STAT TESTING MENU (2 Pages)
30 Minute In-Lab Turnaround Time (TAT) Unless Further Noted Below
(In-Lab Time)

MICROBIOLOGY
1. Spinal Fluid Culture set up and Gram Stain of sediment, India Ink prep
2. Gram Stain, other sites
3. Planting of cultures
4. Wet prep
5. Rapid Strep A Antigen Test (15 min. TAT)
6. Rapid Influenza A & B Antigen test
7. Rapid RSV Antigen test
8. Malaria Prep (60 min. TAT), Evening and Night shifts will only report “Parasites present or absent”
9. Screen, Gastric Urease, for Helicobacter Pylori (60 min. TAT)
10. Clostridium difficile DNA amplification (60 min. TAT)

BLOOD BANK
1. Compatibility testing (leuko-reduced packed cells)
2. Type and Screen (60 min. TAT)
3. Cord Blood (2 hours)

HEMATOLOGY
1. Complete Blood Count (CBC) SEE NOTE #1
2. Fibrinogen
3. Hemogram (ABC)
4. Monospot Test
5. Partial Thromboplastin Time (PTT) (60 min. TAT)
6. Prothrombin Time (PT) (60 min. TAT)
7. Fluid Cell Count (60 min. TAT)
8. Complete Urinalysis
9. D-dimer
10. Fluid pH

CHEMISTRY
1. Arterial Blood Gases
2. Acetone
3. Ammonia
4. Amylase
5. Basic Metabolic Panel: Sodium, Potassium, Chloride, CO₂, Creatinine, BUN, Glucose, and Calcium
6. Bilirubin (Total)
7. Blood Urea Nitrogen (BUN)
8. Calcium (Total and Ionized)
9. CPK (Total) (60 min. TAT for CPK total with MB fraction. CPKMB only run if CPK total > 113)
10. Creatinine  
11. CSF (Glucose and Protein)  
12. Electrolytes: Sodium (Na), Potassium (K), Chloride (Cl), CO₂  
13. Estradiol (60 min. TAT)  
14. Glucose  
15. HIV – (75 min. TAT)  
16. HCG Serum (Qualitative and Quantitative)  
17. Iron (Total – Pediatric)  
18. Lactic Acid  
19. Magnesium  
20. Osmolality (Serum or Urine)  
22. Drugs of Abuse Urine Screen  
23. Therapeutic Drug Assay:  
   Acetaminophen  Salicylate  
   Dilantin  Tegretol  
   Digoxin  Theophylline  
   Gentamycin  Tobramycin  
   Lithium  Valproic Acid  
   Phenobarbital  Vancomycin  
24. Troponin  
25. C-Reactive Protein  
26. Ethanol  
27. Lipase  
28. BNP  
29. Urine HCG (Qualitative)  
30. Carboxyhemoglobin  
31. PTH (Surgical patients only)  

**NOTE #1**: 60 min. TAT if manual differential is needed.

Created on: 05/12/2004  
Revised on: 03/30/2017  
Copy: Charge Tech Manual
ABC

TEST NAME: ABC (WBC, RBC, HGB, HCT, MCV, MCH, MCHC, RDW, PLT, MPV)

CPT CODE: (ABC) 85027

SPECIMEN REQUIREMENT: 3 mL lavender top tube (EDTA) minimum of 1 mL required OR 250 µL lavender microtainer.

REFERENCE RANGE: Reference range listed on report.

METHOD: Direct Current Electrical Impedance

LAB SECTION PERFORMING TEST: Hematology

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift of collection. • STAT – 30 minutes.

GENERAL USE OF TEST: Evaluation of peripheral blood parameters.

LIMITATIONS: • Collect specimen using standard lab procedures. • DO NOT CENTRIFUGE. • Gently invert the tube several times immediately after collection.

STORAGE REQUIREMENTS: Sample must be analyzed within 24 hours of collection when stored at room temperature or within 48 hours when stored at 2° - 8°C.

Revised: 3/30/2017
# ABO GROUP AND RH TYPE

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>ABO GROUP AND RH TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>86900 &amp; 86901</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>EDTA vacutainer tube</td>
</tr>
<tr>
<td><strong>COLLECTION REQUIREMENT:</strong></td>
<td>Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood sample.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Agglutination</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Blood Bank</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily</td>
</tr>
</tbody>
</table>
| **TURNAROUND TIME:** | • 1 day  
• 20 minutes for STATs |
| **GENERAL USE OF TEST:** | To identify a person’s blood type for any reason: compatibility, testing, prenatal workup. |
| **STORAGE REQUIREMENTS:** | Room temperature or at 1-8° C. |

Revised: 3/30/2017
ACETAMINOPHEN (TYLENOL)

TEST NAME: ACETAMINOPHEN (TYLENOL)

CPT CODE: 82003 (ACET)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: 10-25 ug/mL

CRITICAL VALUE: >150 ug/mL

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

COLLECTION REQUIREMENTS: Acetaminophen specimens should not be drawn earlier than 4 hours after ingestion. If the time of ingestion is not known, 2 or more blood samples taken at two or three hour intervals may be used to estimate acetaminophen half-life and assess toxicity.

AVAILABILITY: Daily

TURNAROUND TIME: • Same shift testing.
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Drug toxicity, monitoring therapeutic levels.

LIMITATIONS: Bilirubin, IgG, and total protein can produce a negative bias.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection.

STORAGE REQUIREMENTS: • Separated samples are stable for up to 48 hrs refrigerated at 2-8°C.
• Samples will be capped and held for 5 days after testing.
ALANINE AMINOTRANSFERASE (ALT OR SGPT)

TEST NAME: ALANINE AMINOTRANSFERASE (ALT or SGPT)

CPT CODE: 84460 (ALT)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: 7-56 U/L

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Liver function

LIMITATIONS: None

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection.

STORAGE REQUIREMENTS: • Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection.
• Separated samples are stable for 7 days refrigerated at 2-8°C. For longer storage, specimens may be frozen for 1 month at -20°C or colder.
• Samples will be capped and held for at least 5 days after testing.

Revised: 1/26/17
ALBUMIN

TEST NAME: ALBUMIN

CPT CODE: 82040 (ALB)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: 3.4-5.0 g/dL

METHOD: Bromocresol purple dye-binding

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Nutritional status, blood oncotic pressure.

LIMITATIONS:
• Albumin concentrations vary with posture; it is lower when a subject is in the supine position.

SPECIMEN PREPARATION:
• Collect specimen using standard lab procedures.
• Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection.

STORAGE REQUIREMENTS:
• Separated samples are stable for up to 72 hours refrigerated at 2-8°C.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
ALKALINE PHOSPHATASE

TEST NAME: ALKALINE PHOSPHATASE

CPT CODE: 84075 (ALKP)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE:

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 yrs</td>
<td>145 – 320 IU/L</td>
<td>150 – 380 IU/L</td>
</tr>
<tr>
<td>4-6 yrs</td>
<td>175 – 420 IU/L</td>
<td>150 – 380 IU/L</td>
</tr>
<tr>
<td>7-9 yrs</td>
<td>135 – 530 IU/L</td>
<td>130 – 560 IU/L</td>
</tr>
<tr>
<td>10-11 yrs</td>
<td>200 – 495 IU/L</td>
<td>200 – 495 IU/L</td>
</tr>
<tr>
<td>12-13 yrs</td>
<td>130 – 525 IU/L</td>
<td>105 – 420 IU/L</td>
</tr>
<tr>
<td>14-15 yrs</td>
<td>70 – 230 IU/L</td>
<td>65 – 260 IU/L</td>
</tr>
<tr>
<td>16-19 yrs</td>
<td>50 – 130 IU/L</td>
<td>50 – 130 IU/L</td>
</tr>
<tr>
<td>&gt;19 yrs</td>
<td>38 – 126 IU/L</td>
<td>38 – 126 IU/L</td>
</tr>
</tbody>
</table>

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Liver function, bone, parathyroid, and intestinal diseases.

LIMITATIONS: None

SPECIMEN PREPARATION:

- Collect specimen using standard lab procedures.
- Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection.

STORAGE REQUIREMENTS:

- Stable up to 8 hrs @ room temperature
- Separated samples are stable for 7 days refrigerated at 2-8°C. For longer storage, specimens may be frozen for 6 months at -20°C or colder.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
**ALKALINE PHOSPHATASE FRACTIONATION**

**TEST NAME:** ALKALINE PHOSPHATASE FRACTIONATION (Includes Total Alkaline Phosphatase)

**CPT CODE:** 84078 (ALKF), 84075 (ALKP)

**SPECIMEN REQUIREMENT:**
- 0.5 mL serum from a 3 mL tiger top tube (SST)
- 0.5 mL plasma from a 3 mL green mint top tube (lithium heparin).

**REFERENCE RANGE:**
% residual activity greater than 20% favors hepatic or intestinal origin; less than 20% favors bone origin.

**METHOD:** Enzymatic

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing.

**GENERAL USE OF TEST:** Differentiation of liver, intestinal, and bone disease in patients with increased alkaline phosphatase.

**LIMITATIONS:** None

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection.

**STORAGE REQUIREMENTS:**
- Stable up to 8 hrs @ room temperature
- Separated samples are stable for 7 days refrigerated at 2-8°C. For longer storage, specimens may be frozen for 6 months at -20°C or colder.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
ALPHA FETOPROTEIN

TEST NAME: ALPHA FETOPROTEIN

CPT CODE: 82105 (AFTP)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) or 0.5 mL plasma from a 3 mL mint green (Lithium Heparin Tube)

REFERENCE RANGE: 0.5-8.0 ng/mL

METHOD: Loci Chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Used in follow-up management of patients undergoing cancer therapy, especially for testicular and ovarian tumors and for hepatocellular carcinoma

LIMITATIONS:
- Not to be used as a screening test for the detection or the presence of cancer.
- Only request for males and non-pregnant females.
- Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection

STORAGE REQUIREMENTS:
- Separated samples are stable for 7 days refrigerated at 2-8°C. For longer storage, specimens may be frozen for 10 months at -20°C or colder.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
AMMONIA

TEST NAME: AMMONIA

CPT CODE: 82140 (AMM)

SPECIMEN REQUIREMENT:
- AMMONIA: The specimen of choice is 3 mL lithium heparinized tubes (green top).
- Collect by standard venipuncture techniques and keep on ice.

REFERENCE RANGE: 11-32 μmol/L

METHOD: Glutamate Dehydrogenase

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME:
- Same shift testing.
- Results of STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Ammonia-hepatic failure, liver necrosis and Reyes Syndrome.

LIMITATIONS:
- Failure to place sample on ice after collection or failure to promptly separate cells and plasma can result in falsely elevated levels of ammonia.
- Do not use hemolyzed samples – a hemolyzed sample can result in falsely elevated levels of ammonia.
- Concentrations may more than double in plasma when stored at room temperature for 6 hours

SPECIMEN PREPARATION:
- Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of 15 minutes from the time of collection

STORAGE REQUIREMENTS:
- Samples should be analyzed within 30 minutes of centrifugation.
- Store at 2 – 8°C in a tightly stoppered plain transport tube.
- Separated specimens are stable for 2 hours at 2–8°C

Revised: 3/30/2017
AMYLASE

TEST NAME: AMYLASE

CPT CODE: 82150 (AMYL)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: 20 - 100 µ/L

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME:
- Same shift testing.
- Results of STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Pancreatitis, obstruction in pancreatic duct and macroamylasemia.

LIMITATIONS:
- Hemolysis can cause a negative bias on amylase results
- Elevated total protein, Immunoglobulin G and triglycerides can produce a positive bias on amylase results.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection. Specimens should be free of particulate matter.

STORAGE REQUIREMENTS:
- Separated samples are stable for 7 days at room temperature and six months at 2 to 8 °C.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
### ANTIBODY ELUTION PROCEDURE

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>ANTIBODY ELUTION PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>86860</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>2-5 mL EDTA vacutainer tubes</td>
</tr>
<tr>
<td><strong>COLLECTION REQUIREMENT:</strong></td>
<td>Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood sample.</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>Negative</td>
</tr>
<tr>
<td><strong>CRITICAL VALUE:</strong></td>
<td>Patient undergoing a delayed transfusion reaction.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Acid elution technique</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Blood Bank</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>1 day</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>Test is performed on patient’s red blood cells when a positive direct antiglobulin test is obtained, shortened red cell survival is suspected and patient has been transfused in the last three months.</td>
</tr>
<tr>
<td><strong>LIMITATIONS:</strong></td>
<td>The amount of antibody bound to the cells, dissociation of antibody during the washing procedure and degree to which immunoglobulin is denatured by low pH during dissociation.</td>
</tr>
<tr>
<td><strong>STORAGE REQUIREMENTS:</strong></td>
<td>Room temperature or at 1 - 8°C.</td>
</tr>
</tbody>
</table>

Revised: 3/30/2017
**TEST NAME:** ANTIBODY IDENTIFICATION  
**CPT CODE:** 86870  
**SPECIMEN REQUIREMENT:** EDTA vacutainer tube  
**COLLECTION REQUIREMENT:** Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood sample.  
**REFERENCE RANGE:** Negative  
**METHOD:** Gel column agglutination  
**LAB SECTION PERFORMING TEST:** Blood Bank  
**AVAILABILITY:** Daily  
**TURNAROUND TIME:** 1 day (usually)  
**GENERAL USE OF TEST:** To identify an alloantibody in a sensitized patient.  
**LIMITATIONS:** This test is performed automatically when a positive antibody screening is obtained.  
**SPECIMEN PREPARATION:** None  
**STORAGE REQUIREMENTS:** Room temperature or at 1 - 8°C.  

Revised: 3/30/2017
ANTIBODY SCREEN (Indirect Coombs Test)

TEST NAME: ANTIBODY SCREEN (Indirect Coombs Test)

CPT CODE: 86850

SPECIMEN REQUIREMENT: EDTA vacutainer tube

COLLECTION REQUIREMENT: Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood sample.

REFERENCE RANGE: Negative

CRITICAL VALUE: Antibody detection on STAT request.

METHOD: Gel column agglutination

LAB SECTION PERFORMING TEST: Blood Bank

AVAILABILITY: Daily or STAT

TURNAROUND TIME:
- 24 hours for routines
- 45 minutes for STATs

GENERAL USE OF TEST: To determine if sensitization to red cell antigens has occurred. If screen is positive, antibody identification will be performed.

PATIENT PREPARATION: An armband is required on the patient so that positive patient identification can be established.

STORAGE REQUIREMENTS: Room temperature or at 1 - 8°C.

Revised: 3/30/2017
ANTIBODY TITER

TEST NAME: ANTIBODY TITER

CPT CODE: 86886

SPECIMEN REQUIREMENT: EDTA vacutainer tube

COLLECTION REQUIREMENT: Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood sample.

CRITICAL VALUE: A rise in antibody titer of more than two tubes over the previous sample suggests that HDN is possible.

METHOD: Agglutination using anti-IgG monospecific reagents.

LAB SECTION PERFORMING TEST: Blood Bank

AVAILABILITY: Daily (on weekdays)

TURNAROUND TIME: 48 hours

GENERAL USE OF TEST: To follow obstetrical patients to determine a change in titer of clinically significant antibodies known to cause HDN.

STORAGE REQUIREMENTS: Room temperature or at 1 - 8°C.

Revised: 3/30/2017
ANTINUCLEAR ANTIBODY

TEST NAME: ANTINUCLEAR ANTIBODY  
(Positive screens will be titered)

CPT CODE: 86038 (ANAB), 86039 (QANA)

SPECIMEN REQUIREMENT:  
0.5 mL serum from a 3 mL tiger top tube (SST)

REFERENCE RANGE:  
Negative (less than 1:40)

METHOD:  
Indirect fluorescent antibody HEP-2 substrate

LAB SECTION PERFORMING TEST: Special Chemistry

AVAILABILITY:  
Monday, Wednesday and Friday

TURNAROUND TIME:  
• Results of specimens will be reported by 4:00 PM Mondays, Wednesdays and Fridays.
• All screens positive at 1:40 will be quantitated on the next scheduled run.

GENERAL USE OF TEST:  
Collagen vascular diseases.

LIMITATIONS:  
Some drugs, such as hydralazine and procainamide, may induce ANA.

SPECIMEN PREPARATION:  
• Collect specimen using standard laboratory procedures.
• Centrifuge specimens; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS:  
• Store spun and separated serum samples at -18°C.
• Samples will be held for 5 days after testing.
• Repeat freezing and thawing may cause deterioration of test specimen.
• Take serum off in duplicate.

Revised: 3/30/2017
ASO (STREPTOZYME)

**TEST NAME:** ASO (STREPTOZYME)

**CPT CODE:** 86060 (ASO)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green mint top tube (lithium heparin).

**REFERENCE RANGE:** Less than 250 IU/mL

**METHOD:** Immunochemical assay - Nephelometric

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing

**GENERAL USE OF TEST:** Serodiagnosis of recent streptococcal infections.

**LIMITATIONS:**
- In patients with monoclonal gammopathies (e.g. Waldenström's macroglobulinemia) the measurements may yield false highly elevated ASL concentrations in some patients. Such samples should be assayed by another method.
- Lipemic or Turbid samples should not be used

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection. Specimens should be free of particulate matter

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 7 days
- Freeze separated serum at -15°C to -20°C if analysis is delayed beyond 72 hours.
- Samples are capped and held for 5 days after testing.
## ASPARTATE AMINOTRANSFERASE (AST or SGOT)

**TEST NAME:** ASPARTATE AMINOTRANSFERASE (AST or SGOT)

**CPT CODE:** 84450 (AST)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

**REFERENCE RANGE:**

<table>
<thead>
<tr>
<th>Age Range</th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 yrs</td>
<td>20 – 60 IU/L</td>
<td>20 – 60 IU/L</td>
</tr>
<tr>
<td>4-6 yrs</td>
<td>15 – 50 IU/L</td>
<td>15 – 50 IU/L</td>
</tr>
<tr>
<td>7-9 yrs</td>
<td>15 – 40 IU/L</td>
<td>15 – 40 IU/L</td>
</tr>
<tr>
<td>10-11 yrs</td>
<td>10 – 60 IU/L</td>
<td>10 – 40 IU/L</td>
</tr>
<tr>
<td>12-15 yrs</td>
<td>15 – 40 IU/L</td>
<td>10 – 30 IU/L</td>
</tr>
<tr>
<td>16-19 yrs</td>
<td>10 – 45 IU/L</td>
<td>15 – 30 IU/L</td>
</tr>
<tr>
<td>&gt;20 yrs</td>
<td>15 – 46 IU/L</td>
<td>15 – 46 IU/L</td>
</tr>
</tbody>
</table>

**METHOD:** Enzymatic

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing.

**GENERAL USE OF TEST:** Cardiac function or liver function.

**LIMITATIONS:** Do not use hemolyzed samples. Hemolysis, icterus, and lipemia can cause falsely elevated bias of AST.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Serum or plasma should be physically separated from cells as soon as possible with a maximum limit of two hours from the time of collection. Specimens should be free of particulate matter.

**STORAGE REQUIREMENTS:**
- Separated samples are stable for 3 days at 20°-25°C, 7 days refrigerated at 2-8°C. For longer storage, specimens may be frozen for up to 1 month at -20°C or colder.
- Samples will be capped and held for 5 days after testing.

Revised: 1/26/17
BASIC METABOLIC PANEL

TEST NAME: BASIC METABOLIC PANEL (Na, K, Cl, C0₂, Gluc, Bun, Calcium & Creatinine)

CPT CODE: 80048 (CP7)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: See individual tests

CRITICAL VALUE: See individual tests

METHOD: See individual tests

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: • Same shift testing. • Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Evaluation of various serum biochemistry constituents.

LIMITATIONS: Hemolyzed or lipemic specimens.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures. • Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 48 hours. Freeze at -15°C to -20°C for extended storage prior to analysis. • Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
# BETA HYDROXYBUTYRATE (QUANTITATIVE)

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>BETA HYDROXYBUTYRATE (QUANTITATIVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>82010 (BHBQ)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>0.5 mL plasma from a 3 mL EDTA tube OR 0.5 mL serum from a 3 mL tiger top tube (SST).</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>0.02 – 0.27 mmol/L</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Enzymatic</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Chemistry</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>• Daily</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>• Same shift testing.</td>
</tr>
<tr>
<td></td>
<td>• If ordered STAT, within 30 minutes of receipt in the laboratory.</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>To diagnose Diabetic Ketoacidosis (DKA) and monitor the results of treatment.</td>
</tr>
<tr>
<td><strong>LIMITATIONS:</strong></td>
<td>Do not use hemolyzed specimens.</td>
</tr>
<tr>
<td><strong>SPECIMEN PREPARATION:</strong></td>
<td>• Collect specimen using standard lab procedures.</td>
</tr>
<tr>
<td></td>
<td>• Centrifuge specimen, separate serum/plasma from cells within 2 hours of collection.</td>
</tr>
<tr>
<td><strong>STORAGE REQUIREMENTS:</strong></td>
<td>• Refrigerate at 2° - 8°C up to 7 days.</td>
</tr>
</tbody>
</table>

Revised: 3/30/2017
**BILIRUBIN, DIRECT**

**TEST NAME:** BILIRUBIN, DIRECT

**CPT CODE:** 82248 (DBIL)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

**REFERENCE RANGE:**
- Adult: 0.1 - 0.3 mg/dL
- Baby: 0.1 - 0.6 mg/dL

**METHOD:** Diazo JG

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing.

**GENERAL USE OF TEST:** Liver function test useful in the diagnosis of jaundice due to liver disease, hemolytic anemia, as well as hematological and metabolic disorders including hepatitis and gall bladder disease.

**LIMITATIONS:** Specimen must be protected from light.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 5 days.
- Samples will be capped and held for 5 days after testing.
- Protect specimen from light.
- When frozen at -20° or colder, specimen is stable for up to 3 months.

Revised: 3/30/2017
BILIRUBIN, TOTAL

TEST NAME: BILIRUBIN, TOTAL

CPT CODE: 82247 (TBIL)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: Adult: 0.2 - 1.3 mg/dL  
Baby: 0.6 - 11.1 mg/dL

METHOD: Diazo JG

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Liver function test useful in the diagnosis of jaundice due to liver disease, hemolytic anemia.

LIMITATIONS: Specimen must be protected from light.  
Lipemia may produce a bias to the results.

SPECIMEN PREPARATION:  
- Collect specimen using standard lab procedures.  
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:  
- Refrigerate at 2° - 8°C up to 5 days. Freeze at -15°C to -20°C for extended storage, up to 6 months prior to analysis.  
- Samples will be capped and held for 5 days after testing.  
- Protect specimen from light.

Revised: 3/30/2017
**TEST NAME:** BLOOD GASES  
(pH, pO\(_2\), pCO\(_2\), HCO\(_3\), TCO\(_2\), BE)

**CPT CODE:** 82803 (ABG, VBG, CBG)

**SPECIMEN REQUIREMENT:**
- Whole blood in heparinized syringe obtained by arterial (ABG) or venous (VBG) puncture, cord blood (CBG) obtained by physician.
- Specimen should be transported immediately in ice slurry.

**REFERENCE RANGE:**

**Adult Normal Range**

<table>
<thead>
<tr>
<th></th>
<th>Arterial</th>
<th>Venous</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.35 – 7.45</td>
<td>7.32 – 7.42</td>
</tr>
<tr>
<td>pCO(_2)</td>
<td>35 – 48 mmHg (m), 32 – 45 mmHg (f)</td>
<td>41 – 51 mmHg</td>
</tr>
<tr>
<td>pO(_2)</td>
<td>83 – 108 mmHg</td>
<td>25 – 40 mmHg</td>
</tr>
<tr>
<td>HCO(_3)</td>
<td>20 – 30 mmol/L</td>
<td>24 – 28 mmol/L</td>
</tr>
<tr>
<td>TCO(_2)</td>
<td>19 – 24 mmol/L</td>
<td>22 – 26 mmol/L</td>
</tr>
<tr>
<td>O2 SAT</td>
<td>94 – 98 %</td>
<td></td>
</tr>
</tbody>
</table>

**Cord Blood**

<table>
<thead>
<tr>
<th></th>
<th>Arterial</th>
<th>Venous</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.15 – 7.43</td>
<td>7.24 – 7.49</td>
</tr>
<tr>
<td>pCO(_2)</td>
<td>31.1 – 74.3 mmHg</td>
<td>23.2 – 49.2 mmHg</td>
</tr>
<tr>
<td>pO(_2)</td>
<td>3.8 – 33.8 mmHg</td>
<td>15.4 – 48.2 mmHg</td>
</tr>
<tr>
<td>HCO(_3)</td>
<td>13.3 – 27.5 mmol/L</td>
<td>15.9 – 24.7 mmol/L</td>
</tr>
</tbody>
</table>

**CRITICAL VALUE:**

<p>| | | |</p>
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<tr>
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<tbody>
<tr>
<td>pH</td>
<td>&lt;7.20 or &gt;7.60</td>
<td></td>
</tr>
<tr>
<td>pCO(_2)</td>
<td>&lt;20 or &gt;70 mmHg</td>
<td></td>
</tr>
<tr>
<td>pO(_2)</td>
<td>&lt;40 mmHg</td>
<td></td>
</tr>
</tbody>
</table>

**METHOD:** Ion specific electrodes

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily (This test is available at the CVPH campus only.)

**TURNAROUND TIME:** All specimens handled as STAT.

Revised: 3/30/2017
TEST NAME: BLOOD GASES (cont)

GENERAL USE OF TEST: Determination of acid-base status, respiratory function.

LIMITATIONS:
- Clotted sample, liquid anti-coagulants can cause dilution effect if improper ratio of sample to anti-coagulant when collected, contamination with room air.
- Specimens must be submitted on ice immediately after being drawn.

NOTE: O₂ deliver or room air should be noted.

Revised: 3/30/2017
PRO-BNP (B Natriuretic Peptide)

TEST NAME: BNP (B Natriuretic Peptide)

CPT CODE: 83880

SPECIMEN REQUIREMENT: 0.5 mL plasma from a lavender EDTA tube OR 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: ≤ 74 years old: 5 – 125 pg/mL
≥ 75 years old: 5 – 450 pg/mL

METHOD: Loci Chemiluminescence

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME:
• Same shift testing.
• Results of STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Aid in the diagnosis and assessment of severity of congestive heart failure.

LIMITATIONS:
• Concentrations may be elevated in patients:
  ➢ who are experiencing a heart attack
  ➢ who are candidates for renal dialysis
  ➢ who have had renal dialysis
• This test has been formulated to minimize the effects of antibodies on the assay. However, clinicians should carefully evaluate results from patients suspected of having such antibodies.

SPECIMEN PREPARATION: Centrifuge sample and remove plasma within 2 hours of collection.

STORAGE REQUIREMENTS:
• Plasma stored at room temperature or 2° - 8°C is stable for 72 hours. Freeze at -15°C to -20°C for extended storage, up to 12 months prior to analysis.
• Samples are capped and held for 5 days after testing.
BODY FLUIDS, CYTOLOGY

TEST NAME: BODY FLUIDS, CYTOLOGY (Pleural fluid, Peritoneal fluid (Ascites fluid) & Pericardial fluid)

CPT CODE: 88108

SPECIMEN REQUIREMENT: • 10-100 mL fresh body cavity fluid.
• The practice of salvaging large amounts of fluid is not recommended.
• If available, a full bottle of fresh unfixed fluid is preferred in addition to the aliquot.

COLLECTION REQUIREMENT: • Include 5 units of heparin per mL of fluid in a clean, sealed plastic or glass container.
• Submit fresh without fixative.

REFERENCE RANGE: Negative for malignant cells.

METHOD: Modified Papanicolaou

LAB SECTION PERFORMING TEST: Cytology

AVAILABILITY: Monday through Friday (0800 to 1630)

TURNAROUND TIME: 24 – 72 hours

GENERAL USE OF TEST: To establish the presence of primary or metastatic neoplasm.

STORAGE REQUIREMENTS: Refrigerate

Revised: 3/30/2017
BONE MARROW

TEST NAME: BONE MARROW

CPT CODE: 85097 (Aspirate smears)
88305 (Clot)
88305 (Biopsy)
85060 (Peripheral blood smears)

SPECIMEN REQUIREMENT: Bone marrow, aspirate and/or biopsy specimen.

REFERENCE RANGE: Results interpreted by pathologist.

METHOD: Microscopic examination of modified Wright’s Giemsa Stain, paraffin embedded tissue sections.

LAB SECTION PERFORMING TEST: Hematology / Anatomic Pathology

AVAILABILITY: Weekdays, 0800 to 1630

TURNAROUND TIME:
• 48 hours
• Preliminary report in 24 hours

GENERAL USE OF TEST: Bone marrow morphology

PATIENT PREPARATION:
• Physician’s responsibility.
• Consent form signed.
• Acquire bone marrow tray from Sterile Processing.
• Physician to call Hematology for scheduling.
• Physician and technologist meet at bedside; smears made from aspirate.
• An appointment should be made in advance with the Hematology Dept., Ext 7400.
• If cultures, flow cell markers or chromosome studies are required, please inform Hematology Dept. when scheduling.

Revised: 3/30/2017
TEST NAME: BRUSHING, NON-GYNECOLOGIC CYTOLOGY (Bronchial, Esophageal, Gastric, Small Bowel, Colonic)

CPT CODE: 88104

SPECIMEN REQUIREMENT:
- After brushing the lesion, **ROLL** the brush over the glass slide and fix immediately in 95% ETOH to prevent air drying.
- Place brush tip in container with 95% ETOH.
- Label slide with patient name and medical record number or date of birth.

COLLECTION REQUIREMENT: Glass slides, container and 95% ETOH are obtained from the laboratory.

REFERENCE RANGE: Negative for malignant cells.

METHOD: Modified Papanicolaou

LAB SECTION PERFORMING TEST: Cytology

AVAILABILITY: Monday through Friday (0800 to 1630)

TURNAROUND TIME: 24 – 72 hours

GENERAL USE OF TEST: To establish the presence of primary or metastatic neoplasm.

LIMITATIONS: Specimen is considered non-diagnostic if epithelium lining the site of the brush is not present.

STORAGE REQUIREMENTS: Refrigerate

Revised: 3/30/2017
C3 COMPLEMENT

TEST NAME: C3 COMPLEMENT

CPT CODE: 86160 (C3)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL lithium heparin tube.

REFERENCE RANGE: >1 y: 87 – 200 mg/dL

METHOD: Turbidimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: • Decrease in autoimmune diseases, serum sickness, acute glomerulonephritis and LE with renal involvement.
• Increase in acute phase responses, obstructive jaundice and some connective tissue diseases (excluding SLE).

LIMITATIONS: Lipemic specimens should not be used.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Separated specimens can be stored at 2°-8°C for up to 7 days.
• Samples frozen at -20°C or colder are stable up to 3 months.
• Samples will be held for 5 days after testing.
• Repeat freezing and thawing may cause deterioration of test specimen.

Revised: 3/30/2017
C4 COMPLEMENT

TEST NAME: C4 COMPLEMENT

CPT CODE: 86160 (C4)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL lithium heparin tube.

REFERENCE RANGE: >3 mos: 19 - 52 mg/dL

METHOD: Turbidimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: To detect individuals with inborn deficiency of this factor or those with immunologic disease in whom hypercatabolism of complement causes reduced levels. These diseases include: Lupus, serum sickness, glomerulonephritis, chronic active hepatitis and others.

LIMITATIONS: Lipemic specimens should not be used.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Stability same as those of C3
• Samples will be held for 5 days after testing.
• Repeat freezing and thawing may cause deterioration of test specimen.

Revised: 3/30/2017
# C-REACTIVE PROTEIN (High Sensitivity)

**TEST NAME:** C-REACTIVE PROTEIN (High Sensitivity)  
**CPT CODE:** 86141 (CRP)  
**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a green top lithium heparin tube.  
**REFERENCE RANGE:** <0.30 mg/dL  
**METHOD:** Nephelometry  
**LAB SECTION PERFORMING TEST:** Chemistry  
**AVAILABILITY:** Daily  
**TURNAROUND TIME:**  
- Same shift testing.  
- Results of STAT specimens will be reported within 30 minutes of receipt in the laboratory.  
**GENERAL USE OF TEST:** Used in evaluation of myocardial infarction, stress, trauma, infection, inflammation, surgery and neoplastic proliferation.  
**LIMITATIONS:** Hemolyzed or lipemic specimens should not be used, unless clarified by centrifugation.  
**SPECIMEN PREPARATION:**  
- Collect specimen using standard lab procedures.  
- Centrifuge specimen; separate serum from cells within 2 hours of collection.  
**STORAGE REQUIREMENTS:**  
- Refrigerate a 2° - 8°C up to 7 days.  
- Freeze separated serum at -15°C to -20°C for up to 8 months, avoiding repeated freeze thaw cycles.  
- Samples will be held for 5 days after testing.  

Revised: 3/30/2017
C-REACTIVE PROTEIN (Non Cardiac)

TEST NAME: C-REACTIVE PROTEIN (Non Cardiac)

CPT CODE: 86140 (CRPN)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 5 mL tiger top tube (SST) OR 0.5 mL plasma from a green top lithium heparin tube.

REFERENCE RANGE: <0.30 mg/dL

METHOD: Nephelometric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Used in evaluation of stress, trauma, infection, inflammation and surgery.

LIMITATIONS: Hemolyzed or lipemic specimens should not be used.

SPECIMEN PREPARATION:

- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS:

- Refrigerate at 2°C - 8°C up to 48 hours. Freeze at -15°C to -20°C for extended storage prior to analysis.
- Samples will be held for 5 days after testing.

Revised: 3/30/2017
TEST NAME: CALCIUM

CPT CODE: 82310 (CA)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: <1 yr: 7.8 – 10.6 mg/dL
1 – 3 yr: 8.7 – 9.8 mg/dL
4 – 11 yr: 8.8 – 10.0 mg/dL
12 – 13 yr: 8.8 – 10.6 mg/dL
14 – 15 yr: 9.2 – 10.6 mg/dL
16 – 19 yr: 8.9 – 10.6 mg/dL
>19 yr: 8.7 – 10.2 mg/dL

CRITICAL VALUE: <6.0 or >13.0 mg/dL

METHOD: Cresolphthalein Complexone

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: 
• Same shift testing
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Evaluation of calcium metabolism.

LIMITATIONS:
• Blood from patients on EDTA therapy cannot be used.
• Blood from patients on Hypaque radiographic contrast agent cannot be used.
• Blood collected w/stasis may have calcium concentrations 15% higher.
• Protective gloves manufactured with calcium carbonate powders may cause elevated test results because of contamination of sample handling supplies. Use powder-free gloves; handle supplies with clean hands.
• Note: Gloves labeled as powder-free may contain some contaminating powder agents on the inside of the gloves.

SPECIMEN PREPARATION:
• Collect specimen using standard lab procedures.
TEST NAME: **CALCIUM**

- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:

- Separated samples are stable for 5 days refrigerated at 2-8°C. For longer storage, specimens may be frozen for 6 months at -20°C or colder.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CALCIUM, URINE

TEST NAME: CALCIUM, URINE (24 Hours)

CPT CODE: 82310 (CA24)

SPECIMEN REQUIREMENT: Total 24-hour urine collected in a plastic container obtained from the laboratory.

REFERENCE RANGE: 24-hour urine: 100 – 300 mg/TV

METHOD: Cresolphthalein Complexone

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same day testing.

GENERAL USE OF TEST: Evaluation of calcium excretion, parathyroid disorders, renal tubular disease, bone disease and Vitamin D intoxication.

PATIENT PREPARATION: Low calcium diet for 3 days.

SPECIMEN PREPARATION: The specimen of choice is 24-hour collection, no preservative, refrigerate during collection and keep refrigerated until analysis.

STORAGE REQUIREMENTS: Refrigerate at 2°C - 8°C up to a week.

Revised: 3/30/2017
**TEST NAME:**
CANCER ANTIGEN 125

**CPT CODE:**
86304 (OV25)

**SPECIMEN REQUIREMENT:**
0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL lithium heparin tube.

**REFERENCE RANGE:**
1.5 – 35.0 u/mL

**METHOD:**
Loci Chemiluminescent immunoassay

**LAB SECTION PERFORMING TEST:**
Chemistry

**AVAILABILITY:**
Daily

**TURNAROUND TIME:**
Same shift testing.

**GENERAL USE OF TEST:**
Aid in management of patients with ovarian carcinoma.

**LIMITATIONS:**
- Not to be used as a screening test for the detection or the presence of cancer.
- Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Separated specimens are stable for 8 hours at room temperature, 7 days at 2°C-8°C, or at -20°C or colder for up to 9 months.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CARBON DIOXIDE, TOTAL

TEST NAME: CARBON DIOXIDE, TOTAL

CPT CODE: 82374 (CO2)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: 22.0 – 31.0 mmol/L

CRITICAL VALUE: <10 or >40 mmol/L

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

RESULTS OF SPECIMENS REQUESTED STAT WILL BE REPORTED WITHIN 30 MINUTES OF RECEIPT IN THE LABORATORY.

GENERAL USE OF TEST: Evaluation of acid-base status.

LIMITATIONS: Lipemia can cause a falsely lower analysis of CO2.

SPECIMEN PREPARATION: Collect specimen using standard lab procedures. Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: Refrigerate at 2° - 8°C up to 48 hours. Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CARBOXYHEMOGLOBIN

TEST NAME: CARBOXYHEMOGLOBIN

CPT CODE: 82375 (COH)

SPECIMEN REQUIREMENT: Heparinized whole blood (venous or arterial) from green top tube or heparinized syringe.

REFERENCE RANGE: 14 days and older, <2.2% (non-smoker)

CRITICAL VALUE: 20%

METHOD: Co-oximetry

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Routine or STAT

TURNAROUND TIME: 15 minutes after receipt in the laboratory.

GENERAL USE OF TEST: Carbon monoxide poisoning.

LIMITATIONS: COH levels are higher in smokers.

SPECIMEN PREPARATION: Collect specimen using standard lab procedures.

STORAGE REQUIREMENTS: Cap tube and refrigerate immediately after collection. Do not remove cap. If assay is delayed, keep tube capped and refrigerate sample. COH is stable for 1 week.

Revised: 3/30/2017
CARCINOEMBRYONIC ANTIGEN

TEST NAME: CARCINOEMBRYONIC ANTIGEN

CPT CODE: 82378 (CEA)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL lithium heparin tube.

REFERENCE RANGE: 0 - 3.0 ng/mL

METHOD: Loci Chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Adjunctive aid in management of cancer patients with carcinoma.

LIMITATIONS:
- Not to be used as a screening test for the detection or the presence of cancer.
- Elevations in circulating levels may be observed in smokers, as well as patients with non-colorectal or pancreatic neoplasms.
- Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 4°C for 1 week, frozen at >20°C for up to 4 months.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
# CELL COUNT, CEREBROSPINAL FLUID

**TEST NAME:** CELL COUNT, CEREBROSPINAL FLUID (RBC, WBC, Total Cell Count & Differential when needed)

**CPT CODE:** 89051 (CFCT)

**SPECIMEN REQUIREMENT:**
- 0.5 mL cerebrospinal fluid collected in sterile screw cap tubes, which are labeled #1, #2, #3 and #4.
- Cell counts will be performed on tubes #1 and #4. (See note below)

**REFERENCE RANGE:** 0 – 5 cells/mm³

**METHOD:** Manual using hemocytometer

**LAB SECTION PERFORMING TEST:** Hematology

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**
- Same shift testing.
- Results of specimens requested STAT will be reported within 60 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:** Evaluation of cellular exudation into cerebral spinal space.

**LIMITATIONS:** If WBC is less than 10 cell/mm³, a differential will not be performed.

**STORAGE REQUIREMENTS:** Cell count must be performed immediately due to rapid cell lysis on standing.

**Note:** If the physician collects 3 tubes of cerebrospinal fluid, the cell count will be done on tube #3.

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<table>
<thead>
<tr>
<th><strong>CELL COUNT, MISCELLANEOUS BODY FLUIDS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TEST NAME:</strong></td>
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<td></td>
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<tr>
<td><strong>CPT CODE:</strong></td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
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<td><strong>METHOD:</strong></td>
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<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
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<td><strong>AVAILABILITY:</strong></td>
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<td><strong>TURNAROUND TIME:</strong></td>
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<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
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<tr>
<td><strong>LIMITATIONS:</strong></td>
</tr>
<tr>
<td><strong>STORAGE REQUIREMENTS:</strong></td>
</tr>
</tbody>
</table>

Revised: 3/30/2017
CEREBROSPINAL FLUID, NON-GYNECOLOGIC CYTOLOGY

TEST NAME: CEREBROSPINAL FLUID NON-GYNECOLOGIC CYTOLOGY

CPT CODE: 88108

SPECIMEN REQUIREMENT: 1-10 mL second or third tube.

COLLECTION REQUIREMENT:
• Deliver to Cytology Laboratory immediately.
• After hours, fix sample for Cytology with an equal amount of 50% ethyl alcohol and refrigerate.

REFERENCE RANGE: Negative for malignant cells.

METHOD: Modified Papanicolaou

LAB SECTION PERFORMING TEST: Cytology

AVAILABILITY: Monday through Friday (0800 to 1630)

TURNAROUND TIME: One to two working days.

GENERAL USE OF TEST: To establish the presence of primary or metastatic neoplasm.

Revised: 3/30/2017
TEST NAME: CHLAMYDIA TRACHOMATIS / NEISSERIA GONORRHOEAE AMPLIFIED DETECTION

CPT CODE: 87491 / 87591

SPECIMEN REQUIREMENT: Urine, endocervical or vaginal swabs submitted in appropriate transport tube and Cervical specimens collected in PreservCyt® (Thin prep vial).

COLLECTION REQUIREMENT: Urine: Patient should not have urinated for at least 1 hour prior to specimen collection. Direct patient to provide first-catch urine (approximately 10 to 50 ml of initial urine stream) into urine collection cup free of any preservatives. Collection of larger volumes of urine may result in specimen dilution that may reduce test sensitivity. **Female patients should not cleanse labial area prior to providing specimen.** Make sure collection cup cap is closed tightly and label with patient name. Urine can be transferred into Cobas® PCR urine transport tube (stable for 12 months) if available or sent in urine collection cup (must be transferred within 24 hours of collection).

**Endocervical:** Use one of the white shaft swabs (provided in collection kit) to remove excess mucous and exudates from exocervix. Discard this swab. Insert the second white shaft collection swab from collection kit into the endocervical canal. Rotate swab for 10-30 seconds using enough pressure to obtain cells from all surfaces of the endocervical canal. **Withdraw swab carefully avoiding contact with vaginal surfaces.** Place swab in the transport tube provided and snap off swab at the score line so that the swab fits into the closed tube. Close cap tightly and label tube with patient name. The presence of two swabs in the transport tube will result in rejection of specimen.

**Vaginal:** Insert one of the white shaft swabs about 5 cm into the vaginal opening. Gently turn the swab for about 30 seconds while rubbing the swab against the wall of the vagina. Remove the swab carefully. Do not touch the swab to any surface before placing it into the collection tube. The presence of two swabs in the transport tube will result in rejection of specimen.

**Cervical:**
- After visualization of the cervix is accomplished, collect the sample.
TEST NAME: CHLAMYDIA TRACHOMATIS / NEISSERIA GONORRHOEAE AMPLIFIED DETECTION

- **Brush / Spatula Collection:** Obtain an adequate sampling from the ectocervix using a plastic spatula. Rinse the spatula into the Preserv Cyt® Solution vial by swirling the spatula vigorously in the vial 10 times. Discard the spatula. Insert the brush into the cervix until only the bottom most fibers are exposed. Slowly rotate or turn in one direction. **DO NOT OVER ROTATE.** Rinse the brush in the Preserv Cyt® Solution by rotating the device in the solution 10 times while pushing against the vial wall. Swirl the brush vigorously to further release material. Discard the brush.
- **Tighten the cap so that the torque line on the cap passes the torque line on the vial.**

REFERENCE RANGE: Negative for Chlamydia trachomatis. Negative for Neisseria gonorrhoeae.

METHOD: Target amplification Nucleic Acid Probe

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Day shift (Monday, Wednesday & Friday), except holidays.

GENERAL USE OF TEST: Diagnosis of Chlamydia trachomatis and/or Neisseria gonorrhoeae infection.

LIMITATIONS:
- **In populations with low disease prevalence (5% or less), a positive direct specimen test should be interpreted cautiously.**
- **Optimal performance of this test depends upon collection of a good patient specimen (many epithelial cells, no mucous).**

SPECIMEN PREPARATION:
- **Fully insert one whit shaft swab into the Cobas® PCR transport tube.**
- **Snap off swab at score line.**
- **Use care to avoid splashing contents.**
- **Cap tube tightly.**
- **For urine:** following package directions transfer urine into Cobas® PCR urine specimen transport tube. Cap tube tightly.

STORAGE REQUIREMENTS:
- Collected swab specimens are stable at 2°C to 30°C for up to 90 days.
- Urine specimens that have been transferred into the urine transport tube are stable at 2°C to 30°C for up to 12 months.

Revised: 3/30/2017
CHLORIDE

TEST NAME: CHLORIDE

CPT CODE: 82435 (CL)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: 97 – 112 mmol/L

METHOD: Ion Selective Indirect Potentiometric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: • Same shift testing.
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: • Decrease in overhydration, chronic respiratory acidosis and congestive heart failure.
• Increase in dehydration, renal tubular acidosis and excessive infusion of normal saline.

LIMITATIONS: Grossly hemolyzed specimens should be rejected for analysis.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 48 hours.
• Freeze at -15°C to -20°C for extended storage prior to analysis.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
## CHLORIDE, SWEAT

**TEST NAME:** CHLORIDE (SWEAT)  

**CPT CODE:** 82438 (SWCL)  

**SPECIMEN REQUIREMENT:** Patient should produce sufficient sweat within 30 minutes of iontophoresis.  

**REFERENCE RANGE:**  
- **Normal:** 0 – 60 mmol/L equivalent NaCl  
- **Equivocal:** 61 – 80 mmol/L equivalent NaCl  
- **Cystic Fibrosis:** >80 mmol/L equivalent NaCl  

This result represents a screening test for cystic fibrosis. The Cystic Fibrosis Foundation recommends that patients with a sweat conductivity decision level of greater than or equal to 50 mmol/L (equivalent sodium chloride) be referred for a quantitative sweat chloride test.  

**METHOD:** Conductivity  

**LAB SECTION PERFORMING TEST:** Chemistry  

**AVAILABILITY:**  
- Monday through Friday.  
- Specimens will not be accepted for testing after 1:00 PM.  
- This test is **ONLY** available at the CVPH campus.  

**TURNAROUND TIME:** Results of specimens collected by 1:00 PM will be reported by 4:00 PM.  

**GENERAL USE OF TEST:** Suspected Cystic Fibrosis.  

**LIMITATIONS:** Patients less than 48 hours of age and patients on IV therapy.  

**PATIENT PREPARATION:** Specimen is collected by iontophoresis.  

Revised: 3/30/2017
CHOLESTEROL

**TEST NAME:** CHOLESTEROL

**CPT CODE:** 82465 (CHOL)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

**REFERENCE RANGE:** <200 mg/dL

**METHOD:** Enzymatic

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing.

**GENERAL USE OF TEST:** Increase in inherited defect lipoprotein metabolism, endocrine disease, renal disease and decreased liver function impairment.

**LIMITATIONS:** Lipemia and icterus can produce a negative bias to the results.

**PATIENT PREPARATION:** Fasting is preferred.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 48 hours.
- Samples will be capped and held for 5 days after testing.

The National Cholesterol Education Program has published reference cholesterol values for cardiovascular risk to be:

<table>
<thead>
<tr>
<th>Cholesterol Level</th>
<th>Risk Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 200 mg/dL</td>
<td>Desirable</td>
</tr>
<tr>
<td>201 – 239 mg/dL</td>
<td>Borderline risk</td>
</tr>
<tr>
<td>240 mg/dL and greater</td>
<td>High risk</td>
</tr>
</tbody>
</table>

Revised: 3/30/2017
CHOLESTEROL, HIGH DENSITY

TEST NAME: CHOLESTEROL, HIGH DENSITY (HDL)

CPT CODE: (HDL)

SPECIMEN REQUIREMENT: 0.5 mL of serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: >60 mg/dL

METHOD: Detergent/enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

LIMITATIONS: Depressed results may occur on samples drawn from patients receiving Metamizole.

Note: If patient is taking NAC or Metamizole, venipuncture should occur before drug administration.

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Suspected coronary heart disease.

LIMITATIONS: Fasting is preferred.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection. Once separated, stable at 2°-8°C for up to one week, if not tested within 8 hrs.

STORAGE REQUIREMENTS:
- Freeze at -15°C to -20°C for extended storage, for up to 3 months prior to analysis. DO NOT REFREEZE.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CHOLESTEROL, LDL

TEST NAME: CHOLESTEROL, LDL
(Computed from total cholesterol, triglyceride and HDL cholesterol)

CPT CODE: 83721 (Direct Measure)

SPECIMEN REQUIREMENT: 1.0 mL serum from a 3 mL tiger top tube (SST) OR plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: <100 mg/dL

METHOD: Direct: Detergent/Enzymatic
Calculation: LDL Cholesterol = T cholesterol – HDLC – Triglyceride/5

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same day testing

GENERAL USE OF TEST: Prediction of risk of coronary arterial atherosclerosis.

PATIENT PREPARATION: Fasting is preferred.

LIMITATIONS:
- LDL cannot be accurately calculated on samples that have triglyceride levels greater than 400 mg/dL.
- Lipemic and icteric samples can produce a negative bias to the results.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection. Separated specimen stables up to 24 hours at room temperature.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 72 hours.
- Freeze at -15°C to -20°C for extended storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CLOSTRIDIUM DIFFICILE DNA AMPLIFICATION

**TEST NAME:** CLOSTRIDIUM DIFFICILE DNA AMPLIFICATION

**CPT CODE:** 87493

**SPECIMEN REQUIREMENT:**
- 1.0 gm/ml of fresh unformed fecal specimen collected in a sterile 4 oz. plastic screw top container.
- Formed stool will be rejected.
- >1 sample within 7 days is not recommended.
- Sample will not be accepted for “test of cure”.
- Samples received within 10 days of initial positive result will be rejected.
- Patients must be >1 year of age (infants have a high carriage rate).

**REFERENCE RANGE:** Negative for C. difficile.

**METHOD:** Real-time polymerase chain reaction (PCR)

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:** Test run on All Shifts (Monday – Sunday)

**GENERAL USE OF TEST:** Diagnosis of antibiotic-associated pseudomembranous colitis.

**LIMITATIONS:**
- A positive or negative result cannot, on its own, establish the presence of C. difficile disease.
- Assay does not distinguish between viable and nonviable organisms.
- Non-027/NAP1/BI representing toxinotype XIV will be reported “Toxigenic C. difficile Positive; 027 presumptive positive.
- Occasionally, no-027/NAP1/BI isolates representing toxinotypes IV, V, and X will be reported “Toxigenic C. difficile Positive; 027 presumptive positive.

**SPECIMEN COLLECTION:**
- Stool material must be submitted. A rectal swab does not provide sufficient material for testing and is not acceptable.

**STORAGE REQUIREMENTS:** Specimen may be stored at 2° - 8°C for up to 5 days.

Revised: 3/30/2017
COMPLETE BLOOD COUNT (CBC)

TEST NAME: COMPLETE BLOOD COUNT (CBC) (WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, RDW, MPV, PLT, Automated Differential) Manual differential performed when established criteria are met.

CPT CODE: 85025 (CBC)

SPECIMEN REQUIREMENT:
- 3 mL lavender top tube (EDTA).
- Minimum of 1 mL required OR 250 µL lavender microtainer.

REFERENCE RANGE:
Reference range listed on report.

METHOD:
Direct current, electrical impedance, light scatter and fluorescence.

LAB SECTION PERFORMING TEST:
Hematology

AVAILABILITY:
Daily or STAT

LIMITATIONS:
Hemoglobin results must be corrected on grossly lipemic specimens and cold agglutinins

TURNAROUND TIME:
- Same shift of collection.
- STAT: 30 to 60 minutes.

GENERAL USE OF TEST:
Evaluation of peripheral blood parameters.

SPECIMEN REQUIREMENT:
- Collect specimen using standard lab procedures.
- Gently invert tube several times immediately after collection.
- Do not centrifuge.

STORAGE REQUIREMENTS:
Sample must be analyzed within 24 hours of collection when stored at room temperature or within 48 hours when stored at 2° - 8°C.

Revised: 3/30/2017
COMPREHENSIVE METABOLIC PANEL

TEST NAME: COMPREHENSIVE METABOLIC PANEL
(Total Protein, Albumin, A/G Ratio, T. Bilirubin, Ca, Alk Phos, BUN, Creat, AST, Gluc, Na, K, Cl, CO₂, BUN/Creat Ratio, Anion GAP, ALT)

CPT CODE: 80053 (CP13)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: See individual tests.

METHOD: See individual tests.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing. • If ordered STAT: 30 minutes from receipt in laboratory.

GENERAL USE OF TEST: Evaluation of various serum biochemistry constituents.

SPECIMEN REQUIREMENT: • Collect specimen using standard lab procedures. • Collect specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2°C - 8°C up to 48 hours. • Freeze at -15°C to -20°C for extended storage prior to analysis. • Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CONSULTATION, INTRAOPERATIVE

TEST NAME: CONSULTATION, INTRAOPERATIVE (Pathology Consultation During Surgery)

CPT CODE: 88329, 88331, 88332, 88333

SPECIMEN REQUIREMENT: Surgical tissue.

COLLECTION REQUIREMENT: Fresh tissue.

REFERENCE RANGE: Normal tissue.

METHOD: Gross examination; consultation.

LAB SECTION PERFORMING TEST: Anatomic Pathology

AVAILABILITY:
- Monday through Friday 8:00 AM to 4:30 PM.
- Notify Pathology Secretary at 562-7408.
- Other hours, schedule with pathologist on call 3 hours prior to procedure.

TURNAROUND TIME: 15 – 20 minutes.

GENERAL USE OF TEST: To evaluate specimen adequacy; determine course of surgery.

STORAGE REQUIREMENTS: Immediately deliver to Anatomic Pathology for Pathologist examination.

Revised: 6/20/2017
CONSULTATION, SURGICAL PATHOLOGY

TEST NAME: CONSULTATION, SURGICAL PATHOLOGY

CPT CODE: 88321

SPECIMEN REQUIREMENT:
- Hematoxylin and eosin stained slides. When appropriate, special stained slides, unstained slides or paraffin blocks.
- Outside report and billing information.
- Requisition requesting consultation.

REFERENCE RANGE: Normal tissue

METHOD: Light microscopy

LAB SECTION PERFORMING TEST: Anatomic Pathology

AVAILABILITY: Monday through Friday, 0800 to 1630.

TURNAROUND TIME: One to two days.

GENERAL USE OF TEST: Second opinion regarding diagnoses will be rendered by staff pathologist in consultation with colleagues when appropriate.

Revised: 3/30/2017
CORD BLOOD EVALUATION

TEST NAME: CORD BLOOD EVALUATION

CPT CODE: 86900 / 86901 / 86880 / 86850

SPECIMEN REQUIREMENT: EDTA vacutainer tube.

COLLECTION REQUIREMENT: Baby and mother’s name, and identification labels, date of specimen collection on blood sample(s) and initials of individual collecting the blood sample.

REFERENCE RANGE: • Direct Coombs negative.
• Indirect Coombs negative.

CRITICAL VALUE: Direct Coombs positive; antibody screen and/or group specific screen positive.

METHOD: Agglutination

LAB SECTION PERFORMING TEST: Blood Bank

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Expected turnaround time for STATs is 2 hours from time the specimen is received.
• Routine turnaround time is 8 hours from the time the specimen is received.

GENERAL USE OF TEST: • To determine ABO or Rh incompatibility between mother and newborn.
• To identify Hemolytic Disease of the Newborn (HDN). If direct antiglobulin test and/or ABO group mismatch exists between mother and newborn, eluates and/or antibody identification techniques will be performed to determine the possible cause of the Hemolytic Disease of the Newborn (HDN).

PATIENT PREPARATION: Obtain cord blood samples free of contamination with Wharton’s Jelly.

LIMITATIONS: If blood sample is grossly contaminated with Wharton’s Jelly, the test may be invalid.

STORAGE REQUIREMENTS: Refrigerate sample(s) at 1° - 8°C.

Revised: 3/30/2017
CORONARY RISK EVALUATION

TEST NAME: CORONARY RISK EVALUATION
(HDL, Cholesterol, Triglycerides, LDL and Chol/HDL Ratio)

CPT CODE: 80061 (CVE)

SPECIMEN REQUIREMENT: 2.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from 3 mL green top tube (lithium heparin).

REFERENCE RANGE: See individual tests.

METHOD: See individual tests.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same day testing.

GENERAL USE OF TEST: See individual tests.

PATIENT PREPARATION: Fasting is preferred.

SPECIMEN REQUIREMENT:
- Collect specimen using standard lab procedures.
- Collect specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -15°C to -20°C for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CORTISOL

TEST NAME: CORTISOL

CPT CODE: 82533 (CORT)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: 
Morning: 4.3 – 22.4 µg/dL (7-9 AM)
Evening: 3.09 – 16.66 µg/dL (3-5 PM)

METHOD: Chemiluminescence

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Addison’s Syndrome, Cushing’s Syndrome and adrenal tumor.

LIMITATIONS:
• Diurnal variation
• Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.
• Exercise caution with patients who are undergoing synthetic corticosteroids therapy, as circulation cortisol results may be falsely elevated.

SPECIMEN PREPARATION:
• Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
• Refrigerate at 2° - 8°C up to 48 hours.
• Freeze at -20°C or colder for prolonged storage prior to analysis.
• Samples will be capped and held for at least 5 days after testing.

Revised: 3/30/2017
COSYNTROPIN, ACTH STIMULATION

TEST NAME: COSYNTROPIN, ACTH STIMULATION
(Includes Baseline 30 min., 60 min.)

CPT CODE: 3x 82533 (ACTO)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST)

REFERENCE RANGE:
- The baseline cortisol level should exceed 5 µg/dL.
- The 30-minute level should show an increment of at least 7 µg/dL above the baseline.
- The 60-minute level should be greater or equal to 18 µg/dL.

METHOD: Chemiluminescence

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday through Friday by appointment only at the CVPH Campus. Call Patient Registration at 562-7339 to schedule.

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: For use in the detection of adrenal insufficiency and to determine the response of the adrenals to ACTH.

PATIENT PREPARATION:
- The test may be performed at any time during the day, although it is preferred that the patient be fasting throughout the procedure.
- A baseline cortisol level is drawn. Cosyntropin is injected and samples are drawn at 30 minutes and 60 minutes.

LIMITATIONS: Positive interferences are caused by estrogens, cortisone, hydrocortisone and spironolactone.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -20°C or colder for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CREATININE

TEST NAME: CREATININE

CPT CODE: 82565 (CRE)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL of plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: Male: 0.7 – 1.4 mg/dL  
Female: 0.5 – 1.2 mg/dL

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME:  
• Same shift testing.  
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Kidney function, shock, dehydration

LIMITATIONS: Icterus can cause falsely lower analysis of CRE.

SPECIMEN PREPARATION:  
• Collect specimen using standard lab procedures.  
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:  
• Separated serum and plasma specimens stable for 24 hours at room temperature.  
• Refrigerate at 2°C - 8°C up to 7 days.  
• Freeze at -15°C to -20°C for extended storage prior to analysis (up to 3 months).  
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CREATININE KINASE

TEST NAME: CREATININE KINASE

CPT CODE: 82550 (CK)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL of plasma from a 3 mL green top tube (heparin).

REFERENCE RANGE: Male: 39 – 308 IU/L  
Female: 26 – 192 IU/L

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing.  
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Myocardial infarction; skeletal muscular disease.

LIMITATIONS: Hemolyzed samples should not be used.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.  
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 7 days or at -20°C or colder for up to 29 days.  
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
CREATININE KINASE (TOTAL) WITH CK-MB FRACTION

TEST NAME: CREATININE KINASE (TOTAL) WITH CK-MB FRACTION

CPT CODE: (CKMB) 82553  
(CK) 82550

SPECIMEN REQUIREMENT: 1 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL from a 3 mL green top tube (heparin).

REFERENCE RANGE: See previous page CK

0.50 – 3.6 ng/mL

METHOD: CK – enzymatic  
CKMB – loci chemiluminescence

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing.  
• Results of specimens requested STAT will be reported within 60 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Myocardial infarction, muscular dystrophy, other muscle disease.

LIMITATIONS: • If the total CPK <113 U/L, the CK-MB Fraction will be cancelled.  
• For CKMB: Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION: • Collect specimen using standard laboratory procedures.  
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • See storage requirements for creatine kinase (CK).  
• For CK-MB: Refrigerate at 2° - 8°C up to 48 hours. Freeze at -20°C or colder for prolonged storage prior to analysis.  
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
# CREATININE, 24-HOUR URINE

**TEST NAME:** CREATININE, 24-HOUR URINE

**CPT CODE:** 82570 (CR24)

**SPECIMEN REQUIREMENT:** Total 24-hour urine collection with no preservative in a plastic container obtained from the laboratory.

**REFERENCE RANGE:** 24-hour range: 800 – 2800 mg/TV

**METHOD:** Enzymatic

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing.

**GENERAL USE OF TEST:** Renal function.

**LIMITATIONS:**
- Precisely timed and completely collected specimen is necessary.
- No preservative necessary.
- Refrigerate specimen during collection.

**STORAGE REQUIREMENTS:** Refrigerate at 2° - 8°C up to a week.

Revised: 3/30/2017
CREATININE CLEARANCE, 12 OR 24-HOUR

**TEST NAME:**
CREATININE CLEARANCE, 12 OR 24-HOUR
(Includes Serum (or plasma) and Urine Creatinine Measurement)

**CPT CODE:**
82575 (CRCL)

**SPECIMEN REQUIREMENT:**
Total 12 or 24-hour urine collection with no preservative in a plastic container obtained from the laboratory.

**REFERENCE RANGE:**
800 – 2800 mg/V_t

**METHOD:**
Enzymatic

**LAB SECTION PERFORMING TEST:**
Chemistry

**AVAILABILITY:**
Daily

**TURNAROUND TIME:**
Same shift testing.

**GENERAL USE OF TEST:**
Glomerular filtration.

**LIMITATIONS:**
- Precisely timed and completely collected specimen is necessary.
- Blood collection should be drawn within 48 hours of stated urine collection.
- No preservative necessary for urine; refrigerate specimen during collection.

**SPECIMEN PREPARATION:**
- Collect serum creatinine specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
Refrigerate at 2° - 8°C up to a week.

Revised: 3/30/2017
CROSSMATCH (COMPATIBILITY TESTING)

TEST NAME: CROSSMATCH (COMPATIBILITY TESTING)

CPT CODE: 86920

SPECIMEN REQUIREMENT: EDTA vacutainer tube.

COLLECTION REQUIREMENT: Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood samples.

REFERENCE RANGE: Compatible unit.

METHOD: Gel column or agglutination.

LAB SECTION PERFORMING TEST: Blood Bank

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • 60 minutes for STATs (10 minutes if type and screen are already done on sample). • Day shift for routines.

GENERAL USE OF TEST: To determine compatibility of red cell units required for transfusion. Phenotyping of blood units and the patient may need to occur to find compatible units of blood.

PATIENT PREPARATION: A patient armband is required to establish positive patient identification.

LIMITATIONS: Crossmatched units will only be held for 72 hours.

STORAGE REQUIREMENTS: Room temperature or at 1°C - 8°C.

Revised: 3/30/2017
CRYPTOCOCCAL ANTIGEN TITER, BLOOD

TEST NAME: CRYPTOCOCCAL ANTIGEN TITER, BLOOD

CPT CODE: 87899

SPECIMEN REQUIREMENT: Serum, 1 mL in a red top vacutainer

REFERENCE RANGE: Negative

CRITICAL VALUE: Positive

METHOD: Lateral Flow Assay

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Test run day shift, Monday - Sunday

GENERAL USE OF TEST: Suspected systemic cryptococcal infection.

PATIENT PREPARATION: None

LIMITATIONS: • Hemolyzed serum samples could lead to false negatives due to the high background color on the strip. • A negative test does not preclude a diagnosis of cryptococcosis in a symptomatic patient.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
CRYPTOCOCCAL ANTIGEN TITER, CEREBROSPINAL FLUID

TEST NAME: CRYPTOCOCCAL ANTIGEN TITER, CEREBROSPINAL FLUID

CPT CODE: 87899

SPECIMEN REQUIREMENT: Cerebrospinal fluid, 0.5 mL in a sterile tube.

REFERENCE RANGE: Negative

CRITICAL VALUE: Positive

METHOD: Lateral Flow Assay

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Test run day shift, Monday - Sunday

GENERAL USE OF TEST:
- Suspected CNS cryptococcal infection.
- Serological detection of cryptococcal antigen in CSF.

PATIENT PREPARATION: Physician responsibility.

LIMITATIONS:
- A single negative result does not rule out cryptococcosis in a symptomatic patient.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
CRYSTALS, FLUID

TEST NAME: CRYSTALS, FLUID

CPT CODE: 89060 (FCRY)

SPECIMEN REQUIREMENT: 2 mL fluid transferred to a lavender top tube (EDTA).

REFERENCE RANGE: No crystals seen.

METHOD: Polarization Microscopy

LAB SECTION PERFORMING TEST: Hematology

AVAILABILITY: Daily

TURNAROUND TIME: Same shift.

GENERAL USE OF TEST: Identification of monosodium urate and calcium pyrophosphate crystals.

Revised: 3/30/2017
CULTURE – ANAEROBIC, BODY FLUID

TEST NAME: CULTURE, ANAEROBIC, BODY FLUID

CPT CODE: 87075

SPECIMEN REQUIREMENT: Aseptically obtained body fluid submitted in anaerobic transport tube, anaerobic blood culture bottle or capped syringe.

REFERENCE RANGE: Negative for anaerobic bacteria.

METHOD: Classical culture; ID by biochemical strip.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No limitations.

TURNAROUND TIME:
- 48 hours for preliminary negative results
- Five days for final negative results.

GENERAL USE OF TEST: To identify infections in body cavities or bursa fluid suspected of harboring anaerobic bacteria.

PATIENT PREPARATION: Standard sterile prep of aspiration site.

SPECIMEN PREPARATION: Specimen may be collected by drainage tube or by syringe aspiration.

STORAGE REQUIREMENTS:
- Place in transport media (blood culture bottle) immediately after collection.
- Receipt in the lab within 1 hour of collection is preferable.
- Immediate transport required if in syringe.
- Maximum allowable transport is 72 hours with 2°C - 8°C maintained if testing will be delayed beyond 24 hours (or room temperature if in blood culture bottle).

Revised: 3/30/2017
CULTURE – ANAEROBIC, MISCELLANEOUS

TEST NAME: CULTURE, ANAEROBIC, MISCELLANEOUS

CPT CODE: 87075

SPECIMEN REQUIREMENT: Swab or tissue taken from affected area submitted in anaerobic transport tube.

REFERENCE RANGE: Subject to interpretation.

METHOD: Classical culture; ID by biochemical strip.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No limitations.

TURNAROUND TIME:
- 48 hours for preliminary negative results.
- Five days for final negative results.

GENERAL USE OF TEST: To identify infection of abscess or inflamed lesion suspected of anaerobic colonization.

PATIENT PREPARATION: Avoid contamination from surrounding tissue.

LIMITATIONS: Aeration of specimen.

SPECIMEN PREPARATION: Specimen may be collected on a sterile swab or by surgical biopsy depending on site of lesion.

STORAGE REQUIREMENTS:
- Place in transport media immediately after collection.
- Receipt in the lab within 1 hour of collection is preferable.
- Maximum allowable transport is 72 hours with 2° - 8°C maintained if testing will be delayed beyond 24 hours (or room temperature if in blood culture bottle).

Revised: 3/30/2017
<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>CULTURE, ANAEROBIC, PUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>87075</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>Pus from abscess or inflamed lesion submitted in anaerobic transport tube.</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>Subject to interpretation.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Classical culture; ID by biochemical strip.</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Microbiology</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>No limitations.</td>
</tr>
</tbody>
</table>
| **TURNAROUND TIME:** | • 48 hours for preliminary negative results.  
                              • Five days for final negative results. |
| **GENERAL USE OF TEST:** | To identify suspected anaerobic infection from an abscess or inflamed lesion. |
| **PATIENT PREPARATION:** | Avoid contamination from surrounding tissue. |
| **LIMITATIONS:** | Aeration of specimen. |
| **SPECIMEN PREPARATION:** | Specimen may be collected on a sterile swab, in a syringe or by aspiration. |
| **STORAGE REQUIREMENTS:** | • Place in transport media immediately after collection.  
                                • Receipt in the lab within 1 hour of collection is preferable.  
                                • Maximum allowable transport is 72 hours with 2° - 8°C maintained if testing will be delayed beyond 24 hours (or room temperature if in blood culture bottle). |

Revised: 3/30/2017
TEST NAME: CULTURE, BLOOD ROUTINE AND FUNGAL (ADULT)

CPT CODE: 87040

SPECIMEN REQUIREMENT:
- A blood culture order consists of 2 independent draws.
- From each draw inoculate 10 ml into an aerobic blood culture bottle and 10 ml into an anaerobic bottle.
- Both draws may be done at the same time if separate sites are used.
- The physician may order a third blood culture.
- The physician may specify the timing of each draw.
- Each site and each draw must have the complete site preparation.

Blood cultures drawn through an indwelling line are not permitted without a physician order. A second set must be drawn by phlebotomy.

One blood culture may be drawn via a newly inserted intravenous canula if:
1. The appropriate skin prep was performed.
2. The culture is drawn before other blood is drawn or drug administered.

When a venous site is unavailable, arterial blood is an equally suitable sample for accurate blood cultures. Complete site preparation is required.

PATIENT/SITE PREPARATION:
- Aseptic venipuncture procedure.
- Cleanse venipuncture site with alcohol followed by 10% Povidone-Iodine.
- Allow Povidone-Iodine to sit on skin 1-2 minutes prior to venipuncture.
- Do not palpate vein after skin preparation.

LABELING:
All blood culture bottle labels must have the date, time and site of draw and the identification of the staff member who drew the sample. Labels must clearly indicate which bottle pairs belong with each draw.

REFERENCE RANGE: No growth.

CRITICAL VALUE: Positive

METHOD: CO₂ detection; BacT/Alert.
**TEST NAME:** CULTURE, BLOOD ROUTINE AND FUNGAL (ADULT)

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:** No restrictions.

**TURNAROUND TIME:**
- Five days for negative bacterial findings.
- Three weeks for negative fungal findings.

**GENERAL USE OF TEST:** Diagnosis of septicemia. Isolation and identification of bacteria and fungi from blood. Antimicrobial sensitivity studies of most bacterial isolates.

**PATIENT PREPARATION:** Avoid contamination from surrounding tissue.

**LIMITATIONS:** Systemic antimicrobial therapy.

**STORAGE REQUIREMENTS:**
- Transport to lab ASAP.
- Do not refrigerate.

Revised: 3/30/2017
CULTURE – BLOOD, ROUTINE AND FUNGAL (PEDIATRIC)

TEST NAME: CULTURE, BLOOD ROUTINE AND FUNGAL (PEDIATRIC)

CPT CODE: 87040

SPECIMEN REQUIREMENT: Blood – 1.0 to 4.0 mL
The volume of blood drawn for pediatric patients should be based on the patient’s weight. Recommendations are that the volume of blood drawn be equal to 1% of patient’s total blood volume.

<table>
<thead>
<tr>
<th>Patient’s Weight</th>
<th>Recommended Volume of blood</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;8 kg</td>
<td>1-2 ml (yellow)</td>
</tr>
<tr>
<td>8-14 kg</td>
<td>3-4 ml (yellow)</td>
</tr>
<tr>
<td>14-37 kg</td>
<td>4-10 ml (for volume &gt;4 draw in adult aerobic bottle (green))</td>
</tr>
<tr>
<td>&gt;37 kg</td>
<td>Draw adult blood culture bottles (green and orange)</td>
</tr>
</tbody>
</table>

Place blood directly into BacT/Alert PF Plus Bottle (yellow).

REFERENCE RANGE: No growth.

CRITICAL VALUE: Positive

METHOD: CO2 detection, BacT/Alert.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No restrictions.

TURNAROUND TIME: • Five days for negative bacterial findings.
• Three weeks for negative fungal findings.

GENERAL USE OF TEST: • Clinical symptoms and signs consistent with possible sepsis.
• Identification of bacteria and fungi from blood.
• Antimicrobial sensitivity studies of most bacterial isolates.

PATIENT PREPARATION: • Cleanse venipuncture site with alcohol followed by betadine.
• Allow betadine to sit on skin 1-2 minutes prior to venipuncture.
• Do not palpate vein after skin preparation.

**LIMITATIONS:**

Systemic antimicrobial therapy.

**SPECIMEN PREPARATION:**

Aseptic venipuncture procedure.

**STORAGE REQUIREMENTS:**

- Transport to laboratory ASAP.
- Do not refrigerate.

Revised: 3/30/2017
CULTURE – FOREIGN BODIES

TEST NAME: CULTURE, FOREIGN BODIES

CPT CODE: 87070

SPECIMEN REQUIREMENT:
- Foreign body.
- Submit in sterile 4 oz. plastic screw top container or sterile tube.

REFERENCE RANGE: Subject to interpretation.

METHOD: Classical culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No limitations for submission.

TURNAROUND TIME: 48 hours for a negative result.

GENERAL USE OF TEST: To determine if foreign body is contaminated with pathogenic bacteria and provide antimicrobial sensitivity studies if indicated.

PATIENT PREPARATION: Avoid contamination from surrounding tissue.

SPECIMEN PREPARATION: Collection method varies with the nature and location of the foreign body.

STORAGE REQUIREMENTS: Moisten with sterile saline if transport is delayed; hold at 2° - 8°C.

Revised: 3/30/2017
CULTURE – FUNGUS, BODY FLUIDS

**TEST NAME:** CULTURE, FUNGUS BODY FLUIDS

**CPT CODE:** 87102

**SPECIMEN REQUIREMENT:** Body fluids placed in a sterile 4 oz. plastic screw-top container, syringe with needle removed, tube or bottle.

**REFERENCE RANGE:** Negative for fungal growth.

**METHOD:** Classical culture.

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:**
- Day shift Monday – Sunday.
- STAT stains of smears available on physician request.

**TURNAROUND TIME:**
- Stain: Available within 24 hours.
- Culture: 4 weeks for negative report.

**GENERAL USE OF TEST:** Establish presence of viable fungus in body fluids.

**PATIENT PREPARATION:** Standard sterile prep of aspiration site.

**LIMITATIONS:** A single negative culture does not rule out the presence of fungal infection.

**SPECIMEN PREPARATION:** May be aspirated by syringe or drained by tube into a sterile container.

**STORAGE REQUIREMENTS:** Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – FUNGUS, BONE MARROW

TEST NAME:  CULTURE, FUNGUS BONE MARROW

CPT CODE:  87102

SPECIMEN REQUIREMENT:  Bone marrow placed in a sterile tube or syringe with needle removed.

REFERENCE RANGE:  Negative for fungal growth.

METHOD:  Classical culture.

LAB SECTION PERFORMING TEST:  Microbiology

AVAILABILITY:  • No limitations.
• STAT stain of smear available on physician request.

TURNAROUND TIME:  • Stain: Available within 24 hours.
• Culture: 4 weeks for negative report.

GENERAL USE OF TEST:  • Clinical evidence of systemic fungal infection.
• Isolation and identification of fungi.

PATIENT PREPARATION:  Standard prep by physician.

LIMITATIONS:  A single negative culture does not rule out the presence of fungal infection.

SPECIMEN COLLECTION:  Bone marrow aspiration.

STORAGE REQUIREMENTS:  Transport to laboratory ASAP.

Revised: 3/30/2017
CULTURE – FUNGUS, BRONCHIAL ASPIRATE & TRANSTRACHEAL ASPIRATE

TEST NAME: CULTURE, FUNGUS BRONCHIAL ASPIRATE & TRANSTRACHEAL ASPIRATE

CPT CODE: 87102

SPECIMEN REQUIREMENT: 10 mL (minimum) bronchial or transtracheal aspirate placed in a sterile tube.

REFERENCE RANGE: Negative for pathogenic fungi.

METHOD: Classical culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Specimen processed day shift Monday – Sunday.
- STAT stains of direct specimens available on physician request.

TURNAROUND TIME:
- Stain: Available within 24 hours.
- Culture: 4 weeks for negative report.

GENERAL USE OF TEST:
- Clinical evidence of pulmonary fungal infection.
- Isolation and identification of fungi.

PATIENT PREPARATION: Standard prep by physician.

LIMITATIONS:
- A single culture does not rule out presence of fungal infection.
- The significance of saprophytic or opportunistic fungi isolated is subject to interpretation.
- Non-sterile handling; introduction of oral material.

SPECIMEN PREPARATION: Specimen is aspirated directly into a sterile test tube.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – FUNGUS, CEREBROSPINAL FLUID

TEST NAME: CULTURE, FUNGUS CEREBROSPINAL FLUID

CPT CODE: 87102

SPECIMEN REQUIREMENT: 1 mL (minimum) cerebrospinal fluid placed in a sterile tube.

REFERENCE RANGE: Negative for fungal growth.

METHOD: India ink and/or gram stain plus Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Specimen processed day shift Monday – Sunday.
- STAT stain of direct smear available on physician request.

TURNAROUND TIME:
- Stain: Available within 24 hours.
- Culture: 4 weeks for negative report.

GENERAL USE OF TEST: Clinical and laboratory findings suggest non-bacterial CNS infection and isolation and identification of fungi from cerebrospinal fluid.

PATIENT PREPARATION: Standard prep by physician.

LIMITATIONS: Contamination of specimen by non-sterile handling.

SPECIMEN PREPARATION: Lumbar puncture or tap from shunt.

STORAGE REQUIREMENTS: Transport to laboratory ASAP.

Revised: 3/30/2017
CULTURE – FUNGUS, PUS

TEST NAME: CULTURE, FUNGUS PUS

CPT CODE: 87102

SPECIMEN REQUIREMENT: Pus, purulent fluid rather than swab of fluid submitted in a sterile tube, culturette or syringe (w/o needle).

REFERENCE RANGE: Negative for fungal growth.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: • Specimen processed day shift Monday – Sunday.
• STAT stain of specimen available on physician request.

TURNAROUND TIME: • Stain: Available within 24 hours.
• Culture: 4 weeks for negative report.

GENERAL USE OF TEST: Clinical evidence of wound or abscess fungal infection and isolation and identification of fungi from purulent material.

PATIENT PREPARATION: • For fluids, sterile preparation of site.
• For purulent material, avoid contamination from adjacent skin.

LIMITATIONS: • A single negative culture does not rule out the presence of fungal infection.
• Swabs should be submitted only when aspirated purulent fluid, exudate or biopsy material cannot be obtained.

SPECIMEN PREPARATION: Aspiration of purulent fluid.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – FUNGUS, SKIN

TEST NAME: CULTURE, FUNGUS SKIN

CPT CODE: 87102

SPECIMEN REQUIREMENT:
- Epidermal scrapings from skin lesions and hair clippings if the scalp or hair is involved.
- 50 small flakes of skin and/or several infected hairs (minimum).
- If lesion is moist, culturette may be used.
- Use sterile, tightly covered container for scrapings.

REFERENCE RANGE:
No pathogenic fungi isolated.

METHOD:
Classical Culture.

LAB SECTION PERFORMING TEST:
Microbiology

AVAILABILITY:
- Specimen processed day shift Monday – Sunday.
- STAT KOH prep available on physician request.

TURNAROUND TIME:
- KOH prep: Available within 24 hours.
- Culture: 4 weeks for negative report.

GENERAL USE OF TEST:
Skin lesions suggestive of dermatophytosis.

PATIENT PREPARATION:
Dirt, oils and/or powders must be removed from the lesion site prior to collection.

LIMITATIONS:
- A single culture does not rule out presence of fungal infection.
- Anti-fungal medication applied or administered prior to specimen collection.

SPECIMEN PREPARATION:
Skin scrapings (use implement with medium sharp edge, not a scalpel) or hair clippings.

STORAGE REQUIREMENTS:
- Protect dry samples from moisture.
- Keep tightly contained.
- No refrigeration required.

Revised: 3/30/2017
CULTURE – FUNGUS, SPUTUM OR GASTRIC ASPIRATE

TEST NAME: CULTURE, FUNGUS SPUTUM OR GASTRIC ASPIRATE

CPT CODE: 87102

SPECIMEN REQUIREMENT:
- 5 mL (minimum) sputum or gastric aspirate.
- Submit in a 4 oz. sterile screw-top container or sterile tube.

REFERENCE RANGE: Negative for pathogenic fungi.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Specimen processed day shift Monday – Sunday.
- STAT stain of direct smear is available on physician request.

TURNAROUND TIME:
- Stain: Available within 24 hours.
- Culture: 4 weeks for negative report.

GENERAL USE OF TEST:
- Establish the presence of pulmonary fungal infection.
- Isolation and identification of pathogenic fungi in sputum or gastric aspirate.

PATIENT PREPARATION:
Patient must remove dentures, gargle with antiseptic mouth wash, rinse mouth with water and collect deep chest sputum.

LIMITATIONS:
- A single negative culture does not rule out the presence of fungal infection.
- The significance of isolates is subject to interpretation.
- Respiratory and/or oral bacteria may overgrow fungal cultures preventing growth. Candida spp and/or other yeast may be isolated in the absence of disease.

SPECIMEN PREPARATION:
- Sputum collection should be a deep chest specimen or tracheal aspirate.
- Oral or esophageal material must be avoided.
- Gastric aspiration is collected by physician.
TEST NAME: CULTURE, FUNGUS
SPUTUM OR GASTRIC ASPIRATE

STORAGE REQUIREMENTS:
Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – FUNGUS, STOOL

TEST NAME: CULTURE, FUNGUS STOOL

CPT CODE: 87102

SPECIMEN REQUIREMENT: • Stool or rectal swab. • Submit in a 4 oz. sterile screw-top container or culturette.

REFERENCE RANGE: Subject to interpretation.

METHOD: Classical Culture

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: • Specimen processed day shift Monday – Sunday. • STAT stain of diarrheal specimen available by physician request.

TURNAROUND TIME: • Stain: (Diarrheal only) Available within 24 hours. • Culture: Negative in 48 hours.

GENERAL USE OF TEST: • This procedure is generally limited to Candida isolation. Normal stool may contain Candida spp and other yeast. • Isolation and identification of yeast-like fungi from stool.

PATIENT PREPARATION: Barium or oils should be cleared from the intestinal tract.

LIMITATIONS: Dehydrated specimen.

SPECIMEN PREPARATION: Feces deposited directly in specimen container or sterile culturette swab rectally inserted 3-5 cm.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
# Culture – Fungus, Throat, Nose or Ear

**Test Name:** Culture, Fungus Throat, Nose or Ear

**CPT Code:** 87102

**Specimen Requirement:** Culturette or nasopharyngeal swab from affected area.

**Reference Range:** Subject to interpretation.

**Method:** Classical Culture.

**Lab Section Performing Test:** Microbiology

**Availability:** Specimen processed day shift Monday – Sunday.

**Turnaround Time:** 4 weeks for a negative report.

**General Use of Test:**
- Clinical evidence of fungal infection in the upper respiratory tract.
- Isolation and identification of fungi from upper respiratory tract.

**Limitations:** Candida and other yeast may be isolated from these specimens in the absence of disease.

**Specimen Preparation:** Material from affected site is collected using appropriate device.

**Storage Requirements:** Store at 2°C - 8°C until tested.

Revised: 3/30/2017
CULTURE – FUNGUS, TISSUE

TEST NAME: CULTURE, FUNGUS TISSUE

CPT CODE: 87102

SPECIMEN REQUIREMENT: Biopsied tissue submitted in sterile tube or cup moistened with sterile saline.

REFERENCE RANGE: Negative for fungal growth.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Specimen processed day shift Monday – Sunday.

TURNAROUND TIME: 4 weeks for negative report.

GENERAL USE OF TEST:
- Clinical evidence of subcutaneous or systemic fungal infection.
- Isolation and identification of fungi from biopsy material.

PATIENT PREPARATION: Avoid contamination from surrounding tissue.

LIMITATIONS: A single negative culture does not rule out the presence of fungal infection.

SPECIMEN PREPARATION: Specimen is surgically obtained.

STORAGE REQUIREMENTS:
- Moisten specimen with sterile saline.
- Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – FUNGUS, URINE

TEST NAME: CULTURE, FUNGUS URINE

CPT CODE: 87102

SPECIMEN REQUIREMENT: • 10-50 mL first morning, mid-void urine specimen preferred.
• Submit in sterile 4 oz. plastic screw top container.

REFERENCE RANGE: Subject to interpretation.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Specimen processed day shift Monday – Sunday.

TURNAROUND TIME: • 48 hours for Candida.
• 4 weeks for negative report.

GENERAL USE OF TEST: • Clinical evidence of systemic fungal infection.
• Isolation and identification of yeast-like fungi from biopsy material.

PATIENT PREPARATION: Clean catch, mid-void collection preparation as described in the “Urine Collection” section of this manual.

LIMITATIONS: • A single negative culture does not rule out the presence of fungal infection.
• Yeast-like fungi may be isolated from urine in the absence of disease.

SPECIMEN PREPARATION: Mid-void urine specimen voided directly into the container.

STORAGE REQUIREMENTS: • Store at 2°C - 8°C until tested.

Revised: 3/30/2017

CULTURE – FUNGUS, VAGINA

TEST NAME: CULTURE, FUNGUS VAGINA
CPT CODE: 87102

SPECIMEN REQUIREMENT: Wet swab of vagina, vulva or labia.

REFERENCE RANGE: Subject to interpretation.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No limitations.

TURNAROUND TIME: • 24 hours for preliminary report.
• 48 hours for final report.

GENERAL USE OF TEST: • Clinical evidence of Candida or other vaginal fungal infection.
• Isolation and identification of fungi from female genital tract.

LIMITATIONS: • Candida and other yeasts may colonize the area in the absence of disease.
• Dehydrated specimen.

SPECIMEN PREPARATION: Specimen is collected by physician.

STORAGE REQUIREMENTS: • Store at 2° - 8°C until tested.

Revised: 3/30/2017
TEST NAME: CULTURE, MYCOBACTERIA BLOOD

CPT CODE: 87117 / 87206 / 87015

SPECIMEN REQUIREMENT: 8 – 10 mL blood submitted in 1 Dupont Isolator Blood Culture (10 mL) (grey/yellow top)

REFERENCE RANGE: No growth.

CRITICAL VALUE: Microscopic observation of organism or growth in culture.

METHOD: Lysis Centrifugation.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: • Specimen processed day shift Monday – Sunday.

TURNAROUND TIME: • Stain: Available within 24 hours.
• Culture: Positive – physician called
  Negative – 8 weeks

GENERAL USE OF TEST: Acid fast stain, isolation and identification of mycobacteria from the blood.

PATIENT PREPARATION: • Cleanse venipuncture site with alcohol followed by betadine.
• Allow betadine to sit on skin 1 – 2 minutes prior to venipuncture.
• Do not palpate vein after skin preparation.

LIMITATIONS: • All isolates of M. tuberculosis will be sent to NYSDOH laboratories for susceptibility testing.
• Susceptibility testing on other isolates will be performed by physician request only.

SPECIMEN PREPARATION: Usual aseptic blood culture venipuncture technique.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
**CULTURE – MYCOBACTERIA, BODY FLUID**

**TEST NAME:** CULTURE, MYCOBACTERIA BODY FLUID

**CPT CODE:** 87117 / 87206 / 87015

**SPECIMEN REQUIREMENT:** Fluid, 0.5 mL (minimum) – 50 mL (maximum) rather than swabs of fluid submitted in a sterile tube or screw cap container.

**REFERENCE RANGE:** No growth.

**CRITICAL VALUE:** Microscopic observation of AFB and/or growth in culture.

**METHOD:** Classical Culture.

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:**
- Specimen processed day shift, Monday – Sunday.
- STAT acid fast stain of direct smear available on physician request.

**TURNAROUND TIME:**
- **Stain:** Available within 24 hours.
- **Culture:** Positive – physician called
  Negative – 8 weeks

**GENERAL USE OF TEST:**
- Rule out disseminated mycobacterial disease.
- Acid fast stain, isolation and identification of bacteria.

**PATIENT PREPARATION:** Sterile preparation of aspiration site.

**LIMITATIONS:** For optimal yield, fluid (rather than swabs of fluid) should be submitted.

**SPECIMEN PREPARATION:**
- Aseptic technique as appropriate to the site.
- A single specimen will be divided for fungal culture and stain, mycobacterial culture and stain, and routine bacterial culture and gram stain only if the specimen is accompanied by a properly completed requisition for each of these procedures and if the specimen is of adequate volume for all tests requested.

**STORAGE REQUIREMENTS:** Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – MYCOBACTERIA, BONE MARROW

**TEST NAME:**
CULTURE, MYCOBACTERIA
BONE MARROW

**CPT CODE:**
87117 / 87206 / 87015

**SPECIMEN REQUIREMENT:**
Bone marrow submitted in sterile vacutainer blood collection tube or syringe without needle.

**REFERENCE RANGE:**
No growth.

**CRITICAL VALUE:**
Observation of acid fast bacilli microscopically and/or growth in culture.

**METHOD:**
Classical Culture.

**LAB SECTION PERFORMING TEST:**
Microbiology

**AVAILABILITY:**
- No limitations.
- STAT acid fast stain of direct smear available on physician request.

**TURNAROUND TIME:**
- *Stain:* Available within 24 hours.
- *Culture:* Positive – physician called
  Negative – 8 weeks

**GENERAL USE OF TEST:**
- Suspected mycobacterial infection.
- Acid fast stain, isolation and identification of Mycobacteria.

**PATIENT PREPARATION:**
Usual sterile preparation of aspiration site.

**LIMITATIONS:**
Sensitivities will be performed by NYSDOH laboratory on all M. tuberculosis isolates and on other mycobacteria species by physician request only.

**SPECIMEN PREPARATION:**
- Standard bone marrow procedure.
- The laboratory will provide media and supplies for direct inoculation on request.

**STORAGE REQUIREMENTS:**
Transport to laboratory ASAP.

Revised: 3/30/2017
**TEST NAME:** CULTURE, MYCOBACTERIA BRONCHIAL ASPIRATE

**CPT CODE:** 87117 / 87206 / 87015

**SPECIMEN REQUIREMENT:** 5 mL (minimum) bronchial aspirate submitted in sterile container.

**REFERENCE RANGE:** No growth; isolation of potentially pathogenic AFB is subject to interpretation.

**CRITICAL VALUE:** Microscopic observation of acid fast bacilli and/or growth in culture.

**METHOD:** Classical Culture.

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:**
- Specimen processed day shift Monday – Sunday.
- STAT acid fast stain of direct smear available on physician request.

**TURNAROUND TIME:**
- **Stain:** Available within 24 hours.
- **Culture:** Positive – physician called
  Negative – 8 weeks

**GENERAL USE OF TEST:**
- Clinical / radiological evidence of pulmonary tuberculosis.
- Acid fast stain, isolation and identification of mycobacteria.

**PATIENT PREPARATION:** Bronchoscope procedure by physician.

**LIMITATIONS:** Sensitivities will be performed by NYSDOH laboratory on all M. tuberculosis isolates and on other mycobacteria species by physician request only.

**SPECIMEN PREPARATION:**
- Standard bronchial washing procedure.
- Do not add fixatives of any kind.
- Single specimen will be divided for fungal culture and stain, mycobacteria culture and stain, and routine bacterial culture and gram stain if these tests are checked on the requisition and there is adequate volume for all tests requested.
TEST NAME: CULTURE, MYCOBACTERIA BRONCHIAL ASPIRATE

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – MYCOBACTERIA, CEREBROSPINAL FLUID

TEST NAME: CULTURE, MYCOBACTERIA CEREBROSPINAL FLUID (CSF)

CPT CODE: 87117 / 87206 / 87015

SPECIMEN REQUIREMENT: 10 mL (optimum), 5 mL (minimum) cerebrospinal fluid submitted in sterile test tube.

REFERENCE RANGE: No growth.

CRITICAL VALUE: Microscopic observation of acid fast bacilli and/or growth in culture.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Specimen processed day shift Monday – Friday.
- STAT acid fast stain of direct smear available on physician request.

TURNAROUND TIME:
- Stain: Available within 24 hours.
- Culture: Positive – physician called
  Negative – 8 weeks

GENERAL USE OF TEST:
- Clinical evidence of tuberculosis meningitis.
- Acid fast stain, isolation and identification of Mycobacteria.

PATIENT PREPARATION: Usual sterile preparation by physician.

LIMITATIONS: Sensitivities will be performed by NYSDOH laboratories on all isolates of M. tuberculosis and on other mycobacteria by physician request only.

SPECIMEN PREPARATION:
- Aseptic cerebrospinal fluid collection.
- The specimen will be divided for fungal culture and stain, mycobacteria culture and stain, and routine bacterial culture and gram stain if ordered and if the specimen is of adequate volume for all tests requested.

STORAGE REQUIREMENTS: Transport to laboratory ASAP.

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<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>CULTURE, MYCOBACTERIA PUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>87117 / 87206 / 87015</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>As much as possible up to 10 mL pus, purulent fluid rather than swab of fluid, if possible, submitted in syringe without needle, sterile tube or culturette.</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>No growth.</td>
</tr>
<tr>
<td><strong>CRITICAL VALUE:</strong></td>
<td>Microscopic observation of acid fast bacilli and/or growth in culture.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Classical Culture.</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Microbiology</td>
</tr>
</tbody>
</table>
| **AVAILABILITY:** | • Specimen processed day shift Monday – Sunday.  
• STAT acid fast stain of direct smear available on physician request. |
| **TURNAROUND TIME:** | • *Stain:* Available within 24 hours.  
• *Culture:* **Positive** – physician called  
**Negative** – 8 weeks |
| **GENERAL USE OF TEST:** | • Chronic pyogenic infection not attributable to other bacteria.  
• Acid fast stain, isolation and identification of Mycobacteria. |
| **PATIENT PREPARATION:** | • Dependent upon specimen site.  
• Avoid contamination from surrounding tissue. |
| **LIMITATIONS:** | • Sensitivities will be performed by NYSDOH laboratories on all isolates of M. tuberculosis and on other mycobacteria by physician request only.  
• Swabs should be submitted to the laboratory only when aspirated purulent fluid, exudate or biopsy material cannot be obtained. |
| **SPECIMEN PREPARATION:** | • Aseptic technique. |
| **SPECIMEN PREPARATION CONT:** | • The specimen will be divided for fungal culture and stain, routine bacterial culture and gram stain in addition to the mycobacterial culture only if the specimen is of
TEST NAME: CULTURE, MYCOBACTERIA PUS
adequate volume for all tests requested.
- If swabs are submitted, one swab must be provided for each procedure requested.

STORAGE REQUIREMENTS:
Store at $2^\circ - 8^\circ$C until tested.

Revised: 3/30/2017
TEST NAME: CULTURE, MYCOBACTERIA SPUTUM OR GASTRIC ASPIRATE

CPT CODE: 87117 / 87206 / 87015

SPECIMEN REQUIREMENT: 5 – 10 mL undiluted, first morning sputum, fasting gastric aspirate or induced sputum submitted in sterile screw-top container.

Patients with clinical or radiologic signs of active TB should have 3 samples collected in an 8 – 24 hour period. One of these samples should be a first morning collection.

REFERENCE RANGE: No growth; non-pathogenic mycobacteria; isolation of potential pathogenic mycobacteria is subject to interpretation.

CRITICAL VALUE: Microscopic observation of acid fast bacilli (AFB) and/or growth in culture.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Specimen processed day shift Monday – Sunday.

STAT acid fast stain of direct smear available by physician request.

TURNAROUND TIME: Stain: Available within 24 hours.

Culture: Positive – physician called Negative – 8 weeks

GENERAL USE OF TEST: Radiologic/clinical significant of pulmonary tuberculosis.

Acid fast stain, isolation and identification of mycobacteria.

PATIENT PREPARATION: Remove dentures, or brush teeth, gargle and rinse with water.

LIMITATIONS: Occasional cultures are lost due to bacterial overgrowth.

SPECIMEN PREPARATION: Patient expectorates sputum from deep in lungs.

Physician performs gastric lavage for gastric aspirate specimen.
TEST NAME: CULTURE, MYCOBACTERIA
SPUTUM OR GASTRIC ASPIRATE

SPECIMEN PREPARATION CONT: The specimen will be divided for fungal culture and
stain, mycobacteria culture and stain, and routine
bacterial culture and gram stain if the specimen is of
adequate volume for all tests requested.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – MYCOBACTERIA, STOOL

**TEST NAME:** CULTURE, MYCOBACTERIA STOOL

**CPT CODE:** 87117 / 87206 / 87015

**SPECIMEN REQUIREMENT:** Two scoops of fecal material submitted in sterile 4 oz. screw top container.

**REFERENCE RANGE:** No growth.

**CRITICAL VALUE:** Microscopic observation of acid fast bacilli and/or growth in culture.

**METHOD:** Classical Culture.

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:**
- Specimen processed day shift Monday – Sunday.

**TURNAROUND TIME:**
- **Stain:** Available within 24 hours.
- **Culture:**
  - **Positive** – physician called
  - **Negative** – 8 weeks

**GENERAL USE OF TEST:**
- Suspected disseminated Mycobacterial infection.
- Isolation and identification of Mycobacteria from fecal material.

**LIMITATIONS:**
- All isolates of M. tuberculosis will be sent to NYSDOH laboratories for susceptibility testing.
- Susceptibility testing of other isolates only by physician request.

**SPECIMEN PREPARATION:**
- Place specimen in dry, clean screw cap cup.
- Contamination with urine or addition of preservation should be avoided.

**STORAGE REQUIREMENTS:** Store at 2° - 8°C until tested.

Revised: 3/30/2017
## CULTURE – MYCOBACTERIA, TISSUE

**Test Name:** CULTURE, MYCOBACTERIA TISSUE  
**CPT Code:** 87117 / 87206 / 87015  
**Specimen Requirement:** Surgical specimen submitted in sterile 4 oz. specimen container.  
**Reference Range:** No growth.  
**Critical Value:** Microscopic observation of acid fast bacilli and/or growth in culture.  
**Method:** Classical Culture.  
**Lab Section Performing Test:** Microbiology  
**Availability:**  
- Specimen processed day shift Monday – Sunday.  
- STAT acid fast stain of impression smear available on physician request.  
**Turnaround Time:**  
- **Stain:** Available within 24 hours.  
- **Culture:**  
  - **Positive** – physician called  
  - **Negative** – 8 weeks  
**General Use of Test:**  
- Chronic inflammatory process not attributable to other bacteria or fungi.  
- Acid fast stain, isolation and identification of mycobacteria.  
**Limitations:**  
- Optimal isolation of mycobacteria from tissue is accomplished by processing as much tissue as possible for culture.  
- Swabs should be submitted only when adequate tissue is not available.  
**Specimen Preparation:**  
- Submit in sterile saline.  
- The portion of the surgical specimen submitted to Microbiology should be separated from the portion submitted to Anatomic Pathology by the surgeon utilizing sterile technique. Division of the specimen should be performed in consultation with a Pathologist.  
- The Microbiology specimen will be divided in Microbiology for fungal culture, mycobacteria culture and smear, routine bacterial culture and gram stain if the specimen is of adequate volume for all tests requested.
TEST NAME: CULTURE, MYCOBACTERIA TISSUE

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – MYCOBACTERIA, URINE

TEST NAME: CULTURE, MYCOBACTERIA URINE

CPT CODE: 87117 / 87206 / 87015

SPECIMEN REQUIREMENT: Entire first morning voided urine for 3 consecutive days, more than 50 mL if possible (minimum volume 10 mL) submitted in sterile specimen container.

REFERENCE RANGE: No growth.

CRITICAL VALUE: Microscopic observation of acid fast bacilli and/or growth in culture.

METHOD: Classical Culture

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Specimen processed day shift Monday – Sunday.
- STAT acid fast stain of direct smear available on physician request.

TURNAROUND TIME:
- Stain: Available within 24 hours.
- Culture: Positive – physician called Negative – 8 weeks

GENERAL USE OF TEST:
- Rule out renal tuberculosis.
- Acid fast stain, isolation and identification of bacteria.

PATIENT PREPARATION: Clean catch collection preparation as described in the “Urine Collection” section of this manual.

SPECIMEN PREPARATION: Clean catch technique.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – ROUTINE, BODY FLUID

TEST NAME: CULTURE, ROUTINE, BODY FLUID

CPT CODE: 87117 / 87206 / 87015

SPECIMEN REQUIREMENT: 0.5 mL to 50 mL steriley aspirated body fluid in anticoagulant submitted in sterile vacutainer, syringe without needle or other sterile container.

REFERENCE RANGE: No growth.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No restriction.

TURNAROUND TIME: • Preliminary reports are issued at 24 hours.
• Cultures with no growth will be reported after 48 hours.
• Reports or cultures from which pathogens are isolated may require additional time for completion.

GENERAL USE OF TEST: • Clinical signs of infection and/or fluid accumulation.
• Isolation, identification and susceptibility testing of significant isolates.

PATIENT PREPARATION: Sterile preparation of the aspiration site.

LIMITATIONS: • For recovery of anaerobics either immediate inoculation into anaerobic broth or transport in a transport tube.
• Contact Microbiology for materials and instructions.
• Prior antimicrobial therapy may result in negative findings.

SPECIMEN PREPARATION: • Sterile aspiration.
• Specimen must be transported to lab without delay to avoid clotting.
• Contamination with normal flora from skin, rectum, vaginal tract or other body surfaces must be avoided.

STORAGE REQUIREMENTS: Store at 2° - 8°C if testing will be delayed beyond 24 hours.

Revised: 3/30/2017
**TEST NAME:**  CULTURE, ROUTINE BRONCHIAL OR TRACHEAL ASPIRATES

**CPT CODE:**  87070

**SPECIMEN REQUIREMENT:**  Transtracheal aspiration or bronchoscopy specimen without preservation (2 mL preferred but any quantity will be acceptable) submitted in sterile transtracheal tube or sterile bronchoscopy tube.

**REFERENCE RANGE:**  No growth or normal respiratory flora.

**METHOD:**  Classical Culture.

**LAB SECTION PERFORMING TEST:**  Microbiology

**AVAILABILITY:**  No restriction.

**TURNAROUND TIME:**
- Preliminary reports are issued at 24 hours.
- Cultures with normal flora or no growth are reported after 48 hours; reports on specimens from which pathogens are isolated require at least 48 hours for completion.

**GENERAL USE OF TEST:**
- Diagnosis of respiratory infection.
- Isolation, identification and susceptibility testing of significant isolates.

**PATIENT PREPARATION:**  Standard preparation by physician.

**LIMITATIONS:**
- Susceptibility testing will be performed only if relevant.
- If anaerobes are suspected, please submit a transtracheal aspiration specimen using anaerobic transport tube. Transtracheal aspiration is the specimen of choice and the only specimen acceptable for anaerobic culture of the respiratory tract.
- Prior antimicrobial therapy can result in negative findings.

**SPECIMEN PREPARATION:**
- Specimen collected by physician.
- Specimen must be transported to the laboratory within 6 hours of collection if not refrigerated.
TEST NAME: CULTURE, ROUTINE
BRONCHIAL OR TRACHEAL ASPIRATES

STORAGE REQUIREMENTS:
Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – ROUTINE, CATHETER TIP

TEST NAME: CULTURE, ROUTINE CATHETER TIP

CPT CODE: 87070

SPECIMEN REQUIREMENT: Catheter tip segment, approximately 2 inches long, submitted in a sterile container. Foley catheter tips are not acceptable for culture.

REFERENCE RANGE: <15 colonies per inoculated culture plate.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No restriction.

TURNAROUND TIME:
- Culture plates read daily.
- Negative reported at 72 hours.

GENERAL USE OF TEST: Assess the microbiological status of the IV site and distinguish true infection from colonization in cases of potential line-related bacteremia.

PATIENT PREPARATION: Standard nursing prep for IV line.

LIMITATIONS: Contamination of the tip during removal can affect results.

STORAGE REQUIREMENTS: Transport to laboratory within 1 hour or refrigerate at 2° - 8°C.

Revised: 1/26/17
TEST NAME: CULTURE, ROUTINE CEREBROSPINAL FLUID (CSF)

CPT CODE: 87070 / 87205

SPECIMEN REQUIREMENT: Cerebrospinal fluid (2.0 mL preferred, but any quantity will be acceptable) submitted in sterile tube (disposable spinal tap tray is available from Central Service).

REFERENCE RANGE: No growth.

CRITICAL VALUE: Positive culture.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- No restrictions.
- Gram stain performed STAT in all cases.

TURNAROUND TIME:
- Stain: Available within 24 hours.
- Culture: Preliminary report issued at 24 hours; cultures with no growth are reported after 48 hours; reports of cultures from which pathogens are isolated require a minimum of 48 hours for completion.
- Positive gram stain / culture will be reported verbally immediately upon recognition.

GENERAL USE OF TEST:
- Determine bacterial agent of CNS infection.
- Gram stain, isolation, identification and susceptibility testing of bacteria from cerebrospinal fluid.

PATIENT PREPARATION: Standard preparation of the aspiration site by physician.

LIMITATIONS: Prior antimicrobial therapy can result in negative findings.

SPECIMEN PREPARATION:
- Specimen collected by physician.
- Specimen must be transported to the laboratory ASAP.
- Contamination with normal flora from skin or other body surfaces should be avoided.
- Specimen must not be refrigerated.
TEST NAME: CULTURE, ROUTINE CEREBROSPINAL FLUID (CSF)

STORAGE REQUIREMENTS:
Transport to the laboratory ASAP; do not refrigerate.

Revised: 3/30/2017
CULTURE – ROUTINE, GENITAL SITES

TEST NAME: CULTURE, ROUTINE, GENITAL SITES

CPT CODE: 87070

SPECIMEN REQUIREMENT: 1 swab or 1 mL fluid of genital area, prostatic secretions, etc., fluid aspiration, tissue any quantity submitted in:

FEMALE: Culturette swab
MALE: NP (Calgi) swab (available from Microbiology).

REFERENCE RANGE: No growth, normal vaginal flora, normal skin flora.

METHOD: Classical Culture, see limitations below.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No restrictions.

TURNAROUND TIME: • Preliminary report issued at 24 hours; cultures with no growth or with normal flora for the site are reported after 48 hours.
• Cultures from which pathogens are isolated require a minimum of 48 hours for completion.

GENERAL USE OF TEST:
• Determine bacterial agent of genital tract infection.
• Isolation, identification and susceptibility testing of significant isolates.
• Refer to Vaginosis Pathogens by DNA Probe for common causes of vaginosis.

PATIENT PREPARATION:
• FEMALE: Collect specimen while performing vaginal examination.
• MALE: Strip penis to express secretions, an NP swab should be used to collect specimen. For prostatic secretions, use gentle digital massage per rectum. Do not permit urination 2 hours prior to collection.

LIMITATIONS:
• Recommended test method for vaginosis is a graded Gram stain. Routine vaginal culture orders will be converted to Gram stain unless specific information is provided to justify the full culture. Results will be in standard graded form with vaginosis likelihood noted.
• Rapidly growing aerobic organisms that predominate may mask the presence or prevent the growth of slower growing pathogenic types. Susceptibility testing will be performed if relevant.
• Neisseria gonorrhoeae requires special handling.
TEST NAME: CULTURE, ROUTINE, GENITAL SITES

Please refer to the appropriate procedure in this guide. Anaerobic cultures on these specimens are not indicated unless specimen is obtained by needle aspiration of a thoroughly decontaminated closed site (abscess, cavity, etc.).

LIMITATIONS CONT:

- Prior antimicrobial therapy can result in negative findings.

SPECIMEN PREPARATION:

- Aseptic technique.
- Specimen must be transported to the laboratory within 6 hours of collection if not refrigerated.

STORAGE REQUIREMENTS:

Store at 2° - 8°C if testing will be delayed beyond 24 hours.

Revised: 3/30/2017
CULTURE – ROUTINE, MISCELLANEOUS SITES

TEST NAME: CULTURE, ROUTINE, MISCELLANEOUS SITES

CPT CODE: 87070

SPECIMEN REQUIREMENT: 2 mL or small piece of surgical tissue, biopsy material or swab submitted in a sterile 4 oz. plastic screw-top container or culturette. Moisten tissue sample with sterile saline.

REFERENCE RANGE: No growth or normal flora.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: • No restrictions.
• Tissue specimens that require grinding are processed day shift; Monday – Sunday.

TURNAROUND TIME: • Preliminary report issued at 24 hours; cultures with no growth or with normal flora are reported after 48 hours.
• Reports on specimens from which pathogens are isolated require a minimum of 48 hours for completion.

GENERAL USE OF TEST: • Determine bacterial agent of infection.
• Isolation, identification and susceptibility testing of significant isolates.

PATIENT PREPARATION: Sterile preparation of the aspiration or biopsy site by physician.

LIMITATIONS: • Only fast growing non-fastidious aerobic organisms are screened for and identified. Susceptibility testing will be performed, if relevant.
• If anaerobes are suspected, please submit properly collected specimen in anaerobic transport tube.
• Prior antimicrobial therapy can result in negative findings.

SPECIMEN PREPARATION: • Specimen must be transported to the laboratory within 6 hours of collection if not refrigerated.
• Contamination with normal flora from skin, rectum, vaginal tract or other body surfaces must be avoided.
TEST NAME: CULTURE, ROUTINE, MISCELLANEOUS SITES

SPECIMEN PREPARATION CONT:

- Tissue/biopsy material must be kept moist by the addition of sterile saline.

STORAGE REQUIREMENTS:

Store at 2° - 8°C if testing will be delayed beyond 24 hours.

Revised: 3/30/2017
# CULTURE – ROUTINE, PUS

<table>
<thead>
<tr>
<th>TEST NAME:</th>
<th>CULTURE, ROUTINE, PUS</th>
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</thead>
<tbody>
<tr>
<td>CPT CODE:</td>
<td>87070</td>
</tr>
<tr>
<td>SPECIMEN REQUIREMENT:</td>
<td>At least 0.5 mL steriley aspirated pus or exudate properly obtained from a wound site or abscess. Submit a sterile syringe without needle (preferred) or a culturette swab.</td>
</tr>
<tr>
<td>REFERENCE RANGE:</td>
<td>No growth or normal skin flora.</td>
</tr>
<tr>
<td>METHOD:</td>
<td>Classical Culture.</td>
</tr>
<tr>
<td>LAB SECTION PERFORMING TEST:</td>
<td>Microbiology</td>
</tr>
<tr>
<td>AVAILABILITY:</td>
<td>No restrictions.</td>
</tr>
</tbody>
</table>
| TURNAROUND TIME:        | • Preliminary report issued at 24 hours; cultures with no growth or with normal flora are reported after 48 hours.  
                          | • Reports on specimens from which pathogens are isolated require a minimum of 48 hours for completion. |
| GENERAL USE OF TEST:    | • Determine bacterial agent of infection.                  
                          | • Isolation, identification and susceptibility testing of significant isolates. |
| PATIENT PREPARATION:    | Sterile preparation of the aspiration site.               |
| LIMITATIONS:            | • Only fast growing non-fastidious aerobic organisms are screened for and identified. Susceptibility testing will be performed, if relevant.  
                          | • If anaerobes are suspected, please submit properly collected specimen in anaerobic transport tube.  
                          | • Prior antimicrobial therapy can result in negative findings. |
| SPECIMEN PREPARATION:   | • Specimen must be transported to the laboratory within 6 hours of collection if not refrigerated.  
                          | • Contamination with normal flora from skin, rectum, vaginal tract or other body surfaces must be avoided. |
| STORAGE REQUIREMENTS:   | Store at 2° - 8°C if testing will be delayed beyond 24 hours. |

Revised: 3/30/2017
TEST NAME: CULTURE, ROUTINE SPUTUM

CPT CODE: 87070

SPECIMEN REQUIREMENT:
• 2 mL (minimum) sputum, first morning preferred. However, any single random specimen may be submitted.
• Only one acceptable quality specimen per day for three consecutive days will be processed.
• Submit in sterile 4 oz. plastic container.

REFERENCE RANGE: Normal upper respiratory flora.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No restriction.

TURNAROUND TIME:
• Preliminary reports are issued at 24 hours.
• Cultures with no growth or normal flora are reported after 48 hours.
• Reports on specimens from which pathogens are isolated require at least 48 hours for completion.

GENERAL USE OF TEST:
• Diagnosis of bacterial respiratory infections.
• Identification and susceptibility testing of significant isolates.

PATIENT PREPARATION: The patient should be instructed to remove dentures, rinse mouth and gargle with water.

LIMITATIONS:
• All fast growing, non-fastidious aerobic organisms in quantities greater than “rare” will be identified. Susceptibility testing will be performed, if relevant.
• Specimens received on patients who are unable to produce sputum truly representing the lower respiratory tract.
• Prior antimicrobial therapy.

SPECIMEN PREPARATION:
• Patient should be instructed to cough deeply and expectorate sputum into container.
• Specimen must be transported to laboratory within 6 hours of collection if not refrigerated.
TEST NAME: CULTURE, ROUTINE SPUTUM

STORAGE REQUIREMENTS:
Store at 2° - 8°C until tested.

Revised: 3/30/2017
TEST NAME: CULTURE, ROUTINE STOOL FOR ENTERIC PATHOGENS

CPT CODE: 87045 (STLC)

SPECIMEN REQUIREMENT:
- 2 grams (or 2 mL) minimum fresh random stool best for Salmonella, swab of rectal mucosa is preferred for Shigella.
- Swab of stool is unacceptable.
- The laboratory will process up to 3 specimens per patient.
- Submit in a sterile 4 oz. screw cap container or culturette swab.

REFERENCE RANGE: Normal for Salmonella and Shigella.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Consult Pathologist and Infection Control for enteric pathogen request on patients with diarrheal onset >3 days post admission.

TURNAROUND TIME: Minimum 48 hours if negative.

GENERAL USE OF TEST:
- Diagnosis of bacteria enteritis.

LIMITATIONS:
- Specimen will be routinely screened for Salmonella and Shigella only.
- Specimens must be a minimum of 8 hours apart in collection.
- Campylobacter, hemorrhagic E. Coli (including a Shiga-Toxin Test) and Yersinia will be screened on bloody or diarrheal specimens and on physician request.
- Staph aureus and Candida albicans are screened on liquid specimens if an ordered gram stain of diarrheal stool shows a preponderance of these forms.
- Excessive delay in processing and prior antimicrobial therapy can result in negative findings.

SPECIMEN PREPARATION:
- Specimen must be less than 2 hours old if unrefrigerated and in a sterile screw cap container or culturette for rectal swab (swab of stool is unacceptable).
TEST NAME: CULTURE, ROUTINE STOOL FOR ENTERIC PATHOGENS

SPECIMEN PREPARATION CONT:
- Swab not acceptable for Campylobacter culture.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
CULTURE – ROUTINE THROAT

TEST NAME: CULTURE, ROUTINE THROAT

CPT CODE: 87060

SPECIMEN REQUIREMENT: Throat 1 swab; submitted in a sterile culturette.

REFERENCE RANGE: Normal throat flora.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No restrictions.

TURNAROUND TIME:
• Preliminary reports are issued at 24 hours.
• Cultures with no growth or normal flora are reported after 48 hours.
• Group A beta Strep may be detected at 24 or 48 hours.

GENERAL USE OF TEST:
• Diagnosis of carrier state of Group A beta Strep or pharyngitis.
• Isolation and identification of Group A beta hemolytic Strep. H. influenzae, C albicans and predominating quantities of other potential pathogens will be noted if present.
• Susceptibility testing is not routinely performed on any isolate.

LIMITATIONS:
• Presence or absence of normal throat flora will be reported.
• If isolation of N. gonorrhoeae is required, see Culture, Special for Neisseria gonorrhoeae.
• Prior antimicrobial therapy can result in negative findings.

SPECIMEN PREPARATION:
• Use a tongue depressor and, with the culturette swab, firmly swab both tonsillar areas and the posterior pharynx.
• Specimens must be transported to the laboratory within 6 hours of collection if not refrigerated.

STORAGE REQUIREMENTS: Store at 2° - 8°C if testing will be delayed beyond 24 hours.

Revised: 3/30/2017
TEST NAME: CULTURE, ROUTINE URINE

CPT CODE: 87086 (URNC)

SPECIMEN REQUIREMENT: 1 mL (minimum) urine submitted in a sterile 4 oz. urine container, OR 5 mL (minimum) urine in a sterile culture preservative tube.

REFERENCE RANGE: • No growth.
• Growth levels are subject to interpretation dependent upon actual level, number of bacterial types and mode of specimen required >100,000/cc of a single organism is generally significant.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No submission restriction.

TURNAROUND TIME: • Preliminary reports available at 24 hours.
• Cultures with no growth will be reported after 24 hours.
• Reports on specimens from which an organism has been isolated require 48 hours for completion.

GENERAL USE OF TEST: • Diagnosis of urinary tract infections.
• Quantitation, identification and susceptibility testing of significant aerobic bacterial isolates.
• Anaerobic culture will be performed on suprapubic puncture specimens only.

PATIENT PREPARATION: Contamination with skin flora must be avoided.

LIMITATIONS: • Anaerobic organisms will not be isolated.
• Workup of organisms is dependent on colony count, number and type of organisms in the specimen and the collection method.
• Prior antimicrobial therapy can result in negative findings.

SPECIMEN PREPARATION: • Deliver to the laboratory within 2 hours of collection if not refrigerated; within 24 hours of collection if refrigerated.
TEST NAME: CULTURE, ROUTINE URINE

SPECIMEN PREPARATION CONT:
- Clean catch, mid-void, catheterized and suprapubic puncture specimens are to be collected as per Nursing Procedure Manual.
- Collection method must be indicated on the requisition.

STORAGE REQUIREMENTS:
Store at 2°C - 8°C until tested 24 hours; 72 hours if in urine culture transport tube.

Revised: 3/30/2017
CULTURE – SPECIAL, MRSA

TEST NAME: CULTURE, SPECIAL MRSA

CPT CODE: 87081 (MRSC)

SPECIMEN REQUIREMENT: • Maximum of 3 sites for carrier screening.
• Material from suspected infection or colonization submitted in a sterile culturette for each site cultured.

REFERENCE RANGE: Negative for MRSA.

METHOD: Classical Culture

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: • No restrictions on collection or processing.
• Please note limitations below.

TURNAROUND TIME: • Final report available in 24 hours.

GENERAL USE OF TEST: Isolation, identification, MIC susceptibility confirmation, (first time isolates only) of the presence of methicillin resistant Staphylococcus aureus.

PATIENT PREPARATION: Avoid contamination from surrounding tissue.

LIMITATIONS: • Cultures will be screened for MRSA only. No other pathogens will be reported.
• Cultures for MRSA screening should only be ordered in conjunction with Infection Control guidelines for nosocomial control of this organism.

SPECIMEN PREPARATION: • Collect swab of pus or drainage.
• Other routine screening site, rectal.
• Submit specimens to laboratory within 6 hours of collection if unrefrigerated.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

NOTE: See MRSA Screen by PCR for Nares specimens.
CULTURE – SPECIAL, FOR NEISSERIA GONORRHOEAE ONLY (2 Pages)

TEST NAME: CULTURE, SPECIAL FOR NEISSERIA GONORRHOEAE ONLY

CPT CODE: 87081

SPECIMEN REQUIREMENT:
- 0.5 mL or 1 swab body fluid, discharge, pus, genital tract, eye, throat, rectal, etc., inoculated at bedside directly into Thayer-Martin plate.
- Thayer-Martin (JEMBEC) plate placed in plastic bag with CO₂ generating tablet (provided by the Microbiology Department).

REFERENCE RANGE: No Neisseria gonorrhoeae isolated.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No restrictions.

TURNAROUND TIME:
- Preliminary reports available at 24 hours.
- Cultures with no growth will be reported at 48 hours.
- Cultures from which N. gonorrhoeae is isolated require a minimum of 48 hours for completion.

GENERAL USE OF TEST:
- Isolation and identification of N. gonorrhoeae.
- Isolates are tested for beta lactamase production.
- Additional susceptibility testing as appropriate.

PATIENT PREPARATION: Sterile preparation or cleansing of the pertinent site.

LIMITATIONS:
- Screening only for N. gonorrhoeae. No other organisms will be identified.
- Overgrowth by Proteus and yeast may make it impossible to rule out G.C.

SPECIMEN PREPARATION:
- Swab or aspiration of infected site.
- Direct inoculation to culture media is required.
TEST NAME: CULTURE, SPECIAL FOR NEISSERIA GONORRHOEAE ONLY

STORAGE REQUIREMENTS:

- Hand carry to laboratory immediately after collection.
- Do not refrigerate.

Revised: 3/30/2017
CULTURE – SPECIAL, THROAT FOR BETA HEMOLYTIC STREPTOCOCCI (GROUP A)

TEST NAME: CULTURE, SPECIAL, THROAT FOR BETA HEMOLYTIC STREPTOCOCCI (Group A)

CPT CODE: 87081

SPECIMEN REQUIREMENT: 1 swab, throat, submitted in a sterile culturette.

REFERENCE RANGE: Negative for beta hemolytic streptococci.

METHOD: Classical Culture.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: No restrictions.

TURNAROUND TIME:
- Preliminary reports available at 24 hours.
- Cultures with no beta streptococci will be reported after 48 hours.
- Reports on specimens from which beta streptococci Group A has been isolated may require 48 hours for completion.

GENERAL USE OF TEST:
- Rule out beta streptococci Group A as a causative agent of pharyngitis.
- Isolation and presumptive identification of Group A beta hemolytic streptococci.

LIMITATIONS:
- Culture will be screened for beta streptococci Group A only.
- Recent use of antibacterial mouth wash.

SPECIMEN PREPARATION:
- Use a tongue depressor and, with the culturette swab, firmly swab both tonsillar areas and the posterior pharynx.
- The specimen must be transported to the laboratory within 6 hours of collection if not refrigerated.

STORAGE REQUIREMENTS: Store at 2° - 8°C if testing will be delayed beyond 24 hours.

Revised: 3/30/2017
**TEST NAME:** CULTURE, SPECIAL, VAGINAL/RECTAL FOR BETA STREP

**CPT CODE:** 87081

**SPECIMEN REQUIREMENT:** Moist swabs of vaginal and rectal sites submitted together.

**REFERENCE RANGE:** Negative for Group B beta streptococcus agalactiae Jero Group B.

**METHOD:** CDC recommended guidelines followed.

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:** No restrictions.

**TURNAROUND TIME:**
- Preliminary reports available at 48 hours.
- 48 hours for negative culture.
- Additional time may be required to test suspect colonies.

**GENERAL USE OF TEST:** Monitor carrier state of child-bearing females for Group B beta strep.

**LIMITATIONS:** Culture will be screened for Group B beta strep only.

**SPECIMEN PREPARATION:** The specimen must be transported to the laboratory within 6 hours of collection if not refrigerated.

**STORAGE REQUIREMENTS:** Store at 2° - 8°C if testing will be delayed beyond 24 hours.

Revised: 3/30/2017
CULTURE – SPECIAL, VRE

TEST NAME: CULTURE, SPECIAL VRE

CPT CODE: 87081

SPECIMEN REQUIREMENT: Material from suspected infection or colonization submitted in a sterile culturette.

REFERENCE RANGE: Negative for VRE.

METHOD: Classical Culture (Selective Chromogenic Agar)

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- No restrictions on collection or processing.
- Please note limitations below.

TURNAROUND TIME:
- Preliminary reports available at 24 hours.
- Cultures negative for VRE will be reported at 48 hours.
- Cultures reported as “Preliminary VRE” will take 24 hours or more for confirmation.

GENERAL USE OF TEST: Isolation, identification, MIC susceptibility confirmation, (first time isolates only) of the presence of vancomycin resistant enterococci.

PATIENT PREPARATION: Avoid contamination from surrounding tissue.

LIMITATIONS:
- Cultures will be screened for VRE only; no other pathogens will be reported.
- Cultures for VRE screening should only be ordered in conjunction with infection control guidelines for nosocomial control of this organism.

SPECIMEN PREPARATION:
- Collect swab of pus or drainage.
- Routine screening site: rectal.
- Submit specimens to laboratory within 6 hours of collection if not refrigerated.

STORAGE REQUIREMENTS:
- Store at 2° - 8°C until tested.

Revised: 3/30/2017
<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>CYST FLUID, NON-GYNECOLOGIC CYTOLOGY: BREAST, OVARIAN, RENAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>88108</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>Fresh fluid with equal volume of 50% ethyl alcohol and refrigerate.</td>
</tr>
<tr>
<td><strong>COLLECTION REQUIREMENT:</strong></td>
<td>10 mL of fluid.</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>Negative for malignant cells.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Modified Papanicolaou</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Cytology</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Monday – Friday, 0800 to 1630</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>24 – 48 hours</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>To establish the presence of primary or metastatic neoplasm.</td>
</tr>
<tr>
<td><strong>STORAGE REQUIREMENTS:</strong></td>
<td>Refrigerate</td>
</tr>
</tbody>
</table>

Revised: 3/30/2017
CYTOMEGALOVIRUS IgG

TEST NAME: CYTOMEGALOVIRUS IgG

CPT CODE: 86644 (CMV)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: No antibody detected.

METHOD: Indirect chemiluminescent immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday – Saturday.

TURNAROUND TIME: Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

LIMITATIONS: Do not use grossly hemolyzed, icteric, or lipemic specimens.

GENERAL USE OF TEST: Determine serological status to CMV.

SPECIMEN PREPARATION:
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Store specimens at 2° - 8°C up to 2 days.
- Freeze at -20°C for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
**D-DIMER**

**TEST NAME:** D-DIMER

**CPT CODE:** 85379 (DIME)

**SPECIMEN REQUIREMENT:** Plasma from one full blue top tube (sodium citrate).

**REFERENCE RANGE:** <250 ng/mL DDU.

**METHOD:** High sensitivity latex agglutination.

**LAB SECTION PERFORMING TEST:** Hematology

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**
- Same shift testing.
- STAT specimens will be reported within 60 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:** Elevated levels are seen in conditions such as pulmonary embolism and deep vein thrombosis.

**STORAGE REQUIREMENTS:** Decanted plasma stored at 2°C - 8°C for up to 24 hours or at -20°C for 2 months.

Revised: 3/30/2017
DIGOXIN (LANOXIN)

**TEST NAME:** DIGOXIN (LANOXIN)

**CPT CODE:** 80162 (DIG)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST) or 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

**REFERENCE RANGE:** 0.8 – 2.0 ng/mL

**CRITICAL VALUE:** >3.0 ng/mL

**METHOD:** Loci Chemiluminescent Immunoassay

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**
- Same shift testing.
- STAT specimens will be reported within 30 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:** Diagnosis of digoxin toxicity or insufficient dosage.

**PATIENT PREPARATION:** Specimen should be drawn between 6 – 8 hours after last oral dose.

**LIMITATIONS:** Specimen collected from patient on Dig-A-Bind. Patients who have been regularly exposed.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection, and are stable for 8 hrs at 20°-25°C, 7 days at 2°-8°C, or frozen at -20°C or colder for 6 months.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -15°C to -20°C for extended storage prior to analysis.
- Samples will be capped and held for 5 days after testing.
DIRECT ANTIGLOBULIN (DIRECT COOMBS) TEST

TEST NAME: DIRECT ANTIGLOBULIN (Direct Coombs) TEST

CPT CODE: 86880 (DAT)

SPECIMEN REQUIREMENT: EDTA vacutainer tube

COLLECTION REQUIREMENT: Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood sample.

REFERENCE RANGE: Negative

CRITICAL VALUE: Positive test detected on cord blood or recently transfused patient.

METHOD: Agglutination using polyspecific antihuman globulin and/or anti-IgG and anti-C3 monospecific reagents.

LAB SECTION PERFORMING TEST: Blood Bank

AVAILABILITY: Daily or STAT

TURNAROUND TIME:
- Routine: 24 hours
- STAT: 15 minutes

GENERAL USE OF TEST:
- For the detection of antibody bound in vivo to the patient’s red cells.
- An eluate and/or antibody identification techniques may be required to find the source of a positive direct antiglobulin test.

STORAGE REQUIREMENTS: Room temperature or at 1°C - 8°C.

Revised: 3/30/2017
TEST NAME: DRUGS OF ABUSE IN URINE (Medical Evaluation Only)

Urine Screen (Qualitative) for:

Lowest Detectable Concentrations

- PCP  Phencyclidine  25 ng/mL
- BZO  Benzodiazepines  200 ng/mL
- COC  Cocaine  300 ng/mL
- AMP  Amphetamines  1000 ng/mL
- THC  Tetrahydrocannabinol  50 ng/mL
- OPI  Opiates  300 ng/mL
- BAR  Barbiturates  200 ng/mL
- MTHD  Methadone  300 ng/mL
- XTSE  Ecstasy  300 ng/mL

CPT CODE: 80100 (DOA)

SPECIMEN REQUIREMENT: 10 mL of freshly voided urine.

REFERENCE RANGE: Negative

METHOD: Immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY:
- Daily
- Use of this test is limited to emergency medical evaluations of inpatients and ECC patients, and patients from MHU and the Adolescent Mental Health Unit.

TURNAROUND TIME:
- Same shift testing.
- STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST:
This test provides only a preliminary test result for the qualitative detection of the major metabolites of the noted drugs of abuse stated above.

NOTE: A more specific alternate chemical method must be used in order to obtain a confirmed quantitative result.

LIMITATIONS:
- Additional substances in the urine sample may interfere with the test and cause erroneous results.
- Adulterants, such as bleach or other strong oxidizing agents, added to the sample may also produce erroneous results.
TEST NAME: DRUGS OF ABUSE IN URINE
(Medical Evaluation Only)
Refrigerate at 2°C - 8°C for up to a week.

Revised: 3/30/2017
ELECTROLYTES, BLOOD

TEST NAME: ELECTROLYTES, BLOOD
(Sodium, Potassium, Chloride & Carbon Dioxide)

CPT CODE: 80051 (LYTE)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube OR
0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE:
- Na: 136 – 143 mmol/L
- K: 3.4 – 5.2 mmol/L
- Cl: 97 – 112 mmol/L
- CO2: 22 – 31 mmol/L
- AGAP: 4 – 12

CRITICAL VALUES:
- Na = <120 or >160 mmol/L
- K = <2.8 or >6.0 mmol/L
- CO2 = <10 or >40 mmol/L
- Cl = <10 or >40 mmol/L

METHOD: Ion Selective Indirect Potentiometric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME:
- Same shift testing.
- STAT specimens will be resulted within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Electrolyte balance

LIMITATIONS:
- Hemolyzed specimens elevate potassium levels.
- Lipemic specimens can cause pseudonaturemia.

SPECIMEN PREPARATION:
- Collect specimens using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 48 hours. Freeze at -15°C to -20°C for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
TEST NAME: ELECTROLYTES, URINE (Sodium and Potassium only)

CPT CODE: 84300 (NaU or S024)
84133 (KU or K24)

SPECIMEN REQUIREMENT: 2 mL of a random urine specimen or the total 24-hour urine collection with no preservative in a plastic container obtained from the laboratory.

REFERENCE RANGE: Na: 40 – 220 mmol/24 hr.
K: 25 – 120 mmol/24 hr.

METHOD: Ion Selective Indirect Potentiometric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: • Daily
• Random urine has STAT capability.

TURNAROUND TIME: • Same shift testing.
• STAT specimens will be resulted within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Renal function.

SPECIMEN PREPARATION: • No preservatives necessary.
• Refrigerate during collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C for up to a week.

Revised: 3/30/2017
Eosinophil Count

**Test Name:**
EOSINOPHIL COUNT

**CPT Code:**
85999 (EOCT)

**Specimen Requirement:**
3 mL lavender top tube (EDTA), minimum of 1 mL required.

**Reference Range:**
0.0 – 0.4 K/uL

**Method:**
Fluorescence

**Lab Section Performing Test:**
Hematology

**Availability:**
Daily

**Turnaround Time:**
Same shift testing.

**General Use of Test:**
Absolute eosinophil count for investigation of allergic or parasitic worms.

**Storage Requirements:**
Samples must be analyzed within 24 hours of collection when stored at room temperature or within 48 hours when stored at 2° - 8°C.

Revised: 3/30/2017
EOSINOPHIL SMEARS (URINE ONLY)

TEST NAME: EOSINOPHIL SMEARS (Urine Only)

CPT CODE: 89190 (SEOS)

SPECIMEN REQUIREMENT: Freshly voided urine specimen, collected following the urine clean catch procedure.

REFERENCE RANGE: Occasional eosinophil observed.

METHOD: Microscopic examination of modified Wright’s Giemsa stained smears.

LAB SECTION PERFORMING TEST: Hematology

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Investigation of allergic disorders.

Revised: 3/30/2017
**TEST NAME:** ESTRADIOL

**CPT CODE:** 82670 (E2)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

**REFERENCE RANGE:**

*Menstruating Females (by day in cycle relative to LH peak)*
- Follicular phase: 21.4 – 164.8 pg/mL
- Mid-cycle phase: 49.9 – 367.2 pg/mL
- Luteal phase: 40.2 – 259.0 pg/mL

*Post-menopausal Females*
- On Menopausal Hormone Therapy: <11 – 462.1 pg/mL
- Untreated: <11 – 58.3 pg/mL

*Males*
<11 – 52.5 pg/mL

**METHOD:** Loci Chemiluminescent Immunoassay

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**
- Same shift testing.
- STAT specimens will be reported within 60 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:** Used to assess gonadal dysfunction including delayed puberty, amenorrhea and menopause.

**LIMITATIONS:** Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze specimen at -20°C or colder if analysis is delayed.
- Samples will be capped and held for 5 days after testing.
TEST NAME: ETHANOL (Medical Evaluation Only)

CPT CODE: 82055 (ETOH)

SPECIMEN REQUIREMENT: 0.5 mL plasma from a lithium heparin tube OR 0.5 mL serum from a 3 mL (SST). Use nonalcohol germicidal solution to cleanse the skin.

REFERENCE RANGE: None detected.

CRITICAL VALUE: >450 mg/dL

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY:
- Daily, ED and inpatient use only.
- Has STAT capability.

TURNAROUND TIME:
- Same shift testing.
- STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Quantitative measurement of ethanol.

LIMITATIONS: None

PATIENT PREPARATION: Venipuncture: Do not use alcohol prep or any other volatile disinfectants to cleanse draw site.

SPECIMEN PREPARATION:
- Deliver tightly stopped tube to laboratory.
- Centrifuge specimens; remove serum/plasma from cells within 2 hours of collection. Store refrigerated until assayed.
- Assay immediately after opening the sample tube.

STORAGE REQUIREMENTS: Samples will be capped and held for 3 days after testing.

Revised: 3/30/2017
FECAL IMMUNOCHEMICAL TEST

TEST NAME: FECAL IMMUNOCHEMICAL TEST

CPT CODE: 82274

SPECIMEN REQUIREMENT: • Stool placed on special collection cards for this test.

REFERENCE RANGE: Negative

METHOD: Immunochromatography

LAB SECTION PERFORMING TEST: Urinalysis

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: A positive result may indicate colorectal cancer, adenomas and other conditions that may cause bleeding in the lower gastrointestinal tract.

PATIENT PREPARATION: No specific patient preparation is necessary.

LIMITATIONS: Polyps may bleed intermittently or not at all. Even when blood is present, it may not be present uniformly. Therefore a negative test does not rule out the possibility of lower gastro-intestinal disease.
FIT result should not be considered to be a diagnostic test for the presence or absence of a disease.
FIT is not sensitive to upper gastro-intestinal bleeding and should not be used to detect blood in the upper gastro-intestinal tract.
FIT should not be used to test urine, gastric specimens, or other body fluids.
The American Cancer Society cautions that a fecal immunochemical test (FIT) done during digital rectal exam is not adequate for screening. For a FIT used as a screening test, the take home multiple sample method should be used.

SPECIMEN PREPARATION & STORAGE REQUIREMENTS: Specimen must be labeled with patient’s full name, room, number, date, medical record, and date time of collection, and initials of collection personnel.
Stool samples collected on Beckman Coulter FIT collection cards are stable for up to 14 days at room temperature.

Revised: 3/30/2017
# FECAL REDUCING SUBSTANCES

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>FECAL REDUCING SUBSTANCES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>81099 (SRED)</td>
</tr>
</tbody>
</table>
| **SPECIMEN REQUIREMENT:** | - 5 mL random fresh stool in a plastic screw top container.  
- Transport to the laboratory immediately after collection. |
| **REFERENCE RANGE:** | ¼% or less is considered normal. |
| **METHOD:** | Benedict’s copper reduction reaction. |
| **LAB SECTION PERFORMING TEST:** | Urinalysis |
| **AVAILABILITY:** | Daily |
| **TURNAROUND TIME:** | Same shift testing. |
| **GENERAL USE OF TEST:** | Detection of an increase in stool sugars in newborns and infants who are fed on milk formulas or milk substitutes and have a tendency to develop necrotizing enterocolitis. |
| **STORAGE REQUIREMENTS:** | Refrigerate |

Revised: 3/30/2017
**FECAL WBC**

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>FECAL WBC (Analysis for)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>87205 (SWBC)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>3 mL of fresh random stool specimen in a plastic screw top container.</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>No WBCs observed.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Microscopic examination of modified Wright's Giemsa stained smears.</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Urinalysis</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>Same shift testing.</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>Differential diagnosis of diarrheal conditions.</td>
</tr>
<tr>
<td><strong>STORAGE REQUIREMENTS:</strong></td>
<td>Refrigerate</td>
</tr>
</tbody>
</table>

Revised: 3/30/2017
FERRITIN

TEST NAME: FERRITIN

CPT CODE: 82728 (FERR)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL from a 3 mL green top tube (heparin).

REFERENCE RANGE: Male: 24 – 336 ng/mL  
Female: 11 – 307 ng/mL

METHOD: Chemiluminescence

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: • Depletion of iron stores (anemia).  
• Also aids in diagnosis of diseases affecting iron metabolism (hemochromatosis).

LIMITATIONS: • Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.  
• Serum ferritin values are elevated in the presence of inflammation, significant tissue destruction, liver disease, malignancies such as Hodgkin's disease and therapy with iron supplements.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.  
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection. Separated specimens stable up to 8 hrs at room temperature.

STORAGE REQUIREMENTS: • Refrigerate serum at 2° - 8°C up to 48 hours.  
• Freeze at -20°C or colder for prolonged storage prior to analysis.  
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
### Fetal Bleed Screen

<table>
<thead>
<tr>
<th><strong>Test Name:</strong></th>
<th>Fetal Bleed Screen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT Code:</strong></td>
<td>85461</td>
</tr>
<tr>
<td><strong>Specimen Requirement:</strong></td>
<td>EDTA vacutainer tube</td>
</tr>
<tr>
<td><strong>Collection Requirement:</strong></td>
<td>Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood sample.</td>
</tr>
<tr>
<td><strong>Reference Range:</strong></td>
<td>Two or fewer rosettes per 5 low-power fields.</td>
</tr>
<tr>
<td><strong>Method:</strong></td>
<td>Immune rosetting</td>
</tr>
<tr>
<td><strong>Lab Section Performing Test:</strong></td>
<td>Blood Bank</td>
</tr>
<tr>
<td><strong>Availability:</strong></td>
<td>Daily (7:00 AM – 3:00 PM)</td>
</tr>
<tr>
<td><strong>Turnaround Time:</strong></td>
<td>24 hours</td>
</tr>
<tr>
<td><strong>General Use of Test:</strong></td>
<td>Variable amounts of fetal blood enter the maternal circulation at time of delivery. In order to assure that a sufficient dose of Rh immune globulin is administered to D negative mothers who deliver D positive babies, this screening test is performed.</td>
</tr>
<tr>
<td><strong>Limitations:</strong></td>
<td></td>
</tr>
</tbody>
</table>
  - This test can be performed ONLY on Rh negative women.  
  - Results from Weak D positive women will be falsely positive.  
  - A positive screening test needs to be followed up with a Kleihauer-Betke test to determine the amount of Rh immune globulin to be administered. |
| **Storage Requirements:** | Room temperature or 1° - 8°C. |

Revised: 3/30/2017
## Fetal Fibronectin

**Test Name:** Fetal Fibronectin  
**CPT Code:** 82731 (FFIB)  
**Specimen Requirement:** Specimen collected from the posterior fornix of the vagina using the Adeza Biomedical Specimen Collection Kit.  
**Reference Range:** N/A  
**Method:** Lateral flow, solid phase immunochromatographic assay.  
**Lab Section Performing Test:** Hematology  
**Availability:** Daily or STAT  
**Turnaround Time:** Same shift of collection or 30 minutes if STAT.  
**General Use of Test:** Detection of fetal fibronectin as an aid in assessing the risk of pre-term delivery.  
**Specimen Collection:** After collection, submerge the tip of the applicator swab in the tube of buffer, break the shaft even with the top of the tube, cap and push down tightly to secure the top.  
**Limitations:**  
- Grossly bloody samples will be rejected.  
- A positive result may be observed for patients with cervical disruptions caused by, but not limited to, events such as sexual intercourse, digital cervical examination or vaginal probe ultrasound.  
- Results of this test should be used in conjunction with information from the clinical evaluation and other diagnostic procedures.  
**Storage Requirements:** If not tested within 8 hours, refrigerate at 2° - 8°C within 3 days of collection or frozen with 3 months of collection.

Revised: 3/30/2017
FETAL HEMOGLOBIN TEST

TEST NAME: FETAL HEMOGLOBIN TEST (Kleihauer-Betke)

CPT CODE: 85460

SPECIMEN REQUIREMENT: EDTA vacutainer tube

COLLECTION REQUIREMENT: Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood sample on tube label.

REFERENCE RANGE: Normal adult blood contains less than 1.0% fetal hemoglobin.

CRITICAL VALUE: Ratio of fetal/adult cells is over 0.0045.

METHOD: Semi-quantitative determination of fetal hemoglobin in blood smears.

LAB SECTION PERFORMING TEST: Blood Bank

AVAILABILITY: Weekdays (7:00 AM to 1:00 PM)

TURNAROUND TIME: 3 hours

GENERAL USE OF TEST:
- Identification and enumeration of fetal cells in the maternal circulation.
- To determine the correct dosage of Rh immune globulin to be administered.

LIMITATIONS: The blood sample must be less than 24 hours old at the time of testing.

STORAGE REQUIREMENTS: Room temperature or at 1° - 8°C.

Revised: 3/30/2017
FIBERS, STOOL

TEST NAME: FIBERS, STOOL

CPT CODE: 89160 (SFIB)

SPECIMEN REQUIREMENT: 3 mL of fresh random stool specimen in a plastic screw top container.

REFERENCE RANGE: Excretion of large numbers of undigested meat fibers is abnormal.

METHOD: Microscopic examination of unstained smears.

LAB SECTION PERFORMING TEST: Urinalysis

AVAILABILITY: Daily

TURNAROUND TIME: 24 hours

GENERAL USE OF TEST: Screening for malabsorption syndrome.

PATIENT PREPARATION:
- Patient is required to eat adequate amounts of red meat for 24 – 72 hours before testing.
- No barium procedures or laxatives for one week prior to collection of the specimen.

Revised: 3/30/2017
FIBRINOGEN

TEST NAME: FIBRINOGEN

CPT CODE: 85384 (FIBR)

SPECIMEN REQUIREMENT: Plasma from one full blue top tube (sodium citrate).

REFERENCE RANGE: Reference range listed on report

CRITICAL VALUE: <100 mg/dL or >650 mg/dL

METHOD: Electromagnetic mechanical clot detection system

LAB SECTION PERFORMING TEST: Hematology

AVAILABILITY: Daily or STAT

TURNAROUND TIME: 30 minutes

GENERAL USE OF TEST:
- Fibrinogen is an acute phase reactant as well as the focal point in the coagulation process.
- Consumption of fibrinogen is a major and clinically threatening aspect of disseminated intravascular coagulation.

LIMITATIONS:
- Hemolysis or clotted specimens.
- Incomplete filling of vacutainer tube.

SPECIMEN PREPARATION:
- Mix immediately after drawing.
- Centrifuge at 2500g for 10 minutes.

STORAGE REQUIREMENTS: Plasma is stable for 4 hours at room temperature or at 2° - 8°C, and for 2 weeks at -20°C.

Revised: 3/30/2017
FINE NEEDLE ASPIRATION, DEEP TISSUE

TEST NAME:  
FINE NEEDLE ASPIRATION, DEEP TISSUE  
(Lung, Kidney, Pancreas, Liver, Etc.)

CPT CODE:  
88173 – Interpretation and report  
88172 – Immediate study to determine specimen adequacy

SPECIMEN REQUIREMENT:  
Needle aspirate, entire specimen.

COLLECTION REQUIREMENT:  
• Place small amount of aspirated specimen on end of glass slide(s).  
• Use a second glass slide to smear material and immediately fix in 95% alcohol.  
• Send up six (6) slides (optimum).  
• Place remaining material in 10% NBF.  
• When a STAT evaluation of specimen adequacy is required, notify the laboratory in advance of specimen collection.

REFERENCE RANGE:  
Negative for malignant cells.

METHOD:  
Modified Papanicolaou

LAB SECTION PERFORMING TEST:  
Cytology

AVAILABILITY:  
Monday through Friday (0800 to 1630).

TURNAROUND TIME:  
One to two working days.

GENERAL USE OF TEST:  
To establish the presence of primary or metastatic neoplasm.

LIMITATIONS:  
Inadequate specimens.

STORAGE REQUIREMENTS:  
Deliver immediately to Cytology Laboratory.

Revised: 3/30/2017
FINE NEEDLE ASPIRATION, SUPERFICIAL TISSUE

TEST NAME: FINE NEEDLE ASPIRATION, SUPERFICIAL TISSUE (Breast, Thyroid, Prostate, Etc.)

CPT CODE: 88173 – Interpretation and report

SPECIMEN REQUIREMENT: Needle aspirate, entire specimen.

COLLECTION REQUIREMENT:
- Place small amount of aspirated specimen on end of glass slide(s).
- Use a second glass slide to smear material and immediately fix in 95% alcohol.
- Send up six (6) slides (optimum).
- Place remaining material in CytoLyt.
- When a STAT evaluation of specimen adequacy is required, notify the laboratory in advance of specimen collection.

REFERENCE RANGE: Negative for malignant cells.

METHOD: Modified Papanicolaou

LAB SECTION PERFORMING TEST: Cytology

AVAILABILITY:
- Monday through Friday (0800 to 1630).
- STAT evaluations must be scheduled.

TURNAROUND TIME: One to two working days.

GENERAL USE OF TEST: To establish the presence of primary or metastatic neoplasm.

STORAGE REQUIREMENTS: Deliver immediately to Cytology Laboratory.

Revised: 3/30/2017
FOLIC ACID

TEST NAME: FOLIC ACID

CPT CODE: 82746

SPECIMEN REQUIREMENT: 1 mL serum from 3 mL tiger top tube (SST).

REFERENCE RANGE:
- Deficient: <3.4 ng/mL
- Indeterminate: 3.4 – 5.4 ng/mL
- Normal: >5.4 ng/mL

METHOD: Chemiluminescent immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Folate is an essential vitamin vital to cell growth and DNA synthesis. Folate deficiency can lead to megaloblastic anemia followed by severe neurological problems.

PATIENT PREPARATION: Fasting preferred.

LIMITATIONS:
- Patient’s true folate status may be masked by whole blood transfusions.
- Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

INTERFERENCE: Hemolysis can significantly increase folate values.

SPECIMEN PREPARATION: Centrifuge and separate serum/plasma from cells immediately after collection. Separated specimens stable up to 8 hrs at room temperature.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 8 hours.
- Freeze at -20°C for prolonged storage up to 30 days prior to analysis.

Revised: 3/30/2017
# FOLLICLE STIMULATING HORMONE

<table>
<thead>
<tr>
<th>TEST NAME:</th>
<th>FOLLICLE STIMULATING HORMONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPT CODE:</td>
<td>83001 (FSH)</td>
</tr>
<tr>
<td>SPECIMEN REQUIREMENT:</td>
<td>0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).</td>
</tr>
<tr>
<td>REFERENCE RANGE:</td>
<td>FSH (mIU/mL)</td>
</tr>
<tr>
<td>Adult Male:</td>
<td>0.7 – 10.8 mIU/mL</td>
</tr>
<tr>
<td>Adult Female:</td>
<td></td>
</tr>
<tr>
<td>Mid-Follicular</td>
<td>2.3 – 12.6 mIU/mL</td>
</tr>
<tr>
<td>Mid-Luteal</td>
<td>1.7 – 9.5 mIU/mL</td>
</tr>
<tr>
<td>Mid-Cycle Peak</td>
<td>5.2 – 17.5 mIU/mL</td>
</tr>
<tr>
<td>Post Menopausal</td>
<td>12.7 – 132.2 mIU/mL</td>
</tr>
<tr>
<td>On Menopausal Hormone Therapy:</td>
<td>5.9 – 72.8 mIU/mL</td>
</tr>
<tr>
<td>METHOD:</td>
<td>Loci Chemiluminescent Immunoassay.</td>
</tr>
<tr>
<td>LAB SECTION PERFORMING TEST:</td>
<td>Chemistry</td>
</tr>
<tr>
<td>AVAILABILITY:</td>
<td>Daily</td>
</tr>
<tr>
<td>TURNAROUND TIME:</td>
<td>Same shift testing</td>
</tr>
<tr>
<td>GENERAL USE OF TEST:</td>
<td>Assessment of pituitary function and to distinguish between primary and secondary gonadal failure.</td>
</tr>
<tr>
<td>LIMITATIONS:</td>
<td>• FSH values vary widely during the different phases of the normal female menstrual cycle.</td>
</tr>
<tr>
<td></td>
<td>• Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.</td>
</tr>
<tr>
<td>SPECIMEN PREPARATION:</td>
<td>• Collect specimen using standard lab procedures.</td>
</tr>
<tr>
<td></td>
<td>• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.</td>
</tr>
<tr>
<td>STORAGE REQUIREMENTS:</td>
<td>• Refrigerate at 2°C - 8°C up to 48 hours.</td>
</tr>
<tr>
<td></td>
<td>• Freeze separated serum at −20°C or colder if analysis is delayed beyond 48 hours.</td>
</tr>
<tr>
<td><strong>TEST NAME:</strong></td>
<td>FRESH FROZEN PLASMA (FFP)</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>P9017</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>EDTA vacutainer tube if blood type is not on file.</td>
</tr>
<tr>
<td><strong>COLLECTION REQUIREMENT:</strong></td>
<td>Two unique patient identifiers, date of specimen collection and initials of individual collecting the blood sample.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Thawing is performed using a 37°C waterbath.</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Blood Bank</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>STAT on all 3 shifts (call Blood Bank with urgency at ext. 7404).</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>45 minutes</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>For the treatment of coagulation deficiencies or to replace depleted coagulation factors.</td>
</tr>
<tr>
<td><strong>PATIENT PREPARATION:</strong></td>
<td>Refer to Transfusion Therapy Protocol.</td>
</tr>
</tbody>
</table>
| **LIMITATIONS:** | • Fresh frozen plasma is administered as ABO compatible without regard to Rh type.  
• Fresh frozen plasma is good for only 24 hours after thawing. If not used, the product must be discarded (wasted). |

Revised: 3/30/2017
# FROZEN TISSUE SECTION: RAPID SCREEN FOR MALIGNANCY

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>FROZEN TISSUE SECTION: RAPID SCREEN FOR MALIGNANCY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>88331, 88332 (CPT codes vary based upon testing performed.)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>Fresh tissue (excluding bone and calcified tissue).</td>
</tr>
</tbody>
</table>
| **COLLECTION REQUIREMENT:** | • Operative diagnosis and source must be provided.  
• If an infectious disease is suspected, a warning must be stated on the requisition and specimen label. |
| **REFERENCE RANGE:** | Results interpreted by consulting Pathologist. |
| **METHOD:** | Cryotomy, Microscopy |
| **LAB SECTION PERFORMING TEST:** | Histology |
| **AVAILABILITY:** | • Monday through Friday; 0800 to 1630.  
• Other times, schedule with pathologist on call 3 hours prior to procedure. |
| **TURNAROUND TIME:** | Approximately 20 minutes. |
| **GENERAL USE OF TEST:** | Provisional histologic diagnosis and aid to surgical therapy. |
| **LIMITATIONS:** | Occasional false negative result. |

Revised: 6/20/2017
GAMMA GLUTAMYL TRANSPEPTIDASE

TEST NAME: GAMMA GLUTAMYL TRANSPEPTIDASE

CPT CODE: 82977 (GGT)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE:
- Male: 15 – 85 U/L
- Female: 5 – 55 U/L

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Liver function.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENT:
- Refrigerate at 2°C - 8°C up to 48 hours.
- Freeze at -15°C to -20°C for extended storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
TEST NAME: GASTRIC UREASE SCREEN FOR HELICOBACTER PYLORI

CPT CODE: 87072

SPECIMEN REQUIREMENT: Gastric biopsy sample consisting of 1-3 mm tissue.

COLLECTION REQUIREMENT:
- Physician obtains gastric biopsy sample.
- Specimen is removed aseptically from biopsy forceps and inserted fully into the Pylo-Plus slide.
- Note:
  - For in-house procedures, call the Microbiology Lab prior to the start of the procedure. A tech will come to the endoscopy unit to inoculate and transport the specimen to the laboratory.
  - For surgical center procedures, nursing staff will set up procedure and arrange transport to the laboratory.

REFERENCE RANGE: Negative

METHOD: Direct detection of urease, Pylo-Plus

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Test run day shift Monday – Saturday.
- After hours, call lab for kit and inoculation instructions. Physician completes inoculation and returns all materials to the lab.
- Lab Tech will read final results at 1 hour post collection.

TURNAROUND TIME:
- Positive: may be detected within 20 minutes.
- All results completed at 1 hour.

GENERAL USE OF TEST: Screening test for Helicobacter pylori.

PATIENT PREPARATION:
- Standard endoscopy preparation.
- Patient should not have taken antibiotics or bismuth salts for at least three weeks prior to endoscopy.

LIMITATIONS: False negative results may occur with low numbers of H. pylori, usage of antibiotics or bismuth salts within three weeks of sample collection.
TEST NAME: GASTRIC UREASE SCREEN FOR HELICOBACTER PYLORI

SPECIMEN PREPARATION: Direct inoculation into Pylo-Plus reaction slide.

Revised: 3/30/2017
**TEST NAME:** GENTAMICIN

**CPT CODE:**
- 80170 GENU – Random
- GENP – Peak
- GENT - Trough

**SPECIMEN REQUIREMENT:**
- 0.5 mL serum from a 3 mL tiger top tube (SST) **OR**
- 0.5 mL from a 3 mL green top tube (heparin).

**REFERENCE RANGE:**
- **Trough:**
  - 0-10 yrs: 0.5 – 2.0 µg/mL
  - 11 yrs. – Adult: 0.5 – 1.5 µg/mL
- **Peak:** 5.0 – 20.0 µg/mL

**CRITICAL VALUE:**
- **Trough:** >2.0 µg/mL for 0-10 yrs.
- >1.5 µg/mL for 11 yrs. – Adult
- **Random and Peak:** >20 µg/mL

**METHOD:** Immunoassay

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**
- Same shift testing.
- Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:** To monitor antibiotic therapy and to test for insufficient or toxic serum levels of gentamicin.

**PATIENT PREPARATION:**
- **Trough:** Specimen is drawn 30 minutes to immediately prior to next dose.
- **Peak:**
  - Drawn 30 minutes after the infusion is complete for “traditional dosing” regime.
  - Drawn 60 minutes after infusion is complete when following the “once daily dosing” regime.

**SPECIMEN PREPARATION:**
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.
TEST NAME: GENTAMICIN

STORAGE REQUIREMENTS:

• Refrigerate at 2° - 8°C up to 48 hours.

• Samples will be capped and held for 4 days after testing.

Revised: 3/30/2017
GIARDIA ANTIGEN, STOOL

TEST NAME: GIARDIA ANTIGEN, STOOL

CPT CODE: 87328

SPECIMEN REQUIREMENT:
- 10 gm of stool in clean container or transport container with 10% formalin.
- A single specimen is adequate; ≥3 samples are not recommended when using this test methodology.

REFERENCE RANGE: Negative for Giardia antigen.

METHOD: Immunoassay

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Tuesday and Thursday

GENERAL USE OF TEST: Detection of Giardia infection of the intestinal tract.

STORAGE REQUIREMENTS:
- Un-preserved specimens stored at 2°C - 8°C.
- Preserved specimens stored at room temperature (22°C - 27°C).

Revised: 3/30/2017
GLUCOSE, FASTING

TEST NAME: GLUCOSE, FASTING

CPT CODE: 82947 (FGLU)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (ST) OR plasma from a green top tube (lithium heparin), OR a gray top tube (potassium oxalate/sodium fluoride).

REFERENCE RANGE: Greater than 2 yrs: 75 – 99 mg/dL
Less than 2 yrs: 75 – 99 mg/dL

CRITICAL VALUE: <50 or >400 mg/dL

METHOD: Glucose oxidase

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Evaluation of carbohydrate metabolism.

PATIENT PREPARATION: Fasting, if indicated.

SPECIMEN PREPARATION: • Collect specimen using standard laboratory procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 72 hours.
• Separated non-hemolyzed serum stable up to 8 hours at 25°C.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
GLUCOSE, RANDOM

TEST NAME: GLUCOSE, RANDOM

CPT CODE: 82947(GLR)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (ST) OR plasma from a green top tube (lithium heparin), OR a gray top tube (potassium oxalate/sodium fluoride).

REFERENCE RANGE: 75 – 199 mg/dL

CRITICAL VALUE: <50 or >400 mg/dL

METHOD: Glucose oxidase

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME:
- Same shift testing
- Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Carbohydrate metabolism disorders.

SPECIMEN PREPARATION:
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 48 hours.
- Separated non-hemolyzed serum stable up to 8 hours at 25°C.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
GLUCOSE, SPINAL FLUID

**TEST NAME:** GLUCOSE, SPINAL FLUID

**CPT CODE:** 82945 (GLCS)

**SPECIMEN REQUIREMENT:** 0.5 mL spinal fluid in a sterile plastic CSF screw cap tube (#1).

**REFERENCE RANGE:** 40 – 70 mg/dL

**METHOD:** Glucose oxidase with glucose electrode.

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**
- Same shift testing.
- Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:** Diagnosis of central nervous system disorders.

**LIMITATIONS:** Grossly bloody specimen; bacterial contamination.

**SPECIMEN PREPARATION:** If specimen is cloudy or bloody, centrifuge and remove the supernatant within 30 minutes of collection.

**STORAGE REQUIREMENTS:** Refrigerate at 2° - 8°C for up to 1 week.

Revised: 3/30/2017
GLUCOSE TOLERANCE, BLOOD

TEST NAME: GLUCOSE TOLERANCE, BLOOD

CPT CODE: 82947, 82950 (GT2) – Standard Oral
           82951, 82952 (GTT3) – Standard Gestational
           82950 (GLU1) – Gestational Screen

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (ST) OR plasma from a 3 mL tiger top tube (ST) OR plasma from a green top tube (lithium heparin), OR a gray top tube (potassium oxalate/sodium fluoride).

NOTE: Use same tube type consistently throughout test.

REFERENCE RANGE: Standard Oral Tolerance:
                  Fasting: 75 – 95 mg/dL
                  120 mins: 75 – 139 mg/dL

                  Glucose 1 Hour OB Screen: 75 – 139 mg/dL

                  Standard Oral Gestational:
                  Fasting: 75 – 95 mg/dL
                  1 Hour: 75 – 180 mg/dL
                  2 Hours: 75 – 155 mg/dL
                  3 Hours: 75 – 140 mg/dL

CRITICAL VALUE: <50 or >400 mg/dL

METHOD: Glucose oxidase

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: • Monday through Friday.
              • This test is available at the CVPH campus only.

TURNAROUND TIME: Results will be reported upon completion of tolerance test.

GENERAL USE OF TEST: Endocrine disorders, carbohydrate metabolism.

PATIENT PREPARATION: • Fasting; no smoking.
                      • Administer Glucola after baseline results are received.
                      • Patient can drink water.

SPECIMEN PREPARATION: • Collect specimen using standard laboratory procedures.
                        • Centrifuge specimen; separate serum from cells within 2 hours of collection.
TEST NAME: GLUCOSE TOLERANCE, BLOOD

STORAGE REQUIREMENTS:

- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -15°C to -20°C for extended storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
GRAM STAIN (2 Pages)

TEST NAME: GRAM STAIN

CPT CODE: 87205

SPECIMEN REQUIREMENT:
- Same specimen as for routine culture of site (specify site of material) or slide material.
- If culture is also requested, a second swab must be submitted.
- 2 mL (minimum) or 1 swab or 1 slide.
- Sterile containers for fluids; culturette swab for other material.

REFERENCE RANGE: No organisms seen; mixed morphology suggestive of normal flora for site or specimen contamination.

METHOD: Microscopic examination

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Routine: Day shift; Monday through Sunday
- STAT requests: No restrictions.

TURNAROUND TIME:
- Routine requests reported by end of day shift.
- STAT requests: 45 minutes.

GENERAL USE OF TEST: To determine presence or absence of bacteria, yeast, neutrophils and epithelial cells.

PATIENT PREPARATION: Same as routine culture of specific site.

LIMITATIONS:
- Organism isolation and identification will only be performed if routine culture is requested.
- Antimicrobial therapy can result in atypical forms or false negative results.
- Gram stains of sites where normal flora cannot be differentiated from pathogens (throat, stool) are normally not performed.
- Gram stains of blood and urine generally do not provide useful results.

SPECIMEN PREPARATION:
- Same procedure as for routine culture of the specific site.
- Specimens must be collected to avoid contamination with skin, adjacent structures and non-sterile surfaces.
TEST NAME: GRAM STAIN

STORAGE REQUIREMENTS:
Same as for culture requirements for specimen site.

Revised: 3/30/2017
TEST NAME: GYNECOLOGIC CYTOLOGY, THIN PREP® PAP TEST™

CPT CODE: Varies based on testing performed.

COLLECTION REQUIREMENT: This test requires a Thin Prep® Pap Test™ Collection Kit which is supplied by the Anatomic Pathology Laboratory at 562-7400.

SPECIMEN REQUIREMENT: After visualization of the cervix is accomplished, collect the sample.

**Brush / Spatula Collection:**
Obtain an adequate sampling from the ectocervix using a plastic spatula. Rinse the spatula into the Preserv Cyt® solution vial by swirling the spatula vigorously in the vial 10 times. Discard the spatula. Insert the brush into the cervix until only the bottom most fibers are exposed. Slowly rotate or turn in one direction. **Do not over rotate.**

Rinse the brush in the Preserv Cyt® solution by rotating the device in the solution 10 times while pushing against the vial wall. Swirl the brush vigorously to further release material. Discard the brush.

REFERENCE RANGE: Bethesda Reporting.

METHOD: Modified Papanicolaou. ThinPrep Pap Test Imaging System assisted evaluation and/or manual screening.

LAB SECTION PERFORMING TEST: Cytology

AVAILABILITY: Monday through Friday, 08:00 – 16:30.

TURNAROUND TIME: Approximately one week.

GENERAL USE OF TEST:
- Screening of unsuspected or confirmation of suspected atypia, pre-malignant or malignant changes.
- Follow up of patients with known and/or treated pre-malignant or malignant lesions.
- Evaluation of inflammatory/infections or benign proliferative conditions.

PATIENT PREPARATION:
- Patient to avoid douches 38-72 hours prior to exam.
- Obtain specimen prior to bimanual exam.
- Use an unlubricated speculum (saline or warm water may be used).
TEST NAME: GYNECOLOGIC CYTOLOGY, THIN PREP® PAP TEST™

LIMITATIONS: Samples not collected in a Thin Prep® Pap Test™ special collection kit or samples submitted in an expired collection kit will not be processed.

STORAGE REQUIREMENTS: Preserv Cyt® solution preserves cells for up to three weeks at temperatures between 4° and 37°C.

NOTE: Store Preserv Cyt® solution without cytologic samples at 15° to 30°C in the vials provided.

Revised: 3/30/2017
**GYNECOLOGIC CYTOLOGY, THIN PREP PAP WITH REFLEX TO HPV**

**TEST NAME:** GYNECOLOGIC CYTOLOGY, THIN PREP PAP WITH REFLEX TO HPV

**CPT CODE:**
Cytology varies based on testing performed. See pg. 197 for HPV.

**SPECIMEN REQUIREMENT:**
Refer to Gynecologic Cytology, Thin Prep® PAP Test™ Specimen Collection for collection guidelines.

**Remarks:**
Must be ordered in conjunction with Thin Prep® PAP Test™. Thin Prep PAP test results with a diagnosis of ASCUS will be sent for High Risk HPV testing by Digene method unless the box on the requisition indicating HPV testing is not desired has been checked. Vial must be kept at 4° to 37°C.

**Stability:**
Three weeks ambient temperature, three weeks refrigerated. Do not freeze.

**REFERENCE RANGE:**
High Risk HPV – Negative. 
Cytology – Bethesda reporting.

**METHOD:**
HPV - Nucleic acid probe. 
Cytology – ThinPrep

**LAB SECTION PERFORMING TEST:**
Cytology and Microbiology

**AVAILABILITY:**
Monday through Friday (Cytology) 
HPV set up Tu & Th; results read Weds/Fri

**TURNAROUND TIME:**
One to two weeks.

**GENERAL USE OF TEST:**
Specific HPV genotypes have been shown to be associated with certain anogenital diseases. Types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68 (high risk group) are associated with cervical carcinoma and its predisposing lesions; cervical atypical, severe dysplasia, cervical intraepithelial neoplasia (CIN) and carcinoma in situ.

Revised: 3/30/2017
**TEST NAME:**  
H. pylori Antigen, Stool

**CPT CODE:**  
87338

**SPECIMEN REQUIREMENT:**  
0.5 mL liquid/semi-solid stool

**COLLECTION REQUIREMENT:**  
Collect liquid/semi-solid stool and transfer to a properly labeled, sterile, leak-proof container. Do not place stool in preservative, transport media. Swabs are not acceptable.

**REFERENCE RANGE:**  
Negative for H. pylori antigen.

**METHOD:**  
Lateral flow immunoassay.

**LAB SECTION PERFORMING TEST:**  
Microbiology

**AVAILABILITY:**  
Specimens tested daily on day shift

**TURNAROUND TIME:**  
Within 24 hours of specimen receipt.

**GENERAL USE OF TEST:**  
To detect H. pylori antigen in stool specimens for diagnosis, therapeutic monitoring and proof of cure post treatment.

**PATIENT PREPARATION:**  
None

**LIMITATIONS:**  
Antimicrobials, proton pump inhibitors and bismuth preparations are known to suppress H. pylori. Ingestion of these prior to H. pylori testing may cause false-negative results.

**STORAGE REQUIREMENTS:**  
Specimen may be stored at 2°- 8°C for up to 72 hours.

Revised: 4/21/2017
HAPTOGLOBIN, BLOOD

TEST NAME: HAPTOGLOBIN, BLOOD

CPT CODE: 83010 (HAPT)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a lithium heparin tube.

REFERENCE RANGE: Adults: 31 – 200 mg/dL

METHOD: Turbidimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Intravascular hemolysis.

LIMITATIONS: Lipemic specimens should not be used.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Store spun and separated serum samples at -15°C to -20°C.
• Samples will be held for 5 days after testing.

STABILITY: Same as C3.

Revised: 3/30/2017
HCG, BETA (QUALITATIVE)

TEST NAME: HCG, BETA (QUALITATIVE)

CPT CODE: 84703 (HCG)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: Assay reported as positive or negative.

METHOD: Loci Chemiluminescent immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing. • STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Detection of pregnancy

LIMITATIONS: Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures. • Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 48 hours. • Freeze at −20°C or colder for prolonged storage prior to analysis. • Samples will be capped and held 5 days after testing.

Revised: 3/30/2017
### HCG, BETA (QUANTITATIVE)

**TEST NAME:** HCG, BETA (QUANTITATIVE)

**CPT CODE:** 84702 (QHCG)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 5 mL tiger top tube (SST) OR 0.5 mL plasma from a 5 mL green top tube (heparin).

**REFERENCE RANGE:** Non-pregnant females: Less than 5.0 mIU/mL.

**METHOD:** Loci Chemiluminescent immunoassay.

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**
- Same shift testing.
- If ordered STAT, within 30 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:**
- Hydatidiform mole.
- Choriocarcinoma.
- Ectopic pregnancy.
- Threatened or missed abortion.

**LIMITATIONS:** Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at –20°C or colder for prolonged storage prior to analysis.
- Samples will be capped and held 5 days after testing.

Revised: 3/30/2017
**HCG, URINE**

<table>
<thead>
<tr>
<th>TEST NAME:</th>
<th>HCG, URINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPT CODE:</td>
<td>84703</td>
</tr>
<tr>
<td>SPECIMEN REQUIREMENT:</td>
<td>1 mL of urine.</td>
</tr>
</tbody>
</table>
| REFERENCE RANGE: | <25 mIU/mL negative  
| | ≥25 mIU/mL positive |
| METHOD: | Chromatographic immunoassay. |
| LAB SECTION PERFORMING TEST: | Urinalysis |
| AVAILABILITY: | Daily or STAT |
| TURNAROUND TIME: |  
| | • Same shift of collection.  
| | • If ordered STAT, within 15 minutes of receipt in the laboratory. |
| GENERAL USE OF TEST: | Detection of pregnancy. |
| SPECIMEN PREPARATION: | Submit urine in a clean, dry container. |
| STORAGE REQUIREMENTS: |  
| | • Room temperature if testing immediately.  
| | • Store at room temperature for up to 72 hours.  
| | • Bring to room temperature before testing.  
| | • Specimens greater than 72 hours old will be unacceptable.  
| | • Urine specimens may be stored at 2-8°C for up to 48 hours prior to testing.  
| | • For prolonged storage, specimens may be frozen and stored below -20°C. |

Revised: 3/30/2017
HEMOGLOBIN A1C

TEST NAME: HEMOGLOBIN A1C

CPT CODE: 83036 (A1C)

SPECIMEN REQUIREMENT: 0.5 mL whole blood (EDTA) from a lavender top tube.

REFERENCE RANGE: 4.5 – 5.7%

METHOD: Ion exchange HPLC.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

GENERAL USE OF TEST: Monitor diabetic patient.

LIMITATIONS: Hemoglobin variants may interfere.

STORAGE REQUIREMENTS: Whole blood samples are stable for 7 days at 2 - 8°C.

Revised: 3/30/2017
HEPARIN ANTI-Xa, LMW HEPARIN

TEST NAME: HEPARIN Anti-Xa, Low Molecular Weight Heparin

CPT CODE: 85520

SPECIMEN REQUIREMENT: Plasma from a full blue top tube (sodium citrate).

REFERENCE RANGE: Reference range listed on report.

METHOD: Chromogenic

LAB SECTION PERFORMING TEST: Hematology

AVAILABILITY: 24 hours a day

TURNAROUND TIME:
- Same shift testing.
- STAT: 30 – 60 minutes

GENERAL USE OF TEST: Used to monitor heparin levels of patients on low molecular weight heparin.

LIMITATIONS:
- Clotted specimen.
- Improper labeling.
- Specimen greater than 4 hours old.
- Incomplete filling of vacutainer.
- Grossly hemolyzed, lipemic specimen.
- Anticoagulant therapy (Low Molecular Weight Heparin) should be noted on requisition.

SPECIMEN PREPARATION:
- Mix immediately after drawing.
- Centrifuge at 3500 g for 10 minutes.
- Separate plasma within 1 hour of venipuncture.

STORAGE REQUIREMENTS:
- Store unopened tube at 2° - 8°C or at room temperature for up to 4 hours prior to analysis.
- Freeze separated plasma at -20°C for up to 2 weeks prior to analysis.

Revised: 3/30/2017
## Heparin Anti-Xa, Unfractionated Heparin

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>Heparin Anti-Xa, Unfractionated Heparin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>85520</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>Plasma from a full blue top tube (sodium citrate).</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>Reference range listed on report.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Chromogenic</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Hematology</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>24 hours a day</td>
</tr>
</tbody>
</table>
| **TURNAROUND TIME:** | • Same shift testing.  
• STAT: 30 – 60 minutes |
| **GENERAL USE OF TEST:** | Used to monitor heparin levels of patients on unfractionated heparin. |
| **LIMITATIONS:** | • Clotted specimen.  
• Improper labeling.  
• Specimen greater than 4 hours old.  
• Incomplete filling of vacutainer.  
• Grossly hemolyzed, lipemic specimen.  
• Anticoagulant therapy (Unfractionated Heparin) should be noted on requisition. |
| **SPECIMEN PREPARATION:** | • Mix immediately after drawing.  
• Centrifuge at 3500 g for 10 minutes.  
• Separate plasma within 1 hour of venipuncture. |
| **STORAGE REQUIREMENTS:** | • Store unopened tube at 2° - 8°C or at room temperature for up to 4 hours prior to analysis.  
• Freeze separated plasma at -20°C for up to 2 weeks prior to analysis. |

Revised: 3/30/2017
HEPATIC FUNCTION PANEL

TEST NAME: HEPATIC FUNCTION PANEL (Alb, ALT, AST, T. Bil, Alk Phos, DBil, T Protein, A/G Ratio)

CPT CODE: 80076 (LIVP)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: See individual tests.

METHOD: See individual tests.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing.
• STAT results will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Evaluation of various serum biochemistry constituents.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 72 hours.
• Freeze at -15° to -20°C for prolonged storage, up to one month prior to analysis.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
HEPATITIS A ANTIBODY (IgM)

TEST NAME: HEPATITIS A ANTIBODY (IgM)

CPT CODE: 86709 (HAVM)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: Negative

METHOD: Chemiluminescent microparticle immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday - Saturday

TURNAROUND TIME: Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

GENERAL USE OF TEST: Acute Hepatitis A is associated with Hepatitis A IgM antibodies.

LIMITATIONS: -Test cannot determine patient’s immune status to Hepatitis A.
-Heterophilic AB’s (animals).
-Specimens from individuals with Non-Hodgekins Lymphoma may cross-react with this assay.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection.
• Specimens stable up to 3 days at room temperature on or off of the clotted red cells.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 7 days.
• Freeze at or below -20°C for prolonged storage prior to analysis.
• Samples will be capped and held for 7 days after testing.

Revised: 3/30/2017
HEPATITIS B CORE ANTIBODY (IgM)

**TEST NAME:** HEPATITIS B CORE ANTIBODY (IgM)

**CPT CODE:** 86705 (CORM)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST).

**REFERENCE RANGE:** Negative

**METHOD:** Chemiluminescent microparticle immunoassay.

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Monday - Saturday

**TURNAROUND TIME:** Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

**GENERAL USE OF TEST:** Acute Hepatitis B is associated with Hepatitis B core IgM antibodies.

**LIMITATIONS:**
- Test cannot determine patient’s immune status to Hepatitis A.
- Heterophilic AB’s (animals)

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.
- Specimens may be stored on or off the clotted red cells or separator cell for up to 3 days at room temperature.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2°C - 8°C up to 7 days.
- Freeze at -20°C for up to 4 weeks.
- Samples will be capped and held for 7 days after testing.

Revised: 3/30/2017
**HEPATITIS B SURFACE ANTIBODY**

**TEST NAME:** HEPATITIS B SURFACE ANTIBODY

**CPT CODE:** 86706 (BsAb)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST).

**REFERENCE RANGE:** Negative

**METHOD:** Chemiluminescent microparticle immunoassay.

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Monday - Saturday

**TURNAROUND TIME:** Results of specimens collected by 7:00 AM will be reported by 4:00 PM

**LIMITATIONS:** Do not use grossly hemolyzed specimens.

**GENERAL USE OF TEST:**
- Presence of Hepatitis B antibody indicates resolved infection and/or lasting immunity.
- Presence of antibody also used to monitor post vaccination immunity.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.
- Specimens may be stored on or off the clotted red cells or separator cell for up to 3 days at room temperature.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at or below -20°C for prolonged storage prior to analysis.
- Samples will be capped and held for 7 days after testing.
HEPATITIS B SURFACE ANTIGEN

TEST NAME: HEPATITIS B SURFACE ANTIGEN

CPT CODE: 87341 (BSAG)

SPECIMEN REQUIREMENT: 1 mL serum from 3 mL tiger top tube (SST).

REFERENCE RANGE: Negative

METHOD: Chemiluminescent microparticle immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY:
- Monday - Saturday
- Can be ordered STAT for expedited newborn/ maternal testing, testing of source patient following a needlestick injury or testing of new/traveling dialysis patient.

TURNAROUND TIME:
- Results of routine specimens collected by 7:00 AM will be reported by 4:00 PM.
- STAT results will be reported the same shift.

GENERAL USE OF TEST: Detection of surface antigen to Hepatitis B.

LIMITATIONS:
- Do not use grossly hemolyzed specimens.
- A nonreactive test result does not exclude the possibility of exposure to or infection with Hepatitis B Virus.
- Heterophilic AB’s (animals).

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.
- Specimens may be stored on or off the clotted red cells or separator cell for up to 7 days at room temperature.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 6 days.
- Freeze at or below -20°C for prolonged storage prior to analysis.
- Samples will be capped and held for 7 days after testing.

Revised: 3/30/2017
HEPATITIS B SURFACE ANTIGEN CONFIRMATORY

TEST NAME: HEPATITIS B SURFACE ANTIGEN CONFIRMATORY

CPT CODE: 87341 (HCON)

SPECIMEN REQUIREMENT: 1 mL serum from 3 mL tiger top tube (SST).

REFERENCE RANGE: Negative

METHOD: Chemiluminescent microparticle immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Will be performed to confirm a positive Hepatitis B Surface Antigen.

TURNAROUND TIME: Within 24 hours of positive screening results.

GENERAL USE OF TEST: Confirmatory test for a positive B surface antigen.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.
- Specimens may be stored on or off the clotted red cells or separator cell for up to 3 days at room temperature.

LIMITATIONS
- Do not use grossly hemolyzed specimens.
- A nonreactive test result does not exclude the possibility of exposure to or infection with Hepatitis B Virus.
- Heterophilic AB’s (animals).

Revised: 3/30/2017
HEPATITIS C ANTIBODY

TEST NAME: HEPATITIS C ANTIBODY

CPT CODE: 86803 (HCV)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: Negative

METHOD: Chemiluminescent microparticle immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday - Saturday

TURNAROUND TIME: Results of specimens collected by 7:00 AM will be reported by 4:00 PM

LIMITATIONS:
- Do not use grossly hemolyzed specimens.
- A nonreactive test result does not exclude the possibility of exposure to Hepatitis C Virus.
- An immunocompromised patient may have a false negative result.
- Heterophilic AB’s (animals).

GENERAL USE OF TEST: Signals acute, resolving or chronic infection.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.
- Specimens may be stored on or off the clotted red cells or separator cell for up to 3 days at room temperature.

PATIENT PREPARATION:
- Refrigerate at 2° - 8°C up to 7 days.
- Freeze at or below -20°C for prolonged storage prior to analysis.
- Samples will be capped and held for 7 days after testing.

Revised: 3/30/2017
# HERPES VIRUS

**TEST NAME:** HERPES VIRUS  

**CPT CODE:** 87207  

**SPECIMEN REQUIREMENT:** Swab of suspect lesion submitted in Viral Transport Tube (available from Microbiology).  

**REFERENCE RANGE:** Negative for Herpes simplex virus.  

**METHOD:** Modified culture/enzyme linked virus inducible system.  

**LAB SECTION PERFORMING TEST:** Microbiology  

**AVAILABILITY:**  
- No submission restrictions.  
- STAT testing is available for late term maternity patients.  

**TURNAROUND TIME:** 24 – 96 hours  

**GENERAL USE OF TEST:** Cultural isolation and identification of Herpes simplex virus.  

**PATIENT PREPARATION:** Decapitate vesicle or remove scab if present.  

**LIMITATIONS:** Procedure cannot discriminate between Herpes simplex I and II.  

**SPECIMEN PREPARATION:**  
- Fluid from a fresh vesicle is preferred.  
- Lesion is rubbed with a sterile cotton or synthetic fiber swab.  
- The swab is immediately deposited in the transport medium cited above.  
- Deliver to the laboratory within 2 hours OR refrigerate at 2° - 8°C.  

**STORAGE REQUIREMENTS:**  
- Store specimens at 2° - 8°C for up to 72 hours.  

Revised: 3/30/2017
HUMAN IMMUNODEFICIENT VIRUS (HIV), ANTIBODY SCREEN

TEST NAME: HUMAN IMMUNODEFICIENT VIRUS (HIV), ANTIBODY SCREEN

CPT CODE: 86703 (DHIV)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: Negative

METHOD: Chemiluminescent microparticle immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY:
• Monday - Saturday
• Can be ordered STAT for expedited newborn/ maternal testing or testing of source patient and/or hospital employee following a needlestick injury.

TURNAROUND TIME:
• Results of specimens collected by 7:00 AM will be reported by 4:00 PM
• Results of specimens requested STAT will be reported the same shift.

GENERAL USE OF TEST: Detection of antibody to HIV-1, 2. Detection of HIV p24 antigen.

LIMITATIONS:
- All positive results will be sent to a reference laboratory for confirmatory testing.
- Do not use grossly hemolyzed specimens.

SPECIMEN PREPARATION: Collect specimen using standard lab procedures. Specimens may be stored on or off the clotted red cells or separator cell for up to 3 days at room temperature.

STORAGE REQUIREMENTS:
• Store at 2°C - 8°C up to 7 days.
• If not assayed within 7 days of collection, store at -20°C or colder.
• Samples will be capped and held for 7 days after testing.

Revised: 3/30/2017
HUMAN PAPILLOMAVIRUS (HPV) DNA PROBE, HIGH RISK

TEST NAME: HUMAN PAPILLOMAVIRUS (HPV) DNA PROBE, HIGH RISK with Reflex genotyping for 16 and 18.

CPT CODE: 87624/ 87625

SPECIMEN REQUIREMENT: Cervical specimen submitted in Preserv Cyt® Solution (Thin Prep Pap Test System)

COLLECTION REQUIREMENT

- After visualization of the cervix is accomplished, collect the sample.
- **Brush / Spatula Collection**: Obtain an adequate sampling from the ectocervix using a plastic spatula. Rinse the spatula into the Preserv Cyt® Solution vial by swirling the spatula vigorously in the vial 10 times. Discard the spatula. Insert the brush into the cervix until only the bottom most fibers are exposed. Slowly rotate or turn in one direction. **DO NOT OVER ROTATE**. Rinse the brush in the Preserv Cyt® Solution by rotating the device in the solution 10 times while pushing against the vial wall. Swirl the brush vigorously to further release material. Discard the brush.
- Tighten the cap so that the torque line on the cap passes the torque line on the vial.

REFERENCE RANGE: Negative

METHOD: Real-Time Polymerase Chain Reaction (RT-PCR).

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Day shift (Tuesday & Thursday with results available Wednesday and Friday).

GENERAL USE OF TEST: Screening for HPV high-risk infection.

LIMITATIONS:

- Not intended to screen women under the age of 25.
- Not intended to be substituted for regular cervical cytology screening.
- Does not differentiate between the various high-risk HPV types other than 16 and 18.

STORAGE REQUIREMENTS:

- Store at 20° - 30°C and test within 18 weeks.
- Do not freeze Preserv Cyt® Solution.

Revised: 3/30/2017
IMMUNOFIXATION (SERUM)

TEST NAME: IMMUNOFIXATION (SERUM)
Includes Quantitative Immunoglobulins (G,A,M) and Qualitative Total Immunoglobulins (IgG, IgA, IgM, Kappa Lambda)

CPT CODE: IEPS (86334, 82784 x 3)

SPECIMEN REQUIREMENT: 1 mL serum from 3 mL tiger top tube (SST)

REFERENCE RANGE:
Albumin: 50.3 – 66.6%
Alpha 1: 2.3 – 6.7%
Alpha 2: 7.2 – 14.7%
Beta: 9.0 – 14.6%
Gamma: 9.3 – 19.2%

METHOD: Electrophoresis followed by immunofixation.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday - Friday

TURNAROUND TIME: 3 business days

GENERAL USE OF TEST: Detection and identification of monoclonal or polyclonal gammopathies.

SPECIMEN PREPARATION:
• Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
• Refrigerate spun and separated specimens at 2° - 8°C for up to 72 hours.
• Freeze separated serum at -18°C or colder if analysis is delayed beyond 72 hours.

Revised: 3/30/2017
**IMMUNOFIXATION (URINE)**

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>IMMUNOFIXATION (URINE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes Total Protein (Urine)</td>
</tr>
</tbody>
</table>

| **CPT CODE:** | IERA (86334, 84156) |

<table>
<thead>
<tr>
<th><strong>SPECIMEN REQUIREMENT:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Total 24-hour urine specimen, collected on ice, containing no preservatives in a plastic container obtained from the laboratory.</td>
</tr>
<tr>
<td>• Random urine may also be used.</td>
</tr>
</tbody>
</table>

| **REFERENCE RANGE:** | Refer to report for interpretation. |

| **METHOD:** | Electrophoresis followed by immunofixation. |

| **LAB SECTION PERFORMING TEST:** | Chemistry |

| **AVAILABILITY:** | Monday - Friday |

| **TURNAROUND TIME:** | 3 business days |

| **GENERAL USE OF TEST:** | Gammopathy – Abnormal immunoglobulins – Bence Jones Proteinuria. |

<table>
<thead>
<tr>
<th><strong>LIMITATIONS:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• No preservatives.</td>
</tr>
<tr>
<td>• Refrigerate specimen during collection.</td>
</tr>
</tbody>
</table>

| **STORAGE REQUIREMENTS:** | Refrigerate at 2°C - 8°C up to a week. |

Revised: 3/30/2017
TEST NAME: IMMUNOGLOBULINS, QUANTITATIVE (IgG, IgA, IgM)

CPT CODE: 82784 x3 (TIGS)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL lithium heparin tube.

REFERENCE RANGE:
- IgA mg/dL: Adults 66 - 433
- IgG mg/dL: Adults 635 - 1741
- IgM mg/dL: Adults 45 - 281

METHOD: Turbidimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Evaluation of humoral immunity.

LIMITATIONS
- Lipemic specimens should not be used.

SPECIMEN PREPARATION:
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2°C - 8°C up to 72 hours.
- Freeze at -15°C to -20°C for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

STABILITY:
Same as those of C3

Revised: 3/30/2017
INDIA INK PREPARATION

TEST NAME: INDIA INK PREPARATION

CPT CODE: 87210 (INK)

SPECIMEN REQUIREMENT:
- CSF or other body fluid.
- Same as for culture for specific site.

REFERENCE RANGE: No Cryptococcus seen.

CRITICAL VALUE: Encapsulated, budding yeast cells seen.

METHOD: Microscopic examination

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- No restrictions.
- Specimens will be divided for multiple tests (when ordered) volume permitting.

TURNAROUND TIME: STAT – 1 hour

GENERAL USE OF TEST: Direct examination to determine the presence of budding yeast with capsule as an aide in the diagnosis of cryptococcal meningitis.

PATIENT PREPARATION: Same as for culture for specific site.

LIMITATIONS: India Ink preparations may be negative when culture is positive.

SPECIMEN PREPARATION: Standard lumbar puncture by physician.

STORAGE REQUIREMENTS: Transport to laboratory ASAP.

Revised: 3/30/2017
**TEST NAME:** INFLUENZA VIRUS A&B ANTIGEN DETECTION

**CPT CODE:** 87400 x 2

**SPECIMEN REQUIREMENT:**
- 0.5 – 3.0 ml nasopharyngeal washings. Aspirate material from nasopharynx is acceptable.
- Nylon flocked swabs are acceptable.
- Sample must be from nasopharynx. Anterior nares and throat samples are not acceptable.
- Submit in viral transport media (obtain from Microbiology).
- Laboratory will not collect this specimen.
- Submit to laboratory within 1 hour of collection or on ice.

**REFERENCE RANGE:** Negative

**METHOD:** Immunofluorescence technology to detect influenza virus nucleoproteins.

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:**
- Routine testing available Monday – Friday, day shift until 7:30 PM, and Saturday – Sunday until 3:30 PM.
- STAT 24/7

**GENERAL USE OF TEST:** Direct qualitative assay for Influenza Virus A & B antigen in nasopharyngeal washings in patients with symptoms consistent with influenza infection.

**PATIENT PREPARATION:** None

**LIMITATIONS:**
- Assay is not a culture method.
- Both viable and non-viable influenza will be detected.
- Sensitivity of flu A Ag is 96% and flu B Ag is 98% compared to culture.
- Specimens, which test negative for both flu A and flu B antigens, can be sent for culture with a physician order.
- Influenza infection is seasonal. Testing should be confined to the period December – March.
TEST NAME: INFLUENZA VIRUS A&B ANTIGEN DETECTION

SPECIAL PREPARATION:

• Sterile saline is introduced into and recovered from nasopharynx via tubing and syringe or bulb.
• Washings are transferred to tube containing viral transport media.

STORAGE REQUIREMENTS:

• Store 2° - 8°C until tested (up to 72 hours).

Revised 7/14/2015
INSECT IDENTIFICATION

TEST NAME: INSECT IDENTIFICATION

CPT CODE: 87208

SPECIMEN REQUIREMENT: Whole insect or nits in the case of lice submitted in a clean, dry, transparent screw cap container.

METHOD: Microscopic examination.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Day shift; Monday through Sunday

TURNAROUND TIME: Dependent on the type of insect and the need for additional consultation.

GENERAL USE OF TEST:
- Evidence of insect infestation.
- Speciation of insects causing human infestation.

PATIENT PREPARATION: N/A

LIMITATIONS:
- Insects other than those infesting humans will not be identified.
- Environmental insects should be sent to the Environmental Services Department to determine the need for pest control.

SPECIMEN PREPARATION: Transfer insects to container in as intact condition as possible.

STORAGE REQUIREMENTS: Avoid moisture; no refrigeration required.

Revised: 3/30/2017
IONIZED CALCIUM

TEST NAME:            IONIZED CALCIUM

CPT CODE:             82330 (CAI)

SPECIMEN REQUIREMENT:
- 3 mL green top tube (heparin).
- Do not remove the tube stopper.
- Place on ice.
- Do not centrifuge.

REFERENCE RANGE:      1.17 – 1.33 mmol/L

CRITICAL VALUE:       <0.80 or >1.80 mmol/L

METHOD:               ISE

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY:         Daily or STAT

LIMITATIONS:          Ionized calcium specimens will be falsely increased if the specimen is not stored on ice after collection.

TURNAROUND TIME:
- Same shift testing.
- Results of STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST:  Measure of physiologically active calcium fraction.

SPECIMEN PREPARATION: Collect specimen using standard laboratory procedures.

STORAGE REQUIREMENTS: Stable on ice for 4 – 6 hours.

Revised: 3/30/2017
IRON AND IRON BINDING CAPACITY

TEST NAME: IRON AND IRON BINDING CAPACITY (FEB)

CPT CODE: 83540 (FEB)

SPECIMEN REQUIREMENT: 1 mL serum from a 3 mL tiger top tube (SST) OR 1 mL plasma from a 3 mL green top tube (heparin).

REFERENCE RANGE:
IRON (Total): Male: .............45 – 182 µg/dL  
               Female: ...........28 – 170 µg/dL  
IRON % Saturation:..............20 – 50%  
TRANSFERRIN: Male:...........180 – 329 mg/dL  
               Female:......192 – 382 mg/dL

METHOD: Colorimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY:
• Daily
• Pediatric Iron (Total) maybe ordered STAT.

TURNAROUND TIME:
• Routine, same shift testing.
• Results of specimens for total iron studies requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Evaluation of iron metabolism.

PATIENT PREPARATION: Fasting is recommended.

LIMITATIONS: Contraindicated during iron therapy. Do not use hemolyzed specimens or lipemic specimens that cannot be clarified by centrifugation.

SPECIMEN PREPARATION:
• Collect specimen using standard laboratory procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
• Refrigerate at 2 - 8°C up to 7 days.
• Freeze at -15°C to -20°C for extended storage, up to 6 months prior to analysis.
• Samples will be capped and held for 5 days after testing.
TEST NAME: IRON AND IRON BINDING CAPACITY (FEB)

STORAGE REQUIREMENTS CONT’D:

- After 24 hours of storage, plasma samples should be re-centrifuged and separated from precipitate before testing.

Revised: 3/30/2017
KOH PREPARATION

TEST NAME: KOH PREPARATION

CPT CODE: 87220

SPECIMEN REQUIREMENT:
- Skin scrapings collected from the outer, growing edge of suspected fungal lesions.
- Visible (up to 50 or more) amount of skin flakes, submitted in sterile, dry container with tight fitting top.

REFERENCE RANGE: No fungus seen.

METHOD: Microscopic examination.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Results read day shift; Monday – Sunday.

TURNAROUND TIME: 24 hours

GENERAL USE OF TEST: Direct examination of skin scraping for the presence of fungal elements.

PATIENT PREPARATION: Same as for culture of specific site.

LIMITATIONS: KOH preparations may be negative when culture is positive.

SPECIMEN PREPARATION: Specimen will be divided for fungal culture and KOH preparation and other ordered cultures, volume permitting.

STORAGE REQUIREMENTS:
- Avoid moisture.
- Refrigeration not required.

Revised: 3/30/2017
LACTATE DEHYDROGENASE

TEST NAME: LACTATE DEHYDROGENASE

CPT CODE: 83615 (LDH)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a green top tube (lithium heparin).

REFERENCE RANGE: Male: 87 – 241 U/L  
Female: 84 – 246 U/L

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Cardiac and liver disorder, hematologic disorders, certain tumors.

LIMITATIONS: Hemolyzed samples should not be used; hemolysis will cause falsely elevated results.

SPECIMEN PREPARATION:  
• Collect specimen using standard laboratory procedures.  
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection, and are stable at 20°-25°C for 3 days.

STORAGE REQUIREMENTS:  
• Samples will be capped and held for 5 days after testing.  
• Do not freeze or refrigerate prior to analysis.

Revised: 3/30/2017
**TEST NAME:** LACTIC ACID  

**CPT CODE:** 83605 (LACK)

**SPECIMEN REQUIREMENT:**  
- 1 mL plasma from a grey top tube (sodium fluoride/potassium oxalate).  
- If possible, collect specimen without applying a tourniquet.  
- Specimen must be placed on ice immediately after collection.  
- Centrifuge specimen within 15 minutes of collection and remove plasma.

**REFERENCE RANGE:** 0.5 – 2.1 mmol/L

**CRITICAL VALUE:** > 2.1 mmol/L

**METHOD:** Colorimetric

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**  
- Same shift testing.  
- STAT specimens in 30 minutes.

**GENERAL USE OF TEST:** Detection of tissue hypoxia, diabetes mellitus, malignancies, glycogen storage disease, ethanol, methanol or salicylate ingestion and metabolic acidosis.

**PATIENT PREPARATION:** The patient should avoid any exercise of the arm or hand before or during collection of specimen.

**SPECIMEN PREPARATION:**  
- Collect specimen using standard laboratory procedures.  
- Centrifuge specimen; remove plasma from cells within 15 minutes of collection.

**STORAGE REQUIREMENTS:** Once cells and plasma are separated, plasma lactate samples are stable for several hours.

Revised: 3/30/2017
TEST NAME: LACTOSE TOLERANCE TEST (Fasting glucose and timed specimens drawn at 15, 30, 45, 60 and 120 minutes after ingestion of Lactose)

CPT CODE: 82951, 82952 x 3 (LTTB)

SPECIMEN REQUIREMENT:
- 0.5 mL plasma from a 3 mL grey top tube (sodium fluoride/ potassium oxalate).
- Heparinized plasma or serum may also be used.

NOTE: Use the same tube type consistently throughout test.

REFERENCE RANGE: A 39 mg/dL increase in glucose concentration over the fasting glucose level is considered normal.

METHOD: Glucose oxidase with glucose electrode.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday - Friday

TURNAROUND TIME: Results will be reported upon completion of the tolerance test.

GENERAL USE OF TEST: Lactose intolerance evaluation.

PATIENT PREPARATION:
- Fasting 8-12 hours prior to testing. No smoking or chewing gum.
- Encourage patient to drink 1-2 glasses of H2O.
- Patient should remain seated or in bed during test.
- The patient will have a fasting glucose level collected.
- If the fasting result meets laboratory criteria, the patient will be given a 50 gram lactose solution. Additional blood samples will be collected at the time intervals indicated above.

SPECIMEN PREPARATION:
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate plasma/serum from cells within 4 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -15° to -20°C for extended storage prior to analysis.
TEST NAME:

LACTOSE TOLERANCE TEST (Fasting glucose and timed specimens drawn at 15, 30, 45, 60 and 120 minutes after ingestion of Lactose)

STORAGE REQUIREMENTS

• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
TEST NAME: LEAD

CPT CODE: 83655 (VPB – Venous lead level)
            (CPB – Capillary lead level)

SPECIMEN REQUIREMENT: 250-500 mL in an EDTA microtainer OR lavender EDTA,
                       royal blue EDTA OR a tan EDTA tube that is at least 50% 
                       full mixed with treatment reagent within 72 hours from 
                       collection.

REFERENCE RANGE: 0 – 4.9 μg/dL

METHOD: Anodic stripping voltammetry.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday, Wednesday and Friday.

TURNAROUND TIME: Specimens received by 7:00 AM on Tuesday and Thursday 
                  will be resulted by 4:00 PM on Monday, Wednesday and 
                  Friday (unless initially high- in which case the specimen will 
                  be re-pipetted and resulted the next day).

GENERAL USE OF TEST: Determine lead levels.

LIMITATIONS: No clots

SPECIMEN PREPARATION: • Collect sample using standard venipuncture or capillary 
                       puncture procedures.

STORAGE REQUIREMENTS: • Whole blood samples must be brought to room 
                        temperature and thoroughly mixed prior to addition of 
                        treatment reagent. When mixed with treatment reagent, 
                        blood samples are stable for up to 2 days at room 
                        temperature, or 3 days refrigerated.

Revised: 3/30/2017
LEGIONELLA URINARY ANTIGEN DETECTION, RAPID

TEST NAME: LEGIONELLA URINARY ANTIGEN DETECTION, RAPID

CPT CODE: 87899 (LEAU)

SPECIMEN REQUIREMENT: Urine

REFERENCE RANGE: Negative

METHOD: Immunochromatographic membrane assay

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
• No restrictions.
• STAT on physician request.

TURNAROUND TIME: 15 minutes

GENERAL USE OF TEST:
• Rapid, direct detection of viable and non-viable Legionella antigen.

PATIENT PREPARATION: None

LIMITATIONS:
• A negative Legionella antigen result does not exclude infection with Legionella pneumophila serogroup 1.
• This test will not detect infections caused by other L. pneumophila serogroups and by other Legionella species. Culture is recommended for suspected pneumonia to detect causative agents other than L. pneumophila serogroup 1 and to recover L. pneumophila serogroup 1 when antigen is not detected in urine.
• Excretion of Legionella antigen in urine may vary depending on the individual patient. Antigen excretion may begin as early as 3 days after onset of symptoms and persist for up to 1 year afterwards.

SPECIMEN PREPARATION:
• Collect urine specimens in standard container. Boric acid may be used as a preservative.
TEST NAME: LEGIONELLA URINARY ANTIGEN DETECTION, RAPID

STORAGE REQUIREMENTS:
Store at 2-8°C or frozen for up to 14 days.

Revised 6/13/16
**LEUKOCYTE REDUCED RED BLOOD CELLS**

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>LEUKOCYTE REDUCED RED BLOOD CELLS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>P9016</td>
</tr>
</tbody>
</table>

**SPECIMEN REQUIREMENT:**
EDTA vacutainer tube is required for a crossmatch.

**COLLECTION REQUIREMENT:**
- Two unique patient identifiers on tube label, date of specimen collection and initials of individual collecting the blood sample.
- The patient must be positively identified using a Securline blood band.

**METHOD:**
Gel column agglutination.

**LAB SECTION PERFORMING TEST:**
Blood Bank

**AVAILABILITY:**
STAT on all 3 shifts.

**TURNAROUND TIME:**
1 hour (10 minutes if type and screen is already complete).

**GENERAL USE OF TEST:**
- Indicated for any patient who requires a packed red cell product.
- Indicated for treatment of symptomatic anemia in patients who require only an increase of oxygen carrying capacity and red blood cells mass.

**PATIENT PREPARATION:**
Refer to Transfusion Therapy Protocol.

Revised: 3/30/2017
LIPASE

TEST NAME: LIPASE

CPT CODE: 83690 (LIPA)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: 73 – 393 U/L

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing. • STAT specimens in 30 minutes.

GENERAL USE OF TEST: Acute pancreatitis; obstruction of pancreatic duct.

SPECIMEN PREPARATION: • Collect specimen using standard laboratory procedures. • Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Separated samples are stable for 24 hours at room temperature, 7 days refrigerated at 2-8°C. • For longer storage, specimens may be frozen for up to a year at -20°C or colder. • Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
# LIPOPROTEIN LOW DENSITY DIRECT MEASUREMENT

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>LIPOPROTEIN LOW DENSITY DIRECT MEASUREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>83721 (LDLD)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>0.5 mL of serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a 3 mL green top tube (heparin).</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>&lt;100 mg/dL</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Detergent/colorimetric</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Chemistry</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>Same shift testing.</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>Used for the evaluation of coronary heart disease.</td>
</tr>
<tr>
<td><strong>LIMITATIONS:</strong></td>
<td>Fasting is preferred. Lipemia and icterus can produce a negative bias to the results.</td>
</tr>
<tr>
<td><strong>SPECIMEN PREPARATION:</strong></td>
<td>• Collect specimen using standard lab procedures. • Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.</td>
</tr>
<tr>
<td><strong>STORAGE REQUIREMENTS:</strong></td>
<td>• Refrigerate at 2° - 8°C up to 3 days. • Freeze at -80°C for extended storage prior to analysis. • Samples will be capped and held for 5 days after testing.</td>
</tr>
</tbody>
</table>

Revised: 3/30/2017
<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>LITHIUM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>80178 (LI)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>0.5 mL serum from a 3 mL tiger top tube (SST).</td>
</tr>
<tr>
<td><strong>COLLECTION REQUIREMENT:</strong></td>
<td>Recommended time for collection is 12 hours post dose.</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>0.60 – 1.20 mmol/L</td>
</tr>
<tr>
<td><strong>CRITICAL VALUE:</strong></td>
<td>&gt;2.0 mmol/L</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Colorimetric</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Chemistry</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily or STAT</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>• Same shift testing.</td>
</tr>
<tr>
<td></td>
<td>• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>Therapeutic monitoring of lithium.</td>
</tr>
<tr>
<td><strong>LIMITATIONS:</strong></td>
<td>Hemolyzed specimens should not be used with this assay.</td>
</tr>
<tr>
<td><strong>SPECIMEN PREPARATION:</strong></td>
<td>• Collect specimen using standard laboratory procedures.</td>
</tr>
<tr>
<td></td>
<td>• Centrifuge specimen; separate serum from cells within 2 hours of collection. Once separated, stable at least 24 hours at 20°-25°C.</td>
</tr>
<tr>
<td><strong>STORAGE REQUIREMENTS:</strong></td>
<td>• Refrigerate at 2 - 8°C up to 7 days, stable at -20°C for at least 6 months.</td>
</tr>
<tr>
<td></td>
<td>• Samples will be capped and held for 5 days after testing.</td>
</tr>
</tbody>
</table>

Revised: 3/30/2017
LUTEINIZING HORMONE

TEST NAME: LUTEINIZING HORMONE

CPT CODE: 83002 (LH)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE:

- **Adult Male:** 1.2 – 10.6 mIU/mL
- **Adult Female:**
  - Mid-Follicular Phase: 1.9 – 12.8 mIU/mL
  - Mid-Luteal Phase: 0.6 – 13.5 mIU/mL
  - Mid-Cycle Peak: 22.8 – 76.1 mIU/mL
  - Postmenopausal: 8.6 – 61.8 mIU/mL

METHOD: Chemiluminescent Immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST:

- Regulation of menstrual cycle.
- Maintenance of pregnancy.
- Assessment of hypothalamic function and pituitary function.
- To distinguish between primary or secondary gonadal failure.

LIMITATIONS:

Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION:

- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:

- Refrigerate at 2 - 8°C up to 7 days.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
LYME ANTIBODY

**TEST NAME:** LYME ANTIBODY (IgG, IgM)

**CPT CODE:** 86618 (LYME)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST).

**REFERENCE RANGE:** No antibody detected.

**METHOD:** Indirect chemiluminescent immunoassay

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Monday - Saturday

**TURNAROUND TIME:** Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

**GENERAL USE OF TEST:** For use in the detection of Lyme Disease caused by the tick-borne spirochete *Borrelia burgdorferi*.

**LIMITATIONS:**
- Early stages of infections may not produce detectable levels of antibody.
- Do not use grossly hemolyzed, icteric, or lipemic specimens.

**SPECIMEN PREPARATION:**
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2 - 8°C up to 7 days.
- Freeze at -20°C for longer storage.
- Samples will be capped and held for 7 days after testing.

Revised: 3/30/2017
MAGNESIUM

TEST NAME: MAGNESIUM

CPT CODE: 83735 (MG)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE: 1.8 – 2.5 mg/dL

CRITICAL VALUE: <1.0 mg/dL or >5.0 mg/dL

METHOD: Colorimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing.
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Evaluation of metabolic disorders.

LIMITATIONS: Protective gloves manufactured with magnesium stearate (talc) powder may cause elevated test results because of contamination of sample handling supplies. Hemolyzed specimens should not be used with this assay.

SPECIMEN PREPARATION: • Collect specimen using standard laboratory procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Separated samples are stable for 7 days at room temperature, or 7 days refrigerated at 2-8°C.
• For longer storage, specimens may be frozen for up to a year at -20°C or colder.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
MALARIA SMEAR

TEST NAME: MALARIA SMEAR

CPT CODE: 87207

SPECIMEN REQUIREMENT: 3 – 5 mL whole blood (EDTA) in lavender top vacutainer and blood smears from finger stick (capillary puncture).

REFERENCE RANGE: No parasite observed.

CRITICAL VALUE: Presence of malaria parasites.

METHOD: Examination of peripheral smear.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Day shift: Monday - Sunday
- STAT available on Evening and Night Shift, will only report “Parasite present or Parasite absent”.

TURNAROUND TIME: Same day.

GENERAL USE OF TEST:
- Suspected malarial disease.
- Microscopic examination of thick and thin blood smears for blood borne parasites.

PATIENT PREPARATION: None

LIMITATIONS:
- A single negative result does not rule out the presence of Malaria organisms.
- Multiple samples over a 36-hour period are recommended.
- Antimalarial chemotherapy; improper timing of collection.

SPECIMEN PREPARATION: Venipuncture or capillary collection should take place just prior to or at onset of chills.

STORAGE REQUIREMENTS: Smears should be made immediately to avoid prolonged contact of the organisms with EDTA.

Revised: 3/30/2017
MEASLES (RUBEOLA) IgG

TEST NAME: MEASLES (RUBEOLA) IgG

CPT CODE: 86765 (RUVA)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: Immune

METHOD: Indirect chemiluminescent immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday - Saturday.

TURNAROUND TIME: Results of specimens collected by 7:00 AM on Monday, Wednesday or Friday will be reported by 4:00 PM.

GENERAL USE OF TEST: For use in the detection of the IgG antibody to measles virus.

LIMITATIONS:
- Presence of IgG Ab indicates prior exposure to virus but does not exclude an ongoing infection.
- IgM Ab should be used to diagnose a recent infection.
- False negative results may occur early in disease.
- Do not use grossly hemolyzed, icteric, or lipemic samples.

SPECIMEN PREPARATION:
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2 - 8°C up to 9 days.
- Freeze at -20°C for longer storage.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
METHOTREXATE

TEST NAME: METHOTREXATE

CPT CODE: 82099 (MEXT)

Note: Sent to UVHN AT UVMC FAH5718

STORAGE REQUIREMENTS:
- Refrigerate at 2 - 8°C up to 4 days.
- Protect from light.

Revised: 3/30/2017
MICROALBUMIN

TEST NAME:  MICROALBUMIN

CPT CODE:  82043 (UALB); 82043 (AL24)

SPECIMEN REQUIREMENT: Random urine or 24-hour urine collected with no preservative in a plastic container obtained from the laboratory.

REFERENCE RANGE: Random: 0 – 20 mg/L
24-hour Urine: 0 – 30 mg/TV

METHOD: Turbidimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Aids in the diagnosis of kidney and intestinal disease.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 72 hours.
- Samples will be capped and held for 5 days after testing.
- Do not freeze samples.

Revised: 3/30/2017
MICROFILARIA, PERIPHERAL BLOOD PREPARATION

TEST NAME: MICROFILARIA, PERIPHERAL BLOOD PREPARATION

CPT CODE: 87207

SPECIMEN REQUIREMENT: 1 mL EDTA blood in a purple top vacutainer tube and blood smears from finger stick (capillary puncture).

REFERENCE RANGE: None present.

METHOD: Microscopic examination

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Examination of specimen and confirmation of results on day shift only.
- Collection timed as clinically relevant.

TURNAROUND TIME: Same day

GENERAL USE OF TEST: Collection and examination of peripheral blood for the presence of microfilarial parasites when eosinophilia, urticaria, dermatitis, ocular lesions and swelling are present in individuals who have been geographically exposed to these agents.

PATIENT PREPARATION: As per Pathologist recommendation, administration of diethylcarbamazine to induce release of microfilaria into the bloodstream.

LIMITATIONS: Improperly obtained specimen.

SPECIMEN PREPARATION: Routine venipuncture; timing and the need for special procedures should be determined in advance via consultation with a Pathologist to discuss details of patient history.

STORAGE REQUIREMENTS: Transport to the laboratory ASAP.

Revised: 3/30/2017
MONONUCLEOSIS, SCREEN

TEST NAME: MONONUCLEOSIS, SCREEN

CPT CODE: 86308 (MSPT)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a 3 mL lavender top tube (EDTA).

REFERENCE RANGE: Negative

METHOD: Hemagglutination Slide Test

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME:
- Results of routine specimens collected by 9:00 PM will be reported by 7:00 AM.
- Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: The detection of heterophile antibodies related to infectious mononucleosis.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.
- Can be stored at room temperature for up to 24 hours.

STORAGE REQUIREMENTS:
- Refrigerate at 2°C - 8°C up to 8 days.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
TEST NAME: MUMPS

CPT CODE: 86735 (MUMP)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: Immune

METHOD: Indirect chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday - Saturday

TURNAROUND TIME: Results of specimens collected by 7:00 AM on Monday, Wednesday or Friday will be reported by 4:00 PM.

GENERAL USE OF TEST: For use in the detection of the viral infection and serological status to mumps virus.

SPECIMEN PREPARATION:
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2 - 8°C up to 9 days.
- Freeze at -20°C for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
MYCOBACTERIAL (ACID FAST) STAIN

TEST NAME: MYCOBACTERIAL (ACID FAST) STAIN

CPT CODE: 87206 (AFS)

SPECIMEN REQUIREMENT:
- Appropriate specimen for stain is the same as for culture from the same site.
- See Mycobacteria Culture of specific site for details. Same as for culture of specific site.
- Specimen will be divided to perform all ordered tests (volume permitting).

REFERENCE RANGE: No AFB seen.

CRITICAL VALUE: Presence of AFB.

METHOD: Microscopic examination

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Routine: day shift only.
- STAT: by physician request.

TURNAROUND TIME: Within 30 hours of specimen submission.

GENERAL USE OF TEST: Acid fast stain of direct or concentrated material from suspected infected sites for the diagnosis of mycobacterial infection. Culture must be performed in addition to stain to properly diagnose presence of mycobacterial infection.

PATIENT PREPARATION: Same as for culture of specific site.

LIMITATIONS: Smear may be negative when culture is positive.

SPECIMEN PREPARATION: Same as for culture of specific site.

STORAGE REQUIREMENTS: Store at 2° - 8°C until tested.

Revised: 3/30/2017
MYOGLOBIN

TEST NAME: MYOGLOBIN
(Plasma)

CPT CODE: 83874 (MYGB)

SPECIMEN REQUIREMENT: 0.5 mL plasma from a 3 mL green top tube (lithium heparin).

REFERENCE RANGE: 14.0 – 106.0 ng/mL
Males: 16.0 – 116.0 ng/mL
Females: 13.0 – 71.0 ng/mL

METHOD: Chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Half hour after receipt in laboratory.

GENERAL USE OF TEST: Myoglobin is a sensitive indicator of acute myocardial infarction.

LIMITATIONS: Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 7 days.
- Freeze at -20°C or colder for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
### NIPPLE SECRETION, NON-GYNECOLOGIC CYTOLOGY

**TEST NAME:** NIPPLE SECRETION (NIPPLE DISCHARGE)  
NON-GYNECOLOGIC CYTOLOGY

**CPT CODE:** 88160

**SPECIMEN REQUIREMENT:** Nipple secretion; glass slides, container with 95% ethyl alcohol are available from the Cytology Laboratory.

**COLLECTION REQUIREMENT:**
- Gently squeeze the subareolar area and nipple with thumb and forefinger.
- When secretion occurs, allow a pea-sized drop to accumulate on the apex of the nipple.
- Move slide across the nipple, smearing the secretion(s) across the slide and fix immediately in 95% ETOH.
- Label slide with the patient’s name.

**REFERENCE RANGE:** Negative for malignant cells.

**METHOD:** Modified Papanicolaou

**LAB SECTION PERFORMING TEST:** Cytology

**AVAILABILITY:** Monday through Friday; 0800 to 1630.

**TURNAROUND TIME:** One to two working days.

**GENERAL USE OF TEST:** To establish the presence of primary or metastatic neoplasm.

**STORAGE REQUIREMENTS:** Refrigerate

Revised: 3/30/2017
OCCULT BLOOD, GASTRIC

TEST NAME: OCCULT BLOOD, GASTRIC

CPT CODE: 82271 (OCLG)

SPECIMEN REQUIREMENT: 0.5 mL gastric contents submitted in a clean, sealed container.

REFERENCE RANGE: Negative

METHOD: Buffered guaiac slide test.

LAB SECTION PERFORMING TEST: Urinalysis

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Rapid screening test designed for detection of occult blood in gastric aspirate or vomitus.

LIMITATIONS:
- Test results should be used only in conjunction with other information relevant to the clinical status of the patient.
- A positive test result may suggest the need for more careful monitoring of the patient.
- Many foods can produce a positive test result. Therefore, a positive result does not always indicate the presence of human blood.

SPECIMEN PREPARATION: Specimen must be labeled with patient's full name, room number, date, medical record number, and date, time and initial of collection personnel.

STORAGE REQUIREMENTS: Test immediately after collection. If not possible, store gastric secretions at room temperature for 24 hours or up to 5 days at 2° - 8°C.

Revised: 3/30/2017
OCCULT BLOOD, STOOL (2 Pages)

TEST NAME: OCCULT BLOOD, STOOL

CPT CODE: 82270 (OCLT for inpatients & OCLB for outpatients)

SPECIMEN REQUIREMENT: Fresh random stool submitted in a clean, sealed container.

REFERENCE RANGE: Negative

METHOD: Buffered guaiac slide test.

LAB SECTION PERFORMING TEST: Urinalysis

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Routine screening procedure for occult blood in stool.

PATIENT PREPARATION:
- Patient should not eat red meats, including processed meats and liver, melon, radishes, horseradish, turnips, aspirin or Vitamin C in excess of 250 mg/day for a period of 2 days prior to collection of specimen.
- Oral medications, such as aspirin, indomethacin, reserpine, phenylbutazone, corticosteroids and heavy alcohol consumption may cause irritation or bleeding of the gastrointestinal tract and should be discontinued for 3 days prior to and during the test period.

NOTE: Roughage in the diet can increase test accuracy by uncovering silent lesions that bleed intermittently.

LIMITATIONS:
- Vitamin C intact may cause false negatives.
- Results obtained cannot be considered conclusive evidence of the presence of gastrointestinal bleeding or pathology.
- False negative tests may be obtained since most bleeding occurs intermittently.

SPECIMEN PREPARATION: Specimen must be labeled with patient’s full name, room number, date, medical record number, and date, time and initial of collection personnel.

STORAGE REQUIREMENTS:
- Test immediately after collection. If not possible, store the stool sample at 2° - 8°C for up to 5 days.
TEST NAME: OCCULT BLOOD, STOOL

STORAGE REQUIREMENTS CONT:

- Hemoccult cards with stool applied can be stored at room temperature for up to 10 days following collection of the stool sample.

Revised: 3/30/2017
**TEST NAME:** OSMOLALITY, SERUM

**CPT CODE:** 83930 (SOSM)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST).

**REFERENCE RANGE:** 275 – 295 mOsm/Kg

**METHOD:** Freezing point depression.

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily or STAT.

**TURNAROUND TIME:**
- Same shift testing.
- Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:** Dehydration, electrolyte balance.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 1 week.
- Samples will be capped and held for at least 48 hours after testing.

Revised: 3/30/2017
### OSMOLALITY, URINE

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>OSMOLALITY, URINE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>83935 (UOSM)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>0.5 mL random urine</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>300 – 1000 mOsm/Kg</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Freezing point depression.</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Chemistry</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily or STAT</td>
</tr>
</tbody>
</table>
| **TURNAROUND TIME:** | • Same shift testing.  
| | • Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory. |
| **GENERAL USE OF TEST:** | Dehydration, concentrating ability of the kidney. |
| **SPECIMEN PREPARATION:** | Keep specimens refrigerated until analysis. |
| **STORAGE REQUIREMENTS:** | Refrigerate at 2° - 8° up to a week. |

Revised: 3/30/2017
OVA & PARASITES, ASPIRATED SPECIMEN

TEST NAME: OVA & PARASITES ASPIRATED SPECIMEN

CPT CODE: 87117 (OVA)

SPECIMEN REQUIREMENT:
- 4 mL (minimum) fresh sputum, aspirate or biopsy
- Sterile test tube: Aspirate
- Sterile screw cap cup: Sputum

REFERENCE RANGE: No parasites seen.

METHOD: Microscopic examination

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Day shift; Monday through Sunday.

TURNAROUND TIME: 24 hours

GENERAL USE OF TEST:
- To detect the presence of parasitic infection.
- Direct and concentrated examination for the presence of human parasites.

PATIENT PREPARATION:
- Usual aseptic technique for aspirations/biopsies.
- Deep cough specimen for sputum.

LIMITATIONS:
- Examination for parasites only.
- One negative result does not rule out the possibility of parasitic infection; administration of barium, bismuth, Metamucil, castor oil, mineral oil or Tetracycline or other anti-parasitic therapy.

SPECIMEN PREPARATION: Specimen dependent.

STORAGE REQUIREMENTS: Store at 2° - 8° until tested.

Revised: 3/30/2017
TEST NAME: OVA & PARASITES STOOL

CPT CODE: 87117 (OVA)

SPECIMEN REQUIREMENT:
- 2 scoopfuls of fresh random stool.
- Swabs are not acceptable.
- Submit in a container with lid.
- If using transport media, place stool in container. Cap tightly. Shake for 30 seconds. Refrigeration is not needed.

REFERENCE RANGE: No parasites seen

METHOD: Microscopic examination

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Day shift; Monday through Sunday
- Consult Pathologist and Infection Control for enteric pathogen request on patients with diarrheal onset ≥ 3 days post admission.

TURNAROUND TIME: Within 24 hours

GENERAL USE OF TEST: Detect parasitic infection

PATIENT PREPARATION:
- Specimens obtained with a warm saline enema or Fleet's phosphor-soda are acceptable.
- Specimens obtained with mineral oil, bismuth or magnesium compounds are unsatisfactory.
- No barium procedures or laxatives for one week prior to collection of the specimen.

LIMITATIONS:
- One negative result does not rule out the possibility of parasitic infection.
- Test does not detect pinworms with adequate reliability. If pinworms are suspected, use scotch tape test.

SPECIMEN PREPARATION:
- Stool samples should be submitted in clean, tight capped containers.
- Stools must be submitted within 3 hours of collection or placed in
TEST NAME: OVA & PARASITES STOOL

SPECIMEN PREPARATION CONT:
- Three samples (one per day) are recommended.
- One sample may be obtained by use of an enema.
- Avoid contamination with urine or toilet water.

STORAGE REQUIREMENTS:
- *Liquid/soft specimens*: Transport to laboratory ASAP.
- *Others*: Store at 2° - 8° until tested.

Revised: 3/30/2017
OVA & PARASITES, URINE

TEST NAME: OVA & PARASITES URINE

CPT CODE: 87117 (OVA)

SPECIMEN REQUIREMENT: 15 mL (minimum) freshly voided urine submitted in 4 oz. sterile urine container.

REFERENCE RANGE: No parasites seen.

METHOD: Microscopic examination.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Day shift; Monday through Sunday.

TURNAROUND TIME: Same day

GENERAL USE OF TEST:
- To detect parasitic infection, particularly Trichomonas or Schistosoma haematobium.
- **Note:** One negative result does not rule out the possibility of parasitic infection.

PATIENT PREPARATION: Standard clean catch method.

LIMITATIONS: Only a wet preparation and concentration procedure will be performed with this request.

SPECIMEN PREPARATION:
- Submit the first portion of a voided specimen.
- Specimen must be less than 4 hours old and not refrigerated.

STORAGE REQUIREMENTS:
- Transport to laboratory ASAP.
- Do not refrigerate.

Revised: 3/30/2017
# PARATHYROID HORMONE, INTACT

**TEST NAME:** PARATHYROID HORMONE, INTACT

**CPT CODE:** 83970 (PTH)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST).

**REFERENCE RANGE:** 12 – 88 pg/mL

**METHOD:** Chemiluminescent Immunoassay.

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing.

**GENERAL USE OF TEST:** Aid in the differential diagnosis of hyperparathyroidism, hypoparathyroidism or hypercalcemia of malignancy.

**LIMITATIONS:** Proper specimen handling in time and temperature is critical.

Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

Do not use hemolyzed specimens.

**SPECIMEN PREPARATION:**
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate plasma from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Separated samples are stable for up to 4 hours at room temperature or 48 hours refrigerated at 2-8°C.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
### PARTIAL THROMBOPLASTIN TIME, ACTIVATED APPT

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>PARTIAL THROMBOPLASTIN TIME, ACTIVATED, APPT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>85730 (PTT)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>Plasma from a full blue top tube (sodium citrate).</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>Reference range listed on report.</td>
</tr>
<tr>
<td><strong>CRITICAL VALUE:</strong></td>
<td>&gt;93 seconds</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Electromagnetic mechanical clot detection system</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Hematology</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily or STAT</td>
</tr>
</tbody>
</table>
| **TURNAROUND TIME:** | • Same shift testing.  
| | • STAT = 30 – 60 min. |
| **GENERAL USE OF TEST:** | Measurement of intrinsic coagulation system. |
| **LIMITATIONS:** | • Heparin therapy should be noted on requisition.  
| | • Clotted specimen, inadequate filling of tube, specimen greater than 4 hours old, improper labeling, hemolyzed, icteric or lipemic specimens, specimen drawn above an IV. |
| **SPECIMEN PREPARATION:** | • Mix well immediately after drawing.  
| | • Centrifuge at 3500 g for 10 minutes within four hours of collection. |
| **STORAGE REQUIREMENTS:** | • Store unopened tube at 2 - 8°C or at room temperature for up to 4 hours prior to analysis.  
| | • Freeze at -20°C for up to 2 weeks prior to analysis.  
| | • **Note:** Plasma from heparinized patients must be centrifuged within 1 hour of collection and tested within 4 hours of collection. |

Revised: 3/30/2017
<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>pH, BODY FLUIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>82800 (FPH)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>Body fluid submitted in green top tube (heparin).</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>Should be interpreted in regard to fluid type submitted.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Ion Selective Electrode</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Chemistry</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily or STAT</td>
</tr>
</tbody>
</table>
| **TURNAROUND TIME:** | • Same shift testing  
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory. |
| **GENERAL USE OF TEST:** | Determine pH of clinical specimen. |
| **STORAGE REQUIREMENTS:** | Refrigerate at 2°C - 8°C for up to a week. |

Revised: 3/30/2017
TEST NAME: pH, FECES

CPT CODE: 84999 (SPH)

SPECIMEN REQUIREMENT:
- Fresh liquid stool specimen.
- Formed stool specimens will be rejected.

REFERENCE RANGE: pH 7.0 – 7.5

METHOD: pH indicator strips

LAB SECTION PERFORMING TEST: Urinalysis

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Low pH of stool (acidic) is seen in lactose intolerance or where there is rapid intestinal transit time as in diarrhea.

PATIENT PREPARATION: No barium procedures, laxatives or antiamebic drugs for one week prior to specimen collection.

STORAGE REQUIREMENTS: Refrigerate at 2°C - 8°C until testing is complete.

Revised: 3/30/2017
PHENOBARBITAL

TEST NAME: PHENOBARBITAL

CPT CODE: 80184 (PHEN)

SPECIMEN REQUIREMENT: • 0.5 mL serum from a 3 mL plain red top tube.
• Do not collect in SST tube.

REFERENCE RANGE: 10 – 25 μg/mL

CRITICAL VALUE: >60 μg/mL

METHOD: Immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing.
• STATs will be resulted within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Monitor phenobarbital levels to ensure appropriate therapy.

PATIENT PREPARATION: Trough: One hour prior to next dose.

SPECIMEN PREPARATION: • Collect specimen using standard laboratory procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Separated samples are stable for 2 days at room temperature, 30 days refrigerated at 2-8°C.
• For longer storage, specimens may be frozen for up to 3 months at -20°C or colder.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
# PHENYTOIN (DILANTIN)

**TEST NAME:** PHENYTOIN (DILANTIN)

**CPT CODE:** 80185 (DIL)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST) **OR** plasma from a green top tube (lithium heparin).

**REFERENCE RANGE:** 10 – 20 μg/mL

**CRITICAL VALUE:** >40 μg/mL

**METHOD:** Petinia

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**
- Same shift testing; reported the same day.
- STATs will be resulted within 30 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:** Monitor phenytoin levels to ensure appropriate therapy.

**PATIENT PREPARATION:** See pharmacy for TDM.

**SPECIMEN PREPARATION:**
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -15° to -20°C for extended storage prior to analysis.
- Samples will be capped and held for at least 5 days after testing.

Revised: 3/30/2017
PHOSPHORUS, BLOOD

TEST NAME:  PHOSPHORUS, BLOOD

CPT CODE:  84100 (PO4)

SPECIMEN REQUIREMENT:  0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE:  Serum, plasma 2.5 – 4.9 mg/dL

METHOD:  Colorimetric

LAB SECTION PERFORMING TEST:  Chemistry

AVAILABILITY:  Daily

TURNAROUND TIME:  Same shift testing.

GENERAL USE OF TEST:  Measurement of phosphorus is used in the diagnosis and treatment of parathyroid gland and kidney diseases, and Vitamin D imbalance.

SPECIMEN PREPARATION:  
- Collect specimen using standard laboratory procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:  
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -15°C to -20°C for extended storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
PHOSPHORUS, URINE

TEST NAME: PHOSPHORUS, URINE

CPT CODE: 84105 (PO4U) (P24)

SPECIMEN REQUIREMENT: Random urine or 24-hour urine collected with no preservative in a plastic container obtained from the laboratory.

REFERENCE RANGE: 400 – 1300 mg/24 hrs.

METHOD: Colorimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Measurement of phosphorus is used in the diagnosis and treatment of parathyroid gland and kidney diseases, and Vitamin D imbalance.

SPECIMEN PREPARATION:
- No preservatives necessary.
- Refrigerate specimen during collection and until analysis.

STORAGE REQUIREMENTS: Refrigerate at 2°C - 8°C up to a week.

LIMITATIONS: Acidify urine aliquot to a pH of 3 prior to analysis.

Revised: 3/30/2017
**PINWORM PREPARATION**

**TEST NAME:** PINWORM PREPARATION

**CPT CODE:** 87208 (PIN)

**SPECIMEN REQUIREMENT:** Scotch tape slide preparation of material from perianal region.

**COLLECTION REQUIREMENT:**
- Scotch tape prep slide must be inside a covered container – pinworm eggs are very infectious.
- Use only clear slides and clear tape.

**REFERENCE RANGE:** No pinworm (*Enterobius vermicularis*) eggs seen.

**METHOD:** Microscopic examination

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:** Day shift, Monday – Sunday.

**TURNAROUND TIME:** Same day

**GENERAL USE OF TEST:**
- To detect cases of enterobiasis.
- Pinworm identification.
- One negative result does not rule out the possibility of parasitic infection.

**PATIENT PREPARATION:** None

**LIMITATIONS:**
- Examination for pinworm only.
- Tests will not detect other parasites.

**SPECIMEN PREPARATION:**
- Specimen is best obtained a few hours after the person retires, perhaps at 10:00 or 11:00 PM OR first thing in the morning before a bowel movement or bath.
- Clear tape must be used. The cloudy type is unsatisfactory.
- Press the tape, sticky side down to the anal area.
- If any worms are visible, be sure to capture them on the tape.
TEST NAME: PINWORM PREPARATION

SPECIMEN PREPARATION CONT:

• Place tape smoothly, sticky side down, to clear glass slide.
• Place in clean dry sealable container and send to the laboratory.

STORAGE REQUIREMENTS:

No refrigeration required.

Revised: 3/30/2017
PLATELETS

TEST NAME: PLATELETS

CPT CODE: P9035

SPECIMEN REQUIREMENT: EDTA or plain red top vacutainer tube if blood type is not on file.

COLLECTION REQUIREMENT: Two unique patient identifiers on tube label: date of specimen collection and initials of individual collecting the blood sample.

METHOD: Leukoreduced plateletpheresis products used.

LAB SECTION PERFORMING TEST: Blood Bank

AVAILABILITY: STAT on all three shifts. Call Blood Bank with urgency at extension 7404.

TURNAROUND TIME: 30 minutes

GENERAL USE OF TEST: To correct platelet deficiencies if clinical indicated.

PATIENT PREPARATION: Refer to Transfusion Therapy Protocol.

Revised: 3/30/2017
PNEUMOCYSTIS CARINII STAIN

TEST NAME: PNEUMOCYSTIS CARINII STAIN

CPT CODE: 88312

SPECIMEN REQUIREMENT: Lung biopsy, trans-thoracic needle aspirate, bronchoscopy specimens, sputum.

COLLECTION REQUIREMENT:
- **Tissue**: 10% formalin
- **Cytology**: Sputum or bronch wash fixed with 50% ETOH. Specimen, glass slide must be immediately immersed in 95% ETOH.

REFERENCE RANGE: No organisms seen (normal).

METHOD:
- Methenamine silver nitrate stain (Grocott)
- Microscopy

LAB SECTION PERFORMING TEST: Histology

AVAILABILITY:
- Monday through Friday 0800 to 1630.
- Other hours by consultation with Pathologist on call.

TURNAROUND TIME:
- 36 hours
- STAT results available by consultation with Pathologist on call.

GENERAL USE OF TEST: Diagnosis of pneumocystis carinii infection.

LIMITATIONS: Inadequate material for evaluation.

Revised: 3/30/2017
### POTASSIUM

<table>
<thead>
<tr>
<th>TEST NAME:</th>
<th>POTASSIUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPT CODE:</td>
<td>84132 (K)</td>
</tr>
<tr>
<td>SPECIMEN REQUIREMENT:</td>
<td>0.5 mL serum from 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).</td>
</tr>
<tr>
<td>REFERENCE RANGE:</td>
<td>3.4 – 5.2 mmol/L</td>
</tr>
<tr>
<td>CRITICAL VALUE:</td>
<td>&lt;2.8 mmol/L or &gt;6.0 mmol/L</td>
</tr>
<tr>
<td>METHOD:</td>
<td>Indirect potentiometric</td>
</tr>
<tr>
<td>LAB SECTION PERFORMING TEST:</td>
<td>Chemistry</td>
</tr>
<tr>
<td>AVAILABILITY:</td>
<td>Daily or STAT</td>
</tr>
</tbody>
</table>
| TURNAROUND TIME: | • Same shift testing.  
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory. |
| GENERAL USE OF TEST: | Electrolyte balance |
| LIMITATIONS: | Hemolysis falsely increases potassium. |
| PATIENT PREPARATION: | • The patient should avoid any exercise of the arm or hand before or during collection because opening and closing the fist increases concentrations by 10 to 20%.  
• Do not draw from an arm receiving IV. |
| SPECIMEN PREPARATION: | • Collect specimen using standard laboratory procedures.  
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection. |
| STORAGE REQUIREMENTS: | • Refrigerate at 2° - 8°C up to 48 hours.  
• Freeze at -15°C to -20°C for extended storage prior to analysis.  
• Samples will be capped and held for 5 days after testing. |

Revised: 3/30/2017
POTASSIUM, URINE

TEST NAME: POTASSIUM, URINE

CPT CODE: 84133 (K24) (KU)

SPECIMEN REQUIREMENT: Total random urine or 24-hour urine collected with no preservative in a plastic container obtained from the laboratory.

COLLECTION REQUIREMENT: See 24-hour urine collection procedure.

REFERENCE RANGE: 25 – 120 mmol/24 hours

METHOD: Ion Selective Indirect Potentiometric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: • Renal function.
• Disorders of aldosterone secretion.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 48 hours.

Revised: 3/30/2017
**PREALBUMIN**

**TEST NAME:** Prealbumin

**CPT CODE:** 84134 (PRAB)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from 3 mL tiger top tube (SST) OR plasma from green top tube (lithium heparin).

**REFERENCE RANGE:** 17 – 34 mg/dL

**METHOD:** Turbidimetric

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing

**GENERAL USE OF TEST:** Aids in the assessment of the patient’s nutritional status.

**LIMITATIONS:** Lipemic specimens not clarified by airfuging should not be used.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Separated specimens can be stored at 2°C-8°C for up to 7 days.
- Samples frozen at -20°C or colder are stable up to 3 months.
- Samples will be held for 5 days after testing.

Revised: 3/30/2017
## Prenatal Testing

<table>
<thead>
<tr>
<th><strong>Test Name:</strong></th>
<th>Prenatal Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT Code:</strong></td>
<td>86900, 86901 (ABO/Rh), 86850 (Antibody Screen), 85025 (CBC), 83655 (LEAD), 87340 (BSAG), 86762 (RUBL), 86592 (RPR), positive RPR will reflex to 86593 (RPR titer)</td>
</tr>
<tr>
<td><strong>Specimen Requirement:</strong></td>
<td>EDTA vacutainer tube and an SST vacutainer tube.</td>
</tr>
<tr>
<td><strong>Collection Requirement:</strong></td>
<td>Refer to collection requirement(s) of individual tests.</td>
</tr>
<tr>
<td><strong>Method:</strong></td>
<td>Refer to individual tests.</td>
</tr>
<tr>
<td><strong>Lab Section Performing Test:</strong></td>
<td>Blood Bank, Chemistry and Hematology</td>
</tr>
<tr>
<td><strong>Availability:</strong></td>
<td>Monday through Friday; 8:00 AM to 4:00 PM.</td>
</tr>
<tr>
<td><strong>Turnaround Time:</strong></td>
<td>Usually within 24 hours.</td>
</tr>
<tr>
<td><strong>General Use of Test:</strong></td>
<td>Prenatal screen for possible maternal-fetal blood incompatibility, to identify women at risk of having a baby affected by hemolytic disease of the newborn.</td>
</tr>
</tbody>
</table>
| **Specimen Preparation:** | • Collect specimen using standard lab procedures.  
• Centrifuge specimen; separate serum from cells within 2 hours of collection. |
| **Storage Requirements:** | • Room temperature or at 1°C - 8°C. |

Revised: 3/30/2017
**Procalcitonin**

**TEST NAME:** Procalcitonin

**CPT CODE:** 84145 (PCTC)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 5 mL tiger top tube (SST) OR 1 mL in a red top vacutainer

**REFERENCE RANGE:** Normal: <0.1 ng/mL (infants >72 hours – adults)

**Suspected Lower Respiratory Tract Infection:**
- 0.1 – 0.25 ng/mL: Low likelihood of bacterial infection; antibiotics discouraged
- > 0.25 ng/mL: Increased likelihood of bacterial infection; antibiotics encouraged

**Suspected Sepsis: Strongly consider initiating antibiotics in all unstable patients**
- 0.1 – 0.5 ng/mL: Low likelihood of sepsis; antibiotics discouraged
- > 0.5 ng/mL: Increased likelihood of sepsis; antibiotics encouraged
- > 2 ng/mL: High risk of sepsis/septic shock; antibiotics strongly encouraged

**CRITICAL VALUE:** >2 ng/mL

**METHOD:** Enzyme-Linked Fluorescent Assay (ELFA)
TEST NAME: Procalcitonin

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Daily or STAT

TURNAROUND TIME:
- Same shift testing.
- Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: For the rapid diagnosis of bacterial infection

LIMITATIONS: Interference may be encountered with certain samples containing antibodies directed against reagent components. For this reason, assay results should be interpreted taking into consideration the patient's history and the results of any other tests performed.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2°C - 8°C up to 48 hours. Freeze at -25°C +/- 6°C for extended storage prior to analysis.
- Samples will be capped and held for 4 days after testing.
PROGESTERONE

TEST NAME: PROGESTERONE

CPT CODE: 84144 (PROG)

SPECIMEN REQUIREMENT: • 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).
• Serum can be stored for up to 24 hours on the gel of the SST tube.

REFERENCE RANGE:
Male: 0.200 – 1.97 ng/mL

Pregnant Females:
First Trimester: 11.4 – 41.0 ng/mL

Female:
Mid-Follicular: 0.210 – 1.70 ng/mL
Mid Luteal: 8.76 – 21.6 ng/mL
Postmenopausal: <0.200 – 0.901 ng/mL

METHOD: Loci Chemiluminescence

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST:
Progesterone is a steroid hormone that plays an important role in the preparation for and maintenance of pregnancy, and is a reliable method to detect ovulation.

LIMITATIONS:
Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION:
• Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection, but are stable up to 24 hours at room temperature.

STORAGE REQUIREMENTS:
• Separated samples are stable for 24 hours at room temperature, 3 days refrigerated at 2-8°C.
• Freeze separated serum at -20°C or colder for up to 120 days.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
PROLACTIN

TEST NAME: PROLACTIN

CPT CODE: 84146 (PROL)

SPECIMEN REQUIREMENT: 0.5 mL serum from 3 mL tiger top tube (SST) OR Plasma from a green top tube (lithium heparin).

REFERENCE RANGE: Male: 2.5 – 17.4 ng/mL
Female: Non-pregnant 2.2 – 30.3 ng/mL
Pregnant 8.1 – 347.6 ng/mL
Post-menopausal 0.7 – 31.5 ng/mL

METHOD: Loci Chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Pituitary function test useful in the detection of prolactin secreting pituitary tumors with or without galactorrhea and in the assessment of pituitary dysfunction. Pituitary adenoma, amenorrhea, galactorrhea and infertility.

LIMITATIONS: Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection, but are stable up to 24 hours at room temperature.

STORAGE REQUIREMENTS: • Separated samples are stable for 24 hours at room temperature, 7 days refrigerated at 2-8°C.
• Freeze separated serum at -20°C or colder for prolonged storage. Thawed frozen specimens which are turbid must be clarified by centrifugation prior to testing.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
PROSTATE SPECIFIC ANTIGEN, TOTAL AND FREE

TEST NAME: PROSTATE SPECIFIC ANTIGEN, TOTAL AND FREE

CPT CODE: 84153 (PSA) and 84154 (FRPS)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR lithium heparin.

REFERENCE RANGE: PSA, less than 4.0 ng/mL
Free PSA, see Probability Table below:

Probability of Cancer Table for Men with PSA 4-10 ng/mL

<table>
<thead>
<tr>
<th>% Free PSA</th>
<th>50-64 yrs.</th>
<th>65-75 yrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to 10.00%</td>
<td>56%</td>
<td>55%</td>
</tr>
<tr>
<td>10.01 to 15.00%</td>
<td>24%</td>
<td>35%</td>
</tr>
<tr>
<td>15.01 to 20.00%</td>
<td>17%</td>
<td>23%</td>
</tr>
<tr>
<td>20.01 to 25.00%</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>≥ 25.01%</td>
<td>5%</td>
<td>9%</td>
</tr>
</tbody>
</table>

METHOD: Loci Chemiluminescent Immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Free PSA is an adjunctive test used as an aid to distinguish prostate cancer from benign prostate conditions in men 50-75 years whose total PSA is 4-10 ng/mL. Biopsy is necessary for diagnosis of cancer.

LIMITATIONS:
- Serum PSA measurement is not an absolute test for malignancy. The PSA value should be used in conjunction with information available from clinical evaluation and other diagnostic procedures.
- Specimens obtained from patients undergoing prostate manipulation procedures may give erroneous results.
- Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.
TEST NAME: PROSTATE SPECIFIC ANTIGEN, TOTAL AND FREE

STORAGE REQUIREMENTS:

- Refrigerate serum at 2°C - 8°C up to 48 hours.
- Freeze separated serum at -20°C or colder for prolonged storage.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
PROTEIN, BODY FLUIDS

TEST NAME: PROTEIN, BODY FLUIDS

CPT CODE: 84157 (TPBF)

SPECIMEN REQUIREMENT: 1 mL body fluid submitted in a 3 mL green top tube OR lithium heparin.

REFERENCE RANGE: Specimen dependent

METHOD: Colorimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Evaluating pathological processes.

SPECIMEN PREPARATION: Centrifuge specimen.

STORAGE REQUIREMENTS: Refrigerate serum at 2° - 8°C up to a week.

Revised: 3/30/2017
PROTEIN, CEREBROSPINAL FLUID

TEST NAME: PROTEIN, CEREBROSPINAL FLUID

CPT CODE: 84157 (ATPC)

SPECIMEN REQUIREMENT: 0.5 mL cerebrospinal fluid collected in a sterile plastic CSF screw cap tube (#1).

REFERENCE RANGE: 15 – 45 mg/dL

METHOD: Colorimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME:
- Same shift testing
- Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Diagnosis of cerebrospinal fluid pathological processes.

LIMITATIONS: Presence of hemoglobin may elevate levels.

SPECIMEN PREPARATION: If specimen is cloudy or bloody, centrifuge and remove the supernant as soon as possible.

STORAGE REQUIREMENTS: Refrigerate serum at 2° - 8°C up to a week.

Revised: 3/30/2017
PROTEIN ELECTROPHORESIS (SERUM)

TEST NAME:
PROTEIN ELECTROPHORESIS (SERUM)
(Albumin, Alpha 1, Alpha 2, Beta and Gamma fractions,
Serum Total Protein)

CPT CODE:
84165 (PES), 84155 (TP)

SPECIMEN REQUIREMENT:
0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE:
Albumin: 3.4 – 4.6 g/dL
Alpha 1: 0.1 – 0.4 g/dL
Alpha 2: 0.6 – 1.0 g/dL
Beta: 0.6 – 1.3 g/dL
Gamma: 0.7 – 1.5 g/dL
Total Protein: 6.0 – 8.0 g/dL

METHOD:
Electrophoresis

LAB SECTION PERFORMING TEST:
Chemistry

AVAILABILITY:
Monday, Wednesday, and Friday

TURNAROUND TIME:
Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

GENERAL USE OF TEST:
Chronic infection, hypogammaglobulinemia, destructive lesion, nephrotic syndrome, multiple myeloma and other gammopathy.

SPECIMEN PREPARATION:
• Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
• Refrigerate serum at 2° - 8°C up to a week.
• Samples will be capped and held for at least 48 hours after testing.

Revised: 3/30/2017
## PROTEIN, TOTAL

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>PROTEIN, TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>84155 (TP)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>0.5 mL serum from 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).</td>
</tr>
</tbody>
</table>
| **REFERENCE RANGE:** | 0 – 3 yrs: 5.4 – 7.0 g/dL  
4 – 7 yrs: 5.9 – 7.8 g/dL  
>7 yrs: 6.0 – 8.0 g/dL |
| **METHOD:** | Colorimetric |
| **LAB SECTION PERFORMING TEST:** | Chemistry |
| **AVAILABILITY:** | Daily |
| **TURNAROUND TIME:** | Same shift testing. |
| **GENERAL USE OF TEST:** | Detection of hypo and hyperproteinemia. |
| **SPECIMEN PREPARATION:** | • Collect specimen using standard lab procedures.  
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection. |
| **STORAGE REQUIREMENTS:** | • Separated samples are stable for 8 hours at room temperature, 72 hours refrigerated at 2-8°C.  
• For longer storage, specimens may be frozen for up to 6 months at -20°C or colder.  
• Samples will be capped and held for 5 days after testing. |

Revised: 3/30/2017
**PROTEIN, URINE 24-HOUR**

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong> PROTEIN, URINE 24-HOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong> 84156 (TP24) (TPU)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong> Random urine or a 24-hour urine collected with no preservatives in a plastic container obtained from the laboratory.</td>
</tr>
</tbody>
</table>
| **REFERENCE RANGE:** Random <11.9 mg/dL  
24HR <149.1 mg/dL |
| **METHOD:** Colorimetric |
| **LAB SECTION PERFORMING TEST:** Chemistry |
| **AVAILABILITY:** Daily |
| **TURNAROUND TIME:** Same shift testing. |
| **GENERAL USE OF TEST:** Detection of clinically significant proteinuria. |
| **LIMITATIONS:** |
| · No preservatives necessary. |
| · Collect timed specimens on ice or refrigerate specimen during collection. |
| · Urine samples should not be collected after intense physical exertion, or acute fluid load or deprivation. |
| · Collect specimens prior to administration of contrast media. |
| **SPECIMEN PREPARATION:** Centrifuge specimen before analysis to remove particulate matter. |
| **STORAGE REQUIREMENTS:** |
| · Refrigerate at 2° - 8°C up to 3 days. |
| · Do not freeze. |

Revised: 3/30/2017
# PROTHROMBIN TIME

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>PROTHROMBIN TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>85610 (PT)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>Plasma from a full blue top tube (sodium citrate).</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>Reference range listed on report.</td>
</tr>
<tr>
<td><strong>CRITICAL VALUE:</strong></td>
<td>International Normalized Ratio (INR) (\geq 5.0)</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Electromagnetic mechanical clot detection system</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Hematology</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily or STAT</td>
</tr>
</tbody>
</table>
| **TURNAROUND TIME:** | • Same shift testing.  
| | • STAT: 30 – 60 minutes |
| **GENERAL USE OF TEST:** | Evaluation of extrinsic coagulation system and Vitamin K dependent factors. |
| **LIMITATIONS:** | • Clotted specimen.  
| | • Improper labeling.  
| | • Specimen greater than 24 hours old.  
| | • Incomplete filling of vacutainer.  
| | • Hemolyzed, icteric or lipemic specimen.  
| | • Anticoagulant therapy should be noted on requisition. |
| **SPECIMEN PREPARATION:** | • Mix immediately after drawing.  
| | • Centrifuge at 3500 g for 10 minutes.  
| | • Remove plasma within 24 hours of venipuncture. |
| **STORAGE REQUIREMENTS:** | • Store unopened tube at 2 - 8°C or at room temperature for up to 24 hours prior to analysis.  
| | • Freeze at \(-20°C\) for up to 2 weeks prior to analysis. |

Revised: 3/30/2017
RPR

TEST NAME: RPR (Positive Screens will be Titered)

CPT CODE: 86592 (RPR), 86593 (QRPR)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a lavender or pink top tube (EDTA).

REFERENCE RANGE: Non-reactive

METHOD: Charcoal particle agglutination on 18 mm circle cards.

LAB SECTION PERFORMING TEST: Chemistry or Blood Bank (prenatal samples)

AVAILABILITY: Once daily

TURNAROUND TIME: Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

GENERAL USE OF TEST: Screening test for syphilis.

SPECIMEN PREPARATION: • Collect specimen using standard laboratory procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2 - 8°C up to one week.
• Samples will be capped and held for at least 48 hours after testing.

Revised: 3/30/2017
RESPIRATORY SYNCYTIAL VIRUS ANTIGEN DETECTION

TEST NAME: RESPIRATORY SYNCYTIAL VIRUS (RSV) ANTIGEN DETECTION

CPT CODE: 87807 (RSVV)

SPECIMEN REQUIREMENT:
- 0.5 – 3.0 ml nasopharyngeal washings. Aspirate material from nasopharynx is acceptable.
- Nylon flocked swabs are acceptable.
- Sample must be from nasopharynx. Anterior nares and throat samples are not acceptable.
- Submit in viral transport media (obtain from Microbiology).
- Laboratory will not collect this specimen.
- Submit to laboratory within 1 hour of collection or on ice.

REFERENCE RANGE:
Negative

METHOD:
Immunofluorescence technology to detect Respiratory Syncytial virus nucleoproteins.

LAB SECTION PERFORMING TEST:
Microbiology

AVAILABILITY:
- Routine testing available Monday through Friday, day shift until 7:30 PM, and Saturday and Sunday until 3:00 PM.
- STAT testing is available 24/7.

GENERAL USE OF TEST:
Direct qualitative assay for RSV antigen in nasopharyngeal washings in patients with symptoms consistent with RSV infection.

PATIENT PREPARATION:
None

LIMITATIONS:
- Assay is not a culture method.
- Both viable and non-viable RSV will be detected.
- RSV infection is seasonal. Testing should be confined to the fall, winter and early spring months.

SPECIAL PREPARATION:
- Sterile saline is introduced into and recovered from nasopharynx via tubing and syringe or bulb.
- Washings are transferred to tube containing viral transport media.

STORAGE REQUIREMENTS:
- Store 2° - 8°C until tested.

Revised 07/14/2015
# RETICULOCYTE COUNT

**TEST NAME:** RETICULOCYTE COUNT

**CPT CODE:** 85045 (RETC) Flow Cytometry

**SPECIMEN REQUIREMENT:** 3 mL whole blood (EDTA) from lavender top tube OR 250 mL from a lavender microtainer.

**REFERENCE RANGE:**
- Newborn: 0.4 – 6.0%
- 3 days to Adult: 0.5 – 1.5%

**METHOD:** Flow cytometry

**LAB SECTION PERFORMING TEST:** Hematology

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing.

**GENERAL USE OF TEST:** Evaluation of erythropoietic activity.

**LIMITATIONS:**
- Recently transfused patients.
- Clotted specimen.

**STORAGE REQUIREMENTS:**
- Specimens for manual retic counts are stable at room temperature for 6 hours after collection.
- Specimens for flow cytometry may be stored at 2°C - 8°C for up to 72 hours.

Revised: 3/30/2017
RHEUMATOID FACTOR

TEST NAME: RHEUMATOID FACTOR (RA)

CPT CODE: 86431 (RA)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE: Less than 14 IU/mL

METHOD: Turbidimetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Detection of rheumatoid arthritis.

LIMITATIONS: Lipemic specimens should not be used.

SPECIAL PREPARATION: • Collect specimen using standard lab procedures.
  • Centrifuge specimen and separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Separated specimens can be stored at 2°C-8°C for up to 7 days.
  • Samples frozen at -20°C or colder are stable up to 3 months.
  • Samples will be held for 5 days after testing.

Revised: 3/30/2017
**ROTAVIRUS ANTIGEN DETECTION**

**TEST NAME:** ROTAVIRUS ANTIGEN DETECTION

**CPT CODE:** 87425 (ROVI)

**SPECIMEN REQUIREMENT:** Stool – 0.2 grams or ml. (minimum); 1-2 ml recommended; submitted in a clean, dry, solid sided container with tight fitting lid.

**REFERENCE RANGE:** Negative

**METHOD:** Immunochromato-graphic sandwich (rapid).

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:** Dayshift: Monday through Sunday

**TURNAROUND TIME:** Specimens received by noon will be completed that day.

**GENERAL USE OF TEST:** Direct antigen detection of Rotavirus from stool to aid in diagnosis of gastroenteritis in infants and young children.

**LIMITATIONS:**
- This test does not rule out the presence of other enteric pathogens.
- Samples collected 8 or more days after onset of symptoms may be negative due to natural lowering of viral concentration.
- Rotavirus infection is seasonal. Testing should be confined to the winter and spring months.

**SPECIAL PREPARATION:**
- Specimen should be collected as soon after onset of symptoms as possible.
- Peak viral counts occur 3-5 days after onset.
- Swabs are not recommended and, if submitted, must contain at least the minimum specimen volume.
- Do not use a viral transport media.
- Transport to the laboratory within 2 hours of collection or store at 2° - 8°C.

**STORAGE REQUIREMENTS:**
- Store 2° - 8°C until tested.

Revised: 3/30/2017
RUBELLA (IgG)

**TEST NAME:**
RUBELLA (IgG)

**CPT CODE:**
86762 (RUBL)

**SPECIMEN REQUIREMENT:**
0.5 mL serum from a 3 mL tiger top tube (SST).

**REFERENCE RANGE:**
Immune
Samples with a calculated value of less than 5.0 IU/mL are considered negative for IgG antibodies to rubella virus.

**METHOD:**
Chemiluminesometric immunoassay

**LAB SECTION PERFORMING TEST:**
Chemistry

**AVAILABILITY:**
Daily

**TURNAROUND TIME:**
Same shift testing.

**GENERAL USE OF TEST:**
For the quantitative measurement of IgG antibodies to rubella virus in serum and to aid in the determination of immune status.

**LIMITATIONS:**
Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

**SPECIAL PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen and separate serum from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -20°C or colder for prolonged storage prior to testing.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>SALICYLATE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>80196 (SAL)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>0.5 mL serum from 3 mL tiger top tube (SST)</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>15 – 30 mg/dL</td>
</tr>
<tr>
<td><strong>CRITICAL VALUE:</strong></td>
<td>&gt;30 mg/dL</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Colorimetric</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Chemistry</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily or STAT</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>• Same shift testing.</td>
</tr>
<tr>
<td></td>
<td>• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>• Monitor therapeutic drug level.</td>
</tr>
<tr>
<td></td>
<td>• Salicylate toxicity and poisoning.</td>
</tr>
<tr>
<td><strong>LIMITATIONS:</strong></td>
<td>• Bilirubin and lipemia may cause a negative bias.</td>
</tr>
<tr>
<td><strong>PATIENT PREPARATION:</strong></td>
<td>• <em>Trough:</em> Immediately prior to next oral dose.</td>
</tr>
<tr>
<td></td>
<td>• <em>NOTE:</em> Consult with pharmaceutical services for the appropriate therapeutic monitoring collection times.</td>
</tr>
<tr>
<td><strong>SPECIMEN PREPARATION:</strong></td>
<td>• Collect specimen using standard lab procedures.</td>
</tr>
<tr>
<td></td>
<td>• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.</td>
</tr>
<tr>
<td><strong>STORAGE REQUIREMENTS:</strong></td>
<td>• Separated specimens can be stored for 7 days at 20°-25°C, and up to 2 weeks at 2°-8°C.</td>
</tr>
<tr>
<td></td>
<td>• Samples frozen at -20°C or colder are stable up to 6 months.</td>
</tr>
<tr>
<td></td>
<td>• Samples will be held for 5 days after testing.</td>
</tr>
</tbody>
</table>
## SCABIES, SKIN SCRAPINGS FOR

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>SCABIES, SKIN SCRAPINGS FOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>87210 (SCAB)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>Skin scrapings submitted on a microscopic glass slide with coverslip and transported in a covered container.</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>No parasites found.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Microscopic examination</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Microbiology</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Day shift; Monday - Sunday</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>1 hour</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>Identification of mites and eggs in scrapings as an aide in diagnosis of human scabies.</td>
</tr>
<tr>
<td><strong>PATIENT PREPARATION:</strong></td>
<td>Ointments and cosmetics must be removed 48 hours prior to collection of specimen.</td>
</tr>
<tr>
<td><strong>LIMITATIONS:</strong></td>
<td>Yield of parasites in scrapings is known to be low.</td>
</tr>
</tbody>
</table>
| **SPECIMEN PREPARATION:** | - Place a drop of sterile mineral oil on the lesion and on a sterile scalpel blade.  
- Scrape lesion until tiny flecks of blood appear in the oil.  
- Scrapping should extend down to the base of any “tunnels”.  
- Place oil with scraped material on slide and cover with glass slip. |
| **STORAGE REQUIREMENTS:** | Refrigeration not required. |

Revised: 3/30/2017
SEDIMENTATION RATE

TEST NAME: SEDIMENTATION RATE

CPT CODE: 85651 (ESR)

SPECIMEN REQUIREMENT: 2.4 mL citrated whole blood from a black top tube (sodium citrate).

REFERENCE RANGE:

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>86</td>
<td>0 – 30 mm/hr</td>
<td>0 – 42 mm/hr</td>
</tr>
<tr>
<td>51</td>
<td>0 – 20 mm/hr</td>
<td>0 – 30 mm/hr</td>
</tr>
<tr>
<td>0</td>
<td>0 – 15 mm/hr</td>
<td>0 – 20 mm/hr</td>
</tr>
</tbody>
</table>

METHOD: Westergren

LAB SECTION PERFORMING TEST: Hematology

AVAILABILITY: Daily

TURNAROUND TIME: 1 ½ hours

GENERAL USE OF TEST: Non-specific activity of disease processes.

LIMITATIONS: Anemias and paraproteinemias invalidate results.

SPECIMEN PREPARATION: Gently invert tube six times immediately after collection.

STORAGE REQUIREMENTS:
- Blood kept at room temperature must be analyzed within 4 hours of collection.
- Specimens stored at 2°C - 8°C are stable for 12 hours after collection.

Revised: 3/30/2017
SEDIMENTATION RATE (MINI)

TEST NAME: SEDIMENTATION RATE (MINI)

CPT CODE: 85651 (MESR)

SPECIMEN REQUIREMENT: 250 mL whole blood (EDTA) from a lavender microtainer or 3 mL whole EDTA blood from a lavender top tube.

REFERENCE RANGE: Up to 14 days old: 1 – 4 mm/hr.

METHOD: Sedimentation of red blood cells.

LAB SECTION PERFORMING TEST: Hematology

AVAILABILITY: Daily

TURNAROUND TIME: 1 ½ hours

GENERAL USE OF TEST: Non-specific activity of disease processes.

LIMITATIONS: Hemolyzed specimens; collected specimens.

SPECIMEN PREPARATION: Gently invert tube six times immediately after collection.

STORAGE REQUIREMENTS: • Blood kept at room temperature must be analyzed within 4 hours of collection.
• Specimens stored at 2° - 8°C are stable for 24 hours after collection.

Revised: 3/30/2017
SEMEN ANALYSIS

TEST NAME: SEMEN ANALYSIS

CPT CODE: 89320 (SQAV)

SPECIMEN REQUIREMENT: Single, total ejaculate submitted within 30-60 minutes in clean glass container. 4 oz. plastic screw top container, second choice.

REFERENCE RANGE: Fluid volume: 2 – 5 ml
Sperm count: greater than 15,000,000/ml

METHOD: Automated count & normal morphology determination.

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: By appointment with the Microbiology section only. Specimens are accepted for this test Monday – Friday 7am to 12 pm noon.


GENERAL USE OF TEST: Quantitative and qualitative examination of seminal fluid in the diagnosis of male infertility.

PATIENT PREPARATION:
- Patient should abstain from sexual activity for the three days prior to specimen collection.
- Patient should receive our instruction sheet.

SPECIMEN PREPARATION:
- Specimen is deposited directly into container.
- Exact time of collection must be noted on container or requisition.
- Specimen must be kept at body temperature while being transported to the laboratory.

STORAGE REQUIREMENTS: Keep sample warm; do not refrigerate.

Revised: 3/30/2017
**SEmen Analysis, Post Vasectomy**

**Test Name:** SEMEN ANALYSIS POST VASECTOMY

**CPT Code:** 89300 (SFPV)

**Specimen Requirement:**
- Single, total ejaculate submitted within 1 hour in clean glass or plastic screw top container.
- Submission within 30 minutes is preferred.

**Reference Range:** Sperm absent

**Method:** Microscopic examination

**Lab Section Performing Test:** Microbiology

**Availability:** 6:30 AM – 2:00 PM, Monday – Friday only.

**Turnaround Time:** Same day

**General Use of Test:** Determine presence or absence of sperm after vasectomy procedure.

**Patient Preparation:** Patient should abstain from sexual activity for the three days prior to specimen collection.

**Specimen Preparation:**
- Specimen is deposited directly into container.
- Time of collection must be noted on container or requisition.

**Storage Requirements:**
- Keep sample warm.
- Do not refrigerate.

Revised: 3/30/2017
TEST NAME: SODIUM

CPT CODE: 84295 (Na)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE: 136 – 143 mmol/L

CRITICAL VALUE: <120 OR >160 mmol/L

METHOD: Ion Selective Indirect Potentiometric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing.
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Electrolyte balance.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 48 hours.
• Freeze at -15°C to -20°C for extended storage prior to analysis.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
**TEST NAME:** SODIUM, URINE  

**CPT CODE:** 84300 (NAU) (SO24)

**SPECIMEN REQUIREMENT:** Random urine or 24-hour urine collected with no preservative in a plastic container obtained from the laboratory.

**REFERENCE RANGE:** 40 - 220 mmol/24 hours

**METHOD:** Ion Selective Indirect Potentiometric

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing.

**GENERAL USE OF TEST:** Renal function.

**SPECIMEN PREPARATION:**  
- No preservations necessary.
- Refrigerate during collection.

**STORAGE REQUIREMENTS:**  
- Refrigerate at 2° - 8°C up to a week.

Revised: 3/30/2017
## SPUTUM, CYTOLOGY

**TEST NAME:** SPUTUM, CYTOLOGY  
**CPT CODE:** 88161  
**SPECIMEN REQUIREMENT:** 2 mL of deep cough sputum. Three to five consecutive early morning deep cough specimens are necessary.  
**COLLECTION REQUIREMENT:** Fix with equal volume of 50% ethyl alcohol or Sacamanno fluid.  
**REFERENCE RANGE:** Negative for malignant cells.  
**METHOD:** Modified Papanicolaou  
**LAB SECTION PERFORMING TEST:** Cytology  
**AVAILABILITY:** Monday – Friday; 0800 to 1630.  
**TURNAROUND TIME:** One to two working days.  
**GENERAL USE OF TEST:** To establish the presence of primary or metastatic neoplasm.  
**PATIENT PREPARATION:** Upon arising, the patient rinses mouth and coughs forcefully and vigorously to expectorate a deep cough specimen into a plastic container.  
**LIMITATIONS:** If dust-pigmented laden macrophages are not identified, specimen will be reported as unsatisfactory.

Revised: 3/30/2017
TEST NAME: STAIN, PARASITOLOGY (MODIFIED ACID FAST)

CPT CODE: 87206 (AFS)

SPECIMEN REQUIREMENT:
- 2 scoopfuls of fresh, random stool. Swabs are not acceptable.
- Submit in:
  1) Container with lid.
  2) If using transport media, place stool in container. Cap tightly. Shake for 30 seconds. Refrigeration is not needed.

REFERENCE RANGE: No parasites seen.

METHOD: Microscopic examination

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- Day shift; Monday - Sunday.
- Consult Pathologist and Infection Control for enteric pathogen request on patients with diarrhea onset ≥ 3 days post admission.

TURNAROUND TIME: Within 24 hours

GENERAL USE OF TEST: Detection of Cryptosporidium parvum.

PATIENT PREPARATION:
- Specimens obtained with a warm saline enema or Fleets phospho-soda are acceptable.
- Specimens obtained with mineral oil, bismuth or magnesium compounds are unsatisfactory.
- No barium procedures or laxatives for one week prior to collection of the specimen.

LIMITATIONS:
- One negative result does not rule out the possibility of parasitic infection. The number of oocysts in a stool sample increases the degree of diarrhea.

SPECIMEN PREPARATION:
- Stool samples should be submitted in clean, tight-capped containers.
- Three samples (one per day) are recommended.
- One sample may be obtained by use of an enema.
- Avoid contamination with urine or toilet water.
TEST NAME: STAIN, PARASITOLOGY (MODIFIED ACID FAST)

STORAGE REQUIREMENTS:

- **Liquid/Soft Specimens**: Transport to laboratory ASAP.
- **Others**: Store at 2° - 8°C until tested.

Revised: 3/30/2017
## STOOL GRAM STAIN

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>STOOL GRAM STAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>87205 (GRAM)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>1 mL fresh random diarrheal stool (soft or formed stools will not be tested) submitted in a 4 oz. sterile plastic screw top container.</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>No preponderance of yeast or gram positive coci in clusters.</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Microscopic examination</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Microbiology</td>
</tr>
</tbody>
</table>
| **AVAILABILITY:**          | • No restrictions. 
                            | • STAT on physician request.                     |
| **TURNAROUND TIME:**       | Within 24 hours.                                   |
| **GENERAL USE OF TEST:**   | Examination for predominance of yeast and/or gram positive coci in clusters to assist in the differential diagnosis of diarrheal disease. |
| **PATIENT PREPARATION:**   | None                                               |
| **LIMITATIONS:**           | • Gram stain only. 
                            | • No cultures unless specifically ordered.       |
| **SPECIMEN PREPARATION:**  | • Diarrheal specimen is placed directly in container, avoiding contamination with urine or toilet water. 
                            | • Specimen should be received within 2 to 6 hours of collection if unrefrigerated. |
| **STORAGE REQUIREMENTS:**  | Store at 2° - 8°C until tested.                    |

Revised: 3/30/2017
**STREP A ANTIGEN DETECTION, RAPID**

**TEST NAME:** STREP A ANTIGEN DETECTION, RAPID

**CPT CODE:** 87880 (RSTP)

**SPECIMEN REQUIREMENT:** 2 throat swabs submitted in culturette.

**REFERENCE RANGE:** Negative

**METHOD:** Immunofluorescence technology to detect Group A Streptococcal antigen.

**LAB SECTION PERFORMING TEST:** Microbiology

**AVAILABILITY:**
- No restrictions.
- STAT on physician request.

**TURNAROUND TIME:** 15 minutes

**GENERAL USE OF TEST:**
- Rapid, direct detection of viable and non-viable group A strep antigen.
- Culture will be automatically ordered and performed on all patients with negative antigen results.

**PATIENT PREPARATION:** None

**LIMITATIONS:**
- The rapid test is less sensitive as compared to culture in our laboratory.
- This does not differentiate between carriers and those with infection.

**SPECIMEN PREPARATION:**
- Use a tongue depressor and, with the culturette swab, firmly swab both tonsillar areas and the posterior pharynx.
- Specimen must be transported to laboratory within 72 hours of collection.
- Do not use calcium alginate, cotton tipped or wooden shafted swabs.

**STORAGE REQUIREMENTS:** Store at room temperature until tested; do not refrigerate.

Revised 7/14/2015
STREP PNEUMONIAE ANTIGEN DETECTION, RAPID

TEST NAME: STREP PNEUMONIAE ANTIGEN DETECTION, RAPID

CPT CODE: 87899 (SPAU)

SPECIMEN REQUIREMENT: Urine

REFERENCE RANGE: Negative

METHOD: Immunochromatographic membrane assay

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY:
- No restrictions.
- STAT on physician request.

TURNAROUND TIME: 15 minutes

GENERAL USE OF TEST:
- Rapid, direct detection of viable and non-viable strep pneumoniae antigen.

PATIENT PREPARATION: None

LIMITATIONS:
- A negative Strep. pneumoniae antigen result does not exclude infection with Strep. pneumoniae.
- Strep. pneumonia vaccine may cause false positive results in urine in the 48 hours following vaccination. It is recommended that Strep. pneumoniae antigen testing not be done within 5 days of receiving the Strep. pneumoniae vaccine.

SPECIMEN PREPARATION:
- Collect urine specimens in standard container. Boric acid may be used as a preservative.

STORAGE REQUIREMENTS: Store at 2-8°C or frozen for up to 14 days.

Revised 5/14/15
SURGICAL STAPH SCREEN BY PCR

TEST NAME: SURGICAL STAPH SCREEN BY PCR

CPT CODE: 87641 (SASP)

SPECIMEN REQUIREMENT: Nares specimen collected using a Copan Venturi transystem double-swab.

REFERENCE RANGE: Negative for Staphylococcus aureus

METHOD: DNA Amplification

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Test run on All shifts (Monday – Sunday).

GENERAL USE OF TEST: Identification of the presence of Staphylococcus aureus, and Methicillin resistant Staphylococcus aureus.

LIMITATIONS: • PCR screen is for Staph aureus and MRSA only.

SPECIMEN COLLECTION: • Collect using a Copan Venturi Transystem double swab, any other swabs will be rejected. Insert the dry swabs 1-2 cm into the nostril and rotate swabs against the inside of the nostril for 3 seconds while applying pressure with a finger to the outside of the nose. Repeat in second nostril with the same swabs.

STORAGE REQUIREMENTS: Specimen may be stored at 2° - 8°C for up to 5 days.

Revised 5/14/15
**SURGICAL TISSUE**

**TEST NAME:** SURGICAL TISSUE ROUTINE TISSUE PATHOLOGY  

**CPT CODE:** Determined by specimen type and diagnosis.  

**SPECIMEN REQUIREMENT:** Fresh tissue  

**COLLECTION REQUIREMENT:**  
- 10% Neutral buffered formalin.  
- Operative diagnosis required.  
- To detect the presence of uric acid crystals, tissue must be submitted in 100% ETOH.  

**REFERENCE RANGE:** Results interpreted by consulting Pathologist.  

**METHOD:**  
- Paraffin embedded tissue sections.  
- Microscopy  

**LAB SECTION PERFORMING TEST:** Histology  

**AVAILABILITY:** Monday through Friday, 0800 to 1630  

**TURNAROUND TIME:** 24 – 48 hours  

**GENERAL USE OF TEST:** Histologic diagnosis  

Revised: 3/30/2017
T3, FREE

TEST NAME: T3, Free

CPT CODE: 84481 (FRT3)

SPECIMEN REQUIREMENT: 0.5 mL serum from 3 mL tiger top tube (SST).

REFERENCE RANGE: 2.50 pg/mL – 3.90 pg/mL

METHOD: Loci Chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Evaluate thyroid function.

LIMITATIONS: • Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 48 hours.
• Freeze at -20°C or colder for prolonged storage prior to analysis.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
T3, TOTAL

TEST NAME: T3, TOTAL

CPT CODE: 84480 (TT3)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL plain red top tube or 3 mL tiger top tube (SST).

REFERENCE RANGE: 0.9 – 1.8 ng/mL

METHOD: Chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABLE: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Evaluate thyroid function.

LIMITATIONS: Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

Do not use specimens that have been stored longer than 8 hours at room temperature.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection. Stable up to 8 hours at room temperature.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -20°C or colder for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
TEGRETOL (CARBAMAZEPINE)

TEST NAME: TEGRETOL (CARBAMAZEPINE)

CPT CODE: 81056 (TEG)

SPECIMEN REQUIREMENT: • 0.5 mL serum from a 3 mL tiger top tube (SST) or lithium heparin.

REFERENCE RANGE: 4.0 – 12.0 µg/mL

CRITICAL VALUE: >20.0 µg/mL

METHOD: Petinia

LAB SECTION PERFORMING TEST: Chemistry

COLLECTION REQUIREMENTS: See pharmacy for therapeutic drug monitoring.

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing
• Results of STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Monitor therapeutic drug levels.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2°C - 8°C up to 48 hours.
• Freeze at -15°C to -20°C for extended storage prior to analysis.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
### TEST NAME:
TESTOSTERONE, TOTAL AND/OR FREE

### CPT CODE:
84403 (Test) and 84402 (FRTC)

### SPECIMEN REQUIREMENT:
0.5 mL serum from 3 mL tiger top tube (SST).

### REFERENCE RANGE:

<table>
<thead>
<tr>
<th>Testosterone - Pediatric Males and Females by Age</th>
<th>Testosterone - Pediatric by Tanner Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Values (ng/dL)</td>
<td><strong>Males</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Tanner Stage</strong></td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td></td>
</tr>
<tr>
<td>2-10</td>
<td>&lt; 7.00-29.44</td>
</tr>
<tr>
<td>11</td>
<td>&lt; 7.00-353.00</td>
</tr>
<tr>
<td>12</td>
<td>&lt; 7.00-562.42</td>
</tr>
<tr>
<td>13</td>
<td>8.19-582.87</td>
</tr>
<tr>
<td>14</td>
<td>20.35-777.38</td>
</tr>
<tr>
<td>15</td>
<td>127.21-849.36</td>
</tr>
<tr>
<td>16-21</td>
<td>113.19-882.10</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>&lt; 7.00-117.76</td>
</tr>
<tr>
<td>2-10</td>
<td>&lt; 7.00-38.92</td>
</tr>
<tr>
<td>11-15</td>
<td>&lt; 7.00-38.92</td>
</tr>
<tr>
<td>16-21</td>
<td>15.06-42.41</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Reference Values (ng/dl)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult Males</strong></td>
<td></td>
</tr>
<tr>
<td>&lt; 50</td>
<td>123.06-813.86</td>
</tr>
<tr>
<td>≥ 50</td>
<td>86.98-780.10</td>
</tr>
<tr>
<td><strong>Adult Females</strong></td>
<td></td>
</tr>
<tr>
<td>Pre-menopause (21-46 yrs)</td>
<td>9.01-47.94</td>
</tr>
<tr>
<td>Post-menopause (≥ 45 yrs)</td>
<td>&lt; 7.00-45.62</td>
</tr>
</tbody>
</table>

### METHOD:
Chemiluminescent immunoassay

### LAB SECTION:
Chemistry
**TEST NAME:**
TESTOSTERONE, TOTAL AND/OR FREE

**PERFORMING TEST:**

**AVAILABILITY:**
Daily

**TURNAROUND TIME:**
Same shift testing

**GENERAL USE OF TEST:**
For the assessment of androgen disorders.

**LIMITATIONS:**
- Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.
- Do not use specimens that have been stored longer than 8 hours at room temperature.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection. Stable up to 8 hours at room temperature.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2°C - 8°C up to 48 hours.
- Freeze at -20°C or colder for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 6/19/2017
THEOPHYLLINE (AMINOPHYLLINE)

TEST NAME: THEOPHYLLINE (AMINOPHYLLINE)

CPT CODE: 80198 (THEO)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR 0.5 mL plasma from a green top tube (lithium heparin).

REFERENCE RANGE: 10 – 20 µg/mL

CRITICAL VALUE: >25 µg/mL

METHOD: Immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing.
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Monitor therapeutic drug level.

PATIENT PREPARATION: • Trough: Immediately prior to next dose.

NOTE: Consult with a pharmaceutical services for the appropriate therapeutic monitoring collection times

LIMITATIONS: Lipemia may cause a negative bias.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2 - 8°C up to 48 hours.
• Freeze at -15°C to -20°C for extended storage prior to analysis.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
THERAPEUTIC PHLEBOTOMY

**TEST NAME:** THERAPEUTIC PHLEBOTOMY

**CPT CODE:** 99195 (TPHL)

**SPECIMEN REQUIREMENT:** Whole blood collection

**LAB SECTION PERFORMING TEST:** Blood Bank

**AVAILABILITY:** Weekdays 8:00 AM to 4:00 PM

**TURNAROUND TIME:** 1 hour

**GENERAL USE OF TEST:** Therapeutic treatment for polycythemia or hemochromotosis.

**LIMITATIONS:** Hemoglobin must be above 11.5 grams.

Revised: 3/30/2017
THYROID STIMULATING HORMONE

TEST NAME: THYROID STIMULATING HORMONE (Ultrasensitive TSH)

CPT CODE: 84443 (TSH3)

SPECIMEN REQUIREMENT: 0.5 mL serum from 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE:
- 20 yr: 0.300 – 4.000 µIU/mL
- 12 – 19 yrs: 0.530 – 3.590 µIU/mL
- 7 – 11 yrs: 0.660 – 4.140 µIU/mL
- 2 – 6 yrs: 0.540 – 4.530 µIU/mL
- 1M – 2 yrs: 0.620 – 8.050 µIU/mL
- 4D – 1M: 0.430 – 16.100 µIU/mL
- 0 – 3 days: 5.170 – 14.600 µIU/mL

METHOD: Loci Chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Differential diagnosis of primary hypothyroidism from secondary hypothyroidism.

LIMITATIONS: Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2° - 8°C up to 48 hours.
- Freeze at -20°C or colder for prolonged storage prior to analysis.
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
# TOBRAMYCIN (NEBCIN)

<table>
<thead>
<tr>
<th>TEST NAME:</th>
<th>TOBRAMYCIN (NEBCIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPT CODE:</td>
<td>80200 (TOBU): Random</td>
</tr>
<tr>
<td></td>
<td>(TOBT): Trough</td>
</tr>
<tr>
<td></td>
<td>(TOBP): Peak</td>
</tr>
<tr>
<td>SPECIMEN REQUIREMENT:</td>
<td>0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).</td>
</tr>
<tr>
<td>REFERENCE RANGE:</td>
<td>Trough: 0 – 10 yrs: 0.3 – 2.0 µg/mL</td>
</tr>
<tr>
<td></td>
<td>&gt;11 yrs: 0.5 – 1.5 µg/mL</td>
</tr>
<tr>
<td></td>
<td>Peak: 5.0 – 10 µg/mL (traditional dosing)</td>
</tr>
<tr>
<td></td>
<td>5.0 – 20.0 µg/mL (once daily dosing)</td>
</tr>
<tr>
<td>CRITICAL VALUE:</td>
<td>Trough: &gt;2.0 µg/mL (0 – 10 yrs. old)</td>
</tr>
<tr>
<td></td>
<td>&gt;1.5 µg/mL (&gt;11 yrs. old)</td>
</tr>
<tr>
<td></td>
<td>Peak: &gt;20 µg/mL</td>
</tr>
<tr>
<td>METHOD:</td>
<td>Petinia</td>
</tr>
<tr>
<td>LAB SECTION PERFORMING TEST:</td>
<td>Chemistry</td>
</tr>
<tr>
<td>AVAILABILITY:</td>
<td>Daily or STAT</td>
</tr>
<tr>
<td>TURNAROUND TIME:</td>
<td>Same shift testing.</td>
</tr>
<tr>
<td>GENERAL USE OF TEST:</td>
<td>To monitor antibiotic therapy; test for insufficient or toxic levels of tobramycin.</td>
</tr>
<tr>
<td>PATIENT PREPARATION:</td>
<td>• Trough: 30 minutes to immediately prior to next dose.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Consult with pharmaceutical services for the appropriate therapeutic monitoring collection times.</td>
</tr>
<tr>
<td>SPECIMEN PREPARATION:</td>
<td>• Collect specimen using standard lab procedures.</td>
</tr>
<tr>
<td></td>
<td>• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection. Stable for 8 hours at room temperature.</td>
</tr>
<tr>
<td>STORAGE REQUIREMENTS:</td>
<td>• Refrigerate at 2 - 8°C up to 3 days prior to analysis. If analysis is delayed more than 3 days, freeze samples at -15°C to -20°C for up to one month.</td>
</tr>
<tr>
<td></td>
<td>• Samples will be capped and held for 5 days after testing.</td>
</tr>
</tbody>
</table>

Revised: 3/30/2017

UVM HEALTH NETWORK-CVPH
TEST MENU 295
TOXOPLASMA (IgG)

TEST NAME: TOXOPLASMA (IgG)

CPT CODE: 86777 (TOPG)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: No antibody detected.

METHOD: Indirect chemiluminescent immunoassay.

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday – Saturday.

TURNAROUND TIME: Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

GENERAL USE OF TEST: For use in the detection of antibodies to the intracellular protozoan parasite Toxoplasma gondii.

LIMITATIONS: - Sera collected very early in the acute stages of the disease may have antibody too low to detect.
- Do not use grossly hemolyzed, icteric, or lipemic specimens.

SPECIMEN PREPARATION: - Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: - Refrigerate at 2 - 8°C up to 7 days. If longer storage is needed, freeze at -20°C.
- Samples will be capped and held for 7 days after testing.

Revised: 3/30/2017
### TOXOPLASMA (IgM)

**TEST NAME:** TOXOPLASMA (IgM)

**CPT CODE:** 86778 (TOPG)

**SPECIMEN REQUIREMENT:** 0.5 mL serum from a 3 mL tiger top tube (SST).

**REFERENCE RANGE:** No antibody detected.

**METHOD:** Antibody capture chemiluminescence immunoassay

**LAB SECTION PERFORMING TEST:** Special Chemistry

**AVAILABILITY:** Monday - Saturday

**TURNAROUND TIME:** Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

**GENERAL USE OF TEST:** For use in the detection of antibodies to the intracellular protozoan parasite *Toxoplasma gondii* during acute infection.

**LIMITATIONS:**
- Sera collected very early in the acute stages of the disease may have antibody too low to detect.
- Infections such as Epstein Barr Virus, CMV, and different Hepatitis viruses may cause symptoms similar to Toxoplasmosis and must be excluded before confirmation of diagnosis.

**SPECIMEN PREPARATION:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate serum from cells within 2 hours of collection.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2 - 8°C for up to 7 days. If longer storage is needed, freeze at -20°C.
- Samples will be capped and held for 7 days after testing.

Revised: 3/30/2017
TRANSFERRIN

TEST NAME: TRANSFERRIN

CPT CODE: 84466 (TRNF)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 5 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE: 180 – 329 mg/dL (male)
192 – 382 mg/dL (female)

METHOD: Nephelometric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Aids in diagnosis of malnutrition, acute inflammation, infection, assessment of renal function and red blood cell disorders.

SPECIMEN PREPARATION: Collect specimen using standard lab procedures. Airfuge lipemic specimens.

STORAGE REQUIREMENTS:
- If not assayed within 8 hours of collection, store at 2 - 8°C for 48 hours.
- Freeze at -20°C for prolonged storage.

Revised: 3/30/2017
TRIGLYCERIDES

TEST NAME: TRIGLYCERIDES

CPT CODE: 84478 (TRIG)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE: <150 mg/dL

METHOD: Colormetric

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

LIMITATIONS: Depressed results may occur on samples drawn from patients receiving N-Acetylcysteine (NAC) or Metamizole. **Note:** If patient is taking NAC or Metamizole, venipuncture should occur before drug administration.

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Hyper or hypo lipidemia.

PATIENT PREPARATION: Fasting is preferred.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures. • Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2 - 8°C up to 48 hours. • Freeze at -15°C to -20°C for prolonged storage prior to analysis. • Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
**TEST NAME:** TROPONIN

**CPT CODE:** 84484 (TRPI)

**SPECIMEN REQUIREMENT:** 0.5 mL plasma from a 3 mL green top tube (lithium or sodium heparin).

**REFERENCE RANGE:** 0.0 – 0.045 ng/mL

**CRITICAL VALUE:** ≥2.0 ng/mL

**METHOD:** Chemistry

**LAB SECTION PERFORMING TEST:** Daily or STAT

**AVAILABILITY:**
- Same shift testing.
- STAT specimens will be reported within 30 minutes of receipt in the laboratory.

**TURNAROUND TIME:**
Cardiac specific marker, which is released after AMI or ischemic damage.

**GENERAL USE OF TEST:** Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.

**LIMITATIONS:**
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate plasma from cells within 2 hours of collection.

**SPECIMEN PREPARATION:**
- Specimens may be stored for up to 24 hours at 2° - 8°C.
- Freeze at -20°C or colder for prolonged storage prior to analysis.

**STORAGE REQUIREMENTS:**
- Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
TZANCK SMEAR: VIRAL STUDIES FOR HERPES, PEMPHIGUS

TEST NAME: TZANCK SMEAR

CPT CODE: 88160

SPECIMEN REQUIREMENT: Direct scrapes of lesion at margins of the vesicle.

COLLECTION REQUIREMENT: • Firmly scrape the margins of the lesion with moist end of tongue depressor.
• Spread cellular material evenly on glass slide(s) and immediately immerse in 95% ETOH.
• Label slide(s) with patient’s name.
• Collection materials may be obtained from Cytology, ext 7417.

REFERENCE RANGE: No viral inclusion bodies identified.

METHOD: Modified Papanicolaou

LAB SECTION PERFORMING TEST: Cytology

AVAILABILITY: Monday – Friday; 800 to 1630

TURNAROUND TIME: One to two working days.

GENERAL USE OF TEST: To establish the presence of viral disease; herpes virus infection or pemphigus.

PATIENT PREPARATION: • Superficial skin lesions should be moistened before scraping to remove loose, degenerated cellular debris and serum crust.
• Apply wet compresses over lesion for ½ hour.

STORAGE REQUIREMENTS: Refrigerate

Revised: 3/30/2017
UREA NITROGEN, BLOOD

TEST NAME: UREA NITROGEN, BLOOD

CPT CODE: 84520 (BUN)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE: 8 – 26 mg/dL

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: • Same shift testing.
• Results of specimens requested STAT will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Evaluation of kidney function.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2 – 8°C up to 48 hours.
• Freeze at -15°C to -20°C for prolonged storage prior to analysis.
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
UREA, URINE

TEST NAME: UREA, URINE

CPT CODE: 84540 (UNU)

SPECIMEN REQUIREMENT: Random urine or total 24-hour specimen collected with no preservative in a plastic container obtained from the laboratory.

REFERENCE RANGE: 12,000 – 20,000 mg/24 hours

METHOD: Enzymatic

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Evaluation of kidney function.

SPECIMEN PREPARATION:
- No preservatives necessary.
- Refrigerate specimen during collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2 – 8°C up to 7 days.

Revised: 3/30/2017
URIC ACID, BLOOD

TEST NAME: URIC ACID, BLOOD

CPT CODE: 84550 (URIC)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE: Males: 3.5 – 7.2 ng/dL  
Females: 2.6 – 6.0 ng/dL

METHOD: Uricase

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

LIMITATIONS: Depressed results may occur on samples drawn from patients receiving Metamizole.  
Note: If patient is taking NAC or Metamizole, venipuncture should occur before drug administration.

TURNAROUND TIME: Same shift testing.

GENERAL USE OF TEST: Diagnosis of gout and other metabolic disorders.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures.  
• Centrifuge specimen; separate serum/plasma from cells within 2 hours of collection. Separated samples stable 3-5 days at 4°C.

STORAGE REQUIREMENTS: • Freeze at -15°C to -20°C for prolonged storage up to 6 months prior to analysis.  
• Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
**URIC ACID, URINE**

**TEST NAME:** URIC ACID, URINE

**CPT CODE:** 84560 Random – (UAU)
24 Hour – (UA24)

**SPECIMEN REQUIREMENT:** Random urine or total 24-hour urine collected with no preservative in a plastic jug obtained from the laboratory.

**REFERENCE RANGE:** 24-hour urine: 250 – 750 mg/24 hours

**METHOD:** Uricase

**LAB SECTION PERFORMING TEST:** Chemistry

**AVAILABILITY:** Daily

**TURNAROUND TIME:** Same shift testing.

**GENERAL USE OF TEST:** Uric acid metabolism.

**SPECIMEN PREPARATION:**
- No preservatives necessary.
- Refrigerate during collection.
- Once received in lab, add NaOH to an aliquot of the 24 hour specimen, adjusting to a pH of 8 – 10 using 1N NaOH. Alkaline urine stable at ambient temperature for 3 -4 days.

**STORAGE REQUIREMENTS:**
- Refrigerate at 2 – 8°C up to 7 days.

Revised: 3/30/2017
URINALYSIS, ROUTINE

TEST NAME: URINALYSIS, ROUTINE
(pH, Color, Appearance, Specific Gravity, Protein, Leukocytes, Glucose, Ketone, Nitrite, Urobilinogen, Bilirubin, Hemoglobin and Microscopic if required)

CPT CODE: 81003 (UA)

SPECIMEN REQUIREMENT: 10 mL from a first morning clean catch midstream or catheterized specimen.

REFERENCE RANGE: Reference ranges listed on report.

METHOD: Chemical reaction using a dipstick.

LAB SECTION PERFORMING TEST: Urinalysis

AVAILABILITY: Daily or STAT

TURNAROUND TIME:
- Same shift testing.
- Results of STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Evaluate kidney function, endocrine or metabolic disorders.

SPECIMEN PREPARATION:
- Submit clean catch midstream urine sample or a catheterized sample in a labeled, sealed container.
- Samples transferred to collection containers containing boric acid specified for urinalysis is also acceptable.

STORAGE REQUIREMENTS:
- Refrigerate up to 24 hours before analysis.
- Specimens left at room temperature for more than 2 hours are unacceptable.

Revised: 3/30/2017
URINE CYTOLOGY

TEST NAME: URINE CYTOLOGY

CPT CODE: 88108

SPECIMEN REQUIREMENT:
- Second morning specimen, voided or catheterized.
- 50mL of urine, not less than 5 mL.
- Immediately add urine to container pre-filled with Saccomanno fluid or add equal amount of 50% ETOH and label container “50% ETOH Added”.
- Ideal collection consists of 3 separate (daily) samples. Other frequencies will be accepted.

COLLECTION REQUIREMENT: Immediately add urine to container pre-filled with Sacamanno fluid or add equal amount of 50% ETOH.

REFERENCE RANGE: Negative for malignant cells.

METHOD: Modified Papanicolaou

LAB SECTION PERFORMING TEST: Cytology

AVAILABILITY: Monday through Friday – 0800 to 1630

TURNAROUND TIME: One to two working days.

GENERAL USE OF TEST: To establish the presence of primary or metastatic neoplasm.

PATIENT PREPARATION:
- After first morning void, patient may be hydrated with one glass of water every 30 minutes for three hours.
- Instructions to the patient are included in the patient education section of this guide.

LIMITATIONS: First morning or 24-hour urine samples are unsatisfactory.

STORAGE REQUIREMENTS: Refrigerate

Revised: 3/30/2017
URINE, MICROSCOPIC

TEST NAME: URINE, MICROSCOPIC

CPT CODE: 88108

SPECIMEN REQUIREMENT: 10 mL from a first morning clean catch mid stream or catheterized specimen.

METHOD: Microscopic examination of urine sediment.

LAB SECTION PERFORMING TEST: Urinalysis

AVAILABILITY: Daily or STAT

TURNAROUND TIME:
- Same shift testing.
- Results of STAT specimens will be reported within 30 minutes of receipt in the laboratory.

GENERAL USE OF TEST: Detection of increased and/or abnormal formed elements.

LIMITATIONS: None. This test is included in a routine urinalysis when abnormal dipstick readings are present.

SPECIMEN PREPARATION: Submit clean catch mid stream urine sample or a catheterized sample in a labeled sealed container.

STORAGE REQUIREMENTS:
- Refrigerate up to 24 hours before analysis.
- Specimens left at room temperature more than 2 hours are unacceptable for assay.

Revised: 3/30/2017
URINE REDUCING SUBSTANCES

**TEST NAME:** URINE REDUCING SUBSTANCES

**CPT CODE:** 81099 (URED)

**SPECIMEN REQUIREMENT:** 10 mL from fresh random urine.

**REFERENCE RANGE:** Negative

**METHOD:** Benedict’s copper reduction reaction.

**LAB SECTION PERFORMING TEST:** Urinalysis

**AVAILABILITY:** Daily or STAT

**TURNAROUND TIME:**
- Same shift testing.
- Results of STAT specimens will be reported within 30 minutes of receipt in the laboratory.

**GENERAL USE OF TEST:** Screen for glycosuria, galactosuria or pentosuria.

**LIMITATIONS:**
- The test is routinely performed on all pediatric patients up to the age of 2 years.
- Presence of ascorbic acid (Vitamin C), aspirin, EDTA, thiazines, nicotinic acid, phenothiazines, lithium, glucuronic acid, penicillin or cephalosporins probeneacid.

**STORAGE REQUIREMENTS:** Refrigerate for 24 hours if sample cannot be tested immediately.

Revised: 3/30/2017
URINE UREA CLEARANCE

TEST NAME: URINE UREA CLEARANCE
(Includes serum and urine urea measurement)

CPT CODE: 84545 (BULL)

SPECIMEN REQUIREMENT: • Total 12 or 24-hour urine collected in a plastic container obtained from the laboratory.
• Serum urea (BUN) ordered separately.

METHOD: Enzymatic conductivity

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Kidney function

LIMITATIONS: • Precisely timed and completely collected specimen is necessary.
• Blood collection should be drawn during time of stated urine collection.
• No preservatives necessary for urine; refrigerate during collection.

SPECIMEN PREPARATION: • Collect serum urea using standard lab procedures.
• Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 1 week.
• Samples will be capped and held for at least 5 days after testing.

Revised: 3/30/2017
TEST NAME: VAGINOSIS PATHOGENS BY DNA PROBE

CPT CODE: 87480 / 87510 / 87660

SPECIMEN REQUIREMENT: Vaginal swabs collected in the appropriate transport tube

COLLECTION REQUIREMENT: Using the sterile swab provided in the collection kit, obtain a sample from the posterior vaginal fornix. Twist or roll the swab against the vaginal wall two or three times, ensuring the entire circumference of the swab has touched the vaginal wall. Swab the lateral vaginal wall while removing the swab.


METHOD: DNA Probe

LAB SECTION PERFORMING TEST: Microbiology

AVAILABILITY: Daily – Day shift only

GENERAL USE OF TEST: To detect and identify the following organisms for the diagnosis of vaginitis: Candida species, Gardnerella Vaginalis and Trichomonas Vaginalis.

LIMITATIONS: Optimal performance of this test depends upon collection of a good patient specimen. Must use appropriate collection kit, other methods of collection have not been evaluated.

SPECIMEN COLLECTION: Open collection and transport kit. Remove dropper, break ampule, dispense all fluid from dropper into tube provided. Collect sample from patient using swab provided. Place swab into the tube until swab touches bottom of tube and break shaft at score line. Cap tube tightly.

STORAGE REQUIREMENTS: Sample is stable for 72 hours at room temperature (15-30° C) or refrigerated (2-8° C).

Revised: 3/30/2017
### VALPROIC ACID (DEPAKENE)

<table>
<thead>
<tr>
<th><strong>TEST NAME:</strong></th>
<th>VALPROIC ACID (DEPAKENE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT CODE:</strong></td>
<td>80164 (VALP)</td>
</tr>
<tr>
<td><strong>SPECIMEN REQUIREMENT:</strong></td>
<td>0.5 mL serum from a 3 mL tiger top tube (SST) or lithium heparin.</td>
</tr>
<tr>
<td><strong>REFERENCE RANGE:</strong></td>
<td>50 – 100 µg/mL</td>
</tr>
<tr>
<td><strong>CRITICAL VALUE:</strong></td>
<td>&gt;150.0 µg/mL</td>
</tr>
<tr>
<td><strong>METHOD:</strong></td>
<td>Petinia</td>
</tr>
<tr>
<td><strong>LAB SECTION PERFORMING TEST:</strong></td>
<td>Chemistry</td>
</tr>
<tr>
<td><strong>AVAILABILITY:</strong></td>
<td>Daily or STAT</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME:</strong></td>
<td>Same shift testing.</td>
</tr>
<tr>
<td></td>
<td>Results of STAT specimens will be resulting within 30 minutes of receipt in the laboratory.</td>
</tr>
<tr>
<td><strong>GENERAL USE OF TEST:</strong></td>
<td>Monitor therapeutic drug level.</td>
</tr>
</tbody>
</table>
| **PATIENT PREPARATION:** | *Trough:* Immediately prior to next dose.  
*Note:* Consult pharmaceutical services for the appropriate therapeutic monitoring collection times. |
| **SPECIMEN PREPARATION:** | Collect specimen using standard lab procedures. |
| | Centrifuge specimen; separate serum from cells within 2 hours of collection. Separated specimens are stable for 2 hours at 20 – 25°C, and 8 hours at 2 – 8°C. |
| **STORAGE REQUIREMENTS:** | Freeze at -15°C to -20°C for prolonged storage, up to 2 months prior to analysis. |
| | Samples will be capped and held for at least 5 days after testing. |

Revised: 3/30/2017
VANCOMYCIN (VANCOCIN HC1)

TEST NAME: VANCOMYCIN (VANCOCIN HC1)

CPT CODE: 80202 Random (CVU) Trough (CVT) Peak (CVP)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST) or lithium heparin.

REFERENCE RANGE: Trough: 7.5 – 20.0 µg/mL Peak: 20.0 – 40.0 µg/mL

CRITICAL VALUE: Random & Peak: >40 µg/mL Trough: >25 µg/mL

METHOD: Petinia

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily or STAT

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Monitor therapeutic drug levels.

PATIENT PREPARATION: Trough: 30 minutes to immediately prior to next dose. Note: Consult pharmaceutical services for the appropriate therapeutic monitoring collection times.

SPECIMEN PREPARATION: • Collect specimen using standard lab procedures. • Centrifuge specimen; separate serum from cells within 2 hours of collection.

STORAGE REQUIREMENTS: • Refrigerate at 2° - 8°C up to 48 hours. • Freeze at -15°C to -20°C for prolonged storage prior to analysis. • Samples will be capped and held for 5 days after testing.

Revised: 3/30/2017
VARICELLA (IgG)

TEST NAME: VARICELLA (IgG)

CPT CODE: 86787 (VZ)

SPECIMEN REQUIREMENT: 0.5 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: Immune

METHOD: Indirect chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Monday - Saturday

TURNAROUND TIME: Results of specimens collected by 7:00 AM will be reported by 4:00 PM.

LIMITATIONS: Do not use grossly hemolyzed, icteric, or lipemic samples.

GENERAL USE OF TEST: For use in the detection of immunity to varicella (chicken pox) and zoster (shingles).

SPECIMEN PREPARATION:
- Collect specimen using standard lab procedures.
- Centrifuge specimen; separate plasma from cells within 2 hours of collection.

STORAGE REQUIREMENTS:
- Refrigerate at 2 - 8°C up to 7 days.
- Freeze at -20°C for prolonged storage prior to analysis.
- Samples will be capped and held for 7 days after testing.

Revised: 3/30/2017
VITAMIN B12

TEST NAME: VITAMIN B12

CPT CODE: 82607 (B12)

SPECIMEN REQUIREMENT: 1 mL serum from a 3 mL tiger top tube (SST) OR plasma from a green top tube (lithium heparin).

REFERENCE RANGE: Normal: 211.00 – 911.00 pg/mL
Deficient: <210.00 pg/mL

METHOD: Chemiluminescence

LAB SECTION PERFORMING TEST: Chemistry

AVAILABILITY: Daily

TURNAROUND TIME: Same shift testing

GENERAL USE OF TEST: Megaloblastic anemia, dietary deficiency.

PATIENT PREPARATION: Fasting is preferred.

LIMITATIONS: -Patients who have been regularly exposed to animals or immunoglobulin fragments may produce antibodies that interfere with immunoassays.
-Do not use specimens that have been stored longer than 8 hours at room temperature.
-Preservatives such as fluoride or ascorbic acid interfere with this assay.
-Excessive exposure to light may alter Vitamin B12 Values.

SPECIMEN PREPARATION: Centrifuge and separate serum or plasma from cells immediately after collection.

STORAGE REQUIREMENTS: • Store at 2° - 8°C for up to 24 hours.
• Freeze at -20°C or colder for prolonged storage prior to analysis.
• Samples will be held for at least 5 days after testing.

Revised: 3/30/2017
TEST NAME: VITAMIN D

CPT CODE: 82306 (VTMD)

SPECIMEN REQUIREMENT: 1 mL serum from a 3 mL tiger top tube (SST).

REFERENCE RANGE: 30 – 100 ng/mL

METHOD: Direct competitive chemiluminescent immunoassay

LAB SECTION PERFORMING TEST: Special Chemistry

AVAILABILITY: Monday - Saturday

TURNAROUND TIME: Same day if received before 1:00 pm.

GENERAL USE OF TEST: Vitamin D is important for general bone health. Vitamin D deficiency (less than 10 ng/mL) is characterized by muscle weakness, bone pain and fragility fractures.

PATIENT PREPARATION: None

LIMITATIONS: -The effect of heterophilic antibodies on this assay’s performance has not been evaluated.
-Do not use grossly hemolyzed, icteric, or lipemic samples.

SPECIMEN PREPARATION: Centrifuge and separate serum from cells immediately after collection.

STORAGE REQUIREMENTS: • Store at 2° - 8°C for up to 120 hours.
• Freeze at -20°C or colder for prolonged storage prior to analysis.
• Samples will be held for at least 7 days after testing.

Revised: 3/30/2017
TEST NAME: WASHING / LAVAGE CYTOLOGY: BRONCHIAL, TRACHEAL OR ESOPHAGEAL

CPT CODE: 88108 - Washing  
88104 - Smears  
88305 – Cell Block

SPECIMEN REQUIREMENT:  
- Washing obtained by physician during endoscopy.  
- Immediately add equal amount of 50% ETOH and label container “50% ETOH added.”

REFERENCE RANGE: Negative for malignant cells.

METHOD: Modified Papanicolaou

LAB SECTION PERFORMING TEST: Cytology

AVAILABILITY: Monday through Friday, 0800 to 1630

TURNAROUND TIME: 24 to 72 hours

GENERAL USE OF TEST: To establish the presence of primary or metastatic neoplasm.

LIMITATIONS: Washings are considered non-diagnostic if epithelium lining the site of the wash is not present.

STORAGE REQUIREMENTS: Refrigerate

Revised: 3/30/2017