Critical Values

A critical value is one that represents a pathophysiological state at such variance with normal as to be life-threatening unless something is done promptly, and for which some corrective action could be taken.

Wisconsin Diagnostic Laboratories has procedures for immediate notification to the provider or another member of the patient’s care team. Phone notification includes 2 unique patient identifiers (name and medical record number or date of birth), critical value (test and test result), and name of person calling the result. Read-back of the information provided is required and documented.

<table>
<thead>
<tr>
<th>CHEMISTRY</th>
<th>Test</th>
<th>Age</th>
<th>Critical Low</th>
<th>Critical High</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test</strong></td>
<td><strong>Age</strong></td>
<td><strong>Critical Low</strong></td>
<td><strong>Critical High</strong></td>
<td><strong>Units</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 to 18 years</td>
<td>0 to 3 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicarbonate</td>
<td></td>
<td>≤12</td>
<td>≥40</td>
<td>mmol/L</td>
<td></td>
</tr>
<tr>
<td>Bilirubin, Direct</td>
<td></td>
<td></td>
<td>0 to 18 years</td>
<td>≥10</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Bilirubin, Total</td>
<td></td>
<td></td>
<td></td>
<td>≥15</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Calcium, Ionized</td>
<td></td>
<td>&lt;0.75</td>
<td>&gt;1.6</td>
<td>mmol/L</td>
<td></td>
</tr>
<tr>
<td>Calcium, Total</td>
<td></td>
<td>≤6.0</td>
<td>≥12.0</td>
<td>mg/dL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 to 3 years</td>
<td>≤7.0</td>
<td>≥12.0</td>
<td>mg/dL</td>
<td></td>
</tr>
<tr>
<td>FCO-Hb (Carbon Monoxide)</td>
<td></td>
<td></td>
<td></td>
<td>≥15</td>
<td>%</td>
</tr>
<tr>
<td>Glucose</td>
<td></td>
<td>≤45</td>
<td>≥500</td>
<td>mg/dL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Neonatal</td>
<td>≤45</td>
<td>≥150</td>
<td>mg/dL</td>
<td></td>
</tr>
<tr>
<td>Glucose, CSF</td>
<td></td>
<td>&lt;40</td>
<td>≥120</td>
<td>mg/dL</td>
<td></td>
</tr>
<tr>
<td>Lactic Acid</td>
<td></td>
<td></td>
<td>≥4</td>
<td>mmol/L</td>
<td></td>
</tr>
<tr>
<td>Magnesium</td>
<td></td>
<td>≤1.2</td>
<td>≥5.0</td>
<td>mg/dL</td>
<td></td>
</tr>
<tr>
<td>pCO2, Arterial</td>
<td></td>
<td>≤25</td>
<td>≥60</td>
<td>mmHg</td>
<td></td>
</tr>
<tr>
<td>pH, Arterial</td>
<td></td>
<td>≤7.25</td>
<td>≥7.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH, Umbilical Cord (Arterial or Venous)</td>
<td>Neonatal</td>
<td>&lt;7.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pO2, Arterial</td>
<td></td>
<td>≤55</td>
<td>≥65</td>
<td>mmHg</td>
<td></td>
</tr>
<tr>
<td>Potassium</td>
<td></td>
<td>≤2.8</td>
<td>≥6.0</td>
<td>mmol/L</td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
<td></td>
<td>≤125</td>
<td>≥155</td>
<td>mmol/L</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Neonatal</td>
<td>≤130</td>
<td>≥150</td>
<td>mmol/L</td>
<td></td>
</tr>
<tr>
<td>Troponin HS</td>
<td></td>
<td></td>
<td>≥100</td>
<td>ng/L</td>
<td></td>
</tr>
</tbody>
</table>
## Critical Value List

### COAGULATION

<table>
<thead>
<tr>
<th>TEST</th>
<th>CRITICAL VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibrinogen</td>
<td>&lt;100 mg/dL</td>
</tr>
<tr>
<td>Activated Partial Thromboplastin Time (APTT)</td>
<td>&gt;100 Seconds</td>
</tr>
<tr>
<td>Prothrombin Time (PT)</td>
<td>&gt;5.0 INR</td>
</tr>
</tbody>
</table>

### HEMATOLOGY

<table>
<thead>
<tr>
<th>Test</th>
<th>Age</th>
<th>Critical Low</th>
<th>Critical High</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemoglobin</td>
<td>0 days to 1 week</td>
<td>≤6.0</td>
<td>≥19.0</td>
<td>g/dL</td>
</tr>
<tr>
<td></td>
<td>1 week to 1 month</td>
<td>≤6.0</td>
<td>≥20.5</td>
<td>g/dL</td>
</tr>
<tr>
<td></td>
<td>1 month to 6 months</td>
<td>≤6.0</td>
<td>≥20.0</td>
<td>g/dL</td>
</tr>
<tr>
<td>Hematocrit</td>
<td>0 days to 1 week</td>
<td>≤20%</td>
<td>≥60%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>1 week to 1 month</td>
<td>≤20%</td>
<td>≥66%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>1 month to 6 months</td>
<td>≤20%</td>
<td>≥60%</td>
<td>%</td>
</tr>
<tr>
<td>Platelet Count (Birth to Adult)</td>
<td></td>
<td>≤25.0 x 10³</td>
<td>≥1,000.0 x 10³</td>
<td>µL</td>
</tr>
<tr>
<td>PMN</td>
<td>0 days to 1 month</td>
<td>≤20</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>Reticulocyte</td>
<td>0 days to 1 month</td>
<td></td>
<td>≥15</td>
<td>%</td>
</tr>
<tr>
<td>White Blood Cell Count (Birth to Adult)</td>
<td></td>
<td>≤1.2 x 10³</td>
<td>≥40.0 x 10³</td>
<td>µL</td>
</tr>
</tbody>
</table>

### MICROBIOLOGY

<table>
<thead>
<tr>
<th>Test</th>
<th>Critical Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Culture</td>
<td>• New patient positive &lt;br&gt;• New organism on previous positive patient &lt;br&gt;• Previously positive patient with last positive received over 1 week earlier</td>
</tr>
<tr>
<td>CSF Culture</td>
<td>• New patient positive &lt;br&gt;• New organism on previous positive patient &lt;br&gt;• Previously positive patient with last positive received over 1 week earlier</td>
</tr>
</tbody>
</table>
### TOXICOLOGY

<table>
<thead>
<tr>
<th>DRUG</th>
<th>TOXIC LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaminophen</td>
<td>≥150 mg/L</td>
</tr>
<tr>
<td>Acetone</td>
<td>≥50 mg/dL</td>
</tr>
<tr>
<td>Carbamazepine (Tegretol)</td>
<td>≥15 mg/L</td>
</tr>
<tr>
<td>Carbon Monoxide (Carboxyhemoglobin)</td>
<td>≥15% saturation</td>
</tr>
<tr>
<td>Cyclosporin, Parent Compound</td>
<td>≥700 ng/mL</td>
</tr>
<tr>
<td>Cyclosporin, 2 Hour</td>
<td>≥2250 mg/mL</td>
</tr>
<tr>
<td>Digoxin</td>
<td>≥2.5 mg/mL</td>
</tr>
<tr>
<td>Ethanol</td>
<td>&gt;0.30 g/dL</td>
</tr>
<tr>
<td>Ethylene glycol</td>
<td>≥10 mg/dL</td>
</tr>
<tr>
<td>Everolimus</td>
<td>≥15 mg/mL</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>&gt;10 mg/dL</td>
</tr>
</tbody>
</table>
| Lead                                         | <18 years ≤45 μg/dL  
 |                                             | ≥18 years ≥70 μg/dL  |
| Lidocaine                                    | ≥6 mg/L     |
| Lithium                                      | ≥1.5 mmol/L |
| Methanol                                     | ≥20 mg/dL   |
| Methotrexate                                 | >50 μmol/L  |
| Phenobarbital                                | ≥40 mg/L    |
| Phenytoin                                    | ≥25 mg/L    |
| Procainamide + NAPA                          | ≥30 mg/L    |
| Procainamide                                 | ≥16 mg/L    |
| NAPA                                         | ≥20 mg/L    |
| Salicylate                                   | ≥30 mg/L    |
| Sirolimus                                    | ≥30 mg/L    |
| Tacrolimus (FK506)                           | ≥20 ng/mL   |
| Theophylline                                 | ≥20 mg/L    |
| Tricyclic Antidepressant Rapid Screen        | ≥300 ng/mL  |
| Valproic Acid, Free                          | ≥27 mg/L    |
| Valproic Acid, Total                         | ≥150 mg/L   |