SUNY DOWNSTATE MEDICAL CENTER

UNIVERSITY HOSPITAL OF BROOKLYN
POLICY AND PROCEDURE

	No. LAB-7
Subject: **LABORATORY CRITICAL VALUES**	**Page 1 of 8**
Prepared by: Alix R. Laguerre	**Original Issue Date** 11/93
Reviewed by: Maria I. Mendez Gloria Valencia, M.D. Dianne Woods, RN.	**Supersedes:** 11/06 **Effective Date:** 4/08
Approved by: Peter J. Howanitz, M.D. Anny Yeung, RN, MPA Margaret Jackson, MA, RN David Conley, MBA Stanley Fisher, M.D. Michael Lucchesi, M.D. Debra D. Carey, MS	**The JC Standards:** NPSG 2A, NPSG 2C, NPSG 1A, **Related Policies** (**PTSAF-14)**Timeliness of Critical Test Results **(PTSAF-9)** Documentation of Verbal Telephone orders **Issued by:** **Regulatory Affairs**

I. PURPOSE

To provide expeditious reporting of critical laboratory findings.

II. POLICY

Critical Value results exceeding those listed must be verified for patient identification, acceptability of quality control and according to laboratory section policy.

- Critical Values must be reported expeditiously by the technologist to the ordering physician, service assigned physician, or to a physician extender or a nurse (NOT the Clerk) in order to alert the staff.
- The laboratory technologist will record in the LIS report comment area that a phone report was given, the date and time of the report, and the person who receive and read-back the report.
- In addition, an Expedited Report containing the Critical Value will automatically be printed to the location where the test was requested.

III. DEFINITION(S):

Critical Values-Laboratory results with abnormal findings or with values above or below established normal ranges and criteria are reported for immediate action by the Clinician**.**

IV. RESPONSIBILITIES:

ER, AOD, & Pathology staff, Nursing.

V. PROCEDURES/GUIDELINES:

- **DURING THE DAY:**

1. The Laboratory staff calls the physician in the clinic or nursing station where the patient is being seen, if unsuccessful,
2. The physician is paged on his/her personal beeper, if unsuccessful,
3. The Laboratory staff calls the nurse in charge or designee and gives the result.
4. Same as #3 under evening.
5. The report recipient must write down and verbally repeat the result as a "Read Back". The report recipient will fill out the "Write-Down/ Read Back" label and place the label in the Progress Notes of the medical record.

- **IN THE EVENING:**

1. Page the requesting physician noted in the patient's laboratory record. If there is no answer within **15 minutes, then go to step 2 below**.

2. Call the page operator to determine the Fellow-on-call or the physician covering the service. Page this physician; if no response in **15 minutes**, go to step 3 below.

3. Page the Pathology resident for the Clinical section. If the Pathology resident is unavailable to resolve the problem, then the Emergency Room physician and Nursing Supervisor on duty will be notified if all previous efforts failed.

4. Document your actions in the comments section of the patient's electronic laboratory medical record.

5. **Resident Procedure for Critical Values**

   - Rarely laboratory personnel will call the Pathology Resident on Call because they were unable to reach the physician of a patient who has a critical value.
   - Those results that Pathology Residents will be called to expedite are those that the laboratory personnel has tried to call the physician listed as the attending physician on the laboratory test request at least twice over the last 30 minutes.
   - When the resident is contacted, the resident should do the following:

A. Determine if the critical value requires immediate notification If it does not and can wait until the morning (i.e. a small number of blasts in the blood of a patient previously known as a patient with leukemia), then retry contacting the attending physician. If the resident is unsuccessful in contacting the attending physician, then continue as below.
B. If patient's critical value requires immediate action, contact house-staff physician on call for the service that saw the patient and together try to contact the physician or the physician covering the patient.
C. If the on-call house-staff physician and the on-call pathology resident cannot locate the physician who ordered the test or the physician on call for that physician, call the Attending Physician in the Emergency Department. This physician should then seek additional information on the patient, and may seek additional information such as the patient's demographic and medical information. Based on the information available, the physician in the Emergency Department will determine what the appropriate action is.
D. On the next working day, the resident will provide the Laboratory Administration office the resident on call problem form, and an investigation of the origin of the problem.
E. The Laboratory Administrator will then refer this issue to the Hospital's Quality Improvement Department for Corrective Action.
F. If the cause of the problem resides with a physician, the Laboratory will notify the Chairman of the Department providing care for the patient.
G. These cases must be reviewed by a Pathologist attending the Pathology Residents' On-Call Conference.

6. **Refer to the attached satellite schedule for providing Critical Values information in the satellite clinics.**

The following are the laboratory's critical values:

Blood Bank

Cord Specimens: Positive direct antiglobulin test (direct coombs).

Routine Specimens: Positive direct and indirect antiglobulin test (direct and indirect coombs).

Obstacles regarding procurement of compatible blood/blood components for transfusion.

Maternal titers of significant red cell all antibodies during pregnancy.

Results of a life threatening transfusion reaction workup.

Failure to call for Rh immune globulin for eligible patient, within 72 hours following known or possible exposure to Rh positive red cells.

Cardio thoracic patients who have a cold agglutinin.

Reference laboratory results, for example, of significant red cell antibodies or autoimmune status.

Serology

Preliminary Positive HIV Expedited Maternal/Neonatal.

Microbiology

A. Report expeditiously as Critical Values when the following test are positive, or the following isolate are found:
Rapid antigen detection:
(+) Crytococcus Antigen
(+) Bacterial Antigen in CSF (includes: Group B strept, H. Flu B, -pneumococcus, and meningococcus)
Latex (includes: Group B strept. H. Flu B, pneumococcus, meningoccus)
Clostridium Difficile Toxin A
Preliminary Positive blood culture
Preliminary Positive CSF smear/culture
Group A Strep (Pediatrics – Throat Culture)
Bordetella Pertussis
Stool Culture positive for Enteric Pathogens
Cryptococcus Neoformans
Corynebacterium Diphtheria
Dimorphic Fungi (Histoplasma, Coccidioides, Blastomyces, Paracoccidiodes)
Neisseria gonorrhea
Donor Organ Transplant Culture

B. Report expeditiously as a Critical Value every instance of a positive smear and/or culture from a patient:

Mycobacterium Tuberculosis, AFB, Mycobacterial species.

CHEMISTRY –

	Low	High	Units
Amikacin	---	35	ug/mL
Amylase (Serum)	---	500	U/L
Bilirubin-neonate	---	15	mg/dL
BUN	---	100	mg/dL
Calcium (Ionized)	0.8	1.8	mmol/L
Calcium, total	7	12	mg/dL
Calcium-neonate	6	12	mg/dL
Carbon dioxide (bicarbonate)	10	36	mmol/L
Chloride	70	120	mmol/L
Creatinine	---	10	mg/dL
Creatinine-neonate	---	1.5	mg/dL
Creatinine Kinase (CK)	---	400	U/L
CSF Protein-neonate	15	150	mg/dL
Cyclosporine	---	500	ng/ml
Digoxin	---	2.5	ng/mL
Gentamicin (peak)	---	12	ug/ml
Glucose (Adult)	40	450	mg/dL

Glucose CSF	35	-----	mg/dL
Lactate acid	---	3.0	mmol/L
Lithium	---	1.6	mmol/L
Blood Lead	---	-----	>15 μg/dL
Magnesium	1.0	5.0	mg/dL
Magnesium-neonate	1.0	2.9	mg/dL
pH-arterial	7.20	7.60	
pCO_2-arterial	20	60	mmHg
PO_2-arterial	50	-----	mmHg
Phenobarbital (serum)	---	55	ug/mL
Phenytoin (Dilantin)	---	30	ug/mL
Phosphorus	1.0	8.0	mg/dL
Potassium	3.0	6.0	mmol/L
Procainamide + NAPA		30	ug/mL
Salicylate	----	40	mg/dL
Sodium (except cord blood)	120	155	mmol/L
Sodium-neonate	125	145	mg/dL
Tacrolimus FK506	---	30	mg/mL
	Low	High	Units
Cardiac Troponin I	---	0.4	ng/mL
Theophylline	---	25	ug/mL
Tobramycin (peak)	---	12	ug/mL
Valproic acid	---	150	ug/mL
Vancomycin (Adult)	---	50	ug/mL

Exception:

Specimens from patients undergoing dialysis are brought to the attention of the clinical laboratory staff on a daily basis.

Pre-Dialysis serum values of creatinine that are above 10 mg/dL and BUN above 100 mg/dL are not considered critical and such values do not mandate a call to inform the responsible physician.

HEMATOLOGY –

	Low	High	Units
CSF Cell Count-neonate	---	0.05	k/μL
Hematocrit	15	60	%
Hematocrit-neonate	36	68	%
Hemoglobin (adult)	5	20	g/dL
	Low	High	Units
Hemoglobin (Neonate)	10	23	g/dL
Platelets	30	900	k/μL
Platelet Count-neonate	100	400	k/μL

WBC	2	35	k/μL
WBC-neonate (0-24 hrs)	9.00	34.00	k/μL
WBC-neonate (1-7 days)	5.00	34.00	k/μL
WBC-CSF	--	0.010(10/MM3)	k/μL

- New findings of the presence in the peripheral blood of blasts, bacteria or sickle cells.
- The presence of malignant Cells or Microorganisms in CSF or other body fluids.
- Presence of blood parasites (Malaria, Babesia or Miocrofilaria)

Exception:

Specimen results with previous critical values reported (within 48 hours) are not called to clinicians. Reports in LIS are documented as "KNOWN PATIENT".

COAGULATION -

	Low	High	Units
INR		6.0	
APTT		70 sec	
Fibrinogen	100		mg/dL
D-Dimer	0.5		mg/mL

URINALYSIS –	Low	High
Reducing sugars (infants)	-----	+
Ketones & Glucose		Pos Ketone & 3+Glucose

Presence of RBC Cast, Bacterial cast, Cellular cast, Fatty Cast or Granular Casts.

Exception:

Specimen results with previous critical values reported (within 48 hours) are not called to clinicians. Reports in LIS are documented as "KNOWN PATIENT".

CYTOLOGY

1. Code O (Unsatisfactory specimens)

2. Code **III** and above (Abnormal Cytology Cases)

Reporting Abnormal Cases

1. A copy of Code **IIR** and above report is mailed to the nurse in charge, (Box 24) of abnormal smear follow-up.

2. A xerox copy of all Code **III** and above, are filed in the Positive Gyn book as part of positive Reference record.

3. In-patient reports of Code **III** and above;

4. All other Code **III** and above Cytology reports:

   Patient's physician or midwives will be notified of abnormal reports by page, phone, fax, or hand deliver report to physician's office.

   Private patient abnormal reports are reported to the referring physician. Clinic patient abnormal reports are reported to the midwives.

5. Document on the lab record copy the date and the initial of person notifying the physician.

   Also document how report was conveyed to referring physician or midwives; e.g.: FAX, phone. Keep documented copies in Gyn Code **III** and Above Book.

REPORTING CODE O

Code O cases are also reported to patients' physician or midwives. Document as for abnormal smears. Keep documented Code O copies in Code Book.

SURGICAL PATHOLOGY

POLICY REGARDING TIMELY COMMUNICATION, AND DOCUMENTATION THEREOF , OF SIGNIFICANT OR UNEXPECTED SURGICAL PATHOLOGY FINDINGS.

The responsible clinician should be notified whenever there is an unexpected finding which requires consideration by the clinician of timely action or if there is a possibility that the report of the unexpected finding may be overlooked.
The time and date of the notification and the name of the clinician should be included in the report. The finding should be discussed with the clinician. Leaving a message may not suffice.
Examples include:Absence of chorionic villi when clinically expected (potential ectopic pregnancy)
Unexpected malignancy.
Malignancy in an uncomon location or specimen type, e.g. hernia sac, tonsil, etc.
Change in diagnosis.
After hours diagnosis of rejection in a transplant biopsy.

SATELLITE FACILITIES REPORTING

REPORTING CRITICAL VALUES TO SATELLITE PHYSICIANS

THROOP SATELLITE: SUITE AE

DURING OFFICE HOURS: M.T.W.F 9:00 AM – 5:00 PM TH, 12 PM – 8 PM
Call the Satellite at Ext. 6200 or 6201
AFTER HOURS: During the Week - Page the Ordering Physician through the UHB Page Operator

Weekends: Friday at 5:00 PM thru Monday 9:00 AM
Page the On-Call Physician for the Throop Satellite

IF NO RESPONSE: Page the Pathology Resident on Call

MIDWOOD SATELLITE: SUITE AF

DURING OFFICE HOURS: M.T.W.F 9:00 AM – 5:00 PM TH, 12 PM – 8 PM
Call the Satellite at Ext. 8920 or 8921

AFTER HOURS: During the Week - Page the Ordering Physician through the UHB Page Operator

Weekends: Friday at 5:00 PM thru Monday 9:00 AM
Page the On-Call Physician for the Midwood Satellite

IF NO RESPONSE: Page the Pathology Resident on Call

FHS SATELLITE: SUITE 0

Dr. Hanna Aghabi, Medical Director
Dr. Steven Liverpool Dr. Joseph Quist
Dr. Pamela Sass Dr. Gloria Achara

DURING OFFICE HOURS:	Mon. Tues. Thurs.	9:AM-8:PM
	Wed. Fri.	9:AM-5PM
	Saturday	9:AM-1PM

PAGE THE ORDERING PHYSICIAN through the UHB Page Operator

ALL OTHER HOURS OR, IF ORDERING PHYSICIAN DOES NOT RESPOND: PAGE THE FAMILY PRACTICE RESIDENT ON CALL

VI. ATTACHMENTS

Write Down / Read Back Labels

VII. REFERENCES:

CAP Laboratory Accreditation Program May 2003; NYSDOH Laboratory

Standards Dec 2002, JCAHO Standards 2001

Date Reviewed	Revision Required (Circle One)		Responsible Staff Name and Title
9/03	**Yes**	**No**	Alix Laguerre, Lab Administrator
9/04	**Yes**	**No**	Alix Laguerre, Lab Administrator
11/04	**Yes**	**No**	Alix Laguerre, Lab Administrator
11/05	**Yes**	**No**	Alix Laguerre, Lab Administrator
11/06	**Yes**	**No**	Alix Laguerre, Lab Administrator
7/07	**Yes**		Dianne Woods/ Deputy Nursing Officer