

	Critical Values LABORATORY	
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PURPOSE:

Critical values are those that require immediate notification of the designated caregiver for initiation of appropriate clinical intervention to avert significant patient morbidity or mortality. This policy defines the process for establishment of a critical value list for AnMed Health Laboratory Services and outlines the steps for immediate notification.

SCOPE:

This policy is applicable in all AnMed Health Laboratory Services testing locations.

RESPONSIBILITY:

Client Services is responsible for critical value notifications that go to Epic Beaker Follow-Up Work List – Critical Calls during their operational hours (Monday through Friday, 0700 to 1730). This responsibility shifts to the technical testing personnel for all other hours.

Laboratory technical testing personnel are responsible for notifications of critical values associated with these tests at all times:

- Blood Culture
- CSF/Body Fluid Gram Stain & Culture
- AFB Smears/Culture
- Cryptococcal Antigen/Isolate
- Malaria
- Pre-transfusion Antibody Screen
- Transfusion Reaction

REFERENCES:

Not Applicable

RELATED DOCUMENTS:

Epic Beaker Clinical Pathology Learning Guide

POLICY/PROCEDURE:

- A. Analytes are selected and limits established for critical value notification through collaborative efforts of laboratory staff, pathologists, and medical staff using published literature, peer comparison, opinion/consensus and outcomes literature.
- B. The established critical value list is reviewed once per calendar year by the Pathology Department (Appendix A and Appendix B) and changes approved as needed. Suggested changes may be forwarded to medical staff department meetings for review as needed. The revised list is then presented to the Medical Executive Committee.
- C. When results are outside the critical limits as described in appendices A and B, laboratory personnel are instructed to contact the appropriate individual **IMMEDIATELY** as follows:

Patient Location	Contact Personnel
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Inpatients and Emergency Department (ED, ER, PC, FT)	Patient's nurse on the nursing unit or emergency department. For patients that have been discharged: contact the discharge physician or person on call for that physician.
Outpatient Clinics	Contact the clinic location (Exception: If clinic code is "CA," contact the ordering physician's office instead of the Infusion Center.)
Routine Outpatients	Contact the ordering physician's office during routine office hours. After hours, the physician on call for that practice should be contacted.
Regency Hospital	Contact Regency Hospital by calling the following: 864-255-1438
Kids Care	Contact hospital operator to speak to Pediatric Hospitalist on call after Kids Care is closed.
Free Clinic	Contact the Free Clinic at Ext 7801. If a physician is on site, personnel there will receive the critical value. If Free Clinic personnel will not take report due to lack of physician on site, page AnMed Health Family Medicine Resident designated as ATS DC/BKUP (ATS day call primary back up) in "Web on Call." Inform the resident that results are from a patient at the Free Clinic.
Home Health Agencies	Call the home health agency office. On-call personnel will be available after normal business hours.
Client Hospitals	Contact the laboratory at the client hospital.
Nursing Home Exception	Critical PT INR results for NHC (National Health Care) patients are called to their pharmacy (864-288-0816 ext 132) during their operational hours (Monday through Friday 0800 to 1700) and to NHC. At all other times, critical PT INR results are called only to NHC.
Employee Health Service	Contact Employee Health Nurse at extension 1305 (Monday through Friday 0700 to 1630). Call extension 1851 (Monday through Friday 1630 to 1700). After hours and on weekends, page AnMed Health Family Medicine Resident on call for Adult Teaching Services. Inform the Family Medicine Resident that the results are from an employee health physical.
Point-of-care Testing	When point-of-care testing is performed by the applicable caregiver, critical values are immediately known by and acted upon by the caregiver. When point-of-care testing is performed by someone other than the caregiver, critical values obtained will be called to the appropriate caregiver with



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documentation made in the patient's medical record.



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Patient Location	Contact Personnel
Referred Testing	Critical values obtained at LabCorp routinely will be called to Client Services who will handle notification during their working hours. If after hours, technical laboratory area is responsible for appropriate notification.
Occupational Health Fairs	Contact Occupational Health by calling the following numbers until a person is reached: 512-1766; 512-1851; 512-1329; 512-1305.
LabCorp Stats (performed at AnMed for LabCorp)	Criticals handled by Client Services Mon-Friday 7am to 6pm after these hours notify the ordering provider (provider found on requisition). Same as Routine Outpatient above

NOTE: If you leave a message for a caregiver to return your call, the following information shall be communicated in the message:

- Your name
- Phone number to call
- Notification that a critical value needs to be communicated to that caregiver

All messages should be followed up again within 30 minutes if no response has been received.

D. Verbally report the critical result as followings:

- Patient's identity (full name and date of birth)
- Test name
- Critical value (for quantitative test results state if the value is critically high or critically low)
- Request that the receiving personnel repeat back the patient's identification and critical value to confirm the verbal report.

E. Document the called report and readback and include the receiver's name (**full name is recommended**), date and time of call, and the identity of the responsible laboratory individual who made the call using Epic Beaker Comm Log; refer to Beaker Clinical Pathology Learning Guide – Communication Critical Results for detailed instruction.

- ❖ **NOTE:** Criticals from Arterial Blood Gases performed in the lab on inpatients should be called to Respiratory Therapy beeper designated on the order or beeper #2033. It will not be necessary to call the nursing unit unless Respiratory does not answer their page.
- ❖ **NOTE:** For inpatients, antimicrobial therapeutic drug criticals (amikacin, gentamicin, tobramycin, and vancomycin) will be called to the pharmacy at extension 1200.

F. If the stated contact personnel cannot be reached, search for alternate contact numbers or alternate physicians. If all attempts have failed after 1 hour; notify the pathologist on call. Document each attempt and who was called. Any problems encountered in accomplishing this task should be investigated and a Process Assessment Form completed.



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APPENDIX A LABORATORY CRITICAL VALUES

TEST	LOW	HIGH
Sodium	Less than 121 mmol/L	Greater than 159 mmol/L
Potassium (<i>0 – 30 days old</i>)	Less than 2.6 mmol/L	Greater than 7.9 mmol/L
Potassium (<i>all other ages</i>)	Less than 3.0 mmol/L	Greater than 5.9 mmol/L
Glucose (<i>0 to 4 weeks old</i>)	Less than 31 mg/dL	Greater than 299 mg/dL
Glucose (<i>all other ages</i>)	Less than 50 mg/dL	Greater than 499 mg/dL
Calcium	Less than 6.1 mg/dL	Greater than 11.9 mg/dL
Lactate (Lactic Acid)		Greater than 3.0 mmol/L
PO2 (Arterial)	Less than 51 mmHg	
PCO2 (Arterial)	Less than 21 mmHg	Greater than 69 mmHg
pH (Arterial)	Less than 7.21 units	Greater than 7.59 units
CO2	Less than 12 mmol/L	Greater than 45 mmol/L
INR		Greater than 3.7
PTT		Greater than 156.9 seconds
Platelet Count	Less than 51 K/microL	Greater than 999 K/microL
Hematocrit	Less than 21.0%	
Hemoglobin	Less than 7.0 g/dL	
Neutropenia	Absolute neutrophil count Less than 1.01 K/microL	
Salicylate		Greater than 29 mg/dL (toxic)
Ketones/Newborn (less than 1 month old)		POSITIVE
Urine Glucose/Newborn (less than 1 month old)		POSITIVE
Blood Culture		POSITIVE
CSF/Body Fluid Gram Stain & Culture		POSITIVE
AFB Smears/Culture		POSITIVE
Cryptococcal Antigen/Isolate		POSITIVE
Bacterial/Group B Strep Antigen (Referred)		POSITIVE
hsTroponin T		Greater than or equal to 100 ng/L
CKMB		Greater than 4.9 ng/mL
Cortisol	Less than 2 mcg/dL	Greater than 49 mcg/dL
Magnesium	Less than 1.1 mg/dL	Greater than 3.9 mg/dL
Malaria		POSITIVE
Pre-transfusion Antibody Screen (If transfusion delay is expected)		POSITIVE
Transfusion Reaction		Hemolytic, Bacterial Contamination, or Transfusion-Related Acute Lung Injury
Needlestick Protocol – HIV Rapid	All Results	



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APPENDIX B CRITICAL VALUES for THERAPEUTIC DRUGS

TEST	TOXIC
Acetaminophen, serum	Greater than 149.9 mcg/mL
Amikacin Notify Pharmacy	PEAK -- Greater than 29.9 mcg/mL TROUGH -- Greater than 9.9 mcg/mL
Carbamazepine	Greater than 14.9 mcg/mL
Digoxin	Greater than 2.4 ng/mL
Gentamicin Notify Pharmacy	PEAK -- Greater than 9.9 mcg/mL TROUGH -- Greater than 1.9 mcg/mL
Lithium	Greater than 1.99 mmol/L
Phenobarb	Greater than 39.9 mcg/mL
Phenytoin	Greater than 29.9 mcg/mL
Primidone (Mysoline – LabCorp)	Greater than 24.0 mcg/mL
Theophylline	Greater than 19.9 mcg/mL
Tobramycin Notify Pharmacy	PEAK -- Greater than 9.9 mcg/mL TROUGH -- Greater than 1.9 mcg/mL
Valproic Acid	Greater than 174.9 mcg/mL
Vancomycin Notify Pharmacy	PEAK -- Greater than 49.9 mcg/mL TROUGH -- Greater than 24.9 mcg/mL

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