TITLE: **CRITICAL TEST AND CRITICAL RESULTS**	**DEPARTMENT:** **LABORATORY**
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Las Palmas Del Sol Healthcare adheres to professional/specialty standards of care.

SCOPE:

This Policy Applies to:

X	Las Palmas Medical Center
X	Del Sol Medical Center

PURPOSE:

OUTCOME STANDARDS
To assure that all critical notification values are defined and that a consistent policy is in place for notification to patient care units.

POLICY:
Definitions

Normal: A test result that is within the normal variation and does not require follow-up

Critical Tests: A test that requires rapid communication of abnormal results.

Critical/Panic Test Result: A test result that is beyond the normal variation with a high probability of significant increase in morbidity and/or mortality in the near future that requires rapid communication. The term "critical/panic test results" applies to all diagnostic tests including imaging studies, electrocardiograms, laboratory tests and other diagnostic tests and studies. Critical/Panic Test results are always communicated by telephone or in person.

CRITICAL TESTS:
Las Palmas Del Sol Healthcare has identified the following situations as critical and the accompanying lab tests as "critical tests"

Code Heart

WBC	Hgb	Hct	Platelets	Sodium	Potassium
CO2	BUN	Creatinine	Glucose	PT/PTT	Point of Care (BNP, Troponin)

Code Brain

WBC	Hgb	Hct	Platelets	Sodium	Potassium
CO2	BUN	Creatinine	Glucose	PT/PTT	

Medical Response Team (MRT)

Hgb Hct

Intra-operative "STAT" tests (includes fresh/frozen section biopsies)

CRITICAL TESTS INPATIENT PROCEDURE

1. Critical tests with abnormal or critical results will be directly communicated to the patient's nurse or other licensed caregiver following GEN:01.22.01.A1- Communication of Critical Test/Critical Results and GEN:01.22.A2 – LP Communication of Critical Test/Critical Results. The licensed caregiver will be asked to document and read/repeat back the critical/panic results to the technologist to verify correct communication.
2. In the case of receipt of an intra-procedural critical test result, the test result may first be written or entered in the computer and read back. There may be circumstances in which read back would delay patient treatment. In those cases, ***repeat back*** of the test result would be warranted.
3. Critical/test results will be communicated using two hospital patient identifiers.
4. It will be the responsibility of the nurse to contact the physician within 15 minutes to convey the Critical/panic result and request orders. (i.e. this may be done in rounding, by phone, etc.)
5. Critical tests will not be communicated to a non-licensed individual.
6. Refusal to accept critical tests by the appropriate MD or RN will result in a risk management notification filed by the calling department.

MONITORING OF CRITICAL TESTS

Critical tests indicators will be measured, assessed, and if appropriate, action taken to improve the timeliness of the reporting and the timeliness of receipt by the responsible licensed caregiver. Data will be collected, aggregated and reported as appropriate.

TAT (Turn around Time) is monitored for critical tests. (Time order is entered/given to the time the result reported to the physician) *There are three components to this: 1) Initial order to time resulted 2) Result communicated to nurse and 3) Result communicated from nurse to LIP.*

Indicator (Order to result to report) ***TAT for lab tests = 60 minutes***	**Laboratory Goal**
1. Time from time order is given/written to time physician notified (total TAT)	60 ′
2. Time from order given/written to result available.	30′
3. Time from time result to communication to RN.	15′
4. Time form time result is received to time physician notified.	15′

* includes 30 min call back response after hours

CRITICAL/PANIC RESULTS

1. Critical tests will be directly communicated to the patient's nurse or other licensed caregiver following GEN:01.22.01.A1 - DS Communication of Critical Test/Critical Results and GEN:01.22.01.A2 – LP Communication of Critical Test/Critical Results. The licensed caregiver will be asked to document and read/repeat back the critical/panic results to the technologist to verify correct communication.
2. Critical/panic results will be communicated using two patient identifiers per Adm. Policy: 140: Patient Identification.
3. All results from any test should be reviewed with the patient's welfare in mind.
4. If the patient's nurse is unavailable, a second RN on the unit will be contacted. Communication of the critical /panic result must be completed within 5 minutes.
5. If a second RN is unavailable, the House Supervisor will be contacted and the results communicated within 5 minutes.
6. Critical/panic results will not be communicated to a non-licensed individual.
7. Refusal to accept Critical/panic results by the appropriate MD or RN will result in a Risk Management notification filed by the calling department.
8. Critical or panic values received from a reference laboratory must be read back and verified to the reference lab individual. Documentation is made in Meditech.
   Example: Read Back/Verified: Joe Hernandez, LabCorp, Dallas, 1/28/05, 1520, LG.
9. There may be circumstances in which calling a serum creatinine may not be warranted. A critical serum creatinine is called when:
   a) There is no previous documentation that a critical serum creatinine has been communicated to a licensed practitioner. Documentation must be within the current admission.
   b) The critical serum creatinine is one of several critical values resulted in a specimen. If the creatinine is not reported, full documentation must be made in Meditech. The mnemonic LCRE will be used to pull the comment "CRITICAL CREATININE PREVIOUSLY CALLED."

VERIFICATION OF CRITICAL RESULTS:

The responsibility for recognizing critical results rests with the technologist who performs the test. When a critical result is obtained for one of the tests listed, the technologist shall do the following:

1. Obtain the original specimen.
2. Confirm that the accession number and patient name (if indicated) are correct.
3. Check Q.C. results for acceptable ranges.
4. Review any dilution protocol.
5. Verify that the instrument is working properly. Troubleshoot if necessary.
6. Check for Specimen Integrity
   a. If lipemic – Ultracentrifuge. Document condition and correction of condition. Ex: "Lipemia corrected with ultracentrifugation."
   b. If hemolyzed – Request a redraw with the exception of open-heart patients and those where redraw cannot be obtained. Document condition of and status of specimen. Ex: "Slightly hemolyzed – cannot be redrawn."
   c. If fibrous – remove fibrin and re-spin
7. Check for the presence of any delta or instrument flags prior to result verification.
8. Review medical feasibility limits (e.g. unlikely high or low results obtained when a specimen is cold, contaminated with IV fluid or wrong anticoagulant, or is a non-blood

body fluid).

9. Only repeat the result if analytical error is suspected.
10. Once a critical result is validated, every immediate and reasonable effort must be made to notify the patient's care team of the result by telephone according to the steps outlined in this procedure.

OUTPATIENT PROCEDURE

1. During clinic hours: A licensed nurse or responsible licensed caregiver in the clinic where the patient was seen will be contacted with the name of the patient, the Critical/panic result, and the name of the attending physician. The nurse will be asked to document and read/repeat back the Critical/panic result to the technologists to confirm correct communication.
2. Critical/panic results will be communicated using two patient identifiers per Adm. Policy: 140: Patient Identification.
3. All results from any test should be reviewed with the patient's welfare in mind.
4. Documentation is made in Meditech. "Read-back /verified: first, last name of the licensed practitioner, date/time and tech's initials". Example: Read Back/Verified: Joe Hernandez, 1/28/09, 1520, LG.
5. After clinic hours: The reporting department will call the exchange and ask that they page the physician who is taking call for that service to notify the physician.
6. Critical/panic results will not be communicated to a non-licensed individual.
7. Refusal to accept Critical/panic results by the appropriate MD or RN will result in a notification filed by the calling department.
8. After clinic hours: The reporting department will call the exchange and ask that they page the physician who is taking call for that service to notify the physician.
9. Critical/panic results will not be communicated to a non-licensed individual.
10. Refusal to accept Critical/panic results by the appropriate MD or RN will result in a notification filed by the calling department.

"**FAIL-SAFE" PLAN**

1. When the ordering or covering provider cannot be contacted, the Supervisor will be notified for follow up with either the appropriate Department Chair or the ED Physician.
2. If the FAIL SAFE Plan is implemented at any time during the process, a notification will be filed for follow up by both Risk Management and Quality Management. (Performance Improvement)

MONITORING:

Critical/panic results will be measured, assessed, and if appropriate, action taken to improve the timeliness of the reporting and the timeliness of receipt by the responsible licensed caregiver. Data will be collected, aggregated and reported as appropriate.

Indicator (Know to Reporting Interval	Laboratory Goal
1. Time from time result is known to time physician notified a. Time from result called to nurse (15') b. Time from nurse call to notification LIP (15')	30′

The values below are designated with the following age groups and corresponding age noted for these groups. Meditech follows the age groups set by this policy.

Newborn: <30 days
Pediatric: 31 days – 17 years
Adult: 18 years →

HEMATOLOGY

ADULTS/PEDIATRIC	**LOW**	**HIGH**
WBC	<2.0	>45.0 X 1000/cumm
HEMOGLOBIN	<6.5	≥20g/L
PLATELETS	<50.0	>1000 X 1000/cumm

NEWBORN	**LOW**	**HIGH**
HEMOGLOBIN	<9.5	≥24.5 g/L
WBC	<2.0	>40 X 1000/cumm
PLATLETS	<100.0	>1,000/cumm

COAGULATION

ADULT/PEDIATRIC	**LOW**	
PROTIME when Protime is reported to physician, also report INR	N/A	INR > 5.0
PTT	N/A	>100.0 sec

CHEMISTRY

ALL AGE GROUPS	**LOW**	**HIGH**
CO2	<11.0	>39 mmol/L
LITHIUM	N/A	> 2.0 mmol/L
PHOSPHOROUS	<1.0	>10.0 mg/dl
CKMB	N/A	>5.0 ng/ml
TROPONIN I (CHEMISTRY/POC ANALYZER)	N/A	>0.1 mg/ml

ADULT	**LOW**	**HIGH**
CALCIUM	<7.0	>12.5 mg/dl
GLUCOSE	<50	>450 mg/dl
MAGNESIUM	<1.0	>3.5 mg/dl
SODIUM	<120	>160 mmol/L
BUN	N/A	>100 mg/dl
T. BILIRUBIN	N/A	>18 mg/dl
CREATININE	N/A	>7.0 mg/dl
POTASSIUM	<3.0	>6.0 mmol/L
ETOH	N/A	>250 mg/dl
LACTATE	N/A	>2.0 mmol/L
AMMONIA	N/A	≥200 µmol/L

PEDIATRIC	**LOW**	**HIGH**
GLUCOSE	<50	>300 mg/dl
POTASSIUM	<3.0	>6.0 mmol/L
CALCIUM	<7.0	>12.0 mg/dl
SODIUM	<120	>160 mmol/L
BILIRUBIN	N/A	>15 mg/dl
MAGNESIUM	<1.0	>3.0 mg/dl
UREA NITROGEN	N/A	>50 mg/dl
CREATININE	N/A	>4.0 mg/dl
ETOH	N/A	>40 mg/dl
AMMONIA (30 days - <1 year)	N/A	≥100 µmol/L
AMMONIA (≥1 year – 17 years)	N/A	≥200 µmol/L

NEWBORN	**LOW**	**HIGH**
GLUCOSE	<40	>160 mg/dl
POTASSIUM	<3.0	>7.0 mmol/L
SODIUM…(DSMC ONLY)	<130	>150 mmol/L
SODIUM…(LPMC ONLY)	<130	>160 mmol/L
T-BILIRUBIN	N/A	>15.0 mg/dl
ETOH	N/A	>40 mg/dl
CREATININE	N/A	>4.0 mg/dl
BUN	N/A	>50 mg/dl
CALCIUM	<7.0	>12.0 mg/dl
MAGNESIUM	<1.0	>3.0 mg/dl
AMMONIA	N/A	≥100µmol/L

ANTIBIOTICS

ADULT	**TROUGH**	**PEAK**
GENTAMICIN	>2.0	>12.0 µg/ml
TOBRAMYCIN	>2.1	>12.0 µg/ml
VANCOMYCIN	>20.0	>40.0 µg/ml
PEDIATRIC		
VANCOMYCIN	>15.0	>40.0 µg/ml

ADULT/PEDIATRIC	**LOW**	**HIGH**
ANALGESICS		
ACETAMINOPHEN	N/A	>150 µg/ml
SALICYLATE	N/A	>30 µg/ml
ANTIEPILEPTIC		
CARBAMAZEPINE	N/A	>20 µg/ml
PHENOBARBITAL	N/A	>60 µg/ml
PHENYTOIN	N/A	>40 µg/ml
VALPROIC ACID	N/A	>200 µg/ml
ANTIDYSRYHMICS		
THEOPHYLLINE	N/A	>25 µg/ml
DIGOXIN	N/A	>2.5 ng/ml
IMMUNOSUPPRESSANTS		
TACROLIMUS	N/A	>25 ng/ml
CYCLOSPORIN	N/A	>500 ng/ml

MICROBIOLOGY

ALL POSITIVE BLOOD CULTURES

CSF:

ALL POSITIVE GRAM STAINS
ALL POSITIVE CULTURES
ALL POSITIVE BACTERIAL ANTIGENS (COAGGLUTININS)
ALL POSITIVE INDIA INK

BLOOD BANK

INABILITY TO PROVIDE BLOOD DUE TO INCOMPATIBLE CROSSMATCH
POSITIVE DAT's ON NEWBORN
UNAVAILABILITY OF ORDERED BLOOD PRODUCTS
ANY DELAY IN ORDERS TO TRANSFUSE
ANY CLINICALLY SIGNIFICANT FINDING IN A TRANSFUSION WORKUP.
ANTIGEN TYPING FOR A CLINICALLY SIGNIFICANT ANTIBODY WHICH CANNOT BE PERFORMED

REFERENCES:

C.A.P. Laboratory General Checklist, COM.30000, 7/28/2016.