Affiliated Laboratory, Inc.
General Lab Policy Manual

Clinical Laboratory Critical Result Notification

I. PURPOSE

To provide the laboratory staff with guidelines for when test results must be reported immediately to a responsible licensed caregiver, and a process to ensure timely notification and documentation.

II. DEFINITIONS

A. Critical Result refers to a test result that is unusual or falls significantly outside the normal range and may represent a life-threatening value. The Critical Result Notification Policy is reviewed and approved by the Lab Medical Director and Medical Staff Review Committee at least annually.

B. Repeat Critical Result refers to a lab value that was in the "critical" range the last time it was reported, and is again in the "critical" range.

1. EMMC INPATIENTS (including ED): these results typically do not need to be called again, **unless** the value is the same as the previous value or falls farther outside of the normal reference range (i.e. becomes "more abnormal"). Any exception where repeat call is necessary for a certain test is indicated in the *Critical Values/Results Table.*
2. OUTPATIENTS (including Acadia Hospital, DDPC, and Nursing Home patients): repeat critical results **must be called unless** an exception to a notification rule exists as stated in the *Critical Values/Results Table.* In cases of uncertainty regarding notification, the technologist should always err on the side of caution, making the notification rather than not. "New" Critical Results are always called (i.e. most recent previous result was not in the "critical" range).

C. Intermediary refers to an "agent" who is authorized to receive critical results from lab staff and then report those results directly to the responsible licensed caregiver (i.e. provider responsible for directing the care/treatment of the patient). An acceptable intermediary for EMMC care units would be the patient's RN, alternate RN, or the unit Charge Nurse. Providing results to support staff adds an additional intermediary into the mix and should not be routine practice unless all attempts to reach nursing staff have failed (including Nursing Supervisor).This is an acceptable practice as long as such action does not create significant additional delays in the treatment of the patient; **OR**, if there is another more restrictive lab policy (e.g. some positive microbiology reports must be called directly to a provider).

D. Critical Result Notification Turn-Around-Time is defined as the amount of time it takes for the responsible licensed caregiver to receive notification of a critical result once the result has been identified and is ready for release by the lab. Critical Results will be communicated to the responsible licensed caregiver within 60 minutes of test result identification/availability.

The total notification turn-around-time will be the sum of two measurements if results are reported by the lab to an intermediary rather than directly to the provider/responsible licensed caregiver:

1. Measured from time of critical result identification/availability to time of notification of the intermediary by the lab.
2. Measured from time of receipt by intermediary to time of notification of the responsible licensed caregiver.

The laboratory, in collaboration with individual patient care units, nursing staff, medical staff, and outreach practice staff will monitor Critical Result Notification Turn-Around-Times on a monthly basis. Ongoing organizational efforts will target improvement in the timeliness of reporting.

III. **PROCESS** **Notify ⇒ "Read-Back" ⇒ Document**

A. **Notify ⇒**

1. Immediately report result/s to the appropriate responsible licensed caregiver/provider responsible for care of the patient (or approved intermediary). The lab standard is ≤ 30 minutes.
2. When reporting you must identify yourself then state patient name, Medical Record Number (or DOB), test name and result. The date/time of sample collection is also important with regard to 'frequency orders'. The patient's phone number should also be made available to the provider for outpatients.
3. Some departmental policies may be more restrictive, requiring specific results to be called directly to a physician (e.g. Microbiology Phoned Result Policy). The lab staff would follow the more restrictive policy.

B. **"Read Back" (or Repeat Back) ⇒**

1. The person notified must provide a "read-back" of the information reported to them. Ask the person to repeat back the patient name, test and result. This is to ensure that the information has been accurately recorded, decreasing the chance of a provider acting upon inaccurate test data while managing a patient's care.
2. If ALI is notified of a critical value by a reference lab (e.g. ARUP, Mayo, etc.) the ALI staff member taking the call will be asked to provide a read back and would then in turn ask for one when notifying the ordering provider.
3. **NOTE** -- in some emergency situations (e.g. trauma) it is not prudent to ask for a "read-back". In this case it is acceptable for you to "Repeat Back" the patient name, MR#, test and result to the provider. When the Cardiac OR Lab is staffed, results are handed directly to a provider, eliminating the need for a phone call from the lab and is exempt from read/repeat back requirement. The same holds true for istat results in trauma or Code Blue situations. When the Massive Transfusion Protocol (MTP) is activated, results are handled as dictated by that policy.

C. **Document ⇒**

1. Documentation of the notification is required. This documentation must be available immediately upon request and must be maintained as long as patient reports are stored. The mechanism of documentation varies slightly by department (e.g. Pathnet "order comment" or "result comment" is used in the general lab and similar electronic formats are used in other lab sections).
2. Regardless of the format, the content of the documentation must include: date and time of notification, test name, first & last name of person notified, documentation of the read back (or repeat back), and ID of staff member making the notification (captured by Pathnet with electronic documentation).

IV. **PROCEDURAL NOTES**

1. It is preferable to verify/release result(s) into Pathnet/Powerchart prior to phoning/documenting, particularly for ED or inpatients when delays in nursing (or provider) availability are encountered. Transmission of a hard copy to outreach clients in advance of the call may also be helpful. You are then calling attention to the result/report rather than relying on someone to interpret and transcribe verbal information. You may ask EMMC (and other EMHS affiliates) Powerchart users to view the result while you have them on the phone. In all cases, a follow-up call must be made and documented to indicate successful receipt of result.
2. If you do not provide a verbal report, the read-back requirement is not applicable.
3. ALI continuously works with each outpatient practice in an effort to ensure there is a consistent mechanism in place for notification during and after business hours. This contact information is located on-line in the Client Database (the "After Hours Call Instructions" field contains any special

instructions for after-hours contacts).

4. Should all attempts to contact the provider fail, please notify a supervisor, manager, or charge technologist immediately. The "notification failure" must be documented in Pathnet and an "Incident Report" filed (i.e. using the pink *ALI Internal Problem/Process Investigation Report* Form. The patient information will then be verified in Pathnet (if not already) and "handed off" to the subsequent shift(s) until which time notification is successful.
5. If indicated, the supervisor may consult with pathologist on call who can assist with decision on subsequent actions steps. If pathologist decides to contact patient directly, please provide patient phone number.
6. If the patient results have previously been verified/released there is no need to use "correction mode" in order to document the notification in ARE. An "order comment" may be entered into ORV without causing the patient chart to appear as if it has been corrected. This documentation is viewable in ORV (Order List and Flowsheet modes), so it is available for future retrieval.

V. **REFERENCES**

1. Joint Commission -- National Patient Safety Goals
2. Reporting of Results of Critical Tests and Critical Values -- Eastern Maine Medical Center IDD 11.035
3. College of American Pathologists – Patient Safety Goals; General Checklist
4. Transfusion Medicine Policy Manual, Massive Transfusion Policy BB 210

VI. CRITICAL VALUES/RESULTS TABLE

LAB SECTION	TEST	CRITICAL VALUE/RESULT	CALL FREQUENCY/ OTHER NOTES
Blood gases, co-oximetry	pH	<7.25 or >7.55	**INPATIENTS ONLY: Initial; Then Call ANY/ALL <7.15 or >7.55**
	PO_2	<45 mm/hg (arterial) <20 mm/hg (capillary)	
	PCO_2	>70 mm/hg (arterial, venous, and cap)	**INPATIENTS ONLY: Initial Only**
	Calcium, ionized	<0.81 or >1.55 mmol/L	
	Carboxyhgb	>20%	
	Met-hemoglobin	>10%	
Chemistry	Bicarbonate (CO_2 total)	<12 or >45 mEq/L	**INPATIENTS ONLY: Initial Only**
	Bilirubin, total	>15 mg/dL	
	Calcium, total	<6.0 or >13.0 mg/dL	
	Creatinine	>8.00 mg/dL	Use >20.00 mg/dL for RD patients
	Creatine Kinase (CK), Total	>10,000 U/L	
	CSF glucose	<40 or >450 mg/dL	
	CSF protein	>60 mg/dL	
	Glucose	<45 or >450 mg/dL	
	Lactate (lactic acid)	>4.0 mEq/L	
	Magnesium	<1.0 or >5.0 mg/dL	
	Osmolality	<240 or >330	
	Phosphorus	<1.2 or >8.9 mg/dL	Use <2.0 and >12.0 for RD patients
	Potassium	<2.8 or >6.1 mEq/L	**CALL REGARDLESS OF PREVIOUS** Use >6.9 mEq/L for hemodialysis "Renal Dialysis" patients, pre-dialysis samples only. Use regular critical ranges for all other patients, including peritoneal dialysis "Home Dialysis" patients.
	Sodium	<120 or >160 mEq/L	**INPATIENTS ONLY: Initial; Then Call ANY/ALL <110 or >170**
	Troponin T	>0.03 ng/mL	First in series; or, first random within previous 96 hours; excluding post cardiac surgery patients
Coagulation	Anti-Xa HEP (Standard, UF heparin)	>0.80 units/mL	**CALL REGARDLESS OF PREVIOUS**
	Anti-Xa LMWH (Lovenox/Enoxaparin)	>2.19 units/mL	**CALL REGARDLESS OF PREVIOUS**
	Anti-Xa RIV (Rivaroxaban/Xarelto)	>450 ng/mL	**CALL REGARDLESS OF PREVIOUS**
	Arixtra (Fondaparinux/Arixtra)	>1.50 mg/L	**CALL REGARDLESS OF PREVIOUS**
	INR	>5.0	
	PTT	>45 sec	

LAB SECTION	TEST	CRITICAL VALUE/RESULT	CALL FREQUENCY/ OTHER NOTES
	PF4	Positive result	**CALL REGARDLESS OF PREVIOUS**
Hematology	WBC ANC Differential	WBC <2.0 or >30.0 Th/uL (non-oncology outpatients only)	Initial Only
		ANC <0.50 Th/uL	**EXCLUDES ONLY EMMC Inpatients** Initial; repeat call when follows non-critical result
		Pathology smear review findings dictate immediate intervention – pathologist calls provider	DCPA Pathologist makes determination
	Hemoglobin	<6.5 g/dL or >20.0 g/dL	>20.0 (patient age >6 months)
	Hematocrit	<19.5 % or >60.0 %	>60.0 (patient age >6 months)
	Platelet	<50 Th/uL or >850 Th/uL	**Initial; Then Call ANY/ALL <10 Th/uL**
Microbiology	Blood cultures	Positive bacterial, fungal, mycobacterial or viral	
	Direct CSF smears/cultures	Positive result	
	Blood parasites	Positive for Plasmodium or other blood parasites	
	Direct smear/culture from normally sterile tissue or fluid	Positive result	
	Cryptococcal antigen	Positive result	
	Bordetella pertussis PCR	Positive result	
	HSV, VZV or enterovirus PCR (CSF or other sterile sites)	Positive result	
	AFB smear	Positive result	
	Shiga-toxins	Positive result	
	Legionella urinary antigen or culture	Positive result	
Toxicology	Acetaminophen	>150 ug/mL (4 hrs. post ingestion)	
	Acetone	>40 mg/dL	
	Ethanol	>300 mg/dL	
	Methanol and isopropanol	Any level	**CALL REGARDLESS OF PREVIOUS**
	Butalbital	>10 ug/mL	
	Caffeine	>25 ug/dL	
	Carbamazepine	>15 ug/mL	
	Clozapine	>1300 ng/mL	
	Cyclosporine	>700 ng/mL	
	Digoxin	>2.5 ng/mL	
	Gentamicin	Peak >12.0 ug/mL	
		Trough >3.0 ug/mL	**CALL REGARDLESS OF PREVIOUS**

LAB SECTION	TEST	CRITICAL VALUE/RESULT	CALL FREQUENCY/ OTHER NOTES
Toxicology cont.	Lamotrigine	>20.0 ug/mL	
	Lithium	>1.5 mEq/L (<60 yrs of age)	
		>1.3 mEq/L (>60 yrs of age)	
	Meprobamate	>40 ug/mL	
	Pentobarbital	>7.0 ug/mL	
	Phenobarbital	>60.0 ug/mL	
	Phenytoin	Total >30.0 ug/mL	
		Free > 3.5 ug/mL	
	Salicylate	>30.0 mg/dL	
	Tacrolimus	>26.0 ng/mL	
	Theophylline	>20.0 ug/mL	
	Tobramycin	Trough >2.5 ug/mL	**CALL REGARDLESS OF PREVIOUS**
	Valproic acid	>150.0 ug/mL	
	Vancomycin	Peak >80.0 ug/mL	
		Trough >25.0 ug/mL	**CALL REGARDLESS OF PREVIOUS**
Urinalysis	Microscopic	Positive Clinitest with dipstick glucose negative (child <1 yr.)	
		Sperm present (female <14 yrs.)	