



Critical and Alert Values

Critical Values

Critical values are test results that may indicate an immediate or actionable threat to patient health. Any laboratory test result flagged as a critical value will be **immediately** reported upon confirmation to the physician or other personnel involved for the patient’s care by laboratory personnel. The call will be documented in the Laboratory Information System (LIS), and a laboratory manager will be alerted if the individual or facility cannot be reached.

Alert Values

Alert values are test results that are less likely to indicate an immediate threat to patient health but still present a significant abnormality. Any result flagged as an alert value will be reported by the next business day, including weekend call-outs as appropriate, to the physician or other personnel involved for the patient’s care by laboratory personnel. The call will be documented in the Laboratory Information System (LIS).

Critical And Alert Value Tables

Alert and Critical analytes and thresholds are provided in the following charts. STAT laboratory and referred testing may have slightly different thresholds. Please contact your account executive for more details. Additionally, all STAT testing – whether Critical or Alert – must be completed and communicated within the specified time frame.

Critical Values			
Test	Low Threshold	High Threshold	Reference Range
Chemistry			
Ammonia	None	Age <15 years: ≥120	Adult Female: 11-51 µmol/L Adult Male: 16-60 µmol/L
Bilirubin	None	Age <1 year: ≥15.1	Adult: ≤1.2 mg/dL
Calcium	≤6.0	≥14.0	Adult: 8.5-10.5 mg/dL
Calcium, Ionized	≤3.00	≥7.00	4.70-5.90 mg/dL
CKMB	None	Male: ≥7.8 Female: ≥4.4	Male: ≤7.7 ng/ml Female: ≤4.3 ng/ml
Glucose	Age <1 year: ≤40	≥500	70-99 mg/dL
Magnesium	None	≥8.0	1.6-2.6 mg/dL
Potassium	≤2.5	≥6.5	3.5-5.4 mEq/L
Procalcitonin	None	≥2.00	<0.10 ng/mL
Sodium	≤110	≥170	133-146 mEq/L
Troponin T	None	Male: ≥22 ng/L Female: ≥14 ng/L Not specified: ≥19 ng/L	Male: <22 ng/L Female: <14 ng/L Not specified: <19 ng/L
Coagulation			
PT	None	≥100.0	12.5-14.7 sec
INR	None	≥8.0	DVT Anticoagulation: 2.0-3.0 sec
Hematology			
WBC	None	≥50.0 with blasts > 10%	3.5-11.0 K/µL
Abs. Neutrophil Count	< 0.50	None	1.50-7.50 K/µL
Hemoglobin	≤7.0	≥23.0	Adult Male: 13.5-17.0 g/dL Adult Female: 11.50-15.5 g/dL
Hematocrit	≤21.0	≥69.0	Adult Male: 40.0-51.0% Adult Female: 34.0-45.0%
Platelets	≤10	≥1,500	130-400 K/µL

Critical Values			
Test	Low Threshold	High Threshold	Reference Range
Microbiology			
Culture, Blood	N/A	Positive for microbial growth	Negative for microbial growth
Culture, CSF	N/A	Positive for microbial growth	Negative for microbial growth
Toxicology			
Amikacin	None	>35	No established range for random sample
Digoxin	None	≥2.5	0.6-2.0 ng/mL
Lidocaine	None	>9	2.0-5.0 µg/mL
Lithium	None	>5	0.60-1.20 mEq/L
Methanol	None	>20	< 10 mg/dL
Procainamide NAPA	None	Procainamide: ≥12.1 NAPA: ≥35.1	Procainamide: 4.0-10.0 µg/mL NAPA: 6.0-20.0 µg/mL
Salicylates	None	>50	20-30 mg/dL
Vancomycin, Peak	None	>80.0	25.0-40.0 µg/mL
Vancomycin, Random	None	>80.0	NA
Vancomycin, Trough	None	>80.0	10.0-20.0 µg/mL

Alert Values			
Test	Low Threshold	High Threshold	Reference Range
Chemistry			
Amylase	None	≥500	28-100 U/L
Calcium	≤7.0	≥12.0	Adult: 8.5-10.5 mg/dL
Calcium, Ionized	≤3.50	≥6.00	4.70-5.90 mg/dL
Carbon Dioxide	≤10	≥40	19-31 mEq/L
Chloride	≤70	≥130	95-107 mEq/L
Creatine Kinase	None	≥500	Adult Male: 31-336 U/L Adult Female: 28-176 U/L
Creatinine	None	≥6.00	Adult Male: 0.80-1.40 mg/dL Adult Female: 0.60-1.30 mg/dL
Glucose	≤45	≥400	70-99 mg/dL
Lead	None	Adults: ≥5 Children: ≥5	<5 mcg/dL
Lipase	None	≥500	13-60 U/L
Magnesium	≤1.0	≥5.0	1.6-2.6 mg/dL
Potassium	≤3.0	≥6.0	3.5-5.4 mEq/L
Phosphorus	<2.0	None	Adult: 2.5-4.5 mg/dL
Procalcitonin	≥0.50	None	<0.10 ng/mL
SGOT (AST)	None	≥1,000	Adult Male: 9-50 U/L Adult Female: 9-40 U/L
SGPT (ALT)	None	≥1,000	Adult Male: 5-50 U/L Adult Female: 5-40 U/L
Sodium	≤120	≥160	133-146 mEq/L
Urea nitrogen	None	≥80	Adult: 8-23 mg/dL

Alert Values			
Test	Low Threshold	High Threshold	Reference Range
Coagulation			
PT PT INR	None	≥50.0 >4.0	12.5-14.7 seconds DVT Anticoagulation: 2.0-3.0 sec Prosthetic Heart Valves: 2.5-3.5 sec
PTT	None	≥76.0	25.2-40.0 seconds
Fibrinogen	≤100	None	205-395 mg/dL
Hematology			
WBC	None	≥40.0	Adult: 3.5-11.0 K/μL
Hemoglobin	≤8.0	None	Male: 13.0-17.0 g/dL Female: 11.5-15.5 g/dL
Hematocrit	≤24.0	None	Male: 40.0-51.0% Female: 34.0-45.0%
Platelets	≤30	None	130-400 K/μL
Body fluid, CSF	None	Malignant cells Intracellular fungus/bacteria	No organisms or malignancy
Immunology			
Hepatitis	N/A	Hepatitis A IgM Positive Hepatitis B Antibody Positive Surface Antigen	Non-Reactive
HIV	N/A	Positive Confirmation	Non-Reactive
Microbiology			
Culture, AFB	N/A	Positive for microbial growth	Negative for microbial growth
Culture, Eye	N/A	Positive for <i>N. gonorrhoeae</i> or <i>Pseudomonas</i> sp.	Negative for microbial growth
Culture, Fungus, Eye	N/A	Positive for fungal growth	Negative for fungal growth
Culture, Sterile site	N/A	Positive for microbial growth	Negative for microbial growth
Culture, Stool	N/A	Positive for microbial growth	Negative for microbial growth
Smear, AFB	N/A	AFB observed	No AFB observed
Smear, Sterile site	N/A	Microbe observed	No microbes observed
Smear, Parasite, Blood	N/A	Parasite observed	No parasites observed
Toxin, <i>C. difficile</i>	N/A	Positive	Negative
Confirmation of the following organisms from stool culture:			
<i>Aeromonas</i> sp.	N/A	Positive	Negative
<i>Campylobacter</i> sp.	N/A	Positive	Negative
<i>Plesiomonas</i> sp.	N/A	Positive	Negative
Shigatoxin-producing <i>E. coli</i> (STEC)	N/A	Positive	Negative
<i>Vibrio</i> sp.	N/A	Positive	Negative
<i>Yersinia</i> sp.	N/A	Positive	Negative
Confirmation of the following organisms from any site or assay (e.g., EIA, smear, culture):			
<i>Candida auris</i>	N/A	Positive	Negative
<i>Cyclospora</i> sp.	N/A	Positive	Negative
<i>Cryptosporidium</i> sp.	N/A	Positive	Negative
<i>D. fragilis</i>	N/A	Positive	Negative
<i>E. histolytica</i>	N/A	Positive	Negative
<i>Giardia</i> sp.	N/A	Positive	Negative
<i>Histoplasma</i> sp.	N/A	Positive	Negative
Rotavirus	N/A	Positive	Negative
<i>Salmonella</i> sp.	N/A	Positive	Negative
<i>Shigella</i> sp.	N/A	Positive	Negative

Alert Values			
Test	Low Threshold	High Threshold	Reference Range
Referral			
<i>Bordetella pertussis</i> , PCR	N/A	Positive	Negative
<i>C. difficile</i> Toxin PCR	N/A	Positive	Negative
Respiratory Pathogen Panel	N/A	Positive	Negative
Stool Pathogen Panel by PCR	N/A	Positive	Negative
Thin Prep and Surepath Group B Strep	N/A	Positive	Negative
Cytology/Histology			
New diagnosis of life-threatening malignancies and other pathological processes			
Body Fluid			
Synovial fluid WBC	N/A	≥1000/μL	N/A
CSF WBC	N/A	≥100/μL	N/A
Pleural/ascitic WBC	N/A	≥1000/μL	N/A
Toxicology			
Acetaminophen	None	>40	10-20 μg/mL
Carbamazepine, Total	None	≥16	4.0-12.0 μg/mL
Cyclosporine, Trough	None	>500	110-320 ng/mL
Ethosuximide	None	>150	40-100 μg/mL
Lidocaine	None	>6	2.0-5.0 μg/mL
Lithium	None	>2	0.60-1.20 mEq/L
Phenytoin, Free	None	>3	Therapeutic: 0.8-2.0 μg/mL
Primidone	None	>15	5-12 μg/mL
Salicylates	None	>30	20-30 mg/dL
Tobramycin	None	Peak: >12.1 Trough: >2.1	Peak: 5-10 μg/ml Trough: 0.5 - 2.0 μg/ml
Valproic Acid, Free	None	Free >30	Valproic Acid, Free: Therapeutic Range = 5-15 μg/mL Toxic = >30 μg/mL Valproic Acid, Percent Free: 5-18%
Valproic Acid, Total	None	Total >200	Valproic Acid, Total: Therapeutic Range = 50-125 μg/mL Toxic = >150 μg/mL
Vancomycin, Peak	None	>40.0	25.0-40.0 μg/mL
Vancomycin, Random	None	>30.0	NA
Vancomycin, Trough	None	>30.0	10.0-20.0 μg/mL

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