DEPARTMENT OF PATHOLOGY AND LABORATORY MEDICINE

Policy Title: **Critical and Abnormal Value Reporting Policy#703**

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Policy:

It is the policy of the Department of Pathology and Laboratory Medicine to report critical values, which are those values that medical leadership has determined indicate a potentially dangerous condition requiring attention by the health care provider within one hour.

Results exceeding the following limits are identified by a "C" indicating **critical** on the laboratory report and in all electronic systems.

Inpatient and outpatient results that exceed the following limits are called to the appropriate location by the Laboratory staff, who will identify the result as "Critical". A chartable footnote will be added to the LIS patient record noting the date and time of the call, and the name of the person taking the results. A comment is also added that the receiver has read back the results to the caller. Please refer to Policy #Policy 726 - Critical Values, Add-On Orders, Read-Repeat Back, and Clarification of Orders for guidelines on documenting read back.

Procedure:

The following procedure has been established to assist the laboratory staff with the timely communication of critical values.

ChristianaCare Patient Care Services has defined who in the organization is authorized to take critical values. This list includes nurses, respiratory therapists, and unit clerks as well as physicians. Please refer to the Corporate Policy on Critical Values for further information and the specific list of authorized personnel.

I. Inpatient and 23 Hour Admitted Patients:

1. The Laboratory Scientist will call the Nursing location of the patient as identified in the LIS and state that they have a critical value to report on the patient.

2. A chartable footnote will be added to the LIS patient record noting the date and time of the call and the name of the person taking the results. A comment is also added that the receiver has read back the results to the caller.

3. If the receiver fails to read back the critical result, a Report to Learn event should be generated.

II. **Outpatient**

1. The scientist will identify the ordering health care provider in the LIS.
2. The scientist will use the INet Communication tab for the Medical Dental Staff Directory and enter the last name of the ordering individual to obtain the phone number. An alternative is to utilize the LIS to find the provider's name and phone number.
3. A chartable footnote will be added to the LIS patient record noting the date and time of the call and the name of the person taking the results. A comment is also added that the receiver has read back the results to the caller.
4. In the event a voice mail must be left, the message should request a return call to ChristianaCare Laboratory to receive a critical value on (patient name). The laboratory caregiver's name, contact phone number and time of call should be included in the message. The caregiver will document the call.
    a. If no return call is received within 15 minutes, another call should be placed with all documentation noted. If no return call has been received within 45 minutes of the original call and it is during business hours (M-F 8a – 430p), contact the Chief Pathologist for that laboratory section. In the absence of the Section Chief, contact the Laboratory Medical Director. During non-business hours (outside of M-F, 8a – 430p), contact the Pathologist on call through Vocera, unless it is a critical Hematology or Coagulation value, in which case contact the Hematologist on call. The caregiver should be prepared to provide the patient's name, critical value, ordering physician name, and physician's phone number.
5. It is the laboratory caregiver's responsibility to document all activity and to "hand off" the open item, if leaving the area for any reason. Notification of a critical value should not remain unresolved beyond one hour without appropriate notification.
6. When the on-call pathologist or hematologist returns the call to the laboratory with documentation of hand-off of the critical value to the clinician, a chartable footnote will be added to the LIS patient record noting the date and time of the call and the name of the person taking the results.

III. **Critical Values**

1. Clinical Chemistry

a. Routine Chemistry

Test	Low	High
Albumin	<1.5 g/dL	
Calcium, Total, Serum	<6.0 mg/dL	>12.5 mg/dL
Calcium, Ionized, Serum	<0.75 mmol/L	>1.50 mmol/L
Carbon Dioxide (CO_2), Serum	<10 mM/L	>45 mmol/L
CK	>20,000 IU/L	---
Glucose, Serum	<40 mg/dL	>400 mg/dL
Glucose (Newborn), Serum	<40 mg/dL	>400 mg/dL
HCO3	<10 mmol/L	---
Lactate, Plasma	---	≥4.0 mmol/L
Magnesium, Serum	≤1.0 mg/dL	>4.8 mg/dL
pO_2 Arterial	<40 mm Hg	---
O2 Saturation, Arterial	<70%	---
pH, Arterial/Venous	<7.2	>7.6
Phosphorus, Inorganic, Serum	≤1.0 mg/dL	---
Potassium, Serum	<2.8 mmol/L	>6.2 mmol/L
Sodium, Serum	<120 mmol/L	>160 mmol/L
High Sensitivity (hs) Troponin T (adults ≥18 years)		≥52 ng/L
High Sensitivity (hs) Troponin T Delta (adults ≥18 years)		≥7 ng/L
High Sensitivity (hs) Troponin T (Pediatrics <18 years)		≥25 ng/L
High Sensitivity (hs) Troponin T Delta (Pediatrics <18 years)		≥5 ng/L
Direct Bilirubin (neonates <14 days)	---	>1.0 mg/dL

Total/Neonatal Bilirubin

Specimen	Age	Critical Results (mg/dL)
Cord Blood	0 days	> 3.0
Serum/plasma	0 days	> 9.0
Serum/plasma	1 days	> 12.0
Serum/plasma	2 days	> 13.0
Serum/plasma	3 days	> 16.0
Serum/plasma	4 days	> 17.0
Serum/plasma	5 - 13 days	> 18.0
Serum/plasma	≥ 14 days	None

hs Troponin T, hs Troponin T Delta and CK critical results are called only in the first occurrence of the critical value and not subsequently

2. **Therapeutic Drug Levels**

The following critical results are called to the appropriate location for both inpatients and outpatients.

Test	Critical Result
Acetaminophen (Tylenol®), Serum	>150 mg/L
Caffeine, Serum	≥50 mg/L
Carbamazepine (Tegretol®), Serum	>20 mg/L
Digoxin, Serum	>2.5 mcg/L
Lithium, Serum	>2.0 mmol/L
Methotrexate	≥5.0 µmol/L
Phenobarbital, Peak/Trough, Serum	>60 mg/L
Phenytoin, Peak/Trough, Serum	≥30 mg/L
Salicylate, Serum	>30 mg/dL
Theophylline, Serum (Neonatal)	>15 mg/L
Theophylline (Adult)	>25 mg/L
Valproic Acid	>200 mg/L
Tacrolimus	≥20.0 ng/mL
Sirolimus	≥20.0 ng/mL
Cyclosporine	≥800 ng/mL

3. **Hematology**

Results exceeding the following limits are identified by a 'C' (Critical Value) on the laboratory report and are called to the nursing unit or outpatient location. Laboratory staff will identify the results as "Critical" and follow the guidelines for documentation stated above.

Test	Low	High
INR		≥6.0
PTT (inpatient only)		≥150 seconds
Hemoglobin (Hgb)	≤6.0 g/dL	
Platelets *(1st time for current admission)* (≥ 4 months)	≤20 X10E3/uL	≥1,000 X10E3/uL
Platelets *(everytime)* (< 4 months)	≤20 X10E3/uL	≥1,000 X10E3/uL
WBC *(1st time for current admission)***	≤1.0 X10E3/uL	≥40.0 X10E3/uL

ANC (ED and Pediatric ED patients only)	≤0.5 X10E3/uL /nL
Fibrinogen	≤100 mg/dL
Blood Parasites	Positive
Factor Inhibitor	≥0.6 B.U.
Fetal Hgb	≥0.2%

a. For Hematology and Oncology patients these critical results are called only on the first occurrence of the critical value and not subsequently. Critical WBCs on patients in CBLB that have the diagnosis of "stem cell" will not be called.
b. When calling critical results for WBC, HGB or PLT (including delta HGBs) all three results, regardless of their value, must be communicated to the floor when making the call.
Example: "I have a critical PLT result of 14 for patient John Doe. The patient also has a WBC of 11.0 and a HGB of 12.3. Follow up with the clinician is recommended."

4. Microbiology

The following critical inpatient results are called to the Nursing Unit and outpatient results are called to the physician's office. Laboratory staff will identify the results as "critical".

See POLICY 05 Guidelines for Reporting Critical and Abnormal Values.doc for further information.

IV. Abnormal Values

The following results, although not considered "Critical" (requiring physician notification within one hour of completion), require prompt notification of a care provider so that an evaluation of the impact on the patient can be determined. These are vital results that indicate abnormalities which suggest prompt attention but not immediate response by the health care provider. These results do not require a stat page.

These results will be called to the nursing unit or outpatient office by the laboratory staff upon completion. The laboratory employee will identify the results as "Abnormal".

These results do not require the critical call back protocol be initiated.

These abnormal (but not critical) values are listed below:

1. **Hematology**
    a. For ED Patients with a WBC <15.0 X10E3/uL and >20% bands (initial CBCWD only) a "BAND ALERT" will be called to the ED and OB Triage designated Critical Call number. The person taking the result will be told the results is a "BAND ALERT" and the date, time, and name of the person taking the result will be footnoted in the LIS. DIFFs are performed as per protocol outlined in "Differentials, Morphology and PE Scans".
        - Christiana ED 733-9515
        - Wilmington ED 320-4182
        - Middletown ED 203-1300

2. **Microbiology**

    See POLICY 05 Guidelines for Reporting Critical and Abnormal Values.doc for further information.

3. **Cytogenetics**

    All abnormal results are called to the ordering physician.

4. **Cytology**

    All Rush or Stat reports and unexpected malignancy or infectious organisms are communicated to the responsible clinician (or to the number designated on the requisition form).

5. **Surgical Pathology**

    All RAPID section (STAT) diagnoses are communicated to the responsible clinician (or the number specified on the requisition slip).

    All Products of Conception with a diagnosis of "Decidua, no villi seen" are communicated to the responsible clinician.

    Any unusual and/or unexpected findings are communicated to the responsible clinician at the earliest possible time.

6. **Transfusion Services (Blood Bank)**

    When a Type and Screen is ordered on a patient scheduled for OR and the screen is positive, the physician is called, and compatible units are cross matched.

When a patient has an autologous unit collected and one of the infectious disease screening tests is found to be positive, the physician is notified by letter by the Blood Bank of Delmarva. Christiana Care receives a copy of this letter.

Reactive HIVDI results differentiated as HIV-1 or HIV-2 are called to the ordering physician if the patient is an outpatient or to the patient's nurse if an inpatient.