

## **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 in Attachment B. 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 Attachment B.
  - b. 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 on Attachment B 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** (Warfarin Clinic) - The critical value will be called directly to a doctor, registered nurse or pharmacist in the Warfarin Clinic.
  - c. **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 critical values 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).  
*Note:* In **rare** instances when this person is not available the value will be reported to the contacts listed on Attachment B.
  - 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.
  - 6. **Monitoring of Critical Value Lab Reporting for Inpatients.** Random chart reviews will be performed to verify compliance by patient service lines.
- 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-08M, Critical Values, dated September 19, 2011.
5. **FOLLOW-UP RESPONSIBILITY:** Director, Pathology and Laboratory Medicine Service and Administrative Officer, Imaging PSL.

BARRY D. SHARP  
Director, Minneapolis VA Health Care System

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

Attachment B: List of Surrogate Contacts for Reporting Critical Lab Values

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

Type of Test		List of Critical Values		
<b>Cardiac-Related</b>		(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.		
<b>Imaging/Radiology &amp; Nuclear Medicine</b>		The following pathophysiologic categories <b>that are new findings and require immediate clinical attention</b> will be considered critical values: (I) air outside anatomic boundaries—chest, abdomen, etc.; (II) anatomic obstruction—GI, GU, vascular, neuro, etc.; (III) vascular abnormality (i.e., acute embolic, acute occlusion, acute bleed); (IV) new soft tissue mass—tumor, inflammatory, traumatic, etc; (V) acute skeletal trauma—fracture requiring treatment; (VI) acute intracranial hemorrhage; (VII) acute appendicitis; and (VIII) retained surgical items.		
<b>Pulmonary Function Test</b>		pO2 < 50 mmHg or sat of < 80%		
<b>Laboratory Tests</b>	<i>Clinical Chemistry</i>	Calcium <=6 or >= 14 mg/dl Calcium (Ionized) <= 3 or >= 6 mg/dl Carboxyhemoglobin > 20% Glucose <= 50 mg/dl Magnesium < 1.2 mg/dl	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 Troponin > 0.021ng/ml (1 <sup>st</sup> result)
	<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 <sup>st</sup> of day)	Hemoglobin, Males < 7 gm/dl (1 <sup>st</sup> of day) Platelet < 30,000 mm3 (1 <sup>st</sup> of day)	White Blood Cell Count (WBC) < 1,000 or > 35,000 mm3 (1 <sup>st</sup> of day)
	<i>Microbiology</i>	AFB on smear or culture from any specimen type C.difficile PCR on 1 <sup>st</sup> 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 <sup>st</sup> 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 System.

Attachment B, List of Surrogate Contacts for Reporting Critical Lab Values

*Note:* This attachment lists contacts for reporting **critical lab values**. In rare instances, the people listed below may also be contacted to report non-laboratory critical values. See section 3B(2) on page one for more information.

Type of Clinic or Ward	Daytime Contact Information		Off-Tour** Contact Information	
	Provider Surrogate	Whom To Call If Neither the Provider or Surrogate Can Be Reached	Provider Surrogate	Whom To Call If Neither the Provider or Surrogate Can Be Reached
<b>CBOCs and C&amp;P</b>	C&P, Maplewood, Rochester, Mankato St James—call Lori Baier at 612-919-9076. Chippewa Valley, Rice Lake, Hayward, Hibbing---call John Scheel at 612-919-9087. Northwest Metro—call Greg Hausker at (612) 290-8399.	C&P: Mike Koopmeiners, MD, at pager 612 818-0234  All other: Peter Duane, MD, at 952-292-5859.	The MOD at pager 818-7162.	The Emergency Department physician at ext. 2996.
<b>Twin Ports</b>	Mary Kolosky at 715-392-9711 or 8-897-2907 or pager 818-7651	Clyde Markon, MD at 715-398-2901; 8-897-2933; Pgr 612-818-7401 or the Switchboard at 715-392-9711	The MOD at pager 818-7162.	The Emergency Department physician at ext. 2996
<b>Dental</b>	Chief, Dental Service at ext. 4072 or 2039.	-----	Dentist on call via the medical center operator.	-----
<b>Imaging/CT</b>	Imaging Office at ext. 2038.	Interventional radiology nurses at ext. 2939	The night tech at ext. 2950 or beeper 818-0546 or 818-0184.	-----
<b>Medicine</b> <i>Inpatient Areas</i>  <i>Outpatient Clinics</i>	Surrogate is RN patient's ward.	MOD at pager 818-7162.	Surrogate is RN on patient's ward.	MOD at pager 818-7162.
	<b>Clinic charge nurse listed below (do not call the physician's office):</b>	For all of these areas call the MOD at pager 818-7162.	Emergency Department/Urgent Care calls should be made to the charge nurse at ext. 2996. →  All other calls should go to the MOD at pager 818-7162. →	MOD at pager 818-7162.       Emergency Department/Urgent Care charge nurse at ext. 2996
	1A/1B, 2J, 4F, and 3S at beeper 818-2403			
	3D at ext. 4958/3350			
	AEU/4E at ext. 3503			
	Cardiac Cath Lab at beeper 818-0929			
	Dialysis at ext. 3285			
	Emergency Dept/Urgent Care/Admissions cell 919-0820			
	Heme/Onc ext. 4138			
	Women's at ext. 2030			
	Warfarin (PharmD) at ext. 4678/1628			

\*\* For Heme/Onc and Warfarin clinic critical values, the off tour is from 4 PM until 7:30 AM and on all weekends and holidays. For all other areas, off-tour is from 4:30 PM until 8 AM and all weekends and holidays

Attachment B, List of Surrogate Contacts for Reporting Critical Lab Values

*Note:* This attachment lists contacts for reporting **critical lab values**. In rare instances, the people listed below may also be contacted to report non-laboratory critical values. See section 3B(2) on page one for more information.

Type of Clinic or Ward	Daytime Contact Information		Off-Tour** Contact Information	
	Provider Surrogate	Whom To Call If Neither the Provider or Surrogate Can Be Reached	Provider Surrogate	Whom To Call If Neither the Provider or Surrogate Can Be Reached
<b>Extended Care ECC</b>	RN on patient's ward	ECC Physician on-call (schedule is located on the Q-drive).	RN on patient's ward	ECC physician on-call, schedule available <i>electronically (MIN Clinical On-Call desktop icon)</i> .
4J	RN on patient's ward	PM&R resident on-call, schedule available on the Q-drive.	RN on patient's ward	PM&R resident on-call, schedule available <i>electronically (MIN Clinical On-Call desktop icon)</i> .
Outpatient PM&R	Clinic nurse at ext. 3539.	PM&R resident on-call, schedule available on the Q-drive.	PM&R resident on-call (schedule available on the Q-drive).	PM&R staff MD on-call, schedule available <i>electronically (MIN Clinical On-Call desktop icon)</i> .
GRECC & Home Care	Medical Director of Home Care at ext. 2140 or beeper 818-7383.	ADHC Nurse Manager at ext. 2145 or beeper 818-0436.	Medical Director of Home Care at ext. 2140 or beeper 818-7383.	ADHC Nurse Manager at ext. 2145 or beeper 818-0436.
<b>Psychiatry Inpatient</b>	RN on the patient's ward.	1K nurse manager via cell 612-919-6468.	POD at beeper 818-7120.	On call staff psychiatrist via the Medical Center Operator.
<i>Outpatient</i>	Chief Nurse, Mental Health PSL at ext. 2979 or cell phone 612-919-8133.	Clinician of the day in Psych Urgent Care at x 7655 or x1254.	POD at beeper 818-7120.	On call staff psychiatrist via the Medical Center Operator.
<b>Surgery/ Specialty Care Inpatient</b>	RN on the patient's ward.	SOD at pager 9-818-7622 ↓	RN on the patient's ward.	General Surgery On-Call Staff Surgeon ( <i>electronically (MIN Clinical On-Call desktop icon)</i> ) ↓
<i>Outpatient Surgery, Neurology, Radiation Oncology</i>	Director of Specialty Care Clinics at beeper 818-7681. <i>Note: OR critical values should be called directly to the OR.</i>	Director, Specialty Care PSL or designee at pager 9-818-7166 or cell phone (612) 968-8073.	SOD at beeper 818-7622 or via the medical center operator.	Director, Specialty Care PSL or Designee @ pager 9-818-7166 or cell phone (612) 968-8073

\*\* For Heme/Onc and Warfarin clinic critical values, the off tour is from 4 PM until 7:30 AM and on all weekends and holidays. For all other areas, off-tour is from 4:30 PM until 8 AM and all weekends and holidays