



## CLINICAL LABORATORY

### Critical Values

#### Policy:

The laboratory has established a list of those tests which may have the most immediate impact upon patient outcome in the event of grossly abnormal findings. Specifically, the existence of a "critical" result, as defined on the "critical values list", indicates the need for immediate notification to the ordering physician.

These must be done in a format which will allow complete and clear documentation of all these facts. To meet these requirements, we will use the "CRITICAL RESULT" message that pops up with every verification of a critical result. The date, time and identity of the resulting tech is captured and inserted by the computer system. The entry of person(s) notified is the responsibility of technician or technologist. This identity must include the first and last names of the person(s) called. Employee's mnemonics may be used when results are given to a hospital employee. Do not use initials, RN, MD, etc., as the sole identifier.

All results must be read or repeated back by the receiving person. This is to verify that they understood the result, often called "read back verify" and is a safety measure.

#### Inpatients:

1. Critical results must be called to the patient's nurse or charge nurse the ordering unit. If both are unavailable, the report must be given to the shift supervisor for nursing services. In any case, be certain to say "this is a critical result value, please contact the physician immediately".
2. If the result is obtained post-discharge, the lab will notify the ordering physician's office. In cases where the ordering physician is a hospitalist during admission, a member of the Care Management Team will be called who will assume responsibility for follow-up.

#### Outpatients:

1. Critical results must be called to the office of the ordering physician during office hours. The report(s) may be given to the physician, R.N., or other designated staff. If the office of the ordering physician is not open, proceed to number 2.
2. If the office is closed, lab staff should call the answering service and notify the physician on call. If the provider does not utilize an answering service, cell phones or other means of communication for each physician should be available by the house supervisor or communications office/switchboard who maintains contact information for all providers.
3. Other facilities/other testing laboratories:
  - a. Critical results of tests on samples submitted from other facilities (i.e., Red Bay, NAMC) will be called to the laboratory staff in the originating facility.

#### Reference Lab Results:

Critical results of tests referred to and tested by reference labs (i.e., HH, Mayo, LabCorp) will be treated based upon that laboratory's designation of "critical" and called accordingly.

## CRITICAL CHEMISTRY VALUES

TEST:	CRITICAL LOW:	CRITICAL HIGH:
Glucose >15 years	<50 mg/dl	>450 mg/dl
Glu pediatric 0 days - <16yrs	<60 mg/dl	>200 mg/dl
Sodium >15 years	<120 mmol/l	>155 mmol/l
Na pediatric 0 days - <16yrs	<131 mmol/l	>159 mmol/l
Potassium >14 days	<3.0 mmol/l	>6.0 mmol/l
K pediatric 0 days - 14days	<3.0 mmol/l	>7.9 mmol/l
Co2 >15 years	<10 mmol/l	>40 mmol/l
Co2 pediatric 0 days - <16yrs	<15 mmol/l	>40 mmol/l
Creatinine >10 years	None	>8.0 mg/dl
Cre pediatric 0 days - <11yrs	None	>2 mg/dl
Calcium >16 years	<6.0 mg/dl	>14 mg/dl
Ca pediatric 0 days - <17yrs	<7.0 mg/dl	>14 mg/dl
Phosphorus	<2 mg/dl	None
Magnesium	<1 mg/dl	>5 mg/dl
Lactic acid	None	>3.3 mg/dl
Lithium	<0.6 mmol/L	>1.2 mmol/L
Procalcitonin	None	>1.99 ng/ml
CKMB	None	>15 ug/ml
Acetaminophen	None	>50ug/ml
Salicylate	None	>30 mg/dl



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Test:	Critical Low:	Critical High:
Digoxin	None	>2.8 ng/ml
Ethanol	None	>400 mg/dl
Theophylline	None	>25 mg/dl
Carbamazepine	None	>12 ug/ml
Phenobarbital	None	>50 ug/ml
Phenytoin	None	>30 ug/ml
Valproic	None	>126 ug/ml
Gentamycin trough	None	>2 ug/ml
Gentamycin peak	None	>10 ug/ml
Tobramycin trough	None	>2 ug/ml
Tobramycin peak	None	>10 ug/ml
Vancomycin tough	None	>35.1 ug/ml
Vancomycin peak	None	>90 ug/ml
Total bilirubin >30days	None	>15 mg/dl
Tbil newborn 0days – 30days	None	>14 mg/dl
Troponin T	None	>99 ng/L

## BBK CRITICAL RESULTS

A. The Pathologist is to be notified immediately of any of these problems:

1. The need to transfuse non-group specific products.
2. The need to transfuse incompatible products.
3. Delay in crossmatching a surgery or emergency patient.
4. Orders for emergency release of uncrossmatched products.

B. The Supervisor is to be notified immediately of any of these problems:

1. Inability to crossmatch a patient.
2. Inability to procure blood product.
3. Any discrepancies in ABO group or prior Blood Bank history.

C. The attending physician will be notified as directed by the medical director or supervisor.

## CRITICAL LABORATORY VALUES HEMATOLOGY

TEST:	CRITICAL LOW	CRITICAL HIGH
HEMATOCRIT 0 DAYS – 8 DAYS	< 40.1 %	NONE
9 DAYS – 14 DAYS	< 25.1 %	NONE
15 DAYS – 1 YEAR	<25.1 %	>59.8 %
>1 YEAR FEMALE	<20.1 %	>54.8 %
>1 YEAR MALE	<20.1 %	>59.8 %
HEMOGLOBIN 0 DAYS – 8 DAYS	<8.1 G/DL	
9DAYS – 17YRS	<8.1 G/DL	>19.7 G/DL
>17 YEARS	<6.6 G/DL	>19.7 G/DL
WBC 0 DAYS – 1YEAR 30 DAYS	<2.6 x10 <sup>3</sup> /uL	>17.9 x10 <sup>3</sup> /uL
1 YR 1MTH – 15 YEARS	<2.7 x10 <sup>3</sup> /uL	>17.9 x10 <sup>3</sup> /uL
>15 YEARS	<2.7 x10 <sup>3</sup> /uL	>24.9 x10 <sup>3</sup> /uL
WBC,CSF		>20 (NON-TRAUMATIC TAPS)
CSF,DIFF		>10 POLYS (NON-TRAUMATIC TAPS)
INR		>4.4 RATIO
aPTT		>67.9 sec
aPTT, Heparin Protocol		>200 sec
d-Dimer		>/= 0.50 mg/mL FEU
FIBRINOGEN	<88 MG/DL	>775 mg/dL
PLATELET >16 YEARS	<50,000 x10 <sup>3</sup> /uL	>910,000 x10 <sup>3</sup> /uL
PLT PEDIATRIC 0 DAYS - 16YEARS	<81,000 x10 <sup>3</sup> /uL	>599,000 x10 <sup>3</sup> /uL
MALARIA SMEAR		POSITIVE

## MICROBIOLOGY PROCEDURE CRITICAL LABORATORY VALUES

FINDING:	POSSIBLE EFFECT OR DAMAGE:
POSITIVE BLOOD GRAM STAIN:	SEPSIS
POSITIVE BLOOD CULTURE:	SEPSIS
POSITIVE CSF GRAM STAIN:	MENINGITIS
POSITIVE CSF CULTURE:	MENINGITIS
ANY INDICATION OF CLOSTRIDIUM IN WOUND GRAM STAIN:	SEPSIS, GANGRENE
ANY INDICATION OF CLOSTRIDIUM WOUND CULTURE:	SEPSIS, GANGRENE
EYE - PSEUDOMONAS, STAPH AUREUS OR PURE CULTURE OF ANY ORGANISM	SERIOUS EYE DAMAGE OR BLINDNESS
ANY POSITIVE TB SMEAR OR CULTURE	PUBLIC HEALTH IMPLICATIONS; NOSOCOMIAL INFECTION;
ANY POSITIVE SALMONELLA, SHIGELLA CULTURE OR CAMPYLOBACTER	PUBLIC HEALTH IMPLICATIONS; NOSOCOMIAL INFECTION;
ENTEROPATHOGENIC E. COLI IN PATIENT UNDER 2 YEARS OF AGE	NOSOCOMIAL INFECTIONS
E.COLI 0157:H7	HEMOLYTIC UREMIC SYNDROME
METHICILLIN RESISTANT STAPH AUREUS (MRSA)	NOSOCOMIAL INFECTION
VANCOMYCIN RESISTANT ENTEROCOCCUS (VRE)	NOSOCOMIAL INFECTION
ANY POSITIVE MYCOLOGY CULTURE	



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## SEROLOGY CRITICAL VALUES

<b>FINDING:</b>	<b>POSSIBLE EFFECT OR DISEASE</b>
H. I. V. Positive (SCREENINGS ONLY)	AIDS
Any positive result on meningitis panel	Meningitis
RSV	Respiratory Syncytial Virus

**REFERENCE:** APPROVED BY THE MEDICAL EXECUTIVE COMMITTEE ON 02/08/2017.