JAMES E VAN ZANDT VA MEDICAL CENTER
ALTOONA, PENNSYLVANIA

MEDICAL CENTER MEMORANDUM (MCM) 11-18
MARCH 2011

REPORTING OF CRITICAL AND ABNORMAL VALUES

1. **PURPOSE**: To establish procedures for the communication of reported critical (panic) and abnormal test results from lab, radiology, and cardiology to the ordering physician or provider.

2. **SUMMARY OF MAJOR CHANGES**: Removal of the requirement for reporting "critical tests" as recommended by the Joint Commission. Contents of MCM 11L-08, Reporting of Laboratory Critical Values, dated February 2010, have been incorporated into this MCM. MCM 11L-08 is being rescinded.

3. **POLICY**:

a. Critical radiology, cardiology, and laboratory/respiratory test results (see Attachments A, B, and C) will be communicated directly to the ordering physician or provider, by the service providing the diagnostic test result. Electrocardiograms (EKGs) completed on an inpatient basis are immediately given to the provider. Acknowledgement of receipt of a critical test result, along with any actions taken, shall be documented in the electronic medical record on a STAT basis (less than two hours).

b. Abnormal test results may be transmitted by electronic (view alert) or direct communication.

c. Fee basis test results will be scanned into the electronic medical record and the original will be stored in accordance with appropriate VA regulations. These test results will be accessed through VistA with alerts in the computerized patient record system (CPRS).

d. If the ordering physician or provider is not available to receive critical/abnormal results, responsibility will fall upon the designated covering service chief, provider, or medical officer on duty (MOD).

4. **DEFINITIONS**:

a. **Critical result** is a diagnostic finding that is associated with a high likelihood of short term poor outcome and requires either STAT basis (less than two hours) therapeutic intervention or close clinical monitoring.

b. **Abnormal test result** is a diagnostic finding that requires attention by the ordering provider but not necessarily in a STAT basis time frame.

2. MCM 11-18, Reporting of Critical and Abnormal Values

c. **Direct communication** is transmission of test results by telephone or face-to-face conversation.

d. **Electronic communication** is transmission of test results by electronic means (e.g. alerts, e-mail, facsimile, etc.).

e. **Ordering physician or provider** is a practitioner privileged to enter and sign orders for diagnostic tests.

f. **Reporting staff** is the staff member who observes and reports a critical result.

5. **RESPONSIBILITIES**:

a. **The Chief of Staff** will:

(1) Ensure that a process for communication of critical and abnormal results is in place.

(2) Ensure that monitors are in place for the timeliness of critical result communication as well as the clinical action taken by the provider as a result of this communication to ensure compliance with VHA and local policies.

(3) Review the monitors of test result communication and resolve process deficiencies with program managers and service chiefs.

(4) Establish a chain of responsibility for receipt of critical and abnormal results.

b. **The service chief of reporting service** will:

(1) Define the critical results for the service.

(2) Define, monitor, and ensure compliance with established timeframes for provider notification of critical and abnormal results.

(3) Ensure that staff adhere to local policy for the reporting of test results and that they document the transmission of critical results in the electronic record, to include at a minimum:

(a) Date and time of communication of results.

(b) Name of practitioner to whom the results were conveyed.

(c) Documentation that read back of results occurred.

3. MCM 11-18, Reporting of Critical and Abnormal Values

(4) Work with the Chief of Staff on identifying and resolving process deficiencies.

c. **Ordering physician or providers** will:

(1) Ensure that, when the initial order is placed, that the order is accurate, complete, and authenticated.

(2) Receive and act upon any critical and abnormal values. The Medical Officer of the Day (MOD) is responsible for acting on any critical and abnormal values during non-business hours. All actions taken on critical values must be documented in the medical record within two hours of receipt of the result.

(3) Ensure a surrogate is assigned to receive critical and abnormal test result notifications when the ordering physician or provider is not available to review the results, to prevent avoidable delays in treatment or response.

(4) Confirm the critical results by writing down and then "reading back" the results to the person communicating the critical values.

(5) Document changes in treatment plans in response to critical test results in the medical record within two hours.

(6) When test results are discussed with patients, the discussion needs to be documented in the electronic medical record.

d. **Supervisor** of the reporting service is responsible for monitoring service practice on reporting critical results , collecting data, and working with the chief of service to report data to the Chief of Staff.

6. **PROCEDURES**:

a**. Reporting of Critical Test results**: When a critical result is observed, the ordering provider is paged or called.

(1) When the provider responds, he/she will write down and then read back the results to ensure accuracy.

(2) An entry must be made by reporting technologist in the report comment line noting the date, time, initials of reporting staff member, read-back documentation, and person to whom the results were conveyed. For Radiology, Cardiology, and Respiratory, the reporting technologist starts a critical result progress note which the physician or provider then addends with action taken. For laboratory abnormal results the practitioner notified will start the progress note.

(3) All technologists will also document critical results in a logbook with the date, time, and practitioner notified, along with his/her initials.

(4) If a provider does not respond to initial calls within ten minutes, the provider will be overhead paged. In the event the ordering physician or provider cannot be reached, the critical value shall be called to a covering service chief, provider, or MOD during non-business hours.

b. **Reporting of abnormal (non-critical) test results**:

(1) Abnormal test results will be reported through the View Alert system and reviewed by the ordering/covering provider by using the View Alert system in CPRS.

(2) In order to assure the provider's awareness of abnormal values, "alert" coverage for leave will be provided, as follows:

(a) When the ordering provider is absent less than three administrative workdays, it will be the responsibility of that provider, upon his/her return to duty, to review the test results received while absent using the View Alert system in CPRS.

(b) When the ordering provider plans leave for more than three administrative workdays, he/she will be responsible for delegating a surrogate to review test results on his/her behalf using the VistA View Alert system.

(c) When a provider is on unplanned leave for more than three administrative workdays a surrogate will be delegated by the providers within the same team or by the service chief, to review test results using the CRPS Notification alert system. The service chief will send an Outlook message to the Clinical Application Coordinators (CACs) listing the new surrogate, carbon copy to the Information Security Officer. When the provider returns, the service contacts the CACs to remove the surrogate.

(3) In the case of computer system malfunction, MCM 00-28, Contingency Plan for Computer Downtime, will be followed and test results will be printed to designated team printers.

c. **Actions required for critical and abnormal results**:

(1) **When critical results** are communicated directly to the provider, needed action will be taken. The physician or provider will enter a note for laboratory results and addend a note for radiology, cardiology, and respiratory results in the electronic record and notify the patient. Critical accuchecks done in the hospital/CLC are alerted to the provider/MOD by nursing staff.

(2) **Abnormal (non-critical) test results** will be reviewed within four administrative workdays. When action is necessary, the provider will enter an electronic progress note

to provide direction to the nurse for notification of the patient regarding the need for medication changes, future tests, consults, appointments, etc.

(a) Nurses will review progress notes within one administrative workday and will enter a note/addendum to the appropriate provider's electronic progress note indicating the action taken based on the provider's direction. Any action that cannot wait one administrative work day MUST be brought to the nurse's attention by either face-to-face or telephone communication, and documented in CPRS.

d. **Notification of patient's test results**:

(1) All results, whether normal, critical, or abnormal, are communicated to patients no later than 14 calendar days from the date on which the results are available to the ordering healthcare provider. Significant abnormalities require immediate attention, the communication should occur in the timeframe that minimizes risk to the patient.

(2) If the patient lacks decision making capacity, results will be communicated to the personal representative of the patient identified as his/her designated representative.

(3) Communication with patients can occur in person, by telephone or in writing.

(4) Document that the communication was received and understood, for communications where it is important for the patient to quickly take some kind of action, such as a change in medication or a return to the medical center for further evaluation.

(5) The results are communicated by licensed or certified health care staff. It is not required that the ordering practitioner personally communicate every result. This task may be delegated to other licensed health care staff when clinically appropriate.

(6) When it is not possible to contact the patient (for example: the patient has moved and left no contact information), all attempts to communicate with the patient are documented in the medical record.

(7) **Critical results**:

(a) Critical results will be reviewed by the ordering/covering provider. Whether the results require action or not, documentation is required in CPRS.

(b) The following steps will be taken and documented in CPRS for those critical results that require action:

1. Attempts will be made to contact the patient, or designated representative, by telephone. If the attempts are unsuccessful, at the end of the business day, the patient's provider will give information, in writing, to the Nursing Officer of the Day (NOD) or Chief, Outpatient Service, who will continue to attempt to contact the patient.

2. If the patient cannot be reached by telephone, all available options will be used to contact the patient. This will include requesting assistance from the local police, Disabled American Veterans, etc.

(8) **Abnormal (non-critical) test results**:

(a) Significant abnormal, non-critical tests will be called to the patient. Before the patient is contacted, the provider will enter a Provider/Nurse Communication progress note with instructions to the team nurse. During non-business hours, the nurse on duty (NOD) is notified that the patient needs called and the NOD attempts contact.

(b) The staff member contacting the patient will document in the patient's electronic medical record indicating that the patient or designated representative was contacted, along with the actions and instructions given to the patient.

(c) If unable to contact the patient or designated representative, attempts to make contact will be made for three consecutive administrative workdays and documented in the electronic medical record, and the requesting provider will be alerted.

(d) If all attempts to contact the patient or designated representative fail, the provider will direct the medical support assistant (MSA) to send a letter to the patient indicating the need for the patient to contact the provider as soon as possible. A note stating "letter was sent" or addendum to the appropriate provider/nurse communication progress note will be documented in the electronic medical records and the requesting provider will be alerted.

(e) Patients will be told that they may telephone their primary care team and discuss any test results with the provider or nursing staff.

(f) Patients may request copies of their test results through the Release of Information Office (ROI).

(9) **Fee Basis test results will be processed in the following manner**:

(a) Upon completion of the test, the vendor providing the service will call all critical values to the ordering physician or provider, fax the results to the dedicated fax printer located in Health Information Management Service (HIMS) (scanning) at 814-940-6303, and mail the final report to Health Information Management Service (HIMS).

(b) HIMS will scan the test results into the electronic medical record. Once the results are scanned, this will complete the fee request. The completion of the fee request will generate an Alert notifying the requesting provider and fee basis personnel that the consult has been completed.

(c) When it is necessary to contact a patient regarding the results of a fee basis test, procedures outlined in paragraph above will be followed.

e. When contacting a patient or designated representative concerning test results, Health Insurance Portability and Accountability Act (HIPAA) regulations will be followed.

7. **REFERENCES**:

a. VHA Directive 2009-019, Ordering and Reporting Test Results, dated March 24, 2009.

b. “American College of Radiology Appropriateness Criteria”, dated 1996 CAMH 2004.

c. Critical Value List, recommended by VISN 4 Lab Sub Council, 2003.

d. Lundberg, G.D.: Managing the Patient-Focused Laboratory, Medical Economic Co.

e. Reporting of Critical and Abnormal Laboratory Test Results – Policy Memorandum VISN 4 No. 10-4.

f. The Joint Commission Comprehensive Accreditation Manuals.

8. **RESCISSIONS**: MCM 11-18, Reporting of Critical and Abnormal Values, dated November 2010; MCM 11L-08, Reporting of Laboratory Critical Values, dated February 2010.

9. **REISSUE DATE**: Three years from date of MCM

10. **FOLLOW-UP RESPONSIBILITY**: Chief of Staff

/s/
Tony L. Bennett, FACHE
Director

Distribution “E”

Attachments – A,B,C

8. MCM 11-18, Reporting of Critical and Abnormal Values

ATTACHMENT A

Guidelines for Critical Test Results

***(*All critical results must be called to ordering provider. If after regular business hours, Tele-radiology Group to contact Emergency Room physician immediately. Veterans Affairs Medical Center Radiology staff will contact ordering physician on next business day.)**

Radiology	
Test	**Results**
Chest X-ray/Chest Computed Tomography (CT Scan)	- New Pneumothorax - Newly diagnosed tumor - Newly diagnosed Pneumonia/infiltrate - Large pleural effusions - New Pulmonary edema/Acute Respiratory Distress Syndrome (ARDS) - Pulmonary emboli/embolism - Incorrect location of venous access catheter or tube - Aortic Dissection and/or aortic rupture
CT Scan Head/Brain/Neck	- Intracranial Herniation (subdural, subarachnoid hemorrhage) - Cerebral edema with mid-line shift or signs of brain herniation - Recent Fractures - Recent Cerebrovascular Accident (CVA - Newly diagnosed Tumor/abscess - Intracranial hematoma - Newly diagnosed Intracranial lesion
CT Abdomen/Kidney, Ureters, Bladder (KUB) or abdominal X-ray/Ultrasound	- Free Air under Diaphragm - Bowel obstruction - Newly diagnosed tumor - Bleeding - Abscess/Acute infection (acute appendicitis, cholecystitits, diverticulitis) - Acute Pancreatitis - New Urinary Bladder obstruction with bilateral hydronephrosis - Acute testicular torsion - Obstructing Kidney stone - Ileus - Intestinal inflammation
Musculoskeletal X-ray/Magnetic	- Acute Cord Compression/abscess/hematoma

Resonance Imaging (MRI)	- Acute Fracture - New or old dislocation - Osteomyelitis - Recent Spinal fracture - Major muscle tear
Vascular Ultrasound/CT	- Deep Venous Thrombosis (DVT) - Acute arterial occlusion - Aneurysms of more than 5 centimeter (cm)
Obstetrics (OB) Ultrasound	- Ectopic Pregnancy - Placental abruption - Fetal demise - Congenital anomaly

Abnormal X-ray results:

This includes general X-rays, CT scans, MRI, and ultrasound. These require notification of the provider/surrogate provider by Radiology Service entering a CPRS note entitled, 'abnormal X-rays', and identifying the ordering provider as additional signer.

ABNORMAL X-RAYS:

All other abnormalities that radiologist identifies as a new finding and recommends follow up or additional investigations**.**

10. MCM 11-18, Reporting of Critical and Abnormal Values

ATTACHMENT B

CARDIOLOGY CRITICAL FINDINGS

1. **Carotid**:
   a. New total occlusion
   b. Severe stenosis

2. **Holter**:
   a. Pauses greater than two seconds
   b. Ventricular tachycardia
   c. New atrial fibrillation

3. **Event Recorder**: Same as holter with the exception that after business hours, Advanced Cardiac Monitoring calls abnormalities to the Medical Officer of the Day.

4. **Exercise Tolerance Testing**: Positive stress test that needs the primary care provider's attention prior to the next scheduled visit, as determined by the cardiology consultants.

5. **Echo**:

   a. Pericardial effusion - moderate or greater
   b. New finding of Ejection Fraction < 30%
   c. Papillary muscle rupture
   d. Pseudoaneurysm
   e. Vegetations
   f. Tumors
   g. New thrombus
   h. New severe valvular stenosis
   i. Aortic root dissection

6. **EKG**:

   a. Symptomatic bradycardia
   b. Heart Rate >105 beats per minute beats per minute (bpm)
   c. Heart Rate < 45 bpm unless this is normal for a specific patient
   d. Ventricular tachycardia
   e. New atrial fibrillation
   f. Atrial fibrillation with uncontrolled response
   g. Sustained paroxysmal atrial tachycardia (PAT)
   h. New ischemic changes
   i. Acute myocardial infarction (AMI)
   j. A-V dissociation (3rd degree heart block)
   k. Subendocardial injury
   l. Pacemaker sensing improperly
   m. New bigeminy and salvos

11. MCM 11-18, Reporting of Critical and Abnormal Values

ATTACHMENT C

LABORATORY/ RESPIRATORY CRITICAL VALUES

1. **Chemistry**:

Test	Unit	Low	High	Reference Range
Calcium	mg/dL	7	13.0	8.0 – 10.2
Chloride	mmol/L	82	123	100 – 112
CO2	mEq/L	13	46	20 – 30
Creatinine	mg/dL	None	6.3	0.6 – 1.5
Glucose Serum	mg/dL	50	400	70 - 100
Glucose CSF	mg/dL	30	None	40 – 70
Magnesium	mg/dL	1.0	4.6	1.6 – 2.4
Phosphorous	mg/dL	1.5	9.0	2.5 – 4.5
Potassium	MEq/L	3.0	5.8	3.6 – 5.1
Sodium	mEq/L	122	156	136 – 147
Troponin	ng/ml	None	0.5	0 – 0.05
Urea Nitrogen	mg/dL	None	81	5 – 25
Uric Acid	mg/dL	None	16	3.5 – 8.5
D-Dimer	Ng/ml	None	400	<400

2. **Ph and Blood Gases**:

Test	Unit	Low	High	Normal Range
PH		7.24	7.59	7.35 – 7.45
PCO2	mm Hg	18	55	35 – 45
PO2	mm Hg	50	None	80 - 100

3. **Hematology**

Test	Unit	Low	High	Normal Range
Hb	g/dL	7	19.0	11.9 – 17.0
Platelets	$X10^3$uL	30	900	127 – 360
PTT	Seconds	None	119	22 - 35
INR Coumadin		<1.5 Therapeutic	4.0	2.0 – 3.0
INR non-coumadin			4.0	2.0 – 3.0
WBC	$X10^3$uL	2	30	3.4 – 9.4
Cells in CSF	Cells/ul	None	10	0.5

*** Initial presence of malignant cells and/or blasts on blood smear**

4. **Therapeutic Drug Levels:**

12. MCM 11-18, Reporting of Critical and Abnormal Values

Test	Unit	Therapeutic Range	Critical High Value
Carbamazepine	ug/ml	4 – 10	> 10
Digoxin	ng/ml	0.8 – 2.0	> 2
Gentamicin	ug/ml	5 – 10	Peak >12 trough >2
Lithium	mEq/L	0.5 – 1.5	> 1.8
Phenobarbital	ug/ml	15 – 40	> 40
Phenytoin (Dilantin	ug/ml	10 – 20	> 20
Procainamide	ug/ml	4.0 – 10.0	> 12
Quinidine	ug/ml	2.0 – 5.0	> 5
Theophylline	ug/ml	10 – 20	> 20
Vancomycin, Trough	ug/ml	10 - 20	>25

NOTE: Other therapeutic drug levels including anticonvulsants, Benzodiazepines, and antidepressants performed by reference laboratory will have the therapeutic ranges indicated on the report form. If a drug assay is added to the laboratory assay list, the therapeutic range will be noted on the report form.

5. **Blood Bank**:

a. Positive anti-body screens
b. Positive transfusion reaction work-ups

6. **Clinical Microscopy and Urinalysis**:

a. Elevated white blood cell count in cerebral spinal fluid (CSF).
b. Positive of malignant cells, blasts, microorganisms in CSF or body fluids
c. Presence of pathologic crystals (Urate, Cysteine, Leucine, or Tyrosine.)

7. **Microbiology and Parasitology**: All positive results for:

a. CSF smears and cultures
b. CSF cryptococcol antigen test
c. Blood cultures, smears and cultures
d. Acid fast smears and cultures
e. Malaria smears
f. Clostridium difficile
g. Occult blood

8. **Anatomic Pathology**: Results must be conveyed to both ordering provider and primary care provider when:

a. Any first time malignant diagnosis in biopsy specimens (except common primary skin cancer)
b. A change in diagnosis that would have a critical impact on patient management

13. MCM 11-18, Reporting of Critical and Abnormal Values

c. All infectious pathogens requiring therapeutic intervention
d. Fat in colonic endoscopic polypectomies