ADMIN 24: Rapid Communication of Laboratory Results Policy
Critical Tests, Critical Results and Courtesy Calls
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center

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Approval*:
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Approval and Acknowledgements
Refer to QPulse system and Document Details report for laboratory directors(s)' electronic signature approval, employee acknowledgment and effective date.

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1. POLICY

1.1. Critical tests, critical results, and courtesy calls on inpatients, outpatients, and outreach patients will be communicated to a clinical professional responsible for the patient's care in a consistent and timely manner.

1.1.1. **Critical Tests**:

a. Critical tests are those tests which will always require rapid communication of the results, even if normal.
b. Critical tests will be communicated to a clinical professional responsible for the patient's care, regardless of the test result, within specified time interval from order/collection to. Such notification shall be documented.
c. Critical test specimens should be delivered to the Clinical Laboratories within 10 minutes of order/collection.
d. True collection times should be documented on the specimen/lab label.
e. Critical Tests: Critical Care Batteries (CRITB), rapid intact parathyroid hormone (RPTH) and single block frozen sections

1.1.2. **Critical Results / Critical Values**

a. Critical results, also known as "critical values," are test results that fall significantly outside the normal range and may represent life-threatening values, even if from routine tests.
b. Critical results will be communicated to a clinical professional responsible for the patient's care within 20 minutes of completion of the test, and such notification documented as a component of the test results report.

1.1.3. **Courtesy telephone notification**

a. Courtesy telephone notification for other specified tests/results will be communicated to a clinical professional responsible for the patient's care and such notification documented as a component of the test results report.

1.1.4. Personal Health Information (PHI) including name and medical record cannot be included when paging a critical value. Use appropriate language such as: *Please call the OSUWMC Lab at 293.xxxx for a critical result.*

2. PURPOSE OF DOCUMENT

2.1. This policy is to provide a mechanism for pathology and laboratory staff to communicate and document rapid communication of laboratory test results.

3. SCOPE OF DOCUMENT

3.1. This document applies to all areas within the Clinical Laboratories, as well as medical center collection sites.

4. RESPONSIBILITY

4.1. The Medical Directors of the Clinical Laboratories are responsible for establishing the *Rapid Communication of Laboratory Results* policy. Laboratory Compliance is responsible for maintaining the policy and ensuring at least biennial review.
4.2. Laboratory Compliance is responsible to providing the policy to clinical staff, available on the laboratory website.

5. CRITICAL TESTS – PROCESS

5.1. Critical tests are those tests which will always require rapid communication of the results, even if normal.

5.2. Critical test specimens should be delivered to the Clinical Laboratories within 10 minutes of order/collection.

5.3. Critical tests will be communicated to a clinical professional responsible for the patient's care, regardless of the test result, within specified time interval from order/collection to reporting (see below). Such notification will be documented.

CRITICAL TESTS

Tests	collection	TAT (collection to notification)
RPTH	Collected in OR; deliver directly to Special Functions Laboratory OR call 293-3443 for pick up	40 minutes (30 minutes receive to notification)
CRITB	** Write true collection time on lab label for accurate documentation Deliver directly to Critical Care Laboratory	30 minutes (20 minutes receive to notification)
Frozen sections	Specimen is delivered to surgical pathology gross room. The results are communicated via telephone by the pathologist signing out the frozen section to an attending or resident physician in the operating room.	40 minutes (30 minutes receive to notification)

6. CRITICAL RESULTS - PROCESS

6.1. When rapid communication of laboratory results is required, testing and client services personnel of the Clinical Laboratories notify a clinical professional (e.g. RN, LPN, physician, nurse practitioner, respiratory therapist, pharmD, physician assistants, etc) responsible for the patient's care. Other titles can be approved by the Laboratory Medical Director.

6.1.1 Determine the location from which the patient specimen was sent.

6.1.2 Call the area that submitted the specimen and tell them you have a laboratory result to report. Ask for a clinical professional taking care of the patient.

6.1.2.1 For inpatients:

6.1.2.1.1 If the nurse involved with direct patient care cannot be reached or cannot take the result, request to speak to the floor charge nurse.

6.1.2.1.2 If the charge nurse is not available or cannot take the results, page the ordering physician.

6.1.2.1.3 If the ordering physician does not call back within 10 minutes, proceed with section 6.5 if necessary.

6.1.2.2 If the communication for an inpatient or ED patient is not to a physician and the clinical professional indicates that the patient has been discharged, page the division director or the Laboratories medical director.

6.1.3 Report **ALL** of the following elements:

6.1.3.1 your first and last name and laboratory from which you are calling

6.1.3.2 patient's name

6.1.3.3 patient's MRN

6.1.3.4 **patient phone number: <u>for all non-inpatients or non-ED patients'</u> notifications**

6.1.3.5 name of attending physician

6.1.3.6 collect date and time of specimen

6.1.3.7 test name(s)
6.1.3.8 test results

6.1.4 Request read-back verification of the test result(s). This must include patient name, MRN, test name(s) and test result(s).

6.1.5 Document telephone communications / notifications in the results report in the applicable LIS. Include all of the following elements:
6.1.5.1 First and last name and title (e.g. Dr. or RN) of person notified / who verified/read-back the results
6.1.5.2 Date of notification
6.1.5.3 Time of notification

6.2 Outpatient / Outreach Patients - **MANDATORY**: For any notification for non-ED outpatients or outreach patients, obtain the patient's phone number and **provide to the clinical professional along with the results**

6.2.1 Outpatients (entered by 9-digit MRN): use LIS function IQ, the phone number (if provided at registration) is in the header information.

6.2.2 Outreach (entered using "U-" account number):
- Use URL Access Database to look up with client number or office name for specific phone number to contact for critical results.
- URL clients can request special directors for critical values, including a request for critical values not to be called. Follow instructions indicated in the URL database.
- Use LIS function SAD, the phone number if entered during order entry will appear in the phone number field.
- If no phone number in SAD by account number, use the "name" option to determine if the phone number was previously entered under the 9-digit MRN
- If no phone number in SAD, obtain the requisition from CPA and look for patient number
- If no number on the requisition, look in IHIS by patient name for phone number.

6.2.3 Outreach – *OSU Lab Test* DTC (U18115 through U18122):
- Notify the Vice Chair of clinical pathology, pager 5566.
- Provide the Accession Number, ID number, collect date and time, test name(s), and test result(s).
- The vice chair of clinical pathology will work with the appropriate personnel at URL to determine the identity of the DTC consumer and contact the consumer directly so that such results are communicated to them in a timely manner.

6.3 Exceptions to Rapid Notification Requirements: If the patient is located in a location/on a service for which the medical director or designee authorized an exception for immediate notification of a laboratory result -

6.3.1 Critical Results
6.3.1.1 Review the previous result for the analyte and determine if it was a critical result and the collect date for that specimen.

6.3.1.2 If there was no previous result for the analyte, call the result within 10 minutes of test completion and document as indicated above.

6.3.1.3 If the previous result for the analyte was not a critical result, call the result within 10 minutes of test completion document as indicated above

6.3.1.4 If the previous result was not from the current admission, call the result within 10 minutes of test completion document as indicated above.

6.3.1.5 If the previous result was called or "CVPC" (critical value, previously called) code was appended to that result, and the specimen was collected during the current admission, append code "CVPC" to the current result.

6.4 After Hours Notifications: If the notification must be made after the care area closes, contact the on-call physician, or other person as designated by the client, directly UNLESS the patient care area has submitted a written request for notification to be made only during business hours.

- Obtain phone and/or beeper number from the hospital operator, directory on OneSource, or URL account / client database listing.

6.4.1 For after hours' notification for the **Pre-Transplant Clinic** (PRET, PRETX): WebXchange page the Pre-transplant On-call Coordinator at pager 614.346.4051.

6.4.1.1 From OneSource/ WebXchange/Quick Page

6.4.1.1.1 Enter Pager ID: 4051
6.4.1.1.2 Enter the Alpha Msg: "Please call the OSUMC Lab at 293.xxxx for a critical result"
- NOTE: Be sure to use a phone number which can be accessed from the outside.

6.4.1.2 There will be times that the coordinator staff will be on the phone dealing with organ procurement/processing, so there might be some delays with call backs.

6.4.1.3 Enter the time the coordinator was paged and the time that they returned the call as part of the documentation of the call.

6.4.2 If an area has requested in writing that results be called only during business hours, free-text the following in the "comment" field in the LIS program: "Critical test (or result) to be called in am". This information will appear on the daily log obtained by the client services personnel.

6.4.3 If an "after business hours" communication is not successful and the pathologist determined an immediate notification was not required, leave a note for the following day shift to contact the appropriate person.

6.4.4 Modify the results in the laboratory computer system to document the attempt to communicate the critical test results.

6.4.5 Document communication trail, through problem log, IRA or other means of handoff communication.

6.4.6 Client services personnel:

6.4.6.1 Review daily problem log for patients with "Critical test (or result) to be called in am"; obtain report of appropriate patient's result, call client and notify them of the results, and document notification

6.5 Attending, Ordering, "On Call" Physician, Or Other Person As Designated By The Client Cannot Be Reached following 2 attempts, 20 minutes apart:

6.5.1 During routine business hours (Monday through Friday 7:00am to 5:00pm): page the division director. They will assist with identifying an alternate physician for notification.

6.5.1.1 Review the patient identification, test result information, and attending/ordering physician information with the director.

6.5.1.2 If the division director is unable to identify a physician to accept the value they should contact the Laboratories medical director or the Critical Event/Results Officer.

6.5.1.3 If the division director cannot be reached, page the Laboratories medical director.

6.5.2 After 5:00pm and on weekends/holidays:

6.5.2.1 Contact the CP pathology resident on-call

6.5.2.2 Review the patient identification and test result information with the resident. Make sure you have the patient contact information including phone number available to provide to the resident.

6.5.2.3 The resident, in conjunction with the CP faculty pathologist on call, will determine if notification can wait until the next day, whether the Critical Event / Results Officer needs to be paged to assist in the management of the patient, or the patient needs to be contacted directly and advised to seek medical attention

6.5.2.3.1 ONLY the resident / CP faculty pathologist on call will page the Critical Event/Results Officer if needed.

6.5.2.3.2 If the patient is to be contacted directly, the resident or the CP faculty pathologist will contact the patient.

6.5.2.3.3 Resident or faculty pathologist will provide the name of the person notified and the date and time of notification to the laboratory. Document the notification in the computer.

6.6 Specimens Referred From Another Laboratory: When rapid communication of laboratory results is required for specimens referred from an outside, non-OSUWMC laboratory, a laboratory professional from that laboratory is notified and the communication documented per described above.

6.7 Anonymous Specimens: critical results, critical tests, or courtesy call notifications for anonymous specimens will be made only during business hours.

6.7.1 For specimens identified as research subjects: contact information for critical results notification is pre-printed on the customized, study-specific requisition form. The information is also available in the Laboratory Research Accounts database on the I Drive at I:\Common\Laboratory Research Accounts. Search the database by the LIS number (include the letter) or the Billing number.

6.7.1.1 Copy and paste the Primary Office address and phone information in the corresponding fields

6.8 Research Specimens

6.8.1 For critical values, following the directions in the URL database or on the research set up paperwork. All research studies should list directions for critical values when establishing research accounts with Research Billing and LIS.

5. RELATED DOCUMENTS

5.1. Refer to QPulse System or Document Detail Report for related Laboratory Policies, Procedures, and Master Forms

TABLE A: CRITICAL VALUES

Outpatients only (ED is outpatient) **Neonate/Pediatric only** **James Patients only**

CHEMISTRY

Analyte	Critical Results
Acetone-serum/plasma	Moderate or higher
ALT initial **only**	> 1000 U/L
AST initial **only**	> 1000 U/L
Amylase	> 500 (> 400 under 18 yr) U/L
Beta Hydroxybutyrate	> 1.1 mmol/L
Bilirubin, total	> 14.0 mg/dL (neonates only)
BUN	> 100 mg/dL
NEPH initial **only**	> 100 mg/dL
Calcium	< 6 > 12 mg/dL
Chloride	< 75 > 130 mmol/L
CO2	< 10 > 40 mmol/L
Creatine Kinase	> 500 U/L (outpatients only)
GCRC Mendell: do not call Mendell ICD10 = G71.0 outpatients: do not call (approved 12/2015)	
Creatinine	> 10 mg/dL
NEPH initial **only**	> 10 mg/dL
Free T4 (ED only)	> 4.5 ng/dL
Glucose	< 50 > 400 mg/dL
Neonates	< 40 > 200 mg/dL
CSF Glucose	< 30 > 300 mg/dL
Lactate	> 5.0 mmol/L
Lithium	> 2.0 mmol/L
Phosphorus	< 1.0 > 10 mg/dL
Ionized Calcium	< 3.4 > 6.2 mg/dL
Magnesium	< 1.0 > 4.4 mg/dL
Osmolality	< 250 > 325 mOsm/kg
Potassium	< 3.0 > 6.0 mmol/L
Neonates	< 3.0 > 7.0 mmol/L
Sodium	< 125 > 160 mmol/L
pH	< 7.2 > 7.55
pCO2	< 20 > 65 mmHg
pO2	<44 mmHg
Troponin I	≥ 5.00 FIRST critical result, additional calls ONLY if no previous ≥5.00 within past 24 hours.
TSH (ED only)	>150.0 uIU/mL

HEMATOLOGY

Analyte	Critical Results	
WBC	< 1.5	> 35.0 K/uL
C14, C16, C15, C20, C21 **initial** only	< 0.5	> 35.0 K/uL
Other Oncology	< 0.5	> 35.0 K/uL
Hemoglobin	< 7.0	> 22.0 g/dL
Pediatric	0-7d: < 11.0 8d – 12y: <8.0 >12y: <7.0	> 22.0 g/dL > 22.0 g/dL > 22.0 g/dL
Platelet	< 30	> 1,000 K/uL
C-James locations	< 10	> 1,000 K/uL
Bands + Segs Ratio	≥ 0.25 (Neonates only)	
CSF WBC	> 40 cells / uL	
Bacteria	Any intracellular on peripheral blood smear, Any on direct smear of any sterile body fluid OR count if direct smear is not already positive	

COAGULATION

Analyte	Critical Results
INR	> 4.9
PTT	> 150 sec (inpat) > 60 (outpat)
Fibrinogen	< 75 mg/dL
Factor Activity	< 5%

URINALYSIS

Analyte	**Critical Results**
Urine Microscopic	Any RBC casts
	Any WBC casts

TRANFUSION SERVICES

Newborn Positive Direct Coombs Test (DAT)
Transfusion Reaction
Significant Technical error(s)
Positive Kleihauer-Betke stain
Titer > 32 in pregnancy Titer >8 for Anti-K
Suspected passenger lymphocyte syndrome

TABLE A: CRITICAL VALUES continued			
THERAPEUTIC DRUGS			
Analyte	**Critical Results**	**Analyte**	**Critical Results**
Acetaminophen	> 150 ug/mL	Pentobarbital	> 45 ug/mL
Amikacin	Peak > 60 ug/mL; Trough > 6 ug/mL	Phenobarbital	> 45 ug/mL
Carbamazepine	> 15 ug/mL	Phenytoin	> 22 ug/mL
Digoxin	> 2.0 ng/mL	Salicylate	> 30.0 mg/dL
Free Phenytoin	> 3.0 ug/mL	Theophylline	> 20 ug/mL
Gentamicin	Peak > 20 ug/mL; Trough > 1.0 ug/mL	Tobramycin	Peak > 20 ug/mL; Trough > 1.0 ug/mL
Lidocaine	> 6.0 ug/mL	Valproic Acid	> 150 ug/mL
Lithium	> 2 mmol/L	Vancomycin	> 25 ug/mL Trough
TOXICOLOGY			
Acetone	>10 mg/dL	Ethylene Glycol	>10 mg/dL
Methanol	>10 mg/dL	Ethanol (blood)	>300 mg/dL
Isopropanol	>10 mg/dL		

MICROBIOLOGY
Positive Blood Culture (blood, blood products, transfusion reaction) or new positive blood culture smear with Nanosphere BC GN or BC GP PCR result when indicated
Positive direct smear and culture of any sterile body fluid/device (if smear is positive and culture is positive, an additional call needs to be made to physician to update him with the organism species i.e. Staphylococcus-like, Pseudomonas-like) Ascites/Peritoneal fluid Blood vessels Heart valve Pericardial fluid Amniotic fluid Aqueous Organ Dialysis/perfusate Lymph nodes Cellulitis specimens with purulence or amorphous debris and organisms Pleural fluid Bone marrow Pacemaker/Pacemaker pocket Joint/Synovial fluid Vitreous Cornea CAPD fluid Grafts/Vascular Prosthetic devices Orthopedic devices
Positive direct smear and/or culture from any central nervous system specimen (brain and related sources, CSF, shunt)
Positive LOOP cultures- contact LOOP coordinator 291-LOOP (5667)
BAL Gram stains if organisms are seen on smear
Positive Cytomegalovirus (CMV) by PCR- CSF
Positive Herpes simplex (HSV) by PCR- CSF and sterile body fluids
Positive AFB smear / Tissue section
Positive TB by PCR
Mycobacterium tuberculosis complex identified in culture from any source
Positive Fungal smear
Cultures positive for any Class A reportable diseases
Neisseria meningitidis in blood or CSF (invasive disease)
Diseases of the newborn: Group B beta Streptococci, CMV, HSV, *H. influenza*, *Listeria spp*., *Neisseria gonorrhoeae*, *Chlamydia trachomatis* identified from any newborn culture
Positive Epstein-Barr Virus by PCR if greater than 10,000 copies/ml – blood or CSF *Exception: BMT unit: Any viral loads >10,000 within a month of the initial result does not need to be called again (approved by Dr. Devine 02/2017)*
RSV by PCR (inpatient is a critical value, outpatient is a courtesy call)
Positive *Influenza A/B* tests: (inpatient is a critical value, outpatient is a courtesy call) **Exception: Calls DO NOT need to be made to the emergency room at UH or UHE.**

NOTE: if an *Influenza A* has been called initially and is positive by another methodology, the code CVPC (critical value previously called) can be added to the report instead of making several calls

TABLE B: CRITICAL TESTS	
Expected Notification: Order/Collect to Result	
Critical Care Whole Blood Gas Labs	30 minutes
Single Block Frozen Sections	40 minutes
Intra-Operative PTH	40 minutes

TABLE C: COURTESY CALLS	
	Neisseria gonorrhoeae (L & D only) culture or NAAT
Abnormal AFP Pre-natal Screens	*Nocardia spp.* from any source
Acid fast bacilli in culture from any source	Non tuberculosis Mycobacteria species in cultures from any source
BAL Studies for Cell Count / Morphologic review – OSU inpatients or outpatients only	Parasites
Blood Gas Labs from OR's or PACU	PF4 IgG Elisa Assay – positive and inconclusive results
Chlamydia trachomatis (L & D only) NAAT	Pneumocystis carinii / jiroveci – surgical pathology or BAL specimen
Clostridium tetani	Positive *C. difficile* tests on outpatients
Dimorphic molds : *Coccidiodes immitis/posadasii, Sporothrix schenckii, Penicillium marneffei,Histoplasma capsulatum, Blastomyces dermatidis, Paracoccidoiides brasiliensis* from any source	Positive *Influenza A/B* PCR tests: (inpatient is a critical value, outpatien is a courtesy call) Calls do not need to be made to ED
STAT Drug Screens (upon client request)	Positive Pregnancy Tests for OR, ASU
Fetal Fibronectin Tests – L&D, ED ONLY	Rapid HIV – Blood/Body Fluid Exposure Protocols – Reactive results
Filamentous fungus sterile site	Reportable diseases other than Class A
Gas gangrene	RSV by PCR (inpatient is a critical value, outpatient is a courtesy call)
Herpes simplex (HSV) by PCR from BAL's	Staphylococcal pneumonia
High Troponin (>0.49) from the ED display "Call this result to ED" and require a Courtesy Call to ED nursing unit.	Staphylococcal pneumonia(Gram stain represents Gram positive cocci in groups only on respiratory Gram stains)
	Stat Microbiology Direct Exams
Isolates of *Clostridium perfringens C. septicum* or *C. sordelli*	*Streptococcus pneumoniae* (sterile site, invasive disease)
Lamellar Body Count	*Streptococcus pyogenes* (wound or tissue culture, cellulitis)
Legionella pneumophila from any source	Troponin: A courtesy call will be given to the ED for any extended delay of troponin results (including dilutions)
Legionella Urinary Antigen – positives	Virus, Direct Detection, Herpes / Varicella (Tzanck Preparation)
Listeria spp., any site	VISA or VRSA (vancomycin I or R S. *aureus*)