

SUBJECT: Critical Values and Abnormal Values

1. **PURPOSE:** To outline policy and procedures for critical values, critical tests and abnormal values.

2. **DEFINITIONS:**

- **Critical Value**—An abnormal result or value that represents a **significant threat** to the patient and requires **immediate** intervention or close monitoring. This refers to all diagnostic tests, including imaging studies, electrocardiograms, laboratory tests, and other diagnostic tests.
- **Abnormal Value or Finding**—A value or finding that is not deemed critical but is significant enough to require evaluation and follow-up (e.g., a lung nodule).

3. **POLICY AND PROCEDURES:**

A. **Ordering of Tests and Exams.** When an order is placed for a lab test, imaging/radiology exam or other test (for example an EKG or pulmonary function test), the **correct name** of the ordering provider will be entered along with the correct patient location. All orders for tests performed in areas other than the Laboratory must also include the ordering provider's **telephone number** (the lab's computer package does not permit entry of telephone numbers). For imaging exams, the reason for the exam, including pertinent history, should also be included in the order.

B. **Critical Value Procedures.**

1. **List of Critical Values.** For a list of critical values at this institution, see Attachment A
2. **Expected Timeframes for Reporting Critical Values.** The maximum length of time between ***availability of a critical value*** and ***reporting it*** to the responsible licensed caregiver is 30 minutes.
3. **Persons To Whom Critical Values Should be Reported.** The following process will be used to notify staff of critical results:
 - a. ***Critical Values (Laboratory)***—Whenever lab personnel page someone to report a critical value, they will enter *911 after their call-back number (*exception*: for positive microbiology critical results, only the first result will be coded as *911). All critical values from **Inpatient Wards** will be called to the ordering provider. If the ordering provider cannot be immediately located, the value will be reported to a designated surrogate (registered nurse) on the patient's ward. If a critical value needs to be reported to a designated surrogate, lab personnel will identify themselves by name and share the name of the provider and the pager/number they were using to try to reach the provider. If the designated surrogate cannot be contacted, lab personnel will contact the appropriate person listed within this document: [Q:\CRITICAL VALUE SURROGATES](#), which will be continuously maintained by Lab Service. All critical values from **Outpatient Clinics (including CBOCs)** will be called to the ordering provider during normal business hours (8am to 4:30pm). If the ordering provider cannot be immediately located or it is outside of normal business hours, the value will be reported to the designated surrogate listed in [Q:\CRITICAL VALUE SURROGATES](#). **Note:** If a critical value needs to be reported to a designated surrogate, lab personnel will identify themselves by name and share the name of the provider and the pager/number they were using to try to reach the provider. Exceptions to use of the designated surrogates listed in the Q drive are:
 - ***Critical Heparin APTT***—The lab will call the IV Room at ext 3128 and ask for the pharmacist who is on duty. The pharmacist will respond to the critical value in accordance with Pharmacy policy.

- *Critical Value INR* (Anticoagulation Clinic)—The critical value will be called directly to a doctor, registered nurse or pharmacist in the Anticoagulation Clinic.
 - b. ***All Other Types of Critical Values (Non-Laboratory)***—If the ordering provider cannot be immediately located-and the patient is a Medicine inpatient or Cardiology inpatient-the MOD should be contacted. For all other types of patients, the person listed as on-call contact for the specialty in question should be contacted. This person's name can be found in the "On-call schedules" folder on the Q drive (search for the specialty in question).
 - 4. **Read-Back and Documentation Requirements for Critical Values.** When reporting a critical value, the personnel making the call will confirm the name and title of the person to whom a result is being called. They will note in the log or the patient record the name of the individual contacted and date and time of notification. The staff member accepting the critical value will write it down (to minimize the likelihood of an error) and give a verbal read back of the patient's full name, social security number or date of birth, and completed test result. If a surrogate is accepting the value on behalf of a physician, the surrogate will then notify the patient's provider or responsible covering provider of the critical value. When a provider or surrogate accepts a critical value, s/he will document receipt of the value, along with the date, time and name of the physician notified (if applicable) in the patient's chart or CPRS, as appropriate.
 - 5. **Acting On Critical Values.** The ordering provider will act on or make appropriate referrals in response to critical values as appropriate. Critical values for patients from other VISN 23 medical centers will be handled in accordance with VISN 23 policy.
- C. **Follow-Up On Abnormal Values.** The ordering provider will act on or make appropriate referrals in response to abnormal values as appropriate.
4. **RESCISSIONS:** Policy PE-08P, Critical Values, dated April 12, 2017.
5. **FOLLOW-UP RESPONSIBILITY:** Director, Pathology and Laboratory Medicine Service and Administrative Officer, Imaging PSL.

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Attachment A: List of Values and Results Considered Critical At the Minneapolis VA Health Care System

Type of Test		List of Critical Values		
Cardiac-Related		(I) Markedly positive stress test (a single area of ischemia, regardless of vascular territory; multiple areas of ischemia in separate vascular territories; ischemia in a patient who demonstrates clinical instability on the treadmill, such as symptomatic hypotensive response to exercise; and or ischemia associated with a positive EKG in the first stage of exercise); (II) acute ST elevation MI; (III) regular wide complex tachycardia with rate > 120/min; (IV) heart rates below 40; (V) heart rates above 150.		
Imaging/Radiology & Nuclear Medicine		The following findings that are new and require immediate clinical attention will be considered critical values. Other findings may be deemed critical and called to the appropriate clinical service at the discretion of the interpreting radiologist, including but not limited to: 1. Unexpected air outside anatomic boundaries: pneumothorax, pneumoperitoneum, bowel wall, portal venous. 2. Anatomic obstruction: bowel, ureteral causing significant hydronephrosis. 3. Acute intracranial hemorrhage/herniation. 4. Acute spinal cord compromise. 5. Unexpected retained surgical items. 6. Acute vascular abnormality requiring intervention: hemorrhage, dissection, occlusion, pulmonary embolism. 7. Results of stroke protocol head CT: positive or negative.		
Point of Care Testing		Fingerstick Blood Glucose (FSBG) <= 50 mg/dl or >=500 (treat per protocol and then notify physician)		
Pulmonary Function Test		pO2 < 50 mmHg or sat of < 80%		
Laboratory Tests	<i>Clinical Chemistry</i>	Calcium <=6 or >= 14 mg/dl Calcium (Ionized) <= 3 or >= 6 mg/dl Carboxyhemoglobin > 20% Glucose <= 50 mg/dl or >=500mg/dl Magnesium < 1.2 mg/dl Troponin >0.021 ng/ ml (1st per episode)	Osmolality (serum) <= 265 or >= 325 mOsmol/Kg Ph <= 7.2 or >= 7.6 Phosphorus < 1.0 mg/dl P02 <= 50 mm/Hg (arterial only) Potassium <= 2.5 or >= 6 mmol/L	Sodium <= 115 or >= 160 mmol/L T4, Free > 2 ng/dl
	<i>Coagulation</i>	APTT > 50 seconds Heparin APTT > 95 seconds Argatroban APTT > 110 seconds	INR > 5.5 Enoxaparin (Anti-Xa for enoxaparin) > 1.50 Units/ml HATT (any positive value)	Fibrinogen <80 mg/dL
	<i>Hematology</i>	Hemoglobin, Females < 7 gm/dl (1 st of day) Absolute neut <0.5K/cmm (1 st of day)	Hemoglobin, Males < 7 gm/dl (1 st of day) Platelet < 30,000 mm3 (1 st of day)	White Blood Cell Count (WBC) < 1,000 (CBC without diff) or > 35,000 mm3 (1 st of day)
	<i>Microbiology</i>	AFB on smear or culture from any specimen type C.difficile PCR on 1 st test found to be positive	Organisms found on smear, culture, antigen or DNA test from any normal sterile body sites (e.g., blood, CSF, synovial fluid, peritoneal fluid, sterile-site tissues) (positive blood culture is 1 st per day)	
	<i>Toxicology</i>	Acetaminophen > 20 mcg/ml Amitriptyline+Nortriptyline>450 ng/ml Carbamazepine (Tegretol) > 15 mcg/ml Carbamazepine (Tegretol) + 10, 11 Epoxide Carb > 15 and 10, 11 Epoxide > 10 mcg/ml Desipramine > 450 ng/ml Digoxin > 2.5 ng/ml Disopyramide > 8 mcg/ml	Doxepin + N-Desmethyldoxepin > 450 ng/ml Ethosuximide > 150 mg/l Gabapentin > 60 mcg/ml Imipramine + Desipramine > 450 ng/ml Lead (Blood) > 40 mcg/dl Levetiracetam > 120 mcg/ml Lithium > 1.5 mmol/L Mexiletine > 3 mcg/ml Nortriptyline > 450 ng/ml	Phenobarbital > 58 mcg/ml Phenytoin (Dilantin) > 38 mcg/ml Phenytoin, Free (Dilantin) > 3 mcg/ml Primidone > 18 mcg/ml Procainamide > 10 mcg/ml Procainamide + NAPA > 30 mcg/ml Salicylate > 30 mg/dl Theophylline > 20 mcg/ml Trimipramine > 450 ng/ml Valproic Acid > 160 mcg/ml

*Clinicians must utilize clinical judgment to determine if a result is a critical value/finding. Therefore, this list delineates most – but **not all** – results/values deemed critical at the Minneapolis VA Health Care System3