.0	<3.0 or >6.0	<3.0 or >6.0	Unexpected results >6 should be verified by the laboratory. Hemolysis falsely elevates results. For potassium results to be considered critical, they should also fail the normal range defined for the patient's age.
Sodium mmol/L	i-STAT	<120 or >160	<120 or >160	<120 or >150	
Total CO2 mmol/L	i-STAT	<10 or >40	<10 or >40	<10 or >40	

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Critical Laboratory Values Davie Medical Center

REVISION: 03/2019

Test	Low	High	Comments
Chemistry			
Acetaminophen		>20 µg/mL	
Bilirubin Total - Age <1M		>18.0 mg/dL	
Calcium	<6.0 mg/dL	>13.0 mg/dL	
CO2 Total	<10 mmol/L	>40 mmol/L	
Ethanol		>400 mg/dL	
Glucose - Age >=18Y	<50 mg/dL	>600 mg/dL	
Glucose - Age 7D-18Y	<50 mg/dL	>300 mg/dL	
Glucose - Age 0D-7D	<45 mg/dL	>300 mg/dL	
Lactic Acid		>4.0 mmol/L	
Magnesium	<1.0 mg/dL	>6.0 mg/dL	
Phosphorus	<1.0 mg/dL	>12.0 mg/dL	
Potassium - Age >=1Y	<3.0 mmol/L	>6.0 mmol/L	
Potassium - Age 3M-1Y	<3.0 mmol/L	>6.5 mmol/L	
Potassium - Age 1M-3M	<3.0 mmol/L	>7.5 mmol/L	
Potassium - Age 7D-1M	<3.0 mmol/L	>7.0 mmol/L	
Potassium - Age 0D-7D	<3.0 mmol/L	>6.2 mmol/L	
Salicylate		>=30.0 mg/dL	
Sodium	<120 mmol/L	>160 mmol/L	
Troponin I		>=0.025 ng/mL	
Vancomycin Trough		>25.0 µg/mL	
Coagulation			
INR		>=5.00 or Not Calculated	
Prothrombin Time		>60.0 seconds	
PTT		>=120.0 seconds	
Heparin PTT		>160.0 seconds	
Hematology			
Hematocrit - Age >=1M	<=18.0 %	>60.0 %	
Hematocrit - Age 14D-1M	<=18.0 %	>=63.0 %	
Hematocrit - Age 7D-14D	<=18.0 %	>=66.0 %	
Hematocrit - Age 1D-7D	<=18.0 %	>=67.0 %	
Hematocrit - Age 0D-1D	<=18.0 %	>60.0 %	
Hemoglobin - Age >=1M	<=8.0 g/dL	>=20.0 g/dL	
Hemoglobin - Age 14D-1M	<=8.0 g/dL	>=20.5 g/dL	
Hemoglobin - Age 7D-14D	<=8.0 g/dL	>=21.5 g/dL	
Hemoglobin - Age 1D-7D	<=8.0 g/dL	>=22.5 g/dL	
Hemoglobin - Age 0D-1D	<=8.0 g/dL	>=20.0 g/dL	

Test	Low	High	Comments
Neutrophil Absolute Count	$\leq 0.5 \times 10^3/\mu\text{L}$		on admission or outpatient ¹ see exception below
Seg Neutrophil Absolute Count	$\leq 0.5 \times 10^3/\mu\text{L}$		on admission or outpatient ² see exception below
Platelet Count	$< 30 \times 10^3/\mu\text{L}$	$> 1000 \times 10^3/\mu\text{L}$	on admission or outpatient ³ see exception below
WBC Adjusted	$< 1.5 \times 10^3/\mu\text{L}$	$> 50.0 \times 10^3/\mu\text{L}$	
White Blood Count	$< 1.5 \times 10^3/\mu\text{L}$	$> 50.0 \times 10^3/\mu\text{L}$	
Urinalysis			
Ketones Urine - Age <1Y		$\geq 80 \text{ mg/dL}$	

The exceptions listed below apply to tests performed in Hematology Oncology-Elkin, Hematology-Oncology Mt. Airy and Hematology-Oncology-Statesville as defined in the Policy: [Critical Results of Tests and Diagnostic Procedures](#) under Number 3, Section J: Policy Guideline.

^{1,2} ANC ≤ 500 ($\leq 0.5 \times 10^3/\mu\text{L}$) if most recent ANC ≤ 500 ($\leq 0.5 \times 10^3/\mu\text{L}$).

³ Platelets $\leq 30,000$ ($\leq 30 \times 10^3/\mu\text{L}$) if most recent platelet count $\leq 30,000$ ($\leq 30 \times 10^3/\mu\text{L}$)

³ Platelet count $\leq 20,000$ ($\leq 20 \times 10^3/\mu\text{L}$) in a patient with a Platelet Transfusion Plan in the electronic medical record.

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Critical Laboratory Values Lexington Medical Center

REVISION: 08/28/2019

Test	Low	High	Comments
Blood Bank			
Direct Coombs	+	+	
Chemistry			
Acetaminophen		>=20 µg/mL	
Bilirubin Total - Age <1M		>=18.0 mg/dL	
Calcium	<=6.0 mg/dL	>=13.0 mg/dL	
CO2 Total	<=15 mmol/L	>=40 mmol/L	
Digoxin		>=2.0 ng/mL	
Glucose - Age >=1M	<50 mg/dL	>=400 mg/dL	
Glucose - Age 0D-1M	<40 mg/dL	>=400 mg/dL	
Glucose 2 Hour	<60 mg/dL	>400 mg/dL	
Glucose 50g/60 Minutes	<60 mg/dL	>400 mg/dL	
Glucose, 1 Hr	<60 mg/dL	>400 mg/dL	
Glucose, 3 Hr	<60 mg/dL	>400 mg/dL	
Glucose, Fasting	<=60 mg/dL	>=400 mg/dL	
Lactic Acid		>=2.0 mmol/L	
Lithium		>=2.00 mmol/L	
Magnesium	<=1.0 mg/dL	>=6.0 mg/dl	
Phenytoin/Dilantin		>=25.0 µg/mL	
Phosphorus	<=1.0 mg/dl	>=12.0 mg/dl	
Potassium	<=3.0 mmol/L	>=6.0 mmol/L	
Salicylate		>=30.0 mg/dL	
Sodium	<=120 mmol/L	>=160 mmol/L	
Troponin I		>=0.025 ng/mL	
Valproic Acid		>=150 µg/mL	
Vancomycin Trough		>=25.0 µg/mL	
Coagulation			
Fibrinogen	<=100 mg/dl		
INR		>=5.00 or Not Calculated	
PTT		>120.0 seconds	
Critical Care Blood Gas			
PCO2 Capillary	<=35 mmHg	>=80 mmHg	
PCO2 Cord Arterial - Age Newborn	<=31 mmHg	>=67 mmHg	
PCO2 Cord Venous - Age Newborn	<=26 mmHg	>=50 mmHg	
PCO2, Arterial - Age >=18Y	<=20.0 mmHg	>=70.0 mmHg	
PCO2, Arterial - Age 6M up to 18Y	<=20.0 mmHg	>=50.0 mmHg	
PCO2, Arterial - Age 0D up to 6M	<=35.0 mmHg	>=80.0 mmHg	
PCO2, Venous - Age >=18Y	<=20.0 mmHg	>=70.0 mmHg	
PCO2, Venous - Age 6M up to 18Y	<=20.0 mmHg	>=50.0 mmHg	
PCO2, Venous - Age 0D up to 6M	<=35.0 mmHg	>=80.0 mmHg	

Test	Low	High	Comments
pH Capillary	<=7.20	>=7.45	
pH Cord Arterial - Age Newborn	<=7.17	>=7.39	
pH Cord Venous - Age Newborn	<=7.19	>=7.46	
pH, Arterial - Age >=18Y	<=7.200	>=7.600	
pH, Arterial - Age 6M up to 18Y	<=7.300	>=7.600	
pH, Arterial - Age 0D up to 6M	<=7.300	>=7.450	
pH, Venous - Age >=18Y	<=7.200	>=7.600	
pH, Venous - Age 6M up to 18Y	<=7.300	>=7.600	
pH, Venous - Age 0D up to 6M	<=7.300	>=7.450	
PO2, Arterial - Age >=18Y	<=40.0 mmHg		
PO2, Arterial - Age 6M up to 18Y	<=65.0 mmHg	>100.0 mmHg	
PO2, Arterial - Age 0D up to 6M	<=30.0 mmHg		
Total Hemoglobin, Arterial	<=8.0 g/dL	>=20.0 g/dL	
Total Hemoglobin, Venous	<=8.0 g/dL	>=20.0 g/dL	
Hematology			
Hematocrit	<=21.0 %		
Hemoglobin - Age >=1M	<=7.0 g/dL	>=20.0 g/dL	
Hemoglobin - Age 0D-1M	<=12.0 g/dL	>=22.0 g/dL	
Platelet Count	<=50 x 10 ³ /μL	>=1000 x10 ³ /μL	¹ see exception below
White Blood Count - Age >=1M	<=2.0 x 10 ³ /μL	>=20.0 x 10 ³ /μL	
White Blood Count - Age 0D-1M	<=9.0 x 10 ³ /μL	>=30.0 x 10 ³ /μL	
Microbiology			
Culture, Blood	+	+	

The exceptions listed below apply to tests performed in Hematology Oncology-Elkin, Hematology-Oncology Mt. Airy and Hematology-Oncology-Statesville as defined in the Policy: [Critical Results of Tests and Diagnostic Procedures](#) under Number 3, Section J: Policy Guideline.

¹ Platelets <=30,000 (<=30 X 10³/uL) if most recent platelet count <=30,000 (<=30 X 10³/uL)

¹ Platelet count <=20,000 (<=20 X 10³/uL) in a patient with a Platelet Transfusion Plan in the electronic medical record.

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Critical Laboratory Values Cornerstone Westchester Lab

REVISION: 05/2019

Test	Low	High	Comments
Chemistry			
Bilirubin Total - Age <1M		>18.0 mg/dL	
Calcium	<6.0 mg/dL	>13.0 mg/dL	
CO2 Total	<10 mmol/L	>40 mmol/L	
Glucose - Age >=18Y	<50 mg/dL	>600 mg/dL	
Glucose - Age 7D up to 18Y	<50 mg/dL	>300 mg/dL	
Glucose - Age 0D up to 7D	<45 mg/dL	>300 mg/dL	
Magnesium	<1.0 mg/dL	>6.0 mg/dL	
Phosphorus	<1.0 mg/dL	>12.0 mg/dL	
Potassium - Age >=1Y	<3.0 mmol/L	>6.0 mmol/L	
Potassium - Age 3M up to 1Y	<3.0 mmol/L	>6.5 mmol/L	
Potassium - Age 1M up to 3M	<3.0 mmol/L	>7.5 mmol/L	
Potassium - Age 7D up to 1M	<3.0 mmol/L	>7.0 mmol/L	
Potassium - Age 0D up to 7D	<3.0 mmol/L	>6.2 mmol/L	
Sodium	<120 mmol/L	>160 mmol/L	
Hematology			
Hematocrit - Age >=1M	<=18.0 %	>=60.0 %	
Hematocrit - Age 14D up to 1M	<=18.0 %	>63.0 %	
Hematocrit - Age 7D up to 14D	<=18.0 %	>66.0 %	
Hematocrit - Age 1D-7D	<=18.0 %	>67.0 %	
Hematocrit - Age 0D up to 1D	<=18.0 %	>=60.0 %	
Hemoglobin - Age >=1M	<=8.0 g/dL	>=20.0 g/dL	
Hemoglobin - Age 14D up to 1M	<=8.0 g/dL	>20.5 g/dL	
Hemoglobin - Age 7D up to 14D	<=8.0 g/dL	>21.5 g/dL	
Hemoglobin - Age 1D up to 7D	<=8.0 g/dL	>22.5 g/dL	
Hemoglobin - Age 0D up to 1D	<=8.0 g/dL	>=20.0 g/dL	
Neutrophil Absolute Count	<=0.5 x 10 ³ /μL		on admission or outpatient ¹ see exception below
Seg Neutrophil Absolute Count	<=0.5 x 10 ³ /μL		on admission or outpatient ² see exception below
Platelet Count	<30 x 10 ³ /μL	>1000 x 10 ³ /μL	on admission or outpatient ³ see exception below
White Blood Count		>=50.0 x 10 ³ /μL	on admission or outpatient
Urinalysis			
Ketones Urine - Age <1Y		>=80 mg/dL	

The exceptions listed below apply to tests performed in Hematology Oncology-Elkin, Hematology-Oncology Mt. Airy and Hematology-Oncology-Statesville as defined in the Policy: [Critical Results of Tests and Diagnostic Procedures](#) under Number 3, Section J: Policy Guideline.

^{1,2} ANC <=500 (<=0.5 x 10³/uL) if most recent ANC <=500 (<=0.5 x 10³/uL).

³ Platelets <=30,000 (<=30 X 10³/uL) if most recent platelet count <=30,000 (<=30 X 10³/uL)

³ Platelet count <=20,000 (<=20 X 10³/uL) in a patient with a Platelet Transfusion Plan in the electronic medical record.

Critical Laboratory Values Cornerstone Lab West

REVISION: 05/2019

Test	Low	High	Comments
Chemistry			
Bilirubin Total - Age <1M		>18.0 mg/dL	
Calcium	<6.0 mg/dL	>13.0 mg/dL	
CO2 Total	<10 mmol/L	>40 mmol/L	
Glucose - Age >=18Y	<50 mg/dL	>600 mg/dL	
Glucose - Age 7D up to 18Y	<50 mg/dL	>300 mg/dL	
Glucose - Age 0D up to 7D	<45 mg/dL	>300 mg/dL	
Magnesium	<1.0 mg/dL	>6.0 mg/dL	
Phosphorus	<1.0 mg/dL	>12.0 mg/dL	
Potassium - Age >=1Y	<3.0 mmol/L	>6.0 mmol/L	
Potassium - Age 3M up to 1Y	<3.0 mmol/L	>6.5 mmol/L	
Potassium - Age 1M up to 3M	<3.0 mmol/L	>7.5 mmol/L	
Potassium - Age 7D up to 1M	<3.0 mmol/L	>7.0 mmol/L	
Potassium - Age 0D up to 7D	<3.0 mmol/L	>6.2 mmol/L	
Sodium	<120 mmol/L	>160 mmol/L	
Hematology			
Hematocrit - Age >=1M	<=18.0 %	>=60.0 %	
Hematocrit - Age 14D up to 1M	<=18.0 %	>63.0 %	
Hematocrit - Age 7D up to 14D	<=18.0 %	>66.0 %	
Hematocrit - Age 1D-7D	<=18.0 %	>67.0 %	
Hematocrit - Age 0D up to 1D	<=18.0 %	>=60.0 %	
Hemoglobin - Age >=1M	<=8.0 g/dL	>=20.0 g/dL	
Hemoglobin - Age 14D up to 1M	<=8.0 g/dL	>20.5 g/dL	
Hemoglobin - Age 7D up to 14D	<=8.0 g/dL	>21.5 g/dL	
Hemoglobin - Age 1D up to 7D	<=8.0 g/dL	>22.5 g/dL	
Hemoglobin - Age 0D up to 1D	<=8.0 g/dL	>=20.0 g/dL	
Neutrophil Absolute Count	<=0.5 x 10 ³ /μL		on admission or outpatient ¹ see exception below
Seg Neutrophil Absolute Count	<=0.5 x 10 ³ /μL		on admission or outpatient ² see exception below
Platelet Count	<30 x 10 ³ /μL	>1000 x 10 ³ /μL	on admission or outpatient ³ see exception below
White Blood Count		>=50.0 x 10 ³ /μL	on admission or outpatient
Urinalysis			
Ketones Urine - Age <1Y		>=80 mg/dL	

The exceptions listed below apply to tests performed in Hematology Oncology-Elkin, Hematology-Oncology Mt. Airy and Hematology-Oncology-Statesville as defined in the Policy: [Critical Results of Tests and Diagnostic Procedures](#) under Number 3, Section J: Policy Guideline.

^{1,2} ANC <=500 (<=0.5 x 10³/uL) if most recent ANC <=500 (<=0.5 x 10³/uL).

³ Platelets <=30,000 (<=30 X 10³/uL) if most recent platelet count <=30,000 (<=30 X 10³/uL)

³ Platelet count <=20,000 (<=20 X 10³/uL) in a patient with a Platelet Transfusion Plan in the electronic medical record.

Critical Laboratory Values Medical Plaza - Clemmons

REVISION: 08/28/2019

Test	Low	High	Comments
Chemistry			
Bilirubin Total - Age <1M		>18.0 mg/dL	
Calcium	<6.0 mg/dL	>13.0 mg/dL	
CO2 Total	<10 mmol/L	>40 mmol/L	
Glucose - Age >=18Y	<50 mg/dL	>600 mg/dL	
Glucose - Age 7D up to 18Y	<50 mg/dL	>300 mg/dL	
Glucose - Age 0D up to 7D	<45 mg/dL	>300 mg/dL	
Potassium - Age >=1Y	<3.0 mmol/L	>6.0 mmol/L	
Potassium - Age 3M up to 1Y	<3.0 mmol/L	>6.5 mmol/L	
Potassium - Age 1M up to 3M	<3.0 mmol/L	>7.5 mmol/L	
Potassium - Age 7D up to 1M	<3.0 mmol/L	>7.0 mmol/L	
Potassium - Age 0D up to 7D	<3.0 mmol/L	>6.2 mmol/L	
Magnesium	<1.0 mg/dL	>6.0 mg/dL	
Sodium	<120 mmol/L	>160 mmol/L	
Phosphorus	<1.0 mg/dL	>12.0 mg/dL	
Hematology			
Hematocrit - Age >=1M	<=18.0 %	>=60.0 %	
Hematocrit - Age 14D up to 1M	<=18.0 %	>63.0 %	
Hematocrit - Age 7D up to 14D	<=18.0 %	>66.0 %	
Hematocrit - Age 1D up to 7D	<=18.0 %	>67.0 %	
Hematocrit - Age 0D up to 1D	<=18.0 %	>=60.0 %	
Hemoglobin - Age >=1M	<=6.0 g/dL	>=20.0 g/dL	
Hemoglobin - Age 14D up to 1M	<=6.0 g/dL	>20.5 g/dL	
Hemoglobin - Age 7D up to 14D	<=6.0 g/dL	>21.5 g/dL	
Hemoglobin - Age 1D up to 7D	<=6.0 g/dL	>22.5 g/dL	
Hemoglobin - Age 0D up to 1D	<=6.0 g/dL	>=20.0 g/dL	
Neutrophil Absolute Count	<=0.5 x 10 ³ /μL		on admission or outpatient ¹ see exception below
Seg Neutrophil Absolute Count	<=0.5 x 10 ³ /μL		on admission or outpatient ² see exception below
Platelet Count	<30 x 10 ³ /μL	>1000 x 10 ³ /μL	on admission or outpatient ³ see exception below
White Blood Count		>=50.0 x 10 ³ /μL	on admission or outpatient
Urinalysis			
Ketones Urine - Age <1Y		>=80 mg/dL	

The exceptions listed below apply to tests performed in Hematology Oncology-Elkin, Hematology-Oncology Mt. Airy and Hematology-Oncology-Statesville as defined in the Policy: [Critical Results of Tests and Diagnostic Procedures](#) under Number 3, Section J: Policy Guideline.

^{1,2} ANC <=500 (<=0.5 x 10³/uL) if most recent ANC <=500 (<=0.5 x 10³/uL).

³ Platelets <=30,000 (<=30 X 10³/uL) if most recent platelet count <=30,000 (<=30 X 10³/uL)

³ Platelet count <=20,000 (<=20 X 10³/uL) in a patient with a Platelet Transfusion Plan in the electronic medical record.

Critical Laboratory Values

High Point Medical Center

All analytes are called 24/7 for Inpatients Unless Otherwise Noted

REVISION: 09/20/2019

Test	Low	High	Comments
Blood Bank			
DAT	+ Cord Blood	+ Cord Blood	
Transfusion Reaction	Hemolytic	Hemolytic	
Chemistry			
Bilirubin, Adult / Neonatal		>18 mg/dL	
Calcium	<6.0 mg/dL	>13.0 mg/dL	
CO2	<=10 mmol/L	>=40 mmol/L	
Glucose, CSF	<25 mg/dL		
Glucose, Serum (0-7 days old)	<45 mg/dL	>300 mg/dL	
Glucose, Serum (7 to 14 days)	<50 mg/dL	>300 mg/dL	
Glucose, Serum (14 days to 1 month)	<50 mg/dL	>300 mg/dL	
Glucose, Serum (>1 month to 18 years old)	<50 mg/dL	>300 mg/dL	
Glucose, Serum (>18 yrs old to Adult)	<50 mg/dL	>600 mg/dL	
Lactate		>=4.0 mmol/L	
Magnesium	<1.0 mg/dL	>6.0 mg/dL	
Phosphorus	<1.0 mg/dL	>12.0 mg/dL	
Potassium	<3.0 mmol/L	>6.4 mmol/L	
Sodium	<120 mmol/L	>160 mmol/L	
Troponin I		>=0.040 ng/mL	
Therapeutic Drug Monitoring			
Acetaminophen		>20.0 mcg/mL	
Carbamazepine (Tegretol)		>20.0 mcg/mL	
Digoxin		>2.0 ng/mL	
Dilantin (Phenytoin)		>30.0 mcg/mL	
Dilantin (Phenytoin) (pediatric)		>20.0 mcg/mL	
Valproic Acid (Adults)		>150.0 mcg/mL	
Valproic Acid (Pediatric)		>120.0 mcg/mL	
Vancomycin (Peak or Random)		>50.0 mcg/mL	Call Vancomycin results to both the pharmacy and provider. Document accordingly.
Vancomycin (Trough)		>25.0 mcg/mL	Call Vancomycin results to both the pharmacy and provider. Document accordingly.
Coagulation			
Fibrinogen	<100 mg/dL		
INR		>5.0 or Not Calculated	
PTT		>=200 seconds	
Hematology			
Hemoglobin	<7 g/dL	>21 g/dL	

Absolute Neutrophil	<0.5 x 10 ³ /μL		¹ see exception below
Platelet	<30 x 10 ³ /μL	>1000 x 10 ³ /μL	² see exception below
WBC		>50 x 10 ³ /μL	
Urinalysis			
Urine ketones <12 months old		>80 mg/dL	
Spermatazoa in urine = Males <12 years old	Present / HPF	Present / HPF	
Spermatazoa in urine = Females <18 years old	Present / HPF	Present / HPF	
Microbiology			
Clostridium difficile	+	+	(Antigen and Toxin)
CSF Gram Stain	+	+	
Cryptococcus screens (CSF-Serum)	+	+	
Culture, Blood	+ Gram Stain	+ Gram Stain	
Smear, Malaria (Preliminary Positive Results)	+	+	
Rapid HIV (Reactive Only)	Reactive	Reactive	
Non-Critical Courtesy Calls			
Amnisure	All Results		
Influenza	+	+	
Rapid HIV (Non-Reactive)	Non-Reactive	Non-Reactive	

The exceptions listed below apply to tests performed in Hematology Oncology-Elkin, Hematology-Oncology Mt. Airy and Hematology-Oncology-Statesville as defined in the Policy: [Critical Results of Tests and Diagnostic Procedures](#) under Number 3, Section J: Policy Guideline.

¹ ANC ≤ 500 (≤ 0.5 x 10³/uL) if most recent ANC ≤ 500 (≤ 0.5 x 10³/uL).

² Platelets ≤ 30,000 (≤ 30 X 10³/uL) if most recent platelet count ≤ 30,000 (≤ 30 X 10³/uL)

² Platelet count ≤ 20,000 (≤ 20 X 10³/uL) in a patient with a Platelet Transfusion Plan in the electronic medical record.