

## Procedure LB.100.045

<b>Subject</b>	LB.100.045 - Alert Value Policy		
<b>Department / Location</b>	Laboratory and Pathology / General		
<b>Owner</b>	Director of Laboratory Services		
<b>Stakeholder/ Reviewer(s)</b>	Inpatient and Ambulatory Best Practice Councils		
<b>Effective Date</b>	02/00	<b>Review Frequency</b>	1 Year
<b>Approval Date</b>	06/26/2024		

### Attachments

### Purpose

#### A. Method / Principle

1. To define which verified laboratory test result indicates a severe illness or a life threatening condition. An alert value result requires laboratory staff to initiate notification of the licensed independent practitioner, or others as defined in the notification procedure within 5 minutes of result verification.

### Definitions N/A

### Statement of Policy

- A. It is the policy of Carle Foundation Hospital Laboratory to verbally notify the licensed independent practitioner, or others as defined in the notification procedure, whenever the verified result of a pre-defined laboratory test exceeds the limits stated below.
- B. When communicating results about a patient with a caregiver, two patient identifiers will be used.
  1. When communicating with a Carle caregiver, the patient's full name and medical record number will be used as the identifiers.
  2. When communicating with non-Carle caregivers, the patient's full name and date of birth will be used.
- C. Laboratory staff will request that the person receiving the verbal result repeat/read back the result.
  1. Documentation of the telephone call (date, time, first and last name or first name and employee number, credential, and read/repeat back confirmation) is recorded in the LIS call box or in the Instrument Manager software.
  2. Read/repeat back confirmation is noted using RB.
- D. All Alert values will be reviewed and documented by the section manager or designee.
- E. When Carle Lab staff receive verbal alert values from Reference Laboratories, they will read back the results to the caller to ensure correct transfer of information.
- F. This policy does not apply to caregivers responsible for performing point-of-care testing and acting upon those test results.

### Procedure

#### A. Microbiology

Alert values in Microbiology encompass the detection of clinically important microorganisms or immunological reactions which may require immediate action.

Certain microbiology results will be communicated to Infection Prevention (via EPIC ICON) in addition to the physician or nurse. Additionally, the Illinois Department of Public Health will be notified for certain organisms or results. It may also be necessary to forward isolates or clinical material to the Illinois Department of Public Health Laboratory for confirmatory or additional testing. The Public Health Control of Communicable Disease Code Part 690 is reviewed yearly for changes.

1. Acid Fast Bacilli
  - a. Positive AFB smears.

- b. Recovered on culture.
2. Bacillus anthracis
  - a. Recovered on culture or high clinical suspicion for this organism.
3. Blood cultures
  - a. Positive bottle gram stains and PCR testing results.
  - b. Provide culture updates to providers as needed.
4. Blood parasites
  - a. Blood films which have malarial or other blood parasites present should be called to the licensed independent practitioner
5. Bordetella pertussis
  - a. Recovered on culture or any positive test result.
6. Brucellosis
  - a. Recovered on culture or high clinical suspicion for this organism.
7. Campylobacter
  - a. Recovered on culture or any positive test result.
8. Candida auris
  - a. Recovered on culture.
9. Catheter tip cultures
  - a. Organism growth in significant numbers.
10. Clostridium difficile
  - a. Inpatient and EDCC positive results.
  - b. Outpatient positive results will be called unless the patient has had a previous positive result within 7 days.
11. Corynebacterium diphtheria
  - a. Recovered on culture.
12. Cryptococcal Antigen Test
  - a. Initial positive result. Follow up titer results do not need to be called.
  - b. Both positive and negative antigen results on specimens received from the Emergency Department.
13. Cryptosporidiosis
  - a. Positive result for Cryptosporidium.
14. Cyclosporiasis
  - a. Positive result for Cyclospora
15. CSF
  - a. Positive gram stain result.
  - b. Both positive and negative Gram results will be called to patients from the Emergency Department.
  - c. Any organism recovered on culture.
16. Entamoeba histolytica/dispar
  - a. Positive result.
17. E. coli (O157:H7 and other Shiga Toxin producing E. coli)
  - a. Recovered on culture and any positive test result.
18. Enteric Pathogen Cultures
  - a. Positive for Campylobacter, E. coli O157:H7, Salmonella, Shigella, Vibrio, or Yersinia.
19. Francisella tularensis
  - a. Recovered on culture or high suspicion for this organism.
20. Fungal Cultures/Smears
  - a. Organisms on direct smear resembling Histoplasma, Blastomyces, and Coccidioides
  - b. Histoplasma, Blastomyces, or Coccidioides recovered on culture.
21. Gram Stains
  - a. Organisms observed on smears from normally sterile sources.
22. Gastrointestinal Pathogen Panel (PCR)
  - a. Inpatients: all positive results.
  - b. ED patients and Outpatients: positive results for Campylobacter, E. coli O157:H7, Salmonella, Shigella, Vibrio, Yersinia, E. histolytica.
23. Group B Streptococcus

- a. Recovered on culture or any positive test result for L&D patients and newborns.
- 24. Haemophilus influenzae
  - a. Recovered from cultures of normally sterile sources.
  - b. Any positive test from normally sterile specimen.
- 25. Influenza (including novel or variant A)
  - a. Positive test result for hospitalized patients.
- 26. Legionella Urine Antigen
  - a. Positive test result.
- 27. Listeria monocytogenes
  - a. Recovered on culture or any positive test result from normally sterile sources.
- 28. Malaria Antigen Test/Reflex Blood Films
  - a. Positive result for Plasmodium species.
- 29. MDRO (multiple drug resistant organism including Stenotrophomonas maltophilia) as defined by Infection Prevention.
  - a. Organism resistant to aminoglycosides (gent, tob, amikacin), cephalosporins (1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> generation), ESBL positive, carbapenems for inpatients only.
- 30. Meningitis/Encephalitis Panel (PCR)
  - a. Positive results.
- 31. MRSA
  - a. Recovered on culture or positive PCR results for inpatients.
- 32. Neisseria meningitidis
  - a. Recovered from culture or positive test results from normally sterile sources.
  - b. Call Infection prevention in addition to other notifications.
- 33. Parasites
  - a. Inpatients with positive results.
- 34. Respiratory Pathogen Panel (PCR)
  - a. Positive results for inpatients.
  - b. Positive Bordetella pertussis.
- 35. Rotavirus Antigen Test
  - a. Positive results for inpatients.
- 36. RSV
  - a. Positive results on inpatients.
- 37. Salmonella
  - a. Recovered on culture or any positive test result.
- 38. SARS-CoV-2
  - a. Positive result for SARS-CoV-2 for inpatients only.
- 39. Shigella
  - a. Recovered on culture or any positive test result.
- 40. Streptococcus pneumoniae
  - a. For patients <5 years recovered on culture or any test from normally sterile sites.
- 41. Streptococcus pyogenes
  - a. Recovered on culture or any positive test from normally sterile sites.
- 42. Tick borne diseases
  - a. Positive results for Ehrlichia, Babesia, or Anaplasma
- 43. Vancomycin resistant enterococci
  - a. Positive culture or other test results on inpatients. Intrinsically resistant species are excluded.
- 44. Vancomycin intermediate Staph aureus (VISA) or Vancomycin resistant staph aureus (VRSA)
  - a. Any isolate of Staph aureus with vancomycin MIC of > 4.0 µg/ml.
- 45. Vibriosis
  - a. Vibrio cholera or any Vibrio species recovered on culture or any positive test result.
- 46. Yersiniosis
  - a. Yersinia pestis recovered on culture or any positive test result.
  - b. Yersinia species other than pestis recovered on culture or other positive test result.

## B. Hematology

### 1. Hemoglobin

- OUTPATIENTS – 8.0 mg/dl or below
- INPATIENTS – 7.0 mg/dl or below
- Values 22 mg/dl or greater in patients over 2 months old.
- Values 26 mg/dl or greater in patients under 2 months old.

### 2. Platelets

- OUTPATIENTS – 30,000/uL or below, Excluding Oncology patients, see specific Oncology criteria below.
- INPATIENTS – 20,000/uL or below, Excluding Oncology patients. See specific Oncology criteria below.
- ONCOLOGY OUTPATIENTS – 10,000/uL or below.
- ONCOLOGY INPATIENTS – 10,000/uL or below
- Any patient 1,000,000/uL or above

### 3. Platelets and Schistocytes

- First time platelet count 30,000/uL or below with any schistocyte grading.
- First time in 6 months from initial alert platelet count 30,000 or below with any schistocyte grading.

### 4. White Blood Cells

- OUTPATIENTS – Values  $2.0 \times 10^3$ /uL or below – (excluding orders from known Oncology providers).
- OUTPATIENTS – Values  $25.0 \times 10^3$ /uL or greater – (excluding orders from known Oncology providers).
- INPATIENTS – Values  $2.0 \times 10^3$ /uL or below – (excluding orders from known Oncology providers or patient location is Oncology floor).
- INPATIENTS – Values  $40 \times 10^3$ /uL or greater – (excluding orders from known Oncology providers or patient location is Oncology floor).

### 5. The presence of blasts on a peripheral smear will be called to the licensed independent practitioner or physician's nurse following a Pathology review

- Criteria requiring review for blast cells on a peripheral smear:
  - First Time Blast seen
  - First Time Blast seen in the range of 10%-19%
  - First Time Blast seen in the range of 20% or more
  - When the %Blast seen is remaining stable and it has been greater than 90 days since the last pathologist review, a new review is indicated.
- When the criteria for a review is indicated at times a pathologist is not on site, result the CBC with a comment indicating the differential is pending a review by a pathologist.
  - For Inpatients: the nurse will be notified of the pending review. The nurse will notify the ordering or designated on call physician.
  - For Outpatients: Patient Advisory is notified of the pending review. The nurse will then notify the ordering or designated on call physician.

### 6. Any peripheral smear results, which indicate a possible lymphoid or myeloid proliferative process, will be called to the licensed independent practitioner or physician's nurse following a Pathology review. Abnormal results seen during non-business hours will be called the next business day. If a patient has a history of a known hematologic disorder consistent with the current blood findings, the physician will not be notified.

### 7. The presence of sickle cells on a peripheral smear, with no known history of Sickle Cell Anemia, will trigger a sickle cell screen test as stated in the Laboratory's reflex testing policy.

### 8. Fetal Hemoglobin (Kleihauer-Betke) Stain – any ratio greater than 0.00000 will be called to the licensed independent practitioner or the physician's nurse.

## C. Urinalysis

- Urinalysis Dipstick: Glucose greater than 500 mg/dl **and** Ketone greater than 80 mg/dL.

## D. Coagulation

- APTT – 150 seconds or greater for inpatients  
53.8 seconds or greater for outpatients
- Protime – INR 5.0 or greater
- Fibrinogen – 100 mg/dL or less
- Fibrinogen – 1800 mg/dL or greater
- Factor II, or X Activity – 40% or less
- Factor V Activity – 30% or less

7. Factor VII Activity – 25% or less
8. Factor VIII Activity – 50% or less
9. Factor IX Activity – 50% or less
10. D-Dimer – 500 ng/ml or greater, regardless of previous results.
11. INR results for patients enrolled in the Anticoagulant Management Service
  - a. During business hours (8am-5pm, Monday-Friday), alert INR values for patients enrolled in the AMS program will be called to the Anticoagulant Management Services.
  - b. Outside business hours, alert INR values for patients enrolled in the AMS program will be called to the Patient Advisory Nurse.
  - c. All INR values  $\geq 5.0$  must be called to AMS or PAN.
12. TCT (Thrombin Clotting Time) – Greater than or equal to 120 seconds if patient is on a dabigatran (Pradaxa).

**E. Chemistry**

1. General Chemistry Tests – (**Note:** When checking alert values, the specimen must have been analyzed on the same platform, Values obtained at other facilities or on previous instrumentation should not be considered as a “previous value”. Alert values obtained for the first time on a current Carle analyzer must be called.) Refer to table below. Call Alert Values unless patient has not had a significant change in the alert value when compared to the most recent preceding value within 24 hours.

Test	Less than or Equal to	Greater than or Equal to	Significant Change
Calcium	6.0 mg/dL	13.0 mg/dL	-1.0 below +1.0 above
CO <sub>2</sub>	10 mEq/L	40 mEq/L	-2.0 below +5.0 above
Creatinine, serum	-----	5.0 mg/dL	(see a below)**
Glucose, CSF	30 mg/dL	-----	-----
Glucose, serum***	54 mg/dL	400 mg/dL	-10 mg/dL below +100 mg/dL above
High Sensitivity Troponin****	-----	Males 105 ng/L Female 42 ng/L	-----
Lactic Acid	-----	4.0 mmol/L	-----
Magnesium	1.2 mg/dL	5.0 mg/dL	-0.4 below +1.0 above
Phosphorus	1.0 mg/dL	10.0 mg/dL	-----
Potassium	2.8 mEq/L	6.2 mEq/L Adults 7.8 mEq/L Up to 4 wks	-0.5 below +0.5 above
Sodium	120 mEq/L	160 mEq/L	-5.0 below +5.0 above

- a. Creatinine:
  - Outpatient: Compare Creatinine to the last known value in the computer (no time limit). If the most recent previous value is above the alert value; do not need to contact the physician.
  - Inpatient and Emergency Department: Compare Creatinine to last known value in the computer (no time limit) OR any Creatinine value within the current hospital STAY (not just most recent (previous value). If the most recent previous value or any previous value within the current hospital STAY is above the alert value, do not contact the responsible nurse.
- b. High Sensitivity Troponin, Inpatients only: Compare hsTNI to the most recent previous value within the current hospital STAY. If the most recent value is an alert value, do not contact the responsible nurse.
  - If the patient is in the ED, no call is needed.

- c. Glucose, serum alert values from any Glucose Tolerance Test (GTT2H, GTT3H, GL2PD and GLUPN) do not need to be called.
  - d. Bilirubin, Total, Neonatal – Call **all Neonatal Total Bilirubin** results greater than or equal to 15.0 mg/dL in patients less than one month of age regardless of previous values or time elapsed since the previous test.
2. Therapeutic Drugs – Any toxic concentration is to be called regardless of previous values or time elapsed since the previous test. Toxic levels are defined as being above therapeutic range for a given test except for the following drugs. Toxic concentrations for these drugs are as follows:

Test	Alert Value
Carbamazepine	13 mcg/ml or greater
Lithium	1.5 mmol/L or greater
Phenobarbital	45 mcg/ml or greater
Phenytoin	20 mcg/ml or greater
Valproic Acid	150 mcg/ml or greater
Vancomycin (trough)	20 mcg/ml or greater

3. Heparin Dependent Platelet (PF4) Antibodies – Positive results will be called.

**F. Blood Bank**

1. The licensed independent practitioner is to be notified of all hemolytic transfusion reactions or bacterially contaminated transfusions.
2. The licensed independent practitioner is to be notified when a patient is to receive blood with an incompatible crossmatch.
3. The licensed independent practitioner is to be notified when a requested blood product is not available.
4. An RN will be notified when a Cord Blood Profile has a positive DAT result due to the following:
  - a. ABO incompatibility (Example: Mom is O and Baby is A or B)
  - b. An alloantibody from the Mom (Example: Anti-E)

**G. Referred Testing**

1. Any alert value received from an outside laboratory will be called by the appropriate staff member following the notification procedure outlined in this policy.
2. Any Neonate Screen result, other than NORMAL, must be verbally reported using the schedule below. To obtain the name of the MD or Peds Hospitalist on call, telephone the Nursery at 383-3481. Alternately, the staff member on call can be viewed on c-web, by accessing the on-call list located in the communications section.

Weekdays: 5pm to 7am	Notify Peds Hospitalist on call
Weekends and Holidays: 7am to noon	Notify the MD on Service
Weekends and Holiday: Noon to 7am	Notify Peds Hospitalist on call

3. Certain conditions require immediate or within 24 hour notification which includes weekends and holidays. These results will generate an instruction sheet on the Referred Testing Printer. Follow directions provided on the instruction sheet which will print when a positive result occurs.
  - a. Chickenpox(Varicella Zoster antibodies in CSF)
  - b. Measles
  - c. Mumps
  - d. Rubella
  - e. Typhus
4. Botulism and CJD Protein orders **must** be communicated within 24 hours of an order which includes weekends and holidays. These orders will generate an instruction sheet on the Referred Testing Printer. Follow directions provided on the instruction sheet.

**I. Notification Procedure**

1. Once the alert value has been verified, an MT/MLT/Degreed Lab Assistant will notify the appropriate person as outlined below. The MT/MLT/Degreed Lab Assistant will attempt to contact the responsible physician or designee in the order listed below.
2. The laboratory will not text alert values to providers pagers or cellphones. Texting of alert values could result in HIPAA violations.
3. **Discharged Patient from the Emergency Department/Hospital Unit or Transfer Patient to another facility.**
  - a. ED patients – during business hours, call the Results Coordinator for the Emergency Department.
    - During non-business hours, call the resource RN in the Emergency Department.
  - b. When patients are discharged from the hospital or transferred to another facility, lab staff will notify the Patient Advisory Nurse.
4. **Emergency Department patient, Carle Foundation Hospital – Urbana**
  - a. Notify ordering ED physician or primary RN
  - b. If the licensed independent practitioner is not available, notify any on duty ED physician
5. **Outpatient Main Campus and all Branch Clinics**
  - a. During business hours, when the clinic is open, notify the licensed independent practitioner (or physician's clinic nurse).
    - Utilize the department alert pager during business hours to notify ambulatory care areas.
    - Pager numbers can be found in the on-line directory and are also listed in the laboratory helpful phone number spreadsheet.
    - If page is not answered, contact the department directly.
      - If the physician or the nurse is not available at the office phone number, page the physician through communications
      - If no response within 15 minutes, call Communications (3-3001) to check the physician's availability. If the physician is not available, page the physician on call.
  - b. During non-business hours, when the clinic is closed, notify the Patient Advisory Nurse of alert lab values. The Patient Advisory Nurse will then contact the appropriate provider with the lab results.
  - c. No further communication of alert values will be made by laboratory staff after notifying a Patient Advisory Nurse or on-call physician.
6. **Outpatient – Non-Carle Physician**
  - a. During business hours (8am – 5pm), the outside physician's office will be contacted.
  - b. Outside of business hours, laboratory staff will attempt to contact the physician using the phone number listed as answered 24 hours a day.
  - c. If the outside physician cannot be contacted using the phone number listed, utilize the Cweb Carle Directory. The tab labeled "additional information" in the directory can be used to find an alternate number. It provides links to search for Providers and Facilities as well as the American Hospital Directory. The Communication Center can also be used as a resource. Communications can call hospitals where the outside physician might practice and request the physician be paged.
  - d. If the outside physician cannot be contacted with the assistance of Communications or the Patient Advisory Nurse, notify a pathologist.
    - Have the patient's name and telephone number available. This information should be available on Hyperspace.
    - The pathologist will contact the patient and recommend further action.
    - The pathologist should, as soon as possible, dictate a note stating what action was taken.
    - A pathology secretary will comment the dictation on the patient's SCC lab order that had the alert value.
    - Lab management should also be informed that the licensed independent practitioner's telephone number was not available.
    - The alert value will be called to the licensed independent practitioner's office the next business day.
7. **Inpatients**
  - a. Call the alert value to the hospital floor and give the results to the responsible nurse.
  - b. Alert Vancomycin levels on inpatients will be called to In-patient Pharmacy.
- J. **Policy Review**
  1. The laboratory will review the Alert Value Policy on an annual basis. Interim review will be done if significant changes are needed. The Alert Value Policy is reviewed and approved by the Inpatient and Ambulatory Best Practice Councils each time a revision is made.

**Other Related Links** N/A

**References** N/A

**Electronic Approval on File**

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