

Critical Values List

Arterial Blood Gases

| Test | Value | Comments |
|------------------|-------------------|----------|
| pH | ≤ 7.25 or ≥ 7.6 | |
| PCO ₂ | ≤ 20 or ≥ 60 mmHg | |
| PO ₂ | ≤ 40 mmHg | |
| Hemoglobin | ≤ 7.0g dL | |

Chemistry

| Test | Value | Comments |
|--------------------------------------|-------------------------|----------|
| Bicarbonate (Total CO ₂) | < 10 or > 40 mmol/L | |
| Bilirubin, Total | > 15 mg/dL | |
| Calcium, Ionized | ≤ 0.78 or ≥ 1.58 mmol/L | |
| Calcium, Total | < 6.0 or > 13.0 mg/dL | |
| Glucose | < 40 or > 450 mg/dL | |
| Iron | > 500 ug/dL | |
| Glucose, WB POC | < 60 or > 450 mg/dL | |
| Glucose, WB, neonatal POC | < 40 or > 200 mg/dL | |
| Magnesium | < 1.0 or > 9.0 mg/dL | |
| Phosphorus | < 1.0 or > 9.0 mg/dL | |
| Potassium | < 3.0 or > 6.1 mmol/L | |
| Sodium | < 120 or > 160 mmol/L | |
| Troponin I | ≥ 0.30 ng/mL | |

Coagulation

| Test | Value | Comments |
|------------------------|----------------|--|
| Prothrombin Time | ≥ 46.3 seconds | When ordered as part of a panel, other criteria apply. |
| INR | ≥ 5.0 | |
| PTT | ≥ 85 seconds | When ordered as part of a panel, other criteria apply. |
| Fibrinogen | < 100 mg/dL | |
| Factors 2, 5, 8, 9, 11 | ≤ 5% | When ordered as part of a panel, other criteria apply. |
| Factor 7 | ≤ 6% | |
| Factor 10 | ≤ 7% | |
| Factor 13, Activity | ≤ 5% | |

Infectious Disease

| Test | Value | Comments |
|--|---|---|
| Detection of any infectious agent | By | |
| Blood | Positive culture, smear, or rapid antigen | AFB, bacterial, fungal, parasitic |
| Bone marrow | Positive culture or smear | AFB, bacterial, fungal, viral, parasitic |
| Body fluid (except gastrointestinal fluid or urine sources) | Positive culture or smear | AFB, bacterial, fungal, viral, parasitic |
| CSF or other central nervous system specimen | Positive culture, smear, or rapid antigen | AFB, bacterial, fungal, viral (except Enterovirus), parasitic |
| CSF or other central nervous system specimen | Nucleic acid testing (NAT) | All pathogens except enterovirus, EBV, HIV, JC virus, CMV, HHV6, and parvovirus |
| Eye (ocular) | Positive culture, smear, or NAT | AFB, bacterial, fungal, viral, parasitic |
| Tissue | Positive culture or smear | AFB, bacterial, fungal, viral, parasitic |
| Detection of specific infectious agent | By | In |
| <i>Mycobacterium sp</i> , acid fast bacillus (AFB) (<i>M. tuberculosis</i>) | First positive stain | 90 days |
| | Culture, nucleic acid test, and/or resistance to primary anti-tuberculosis agents | |
| Zygomycete | Positive culture | Nasal, sinus |
| Select agents and other highly pathogenic organisms: <i>Bacillus anthracis</i> , <i>Brucella spp.</i> , <i>Burkholderia mallei</i> , <i>Burkholderia pseudomallei</i> , <i>Coccidioides immitis</i> , <i>Francisella tularensis</i> , <i>Yersinia pestis</i> , and <i>C. diphtheriae</i> , <i>Salmonella typhi</i> , <i>Vibrio cholera</i> | Positive culture and/or positive probe for <i>C. immitis</i> | |
| 5- fluorocytosine | ≥ 100 µg/mL | |

Toxicology

| Test | Value | Comments |
|----------------------|---------------------------|---|
| Acetone | > 100 mg/dL | |
| Acetaminophen | > 150 µg/mL > 40 µg/mL | 4 hours post ingestion; 12 hours post ingestion |
| Amikacin | > 30 µg/mL | Peak—draw 30 minutes post infusion |
| | > 8 µg/mL | Trough—draw 30 minutes before infusion |
| Caffeine (Neonate) | > 20 µg/mL | |
| Cyanide | > 100 µg/mL | |
| Digoxin | > 2.4 ng/mL | Trough—draw 8–12 hours post dose; minimum post dose 6 hours |
| Ethanol | > 250 mg/dL | |
| Ethylene Glycol | > 20 mg/dL | |
| Gentamicin | > 12 µg/mL | Peak—draw 30 minutes post infusion |
| | > 2 µg/mL | Trough—draw 30 minutes before infusion |
| Isopropanol | > 50 mg/dL | |
| Methanol | > 20 mg/dL | |
| Lidocaine | > 9 µg/mL | > 30 minutes post IV dose after steady state (5–10 hours) |
| Lithium | ≥ 1.6 mmol/L | Trough |
| Pentobarbital | > 10 µg/mL | |
| Primidone | > 15 µg/mL | |
| Procainamide NAPA | > 12 µg/mL | |
| | > 35 µg/mL | Trough |
| Quinidine | > 10 µg/mL | Trough |
| Salicylate | > 300 µg/mL or > 30 mg/dL | |
| TCA—Tricyclics | > 400 ng/mL | |
| Tobramycin | > 12 µg/mL | Peak—draw 30 minutes post infusion |
| | > 2 µg/mL | Trough—draw 30 minutes before infusion |
| Vancomycin | > 80 µg/mL | Trough |
| | > 80 µg/mL | Peak (not recommended) |

Trace and Toxic Elements

| Test | Value | Comments |
|------|-----------------------------|----------|
| Lead | ≥ 45 µg/dL (birth–18 years) | Blood |
| | ≥ 70 µg/dL (≥ 19 years) | Blood |

Transfusion Services

| Test | Value | Comments |
|---------------------|----------|----------|
| Antibody Screen | Positive | |
| DAT (Direct Coombs) | Positive | |

Hematology

| Test | Value | Comments |
|------------------------|--|----------|
| Hematocrit | $\leq 21\%$ or $\geq 65\%$ | |
| Hemoglobin | ≤ 7 or > 21.0 g/dL | |
| Platelet Count | ≤ 20 or $\geq 1000 \times 10^3/\mu\text{L}$ | |
| White Blood Cell Count | ≤ 2.0 or $\geq 40 \times 10^3/\mu\text{L}$ | |