KEY WORDS

1. Lab Results
2. Life Threatening
3. Telephone
4. Priority 1
5. Priority 2

A. GENERAL POLICY STATEMENT:

This policy identifies critical tests, critical results/values that have been designated as potentially life threatening or significant enough to immediately notify the ordering or covering practitioner or designated medical professional by telephone so that there will not be delays in treatment for the patient.

B. SCOPE:

This policy applies to all areas within Bassett Medical Center (Bassett).

C. ACCOUNTABILITY:

The Clinical Laboratory Director and the Network Laboratory Director will be responsible for the implementation of this policy.

D. POLICY ELEMENTS:

1. Critical test results are communicated only for identified tests whether positive or negative. Within Bassett, the identified critical test is as follows: Frozen sections from the Operating Room.

2. Identified critical tests are communicated immediately or within 60 minutes from the time of order, from the testing area, to the ordering or covering practitioner or designated medical professional.

3. Critical results/values are communicated only for identified tests that have a given result within a defined range. Within Bassett, the identified critical results/values follow.

4. Identified critical results/values are communicated immediately upon completion of the test or within 30 minutes regardless of the test order (Routine vs. Stat) from the laboratory testing area to the ordering or covering practitioner or designated medical professional. The process for communication and any exceptions to this are detailed in a Department procedure – Communication of *Laboratory Critical Values Procedure*.

5. Reporting of results generally goes to the ordering or covering practitioner. Other designated medical professionals (qualified individuals who are authorized to accept critical values as defined by New York State Department of Health) may also be notified. This includes physicians, residents, PGY1's, physician assistants, nurse practitioners, nurse midwives or other individuals defined by law. Some registered nurses (RNs) may accept results for tests where written protocols exist for immediate action.

6. The recipient must read back all critical test and critical result/value communication to the caller--date, time, recipient name and title (where appropriate)--and read back must be documented in the Laboratory Information System (LIS).

7. The Laboratory collects data on the timeliness of reporting critical tests and critical results/values. The data is assessed periodically and opportunities for improvement are reviewed. Results are reported to the Safety Action Council (SAC).

E. COMMUNICATION:

This policy will be communicated via email to all Directors, Managers, and Executive Operations Team members.

F. DISTRIBUTION:

This policy will be placed online in the Administrative and Medical Staff Policy Manuals.

G. ENFORCEMENT:

The Vice President (VP), Patient Services is responsible for compliance to this policy.

H. REVISION:

The VP, Patient Services is responsible for making revisions to this policy.

References:

1. Hematology critical values were developed with the advice of the Hematology/ Oncology Group and the Transfusion Committee.

2. Microbiology critical values were developed in cooperation with the Infectious Disease Department Infection Control Committee and the following references
   a. *Performance Standards for Antimicrobial Susceptibility Testing; 26th edition*, CLSI supplement M100S, Wayne PA M100-S26 Vol 36, No 1, 2016
   b. *Antibiotic guidelines-2016 Johns Hopkins Medicine Website:* www.hopkinsmedicine.org/amp
   c. New York State Department of Health Communicable Disease Reporting- https://www.health.ny.gov/forms/instructions/doh-389_instructions.pdf

3. Chemistry critical values were developed and approved by Valerie Bush, Ph.D., Clinical Laboratory Director, with input from practitioner staff.

4. The Joint Commission, 2017 National Patient Safety Goals.

**Attachment A**

CHEMISTRY CRITICAL RESULTS/VALUES

Analyte

| Priority | General Chemistry | Below | Above | Units |
|---|---|---|---|---|
| 1 | Bilirubin, neonate | --- | 15.0 | mg/dl |
| 1 | Glucose (blood) | 40 | --- | mg/dl |
| 1 | Glucose (neonatal) | 45 | --- | mg/dl |
| 1 | Magnesium | 1.0 | 4.0 | mg/dl |
| 1 | Lactic Acid | --- | 3.9 | Mmol/L |
| 1 | Phosphorus | 1.0 | | mg/dl |
| 1 | Potassium | 2.8 | 6.0 | mmol/L |
| 1 | Total Protein (CSF) | | 100 | Mg/dl |
| 2 | Calcium, total | 6.0 | 13.0 | mg/dl |
| 2 | Calcium, ionized | 3.0 | 6.5 | mg/dl |
| 2 | Carbon Dioxide | 10 | 45 | mmol/L |
| 2 | Glucose (blood) | --- | 450 | mg/dl |
| 2 | Sodium | 120 | 155 | mmol/L |
| 2 | Osmolality (serum) | 265 | 320 | Mosmo/kg |
| 2 | Troponin | --- | 0.6 | ng/ml |
| | **Blood Gases/Stat Lab** | | | |
| 1 | PH (arterial/venous) | 7.25 | 7.60 | Units |
| 1 | pCO2 (arterial/capillary) | 23 | 60 | MmHg |
| 1 | pO2 (arterial/capillary) | 45 | --- | MmHg |
| 1 | Hematocrit | 21 | 60 | % |
| 1 | Hemoglobin | 7.0 | --- | g/dl |
| 1 | PH (cord blood) | 7.10 | | Units |
| 2 | Carboxyhemoglobin | --- | 30 | %COHb |
| | **TDM/Toxicology** | | | |
| 1 | Acetaminophen | --- | 40 | ug/ml |
| 1 | Alcohol | --- | 300 | mg/dl |
| 1 | Carbamazepine | --- | 15.0 | ug/ml |
| 1 | Digoxin | --- | 2.4 | ng/ml |
| 1 | Gentamicin (trough) | --- | 2.0 | ug/ml |
| 1 | Gentamicin (peak, random) | --- | 18.0 | ug/ml |
| 1 | Lithium | --- | 1.5 | mmol/L |
| 1 | Phenobarbital | --- | 40.0 | ug/ml |
| 1 | Phenytoin (total) | --- | 25.0 | ug/ml |
| | | | | |
| 1 | Salicylate | --- | 30.0 | mg/dl |
| 1 | Theophylline | --- | 20.0 | ug/ml |
| 1 | Tobramycin (trough) | --- | 2.0 | ug/ml |
| 1 | Tobramycin (peak, random) | --- | 18.0 | ug/ml |
| 1 | Valproic Acid | --- | 125.0 | ug/ml |
| 1 | Vancomycin (trough) | --- | 20.0 | ug/ml |
| 1 | Vancomycin random | --- | 30.0 | ug/ml |
| 1 | Vancomycin (peak) | --- | 70.0 | ug/ml |

**NOTES:**

- Priority 1 chemistry critical results/values are always called regardless of how often the test is requested.

- Priority 2 results/values: Once the practitioner or designated medical professional has been notified, subsequent critical results for the same test from the same facility will not be called unless the value has not been reported within the last three (3) days **or** the critical value has become worse and failed a delta check. Document as "previous CV called on__(*date)*___" in the LIS.

**Attachment B**

**HEMATOLOGY CRITICAL RESULTS/VALUES**

| Priority | Analyte | Population | Critical Value Below | Critical Value Above | Units |
|---|---|---|---|---|---|
| 1 | Hematocrit | < 1 month<br>>1 month | 35.0<br>21.0 | 60.0<br>60.0 | % |
| 1 | Hemoglobin | All | 7.0 | --- | g/dl |
| 1 | Platelet count | All | 20 | 1000 | x$10^3$ cells/ul |
| 1 | APTT | On heparin<br>NO heparin | --- | *<br>* | Seconds<br>Seconds |
| 2 | WBC | Newborn 0– 1 month<br>> 1 month | 2.0<br>1.0 | 30.0<br>25.0 | x$10^3$ cells/ul<br>x$10^3$ cells /ul |
| 2 | INR | All | --- | 4.4 | INR |
| 2 | Cerebrospinal fluid WBC's | Adults(>18years)<br>Children(1<18years)<br>Infants (0-1 year) | --- | 10<br>8<br>23 | cells/ul |
| 2 | Peritoneal dialysate WBC's | All | --- | 100 | cells/ul |
| 2 | Urine glucose | OB or Peds (<18y) only | --- | 100 | mg/dl |
| 2 | Urine ketones | OB or Peds (<18y) only | --- | 40 | mg/dl |

**NOTES:**
*Critical value levels for APTT vary slightly annually due to changes in reagent lot numbers. Refer to Laboratory Manual on Bassett Intranet for current value.

- Priority 1 hematology critical results/values are always called regardless of how often the test is requested.

- Priority 2 results/values: Once the practitioner or designated medical professional has been notified, subsequent critical results for the same test from the same facility will not be called unless the value has not been reported within the last three (3) days or the critical value has become worse and failed a delta check. Document as "previous CV called on *(date)*_____" in the LIS.

- Confirmatory INRs with Point of Care Testing values >6.0 are called the same day to the ordering/covering provider. Confirmatory INR values between 4.0 and 6.0 (e.g., from At Home Care)(labeled with orange CONFIRMATORY sticker) from Point of Care Testing sites are called only if the confirmatory laboratory result is critical and varies greater than 20% from the value obtained at the point of care testing site. If after 5PM, call the next day (Saturdays, Sundays and holidays included).
- Confirmatory HGBs from Point of Care Testing (labeled with orange CONFIRMATORY sticker) are called only if the confirmatory result is critical and varies greater than 20% from the value obtained at the point of care testing site. If after 5 PM, call the next day (Saturdays, Sundays and holidays included).

**Attachment C**

**MICROBIOLOGY CRITICAL RESULTS/VALUES**

The following results must be called to the practitioner or designated medical professional in the timeframe noted in D.4. above. All Critical value results with the exception of gram stains will be reported to Infection Control via workbench reports when identified. A ♣ symbol indicates that the result must be called to Infection Control as well as the covering provider when identified, or on the next business day.

| **Immunology or Parasitology Test** | **Body Site / Source** | **Critical value trigger** | **Also Notify Infection Control** |
|---|---|---|---|
| Cryptococcal antigen | CSF or serum | Positive | |

| **Microbiology Stains** | **Body Site / Source** | **Critical value trigger** | **Also Notify Infection Control** |
|---|---|---|---|
| Gram Stain | Normally sterile body fluids* or tissues^ | Any organism | |
| AFB Stain | Any site | Any Acid Fast Bacilli seen | ♣ |
| Fungal Stain | Normally sterile body fluids*or tissues^ | Any yeast or hyphal element | |
| Blood Parasite Stain | Any site | Any parasitic organism | |
| Aerobic, Anaerobic, Fungal, Yeast, AFB Mycobacteria) | Normally sterile body fluids* or tissues^ | Any organism | |

| **Microbiology Culture** | **Body Site / Source** | **Critical value trigger** | **Also Notify Infection Control** |
|---|---|---|---|
| Aerobic, Anaerobic, Fungal, Yeast, AFB Mycobacteria) | Normally sterile body fluids* or tissues^ | Any organism | |
| Aerobic | Any site | Highly Resistant Organisms –<br>• Extended Spectrum Beta Lactamase (ESBL) producing gram negative bacilli for **Inpatients Only**<br>•Carbapenem-resistant Enerobacteriaceae (CRE/KPC)#<br>• Vancomycin intermediate or resistant Staph aureus<br>• | ♣ |
| Aerobic, Fungal, Yeast, AFB (Mycobacteria) | Any site | Mycobacterium species<br>Dimorphic fungi –<br>• Coccidiodes<br>• Histoplasma<br>• Blastomyces<br>• Penicillium marnefferi | ♣ |
| Aerobic, Anaerobic | Any site | Potential bacterial agents of bioterrorism-<br>• *Bacillus anthracis*<br>• *Francisella tularensis*<br>• *Yersinia pestis*<br>• *Brucella species*<br>• *Burkholderia mallei* and *Burkholderia pseudomallei*<br>• *Clostridium botulinum* | ♣ |

KEY:

* Sterile fluid: i.e. Spinal fluids, pleural fluid, peritoneal fluids, joint fluids, blood
^ Sterile tissue: i.e. Surgical samples – such as kidney, liver, brain, spleen, cardiac tissue, etc.

# Enterobacteriaceae **NOT** including *Pseudomonas aeruginosa*, *Morganella* sp., *Proteus* sp., *Providencia* sp., B*urkholderia* sp., *Stenotrophomonas* sp. (this includes confirmed KPC/CRE organisms).

♣ Results must also be called each time to Infection Control.

NOTE:
Critical values that were previously positive do not have to be called again, unless the patient had a negative result in between and there is no change in the result value, with the exception of AFB stains, AFB cultures, Potential Bioterrorism Agents or Dimorphic fungi.

**Attachment D**

**BLOOD BANK CRITICAL RESULTS/VALUES**

The following results will be called to the ordering or covering practitioner **and** the Transfusion Service Director or covering pathologist.

I. Suspected acute or delayed hemolysis due to transfusion or HDN.

II.

**REFERENCE LABORATORY CRITICAL RESULTS/VALUES**

Our reference laboratories have established values for key laboratory tests that may be life threatening and may require immediate attention and/or action. Their protocol includes phone notification of the "critical value result." This information will be phoned to appropriate laboratory. It is the responsibility of the person receiving the call to relay this information to the ordering or covering practitioner, using the following guidelines:

I. Whenever taking phone results make sure to repeat the values to the caller for verification. You will be given the patient's name, patient identifier and test result.

II. Ask the normal or reference range (or in the case of drugs, the therapeutic range) so this information can also be given to the practitioner.

III. Make sure to ask the caller's name if it isn't provided.

IV. Call the practitioner or designated medical professional as per procedure.

V. Document the call information in the Laboratory Information System when verifying the final reference lab report.