ASANTE®
LABORATORY

Title:	Laboratory Critical Values
Index:	GEN 093
Version:	11.0
Ou Name:	Asante Lab General
Approval:	Geoffrey Turner MD PhD, Glen Pogue, Jacob Blair, and Sarah Jankowski
Document Owners:	Glen Pogue, Jacob Blair, and Jessica Hoskins
Authors:	Jacob Blair
Last Updated On:	15-May-2024 10:00
Last Reviewed On:	N/A
Next Review Due:	29-Mar-2026
Last Reviewed By:	N/A
Location Of Copy:	Asante Test Catalogue
Date Time Printed:	03-Jul-2024 16:24

SCOPE: This procedure is applicable to the following laboratory sites:

☒ Asante Rogue Regional Medical Center
☒ Asante Three Rivers Medical Center
☒ Asante Ashland Community Hospital
☒ Asante Heimann Cancer Treatment Center
☒ Asante Spears Cancer Treatment Center

POLICY SUMMARY:

This policy outlines immediate reporting of laboratory critical values or results to appropriate care providers in order to enable the provision of timely, and appropriate treatment of the patient. Parameters for identifying, verifying, reporting, and documenting critical values or results are defined below. All critical values/results are reviewed and approved by the Medical Executive Committee at each hospital site.

All laboratory critical values/results must be reported immediately to the primary care nurse (may be an LPN or RN), attending provider, or provider designee* as appropriate. Critical values/results may not be left on an answering machine. If a provider cannot be reached to report a critical value/result, refer to the Escalation Policy section below.

> **NOTE*: The provider's designee is the ED unit secretary/monitor tech, provider's assistant, or provider on call. In the outpatient setting, this includes an office nurse, home health nurse, medical assistant, or office assistant.

Documentation of the call from the lab including **time, date, and who received** the critical value/result must be documented as part of the patient's electronic medical record (EMR). This documentation is performed through Epic/Beaker utilizing the Comm Log as described in laboratory procedure **GEN 3 – Laboratory Callback Procedures**. Details of any instance where it does not occur should also be documented on an Internal Laboratory Occurrence form.

Point of Care and Blood Gas Critical Results will be reported promptly to the licensed responsible caregiver (RN or provider) within 15 minutes of resulting and documented as outlined in each specific test procedure.

Nursing Responsibility (inpatient):

Nurses, and other approved staff (e.g., ED Techs), receiving the test result(s) provide a read-back verification of the critical value/result using two patient identifiers.
Nursing documents provider notification and any associated interventions.
Exceptions to nursing staff calling critical values to the provider include:
Critical lab values that are managed by using provider orders or ordered treatment protocols.
Previously reported critical values that are expected for the patient condition/situation. Nursing judgement should be used to report values that are not trending as expected or for values that may need new or different intervention.

Laboratory Evaluation of Critical Test Values:

I. Upon recognition of a critical value, the laboratory technologist or testing personnel will evaluate and verify the result. Evaluation and/or verification may include retesting of the specimen, evaluation of the delta checks, and

investigation of specimen's integrity. The action of result evaluation and verification will be based on the best judgment of the laboratory technologist or testing personnel.

II. The laboratory technologist or testing personnel may authorize specimen redraw if specimen integrity is in question.

The following examples would be indicative of specimen integrity issues and would warrant additional evaluation and/or investigation, and specimen redraw authorization:

- Dilution effect resulting from improper collection giving some or all results that are so low that they are incompatible with life (e.g., extremely low electrolytes, total protein suppressed and out of instrument's AMR, etc.).
- Samples contaminated with potassium EDTA. This could be obvious with potassium extremely high values and calcium out instrument low AMR, or it could be subtle with a critically high potassium and critically low calcium.
- Samples contaminated with glucose that are out of high AMR.

Concerns about inpatient sample integrity should be treated as critical and communicated to the ordering provider and/or designee immediately. Such communication must be documented in Comm Log EMR.

Escalation Policy:

It is the responsibility of the ordering provider to be available to receive critical laboratory results ordered at Asante Laboratories. Asante laboratories require after-hours/on-call contacts for all clients.

I. Medical Technologist/Clinical Laboratory Responsibility (inpatient)

A. The medical technologist will attempt to contact the nursing station three (3) times at 15-minute intervals. If a provider, nurse, or designee is reached, the critical value is reported as per normal policy with appropriate documentation in the communication log (LIS-Beaker/Epic).

B. If the provider, nurse, or designee cannot be reached, the medical technologist will follow the Chain of Command Deteriorating Patient Condition policy (400-PCS-NURS 0203) to communicate the critical value either to the Charge Nurse or House Supervisor.

II. Medical Technologist/Clinical Laboratory Responsibility (outpatient/after-hours):

A. When after-hours critical values occur, the medical technologist will attempt to contact the submitting provider/on-call provider at least three (3) times at 15-minute intervals using all available contact methods (office phone, on-call phone, answering service, Halo, pager). If a provider is reached, the critical value is reported as per normal policy (see above).

B. If the on-call provider cannot be reached after at least three (3) attempts, the on-call pathologist will be contacted, and the result will be verified in the EMR. Efforts to contact the on-call clinical provider MUST be documented by the medical

technologist in the Epic communication log. A statement documenting several attempts to reach the clinical provider will be reported in the EMR with the critical laboratory value, as will the handoff to the on-call pathologist. The technologist will send an email to AsanteLabManagement@asante.org with the same information for lab outreach follow up on the next business day.

C. The next business day, the clinical laboratory outreach coordinator will contact the clinic during regular business hours and report the critical result to the clinic. In this call, the coordinator will explain Asante's requirement to be able to reach an after-hours provider at all times. The coordinator will obtain/update the appropriate after-hours contact information.

D. The medical director of the clinical laboratory will reach out to the medical director/owner of the clinic and reiterate that it is best practice to be able to reach a provider after usual business hours.

E. Every instance of this nature will be recorded on a variance log for medical director review and quarterly audit.

F. If there is more than one occurrence by the same clinic, the medical director will contact the clinic medical director again and explain that if the clinic cannot provide an after-hours contact for laboratory use, Asante will be unable to process their specimens.

Pathologist Responsibility:

I. The on-call pathologist will handle the critical value call using his/her best clinical judgment.

II. The pathologist will document his/her actions in the electronic medical record using a clinic note. Work-related to after-hours critical value reporting should be tracked using Part A time AND the appropriate CPT code(s) (80503, 80504, 80505, 80506). An Epic smart phrase may be used for documentation. The smart phrase will indicate the laboratory will contact the clinic the next business day.

III. The on-call pathologist will notify the medical director of the respective clinical laboratory with the patient's name and medical record number.

The following template represents an example and is not meant to encompass all situations. The on-call pathologist can modify this template to fit the needs of the situation.

Epic Smart Phrase Template [Epic smart phrase shortcut: CriticalValueDoc]:

"This patient had an after-hours critical laboratory result. Multiple attempts to contact [Dr./P.A./FNP/NP] were not successful. By Asante Laboratories' escalation policy, I reviewed the patient's medical record, and laboratory studies and took the following action […]. The clinical laboratory will contact the submitting clinic the next business day."

Laboratory Critical Values – Asante Laboratories		
BLOOD BANK		
Suspected hemolytic transfusion reaction	Unit to call the lab	
Suspected TRALI	Pathologist to call provider	
HEMATOLOGY		
	LESS THAN	**GREATER THAN**
WBC	2000 /µL	50,000 /µL
HGB	7 g/dL	20 g/dL
HGB (0-30 days old or NICU)	8.5 g/dL	22g/dL
HCT	21%	60%
HCT (0-30 days old or NICU)		65%
Platelets	20,000 /µL	1,000,000 /µL
Differential Morphology on blood and fluid smears	• Call blasts with first smear on admission	
	• Call blasts with first outpatient smear within the last 7 days	
	• Blood parasites on the first smear within 30 days	
COAGULATION		
	LESS THAN	**GREATER THAN**
PT-INR		5
PT-INR (0-30 days old or NICU)		1.5
PTT		100 sec
FIB	100 mg/dL	
CHEMISTRY		
	LESS THAN	**GREATER THAN**
Bilirubin, Total (0-30 days old or NICU)		**17 mg/dL**
Calcium (Total)	6.5 mg/dL	13.0 mg/dL
Calcium, Ionized	0.8 mmol/L	1.6 mmol/L
Glucose	50 mg/dL	500 mg/dL
Glucose (0-30 days old or NICU)	**40 mg/dL**	**250 mg/dL**
Lactate		4 mmol/L
Magnesium	1.4 mg/dL	5.0 mg/dL
Methotrexate (24 hours post transfusion)		5.0 µmmol/L
Methotrexate (48 hours post transfusion)		0.5 µmmol/L
Methotrexate (72 hours post transfusion)		0.05 µmmol/L
Phosphorous	1.0 mg/dL	8.9 mg/dL
Phosphorous (0-30 days old or NICU)	3.0mg/dL	8.9 mg/dL
Potassium (K)	3.0 mmol/L	6.0 mmol/L
Potassium (K) (0-30 days old or NICU)	**3.0 mmol/L**	**6.9 mmol/L**
Sodium (Na)	120 mmol/L	160 mmol/L
Sodium (Na) (0-30 days old or NICU)	**126 mmol/L**	**160 mmol/L**
TCO_2	10 mmol/L	40 mmol/L

CHEMISTRY		
	LESS THAN	**GREATER THAN**
Troponin-I		100 ng/L In addition, a courtesy call is made for ≥20 ng/L increase between 0-2hr draw (2-hour protoc. only)
*Note: *Adult* inpatients with a critical troponin value do not need a call if there is a prior critical troponin that has been called and documented in the Beaker comm log. The prior called result must have occurred within the past 7 days.		
THERAPEUTIC DRUGS		
	LESS THAN	**GREATER THAN**
Acetaminophen		50 µg/mL
Carbamazepine		15 µg/mL
Digoxin		2.5 ng/mL
Gentamicin (Peak)		12.0 µg/mL
Gentamicin (Trough)		2.0 µg/mL
Tobramycin (Peak)		12.0 µg/mL
Tobramycin (Trough)		2.0 µg/mL
Lithium (Trough)		1.5 mmol/L
Phenobarbital		60 µg/mL
Phenytoin (Dilantin)		30 µg/mL
Salicylate		30 mg/dL
Valproic Acid		150 µg/mL
Vancomycin (Trough)		25 µg/mL
Vancomycin (Random)		50 µg/mL
MICROBIOLOGY		
All gram stains from sterile body fluid/tissue sites	Any organism present on the smear must be called within 30 minutes of resulting.	
Blood Cultures	Positive direct smears or cultures	
CSF/Sterile Body Fluids/Tissue	Positive direct smears or cultures	
Cryptococcal Antigen	All positive results	
Meningitis/Encephalitis Panels	All positive results	
Bioterrorism Agents/Diseases: Refer to MIC 269. *Arenaviruses, Bacillus anthracis, Francisella spp, Brucella spp, Yersinia spp, Burkholderia mallei, Burkholderia pseaudomallei, Chlamydia psittaci, Clostridium botulinum toxin, Coxiella burnetiid, Ricinus communis, Salmonella spp, Shigella, Smallpox, Vibrio cholerae, Viral hemorrhagic fevers, Yersinia pestis.*	All positive results	

BLOOD GAS		
	LESS THAN	**GREATER THAN**
pH (Arterial, Venous, Capillary)	7.2	7.6
pH (Cord - Arterial & Venous)	7.16	
pCO2 (Arterial, Venous, Capillary)	20 mmHg	70 mmHg
pO2 (Arterial)	50 mmHg	
pO2 (Mixed Venous)	29 mmHg	
pO2 (Capillary)	39 mmHg	
HCO3 (Arterial, Venous, Capillary)	9.1 mmol/L	39.9 mmol/L
Base Excess (Cord - Arterial & Venous)	-12.1	
O2HB (Arterial)	82.1 %	
SO2 (Arterial)	82.1 %	
BLOOD GAS		
	LESS THAN	**GREATER THAN**
O2HB (Venous & Mixed Venous)	49.1 %	
SO2 (Venous & Mixed Venous)	49.1 %	
COHB (Arterial, Venous, Mixed Venous, Capillary)		19.9 %
METHB (Arterial, Venous, Mixed Venous, Capillary)		1.9 %

NOTE: The values in the lab-controlled document and in the AsanteNet document MUST always be exactly the same. Any updates to the values in this document are approved through laboratory document control by the Laboratory Medical Director and the Laboratory Administrative Director and processed through the Laboratory Staff Assistant to ensure document integrity.

REVIEWED BY:

Name / Position	Date
Danielle Ennis, Point of Care Supervisor, AACH /ARRMC/ATRMC	01/24/2023
Sarah Carlyle, DNP, RN, CCRN-K, Asante Critical Care Clinical Practice Advisor	02/02/2023
Jaclyn Sanford, MBA, BSRC, RRT, Supervisor of Respiratory AACH & ARRMC/Cardiopulmonary AACH	02/02/2023
Debra Keberle, RRT, RRMC Respiratory Therapy Blood Gas Technical Specialist	02/02/2023
Anne Hansen DNP, RN, ACCNS-Ag, NEA-BC, NPD-BC, CCRN-K, Director- Asante Nursing Professional Development	02/09/2023
Asante Clinical Document Council	02/01/2023

REVISIONS/SUMMARY OF CHANGES:

Revision date:	Revision Description:
01/24/2023	Elevating to 400-level. Updated troponin critical value and blood gas critical values
04/09/2024	Removed the word serum from glucose to include whole blood. Changed O2HB (Arterial) and SO2 (Arterial) to 82.1%, O2HB (venous & mixed venous) and SO2 (venous & mixed venous) to 49.1%. Updated

	Microbiology section to include all positives from Bioterrorism Agents/Diseases, meningitis/encephalitis panels and Cryptococcal Antigen.