I. Title
   Reporting of Critical Results to Providers

II. Policy
   To provide guidelines for the identification, reporting and notification of critical results for tests and diagnostic procedures.

III. Procedures

1. Critical results are determined by the department performing the tests or diagnostic procedures. When a UTMB patient’s critical result is identified, a Licensed Independent Practitioner (LIP) must be notified of the result(s) within 30 minutes by the department performing the procedure (e.g. Radiology or Laboratory Services) so that the patient can be promptly treated. Refer to the Appendices A and B for a list of critical results.

2. During normal business hours (M-F 0800-1700), the ordering LIP/treating Team/Hospitalist will be notified. After normal business hours or on the weekends and holidays, the LIP on-call for the service will be notified. In the event that a patient has been discharged, the ordering physician will be notified and escalated per policy. **Exceptions:** Critical results for ECMO and Anti-Coagulation Clinic patients can be called to a registered nurse (RN).

3. Critical results identified for patients that have been discharged from the Emergency Department will be called to a LIP at the following numbers:
   - Galveston Campus – (409) 747-5061
   - Angleton-Danbury Campus – (979) 848-9131
   - League City Campus – (409) 356-3964
   - Clear Lake Campus – (832) 632-7621

4. Critical results identified for patients that have been discharged from an inpatient unit will be called to the:
   - Ordering LIP
   - If no response from the ordering LIP, then contact the Administrator on-call for the Campus.
5. For critical results pertaining to non-UTMB patients, UTMB will attempt to contact the LIP or nurse caring for the patient at the telephone number provided on the request. If the LIP or nurse caring for the patient is unavailable, the UTMB staff member attempting to communicate the critical result will leave a message for the LIP/care giver to call UTMB.

6. Departments are responsible for maintaining and updating their call schedule.

7. Each attempt to contact the LIP/care giver as indicated per policy must be documented. Information to be documented is date, time, and first and last name of LIP/care giver, and credentials (e.g. “5/8/2014 1:05 PM Dr. Paul Smith paged – no call back” or “5/8/2014 1:05 PM Dr. Paul Smith called, critical result reported, read back, and acknowledged”).

8. When reporting critical results, the staff member reporting the critical result shall:
   - Identify him- or herself
   - State the critical result(s) being reported
   - Give the patient’s name and medical record number (MRN)
   - Report the critical result(s)
   - Request a read back of the patient information and critical result(s)

9. The fact that the critical result was verbally reported to an appropriate LIP/care giver as indicated per policy will be documented in the patient record by the reporting departments. Documentation should include:
   - the critical result
   - reported to, read back and acknowledged by (first and last name of LIP/care giver and credentials)
   - date and time
   - e.g. Pneumothorax reported to, read back and acknowledged by Dr. Paul Smith at 5/8/2014 @ 1:10 PM

10. If the ordering LIP/treating team/Hospitalist/LIP on-call for the service does not call back within 10 minutes or refuses to accept the critical result (e.g. off service, no longer responsible for the patient, etc.), the process will be escalated using the flowcharts in Appendices C-G. Each step of the escalation process will allow for 10 minutes to elapse.

11. For inpatient lab test results, if the critical result is consistent with a previous critical reported within the last 24 hours, then the critical result is not called to the LIP. Exceptions: Microbiology criticals limited to the first occurrence and positive blood cultures called on each set.

12. The department performing the test or diagnostic procedure is responsible for establishing a program to monitor and, if needed, take action to improve the timeliness of the identification, reporting and notification of critical results.

IV. Definitions

Critical Result: A test or diagnostic procedure finding that falls significantly outside the
normal range and may indicate a life threatening situation. See appendices for a list of critical results.

**Licensed Independent Practitioner (LIP):** An individual permitted by law and by the University of Texas Medical Branch (UTMB) to provide care, treatment, and services without direction or supervision. A licensed independent practitioner operates within the scope of his or her license, consistent with individually granted clinical privileges. LIPs include physicians (M.D.s and D.O.s), nurse practitioners (NPs), physician assistants (PAs), and midwives.

V. **Relevant Federal and State Statutes**
The Joint Commission NPSG.02.03.01, Report critical results of tests and diagnostic procedures on a timely basis
- **Rationale:** Critical results of tests and diagnostic procedures fall significantly outside the normal range and may indicate a life threatening situation. The objective is to provide the responsible licensed caregiver these results within an established time frame so that the patient can be promptly treated.
- **Elements of Performance:**
  - Develop written procedures for managing the critical results of tests and diagnostic procedures that address the following:
    - The definition of critical results of tests and diagnostic procedures
    - By whom and to whom critical results of tests and diagnostic procedures are reported
    - The acceptable length of time between the availability and reporting of critical results of tests and diagnostic procedures
  - Implement the procedures for managing the critical results of tests and diagnostic procedures.
  - Evaluate the timeliness of reporting the critical results of tests and diagnostic procedures.

College of American Pathologist Standard COM.30000, Critical Result Notification

VI. **Related UTMB Policies and Procedures**
UTMB Department of Radiology 7.14, Reporting of Critical Findings
Laboratory Services 1.7.8 Reporting of Critical Results to Providers
Laboratory Services 3.01.070 Transfusion Service Problems and Alert Values

VII. **Dates Approved or Amended**

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VIII. **Contact Information**
Professor, Chair Pathology, and Lab Director (409) 772-0090
Vice President and Chief Medical Officer, (409) 772-2436
Vice President and Chief Physician Executive, (409) 772-3639
Appendix A: Radiology Critical Results

- Acute hemorrhage (anywhere)
- Aortic dissection, aneurysm, leaking aneurysm
- Brain edema, infarct, ischemia, or herniation
- Foreign object, airway
- Foreign object post-surgical
- Intraoperative image for incorrect count
- Lacerated viscus
- Pneumoperitoneum
- Pneumothorax
- Pulmonary Embolus
- Spinal cord compression
- Testicular (ovarian) torsion
- Vascular injuries
- Vertebral fracture, unstable
- Unclear or incorrect Central Line position
- Unclear or incorrect Nutritional Tube position
## Appendix B: Laboratory Services Critical Results

### CHEMISTRY

<table>
<thead>
<tr>
<th>ANALYTE</th>
<th>CRITICAL VALUE</th>
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<tbody>
<tr>
<td>Bilirubin (Bu) Serum, neonate to ≤ 28 days old (In-patient and Out-patient)</td>
<td>&gt; 15 mg/dL</td>
</tr>
<tr>
<td>Calcium, ionized</td>
<td>&lt; 3.0 or &gt; 6.5 mg/dL</td>
</tr>
<tr>
<td>Calcium, total</td>
<td>&lt; 6.0 or &gt; 13.0 mg/dL</td>
</tr>
<tr>
<td>Glucose, serum</td>
<td>&lt; 50 or &gt; 450 mg/dL</td>
</tr>
<tr>
<td>Glucose, serum neonates to ≤ 28 days old</td>
<td>&lt; 30 or &gt; 300 mg/dL</td>
</tr>
<tr>
<td>Osmolality</td>
<td>&lt; 240 or &gt; 320 mOsm/Kg</td>
</tr>
<tr>
<td>pH</td>
<td>&lt; 7.20 or &gt; 7.60</td>
</tr>
<tr>
<td>pO₂</td>
<td>&lt; 40 mm Hg</td>
</tr>
<tr>
<td>Sodium</td>
<td>&lt; 120 or &gt; 160 mmol/L</td>
</tr>
<tr>
<td>Potassium</td>
<td>&lt; 3.0 or &gt; 6.0 mmol/L</td>
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### URINALYSIS

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<thead>
<tr>
<th>ANALYTE</th>
<th>CRITICAL VALUE</th>
</tr>
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<tbody>
<tr>
<td>Glucose, urine, Newborns to &lt; 1 yr</td>
<td>Positive</td>
</tr>
<tr>
<td>Ketones, urine, Newborns to &lt; 1 yr</td>
<td>Positive</td>
</tr>
<tr>
<td>Reducing Substances, urine, Newborns to &lt; 1 yr</td>
<td>Positive</td>
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<tr>
<td>Red Cell Cast</td>
<td>Present</td>
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### HEMATOPATHOLOGY

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<tbody>
<tr>
<td>APTT</td>
<td>≥ 100 seconds</td>
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<tr>
<td>Fibrinogen</td>
<td>≤ 100 mg/dL</td>
</tr>
<tr>
<td>Hematocrit, (age ≥ 2 yrs old)</td>
<td>≤ 15%</td>
</tr>
<tr>
<td>Hematocrit, (age &lt; 2 yrs old)</td>
<td>≤ 21%</td>
</tr>
<tr>
<td>Hemoglobin, (age ≥ 2 yrs old)</td>
<td>≤ 5.0 g/dL</td>
</tr>
<tr>
<td>Hemoglobin, (age &lt; 2 yrs old)</td>
<td>≤ 7.0 g/dL</td>
</tr>
<tr>
<td>Platelet</td>
<td>≤ 50.0 x 10³/uL</td>
</tr>
<tr>
<td></td>
<td>≥ 1.0 x 10³/uL</td>
</tr>
<tr>
<td>INR</td>
<td>≥ 4.5</td>
</tr>
<tr>
<td>Joint Fluid WBC</td>
<td>≥ 50,000/mm³</td>
</tr>
<tr>
<td>WBC</td>
<td>≤ 2.0 x 10³/uL</td>
</tr>
</tbody>
</table>
**MICROBIOLOGY**

1. Positive blood smear/antigen for blood parasite, first occurrence
2. Positive AFB smear, respiratory sources, first occurrence
3. Positive blood culture stain with bacteria, fungus, or mycobacteria, per set
4. Positive CSF stain with bacteria or yeast, first occurrence
5. Positive CSF culture when stain is negative, first occurrence
6. Positive CSF result of HSV I/II or VZV, first occurrence
7. Positive HSV I or II test from neonates and patients in L&D or post-partum
8. Positive CSF Cryptococcal antigen, first occurrence
9. Positive CSF bacterial or yeast nucleic acids, first occurrence
10. Positive Mycobacterium tuberculosis complex PCR, first occurrence

**TRANSFUSION MEDICINE**

<table>
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<tr>
<th>ANALYTE</th>
<th>CRITICAL VALUE</th>
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<tbody>
<tr>
<td>IAT</td>
<td>Positive (not due to Rhig)</td>
</tr>
<tr>
<td>Fetal Hemoglobin Stain</td>
<td>Positive</td>
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<tr>
<td>Titer</td>
<td>≥ 16</td>
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Refer to 3.01.070 Transfusion Service Problems and Alert Values for a complete list of alert/critical values that require reporting to the Physician and/or Transfusion Medicine Medical Director.
Appendix D: Angleton-Danbury Campus Hospital Escalation Process

1. Determine patient location
2. Has patient been discharged?
   - Yes: Call ED to Report Results
   - No: Is patient in the ED?
     - Yes: Page Ordering LIP during normal business hours or On-Call LIP afterhours
     - No: Did the LIP call back within 10 minutes?
       - Yes: Non-OB Patient?
         - Yes: Page Chair of OB Dr. Hankins
         - No: Page On-Call Pediatrician
       - No: Is the patient ≥ 16 yrs old?
         - Yes: Page Hospitalist
         - No: Did the LIP call back within 10 minutes?
           - Yes: Page Assoc. Chief Medical Officer (Dr. Roughneen)
           - No: Did Assoc. CMO call back within 10 minutes?
             - Yes: Page Chief Medical Officer (Dr. Sharma)
             - No: Did the CMO call back within 10 minutes?
               - Yes: Page the Administrator On-Call
               - No: Document in Computer System

ED – (979) 848-9131 for discharged patients only
Inpatient Units/Outpatient Clinics – call ordering provider. If no response, page Administrator On-Call
Appendix E: League City Campus Hospital Escalation Process

1. Determine patient location
2. Has patient been discharged?
   - Yes
     - ED – (409) 356-3964 for discharged patients only
     - Inpatient Units/Outpatient Clinics – call ordering provider. If no response, page Administrator On-Call
   - No
3. Is patient in the ED?
   - Yes
     - Call Hospitalist For MedSurg ICU 409-370-0348
   - No
4. Did the Hospitalist call back within 10 minutes?
   - Yes
     - Did the Assoc. CMO call back within 10 minutes?
       - Yes
         - Did the CMO call back within 10 minutes?
           - Yes
             - Page Chief Medical Officer (Dr. Sharma)
           - No
             - Page Administrator On-Call
       - No
         - Page Administrator On-Call
   - No
     - Page Assoc. Chief Medical Officer (Dr. Koutrouvelis)
5. Document in Computer System
Appendix F: Clear Lake Campus Hospital Escalation Process

1. Determine patient location (ED, IP, OP)
   - Has patient been discharged?
     - Yes: Contact ED for discharged ED patients only. Inpatient Units/Outpatient Clinics—call ordering provider. If no response, call Clinical Operations Administrator (COA).
     - No: Call ordering LIP (or on-call LIP after hours)
   - No: Did LIP call back within 10 minutes?
     - Yes: Call CLC Medical Director of Service Line (if unknown contact COA)
     - No: Call Assoc. Chief Medical Officer (Assoc. CMO)
       - Did CLC Medical Director call back within 10 minutes?
         - Yes: Did Assoc. CMO call back within 10 minutes?
           - Yes: Document in Computer System
           - No: Call Chief Medical Officer (CMO)
         - No: Did the CMO call back within 10 minutes?
           - Yes: Document in Computer System
           - No: Call Administrator On-Call

2. Document in Computer System
Appendix G: Ambulatory Clinic Escalation Process (Non-Galveston Campus Clinics)