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SUBJECT: Critical Values

POLICY: The laboratory will identify test results that have critical values and will notify within 30 minutes the physician or other clinical personnel responsible for patient care when validated critical values are obtained.

PROCEDURE:

A. Critical value results will be validated prior to reporting according to standard operating procedures for each test and by the general procedure outlined below.

1. Compare the critical value with prior results and correlation with other clinical data and clinical condition. Report value if results are consistent with findings.
2. If a previous value is not available and/or results are not consistent with findings proceed as described below, reporting the result at the point when the value has been validated.

   Note: The nursing unit and/or physician must be notified that there will be a delay for verification and re-testing. Values obtained in initial testing can be given verbally to the physician with the reminder that the result is preliminary and must be confirmed.

   a. Examine the specimen for patient identification, fibrin, clots, hemolysis, and correct sample type.
   b. Verify that the correct patient has been collected.
   c. Re-run the test using a fresh aliquot from the primary tube sample if examination indicates there is no problem with specimen integrity or identification.
   d. Immediately alert all involved testing areas if a re-draw is requested.
   e. Request a stat redraw of all specimens (if possible) and document the reason needed and any special requirements in the re-collect function. Notify the patient care area of the situation and the need for re-draw.
   f. Run the new specimen and re-validate any critical value obtained.

B. The physician or other clinical personnel responsible for patient care must be notified immediately (within 30 minutes) of all critical values.

1. For testing performed in the laboratory, the technologist or customer service staff will call the appropriate location, identify the patient using two patient identifiers (patient's name and account number for

inpatients; patient's name and date of birth for outpatients), the test name(s), and the critical result(s) to physician, clinical person, or designee, and indicate that the result exceeds critical limits.

a. Have the person that is accepting the critical value, read back the two patient identifiers, the test name(s), and the critical value(s). Obtain the name (first and last) of the person to whom the result was given.

b. Document the call in the LIS (In SCC, the "Call" function is used.) including the person's name, the time of the call, and "RBO" as verification of "read back obtained." If the person refuses to read back the result, document the refusal with the person's name and "RBR" to indicate "read back refused."

c. Exception reports will be monitored periodically (at SRMC, VWCH, PCACC), to verify that all critical values have been called to an appropriate person. If there is no documentation of the call, the critical value must be called by the person monitoring the exception report.

2. For emergency or urgent care patients at the ambulatory care centers (**PE**-PCACC, **DE**-DACC, and **UC**-ESUC,**WU**-WSUC), printed copies of the reports can be given directly to the attending physician in lieu of calling the critical value. This direct delivery of the critical report must be documented in the LIS as in B.1.c. above.(ie., "Printed report given to Dr. Smith.") When blood is received at NVML after the urgent care closes, and testing produces a critical result, the critical value will be called to **PCACC**'s emergency department at **419-226-4400** for documentation and follow up. **This is for Emergency patients only**. Out patients from the urgent cares (DA-DACC, PO-PCACC, EO- ESUC, WO-WSUC) will still need critical values called to the ordering physician.
3. For testing performed at a reference laboratory, the physician or other clinical personnel responsible for patient care will be notified immediately of all results flagged as critical by the reference laboratory as in step B.1.a-c above. Reference laboratories are given a laboratory contact phone number only. Critical values are therefore called directly to laboratory staff.
4. For POCT testing such as POC Glucose, the testing personnel will follow the physician's orders and established Nursing Service protocol for physician notification and patient treatment. Appropriate comment codes can be appended in the analyzer to document actions taken.
5. Certain identified consistent long term patient critical values may not be called after the initial notification.
6. Certain surgical pathology may be considered particularly significant or unexpected. Such findings are communicated to the physician by the pathologist. Documentation of that communication will be

included in the pathology report dictated by the pathologist.

7. If an outpatient's physician or other clinical personnel responsible for patient care is unavailable after 60 minutes, call the Pathologist for disposition.

Quantitative Critical Values

Revised: October 2015

Test Name	Low	High	Note:
*APTT		> 120 seconds	
Arterial pH	<7.2	>7.6	
pCO2	<20 mm Hg	>70 mm Hg	
pO2	<40 mm Hg	760 mm Hg	
Bilirubin		≥14.0 mg/dl	Neonate (0-28 days)
Calcium	≤6.0 mg/dl	≥13.0 mg/dl	
		≥11.5 mg/dl	OP Dialysis
*CO2	≤10 meq/L	≥40 meq/L	
*Creatinine		≥3.0 mg/dl	N/A for dialysis pts.
Fibrinogen	< 80 mg/dl		
*Glucose	≤40 mg/dl	≥500 mg/dl	
*Hematocrit	≤ 21.0%	> 60.0%	
	≤ 33.0%	> 55.0% venous	Neonate (0-28 days)
		> 70.0% capillary	Neonate (0-28 days)
*Hemoglobin	≤ 7.0 g/dl		
	≤ 11.0 g/dl		Neonate (0-28 days)
Ionized Calcium	≤0.77 mmol/L	≥1.59 mmol/L	
Magnesium	≤0.5 mg/dl	≥5.0 mg/dl	
Phosphorous		≥ 12 mg/dl – OP dialysis	
*Platelets	≤30,000/mm^3	≥ 1,000,000	
Prothrombin Time (INR)		INR of 5.0	
	INR <1.0	INR > 5.0	POC testing only at: HMG, IOS, DACC, Cancer Care of West Central Ohio
Potassium	≤2.7 meq/L	≥6.0 meq/L	
		≥ 7.0 meq/L	OP Dialysis
Sodium	≤120 meq/L	≥160 meq/L	
*WBC	≤1,000/mm^3	>25,000/mm^3	Non-OB patient
	<6,000	>30,100	0-1 Day

*Consistent long term patient critical values may not be called.

Qualitative Critical Values

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Urine Glucose	Glucose 1000 along with positive Ketone	SRMC, PCACC, & DACC
AFB Culture	Positive	
AFB Smear	Positive	
Blood Culture	Positive	
Bone Marrow Culture	Positive	
C.DIFF Toxin RT- PCR	Positive	
GC Culture	Positive	OB patient
GC Smear	Positive	OB patient
Gram Stain	Positive	Sterile Body Fluid
India Ink Prep	Positive	
Isolates of: Salmonella, Shigella, Campylobacter, E. coli 0157:H7 VRSA/VRSE VISA/VISE	All isolates	
Biofire Film Array CSF panel: Escherichia coli K1 Haemophilus influenzae Listeria monocytogenes Neisseria meningitides Streptococcus agalactiae Streptococcus pneumoniae Cytomegalovirus Enterovirus Herpes simplex virus 1 Herpes simplex virus 2 Human herpes virus 6 Human parechovirus Varicella zoster virus Cryptococcus neoformans/gatti GI panel: Campylobactor Clostridium difficile Salmonella Vibrio Yersinia E.Coli 0157: H7 Shigella	Detected	All CSF samples that give "Detected" values are to be called to the unit or office. GI panel on the Biofire results giving a "DETECTED" for tests indicated are to be called as critical values on all INPATIENT testing for SRMC.

Spinal Fluid Culture	Positive	
Spinal Fluid Gram Stain	Positive	
Transfusion Reaction	Hemolytic Transfusion Reaction	

Drug Level Critical Values

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Test Name		Value
Acetaminophen		> 150 mcg/ml
Carbamazepine		15 mcg/ml
Digoxin		> 3.0 ng/ml
Gentamicin	Peak	> 10 mcg/ml
	Trough	> 2 mcg/ml
Lithium		> 1.5 meq/L
Phenobarbital		> 60 mcg/ml
Phenytoin		> 30 mcg/ml
Salicylate		≥ 30 mcg/ml
Theophylline		> 30 mcg/ml
Tobramycin	Peak	> 12 mcg/ml
	Trough	> 2 mcg/ml
Valproic Acid		> 200 mcg/ml
Vancomycin	Peak	> 40 mcg/ml
	Trough	> 20 mcg/ml

Policy Approved:

Approved by: Thomas Geis, Operations Manager

6-5-17_____

Approved by: Dr. Elsa Malcolm, Laboratory Medical Director

6-5-17_____