Ambulatory Care Network
HEALTH SERVICES • LOS ANGELES COUNTY
Quality • Compassion • Responsibility

TITLE: Timely Notification of Critically Abnormal, Abnormal and Normal Test Results

DIVISION: ACN Risk Management and Patient Safety

SERVICE AREA/ UNIT: Clinical and Ancillary Services

Policy & Procedure Number	ACN CD-01.003
Origination Date:	6/19/2014
Revision Date:	8/8/2019
Review Date:	9/12/2019
Approved By:	ACN P&P

1.0 POLICY:

To provide standard guidelines for timely notification of critically abnormal, abnormal and normal test results based on clinical urgency.

2.0 DEFINITION:

2.1 **Critical results**: Those results which, if there was a delay in reporting, have the potential for causing serious adverse outcomes. Critical results as defined in reference attachments.

2.2 **Abnormal results**: Those results which fall out of the normal range as defined in reference attachments.

2.3 **Normal results**: Those results which fall in the normal range as defined in the reference attachments.

3.0 PROCEDURE:

3.1 All critically abnormal laboratory and radiology results will be reported to a responsible clinician within the time period specified via the methods defined based on clinical urgency:

3.1.1 **Laboratory:**

Critical – Within 30 minutes of notification via direct contact to a clinician as well as to ordering provider's Orchid inbox flagged as Critical with documentation of contact.

Abnormal – Within 24 hours to the ordering provider's inbox flagged as Abnormal.

Normal – Within 24 hours to the ordering providers inbox flagged as Normal.

3.1.2 **Radiology:**

Critical with Immediate Notification* – Within one hour via direct contact with a clinician with documentation of contact.

Critical with Urgent Notification* – Within eight hours via direct contact with a clinician with documentation of contact.

Abnormal with Confirmed Notification* – Within one week via direct contact with clinician with documentation of contact.

Normal/abnormal – Will be sent to ordering providers inbox for review when interpretation is complete.

3.2 Notification by Laboratory or Radiology Services of critical/abnormal with confirmed notification test results must be given only to licensed clinical staff.

3.3 When licensed clinical staff is notified by the resulting Laboratory or Radiology services, critical laboratory, radiology or abnormal with confirmed notification test results will be in turn, given to a responsible clinician.

3.4 The priority order of notification is as follows:

3.4.1 Ordering provider

3.4.2 Lead Provider in clinic at time of notification

3.4.3 Urgent Care/Walk-in Clinic provider at time of notification

3.4.4 Facility "on-call' provider

3.4.5 Facility Medical Director

3.5 After hours or on weekends, the critical test result will be reported to the designated on-call provider.

3.6 All results will be documented and "read-back" by the receiver to the individual calling with the result.

3.7 The person reporting the critical/abnormal with confirmed notification result will document the date and time of notification and the name of the person the results were provided to.

4.0 MONITORING MECHANISM AND ACCOUNTABILITY:

4.1 The Laboratory and Radiology Departments who perform the tests will monitor the timeliness of critical result reporting.

5.0 SOURCES AND REFERENCE:

5.1 Critical Laboratory Values List

5.2 Radiology Notification List

5.3 Laboratory normal/abnormal ranges

*Critical with immediate Notification, Critical with Urgent Notification and Abnormal with Confirmed Notification are all defined as Critical under the DHS Critical Radiology Notification List.

Approvals:

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10.7.19
Date

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9/25/19
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P&P History

Date	Department	Policy & Procedure #	Comments	Next Annual Review Due
6/26/2014	ACN	CD-01.003	Approved	6/25/2015
12/6/2018	ACN	CD-01.003	Approved	12/6/2019
8/8/2019	ACN	CD-01.003	Revised	8/8/2020
9/12/2019	ACN	CD-01.003	Reviewed & approved	9/12/2020

DHS CRITICAL RADIOLOGY NOTIFICATION LISTS

Radiology Services Steering Committee – January 25, 2016

Definitions:

- **Immediate Notification:**
  A situation where the radiologist reads a study and recognizes an immediate, imminent danger to life, limb, or public health. This requires an immediate communication to the provider or appropriate contact as soon as possible but not to exceed 1-hr. The radiologist would be required to document the time and the name of the provider whom they notified.
- **Urgent Notification:**
  A situation that is important but not life threatening, where the radiologist is required to communicate to the provider or appropriate contact within 8-hrs. The radiologist or department should keep a record of whoever was notified.
- **Confirmed Notification:**
  A situation where the radiologist reads a study and recognizes a condition where follow-up is essential. The finding would be such that a radiologist should not rely on the provider to find the results. Notification is not urgent, but should be confirmed, and notification should be sent to the referring service within 1-week. The radiologist or department should keep a record of whoever was notified.

Lists:

- **Immediate Notification List: (critical results read back as soon as possible but not to exceed 1-hr. of Radiology interpretation)**
  - Evidence of New/Worsening/Unsuspected increased intracranial pressure (i.e. intracranial bleed, mass, edema, shift)
  - Leaking aneurysm (cerebral, thoracic, abdominal)
  - New Pulmonary embolism
  - Emergent Surgical/Interventional abdomen (acute hemorrhage with active bleeding, unexpected free air, bowel/organ perforation, appendicitis)
  - Spinal fracture with instability
  - Acute cord compression
  - Pneumothorax (new, increasing or unsuspected)
  - New or unsuspected large sized pericardial effusion
  - Suspected necrotizing infection
  - Ectopic pregnancy (suspected)
  - New or progressive major vessel dissection
  - Suspected child abuse
  - Acute Testicular or ovarian torsion
  - Dangerous malposition of central line, endotracheal tube or nasoenteric tube
  - Highly suspected active Tuberculosis
  - Unsuspected Acute Ischemic Stroke
  - Any change to a preliminary read that would urgently impact patient care
  - Actionable retained foreign body

- **Urgent Notification List: (critical results read back within 8-hrs of Radiology interpretation)**
  - Acute deep venous thrombosis
  - Moderate to severe obstructive uropathy (unsuspected, new or increasing)

- **Confirmed Notification List: (notification within 1-week of Radiology interpretation)**
  - Unsuspected finding highly worrisome for malignancy
  - Unsuspected sizable aneurysm or rapid growth (Aorta >5cm, >1cm growth/year (>5mm/6month))
  - Any change to a preliminary read that would impact patient care

Health Services
LOS ANGELES COUNTY

DHS Expected Practice

Specialty: Laboratory Medicine

Subject: Critical Laboratory Values List

Date: May 9, 2017 (**updated CLV List – May 9, 2017**)

Purpose:

To define and standardize a list of Critical Laboratory Values to be used throughout DHS in order to increase patient safety and quality of care.

Background:

A critical value is a test result value that is abnormal enough to warrant immediate attention by a clinician. Reporting of critical lab values is increasingly regulated by agencies and quality management organizations as a significant marker of patient-centered care. The Joint Commission and the College of American Pathologists emphasize critical values reporting as a key patient safety standard. The values in the attached list values were established after an extensive vetting process, including review by the DHS Clinical Lab Medical Directors Committee.

Target Audience:

All medical providers, nursing staff, and laboratory staff.

Expected Practice:

Each critical value identified on the below-referenced list will be reported via telephone to the licensed care provider who ordered the test or who is caring for the patient, and the call will be documented in ORCHID. The DHS Clinical Lab Medical Directors Committee will periodically review the List to make improvements and respond to changes in evidence.

This *Expected Practice* was developed by the DHS Clinical Lab Medical Directors Committee to fulfill the DHS mission to ensure access to high-quality, patient-centered, and cost-effective health care. The Committee is composed of laboratory medicine representatives from across LA County DHS and are guided by 1) real-life practice conditions at our facilities, 2) available clinical evidence, and 3) the principle that we must provide equitable care for the entire population that LA County DHS is responsible for, not just those that appear in front of us. It is recognized that in individual situations a provider's clinical judgment may vary from this *Expected Practice*, but in such cases compelling documentation for the exception should be provided in the medical record.

Critical Laboratory Values – Los Angeles County DHS

Updated: DHS Clinical Laboratory Medical Directors Committee – May 9, 2017

TEST	PATIENT AGE	UNIT	LOW	HIGH
Blood Gases (corrected to patient's body temperature)				
Arterial or Venous pH	0 -1 month		<7.21	>7.49
	>1 month to adult		<7.21	>7.59
Umbilical Cord Arterial Blood pH	at birth		<7.01	
Umbilical Cord Venous Blood pH	at birth		<7.21	
Arterial or Venous pCO2	0 -1 month	mmHg	<31	>69
	>1 month to adult	mmHg	<21	>69
Arterial pO2		mmHg	<55	
Venous pO2		mmHg	<21	
Chemistry				
Bicarbonate	0 -1 month	mmol/L	<16	>39
	>1 month to adult	mmol/L	<11	>39
Bilirubin, Total	1st 24 hrs	mg/dL		>7.9
	> 1 day to 1 month	mg/dL		>11.9
Calcium, ionized		mg/dL	<3.5	>6.0
Calcium, total		mg/dL	<6.6	>12.9
Glucose	0 -1 month	mg/dL	<41	>199
	>1 month to 16 years	mg/dL	<41	>249
	>16 years	mg/dL	<41	>449
Lactate		mmol/L		>3.9
Magnesium	All ages	mg/dL	<1.1	>4.8
	Labor & Delivery	mg/dL	<1.1	>7.2
Phosphorus	0 -1 month	mg/dL	<2.1	
	>1 month to adult	mg/dL	<1.1	
Potassium	0 -1 month	mmol/L	<2.6	>5.9
	>1 month to adult	mmol/L	<3.0	>5.9
Sodium		mmol/L	<121	>159
Troponin T		ng/mL		≥0.10
Troponin I		ng/mL		≥0.30
Coagulation				
Activated Partial Thrombin Time (aPTT)		seconds		>100
Fibrinogen		mg/dL	<101	
INR				>3.99
Anti-Xa (Low Molecular Weight heparin)		IU/mL		>1.99

TEST	PATIENT AGE	UNIT	LOW	HIGH
Anti-Xa (unfractionated heparin)		IU/mL		>0.99
Hematology				
WBC		K / cu mm	<1.1	>49.9
Band Count (bandemia)		%		>24
ANC (absolute neutrophil count)		K / cu mm	<0.6	
Hemoglobin	<2 months	g/dL	<6.6	>21.9
	2 months to adult	g/dL	<6.6	>19.9
Hematocrit	<2 months	%	<19.6	>65.9
	2 months to adult	%	<19.6	>59.9
Platelet Count	0 -1 month	K / cu mm	<61	>999
	>1 month to adult	K / cu mm	<21	>999
Microorganisms (i.e., malaria, babesia, trypanosomes, leishmania, microfilaria, fungi, bacteria, etc) detected on peripheral blood smear, in CSF, or in body fluids		Qualitative		Positive
CSF WBC count		per cu mm		>9
Microbiology				
Blood Culture		Qualitative		Positive
CSF Gram Stain		Qualitative		Positive
Parasites seen in any microbiology preparation of a thin or thick smear for detection of blood parasites (i.e., malaria, babesia, trypanosomes, leishmania, microfilaria)		Qualitative		Positive
Blood Bank (Transfusion Medicine)				
Bacterial contamination of transfused blood product		Qualitative		Positive
ABO incompatible transfusion reaction		Qualitative		Positive
Anatomic Pathology				
No Products of conception in endometrial evacuation		Qualitative		Positive
Herpes in GYN Pap smear of pregnant patient		Qualitative		Positive
Biopsy suggests perforation or penetration of an organ		Qualitative		Positive
Bacteria, yeast, fungi in explanted heart valve or bone marrow biopsy; or mucormycosis in tissue		Qualitative		Positive
Crescents in renal biopsy		Qualitative		Positive

Therapeutic Drug Potentially Toxic (Critical) Values

A. Drugs with separate potentially toxic values for peak and trough levels

TEST	UNIT	Trough	Peak	Random
Cyclosporine	ng/mL	>360	>1500	>1500
Gentamicin (conventional dosing)*	mcg/mL	>2.5	>12.0	>12.0
Tobramycin (conventional dosing)*	mcg/mL	>2.5	>12.0	>12.0
Vancomycin	mcg/mL	>25.0	>80.0	>80.0

* Interpretation of the aminoglycoside values depends on renal function

B. Drugs with a single potentially toxic value (no separate values for peak and trough)

TEST		UNIT	POTENTIALLY TOXIC VALUE
Carbamazepine (Tegretol)		mcg/mL	>12.0
Digoxin		ng/mL	>2.0
Iron (for assessing overdose)		mcg/dL	>300
Lithium		mmol/L	>2.00
Magnesium, Labor & Delivery (3B)		mg/dL	>7.2
Phenobarbital		mcg/mL	>50.0
Phenytoin (Dilantin or Fosphenytoin)		mcg/mL	>25.0
Tacrolimus		ng/mL	>20.0
Theophylline	0 – 5 months	mcg/mL	>10.0
	5 months to adult	mcg/mL	>20.0
Valproic Acid and Divalproex Sodium		mcg/mL	>150

C. Drugs for which potentially toxic (critical) value is dependent on collection time

Values above the following will be called to the ward

TEST	UNIT	POTENTIALLY TOXIC VALUE
Acetaminophen	mcg/mL	>49.9
Methotrexate	µmol/L	>10.00
Salicylate (for assessing overdose)	mg/dL	>29.9