

# **Carolinas Laboratory Network**

## **Reference Laboratory**



## **Directory of Services**



## Table of Contents

---

Section	
<b>1</b>	<b>Directory of Laboratory Contacts</b>
<b>2</b>	<b>Specimen Labeling and Requisitions</b>
<b>3</b>	<b>Critical Values</b>
<b>4</b>	<b>Sample Preparation and Handling</b>
<b>5</b>	<b>Laboratory Supplies and Ordering</b>
<b>6</b>	<b>Test Listing with Availability and Sample Requirements</b>
<b>7</b>	<b>Microbiology Collection Information</b>
<b>8</b>	<b>Cytology</b>
<b>9</b>	<b>Surgical Pathology/ Histology Collection</b>
<b>10</b>	<b>Cytogenetics</b>
<b>11</b>	
<b>12</b>	



---

## Section 1      Laboratory Directory of Contacts

Administrative and Supervisory Staff

Reference Lab Staff

Pathology Staff

ACD Phone Information for Clinical Areas

## Carolinas Laboratory Network

<b>CLN Administration</b>		
Lipford, Edward H. M.D.	Medical Director, CLN & CMC	704-355-5497
Ward, Ritu	Asst. Vice-President, CLN	704-512-3789
Gibbons, Rebecca	Sr. Director	704-512-2439
McElhiney, Barbara	Director, Technical	704-355-4628
Patterson, Wendell	Director, CLN	704-355-4887
Wallin, Deborah	Director, Anatomical Pathology	704-304-5984
Davis, Vickie	Director, CMC Northeast	704-403-1418
Sides, Jill	Director, Reference Lab, Sales & Marketing	704-512-3704
<b>CLN Supervisory &amp; Management</b>		
Bell, Sandy	Manager, CMC University Lab	704-863-5897
Grissom, Susan	Manager, CLN	704-355-9422
Smithen, Andrew	Manager, CMC Mercy Lab	704-304-6064
Kientzel, Terri	Manager, CMC Pineville Lab	704-667-0610
Lewis, Vickie	Manager, Processing & Logistics	704-355-8826
Costello, Pamela	Manager, Hematology	704-355-5843
Marian Fortmann	Manager, Blood Bank	704-355-3582
Via, Karen	Manager, Chemistry	704-355-5815
Williams, Anne	Manager, Reference Lab	704-355-5364
Tarleton, Sandy	Manager, Microbiology	704-355-3535
Barto, Paul	Supervisor, Cytogenetics	704-355-7206
Roderick, Cynthia	Supervisor, Specimen Processing	704-355-0024
Tisdale, Kenyatta	Supervisor, Reference Processing	704-355-1553
Walters, Latisha	Supervisor, Reference Processing	704-355-5962
Drechsel, Rebecca	Supervisor, Public Health Lab	704-336-4685
Greger, Geri	Supervisor, Cytology	704-304-5755
Kerns, Florence	Supervisor, CMC Phlebotomy Services	704-355-3209
Sanfilippo, Linda	Supervisor, Client Services	704-355-5246
Starr-Madyun, Shauna	Supervisor, Courier & Reference Phlebotomy	704-355-3289
Mallory, Sharon	Supervisor, Immunology	704-304-5097
Todd, Heather	Supervisor, Molecular Pathology	704-304-5744
Shaw, Susan	Coordinator, Point-of-Care Testing	704-355-3466
Porter, Dara	Coordinator, CLN PI/Safety	704-355-3286
Pizi, Dave	Lead Tech, Histology	704-304-5938

**Carolinas Laboratory Network**

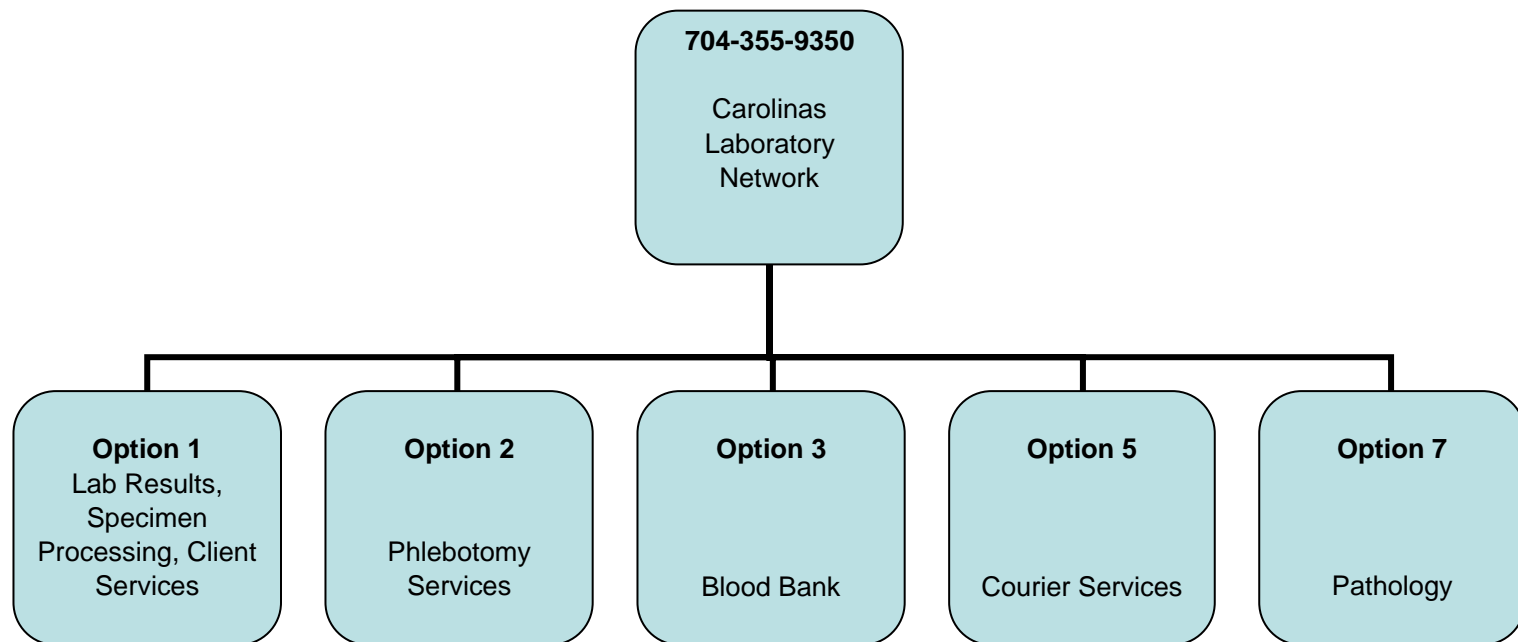
<b>CLN Medical &amp; Ph.D. Staff</b>		
Adlakha, Kiran, M.D.		704-296-4131
Ahrens, William, M.D.		704-355-0519
Ballinger, William E., M.D.		704-355-3480
Smith, Jr., Elton T.	Medical Director, CMC Mercy	704-304-5663
Block, Jared G., M.D.	Medical Director, CMC University	704-863-5727
Burks, R. Tucker, M.D.		704-355-0537
Calhoun, Ben, M.D.	Medical Director, Surgical Pathology	704-355-0518
Christensen, Wayne N., M.D.		704-355-5881
Dollar, James D., M.D.		704-355-0514
Grass, Frank, Ph.D.	Technical Director, Cytogenetics	704-355-3854
Lipford, Edward H., M.D.	Medical Director, CLN & CMC	704-355-5497
Longshore, John W., Ph. D.	Technical Director, Molecular Pathology	704-304-5384
Matthews, Linda J., M.D.		704-355-0516
Maynard, Susan M., Ph.D.	Technical Director, Chemistry	704-355-5814
McDermott, James E., M.D.	Medical Director, Cytology	704-355-3471
Sautter, Robert L., Ph.D.	Technical Director, Microbiology & Point-of-Care Testing	704-355-3476
Sexton, F. Mack, M.D.		704-549-8444
Smith, Kevin S., M.D.	Medical Director, CMC Pineville	704-667-1704
Spence, Edward J., M.D.	Medical Director, Cytogenetics	704-355-5690
Weida, Carol J., M.D.	Medical Director, Transfusion Services	704-355-0555

**Carolinas Laboratory Network**

<b>CLN Reference Laboratory</b>		
Edward H. Lipford, MD	Medical Director, CLN and Reference Lab	704-355-5497
Sides, Jill	Director, Client Services, Sales & Marketing	704-512-3704
Wallin, Deborah	Director, Anatomical Pathology	704-304-5984
Williams, Anne	Senior Account Executive	704-355-5364
LiVecchi, Erin	Account Executive	704-355-5362
Peng, Adrian	Field Service Representative	704-614-9067
Carelock, Andre	Field Service Representative	704-287-5700
Sanfilippo, Linda	Supervisor, Client Services	704-355-5246
Starr-Madyun, Shauna	Supervisor, Courier and Reference Lab Phlebotomy	704-863-9993
Laboratory Results		704-355-9350, Option 1
Courier Dispatch		704-355-9350, Option 5
Supply & Distribution		704-355-3231
Client Services		704-355-9350, Option 1
Dagenhart, Janice	Reference Lab Coordinator	704-355-9350, Option 1
Karppinen, Carol	Reference Lab Coordinator	704-355-9350, Option 1
Dutch, Amy	Reference Lab Coordinator	704-355-9350, Option 1
McAllister, Tomeaka	Reference Lab Coordinator	704-355-9350, Option 1
Kelly, Debra	Reference Lab Coordinator	704-355-9350, Option 1

# Carolinas Laboratory Network

704-355-9350





---

## **Section 2      Specimen Labeling & Requisitions**

Reference Lab Specimen Labeling Policy

Reference Laboratory Requisition Policy

Unlabeled Specimen Policy



# CAROLINAS LABORATORY NETWORK

---

## Reference Laboratory Specimen Labeling Policy

### I. Policy

Laboratory labels should uniquely identify the patient, capture the date and time at which a specimen was obtained, and identify the individual responsible for the collection of the specimen. Specimens include, but are not limited to, blood, urine, CSF, pleural and peritoneal fluids, and tissue.

### II. Purpose

The labeling of laboratory specimens is critical to ensuring the appropriate matching of specimen and subsequent test results to the respective patient.

### III. Definitions

Mislabeled/Unlabeled	No patient name No history number Specimen and requisition do not match Specimen with no label
Incompletely Labeled	No date No collect time No collector's initials

### IV. Procedure

- A. Labeling should take place entirely at the patient's bedside while utilizing the armband to ensure a correct match between patient and specimen. In the case of outpatients, labeling should occur in the presence of the patient. Patient identification should be verified before specimen collection.
- B. The following information is required on each label:
  - 1. Name: Last, First
  - 2. History # (If applicable)
  - 3. Date/Time of collection
  - 4. Collector's initials

For Blood Bank specimens: (see Blood Bank labeling policy)

- 5. Unique Armband # or Manual Blood Bank Armband #

- C. Specimens not labeled with Sunquest barcode labels should arrive in the laboratory with a requisition.
- D. Unlabeled specimens will not be accepted by the laboratory. If an unlabeled specimen is received in the laboratory, the following protocol will be observed:
  - 1. Notify the location that collected the specimen. It will be the responsibility of that location to recollect the specimen.
  - 2. Document the event in the Sunquest laboratory computer system.
  - 3. All specimens will be discarded unless the specimen is irretrievable (ex. cath tip, CSF, amniotic fluid) or if recollection could prove detrimental to the patient. An ATTESTATION FORM may be completed for unlabeled irretrievable specimens absolving the laboratory of the responsibility for specimen identification.
  - 4. As a witness, it is the responsibility of laboratory personnel to make sure the form is completely and correctly filled out.
  - 5. The attestation form is subject to immediate laboratory supervisor review.
- E. Mislabeled specimens that are received in the laboratory will be processed according to the Reference Lab Unlabeled Specimen Policy.

**CAROLINAS HEALTHCARE SYSTEM  
CAROLINAS MEDICAL CENTER**

**ATTESTATION FORM FOR PROPER PATIENT-SPECIMEN  
IDENTIFICATION**

I, \_\_\_\_\_, ATTEST TO THE FACT THAT I  
NAME

PERSONALLY COLLECTED/ACCEPTED THIS \_\_\_\_\_  
SPECIMEN TYPE

SPECIMEN FROM \_\_\_\_\_, \_\_\_\_\_ FOR THE  
PATIENT NAME HISTORY NUMBER

FOLLOWING LABORATORY TESTS \_\_\_\_\_.

I ASSUME FULL RESPONSIBILITY FOR PROPER AND CORRECT  
IDENTIFICATION.

BY THIS ATTESTATION, I FURTHER AND FULLY ABSOLVE ANY  
LABORATORY PERSONNEL FROM THE RESPONSIBILITY FOR THE  
IDENTIFICATION OF THIS PATIENT SPECIMEN.

SIGNED \_\_\_\_\_  
NAME TITLE

WITNESS \_\_\_\_\_  
NAME TITLE

DATE \_\_\_\_\_

# CAROLINAS LABORATORY NETWORK

---

## Reference Laboratory Requisition Policy

### I. Policy

The laboratory test requisition policy ensures that the laboratory is carrying out the orders as directed by the physician and routes the results to the appropriate location.

### II. Purpose

In the absence of a Sunquest barcode label, a requisition must accompany the specimen to the laboratory for testing. This document specifies which tests the laboratory is to perform along with the name of the ordering physician. The requisition authorizes the laboratory to perform the specified procedures.

The requisition also indicates the patient's location so that the results may be called or routed to the proper destination. Finally, for microbiology, histology and cytology specimens, the requisition serves to document the specimen type or body site, which ensures that appropriate processing occurs for that type of specimen.

### III. Procedure

A. The following information is required on a requisition for laboratory testing:

1. Name: Last, First
2. History # (If applicable)
3. Patient Location
4. Ordering physician
5. Account number
6. Tests to be performed
7. Date/Time of collection
8. Collector's initials

For microbiology, histology, and cytology requests:

9. Specimen type or body site

B. Requisitions may be computer generated or manual. The person completing the requisition should ensure that the required information above is provided on the requisition.

- C. The requisition must accompany the sample to the laboratory for the testing process to begin.
- D. For additional lab requests (“add-ons”), an additional requisition must be sent to the laboratory. The requisition must specify that the specimen is already in the laboratory.

# CAROLINAS LABORATORY NETWORK

---

## Procedure

Unlabeled Specimens (Reference Lab clients only)

## Principle

To ensure consistency among the technical areas of CMC Laboratory in processing unlabeled Reference Lab specimens.

## Policy

Unlabeled Reference Lab specimens will be processed according to the following procedure. Any **mislabeled** specimens will be accessioned using the name indicated on the specimen and not the name on the requisition. This policy does not supercede the CHS policy on unlabeled specimens from inpatient locations or the CHS locations listed below:

- A. Acute care hospitals
- B. Myers Park Clinics (COBG,CSUR,CPED,CFPC,CMED,CDBT,CORT)
- C. Northpark locations (NOBG,NPFP,NTEN)
- D. Biddle Point locations (BPFP)

## Procedure

1. Specimens found to be unlabeled should be accessioned in Sunquest according to the accompanying requisition. Order all tests listed on the requisition.
2. Determine which tubes are unlabeled, and credit the tests corresponding to the unlabeled tubes(s). Use the Sunquest function CR to credit, and be sure to document the reason by using English test code MLBL. Occasionally, one or more labeled tubes may be packaged with the unlabeled specimen, and these labeled tubes can be processed for testing.
3. Place the small portion of the original barcode label on the unlabeled tube so that it can be Spec Tracked and retrieved if necessary. Place the large barcode label on the Reference Lab requisition with a comment stating that the specimen was unlabeled. This label alerts the client service billing employee to discharge a patient account number if no tests were performed.
4. Certain irretrievable specimens would be exempt from the above procedure. These specimens would be accessioned according to the name and tested as long as they could be paired with their original requisitions. Some examples of irretrievable specimens are:
  - a. Spinal fluids
  - b. Amniotic fluids
  - c. Joint fluids
  - d. Newborn bilirubins

5. The SPR employee will then notify the client that we have received an unlabeled specimen. If the client insists that the specimen be tested, a specimen release form is required via fax or courier from the client stating that they take responsibility for the results from an unlabeled specimen. Then accession the specimen in RE in the following manner: client code, unlabeled. For example, an unlabeled specimen from a DAVID location will have the name DAVID, UNLABELED. Never accession an unlabeled specimen with the alleged patient's name, birth date, social security number or the chart number. The SPR employee should explain to the client that the results will contain no patient identifier, and that the client and not the patient will be billed. In order for the lab to cross-reference unlabeled orders, LREV should be ordered on both the original credited accession number and the newly created "unlabeled" accession number. BOTH accession numbers should be listed on each LREV comment.
6. Finally, all requests for testing on unlabeled specimens must be reviewed prior to testing by a supervisor or lead tech. These charge personnel must ascertain that the test requested is a screening test and not a diagnostic test. Examples of tests that would never be performed on unlabeled specimens are cancer antigens such as PSA, CA125, and CEA. We would also never perform HIV, hepatitis testing, and T4T8 on an unlabeled specimen. Technical judgment must be utilized in all cases.

**Carolinas Laboratory Network  
Carolinas Medical Center**

**Unlabeled Specimen Release Form**

I \_\_\_\_\_ (please print name) request that Carolinas Medical Center Laboratory perform the following test(s) on an unlabeled specimen received from my facility.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

I believe the patient's identity to be \_\_\_\_\_ (print name of patient) and will assume responsibility for all results received on this patient. I understand that the laboratory will not place a patient's name on the specimen, but will accession and result as "Unlabeled".

Signature\_\_\_\_\_

Date\_\_\_\_\_

**Please fax completed form to 704-355-7721**

CMC Laboratory Supervisor Approval \_\_\_\_\_





---

## Section 3

## Critical Values

Critical Values List

Critical Values Notification Policy

**Carolinas Laboratory Network**  
**Critical Values List**

Hematology		
Test	Lower Limit	Higher Limit
WBC (White Blood Count)	<1000 (This value not called if previous result of <1,000 is documented as called)	> 50,000
Hemoglobin	< 6.0 g/dl	>20.0 g/dl (Greater than 2 weeks old)
	< 7.0 g/dl (Newborn - 30 days)	> 24.0 g/dl (Less than 2 weeks old)
Platelets	< 20,000	>1,000,000
	< 30,000 (Newborn to 30 days)	
Smear	Previously unreported blasts, intracellular organisms	
Coagulation		
Test	Lower Limit	Higher Limit
Fibrinogen	< 50 mg/dl	
Prothrombin Time (PT)		> 49.0 seconds
PTT		>120 seconds
Urinalysis and Body Fluids		
Test	Condition	
CSF	Presence of malignant cells, blasts or microorganisms	
Ketones	Positive ketones in newborns	
Microscopic Exam	Spirochetes resembling Treponema pallidum	
Reducing Substance	Newborns - Positive reducing substance when glucose is negative	
Sperm	Presence of sperm in female under 13 years of age	

Blood Gases		
Test	Lower Limit	Higher Limit
PCO2	< 20 mmHg	> 70 mmHg
pH	< 7.2	>7.6
P02	< 50 mmHg	

**Carolinas Laboratory Network**  
**Critical Values List**

Chemistry		
Test	Lower Limit	Higher Limit
Alcohol - Ethanol (ETOH)		> 400 mg/dl
Alcohol - Ethylene Glycol		Positive
Alcohol - Volatile Non Ethanol		Positive
Bilirubin		≥ 18.0 mg/dl (Less than 2 weeks old)
Calcium	< 6.0 mg/dl	> 14.0 mg/dl
CKMB		≥ 6.3 ng/ml (Critical not called if previous result of ≥ 6.3 ng/ml is documented as called)
CO2	< 10 mmol/L	> 40 mmol/L
Glucose (Blood)	< 40 mg/dl	> 500 mg/dl
Glucose (CSF)	< 40 mg/dl	
K+ (Potassium)	< 2.5 mmol/L	> 7.5 mmol/L (Less than 6 months old)  > 6.5 mmol/L (Greater than 6 months old)
Lead (Blood) - Public Health Dept Only		> 10 µg/ml
Magnesium	< 1.0 mg/dl	> 4.7 mg/dl
NA (Sodium)	< 120 mmol/L	> 160 mmol/L
Phosphorous	< 1.5 mg/dl	
Troponin I (Critical not called if previous result of ≥ 0.5 ng/ml is documented as called)		≥ 0.5 ng/ml
Therapeutic Drugs		
Test	Lower Limit	Higher Limit
Acetaminophen		> 150 µg/ml
Amikacin		> 45 µg/ml
Caffeine		> 50 µg/ml
Carbamazepine		> 20 µg/ml
Digoxin		> 3 ng/ml
Dilantin		> 30 µg/ml
Gentamicin		> 12 µg/ml
Lidocaine		> 9 µg/ml
Lithium		> 2 mmol/L
Mysoline		> 24 µg/ml
Phenobarbital		> 60 µg/ml
Procainamide		> 12 µg/ml
NAPA		> 30 µg/ml
Quinidine		> 10 µg/ml
Salicylate		> 40 µg/ml

**Carolinas Laboratory Network**  
**Critical Values List**

Therapeutic Drugs (continued)		
Test	Lower Limit	Higher Limit
Theophylline		> 25 µg/ml
Tobramycin		> 12 µg/ml
Valproic Acid		> 200 µg/ml
Vancomycin		> 60 µg/ml
Blood Bank		
<ul style="list-style-type: none"> <li>Any cord blood with positive direct coombs</li> <li>Any 2+ or greater result for Anti-C3d/b</li> <li>Incompatible crossmatch with potential for lack of donor blood</li> </ul>		
TB/Mycology		
<ul style="list-style-type: none"> <li>All positive acid fast smears from pulmonary secretions</li> <li>Dimorphic fungi recovered from any source</li> </ul>		
Microbiology		
<ul style="list-style-type: none"> <li>All initial positive blood cultures</li> <li>All initial positive results (gram stain or culture) from the following normally sterile body fluids - Vitreous, CSF, Pleural, Pericardial, Peritoneal, Synovial</li> <li>Eye cultures positive for <i>Neisseria gonorrhoeae</i>, <i>Pseudomonas</i>, <i>Bacillus</i>, <i>Aspergillus</i>, or <i>Fusarium</i> species</li> <li>Isolates of <i>Clostridium perfringens</i> or <i>Clostridium septicum</i> recovered from wounds or cultures of tissues (NOTE: Before phoning, discuss with medical director of microbiology, or, in their absence, the on-call pathologist)</li> <li>Isolates of <i>E.coli</i> O157:H7 from stool cultures</li> <li>Isolates of <i>Salmonella</i> or <i>Shigella</i> from stool cultures (Public Health Dept Only)</li> <li>All possible agents of bioterrorism including the following: <i>Bacillus anthracis</i>, <i>Francisella tularensis</i>, <i>Brucella spp.</i>, <i>Yersenia pestis</i></li> <li>Highly unusual or significant organisms or those recovered with low incidence. (NOTE: Before phoning, discuss with medical director of microbiology, or, in their absence, the on-call pathologist)</li> </ul>		
Special Microbiology/Immunology		
<ul style="list-style-type: none"> <li>All positive acid fast smears from pulmonary secretions</li> <li>Positive CSF VDRLs</li> <li>All positive RSV cultures (where DFA or EIA was negative)</li> <li>Positive RPRs on cord blood</li> <li>All positive cryptococcal antigens</li> <li>All positive <i>Pneumocystis</i> (DFA)</li> <li>All positive <i>Legionella</i> urinary antigens</li> </ul>		

*Carolinas Laboratory Network*  
**Critical Values List**

Special Microbiology/Immunology (Continued)
<ul style="list-style-type: none"><li>• All agents of possible bioterrorism, including <i>Variola</i> (Smallpox) virus</li><li>• Any positive viral cultures on children under 10 years of age</li><li>• Any positive rapid HIV result on maternity patients</li><li>• Any positive result for SARS (Severe Acute Respiratory Syndrome) Results provided by Public Health Dept.</li></ul>

# Critical Values and Test Notification

## I. POLICY AND PURPOSE

To ensure that critical tests and critical values are communicated properly and in a timely manner in order to support the immediate and safe care of the patient. Critical values are those abnormal test results that could potentially be life threatening. Critical tests are those identified tests that require rapid communication of results, even if results are normal. All critical values should be called immediately and all critical tests must be called within timeframe noted on critical test list.

## II. PROCEDURE

### A. Critical Values

1. The *CLN Clinical Laboratory Critical Values* is maintained in the Laboratory Information System (LIS) and posted in the laboratory. This document should be referred to during LIS downtime.
2. The LIS flags critical values when they are result in the computer: **"Critical Value, Phone Physician"**.
3. Critical values are displayed as **HH** or **LL** in the LIS and **\*\*PANIC\*\*** in HBOC/STAR.

### B. Contacting Medical Professionals

1. Results are called by the reporting laboratory directly to a **medical professional** in the facility associated with the patient or client. If that medical professional is unavailable, you must then request the charge nurse of that location. Results are not given to secretarial staff or laboratory staff from CHS Mecklenburg Facilities. Results for non-CHS Mecklenburg facilities may be called directly to the laboratory. See item #4 below for special instructions on microbiology critical values for the emergency department.

**Under no circumstances, are results to be reported to an answering machine.**

2. Phone numbers for patient locations are available via:
  - phone list
  - Sunquest search  
Function: MIQ, Option 12:Location/Room Number Inquiry
  - CHS Voice Automated Operator system

## Carolinas Laboratory Network

3. During regular business hours of a client facility, notification attempts continue to occur until successful. In the event a physician does not respond to a page after hours, a second attempt occurs. If still no response, this is documented in the LIS and held to the following business day for notification and final documentation.

**After hours CMC Clinic results** (i.e. CMC Myers Park Clinics (Except OBGYN), CMC Northpark, CMC Biddlepoint, and CMC Eastland Family Practice) are called to the physician on call for the practice. For the CMC Myers Park OBGYN Clinic, results are called to the medical resident on call as identified by the CMC hospital operator. Phone: 704.355.2000

**After hours Carolinas Physicians Network and other private practice** results are called to the physician on call listed by the answering service. Critical values for specific physician offices are held until the next morning only upon written agreement between the physician office and CLN medical director.

4. Emergency Department (Microbiology Critical Values only) **CMC only**

Critical Values for microbiology results are communicated to the CMC Emergency Department in the following manner:

Admitted Patients

Results are called to the admitting physician or nursing unit for follow-up.

Discharged Patients 9am – 5pm

All critical values are reported directly to Rozella Bethea at 704-355-0506 or pager # 4309. If report cannot be given to her directly, the attending emergency medicine physician must be contacted. For adults, the contact Major Treatment Attending at 355-2157. For pediatrics, contact Pediatric Emergency Medicine Attending at 355-6580.

All Other Times

Microbiology critical values must be called to an attending emergency medicine physician immediately. For adults, the contact Major Treatment Attending at 355-2157. For pediatrics (ages 0-17), contact Pediatric Emergency Medicine Attending at 355-6580.

### C. Documenting Notification in LIS

Documentation of critical value notification should be noted on the appropriate test line, simultaneously as results are called. If results are continuously attempted with no success or if results are phoned the following day, **ONLY** the contact call should be documented on the Sunquest. Any attempt to contact, without response, should be documented under the test code LREV in Sunquest under the same accession number of the critical value. (See below for instructions)

Documentation of critical tests results should be documented in Sunquest or CoPath. Failed attempts for tests resulted in Sunquest should be documented as noted above and critical tests that are resulted in CoPath should be documented in the report.

# Carolinas Laboratory Network

1. After results are entered into the LIS, key in the appropriate comment code **CKDP** (checked and called) or **CALL** (called to), then free text minimally:

- **last name** of the person notified
- **phone number** or extension called
- **time**

Example:

**8.0-CKDP-; S SMITH 52345 2020 (phone number extension)**

**or**

**8.0-CALL-; S SMITH 7045551212 2020 (full phone number)**

2. Results held to the following business day should include the date the result was called.

Example:

**8.0-CKDP-;BEACHAM 7043555000 0800 3/03**

3. Test Code: LREV

LREV enables laboratory staff to free text any contact attempts or other relevant information about calling a critical value. This test code documentation is only visible to laboratory staff and will not appear on the patient record. LREV should be ordered as a test, in RE or REI, under the same accession number of the critical value test. With completion of ordering the test, a prompt for result entry appears. Type a semicolon (;) and begin typing a free test message.

Example:

**LREV: ;paged Dr Jones 2005 no response-; paged again at 2100 no response-; Left for calling in AM**

## D. Reading Back Critical Values

All critical values and tests reported to a medical professional verbally or by phone must be “read-back” by the medical professional receiving the information. “Read-back” is required to ensure that the result was understood correctly.

Documentation in Sunquest of a “read-back” should be included with other required contact/notification information. This should be indicated, after time called, by entering the English text code “RBK” (“Lab value read back”). See example on next page.

Example:

**8.0-CALL-;S SMITH 52020 1800-RBK**



# Carolinas Laboratory Network

## **III. Critical Values in POC testing.**

Critical values obtained in POC testing must be documented and reported immediately. For iSTAT testing, the critical value must be communicated immediately and documentation of date, time and with whom you gave the critical value. If communication is verbal, readback must be incorporated and documented.

## **IV. Critical Tests**

Critical tests are defined and handled in the same way as critical values. Results of these critical tests must be called within defined time range. The compliance of critical tests notification is reported monthly to the Patient Safety Steering committee.



---

## Section 4      Sample Preparation and Handling

## Specimen Collection and Handling

### I. PRINCIPLE

Laboratory test results are dependent on the quality of the specimen submitted. Patients must be properly prepared so that the best possible specimen can be collected. The specimen must be properly processed, packaged and transported to the laboratory in a timely manner and under environmental conditions that will not compromise the integrity of the specimen. Care, skill, and knowledge when preparing the patient and specimen are essential to the provision of the highest quality standards for testing and services.

### II. PROCEDURE

#### A. Health and Safety Precautions

Occupational Safety and Health Administration (OSHA) has developed guidelines for the handling of clinical specimens. Every specimen should be handled as a potential source of infection. Healthcare personnel are required to comply with recommendations, which enable the safety of both the patient and healthcare personnel. **All specimens should be properly sealed prior to being transported. Leaking containers pose a health hazard. Do not submit needles attached to syringes.**

#### B. Patient Preparation

Many tests require that the patient be prepared in some specific way to ensure useful results. The best analytical techniques provide results that are only as good as the specimen that has been submitted for analysis.

##### Fasting requirements

For the majority of tests performed on serum, plasma or whole blood, a fasting specimen is preferred. The fasting specimen provides information that reflects the physiological baseline of the patient. From a practical standpoint, non-fasting specimens are often lipemic, containing high triglycerides from food, which can interfere with many analytical procedures. Patients should fast for the duration of time indicated by their physician.

##### Blood, serum and plasma specimens

Most blood specimens can be obtained using routine phlebotomy techniques; however, there are some exceptions. The patient's posture, either sitting, standing or lying down, or the time of day relative to the patient's sleep cycle can be important factors in some tests. Refer to the Test Listing and Specimen Requirements Listing for specific patient preparation requirements.

### Urine specimens

Many urine tests also require specific preparation of the patient. For routine analysis, the first morning voided (concentrated) specimen is always best. For urine culture specimens, prevention of contamination by normal vaginal, perineal and anterior urethral flora is the most important consideration for collection of a clinically relevant urine specimen.

## **C. Specimen Labeling**

Each submitted specimen must be labeled with the patient's name and date of collection. When ordering tests in a series (e.g. glucose tolerance):

1. Use one Test Requisition
2. Label each specimen with the patient's name, date and time of collection.
3. Write the number of specimens on the Test Requisition.
4. Submit all specimens within a series together in one specimen bag.

## **D. Instructions for Packaging Specimens and Test Requisitions**

1. Complete the "**Patient Information**" (Patient Name, Date of Birth, Identification number, SS number, Physician name (First and Last), Specimen Collection date and time) and "**Insurance Information**" (Policy holder name, relation, Company name and address, Employer name) sections and check (✓) which party will be responsible for payment in the "**Bill To**" section of the requisition form. Enter the ICD9 diagnosis codes that reflect the patient's diagnoses.
2. Collect the specimen(s) in proper transport container. (Refer to the Test Listing and Specimen Requirements worksheet for more information.)
3. The specimen bag has two pouches. Place the specimen(s) in the front ziplock pouch (printed side) and the test requisition form in the back non-ziplock (un-printed side) pouch. This will protect the test requisition form from leakage.
4. FROZEN specimens must be placed in a separate specimen bag along with a separate test requisition form. **Frozen specimens cannot be split for other tests.**

**NOTE: PROPER SPECIMEN PACKING HELPS TO EXPEDITE ORDERS.**

## **E. Collection/Processing of Serum, Plasma, Whole Blood and Urine**

### Serum

The use of serum separator collection tubes is recommended for most analyses. Please refer to the Test Listing and Specimen Requirements worksheet for restrictions.

When using a serum separator tube, follow these instructions:

1. Perform venipuncture as with any other blood collection device.
2. Invert the tube gently no more than five times. Further inversion may cause alterations in sample integrity.
3. Do not remove the stopper at any time. Allow the blood to clot at room temperature for at least 30 minutes, but not longer than 1 hour. Do not centrifuge immediately after drawing blood.
4. Centrifuge at 2200-2500 RPM for at least 15 minutes.

When using serum tubes with no additives, follow these instructions:

1. Perform venipuncture as with any other blood collection device.
2. Allow sample to clot for at least 30 minutes in an upright position, but no longer than 1 hour, before centrifugation.
3. If centrifugation is required, centrifuge within 1 hour of collection at 2200-2500 RPM for at least 15 minutes.
4. If serum requires separation off the red cells, pipette into a clean plastic vial and attach proper labeling. Do not transfer red cells to the vial.

### **Plasma**

Plasma contains fibrinogen and other clotting factors when separated from the red blood cells. Evacuated tubes used to collect plasma specimens contain anticoagulant and frequently, a preservative. The additive in each tube is specified on the label and tube stoppers are color coded according to the additive present. Consult the Test Listing and Specimen Requirements worksheet to determine the correct additive/tube to use.

When using plasma tubes, follow these instructions:

1. Perform venipuncture as with any other blood collection device.
2. Plasma specimens requiring centrifugation, should be centrifuged within 1 hour of collection at 2200-2500 RPM for at least 15 minutes.
3. If plasma requires separation off the red cells, pipette into a clean plastic vial and attach proper labeling. Do not transfer red cells to the vial.

### **Whole Blood**

Collect whole blood according to instructions provided for the individual test. Thoroughly mix the blood with the additives by gently inverting the tube four or five times. Maintain the specimen at ambient temperature before sending to the testing laboratory unless instructed otherwise by the specimen requirements. **NEVER FREEZE WHOLE BLOOD** unless specifically instructed in the specimen requirements.

### **24-hour Urine**

Because proper collection and preservation of 24-hour urine specimens are essential for accurate test results, patients should be carefully instructed in the correct procedure.

**For those analyses requiring the addition of 6N HCl, have the patient collect each voiding in a smaller container and carefully pour the urine into the 24-hour container to avoid any possible acid burns to the patient.**

1. Unless the physician indicates otherwise, instruct the patient to maintain the usual amount of liquid intake but to avoid alcoholic beverages.
2. During the collection period, place the 24-hour urine container in a refrigerator or cool place, to prevent growth of microorganisms and possible decomposition of urine constituents.
3. Have the patient empty his/her bladder in the morning into the toilet (not to be included in the 24-hour collection)
4. Collect the next voiding and add it as soon as possible to the 24-hour container.

5. Add all subsequent voidings to the container as in (4). The last sample collected should be the first specimen voided the following morning at the same time as the previous morning's first voiding, as in step (3).
6. Mix the contents of the container gently but thoroughly.

## F. Specimen Volumes

It is critical that an adequate specimen volume is submitted for analysis. The volume requested is enough for initial analysis as well as any confirmatory tests that must be performed. If an inadequate specimen is submitted, the laboratory may not be able to perform the initial test or required confirmatory procedures. If repeat or confirmatory tests cannot be performed, the report will indicate that specimen quantity submitted was "QNS" (Quantity Not Sufficient) for additional testing.

When serum or plasma is to be submitted for analysis, it is generally good practice to collect a volume that is 2 to 2.5 times the volume of serum or plasma needed for the test. As an example, if 4 ml of serum or plasma is needed for a test, collect 8 to 10 ml of blood.

## G. Storing and Transporting Specimens

Specific instructions for storage and transport of specimens for individual tests are detailed in the Test Listing and Specimen Requirements worksheet. Please follow these instructions carefully.

Additional instructions to note:

- **Needles:** Carolinas Laboratory Network is not permitted, by law, to transport needles. They must be removed from syringes prior to submission.
- **Specimen labels:** Each specimen submitted must be properly labeled and must include a completed requisition for testing.



---

## **Section 5      Laboratory Supplies and Ordering**

## Supplies and Ordering

Supplies for specimen collection and transport are provided without charge for tests referred to our laboratory. Requests for supplies can be made by completing an order request form for either clinical or pathology supplies and faxing to **704-355-3610**. In order to prevent service interruption, please allow 5 to 7 business days for delivery of supplies. STAT requests are accepted and will be delivered with 24 to 48 hours. In rare instances, we may experience difficulties in maintaining inventory due to the manufacturer. In those instances, we will attempt to substitute a similar product.

Questions concerning supplies can be directed to **704-355-9350, option 1**.



Carolinas Laboratory Network  
Reference Laboratory Supply Form

Location \_\_\_\_\_ Phone \_\_\_\_\_ Date \_\_\_\_\_

Qty	Item	Qty	Item
	Bar Code Labels		Urine Containers- Sterile
	Blood Culture Bottles (set of 2 btl)		Urine Culture Transport Tubes
	Blood Collection Needle-21g (box)		Vacutainer Adapters (bag)
	Blood Collection Needle-22g (box)		Viral Culture Transport Tube
	Blood Collection Tubes- Blue 2.7 ml		
	Blood Collection Tubes- Gel SST 6.0ml		Histology Supplies:
	Blood Collection Tubes- Gray 3ml		Requisitions, Pathology (pack of 100)
	Blood Collection Tubes - Lavender 3.0 ml		120 ml Specimen Vial (case of 50)
	Blood Collection Tubes - Red 6 ml		60ml Specimen Vial (case of 50)
	CT/GC NAAT Collection Kit-Female		
	CT/GC NAAT Collection Kit- Male		Cytology Supplies:
	CT/GC NAAT Collection Kit-Urine		Cytobrushes, snap-offs (100/bag or 500/case)
	Glucose Tolerance Beverage (btl)		Cytolyt Fluid, Cup
	O & P Stool Kits (each)		Cytolyt Fluid, Quart
	Requisitions, Ref Lab IDX (box)		Medscand Combo(brush/ clear handle spatula)
	Requisitions, Ref Lab OBGYN (box)		PapPaks (slides, brushes, folders & spatulas)
	Requisitions, Ref Lab Standard (pack)		Requisitions, Cytology-IDX (100/pack)
	Specimen Bags-Red Top (roll)		Requisitions, Cytology non-IDX (100/pack)
	Specimen Bags-Yellow Top (roll)		Slides, Frosted for FNA (100/pack)
	Specimen Bags-Blue Top (roll)		Spatulas-Blue handle-Puritan (50/bag)
	Specimen Bags-Lg Multi Specimen (roll)		Spray fixative
	Specimen Bags-Red STAT (pack)		Slide transfer boxes- styrofoam
	Stool Containers- Culture		Surepath Brooms (25/bag or 500/case)
	Stool Containers- Plain		Surepath Vials (25/pk or 500/case)
	Swab Culturette		List Additional Items:
	Tourniquets, latex free (each)		
	Urine Container-24 hr Soft; Specify additive		
	Urine Container-24 hr Hard; Specify additive		
	Urine Container-Routine		

Please allow 5-7 business days for supplies to arrive in your office.

STAT orders will be filled within 24 -48 hours provided item is in stock.

If you have questions regarding supply orders, call 704-355-9350, option 1.

FAX ORDERS TO 704 355-3610



---

## **Section 6      Test Listing**

Availability of Testing

Test Listing and Sample Requirements

Microsample Requirements

CLN Reference Lab Profiles

## CAROLINAS LABORATORY NETWORK

---

### Availability of Testing

The clinical laboratory is staffed 24 hours per day, 7 days a week. You may call 704-355-9350, option #1 for further testing information and laboratory results. Not all tests are performed daily or on all three shifts. The following key describes the availability of lab tests.

#### Days tests are routinely performed:

D	Daily
M-F	Monday through Friday (weekdays)
M-F, S	Weekdays and Saturdays
M	Monday
T	Tuesday
W	Wednesday
H	Thursday
F	Friday
S	Saturday
X	Sunday
OPW	Once per week, depending upon testing volume
BIW	Biweekly (days not defined)
CALL	By appointment only; must be scheduled; contact the Lab
SO	Send-out; referred to outside reference lab; results available within 3-7 days
MICRO	Preliminary report available after 24 hours; final report after 48 hours, depending upon specific culture type ordered (refer to Microbiology procedures)

#### Times tests are routinely performed:

24H	24 hours per day
1 <sup>st</sup> shift	7am- 3pm
2 <sup>nd</sup> shift	3pm- 11pm
3 <sup>rd</sup> shift	11pm- 7am

#### Codes for departments where tests are routinely performed:

ANDRO	Andrology
BB	Blood Bank
CHEM	Chemistry
CP	Central Processing
CYTO	Cytology
DNA	DNA / Molecular Biology
GENE	Cytogenetics
HEM	Hematology
IMMUN	Immunology / Tissue Typing
MICRO	Microbiology
PATH	Pathology
SM	Special Microbiology
SPHEM	Special Hematology

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1885	11- Desoxycortisol	82634	Gel Tube or Red Top - 3.0 ml serum. Heparinized plasma also acceptable. Minimum volume - 1.0 ml	Centrifuge tube and freeze serum in plastic sendoff vial immediately.	CP	SO
1593	17 - Hydroxyprogesterone	83498	Gel Tube, Red Top or Lavender Top - 1 ml serum or plasma	If collection tube other than gel tube is used, separate serum or plasma into plastic transport tube.	CP	SO
1618	17-Hydroxysteroids	81050, 83491	Obtain jug for 24 hr collection; Requires container with 6N HCl preservative.		CP	SO
21644	3 Androstenediol Glucuronide	82154	Gel Tube or Red Top - 2 ml serum		CP	SO
1096	5-Flucytosine	80299	Red Top - 1 ml serum	Reject: Gel Tube	CP	SO
21808	5-Methyltetrahydrofol	82491	CSF- 0.5 ml in sterile specimen vial	Deliver to lab ASAP.	CP	SO
1533	5-Nucleotidase	83915	Red Top - 2 ml serum	Reject : Gel Tube	CP	SO
1403	5-HIAA, 24 Hr Urine	81050, 83497	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO
	5-Hydroxytryptamine		See Serotonin			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1141	ABO/ RH	86900, 86901	Lavender Top - 5 ml whole blood	Specimen must be hand labeled	BB	D24H
	ACE		See Angiotensin Converting Enzyme			
1286	Acetaminophen (Tylenol)	82003	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		CHEM	D24H
1313	Acetone	82010	Gel Tube - 2 ml serum	Must not open tube before testing	CHEM	D24H
1076	Acetylcholine Receptor Antibody	84238	Gel Tube - 2ml serum		CP	SO
9728	Achondroplasia	Call Client Services	Yellow Top (Solution A) - 10 ml, Lavender Top (5 ml) also acceptable	Specimen must be kept at room temperature	Gene	SO
31465	Acid Phosphatase(AP, Total)	84066	Gel Tube - 1 ml serum	Reference Lab Clients: Spin tube, separate and freeze serum in plastic sendoff vial. Causes for Rejection: Hemolysis; blood unprocessed more than 1 hour after collection; specimen not frozen; plasma received.	CP	SO
1246	ACTH (Adrenocorticotrophic Hormone), 82024 Plasma		Chilled plastic or siliconized glass Lavender - Top, 1 ml plasma.	After collection, immediately immerse tube into ice bath. Deliver to lab on wet ice ASAP. Spin tube, place plasma in plastic sendoff vial, freeze immediately.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
32012	Acylcarnitine, Quantitative	82017	Green Top - 1 ml plasma. Pediatric minimum specimen required - 0.3 ml plasma. Lavender tube also acceptable.	Centrifuge tube and freeze serum in plastic sendoff vial immediately.	CP	SO
1110	Acylcarnitine Duke Sendout	82131	Green Top - 1 ml plasma. Pediatric minimum specimen required - 0.3 ml plasma. Lavender tube also acceptable.	Centrifuge tube and freeze serum in plastic sendoff vial immediately.	CP	SO
21842	Adenosine Deaminase, Fluid	84311	CSF or Body Fluid - 1 ml	Time Sensitive; Must be sent to Reference Lab on same day. Centrifuge sample and freeze supernatant.	CP	SO
19263	Adenovirus Antibody	86603	Gel Tube or Red Top - 1 ml serum	Identify specimens as acute or convalescent. Causes for Rejection: Hemolysis	CP	SO
38340 - Blood Adenovirus, PCR 38341 - Stool (Blood, Stool, Urine) 38342 - Urine		87799	Lavender Top - 3-5 ml whole blood; or small amount of stool; or 5 ml of urine in urine container.			
1486	ADH (Antidiuretic Hormone, Vasopressin)	84588	Two (2) prechilled Lavender Tops - 10 ml whole blood. Pediatric minimum sample - 6.0 ml whole blood	Deliver to lab on wet ice ASAP. Reference Lab Clients: Spin tube and freeze plasma in two (2) plastic sendoff vials.	CP	SO
1246	Adrenocorticotrophic Hormone (ACTH)	82024	See ACTH			
	AFB (Acid Fast Bacillus) Culture		See Culture, AFB			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1806	AFB (Acid Fast Bacillus) Smear	87206	Submit slide or smear in sterile specimen container		Micro	D24H
1248	AFP (Alpha-Fetoprotein), Tumor Marker	82105	Gel Tube or Red Top - 3 ml serum	If Red Top is used for collection transfer serum to plastic transport vial.	CP	SO
31762	AFP Single Maternal Screen	82105	Gel Tube - 5 ml whole blood	Centrifuge. <b>Do not pour off serum</b> , must be kept in parent tube. Maternal screen form must accompany specimen. Reject: Gross hemolysis, gross lipemia	CP	SO
7910	AFP Tetra Maternal Screen	82105, 82677, 86336, 84702	Gel Tube, no thrombin additives 3 - 5 ml whole blood	Centrifuge. <b>Do not pour off serum</b> , must be kept in parent tube. Maternal screen form must accompany specimen. Reject: Gross hemolysis, gross lipemia	CP	SO
1496	AGT (Antigranulocyte Titer)	86021	Gel Tube - 2 ml serum		CP	SO
	ALA Delta, 24 Hr Urine		See Aminolevulinic Acid			
24057	ALA-D & PBG-D, RBC (ALA Dehydrase & Porphobilinogen)	82657	Green Top - 5 ml whole blood	Deliver whole blood to lab ASAP on dry ice. Patient must be fasting 12 -14 hrs.	CP	SO
33688	Albright Osteodystrophy E1	83891, 8389459, 8389859, 8390459	Lavender Top - 5 ml whole blood	Room Temperature	Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
33689	Albright Osteodystrophy E213	83891, 8389459, 8389859, 8390459	Lavender Top - 5 ml whole blood	Room Temperature	Gene	SO
1323	Albumin	82040	Gel Tube - 1 ml serum		Chem	D24H
33740	Albumin, CSF	82042	CSF - 1.0 ml	Reject: CSF with excessive blood	CP	SO
1198	Alcohol Screen by GC (Includes Methanol, Acetone, Ethanol & Isopropanol)	84600	Two (2) Lavender Tops - 10 ml whole blood	Do not uncap tubes. Do not prep skin with alcohol.	Chem	M-F, 1st, 2nd; WE, 1st , Other times by pathology approval only.
1346	Aldolase, Serum or Plasma	82085	Red Top or Gel tube - 2ml. Blue and Green top also acceptable.	Deliver to lab ASAP. Centrifuge to separate serum or plasma within 30 minutes of collection; Reference Lab Clients: Spin tube and refrigerate serum in plastic sendoff vial. Reject: Hemolyzed specimens	CP	SO
1124	Aldosterone, 24 Hr Urine	81050, 82088	Obtain jug for 24 hr collection; Requires container with boric acid preservative	Use plastic container with 1 g boric acid preservative per liter of sample collected. Instruct patient to void at 8 am and discard specimen. Then collect all urine for next 24 hr period.	CP	SO
1310	Aldosterone, Serum	82088	Gel Tube - 1 ml serum. Lavender Top also acceptable	Patient must be supine 4 hrs prior to collection.	CP	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1331	Alkaline Phosphatase	84075	Gel Tube 1 ml serum		Chem	D24H
1223	Alkaline Phosphatase, Isoenzymes	84080	Gel Tube or Red Top - 4 ml serum	Patient must be fasting. Separate serum from cells as soon as possible after blood has clotted.	CP	SO
33456	Allergen, Childhood March Profile by ImmunoCAP	86003x16, 82785	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
35376	Allergen, Seafood by ImmunoCAP	86003x20, 82785	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
35378	Allergen, Shellfish by ImmunoCAP	86003x8, 82785	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
34015	Allergen, Shrimp ImmunoCAP	86003	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
34738	Allergen, Strawberry ImmunoCAP	86003	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
33432	Allergen, Adult Food Profile by ImmunoCAP	86003x11, 82785	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
35377	Allergen, Citrus Profile by ImmunoCAP	86003x5, 82785	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
33690	Allergen, Latex by ImmunoCAP	86003	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
35334	Allergen, Nut Profile by ImmunoCAP	86003x12, 82785	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
34016	Allergen, Peanut by ImmunoCAP	86003	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
33455	Allergen, Regional Respiratory Profile by ImmunoCAP	86003x20, 82785	Gel Tube - 2.0 ml serum. EDTA or heparinized plasma also acceptable.		MER	M-F/2
32394	Allergic Bronchial Pulmonary Aspergillosis Profile	82785, 86606, 86331x12, 86003	Gel Tube or Red Top - 5 ml serum		CP	SO
	Alpha- Fetoprotein		See AFP			
1017	Alpha-1 Antitrypsin	82103	Gel tube or Red Top - 1 ml serum	Patient Preparation: Overnight fasting is preferred. Reject: Lipemic Samples	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
2555	Alpha-1 Antitrypsin Phenotype	82103, 82104	Red Top - 1 ml serum	Patient Prep: Overnight fasting is preferred. Reference Lab Clients: Spin tube, separate and refrigerate serum in plastic transport tube. Reject: Hemolysis or specimen received	CP	SO
1718	Alpha-1 Antitrypsin, Stool	82103	Fresh stool sample - Approx. 5ml volume required		CP	SO
38005	Alpha-2 Antiplasmin	85410	Blue Top- 2 ml plasma	Reference Lab Clients: Spin tube, separate and freeze serum in plastic sendoff vial. Reject: Hemolysis or specimen received thawed.	CP	SO
	Alprazolam		See Xanax			
1337	ALT (SGPT)	84460	Gel Tube - 1 ml serum		Chem	D24H
1260	Aluminum	82108	Royal Blue Top (EDTA heparin) or Red Top, 7 ml plasma (preferred) or serum.	Submit original unopened tube. Blue Top does not have to be spun down. Serum from Red Top should be transferred to plastic transport tube within 45 minutes of collection.	CP	SO
39888	Amikacin	80150	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
1534	Amino Acids, Blood	82136	Green Top - 4 ml plasma frozen. Pediatric minimum sample - 1.0 ml serum	Reference Lab Clients: Spin tube, separate and freeze plasma in plastic sendoff vial.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1536	Amino Acids, Random Urine	81050, 82139	Random Urine - 1.0 ml in sterile specimen container. Minimum Volume: 2 ml	Reference Lab Clients: Freeze urine in plastic sendoff vial.	CP	SO
1872	Aminolevulinic Acid, 24 Hr Urine	82135	Obtain jug for 24 hr collection; Requires container with acetic acid preservative, 25 ml aliquot.	Freeze and protect from light. Collect in plastic 24 hr urine container with 30 ml of 30% glacial acetic acid. Instruct patient to void and discard initial sample at 8 am. Then begin collection for 24 hour period.	CP	SO
	Aminophylline		See Theophylline			
1253	Amiodarone	80299	Gel Tube, Red Top or Lavender Top - 2 ml serum or plasma	Reject: Blood collected in gel tubes	CP	SO
	Amiphophysin		See Paraneoplastic Antibody			
1752	Amitriptyline (Tricyclic) - includes nortriptyline	80152	Red Top- 2 ml serum	Reject: Blood collected in gel tubes	CP	SO
1381	Ammonia (NH3)	82140	Lavender Top - 5 ml whole blood. Collect without stasis. Minimum sample - 2 ml whole blood.	Deliver to lab on wet ice ASAP. Reference Lab Clients: Spin tube and freeze plasma in plastic sendoff vial. Collect without stasis.	Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1390	Amniotic Fluid Scan (Delta OD 450)	82143	Submit amniotic fluid - 3 ml in sterile container or stoppered syringe.	Protect from light. Deliver to lab ASAP. Contact Chemistry at 355-5805 if analysis is required STAT.	Chem	M-F/ 1,2
1053	Amoebic Antibody Hemagglutination (HA, quantitative)	86753	Gel Tube- 3 ml serum		CP	SO
1324	Amylase	82150	Gel Tube - 1 ml serum		Chem	D24H
1518	Amylase Isoenzymes	82664	Gel Tube or Red Top - 2 ml serum	Separate serum from cells.	CP	SO
1366	Amylase, 2 Hr Urine	81050, 82150	Urine - 2 hour urine collection in specimen container with no preservative or additive.		Chem	D24H
1365	Amylase, 24 Hr Urine	81050, 82150	Obtain jug for 24 hr collection; Requires container with no additive or preservative.		Chem	D24H
19365	Amyotrophic Lateral Sclerosis (SOD1)	Call Client Services	Two (2) Lavender Tops - 10 ml whole blood		Gene	SO
1442	ANA (Antinuclear Antibody)	86038	Gel Tube - 2 ml serum. Minimum sample required - 0.7 ml.		SM	M-F/ 1

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
42786	ANA Profile	86038, 86225, 86235x4, 86235x8	Gel Tube - 2 ml serum. Minimum sample required - 2.0 ml.	Reject: Hemolysis, Lipemia	CP	SO
	ANCA		See Antineutrophil Cytoplasmic Antibody			
33442	Androgen Insensitivity	Call Client Services	Lavender Top - 5 ml	Keep at room temperature.	Gene	SO
1263	Androstenedione	82157	Gel Tube, Red Top or Lavender Top - 2 ml serum. Pediatric minimum sample - 0.5 ml serum.	If tube other than Gel-barrier, transfer separated serum or plasma into plastic transport tube.	CP	SO
9653	Angelman Syndrome	Call Client Services	Lavender Top - 5 ml whole blood Pediatric minimum sample - 2.0 ml	Keep specimen at room temperature.	DNA	M-F/ 1
1494	Angiotensin Converting Enzyme	82164	Gel Tube, Red Top, Green Top, Blue Top or Yellow Top - 2 ml		CP	SO
1720	Angiotensin Converting Enzyme, CSF	82164	CSF- 0.5 ml required		CP	SO
	Aniridia		See FISH - Wagr Panel			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Anti - Hu Antibodies		See HU Antibodies			
	Anti - MAG		See Myelin Associated Glycoprotein Antibody			
	Anti MAXA		See Recombx MATA Autoantibody			
	Anti - Smith Antibody		See Extractable Nuclear Antigen			
	Anti - SSA and Anti - SSB Antibodies		See Sjogren's Antibodies			
	Anti - Yo Antibody		See Purkinje Cell Cyto AB			
1018	Anti-DNA Antibody (Double Standed)	86225	Gel Tube or Red Top - 2 ml serum		SM	M-F/1
19247	Anti-Factor X Assay (Heparin Anti- Xa)	85520	Blue Top - 2.7 ml whole blood	Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients: Spin tube and freeze plasma in plastic sendoff vial. Note: Lovenex vs unfractionated	Heme	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Anti-RNP Antibody		See Extractable Nuclear Antigen			
9820	Antiadrenal Antibodies	86255	Gel Tube or Red Top - 1 ml serum		CP	SO
	Antibiotic Serum Level		See Schlicter Test			
	Antibody Screen		See Indirect Coombs			
1826	Anticardiolipin Antibody (Includes IgG, IgM, IgA)	86147	Gel Tube or Red Top - 1 ml serum		CP	SO
1837	Anticentromere Antibody	86256	Gel Tube - 2 ml serum		CP	SO
	Antidiuretic Hormone		See ADH			
28602	Anti-DNA Antibody (Single Stranded)	86226	Gel Tube or Red Top- 1 ml serum	Maintain specimen at room temperature. Reject: Hemolysis, Lipema	CP	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Anti-DNase B Titer		See DNase B Titer			
19240	Antigliaden Antibodies Panel	8352091x2	Red Top - 1 ml serum		CP	SO
	Antiglomerular Basement Membrane Antibody		See Glomerular Basement Membrane Antibody			
	Antigluten Antibodies		See Celiac Disease Antibody Profile			
	Antigranulocyte Titer		See AGT			
28042	Antimyeloperoxidase Antibodies	83516	Red Top - 2 ml serum	Reject: Hemolysis, Lipema	CP	SO
38839	Antineuronal Antibodies	8625591x2	Red Top - 2 ml serum or CSF in sterile container.	Reference Lab Clients: Freeze serum or CSF in plastic sendoff vial.	CP	SO
22881	Antineutrophil Cytoplasmic Antibody (ANCA) Profile	8625591	Gel Tube or Red Top - 1 -3 ml serum	Causes for Rejection: Hemolysis; lipemia	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1032	Antiparietal Cell Antibody	86255	Gel Tube - 1 ml serum		CP	SO
35435	Antiphospholipid Antibody Panel	86147, 83520, 86148	Gel Tube - 3 ml serum		CP	SO
32073	Antiproteinase 3 Antibody	83520	Gel Tube - 1 ml serum	Reject: Hemolysis, Lipema	CP	SO
1022	Antismooth Muscle Antibody	83516	Gel Tube or Red Top - 3 ml serum		CP	SO
19279	Antithrombin III Activity	90171x100	Blue Top - 2.7 ml whole blood	Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients: Spin tube and freeze plasma in plastic sendoff vial.	Hem	D24H
	Antithyroglobulin Antibody		See Thyroglobulin Antibody			
1639	Antithyroid Peroxidase Antibody (Anti - TPO)	86376	Red Top - 3 ml serum		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Antivirogram Analysis		See HIV Phenotype Panel			
	AP		See Alkaline Phosphatase			
21277	Apolipoprotein	82172	Gel Tube or Red Top - 4 ml serum	Patient must be fasting 8 to 12 hrs.	CP	SO
1213	APT Test	83033	Submit specimen in sterile container or stoppered syringe		SPHem	D24H
31063	Arava®	82542	See Leflunomide			
19239	Arbovirus	86651, 86652, 86653, 86654	Gel Tube or Red Top - 5 ml serum		CP	SO
1873	Arsenic	82175	Dark Blue Top - 2 ml whole blood	Causes for Rejection: Clotted sample	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1673	Arsenic, 24 Hr Urine	81050, 82175	Obtain jug for 24 hr collection; Requires container with no additive or preservative	Collection should be performed at the end of the work week for optimal monitoring of potential industrial exposure. Patient should avoid all seafood consumption 72 hours prior to collection.	CP	SO
31364	Arylsulfatase A	82657	Yellow Top (Solution A) - 15 ml whole blood	Refrigerate specimen after collection. Transport to the testing facility on wet ice or cold pack. Do not allow the sample to freeze. Specimens must arrive at testing facility within 48 hours of collection. Collect specimens Monday through Thursday only.	CP	SO
1056	Arylsulfatase A, 24 Hr Urine	82657	Obtain jug for 24 hr collection; Requires container with no additive or preservative		CP	SO
	ASCA		See <i>Saccharomyces cerevisiae</i>			
19309	Asialo GM1 Antibody, ELISA	83520x2	Gel Tube or Red Tube - 2 ml serum		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1081	ASO Titer (Antistreptolysin O, Streptozyme)	86063	Red Top Tube - 2 ml serum		SM	M-F/1
21845	Aspergillus Antibody Panel by CF and Immunodiffusion	8660691x3	Red Top or Gel Tube - 1 ml serum refrigerated or CSF acceptable	Refrigerate samples.	CP	SO
1336	AST (SGOT)	84450	Gel Tube - 1.0 ml serum. Minimum sample required - 0.7 ml		Chem	D24H
38002	Ataxia Panel	83894, 83898, 83901	Yellow Top - 5-10 ml whole blood. Lavender Top also acceptable.	Must be kept at room temperature.	Gene	SO
	Ativan		See Lorazepam			
	Atypical Pneumonia		See Mycoplasma IgG Antibody			
	Australian Antigen		See Hepatitis B Tests			
33691	Auto Dom Optic Atrophy	83890, 83891, 83892, 83894, 8389859, 8390459	Lavender Top - 5 ml whole blood. Whole blood collected in Yellow Top ACD tube also acceptable.	Store at room temperature	Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
37694	AZF Male Y Deletion	83891, 83897, 83900, 83901, 83912	Lavender Top - 5 ml whole blood. Minimum specimen - 2.0 ml	Room Temperature	Gene	SO
	Azoospermia Factor		See AZF			
9811	B Cell Rearrangement	83520	Paraffin Embedded Tissue		DNA	M-F/ 1
21340	B27 HLA	88184x1, 88185x1	Green Top - 5 ml whole blood	Do not collect on weekends or after 11am on Fridays. Deliver to lab ASAP. Reference Lab Clients: Collect M-TH only, Do not collect on Fridays.	Immun	M-F/1
	Bacillary Angiomatosis		See Bartonella Antibody			
8266	Banking	83891	Lavender Top - 5 ml whole blood. Minimum specimen - 2.0 ml	Keep specimen at room temperature.	DNA	M-F/1
	Bannayan Riley Ruvalcaba		See PTEN Mutation			
1049	Barbiturates (Quantitative)	82205	Lavender Top - 5 ml whole blood	Do not uncap tubes. Do not prep skin with alcohol.	Chem	M-F, 1, 2 Weekend, 1; Other by Pathology approval only

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
34254	Bartonella Antibody Profile	8661159	Red Top - 2 ml serum	Hemolysis; lipemia; gross bacterial contamination.	CP	SO
34182 - BMP w/GFR	Basic Metabolic Pkg w/GFR (Includes Na, K, Cl, CO2, Gluc, BUN, Creat, Ca), BMP	80048	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
32739	Battens Disease	83891, 83894x3, 83898x4	Two (2) Lavender Tops - 10 ml whole blood	Keep at room temperature.	Gene	SO
9811	B-cell Clonal Detection	83520	See B Cell Rearrangement			
9813	BCL2	83891, 83898x2, 83894, 83907, 83912	Paraffin Embedded Tissue		DNA	M-F/ 1
9814	bcr/abl Minimal Residual Disease	Call Client Services	Three (3) Lavender Tops	Contact Molecular Pathology lab for notification and proper collection process. Specimen must arrive in Molecular Pathology lab within two (2) hours of collection. Store at room temperature.	DNA	M-F/ 1
30600	Benzene, Blood	84600	Lavender Top - 7 ml whole blood	Do not open tube. Reject: Clotted specimen, Opened tube	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
15658	Benzodiazepines, Blood	80102	Two (2) - four (4) Gray (sodium fluoride/potassium oxalate) Tops - 12 ml whole blood total	Invert tube several times after collection. Test should only be used by those patients who are anuric. Urine is true specimen of choice. Causes for sample rejection: Submission of serum, plasma, clotted sample, insufficient quantity, improper documentation.	CP	SO
34186	Benzodiazepines, Urine	80102	30 ml in plastic urine drug bottle	Seal bottle with tamper resistant tape.		
24056	Beryllium	83018	Dark Blue Top (Metal Free tube with EDTA Additive) - 4 ml whole blood		CP	SO
29518	Beta- 2 Transferrin, Body Fluid	86335	1 ml body fluid		CP	SO
8638	Beta HCG (Qualitative), Blood	84702	Gel Tube - 2 ml serum		Hem	D24H
1671	Beta HCG (Qualitative), Urine	84703	Random urine specimen - 2 ml in specimen container	Rejected with SG <1.005	Hem	D24H
39265	Beta HCG (Quantitative)	84702	Gel Tube - 2 ml serum		Chem	D24H



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
19236	Beta Hydroxybutyrate	82010	Red Top - 5 ml serum	Reject: Blood collected in gel tubes	CP	SO
1830	Beta-2 Microglobulin, Serum	82232	Gel Tube or Red Top - 0.5 to 1 ml serum	If collected in a Red top, centrifuge and transfer serum into a plastic transport vial. Note: 0.3 ml of serum does not allow for repeat testing.	CP	SO
30559	Beta-2 Microglobulin, Urine	82232	Random Urine - 1 ml (minimum) to 10 ml	Patient should empty bladder and then drink large glass of H2O. Urine sample should be collected within one (1)hour of patient preparation.	CP	SO
1230	Betke Kleihauer	85460	Lavender Top - 2 ml whole blood		SPHem	D24H
8638	BHCG	84702	see Beta HCG			
32065	Bile Acid Profile by FABS-MS	82239	Urine - 10 -50 ml urine, Red Top - 2 ml serum, Bile fluid - 2 ml	Centrifuge, freeze serum in plastic sendoff vial. Freeze urine and send to lab in plastic sendoff vial.	Gene	SO
19302	Bile Acids, Conjugated	82239	Gel Tube or Red Top - 1 ml serum (FROZEN)	1 ml frozen serum, (Red Top or Gel Tube) fasting or 2 hr postprandial is preferred. Reject: Plasma	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1335	Bilirubin	82247	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.	Protect from light.	Chem	D24H
1441	Bilirubin (Micro)	82247	Brown bullet - 0.7 ml	Protect from light.	Chem	D24H
1355	Bilirubin, Fractionated (Includes, Total , Direct and Indirect Bili)	82247, 82248	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.	Protect from light.	Chem	D24H
	Biopsy for gross and microscopic exam by pathologist	Call Histology Department	Submit fresh specimen in a Histology container with formalin preservative along with completed tissue request, specifying anatomic source.	See Histology section for additional information.	Path	M-F/1,2, S/1
28723	Biotinase (PKU)	82261	Gel Tube or Red Top - 2 ml serum	This test is not performed on newborns. Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial immediately.	CP	SO
38343	BK Virus by PCR, (Urine)	87799	5 ml urine in sterile urine container			
37507	BK Virus by PCR, Quantitative (Blood)	87799	PPT - 5 ml whole blood	Blood must be centrifuged within two(2) hours of collection. Store at room temperature.	DNA	M-Su/1
1075	Bleeding Time (Template)	85002		Contact Special Hematology (355-3455) to schedule collection.	SPHem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1226	Blood Culture	87040	See Culture, Blood			
	Blood Urea Nitrogen (BUN)		See BUN			
	BMP		See Basic Metabolic Pkg			
	BNP		See Brain Natriuretic Peptide			
1120	Bone Marrow Studies	Call Hematology Department		Contact Special Hematology (355-3455) to schedule collection.	SPHem	D/1
9822	Bordetella Pertussis Antibody, IgA Quant.	86615	Gel Tube or Red Top - 1-2 ml serum	Causes for Rejection: Hemolysis; lipemia	CP	SO
8341	Brain Natriuretic Peptide (BNP)	83880	Lavender Top - 3 ml whole blood	If not run within 4 hours, blood must be centrifuged and plasma frozen in plastic sendoff vial. No capillary specimens accepted.	Chem	D24H
29787	Brodifacoum (Talon), Blood	82491	Red Top - 5 ml serum	Reject: Gel Tube	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1699	Brush Biopsy	88104	Submit specimen in Saccomano vials or slides in 95% alcohol fixative.		Cyto	M-F/1
1507	BUN (Blood Urea Nitrogen)	84520	Gel Tube - 2.0 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
38352	Busulfan Levels	82542	Green Top (sodium Heparin) - 4 ml adult, 1 ml pediatric	Tubes must be kept chilled at all times. Centrifuge and aliquot plasma into plastic transport vial as possible and freeze. Contact lab to notify of collection and delivery expectations.		
1100	C Reactive Protein	86140	Gel Tube - 3 ml serum. Pediatric minimum sample -1.5 ml.		Chem	D24H
1870	C1 Esterase Inhibitor, Serum	86161	Red Top - 1 ml serum	Collect sample on ice. Chill specimen in ice bath during clotting. Separate serum from clot with minimum centrifugation. Transfer serum to a plastic transport tube and freeze immediately.	CP	SO
28599	C1 Q Binding	86332	Red Top or Lavender Top - 3 ml serum	Reference Lab Clients - Centrifuge, separate and freeze serum in plastic sendoff vial.	CP	SO
1004	C3	86161	See Complement C3			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1283	C4	86161	See Complement C4			
40446	CA 125B	86304	Gel Tube - 3 ml serum		Chem	D24H
1531	CA 15-3	86300	Gel Tube - 3 ml serum		CP	SO
1498	CA 19-9 (Carbohydrate Antigen 19)	86301	Gel Tube - 1 ml serum. Red Top acceptable if poured off cells.	If collected in red top, centrifuge and put serum in plastic transport tube. Reject: Gross Hemolysis	CP	SO
19248	CA 27-29	86300	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
32011	CadisiI	83891, 8389891x16, 8390491x16	Two (2) Lavender Tops - 10 ml whole blood		Gene	SO
16454	Cadmium Profile, Blood and Urine	82300x2	Dark Blue Top (EDTA or heparin) - 2 ml whole blood. Urine (Random or 24 hr) - 5 ml plastic urine container	Reject : Clotted Specimen	CP	SO
16456	Cadmium, Blood	82300	Dark Blue Top ( EDTA or Heparin) 0.6 - 7ml whole blood.	Reject : Clotted Specimen	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1576	Caffeine	83520	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
1842	Calcitonin	82308	Gel Tube - 2 ml serum	Reference lab clients: Centrifuge, separate and freeze serum in plastic sendoff vial. Fasting sample preferred.	CP	SO
1501	Calcium	82310	Gel Tube - 2.0 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1402	Calcium, 24 Hr Urine	81050, 82340, 82570	Obtain jug for 24 hr collection; Requires container with 30 ml 6N HCL preservative.		Chem	D24H
1380	Calcium, Ionized	82330	Green Top - 5 ml whole blood. Pediatric minimum sample - 0.7 ml in Green bullet.	Tube must be full. Do not open tube. Reference Lab Clients: - Submit full gel tube, unopened.	Chem	D24H
31275	Calculus Analysis	82360	Submit calculus in clean specimen container. Do not use preservative or additive.		CP	SO
29270	<i>Campylobacter jejuni</i> Antibody	86625	Gel Tube - 1 ml serum		CP	SO
33816	Cannabinoid	80102	Urine - 10 ml random urine in sterile specimen container		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1315	Carbamazepine (Tegretol)	80156	Red Top - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
32070	Carbamazepine 10, 11-Epoxyde	80156	Red Top or Green Top - 1 ml serum or plasma	Reject: Gel tube, hemolysis, gross lipemia, icterus. <b>Do not use Gel Tube.</b> It slows absorption of drug by gel.	CP	SO
	Carbohydrate Antigen 19		See CA 19-9			
1750	Carbohydrate Deficient Transferrin	82373	Gel Tube - 3 ml serum	Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial.	CP	SO
1325	Carbon Dioxide (CO2)	82374	Gel Tube - 2.0 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
	Carcinoembryonic Antigen		See CEA			
	Cardiac BNP		See Brain Natriuretic Peptide			
	Cardiolipin Antibody		See Anticardiolipin Antibody			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1955	Carnitine, Plasma	82379	Green Top - 3 ml plasma. Pediatric minimum sample - 1.0 ml blood.	Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO
1063	Carnitine, Urine	82379	Urine - 5 ml random urine in sterile specimen container.		CP	SO
1349	Carotene	82380	Gel Tube - 2-5 ml serum, <b>frozen and protected from light.</b>	Protect from light. Reference Lab Clients: Centrifuge, separate and freeze serum in sendoff vial. Patient must be fasting for a minimum of 8 hours.	CP	SO
	Cat Scratch Antibody		See Bartonella Antibody			
1505	Catecholamines, 24 Hr Urine, Fractionated	81050, 82382, 82570	Obtain jug for 24 hr collection; Requires container with 20 ml 6N HCL preservative.		CP	SO
1350	Catecholamines, Plasma (Includes Total and Fractionated Dopamine, Epinephrine, Norepinephrine)	82384	Lavender Top or Green Top, 4-6 ml plasma <b>frozen</b>	Patient must be fasting for at least 4 hours without smoking and should remain supine for at least 30 minutes prior to collection. Deliver to lab on wet ice ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial within one(1) hour.	CP	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1232	CBC (Complete Blood Count)	85027	Lavender Top - 3 ml whole blood. Pediatric minimum sample - 0.5 ml in lavender microtainer tube.		Hem	D24H
1232, 1233	CBC with Differential	85027 85007	Lavender Top - 3 ml whole blood. Pediatric minimum sample - 0.5 ml in lavender microtainer tube.		Hem	D24H
	CD4 Count		See Lymphocyte Subset			
8627	CEA (Carcinoembryonic Antigen)	82378	Gel Tube- 3 ml serum		Chem	D24H
37508	Celiac Disease Antibody Profile	8351659, 86255	Gel Tube or Red Top - 2 ml serum (Minimum - 0.5 ml)		Mercy	Mon, Thurs
37509	Celiac Disease IgG Antibody Profile	82784, 83516	Gel Tube or Red Top - 2 ml serum (Minimum - 0.5 ml)		Mercy	Mon, Thurs
39908 - CSF 39910 - Body Fluid 1963 - Bronc. Wash	Cell Count, CSF or Body Fluid	89051	Submit CSF or body fluid in sterile specimen container. Specify fluid type and if CSF, specify tube #. Do not use any preservative or additive.		Hem	D24H
	Celontin		See Methsuximide			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Centromere Antibody		See Anticentromere Antibody			
1560	Ceruloplasmin (Copper Oxidase)	82390	Red Top or Gel Tube - 5.0 ml blood. Minimum 3.0 ml. Green Top also acceptable.	Deliver to CMC lab ASAP. Separate serum or plasma from cells within 45 minutes. Reference Lab Clients - Centrifuge, separate and refrigerate serum in plastic sendoff vial.	CP	SO
	CF Testing		See Cystic Fibrosis Screening			
	CGH		See Comparative Genomic Hybridization			
	CH12		See Comprehensive Metabolic Pkg			
	CH50		See Complement, Total			
	CH7		See Basic Metabolic Pkg			
32001 - Single 32044 - Autosomal CMT Dom. 32040	Charcot-Marie-Tooth Type IA & IX DNA Test	Call Client Services	Yellow Top (Solution A) - Requires two (2) tubes - 15 ml whole blood.		Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
38353	Chimerism Assay (VNTR or STR)	83891, 83898, 83909, 83912	Pre transplant - 1 Yellow Top (Solution A), 10 ml from the recipient and (10 ml) from the donor; Post transplant - 2 Yellow Tops (Solution A), (10 ml each tube) from the recipient.			
	<i>Chlamydia</i> Culture		See Culture, Chlamydia			
32450	<i>Chlamydia</i> Antibody Panel	86631	Gel tube - 1 ml serum		CP	SO
37140	<i>Chlamydia</i> / GC NAAT	87491, 87591	Obtain collection kit from Microbiology		PHD	M-S
37141	<i>Chlamydia</i> / GC NAAT, Urine	87491, 87591	Urine - 15 - 60 ml of first void urine - transfer to UPT kit available from Microbiology	Patient should not have urinated 1 hour prior to collection	PHD	M-S
1327	Chloride	82435	Gel Tube - 2.0 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1199	Chloride, 24 Hr Urine	81050, 82436, 82570	Obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D24H
1674	Cholesterol	82465	Gel Tube - 2.0 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Cholesterol, VAP		See Lipid Panel, Direct Measured			
1347	Cholinesterase, Pseudo	82480	Gel Tube- 3 ml serum		Chem	D24H
3431	Chromagranin A	82397	Gel Tube, Red Top, Green Top or Lavender Top - 1 ml serum or plasma	Serum or plasma must be separated into a plastic vial. Causes for Rejection: Plasma other than EDTA or heparinized; specimen preserved with antimicrobial agents.	CP	SO
1732	Chromium, Plasma	82495	Dark Blue Top (Metal Free tube with heparin or EDTA Additive) - 3.0 ml whole blood.	Reference Lab Clients- Centrifuge, separate plasma into plastic sendoff vial immediately to avoid hemolysis. Transport at room temperature.	CP	SO
42782	Chromium, Urine	82495, 82570	5.0 ml of random urine		CP	SO
19270	Chromogenic Factor Xa	85260	Blue Top - 2.7 ml whole blood	Reference Lab Clients - Spin tube and freeze plasma in plastic sendoff vial.	CP	SO
2845	Chromosome Analysis, Amniotic Fluid	82235, 88267, 88280	20- 30 ml Amniotic Fluid	Store and transport at room temperature only.	Gene	M-F/1

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
2846	Chromosome Analysis, Chorionic Villus	82235, 88267, 88280	10- 30 mgs chorionic villus.	Store and transport at room temperature only.	Gene	M-F/1
2854	Chromosome Analysis, Solid Tissue	82235, 88267, 88280	Place sample in transport or viral media provided by lab.		Gene	M-F/1
2855	Chromosome Analysis, Solid Tumor	82235, 88267, 88280	Place sample in transport or viral media provided by lab.		Gene	M-F/1
2849	Chromosome Analysis, Bone Marrow	82235, 88267, 88280	2.0 - 5.0 ml bone marrow collected in heparinized syringe and placed in transport media.	Store and transport at room temperature only.	Gene	M-F/1
2847	Chromosome Analysis, Blood	88230, 88262	Green Top (Sodium Heparin) - 5 ml whole blood. Pediatric minimum sample - 2 ml .	Store and transport at room temperature only. Reject specimens collected with lithium heparin.	Gene	M-F/1
	Chromosome Microarray Analysis		See Comparative Genomic Hybridization			
19250 - PT 19251 - PTT	Circulating Anticoagulant (Mixing Studies)	85611x6 85732x6	Blue Top - 2.7 ml whole blood	Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic transport vial.	SPHem	M-F/ 1,2
	Circulating Immune Complexes		See C1q Binding			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Circulating Platelet Antibodies		See Platelet Antibodies			
1243	Citric Acid, 24 Hr Urine	82507	Obtain jug for 24 hr collection; Requires container with HCl preservative.		CP	SO
1249	Clomipramine	82491	Red Top, Lavender Top or Green Top - 3 ml serum or plasma	Reject: Gel Tube. Transfer serum or plasma into plastic transport vial.	CP	SO
1215	<i>Clostridium difficile</i> Toxin Assay	87230, 87449, 87324	Collect soft or liquid stool in sterile, wide mouth container.	Rectal swabs and formed stools are not acceptable.		
8680	Clozapine	80154	Red Top, Lavender Top or Green Top - 3 ml serum or plasma	Reject: Gel Tube. Transfer serum or plasma into plastic transport vial.	CP	SO
	CMP		See Comprehensive Metabolic Pkg			
32049	CMT Complete	8389191x2, 83892, 83894, 83896, 83897, 8389891x57, 83890491x60	Three (3) Yellow Tops (Solution A) 30 ml whole blood.		Gene	SO
1877	CMV Antibody, IgM	86645	Gel Tube or Red Top - 1 ml serum		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1539	CMV Antibody, Total	86645	Gel Tube - 1 ml serum		SM	M-F/ 1
30606	CMV PCR, Southern Blot Confirmation	87496, 87497	Lavender Top or Yellow Top - 7 ml whole blood	CSF also acceptable but must be frozen. Specimen must arrive at performing lab within 48 hours of collection. Do not collect on Friday or Saturday.	CP	SO
29273	CMV Resistance Testing (Mutation Analysis)	Call Client Services	Two (2) Lavender Tops or Yellow Top ACD - 10 ml whole blood		CP	SO
27281	CMV, CSF (IgG & IgM)	86644, 86645	CSF- 0.5 - 2 ml, Frozen		CP	SO
37506	CMV, Quantitative by PCR	87497	PPT - 5 ml whole blood	Blood must be centrifuged within two(2) hours of collection. Store at room temperature.	DNA	M-Su/1
38344	CMV, Urine PCR Quant.	87497	See Culture, Viral			
	CO2		See Carbon Dioxide			
1006	Coagulation Survey (Includes PT, PTT, Fibrinogen, Platelet Count)	85384, 85730, 85409, 85610	One (1) Blue Top and One (1) Lavender Top - 7.5 ml whole blood total	Reference Lab Clients: Centrifuge, separate and freeze plasma from Blue Top tube in plastic sendoff vial.	Hem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1511	Cocaine, Urine	82520	Urine - 10 ml random urine in sterile specimen container		Chem	D24H
32187 - (Tier 1)	Coffin Lowry	Call Client Services	Lavender Top Tube - 5 ml whole blood	Keep at room temperature.	Gene	SO
32186 - (Tier 2)	Cold Agglutinins		See Mycoplasma IgM Antibody			
	Collagen Crosslinked N-Telopeptide		See N-Telopeptide Crosslinks			
41530	Comparative Genomic Hybridization	88386x6, 83891x2	4.0 ml whole blood in lavender tube. Yellow ACD tube also acceptable		DNA	D/1
5419	Complement C2	86160	Red Top - 2 ml serum, Frozen	Reference Lab Clients: Place tube in ice bath immediately following venipuncture. Centrifuge, separate and freeze serum in plastic transport vial.	CP	SO
1004	Complement C3	86161	Gel Tube - 2 ml serum		Chem	D24H
1283	Complement C4	86161	Gel Tube - 2 ml serum		Chem	D24H



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1021	Complement C5a	86160	Lavender Top - 5 ml whole blood	Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO
	Complement Fixation		See Fungus Serology			
1591	Complement, Total (CH50)	86162	Gel Tube or Red Top, 1 ml serum	Reference Lab Clients: Centrifuge, separate and freeze serum in plastic transport vial. Reject: Hemolysis.	CP	SO
	Complete Blood Count		See CBC			
	Compound S		See 11-Desoxycortisol			
34144	Comprehensive Metabolic Pkg - CMP (Includes Na, K, Cl, CO2, Gluc, BUN, Creat, Alb, TP, Bili, AST, Ca)	80053	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
34177	CMP with GFR	80053				
32023	Congenital Hypomyelination	83891, 83898x3, 83904x8	Yellow Top (Solution A) - 10 ml whole blood.		Gene	SO
	Copper Oxidase		See Ceruloplasmin			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1026	Copper, 24 Hr Urine	82525, 81050	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO
1025	Copper, Serum or Plasma	82525	Red Top or Royal Blue (EDTA) Top - 1 ml serum or plasma	Serum <b>must</b> be separated from cells within 45 minutes of collection and plasma may be separated immediately into a transport vial. Causes for Rejection: Gel Tube.	CP	SO
	Coproporphyrin		See Porphyrins			
8607	Cortisol	82533	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1586	Cortisol, Free 24 Hr Urine	81050, 82530	Obtain jug for 24 hr collection; Requires plastic container with 1g boric acid or HCl preservative per liter of sample. Urine Volume: 10 ml to 100 ml aliquot	Prior to starting test sample collection, have patient void and discard initial urine at 8 am. Then collect 24 hours worth of sample from that point.	CP	SO
	Cotinine		See Nicotine			
1876	Coumadin (Warfarin)	82486	Red Top, Lavender Top or Green Top - 2 ml serum or plasma	Centrifuge and separate serum or plasma into transport tube. Reject: Gel Tube.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1835	<i>Coxsackie A</i> Virus Antibody (Includes Types 7, 9, 10, 16)	86658x2	Gel Tube or Red Top - 1-2 ml, serum; CSF - 1 to 2 ml	Please refrigerate or freeze serum or CSF.	CP	SO
1834	<i>Coxsackie B</i> Virus Antibody (Includes Types 1-6)	86658x2	Gel Tube or Red Top - 3 ml serum, refrigerated or CSF 1-3 ml	Ship serum on a cold pack. Freeze CSF. Causes of Rejection: Hemolysis, lipemia.	CP	SO
1172	<i>Coxsiella burnettii</i> Antibody Panel, IFA	86638	Red Top or Gel Tube - 1 ml serum	Causes for Rejection: Hemolysis; lipemia	CP	SO
1267	C-Peptide, Serum	84681	Gel Tube or Red Top - 1 ml serum,	Reference Lab Clients: Allow sample to clot. Transfer serum to purple transport tube. Freeze immediately. Do not allow to thaw and refreeze. Patient should fast for 12 to 14 hours.	CP	SO
1504	CPK, Total	82550	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1208	CPK Isoenzymes (Includes Total CK, CPK-MB, %MB)	82550	Gel Tube - 3 ml serum. Pediatric minimum sample - 2.0 ml.		Chem	D24H
1508	Creatinine	82565	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1632	Creatinine Clearance	82575, 81050	Gel Tube - 2 ml serum and obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1730	Creatinine, 24 Hr Urine	81050, 82570	Obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D24H
1869	Creatinine, Urine	82570	Urine - 10 ml random urine in sterile specimen container		Chem	D24H
	Crohn's Disease Panel		See Saccharomyces cerevisiae Panel			
	Crossmatch by Flow Cytometry		See below for crossmatch for transplant			
1467	Crossmatch for ABO/RH	86920	Lavender Top - 5 ml whole blood	Must be <b>completely hand labeled</b> with patient name, medical record #, unique armband #, date, time and collector's initials.	BB	D24H
1242	Crossmatch for Transplant (Donor and Recipient Only)	88184, 88185, 86805x2	Recipient - One (1) Red Top Donor - Three (3) Green Tops	Collect set from both donor and recipient.	Immun	D24H
1105	Cryofibrinogen	82585	Lavender Top - 5 ml whole blood	Keep <b>warm</b> and deliver ASAP to lab	SPHem	M-F/1
1354	Cryoglobulin	82595	Red Top - 5 ml whole blood	Keep <b>warm</b> and deliver ASAP to lab. Reject: Gel Tube	SPHem	M-F/1

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1035	Cryptococcus, Antigen	86403	Gel Tube - 3 ml serum		SM	D/1
1041	Cryptococcus, CSF	86403	Submit 1.0 ml in sterile tube		SM	D/1
1261	Crystal Exam	89060	Submit 1.0 ml of synovial fluid in Green Top, Red Top or stoppered syringe.	It is important to specify source.	Hem	D24H
	Culture, <i>Histoplasma capsulatum</i>		See Blood Culture, Histoplasma		MC	D24H
1202	Culture, CSF or Body Fluid (Bacterial)	87070, 87205	CSF specimens submitted on swabs are unacceptable for CSF culture.	Submit one (1) ml in sterile screw top vials. Refrigerate at 2-8° C if transport is delayed more than 24 hours.	MC	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1252	Culture, Upper Respiratory Tract (Bacterial)	87070, 87205	Cultures for the following organisms require additional culture media: C. diphtheriae, B. pertussis, N. meningitidis, N. gonorrhoeae, Fusospirochetal symbiotic disease. Collect an additional swab for each type of culture ordered. When collecting a swab for viral testing, obtain cells from the margin of the lesion. Viruses are found inside human cells.	<u>Nose:</u> Swab anterior 15 mm of both nares. <u>Nasopharynx:</u> Pass a Bradford wire swab back through the nose until it comes in contact with the posterior nasopharyngeal wall, then rotate the swab gently in this position before removing it. <u>Oropharynx:</u> See Culture, Throat Screen for Group A Beta Strep. For viral culture, place swab into viral transport broth. Refrigerate at 2 - 8° C, if transport is delayed more than 2 hours.	MC	D24H
1265	Culture, Anaerobic	87075	Use anaerobic collection device or syringe if collecting fluid sample. See Attachment 1 for a list of unacceptable specimens.	All specimens must be protected from exposure to oxygen, which is toxic to anaerobic organisms. Some sites or specimens are not acceptable for anaerobe culture because anaerobic organisms are part of the usual flora of these sites.	MC	D24H
21587	Culture, Blood, Bartonella henselae	87040	8.0 - 10.0 mL in Plus Aerobic/F (Gray Top) 8.0 - 10.0 mL in Lytic Anaerobic/F (Purple Top)		MC	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1710	Culture, Blood, AFB, MAI	87116	1.0 - 5.0 mL in Myco/F Lytic (White Top/Red Label)		MC	D24H
5615	Culture, Blood, Fungus	87103	1.0 - 5.0 mL in Myco/F Lytic (White Top/Red Label)	Do not collect Isolator™ tube.	MC	D24H
5615	Culture, Blood, Histoplasma	87103	Adult - 10.0 mL in Gold/Black Top isolator™ Tube Pediatric - 1.5 mL in Gold Top isolator™ tube		MC	D24H
1002	Culture, Blood, Routine Adult	87040	20.0 ML Blood/Culture Set 1(Venipuncture Site #1) 8.0-10.0 mL in Plus Aerobic/F (Gray Top) 8.0-10.0 mL in Lytic Anaerobic/F (Purple Top) Set 2 (Venipuncture Site #2) 8.0-10.0 mL in Plus Aerobic/F (Gray Top) 8.0-10.0 mL in Lytic Anaerobic/F (Purple Top)	Never put more than 10.0 mL in one blood culture bottle.	MC	D24H
1002	Culture, Blood, Routine, Pediatric - 1 month - 2 years	87040	2.0 - 3.0 mL Blood/Culture - 1.0 - 1.5 mL in Plus Aerobic/F (Gray Top) + 1.0 - 1.5 mL in Lytic Anaerobic/F (Purple Top)	If you collect less than 2.0 mL of blood, put all blood in the aerobic bottle.	MC	D24H
1002	Culture, Blood, Routine, Pediatric - 10 years - 15 years	87040	10.0 - 20.0 mL Blood/Culture - 5.0 - 10.0 mL in Plus Aerobic/F (Gray Top) + 5.0 - 10.0 mL in Lytic Anaerobic/F (Purple Top)	If you collect less than 2.0 mL of blood, put all blood in the aerobic bottle.	MC	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1002	Culture, Blood, Routine, Pediatric - 2 years - 10 years	87040	3.0 - 5.0 mL Blood/Culture - 1.5 - 2.5 mL in Plus Aerobic/F (Gray Top) + 1.5 - 2.5 mL in Lytic Anaerobic/F (Purple Top)	If you collect less than 2.0 mL of blood, put all blood in the aerobic bottle.	MC	D24H
1002	Culture, Blood, Routine, Pediatric - Neonate	87040	1.0 - 2.0 mL Blood/Culture - 1.0 mL in Plus Aerobic/F (Gray Top) + 1.0 mL in Lytic Anaerobic/F (Purple Top)	If you collect less than 2.0 mL of blood, put all blood in the aerobic bottle.	MC	D24H
29868	Culture, Bone Marrow	87254x2, 87252	Bone Marrow is sent to Special Hematology for inoculation into Yellow Top S PS Tube		MC	D24H
5614	Culture, Cath Tips	87070, 87205	Foley cath tips are not acceptable	Place tip of catheter in sterile screw top container. Refrigerate at 2-8° C if transport is delayed more than 24 hrs.	MC	D24H
1202	Culture, CSF or Body Fluid (Viral)	87070, 87205		Submit one (1) mL CSF or fluid in sterile container. Refrigerate at 2-8° C, if transport is delayed more than 24 hours.	MC	D24H
5612	Culture, Exudate from Wound Abscess and Lesions (Bacterial, Viral)	87070, 87205	Specimens submitted on culturette swabs are suboptimal for AFB and fungal cultures, but are acceptable. For viral culture, collect an additional swab and place in viral transport media.	Collect aspirate using needle and syringe. Cleanse site to be cultured thoroughly. If culture site is dry, collect using a culturette swab. Refrigerate at 2 - 8° C if transport is delayed more than 24 hours.	MC	D24H



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
5620	Culture, Eye (Bacterial)	87070, 87205	Wash eye with sterile normal saline to remove superficial exudate. Specimens for GC from newborns must be collected prior to the Crede procedure.	Using a small NP swab, touch mucosal surface and place swab in culturette container. Break ampule to moisten swab.	MC	D24H
29622	Culture, Eye (Viral)	87254x2		Using a small NP swab touch mucosal surface and place swab in viral transport broth. Cap securely.	MC	D24H
3462	Culture, Fungus and KOH Prep (Hair, Nail or Skin)	87101, 87220	Lesions should be untreated with topical antifungal agents for one week before culturing.	<p><b>Hair</b> - Remove 10-12 infected hairs with forceps and place in sterile container or between 2 glass slides.</p> <p><b>Skin Scrapings</b> - Cleanse skin with alcohol sponge. Scrape entire periphery of lesion with scalpel blade or cytology brush. Place scrapings between 2 glass slides or sterile container. <b>Nail</b> - Cleanse nail with alcohol sponge. Remove first portion of debris under nail with scapel and discard. Scrape remaining portion and place between 2 glass slides. Refrigerate at 2 - 8° C if transport is delayed more than 24 hours.</p>	MC	D24H
5610	Culture, Genital (Bacterial)	87070	Penile discharge for GC may be spread onto a slide and submitted for gram stain only. Swab for trichomonas should be placed in a sterile tube or urine container with enough sterile saline to keep swab moist (1-2 mL).	Use culturette swab to collect exudate from vaginal or cervical area or from penile discharge. Return swab to holder and crack ampule to preserve specimen. <b>Do not refrigerate.</b>	MC	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
29866	Culture, Genital (Viral)	87255	When collection a swab, obtain cells from the margin of the lesion. Viruses are found inside human cells.	Remove obvious exudate from culture site with sterile swab. Use second swab to scrape mucosal surface well to obtain mucosal cells and then place swab in viral transport media. Refrigerate at 2 - 8 ° C, if transport is delayed more than 2 hours.	MC	D24H
5610	Culture, <i>Haemophilus ducreyi</i> (Genital)	87070	Bring specimen directly to microbiology within 15 minutes.	Use culturette swab to collect exudate from center of soft lesion. Return swab to holder and crack ampule to preserve specimen.	MC	D24H
	Culture, <i>Rochalimaea</i>		See Blood Culture, <i>Bartonella henselae</i>		MC	D24H
1252	Culture, Sputum (Bacterial)	87070, 87205	For optimum results, obtain first morning specimen prior to breakfast. A single sputum sample may be used for bacterial, fungal and AFB if there is at least 5 mL of sputum. For viral culture, place a small amount (0.25 - 0.5 mL) into viral transport broth or send entire specimen. For AFB cultures, sputum culture should be collected first morning, 8 hours later and next day.	Submit specimen in sterile, wide mouth container. Refrigerate at 2 - 8° C, if transport is delayed more than 1 hour.	MC	D24H
1002	Culture, Stem Cells	87040	0.5 - 3.0 mL in Plus Aerobic/F (Gray Top)		MC	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1270	Culture, Stool (Bacteria)	87045, 87046	Specimen must be free of barium, bismuth, and oily suspensions. It cannot be mixed with urine. Diapers are not acceptable.	Use sterile stool container. Requires 10 to 25 gms of specimen. Refrigerate at 2 - 8° C, if transport is delayed more than 2 hours, or Proto-Fix	MC	D24H
29862	Culture, Stool (Viral)	87254x4	Specimen must be free of barium, bismuth, and oily suspensions. It cannot be mixed with urine. Diapers are not acceptable.	Collect a formed stool in sterile container. Swab is also acceptable.	MC	D24H
9866	Culture, Throat Screen for Group A Beta Strep	87081		Use culturette swab. Depress tongue with tongue blade and swab tonsillar area, posterior pharynx, and any areas of inflammation.	MC	D24H
21266	Culture, Tissue (Bacterial)	87071, 87205	Do not submit entire appendages. Do not use anaerobe collection device.	Remove tissue aseptically and place in sterile container with just enough sterile normal saline to keep tissue moist. Transport to lab within 24 hours.	MC	D24H
1227	Culture, Urine (Bacterial)	87086		Use urine culture transport tube.	MC	D24H
1177	Culture, Urine (Viral)	87254		Collect 10 - 20 mL in sterile container.	MC	D24H
1523	Cyanide	82600	Gray Top - 5 ml whole blood		CP	SO
38003	Cyclic AMP, Plasma or Urine	82030	Gel Tube 0.5-1 ml, Plasma or Urine - 10 ml random urine	Reference Lab Clients- Collect blood and place on ice. Centrifuge, separate and freeze plasma immediately in a plastic transport vial. Freeze urine in plastic transport vial. Be careful to identify which vial is serum vs. urine.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1385	Cyclosporine	80158	Lavender Top - 3 ml whole blood. Pediatric minimum sample - 0.5 ml in lavender microtainer tube.		Chem	D/10am, 1pm
38827	Cystatin C	82610	Red Top - 1.0 ml serum. Heparinized plasma (Green Top) also acceptable.	Overnight fasting is preferred.	CP	SO
9815	Cystic Fibrosis Screening	Call Client Services	Lavender Top - 5 ml whole blood. Pediatric minimum volume - 2.0 ml	Room Temperature	DNA	M-F/ 1
22922	Cysticercosis Antibody	86682	Gel Tube - 1 ml serum		CP	SO
1167	Cystine (Quantitative), 24 Hr Urine	81050, 82131	Obtain jug for 24 hr collection. Requires container with 6N HCl preservative. Sample volume: 2.5 ml - 25 ml	Prior to starting test sample collection, have patient void and discard initial urine at 8 am. Then collect 24 hours worth of sample from that point. Keep specimen on ice during collection. Add 30 mL 6N HCl. Final pH must be 1-3. Adjust pH with 6N HCl. Mix well. Freeze sample that is submitted for testing. Causes for Rejection: Thawed specimen; specimen collected in boric acid; pH not <3.	CP	SO
34448	Cytology, Body Fluid	88173	Submit fresh body fluid in sterile specimen container or stoppered syringe. Do not use any preservatives or additives.	Deliver ASAP to lab.	Cyto	M-F/1

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1699	Cytology, Bronchial Washings	88104	Submit fresh specimen or one preserved in 50 % alcohol fixative, in sterile specimen container.	Deliver ASAP to lab.	Cyto	M-F/1
1608	Cytology, CSF	88161	Submit CSF in sterile specimen container or stoppered syringe. Do not use any preservatives or additives.	Deliver ASAP to lab.	Cyto	D/1
1698	Cytology, Sputum	88160, 88108	Submit fresh specimen or one preserved in 50 % carbowax fixative, in sterile specimen container.	Deliver ASAP to lab.	Cyto	M-F/1
1678	Cytology, Urine	88161	Submit fresh specimen or one preserved in 50 % carbowax fixative, in sterile specimen container.	Early morning specimen preferred. Deliver ASAP to lab.	Cyto	M-F/1
1877	Cytomegalovirus, IgM	86645	Gel Tube or Red Top - 1 ml serum		CP	SO
1712	Cytomegalovirus, PCR (Urine)	87496	5-10 ml			
30762	D-Dimer, Quantitative	85379	Blue Top - 2.7 ml whole blood.	Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	Hem	D24H
8238	Dehydrocholesterol, 7 or 8	82541	Lavender Top or Green Top - 1 ml, plasma	Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Dehydroepiandrosterone		See DHEA			
	Dehydroepiandrosterone Sulfate		See DHEA Sulfate			
	Delta Aminolevulinic Acid		See Aminolevulinic Acid			
	Delta OD 450		See Amniotic Fluid Scan			
36391	Demerol	83925	Red Top, Lavender Top or Green Top, 1.1 - 3 ml serum	Centrifuge and transfer serum or plasma to transport vial. Causes for Rejection: Use of Gel Tube	CP	SO
32068	Dengue Fever IgG Antibody	86790	Gel Tube - 1 ml serum		CP	SO
1687	Deoxycorticosterone	82633	Gel Tube, Red Top, Lavender Top, or Green Top - 3 ml serum or plasma	Reference Lab Clients - Centrifuge, separate and freeze serum/plasma in plastic sendoff vial. Separate serum or plasma from cells within 1 hour of collection. Reject: Gel Tube.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Depakote		See Valproic Acid			
1284	Desipramine (Tricyclic)	82491	Red Top, Lavender Top, Green Top - 0.6-2 ml serum or plasma	Reject: Gel Tube	CP	SO
1887	Desyrel (Trazadone)	82491	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
8222 - HSV1	DFA, Vesicular Fluid (Herpes Simplex, Varicella Zoster)	87274		Obtain 3 acetone cleaned slides from laboratory		
8223 - HSV2		87273		with slide container. Collect epithelial cells from		
8229 - Varicella Zoster		87290		lesion onto a sterile swab. Transfer cells directly to acetone cleaned slides by rolling swab back and forth over 5 to 10 mm area of slide. Air dry slide completely before placing in slide container.		
8224 - Influenza A	DFA, Viral (includes RSV, influenza, HSV)	87276		Collect 1 to 2 mL of sample into sterile specimen container. Acceptable specimens are lesion basal		
8225 - Influenza B		87275		cell scrapings, tissue, nasal washings, sputum,		
8228 - RSV		87280		bronchial washings, tracheal specimens. Culturette swabs also acceptable. Refrigerate at 2 - 8° C, if transport is delayed more than 24 hours.		

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1391	DHEA	82626	Gel Tube, Red Top, or Lavender Top, 0.3-1 ml	If collection tube other than a Gel Tube, centrifuge and separate serum or plasma to a plastic transport vial	CP	SO
1392	DHEA-S	82627	Gel Tube or Red Top - 1 ml, serum	If a Red Top tube is used, transfer separated serum to a plastic transport tube.	CP	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	DHT		See Dihydrotestosterone			
33453	Diamond Blackfan Anemia	83891x14, 83898x14, 83892x2, 83904x14, 83894x14	Lavender Top - 5 ml	Keep at room temperature.	Gene	SO
	Dicodid		See Hydrocodone			
31597	Difenacoum	82491	Red Top, Lavender Top or Grey Top, 3 ml serum or plasma	Reject: Gel Tube	CP	SO
	Differential(Diff)		See CBC			
8640	Digoxin	80162	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
19288	Dihydrotestosterone	82651	Gel Tube, Red Top, Lavender Top or Green Top, 1 ml serum (preferred) or plasma,	Centrifuge, separate and freeze serum or plasma in plastic transport vial within 1 hour of collection.	CP	SO
9796	Dihydrotestosterone, Total	82651	Gel Tube, Red Top, Lavender Top or Green Top, 1 ml serum (preferred) or plasma,	Centrifuge, separate and freeze serum or plasma in plastic transport vial within 1 hour of collection.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Dilantin		See Phenytoin			
38017	Diphtheria Antibody	86317	Gel Tube or Red Top - 1 ml serum	Causes for Rejection: Gross hemolysis; lipemia; bacterial contaminaton.	CP	SO
1139	Direct Coombs	86880	Lavender Top - 4 ml whole blood		BB	D24H
32174	Disopyramide (Norpace)	80299	Gel Tube, Red Top, Lavender Top, Green Top, 1 ml serum or plasma	The use of Gel Tube is not recommended, due to slow absorption of drug by gel. Transfer serum/plasma to plastic transport vial. Reject: Hemolysis, Lipemia, Icterus.	CP	SO
1245	DNA Studies	88182	Yellow Top (Solution A) - 10 ml whole blood.		Gene	
19284	DNase B Titer	86215	Gel Tube - 3 ml serum		CP	SO
	Dolophine		See Methadone Screen			
33209	Dopa Responsive Dystonia	83891x14, 83898x14, 83892x2, 83904x14, 83894x14	Lavender Top - 5.0 ml whole blood	Must kept at room temperature.	Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1284	Doxepin (Tricyclic) Level	82491	Red Top, Lavender Top, or Green Top - 2 ml serum or plasma	Transfer separated serum or plasma to a plastic transport tube. Reject: Gel Tube.	CP	SO
1027	Drug Screen	80101x6, 82487	Urine - 50 ml random urine in sterile specimen container		Chem	D24H
1628 - 5 hr. Urine  1655 Bld/Urine	D-Xylose Absorption	84620	Gray Top - 2 mL plasma (each specimen) and 10 mL aliquot of 5-hour urine collection in sterile specimen container.	Patient must be fasting 8 hours prior to administration to D-Xylose; Pediatric patients must be fasting for at least 4 hours. Patient should refrain from eating foods with pentose and medications 24 hours prior to testing. Patient should drink water both during fasting and testing period. Void initial urine before beginning test. Begin testing in AM. Collect fasting blood specimen. Give patient weight based dosage of D-Xylose (0.5 g/kg body weight up to a maximum of 25g). Collect 5 hour urine sample and record total volume.	CP	SO
33201	Dystonia DNA Test	83891, 83894, 83898	Four (4) Lavender Tops - 20 ml whole blood	Keep at room temperature.	Gene	SO
9904	Dystrophin Gene Full Mutation Analysis (Duchenne Muscular Dystrophy Screen)	83890, 83894, 83898	Yellow Top (Solution A) - 10 ml whole blood. Lavender Top also acceptable.	Keep specimen at room temperature.	Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	EBV by PCR		See Epstein Barr Virus by PCR			
1641	Echinococcus Antibody	86682	Gel Tube or Red Top - 0.5 - 1 ml serum	Reference Lab Clients - Centrifuge, separate and refrigerate or freeze serum in plastic sendoff vial.	CP	SO
8670	Ehrlichia Chaffeensis Antibody	86256	Gel Tube - 1 ml serum	Reject : Hemolysis, Lipemia	CP	SO
61219	Electrolytes (Includes Na, K, CO2, Cl)	80051	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
34146	Electrolytes, Urine (Includes Na, K, Creat, Cl)	80051	Urine - 5 ml random urine in sterile specimen container. Pediatric mininum sample - 1.0 ml.		Chem	D24H
32445	Embryotoxicity Assay	86849	Gel Tube - 4 ml serum		CP	SO
9930	Emery-Dreifuss MD	83890x2, 83904x6, 83894x2, 83898x2, 83891	Yellow Top (Solution A) - 5-10 ml whole blood. Lavender Top also acceptable.	Keep specimen at room temperature.	Gene	SO
	ENA Antibodies		See Extractable Nuclear Antigen			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
38016	Endomysial Antibody	83516	Gel Tube or Red Top, 1-3 ml serum		CP	SO
28040	Entamoeba histolytica Antibody	86753	Red Top - 1 ml serum		CP	SO
	Enterovirus Antibody		See Polio Virus			
32737	Enterovirus by PCR, Qualitative, CSF	87498	CSF - 2.0 ml . Pediatric minimum - 0.5 ml	Specimen should be frozen within two (2) hours of collection.	DNA	M-Su/1
1065	Eosinophil Count (Absolute)	85007	Lavender Top - 3 ml whole blood		Hem	D24H
1060	Eosinophil Count (Body Fluid)	89190	Submit 3 ml fluid in sterile specimen container or stoppered syringe. Do not use preservative or additive.	Specify fluid type.	SPHem	M-F, S/1
	Epinephrine		See Catecholamines			
19297	Epstein Barr Titer (Acute Infection)	86663, 86664, 86665	Gel Tube or Red Top - 1 ml serum		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1828	Epstein Barr Titer (Chronic)	86663, 86664	Red Top - 3 ml serum		CP	SO
37329	Epstein Barr Virus, PCR (Viral Load)	87799	White Top - 5 ml whole blood . Lavender tube also accepted	Reference Lab Clients: Centrifuge and freeze within 2 hours of collection. If specimen collected in lavender tube, then plasma must be spun and separated within 2	DNA	
1882	Erythrocyte Protoporphorin	84202	Full Green Top, whole blood	Have patient fast for 12 to 14 hours prior to collection; water is allowed. Send tube immediately on wet ice to lab as testing must be performed within 48 hours of collection.		
1073	Erythrocyte Sedimentation Rate (ESR)	85651	Lavender Top - 3 ml whole blood. Pediatric minimum sample - 2.0 ml in Lavender pediatric tube.	Reject: Blood collected in bullets. Specimen is stable for 6 hours at room temperature and up to 24 hours, if refrigerated.	Hem	D24H
1893	Erythropoietin	82668	Gel Tube or Red Top - 1 ml serum	Reject: Hemolysis, Lipema	CP	SO
	ESR		See Erythrocyte Sedimentation Rate			
1364	Estradiol	82670	Gel Tube - 3 ml serum		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1294	Estriol	82677	Gel Tube or Red Top - 1 ml serum	If a Red-Top tube is used, transfer separated serum to a plastic transport tube. All specimens should be drawn at the same time of day to allow comparison of values.	CP	SO
1751	Estrogen	82672	Gel Tube, Red Top or Green Top 1 .1 - 2.8 ml serum or plasma	If collection performed in tube other than Gel-barrier, transfer serum or plasma to plastic transport vial. Patient must avoid having radioisotope scan prior to collection of specimen.	CP	SO
29413	Estrone	82679	Gel Tube, Red Top, or Lavender Top - 0.4 ml serum or plasma	If collection performed in tube other than Gel-barrier, transfer serum or plasma to plastic transport vial. Reject: Lipema, Gross Hemolysis, Icterus.	CP	SO
8209	Ethambutol	80101	Red Top - 2 ml serum	Reference Lab Clients - Centrifuge, separate and freeze serum in plastic sendoff vial. Reject: Gel Tube	CP	SO
1319	Ethanol (Quantitative)	82055	Red Top - 2 ml serum	Do not prep arm with alcohol. Do not uncap tube; no aliquots accepted.	Chem	D24H
1592	Ethosuximide (Zarontin)	80168	Red Top, Lavender Top, or Green Top - 1 ml serum or plasma	Transfer separated serum or plasma to a plastic transport tube. Reject: Gel Tube.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1517	Ethylene Glycol	82693	Lavender Top - 5 ml whole blood	Do not uncap tubes. Do not prep skin with alcohol.	Chem	M-F, 1, 2 Weekend, 1; Other by Pathology approval only
1095	Euglobulin Clot Lysis	85360	Blue Top - 2.7 ml whole blood	Call CMC Special Hematology at 704-355-9455 to schedule this test. Deliver to CMC Lab ASAP. Sample in original tube is stable for 4 hrs refrigerated. Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and refrigerate plasma in plastic sendoff vial. Once separated, plasma is only stable for 2 hrs refrigerated. Do not freeze plasma.	SPHem	M-F/1
1875	Extractable Nuclear Antigens (ENA) - includes Anti-Smith & Anti-RNP	86235	Gel Tube - 3 ml serum		CP	SO
9718	Facioscapulohumeral (FSH) DNA Test	83890, 83896x2, 83892x3, 83897x2, 83894x2	Two (2) Lavender Tops - 10 ml whole blood	Keep at room temperature.	Gene	SO
19303	Factor II	85210	Blue Top - 2.7 ml whole blood.	Deliver to lab ASAP. Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	Hem	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1160	Factor IX Inhibitor (Bethesda)	85250, 85335	Blue Top - 2.7 ml whole blood.	Deliver to lab ASAP. Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	Hem	SO
9973	Factor V Leiden by PCR	83891, 83901, 83894, 83892x2	Lavender Top - 5 ml whole blood. Pediatric minimum volume - 2.0 ml	Keep at room temperature.	DNA	M-F/1
1152 - V 1153 - VII 1154 - VIII 1160 - IX 1358 - X 1169 - XI 24331 - XII	Factor V, VII, VIII, IX, X, XI and XII Assays	85220 85230 85240 85250 85260 85270 85280	Blue Top - 2.7 ml whole blood.	Deliver to lab ASAP. Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial. Freeze in aliquots of 1.0 -1.5 ml plasma in each vial.	Hem	D/1,2
1438	Factor VIII Inhibitor (Bethesda)	85335	Two (2) Blue Tops	Deliver to lab ASAP. Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	SPHem	M-F/1
38015	Factor VIII Multimers	85247	Two (2) Blue Tops	Deliver to lab ASAP. Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1409	Factor VIII Related Antigen	85244	Two (2) Blue Tops	Deliver to lab ASAP. Testing must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO
1174	Factor XIII	85290	Two (2) Blue Tops	Deliver to lab ASAP. Testing must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO
19365	FALS Disease (Familial Amyotrophic Lateral Sclerosis)	83891, 838904x5, 83898x5	Lavender Top - 3 ml whole blood			
32018	Familial Dysautonomia	83896x2, 83894, 83893x3, 83900	Two (2) Lavender Tops - 10 ml whole blood		Gene	SO
33692	Familial Mediterranean Fever	83891x7, 83892x4, 83894x5, 83898x10, 83904x9	Lavender Top - 5 ml whole blood	Room Temperature	Gene	SO
32172	Fasciola Antibody IgG	86682	Gel Tube or Red Top - 1 ml serum		CP	SO
1059	Fat Stain	89125	Lavender Top - 3 ml whole blood		SPHem	M-F/1

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1434 - Feces 1108 - Sputum 1437 - Urine	Fat Stain (Feces, Sputum, Urine)	89125	Submit specimen in sterile specimen container. Do not use any preservative or additive.		SPHem	M-F/1
1514	Fecal Fat (Quantitative)	82710	Stool - 72 hr collection. Obtain container without preservative from the laboratory.		CP	SO
1630	Felbamate(Felbatol)	82491	Red Top, Lavender Top, or Green Top - 3 ml serum or plasma	Transfer separated serum or plasma to a plastic transport tube. Reject: Gel Tube.	CP	SO
8616	Ferritin	82728	Gel Tube - 3 ml serum. Minimum sample - 1.5 ml serum in two (2) Brown bullets.		Chem	D24H
	Fetal Hemoglobin Stain		See Betke-Kleihauer			
37693	Fetal Maturity Pkg.	83664, 83662, 83663, 82570	Submit 3 ml amniotic fluid in sterile specimen container or stoppered syringe. Do not use preservative or additive.	Deliver ASAP to lab. Do not centrifuge specimen.	Chem	D24H
26536	FGFR3	83891, 83892x3, 83894x3, 83898x3	Lavender Top - Two (2) tubes, 10 ml whole blood	Can also be performed on amniotic fluid	Gene	SO
1360	Fibrinogen	85384	Blue Top - 2.7 ml whole blood.	Deliver to lab ASAP. Specimen must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	Hem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
30601	Filaria IgG4 Antibody	86682	Gel Tube - 1 ml serum		CP	SO
8278	FISH - Aneuploid Screen, Neonate	88271x5, 88275	Green Top (Sodium Heparin) - 3 ml whole blood.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/1
2852	FISH - BCR/ABL	88271x2, 88275	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2 ml . Bone marrow also acceptable. Requires 2 - 5 ml bone marrow in heparinized syringe and place in transport media.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/1
2851	FISH - DiGeorge Interphase	88271, 88275	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/1
2857	FISH - DiGeorge Syndrome (Microdel)	88271, 88273	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/1
42781	FISH - Genetics	88271x2, 88272	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/1
33443	FISH - Greig Syndrome	88230, 88271, 88273	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
35162	FISH - Her2/Neu	8836891x2	Submit formalin fixed , paraffin embedded tissue sections.		Gene	M-F/1
33319	FISH - Lymphoma	88271x8, 88275	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2 ml . Bone marrow also acceptable. Requires 2 - 5 ml bone marrow in heparinized syringe and place in transport media.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	SO
31766	FISH - Multiple Myeloma Panel	88271x5, 88275	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2 ml . Bone marrow also acceptable. Requires 2 - 5 ml bone marrow in heparinized syringe and place in transport media.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	SO
2858	FISH - Prader Willi/Angelman (Microdel)	88271x2, 88273	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/1
31607	FISH - Retinoblastoma	88271, 88275	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	SO
32448	FISH - Rubinstein Taybi	88230, 88271, 88273	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
2859	FISH - Smith Magenis Syndrome	88271, 88273	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/1
33368	FISH - Steroid Sulfatase Deficiency	88271, 88273	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	SO
32055	FISH - Subtelomeric Probe Analysis	88271x41, 88273	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/1
32870	FISH - Trichorhinophalangeal	88230, 88271, 88273	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	SO
33138	FISH - Wagr Panel	88280, 88230, 88273, 88271x3	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	SO
2856	FISH - Williams Syndrome (Microdel)	88271, 88273	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/1
FK506			See Prograf			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
29300	Flecainide	80299	Red Top, Lavender Top, or Green Top - 3 ml serum	Draw immediately prior to next dose unless otherwise instructed. Transfer separated serum or plasma to a plastic transport tube. Reject: Gel Tube.	CP	SO
	Flow Cytometry Crossmatch		See Crossmatch for Transplant			
	Fluorescent Treponemal Antibody (FTA)		See MHATP			
1888	Fluoxetine (Prozac)	82491	Red Top, Lavender Top, or Green Top - 2 ml serum	Transfer separated serum or plasma to a plastic transport tube. Reject: Gel Tube.	CP	SO
27279	Fluphenazine (Prolixin)	84022	Red Top - 2 ml serum. Lavender or Green Top also acceptable.	Transfer serum or plasma to plastic tube within 45 minutes of blood collection. Reject: Gel Tube.	CP	SO
8610	Folate (Folic Acid)	82746	Gel Tube - 2 ml serum	Protect from light. Reject: Hemolysis	Chem	D24H
	Folic Acid		See Folate			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Follicle Stimulating Hormone		See FSH			
9975	Fragile X DNA Analysis	83891, 83897, 83894, 83892x2, 83896, 83912	Lavender Top - 5ml whole blood. Pediatric minimum volume - 2.0 ml	Keep at room temperature.	DNA	M-F/1
32013	Friedreich's Ataxia	83891, 83898, 83894	Yellow Top (Solution A) - 5.0 to 10.0 ml whole blood. Lavender Top also acceptable - 5 ml.	Keep at room temperature.	Gene	SO
1926	Fructosamine	82985	Gel Tube, Lavender Top, or Green Top - 0.5 - 1 ml serum or plasma	Separate serum or plasma from cells within 45 minutes of collection. Reject: Hemolysis, Icterus.	CP	SO
8645	FSH (Follicle Stimulating Hormone)	83001	Gel Tube - 2 ml serum. Pediatric minimum sample -1.5 ml.		Chem	D24H
	FTA (Fluorescent Treponemal Antibody)		See MHATP			
33137	Fucosidase, Alpha	84311	Green Top (Sodium Heparin) - 5.0 ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	SO
38850	Fungus Antibody Panel (Includes Aspergillus, Blastomyces, Histoplasma) by Complement Fixation	86606, 86612, 86635, 86698x2	Gel Tube - 3 ml serum		CP	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1653	G6PD	82960	Lavender Top - 3 ml whole blood		SPHem	M, W, F/ 1
16213	Gabapentin (Neurontin)	82491	Red Top - 3 ml serum. Minimum specimen is 0.6 ml.	Reject: Gel Tube, hemolysis, lipemia	CP	SO
19299	Gabitril (Tiagabine)	80299	Red Top - 3 ml serum	Reject: Gel Tube, hemolysis, lipemia	CP	SO
17678	GAD 65 Autoantibody	83519	Gel Tube - 1 ml serum		CP	SO
9617	Gamma Hydroxybutyric Acid, Urine	80101	Urine - 4 ml random urine with no preservative		CP	SO
9614	Gamma Hydroxybutyric Acid, Serum	80101	Red Top - 4 ml serum	Reject : Gel Tube	CP	SO
38380	Ganciclovir Resistant CMV	83904x4, 83898x2, 83890, 83894	Lavender Top - 2.5 ml	The whole blood that is sent needs to be positive for CMV.	CP	SO
19309	Ganglioside Autoantibody Evaluation	83520x2	Gel Tube - 4 ml serum		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1953	Ganglioside Monosialic Acid Antibody (GM1)	83520	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
8599	Gastrin	82941	Gel Tube - 3 ml serum	Patient must be fasting 8 - 12 hours. Reference Lab Clients - Centrifuge, separate and freeze serum in plastic sendoff vial.	CP	SO
33441	Gaucher Affected Panel	82164, 82657, 84155, 84060	Gel Tube - 3 tubes, 5 mls each	Deliver to lab ASAP. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	Gene	SO
	GC1 Gene Testing		See Dopa Responsive Dystonia			
19308	GD1B Antibody	83520x2	Gel Tube - 1 ml serum		CP	SO
1051	Genital Lesion for Donovan Bodies	87207		Cleanse lesion and remove any tissue debris. Place specimen from punch biopsy into sterile container.		
39795	Gentamicin	80170	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
1029	GGT	82977	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	GHB		See Gamma Hydroxybutyric Acid			
31764	Giardia Lamblia IgG, IgM, IgA Antibodies	86674x3	Red Top - 2 ml serum		CP	SO
1033	Glomerular Basement Membrane Antibody	86255	Gel Tube - 3 ml serum		CP	SO
3438	Glucagon	82943		Contact Laboratory before collection.		
38848 - 2 hr Peds 38508 - 3 hr 100 G dose 38509 - Nonpreg 2 hr	Glucose Tolerance	82947, 82950 82951, 82952 82947, 82950 82947	Refer to Special Collection Procedures			
1219	Glucose, 24 Hr Urine	82947, 81050	Obtain jug for 24 hr collection. Requires container with no preservative.		Chem	D24H
1222	Glucose, CSF	82947	Submit 1.0 ml CSF in sterile specimen container. Pediatric minimum sample - 0.5 ml.		Chem	D24H
1446	Glucose, Serum	82947	Gel Tube - 2 ml serum. Pediatric minimum sample - 0.5 ml in Brown bullet.		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1928	Glucose, Urine	82945	Urine - 2 ml random urine in sterile specimen container		Chem	D24H
	Glutamic Acid Decarboxylase		See GAD 65 Autoantibody			
1832	Glutamine	82975	Submit 1.0 ml CSF in sterile specimen container. Pediatric minimum sample - 0.5 ml.		CP	SO
33207	Glycogen Stor 1A Carrier	83896, 83898	Yellow Top (Solution A) - 10 ml whole blood. Lavender Top also acceptable.	Must kept at room temperature.	Gene	SO
8206	Glycohemoglobin, Total	83036	Lavender Top - 5 ml whole blood		CP	SO
35178	Glycolate & Glycerate, Urine	82542	10 ml random urine in sterile specimen container.	Patient must be fasting 8 - 12 hours.	CP	SO
1953	GM1 Antibody	86318	See Ganglioside Monosialic Acid Antibody			
32185	Gorlin Syndrom	83891, 83898x23, 83904x23	Two (2) Lavender Tops - 10 ml whole blood	Keep at room temperature.	Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1156	Gram Stain	87205	Submit specimen. Gram stain will be prepared in laboratory		MC	
38751	Growth Hormone	80428, 82533	Gel Tube - 1 ml serum		CP	SO
32741	Guanidino Acetate Creatine	82570, 83789x2	Urine - 30 ml random urine in sterile specimen container	Freeze urine in plastic sendoff vial.	Gene	SO
	H & H		See Hemoglobin & Hematocrit			
23360	<i>H. Pylori</i>	87338	Stool - Submit random specimen in sterile specimen container		CP	SO
8655	<i>H. Pylori</i> Antibody	86677	Red Top - 1 ml serum	Reject: Gel Tube	CP	SO
31593	<i>Haemophilus Influenza B</i> IgG Antibody	86684	Red Top - 1 ml serum		CP	SO
	Haldol		See Haloperidol			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1895	Haloperidol (Haldol)	80173	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
1448	Haptoglobin	83010	Gel Tube - 3 ml serum		Chem	D24H
	HBV Superquant		See Hepatitis B Quantasure PCR			
	HCG (Human Chorionic Gonadotropin)		See Beta HCG			
	HCV		See Hepatitis C Tests			
	HDL (High Density Lipoprotein)		See Lipid Profile			
1878	Heavy Metals Screen	83015	Dark Blue Top (Metal Free tube with heparin or EDTA Additive) - 7.0 ml whole blood.	Patient should abstain from seafood and wine for 72 hours.	CP	SO
1619	Heavy Metals Screen, 24 Hr Urine	81050, 83018x3	Obtain jug for 24 hr collection; Requires container with no preservative.	Patient should abstain from seafood and wine for 72 hours.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Hematocrit		See Hemoglobin & Hematocrit			
9970	Hemochromatosis	83891, 83900, 83892, 83894	Lavender Top - 5 ml whole blood	Keep at room temperature.	DNA	M-F/1
1197	Hemoglobin A1C (Glycosated)	83036	Lavender Top - 5 ml whole blood		Chem	D/1,2
2476	Hemoglobin & Hematocrit (H&H)	85014	Lavender Top - 3 ml whole blood. Pediatric minimum sample required is 0.5 ml in Lavender microtainer tube.		Hem	D24H
22265	Hemoglobin A2	83021	Lavender Top - 3 ml whole blood		Hem	M-F,1
22263	Hemoglobin Electrophoresis Scan (Quantitative)	83021	Lavender Top - 3 ml whole blood		Hem	M-F,1
1654	Hemoglobin, Plasma	83051	Green Top - 2 ml plasma	Reject :Hemolysis. Patient must be relaxed during collection. Reference Lab Clients: Centrifuge, separate and refrigerate plasma in plastic sendoff vial.	CP	SO
1432	Hemoglobin, Urine	81003	Urine - 2 ml random urine in sterile specimen container		Hem	D24H
1440	Hemosiderin	83070	Submit 12 ml random urine in sterile specimen container.		SPHem	M-F/1

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
19247	Heparin Anti -Xa Assay	85520	See Anti - Factor X Assay			
19283	Heparin Cofactor 2	85130	Blue Top - 1 - 2 ml, frozen plasma	Deliver to lab ASAP. Testing must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO
21348	Heparin Induced Platelet Aggregation	86022x3	Red Top - 2 ml serum	Reject: Gel Tube. Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial.	CP	SO
1097	Hepatic Function Panel (Includes Alb, Tbili,Dbili, Alk Phos, ALT, AST)	80076	Gel Tube - 3 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1658	Hepatitis A Antibody, IgM	86709	Gel Tube - 5 ml serum		Chem	D24H
1657	Hepatitis A Antibody , Total	86708	Gel Tube - 5 ml serum		Chem	D24H
8698	Hepatitis A Profile (Anti - HAV) - includes Hepatitis A, Total and IgM	86709, 86708	Gel Tube - 5 ml serum. Pediatric minimum sample - 2.0 ml serum.		Chem	D24H
1705	Hepatitis A,B,C Panel Acute - Includes Hepatitis B Surface Antigen, Hepatitis B Core IgM, Hepatitis A IgM, Hepatitis C Antibody	80074	Gel Tube - 5 ml serum.		Chem	D24H



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
34727	Hepatitis B by PCR, Quantitative	87517	White Top - 5 ml whole blood	Reference Lab Clients: Centrifuge and freeze within 2 hours of collection.	DNA	M, F/1
8695	Hepatitis B Chronic Panel - Includes Hepatitis B Surface Antigen, Hepatitis Be Antigen, Hepatitis Be Antibody	87340, 86707, 87350	Gel Tube - 5 ml serum.		Chem	D24H
8696	Hepatitis B Core Antibody, Total	86704	Gel Tube - 5 ml serum.		Chem	D24H
8697	Hepatitis B Panel - Includes Hepatitis B Surface Antigen, Hepatitis B Surface Antibody, Hepatitis B Core Antibody IgM, Hepatitis B Core Total Antibody	87340, 86704, 86706	Gel Tube - 5 ml serum.		Chem	D24H
8623	Hepatitis B Surface Antibody	86706	Gel Tube - 5 ml serum		Chem	D24H
19285	Hepatitis B Surface Antibody to Endpoint (Transplant Patients)	86706	Gel Tube - 2 ml serum	For transplant patients	CP	SO
8600	Hepatitis B Surface Antigen	87340	Gel Tube - 5 ml serum		Chem	D24H
1121	Hepatitis C Antibody	86803	Gel Tube - 5 ml serum		Chem	D24H
19296	Hepatitis C Genotype	87902	White Top - 5 ml whole blood	Reference Lab Clients: Centrifuge and freeze within 2 hours of collection.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
34728	Hepatitis C RNA by PCR (Quantitative)	87522	White Top - 5 ml whole blood	Reference Lab Clients: Centrifuge and freeze within 2 hours of collection.	DNA	M,Th/1
1328	Hepatitis C-RIBA	86804				
28043	Hepatitis D Antibody, Total (EIA)	86692	Red Top or gel tube - 2 ml serum		CP	SO
19286	Hepatitis E	86790	Red Top - 3 ml serum. Minimum specimen is 1.5 ml	Gel tube also acceptable.	CP	SO
	Herpes - DFA Stain		See Viral DFA Stain			
34115	Herpes Simplex I Specific, IgG	86695	Red Top - 2 ml serum		CP	SO
1458	Herpes Simplex I & II (IgG)	86694, 86695	Red Top - 2 ml serum	Reject: Hemolysis, Lipemia	CP	SO
22246	Herpes Simplex I & II (IgM)	86694	Red Top - 2 ml serum	Reject: Hemolysis, Lipemia	CP	SO
38847	Herpes Simplex I & II, IgG Antibody, CSF	86694x2	CSF - 1.5 ml		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
9794	Herpes Simplex I & II, IgM Antibody, CSF	86695, 86696	CSF - 1.5 ml		CP	SO
38424	Herpes Simplex II (IgG)	86696	Gel Tube or Red Top - 0.5 ml minimum		CP	SO
1091	Herpes Viral Culture	87254	See Microbiology section			
19282	Hexosaminidase A	83080	Gel tube - 3 ml serum		CP	SO
	Hgb		See Hemoglobin & Hematocrit			
	HHV-6		See Human Herpes Virus 6			
41676	Histamine, Urine	83088	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO
19260	Histone Antibody	86235	Red Top - 1 ml serum	Reject: Gel Tube	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
33526	Histoplasma Antibodies, Quantitative	87385	Red Top - 2 ml serum		CP	SO
33526	<i>Histoplasma Capsulatum</i> , Antigen Detection Assay, Serum	87385	Five (5) mL blood in Red Top tube.			
19292	<i>Histoplasma Capsulatum</i> , Antigen Detection Assay, Urine	87385	Ten (10) mL urine in sterile specimen container. Refrigerate at 2 - 8° C, if delayed . 2 hours.			
1682	HIV 1 RNA By PCR, Quantitative Viral Load	87536	White Top - 5 ml whole blood	Reference Lab Clients: Centrifuge and freeze plasma within 2 hours of collection.	DNA	M-F/1
34484	HIV Antibody Screen (includes HIV1, HIV2)	86703	Gel Tube - 3 ml serum	All positives are sent to Reference Lab for Western Blot confirmation.	Chem	D24H
19293	HIV Genotype	Call Client Services	Lavender Top - 5 ml whole blood	Deliver to lab ASAP on wet ice. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO
8394	HIV Phenotype Panel	87903, 87904x4, 87536	Lavender Top - 5 ml whole blood	Deliver to lab ASAP on wet ice. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO
29616	HIV Proviral DNA PCR, Qualitative	87535	Yellow Top- 5 ml whole blood. Lavender Top also acceptable.	Reject: Clotted specimens, Poured off specimens. Whole blood must be in original tube. This test is time sensitive; must arrive in performing lab within 72 hours of collection.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	HLA B27		See B27, HLA			
38754 - HLA A H Res 38755 - HLA B H Res 38756 - HLA C H Res	HLA, ABC or DR Typing	83891, 83900, 83901x95, 83912	Two (2) Lavender Tops		Immun	D24H
	Holt-Oram Syndrome		See TBX5 Mutation Analysis			
1547	Homocysteine, 24 Hr Urine	83090	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO
36887	Homocysteine, Blood	83090	Gel tube - 2 ml serum. Green and red top tubes also acceptable.	Plasma or serum must be separated within one (1) hour of collection. Reference Lab Clients: Centrifuge, separate and refrigerate plasma or serum in plastic sendoff vial.	Chem	D24H
	Homovanillic Acid		See HVA			
8340	HPV (Human Papilloma Virus)	87621	Liquid Based Pap Smear		DNA	M, W, F
	HSV by PCR, CSF		See Herpes Simplex I & II by PCR			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
43565	HTLV I	86687	Red Top - 2 ml serum		SM	M-F/1
28598	HTLV I & II Antibody by ELISA, CSF	86687	CSF- 1.0 ml		CP	SO
	HU Antibodies - Include Anti-Ri		See Anti-Neuronal Nuclear AB Panel			
38354	Human Herpes Virus 6 (HHV-6) Antibodies, IgG, Quantitative	86790	Red Top - 4 ml blood in red top tube. Minimum 1.0 blood	Causes for Rejection: Hemolysis; lipemia.	CP	SO
38355	Human Herpes Virus 6 (HHV-6) by PCR	87533	Lavender Top - 3-5 ml whole blood.	Room Temperature	CP	SO
	Human Papilloma Virus		See HPV			
29272	Huntington's Disease, DNA Testing	83898, 83894, 83891	Four (4) Lavender Tops- 20 ml whole blood		Gene	SO
30505	HVA , Urine	83150x2	Urine - 10 ml random urine in sterile specimen container		CP	SO
1295	HVA, 24 Hr Urine	81050, 83150	Obtain jug for 24 hr collection; Requires container with 6N HCl preservative.		CP	SO
35180	Hydrochloric Acid, Free & Total	82926	See Gastric Analysis			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
32072	Hydrocodone, Urine	83925	Urine - 5 ml random in sterile specimen container.		CP	SO
1618	Hydroxycorticosteroids, 24 Hr Urine	83491, 81050	Obtain jug for 24 hr collection; Requires container with 6N HCl preservative.		CP	SO
38010	Hydroxyproline, 24 Hr Urine	83505	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO
1131	Hypersensitivity Pneumonitis	86331	Red Top - 5 ml serum	Reject : Gross hemolysis, Lipemia	CP	SO
9914	Hypochondroplasia	Call Client Services	Yellow Top (Solution A) - 10 ml whole blood. Lavender Top also acceptable.	Keep specimen at room temperature.	Gene	SO
33811	IgG Index	82040, 82042, 82784x2	CSF and Gel Tube - 1 ml CSF and 1 ml serum required. Both specimens are required	CSF with visible blood is not acceptable. Test not valid without serum also.	CP	SO
33739	IgG Quantitative, CSF	82784	CSF - 1 ml	CSF with visible blood is not acceptable.	CP	SO
33738	IgG Synthesis Rate	82040, 82042, 82784x2	CSF and Gel Tube - 1 ml CSF and 1 ml serum required. Both specimens are required.	CSF with visible blood is not acceptable. Test not valid without serum also.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	IgH Gene Rearrangement Assay		See B Cell Rearrangement			
	Imavate		See Imipramine			
2119	Imipramine	80174	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
	ImmunoCAP		See Allergen Profiles			
1509	Immunofixation Electrophoresis, Serum	86334	Red Top or Gel Tube - 3 ml serum		Chem	M-F/ 1
1301	Immunofixation Electrophoresis, Urine	86335	Urine - 50 ml random urine in sterile specimen container		Chem	M-F/ 1
1748	Immunoglobulin D	82784	Red Top - 1 ml serum	Reject: Gross hemolysis. Patient should be fasting 8-12 hours.	CP	SO
33454	Immunoglobulin E	32785	Red Top - 3 ml serum		CHEM	
30506	Immunoglobulin G Subclasses 1,2,3,4	82784, 82787x4	Red Top - 3 ml serum	Reject: Gross hemolysis, gross lipemia. Patient should be fasting 8-12 hours.	CP	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1005	Immunoglobulins (Includes IgG, IgM, IgA)	82784x3	Gel Tube - 3 ml serum. Pediatric minimum sample - 1.5 ml		Chem	D24H
33369	Incontinentia Pigmenti So	83891, 83892, 83896, 83897	Lavender Top - 5 ml	Keep at room temperature.	Gene	SO
1144	Indirect Coombs (Antibody Screen)	86850	Lavender Top - 5 ml whole blood		BB	D24H
19268	Inhibin	86790	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
1307	Insulin Antibodies	86337	Gel Tube - 2 ml serum	Reject: Plasma, Radioactive isotopes administered 24 hr prior to collection. Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial.	CP	SO
1399	Insulin, Total	83525	Red Top - 2 ml serum	Reject: Hemolysis, EDTA plasma. Patient should be fasting 8-12 hours. Centrifuge, separate and freeze serum in plastic sendoff vial.	CP	SO
33372	Insulin, Total & Free	83527, 83525	Gel Tube - 2 ml serum	Reject: Plasma, Radioactive isotopes administered 24 hr prior to collection. Patient should be fasting 8-12 hours.	CP	SO
32639	Insulin-Like Growth Factor Binding Protein 1	84305	Gel Tube, Red Top, Lavender Top or Green Top - 0.2 - 0.5 ml serum (preferred) or plasma	Centrifuge, separate and freeze serum or plasma in plastic sendoff vial.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1491	Insulin-Like Growth Factor Binding Protein 2	83519	Gel Tube or Red Top - 0.5 to 1 ml serum	Centrifuge, separate and freeze serum in plastic sendoff vial immediately.	CP	SO
1492	Insulin-Like Growth Factor Binding Protein 3	83520	Gel Tube or Red Top - 0.5 to 1 ml serum	Centrifuge and separate serum into plastic sendoff vial.	CP	SO
21349	Interleukin 2	83516	Red Top - 1 ml serum		CP	SO
31765	Interleukin 6, Amniotic Fluid	83520	Amniotic Fluid - 1 ml fluid in sterile vial or container		CP	SO
8240	Interleukin 6, Blood	83520	Red Top - 1 ml serum		CP	SO
19262	Intrinsic Factor Blocking Antibody	86340	Red Top - 1 ml serum	Reject: Plasma, recent radioactivity scan, recent B12 injection	CP	SO
1485	Iron Binding Profile - Includes Total Iron, Transferrin, TIBC	83540, 83550, 84466	Gel Tube - 3 ml serum		Chem	D24H
1900	Iron, 24 Hr. Urine	81050, 83540	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO
1318	Iron, Total	83540	Gel Tube - 3 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
16207	Islet Cell Antibody (Anti-GAD)	86341	Gel Tube or Red Top - 1 ml, serum		CP	SO
8212	Isoniazid, Serum	80299	Red Top - 1 ml serum	Centrifuge and Freeze. Reject: Gel Tube	CP	SO
37165	JAK 2 Mutation Testing	83903, 83904	4 ml whole blood in lavender top tube. Bone marrow or paraffin-embedded bone marrow acceptable.	Room Temperature	DNA	OPW
19264	JO Antibody	86235	Gel Tube - 2 ml serum	Reject: Hemolysis, Lipema, Icterus	CP	SO
	Juvenile Neuronal Ceroid Lipofuscinosis		See Battens Disease			
	Kappa/Lambda Light Chains, Urine		See Bence Jones Protein			
31755	Kappa/Lambda Light Chains, Serum	83883x2	Red Top - 2 ml serum	Reject; Hemolysis, Lipemia	CP	SO
	Karyotype		See Chromosome Analysis			
	Keppra		See Levetiracetam			
	Ketogenic Steroids, 24 Hr Urine		See Ketosteroids			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Ketones		See Acetone			
1162	Ketosteroids, 24 Hr Urine	83586, 81050	Obtain jug for 24 hr collection; Requires container with boric acid preservative.	Plastic urine container with 1 g boric acid preservative per liter of urine. 30 mL 6N HCl may also be used as a preservative.	CP	SO
8215	Kidney Stone (Saturation), 24 Hr Urine	Call Client Services	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO
41204	KIT Mutation S/O	83891, 83898x2, 83909x2	5.0-7.0 ml whole blood in lavender tube		GENE	D/1
16211	Klonopin (Clonazepam)	80154	Red Top, Lavender Top, or Green Top - 4 ml serum or plasma	Collect specimen immediately prior to next dose unless specified otherwise. Transfer separated serum or plasma to a plastic transport tube. Do not use a Gel Tube. Reject: Gel Tube.	CP	SO
1231	KOH Prep	87210	Submit specimen or culturette swab		MC	D24H
1398	Lactic Acid	83605	Gray Top - 5 ml whole blood. Pediatric minimum sample - 2.0 ml.	Deliver to lab on wet ice ASAP. Test must be performed or plasma separated within fifteen minutes of collection. Reference Lab Clients: Centrifuge, separate and freeze plasma to -20°C and defrost	Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1343	Lactic Acid, CSF	83615	Submit 1.0 ml CSF in sterile specimen container. Pediatric specimen sample - 0.5 ml.		Chem	D24H
41376	Lactoferrin, Fecal	83630	Submit stool specimen in clean specimen container.		CP	SO
1573	Lactose Tolerance Test	82951	Refer to Special Collection Procedures			
	Lambert Eaton Antibody		See VGCC			
16222	Lamictal (Lamotrigine)	80299	Red Top - 2 ml serum. Lavender Top or Green Top also acceptable.	Keep specimen at room temperature.	CP	SO
1066	LAP Stain - Leukocyte Alkaline Phosphatase	85540	Green Top - 5 ml whole blood		SPHem	M-F/ 1
1329	LDH	83615	Gel Tube - 3 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1651	Lead	83655	Lavender Top - 3 ml whole blood. Pediatric minimum sample - 0.5 ml in Lavender microtainer tube.	Only performed on adults and children > 6 yrs of age. Specimens on children < 6 yrs old are sent to State Lab for analysis	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1161	Lead, 24 Hr Urine	81050, 83655	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO
33687	Leber Hereditary Optic Neuropathy	Call Client Services	Lavender Top - 5 ml whole blood. Whole blood collected in Yellow Top also acceptable.	Store at room temperature	Gene	SO
31063	Leflunomide	82542	Red Top - 1 ml serum	Reject: Gel Tubes Reference Lab Clients must centrifuge, separate and freeze plasma in plastic sendoff vial within 45 minutes of collection.	CP	SO
19295	Legionella Antibody Titer	86713	Red Top - 2 ml serum	Reject: Hemolysis, Lipemia	CP	SO
1001	Legionella Culture	87206, 87081	Submit tracheal aspirate, bronchial washing or sputum sample.		MC	D24H
8682	Legionella Urinary Antigen	87449	Urine - 5 ml random urine in sterile specimen container.		SM	D/ 1
	LEMS Autoantibody		See VGCC			
	Leukocyte Alkaline Phosphatase Stain		See LAP Stain			
38026	Leukocyte Lysosomal Enzyme Screen	82657	Two (2) Green Tops - 10 ml whole blood	Deliver to Central Processing Lab ASAP. Keep specimen at room temperature. Collect specimen only Monday - Thursday; Cutoff 10am Thursdav.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
4924	Levetiracetam (Keppra)	80299	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
1317	LH (Luteinizing Hormone)	83002	Gel Tube - 3 ml serum. Pediatric minimum sample - 1.5 ml		Chem	D24H
1132	Lidocaine	80176	Gel Tube - 3 ml blood. Pediatric minimum sample - 0.7 ml		Chem	D24H
1330	Lipase	83690	Gel Tube - 3 ml Pediatric minimum - 0.7 ml		Chem	D24H
29271	Lipid Analysis, Body Fluid	84311x2, 84478, 82247	Submit 3 ml of body fluid.	Protect from light.	CP	SO
30735	Lipid Profile , Direct Measured	83701, 84478	Gel Tube - 2 ml serum	Patient must be fasting 8 -12 hours. Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial.	CP	SO
37880	Lipid Profile -Includes Cholesterol, Triglyceride, HDL, LDL, NHDL	80061	Gel Tube - 3 ml serum. Pediatric minimum sample - 1.0 ml	Patient should be fasting 8 -12 hours	Chem	D24H
38018	Lipoprotein A	83695	Red Top - 2 ml serum. Lavender Top is also acceptable.	Reject: Gel Tube. Reference Lab Clients: Centrifuge, separate and refrigerate serum in plastic sendoff vial within 2 hours of collection.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
32757	Lipoprotein Associated Phospholipid A2	83698	Gel Tube - 5 ml. Lavender Top is also acceptable	If not using a Gel tube, Reference Lab Clients must centrifuge, separate and freeze plasma in plastic sendoff vial within 45 minutes of collection.	CP	SO
9733	Lipoprotein Electrophoresis	82465, 84478, 83716	Red Top - 5 ml serum	Patient must be fasting 8 -12 hours. Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial. Reject: Gel Tube	CP	SO
42783	Lipoprotein, NMR	83704, 80061	Black Top Gel Tube is preferred - 2 ml serum. Red top and lavender also acceptable.	Reject: Gel Tube other than Black top gel tube. Reference Lab Clients: Centrifuge within 2 hours of collection.	CP	SO
33370	Lissencephaly Seq	83891, 83898x4, 83904x9	Two (2) Lavender Tops - 10 ml	Keep at room temperature.	Gene	SO
27282	Listeria Antibody	86723	Gel Tube - 1 ml serum		CP	SO
1397	Lithium	80178	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
38027	Liver Kidney Microsomal Autoantibodies	86376	Red Top - 1 ml serum	Reject: Hemolysis, Lipemia	CP	SO
	Liver Panel		See Hepatic Function Panel			



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1940	Long Chain Fatty Acid	82726	Lavender Top - 5 ml whole blood		CP	SO
34076	Lorazepam (Ativan)	80154	Red Top - 3 ml serum		CP	SO
38024	LSD (Lysergic Acid Diethylamide)	80101	Urine - 20 ml random urine in sterile specimen container		CP	SO
1526	Lupus Anticoagulant	85732, 85613, 85670, 85705	Blue Top - 2.7 ml whole blood.	Deliver to lab ASAP. Test must be performed or plasma separated within 4 hours of collection. Reference Lab Clients - Centrifuge, separate and	SPHem	M-F/1
	Luteinizing Hormone		See LH			
1590	Lyme Test	86618	Gel Tube - 2 ml serum		CP	SO
8213	Lyme Test, Western Blot	8661791	CSF - 0.5 ml		CP	SO
1175	Lymphocyte Count (Total, Absolute)	85048	Lavender Top - 3 ml whole blood		Hem	D24H
26533	Lymphocyte Mitogen Screen	86353x3	Two (2) Green Tops - 10 ml whole blood	Do not spin, refrigerate or freeze this specimen. Strict room temperature. Collect Mon-Wed only.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
34391	Lymphocyte Subset Analysis	86359, 86360, 86355, 86357	One (1) Lavender Top - 5 ml whole blood and One (1) Green Top - 5 ml whole blood	Do not collect specimens on weekends or after 11am on Fridays. Deliver immediately to the lab. Reference Lab Clients: Collect Monday - Thursday only.	Immun	M-F/1
	Lyrice		See Pregabalin			
21283	Lysozyme, Serum	85549	Red Top - 1 ml serum	Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial	CP	SO
21282	Lysozyme, Urine	85549	Urine - 2 ml random urine in sterile specimen container	Freeze urine in plastic sendoff vial.	CP	SO
	Lytes		See Electrolytes			
	MAG Antibody		See Myelin Associated Glycoprotein Antibody			
1362	Magnesium	83735	Gel Tube - 3 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1079	Malaria Smear	87207	Lavender Top - 3 ml whole blood		SPHem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
31060	Manganese, Blood	83785	Dark Blue Top (Metal Free tube with EDTA) - 3.0 ml whole blood.	Do not centrifuge blood. Test requires whole blood. Reject clotted specimens. Submit original tube.	CP	SO
33208	Maple Syrup Urine Carrier	83893, 83894, 83896, 83898	Yellow Top (Solution A) - 10 ml whole blood. Lavender Top also acceptable.	Must keep at room temperature.	Gene	SO
	Marijuana		See Cannabinoid			
7910	Maternal Screen - Tetra Test (Includes AFP, Estriol, HCG, Inhibin B)	82105, 82677, 86336, 84702	Gel Tube - 5 ml whole blood	Do not pour off serum or separate. Specimen must be received in parent tube. Reject: Lipemia, hemolysis. Sample must be accompanied by completed maternal screen form.	CP	SO
8675	Maternal Screen - Triple Test (Includes AFP, Estriol, HCG)	82105, 82677, 84702	Gel Tube - 5 ml whole blood	Do not pour off serum or separate. Specimen must be received in parent tube. Reject: Lipemia, hemolysis. Sample must be accompanied by completed maternal screen form.	CP	SO
	Measles, Mumps, Rubella Immunity		See MMR Immunity Status			
19298	Megaloblastic Anemia Panel	82136, 83918	Red Top - 3 ml serum	Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial	CP	SO
26539	Mercury, Urine, 24Hr	83825	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
8383	Metanephrines, Plasma	83835	Two(2) Lavender Tops - 10 ml whole blood	Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial	CP	SO
1617	Metanephrines, Urine, 24 Hr	83835x2, 81050, 82570	Obtain jug for 24 hr collection; Requires container with HCl preservative.		CP	SO
27638	Methadone Screen with Confirmation	80101	Urine - 45 ml random urine in sterile specimen container		CP	SO
1198	Methanol	84600	See Alcohol Screen			
1289	Methotrexate	80299	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
16214	Methsuximide (Celontin)	83858	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
	Methylation Analysis		See Prader-Willi Syndrome			
	Methylenetetrahydrofolate Reductase		See MTHFR			
1204	Methylmalonic Acid, Serum	83921	Gel Tube - 3 ml serum	Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial	CP	SO
21844	Methylmalonic Acid, Urine (Quant.)	83921	Urine - 5 ml random urine in sterile specimen container.		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
33206	Mexiletine Serum Plasma	80299	Red Top - 2.0 ml serum. Lavender Top and Green Top also acceptable.	Reject: Gel Tube.	CP	SO
19254	MHATP (Microhemagglut T. pallidum)	86780	Red Top - 1 ml serum. Green Top, Lavender Top, Blue Top also acceptable.	STS must be ordered prior to request for MHATP. This test replaces FTA-ABS	SM	M,W,F/1
	Microarray Analysis		See Comparative Genomic Hybridization			
1441	Microbilirubin	82247	Brown bullet - 0.7 ml	Protect from light.	Chem	D24H
	Minimal Residual Disease		See bcr/abl Testing			
1356	Mitochondrial Antibody	83516	Gel Tube - 3 ml serum		CP	SO
33140	Mitochondrial DNA Genome (Seq.)	83891, 83898x32, 83904x65	Two (2) Lavender Tops - 10 ml whole blood	Keep at room temperature.	Gene	SO
	Mixing Studies		See Circulating Anticoagulant			
21284	MMR Immunity (Measles, Mumps, Rubella)	86765, 86735, 86762	Gel Tube - 3 ml serum		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1086	Monospot	86308	Gel Tube - 3 ml serum. Pediatric minimum sample - 1.0 ml		SM	M-F/1
1891	Morphine	83925	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
23361	MTHFR	83891, 83894, 83898	Lavender Top - 5 ml whole blood. Pediatric minimum volume - 2.0 ml	Room Temperature	DNA	M-F/ 1
1388	Mucin Clot	83872	Submit 3.0 ml synovial fluid in Green Top or Lavender Top.	Reject: Clotted specimens	CP	SO
32740	Mucopolidosis IV	83890, 83894, 83901x4	Two (2) Lavender Tops - 10 ml whole blood	Keep at room temperature.	Gene	SO
19266	Mumps Virus Antibody	86735	Gel Tube - 1 ml serum	Reject: Hemolysis, Lipemia	CP	SO
	Muramidase		See Lysozyme			
	Mutation Analysis		See CMV Resistance Testing			
38004	Myasthenia Gravis Panel	83520, 84238x3	Red Top - 2 ml serum		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
33814	Mycophenolic Acid	82542	Red Top or Lavender Top 1.2 ml serum or plasma	Reject: Gel Tube. Reference Lab Clients: Centrifuge, separate and refrigerate serum in plastic sendoff vial within 45 minutes of collection.	CP	SO
	Mycoplasma Culture		See Microbiology section			
19290	Mycoplasma IgG Antibody	86738	Gel Tube - 3 ml serum	Reject: Hemolysis, Lipemia	CP	SO
3481	Mycoplasma IgM Antibody	86738	Gel Tube - 3 ml serum		SM	M-F/ 1
19290	Mycoplasma Pneumoniae, IgG	86738	Red Top - 2 ml serum		SM	M-F/ 1
1948	Myelin Associated Glycoprotein Antibody (MAG)	86318	Red Top - 3 ml serum. CSF also acceptable		CP	SO
1028	Myelin Basic Protein	83873	Red Top - 3 ml serum. CSF also acceptable		CP	SO
28042	Myeloperoxidase Antibody	83516	Gel Tube - 2 ml serum	Reject: Hemolysis, Lipemia	CP	SO
1320	Myidone	80188	See Mysoline			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
24097	Myoglobin, Serum	83874	Red Top - 2 ml serum		Chem	D24H
1623	Myoglobin, Urine	83874	Urine - 10 ml random urine in sterile specimen container		CP	SO
1320	Mysoline (Primidone, Myidone)	80188	Red Top - 3 ml serum. Green Top also acceptable.	Reject: Gel Tube, Hemolysis, Lipemia, Icterus. This test also includes phenobarbital.	CP	SO
	NAPA		See Procainamide			
21287	Natural Killer Cell, Functional	Call Client Services	Three (3) Green Tops - 15 ml whole blood	Keep at room temperature. This test can only be collected Mon-Thurs.	CP	SO
33813	Natural Killer Surface Antigen	86357	Lavender Top - 7.0 mls, Yellow Top (Solution A) - 7.0 mls, and peripheral blood film. NOTE: All three are required.	Reject: Hemolysis, Specimens separated, refrigerated or frozen. STRICT ROOM TEMPERATURE ONLY. This test can only be collected Mon-Thurs.	CP	SO
32188	Nemaline Myopathy	Call Client Services	Lavender Top - 5 ml whole blood	Keep at room temperature.	Gene	SO
	Nembutal		See Pentobarbital			
33139	Neoencephalitis Profile	83519, 84182x2, 83520x2	Red Top - 4 ml serum. Gel Tube also acceptable.	May keep refrigerated or at room temperature	Gene	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
21650	Neopterin, Total	82491	CSF- 0.5 ml in sterile specimen vial	Deliver to lab ASAP.	CP	SO
32749	Neuromyelitis Optica IgG	86255	Gel Tube - 4 ml serum	Serum must be separated from cells within 45 minutes of collection. Reference Lab Clients: Centrifuge, separate and refrigerate serum in plastic sendoff vial. Do not freeze serum.	CP	SO
	Neurontin		See Gabapentin			
21428	Neurotransmitter Metabolites	82492	CSF- 0.5 ml in sterile specimen vial	Deliver to lab ASAP.	CP	SO
	NH3		See Ammonia			
41193	Nicotine & Metabolite (Cotinine), Serum	83887	Red Top - 3 ml serum		CP	SO
41192	Nicotine & Metabolite (Cotinine), Urine	83887	Urine - 10 ml random urine in sterile specimen container		CP	SO
19261	Nitroblue Tetrazolium Test	86384	Two (2 ) Green Tops - 10 ml whole blood	Deliver to lab immediately. Keep specimen at room temperature.	CP	SO
33090	Noonan Tier 1	Call Client Services	Two (2) Lavender Tops - 10 ml	Keep at room temperature.	Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
33091	Noonan Tier 2	Call Client Services	Two (2) Lavender Tops - 10 ml	Keep at room temperature.	Gene	SO
	Norpace		See Disopyramide			
1752	Nortriptyline (Tricyclic)	80152	Red Top, Lavender Top, Green Top - 3 ml serum	Reject: Gel Tube	CP	SO
30504	N-Telopeptide (Crosslinks)	82523, 82570	Urine - 10 ml of 2nd voided am specimen in sterile specimen container		CP	SO
1433	Occult Blood	82270	Submit fresh stool sample in sterile specimen container. Do not use preservative or additive.	Hemoccult slides are acceptable	Micro	D24H
29269	Olanzapine (Zyprexa)	80154	Red Top - 2 ml serum. Lavender Top also acceptable.	Reject: Gel Tube	CP	SO
30459	Oligoclonal Bands	83916	Red Top - 1 ml serum and 1 ml CSF	Both serum and CSF must be submitted for diagnosis	CP	SO
33204	Oligosaccharides	84375	Urine - 50 ml random urine in sterile specimen container	Freeze urine in plastic sendoff vial.	Gene	SO
1535	Organic Acids	81050, 83918	Urine - 10 ml in sterile specimen container. Pediatric minimum sample - 2 ml.		CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1009	Osmolality , Urine	83935	Urine - 1 ml urine in sterile specimen container		Chem	D24H
1010	Osmolality, Serum	83930	Gel Tube - 1 ml serum		Chem	D24H
1070	Osmotic RBC Fragility	85555, 85557	Two (2 ) Green Tops - 10 ml whole blood	Contact Hematology at 704-355-3455 prior to specimen collection. Deliver specimen to lab ASAP. Must be received in lab before noon. No testing available Friday, Saturday or Sunday.	SPHem	M-H/1
38009	Osteocalcin	83937	Gel Tube - 3 ml serum	Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
33933	Ova and Parasites (O&P)	87177, 87209	Collect stool in sterile, wide mouth container, or O & P transport container with formalin and PVA (preferred). If specimen transport to lab is delayed more than 30 minutes, place specimen in Proto fix CLR vial.	Stools must be free of barium, bismuth and oils for at least 72 hours. Stools cannot be mixed with urine. Diapers and rectal swabs are not acceptable. Fresh feces should not be submitted. Fecal specimens for parasitic examination should be collected before initiation of antidiarrheal therapy or antiparasitic therapy. The highest level of yield occurs when diarrhea is present upon arrival at hospital or within 72 hours of hospital admission. A battery of samples are required because some parasites are released in		
1650	Oxalate, 24 Hr Urine	81050, 83945	Obtain jug for 24 hr collection; Requires container with HCl preservative. Random sample of urine also acceptable.		CP	SO
	Oxazepam		See Serax			
3236	Oxcarbazepine (Trileptal)	82491	Red Top, Lavender Top - 1 ml serum	Reject: Gel Tube, Hemolysis, Lipemia, Icterus	CP	SO
	P53 Mutation		See Li-Fraumeni			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
28042	Panca Specific Antibody (Anti myeloperoxidase Antibody)	83516	Red Top - 1 ml serum	Reject: Hemolysis, Lipemia	CP	SO
28175	Pancreatic Elastase	83520	20 gm of random stool.	Specimen must be frozen upon arrival in laboratory	CP	SO
	Pancreatic Islet Cell Antibodies		See Islet Cell Antibodies			
29414	Pancreatic Polypeptide	83519	Red Top - 1 ml serum	Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial within four (4) hrs of collection. Fasting specimen preferred.	CP	SO
21769	Pap Smear	88175	See Cytology Section			
30605	Paraneoplastic Antibody Panel	Call Client Services	Gel Tube - 4 ml serum	Reference Lab Clients: Centrifuge, separate and refrigerate serum in plastic sendoff vial within 45 minutes	CP	SO
	Parathyroid Hormone (Intact)		See PTH			
1032	Parietal Cell Antibody	86255	Gel Tube - 2 ml serum		CP	SO
	Parotitis Epidemica Antibodies		See Mumps Virus			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Partial Thromboplastin Time		See PTT			
1827	Parvovirus B19 Antibody (Includes IgG & IgM)	86747x2	Gel Tube - 2 ml serum		CP	SO
8237	Parvovirus B19 Antibody by PCR	87798	Gel Tube - 1 ml serum	Transport immediately to laboratory.	CP	SO
1276	PCP (Phencyclidine)	81050, 83992	Urine - 10 ml random urine in sterile specimen container		Chem	D24H
37315	PCR for MRSA	87641	Use liquid Stuart's swab.	Swab anterior 15 mm of both nares.	Micro	M-F 1,2 S/S, 2
32758	Pendred Syndrome	Call Client Services	Two (2) Lavender Tops - 10 ml whole blood	Room Temperature	Gene	SO
27278	Pentazocine (Talwin)	83925	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
41194	Pentobarbital	82205	Red Top - 3 ml blood. Minimum required is 0.6 serum. Lavender and Green Top tubes also acceptable.	Collect specimen immediately prior to next dose unless specified otherwise. Reject: Gel Tube, Gross Hemolysis, Lipemia	CP	SO
	Percent Reactive Antibody		See PRA			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
34460	Pertussis Culture	87070, 87798	See Microbiology section			
35479	PFA 100	85576	See Platelet Function Test			
1557	PG (Phosphatidylglycerol)	84081	Submit amniotic fluid in sterile specimen container or stoppered syringe.	Deliver to lab ASAP. Do not centrifuge specimen.	Chem	D24H
1255 - Urine 1168 - Body Fluid	pH, Urine or Body Fluid	83986	2 ml body fluid or random urine in sterile specimen container		Hem	D24H
2847	PHA Stimulation Chromosomes	8823091, 88262	Green Top(Sodium Heparin) - 5ml whole blood. Pediatric minimum sample - 2.0 ml.	Lithium Heparin is not acceptable. Keep at room temperature.	Gene	M-F/ 1
	Phencyclidine		See PCP			
1117	Phenobarbital	80184	Red Top - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
21479	Phenytoin, Free	80186	Red Top - 3 ml blood, Pediatric minimum sample - 0.7 ml	Green Top or Blue Top plasma also acceptable. Gel tubes not acceptable	Chem	D24H
1214	Phenytoin, Total (Dilantin)	80185	Red Top - 3 ml blood, Pediatric minimum sample - 0.7 ml	GeL tube not acceptable.	Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Phosphatidylglycerol		See PG			
1643	Phosphatidylserine Antibody	83520x3	Gel Tube - 3 ml serum		CP	SO
1577	Phosphorous	84100	Gel Tube - 1 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1254	Phosphorous, 24 Hr Urine	81050, 82570, 84105	Obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D24H
32071	Phytanic Acid	82726	Gel Tube - 1 ml serum	Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial	CP	SO
1374	Pinworm Exam	87172	Specimen should be collected at night or early morning. Do not use frosted end of the slide. Do not use frosted tape.	Using a 5 inch length of clear cellophane tape, press a segment of the sticky surface of the tape over the perianal area. Remove tape and attach		
32041	Pipecolic Acid	82543	Lavender Top - 3.0 ml whole blood or 10.0 ml clean collected random urine	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial.	Gene	SO
	Plasma Hemoglobin		See Hemoglobin, Plasma			



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
19289	Plasminogen	85420	Blue Top - 2.7 ml whole blood.	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial.	CP	SO
1765	Platelet Aggregation Studies	85576x7		Contact Hematology at 355-3455 prior to specimen collection to schedule testing.		
35179	Platelet Antibodies	86022x4	Red Top - 2 ml serum. Minimum required volume is 0.5 ml serum.	Gel tube also acceptable. Serum must be separated from cells. Reference Lab Clients: Centrifuge, separate and refrigerate serum in plastic sendoff vial. Reject: Hemolyzed samples and serum not separated from red cells.	CP	SO
41751	Platelet Count	85049	Lavender Top - 3 ml whole blood. Pediatric minimum sample - 0.5 ml in Lavender microtainer tube.		Hem	D24H
35479	Platelet Function Test (PFA 100)	85576	Two(2) blue tops and one (1) lavender	TIME SENSITIVE: Testing must be performed within 4 hours of collection. Call 5-3455 when test ordered	Hem	D24H
22924	Platelet Specific Antigen	86023	Lavender Top - 2 ml whole blood	Refrigerate whole blood	CP	SO
5518	PM-SCL Antibody Identification	86331	Red Top - 1 ml serum	Reject: Gel Tube	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
16209	Pneumococcal Titer	86609	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
1676	Pneumocystis Smear	87281	Submit fresh bronchial washings or brush biopsy. Do not use preservatives or additives.	Deliver to lab ASAP.	SM	M-F/ 1
22925	Poliovirus Antibodies	Call Client Services	Gel Tube - 5 ml serum	Reject: Lipemia, Hemolysis	CP	SO
	Polymyositis		See JO Antibody			
1159	Porphobilinogen, 24 Hr Urine (Ont.)	81050, 84110	Obtain jug for 24 hr collection; Requires container with acetic acid preservative.	Protect from light.	CP	SO
41678	Porphobilinogen, Urine Screen Qualitative	84106	2.0 ml random urine	Protect from light.	H	D/24
38874	Porphyrins (Includes Coproporphyrins and Uroporphyrins)	81050, 84120	Obtain jug for 24 hr collection; Requires container with no preservative.	Protect from light.	CP	SO
32175	Porphyrins, Serum Total	84311	Red Top - 2 ml serum	Protect from light. Reference Lab Clients: Centrifuge, separate and freeze serum in brown sendoff vial. Protect aliquot from light also.	CP	SO
1015	Potassium, Serum	84132	Gel Tube - 1 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.	Reject: Hemolysis	Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1375	Potassium, 24 Hr Urine	81050, 82570, 84133	Obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D24H
1624	Potassium, Urine	84133	Urine - 2 ml random urine in sterile specimen container		Chem	D24H
	PR3		See Anti - Proteinase 3 Antibody			
21339	PRA (Percent Reactive Antibody)	88184, 88185x2, 88180	Red Top - 5 ml serum. Minimum specimen - 3.0 ml	Room Temperature	Immun	M-F/ 1
9976	Prader-Willi Syndrome	Call Client Services	Lavender Top - 5 ml whole blood. Pediatric minimum volume - 2.0 ml	Keep specimen at room temperature.	DNA	M-F/1
1521	Prealbumin	84134	Gel Tube - 1 ml serum		Chem	M-F/1
41531	Pregabalin (Lyrica)	82542	Red Top - 3 ml	Lavender Tube also acceptable	CP	SO
	Pregnancy Test		see Beta HCG			
1626	Pregnenolone (17 - Hydroxy)	84140	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Presamine		See Imipramine			
	Primidone		See Mysoline			
38585	Procaïnamide (Pronestyl), includes NAPA	80192	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		CP	SP
1352	Progesterone	84144	Gel Tube - 3 ml serum		Chem	D24H
1593	Progesterone, 17- Alpha Hydroxy	83498	Gel Tube - 2ml serum		CP	SO
1923	Prograf (FK 506)	80197	Lavender Top - 3 ml whole blood. Minimum volume - 1.0 whole blood.		Chem	D/ 10am, 1 pm
33371	Progressive Myoclonus Epilepsy	Call Client Services	Four (4) Lavender Top - 20 ml	Keep at room temperature.	Gene	SO
1897	Proinsulin	84206	Gel Tube - 2 ml serum	Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial	CP	SO
8621	Prolactin	84146	Gel Tube - 3 ml serum		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Prolixin		See Fluphenazine			
	Pronestyl		See Procainamide			
2258	Propafenone	82491	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
	Prostate Specific Antigen		See PSA			
1894	Protein C Activity (Functional)	85303	Two (2) Blue Tops	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial. If Protein S is also ordered, it is acceptable to collect two tubes for both tests.	CP	SO
9659	Protein C Antigen	85302	Two (2) Blue Tops	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial. If Protein S is also ordered, it is acceptable to collect two tubes for both tests.	CP	SO
39920	Protein C Resistance, Activated	85303	Two (2) Blue Tops	Deliver to lab on wet ice ASAP. Reference Lab Clients: Spin tube and freeze plasma in plastic sendoff vial. Collect without stasis.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
35360	Protein Electrophoresis	84165	Gel Tube - 2 ml serum		Chem	D/1
1648	Protein Electrophoresis, 24 Hr Urine	81050, 84165	Obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D/1
35359	Protein Electrophoresis, CSF	84166	CSF- 1.0 ml in sterile specimen container		Chem	D/1
1896	Protein S Activity (Functional)	85306	Two (2) Blue Tops	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial. If Protein C is also ordered, it is acceptable to collect two tubes for both tests.	CP	SO
38013	Protein S, Free and Total	85305, 85306	Two (2) Blue Tops	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial. If Protein C is also ordered, it is acceptable to collect two tubes for both tests.	CP	SO
1649	Protein, 24 Hr Urine, Total	81050, 84155	Obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1333	Protein, Total	84155	Gel Tube - 1 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
33737	Protein, Total (CSF)	84157	CSF- 1.0 ml in sterile specimen container		Chem	D24H
31763	Prothrombin Fraction 1 & 2	83520	Blue Top - 2.7 ml whole blood.	Deliver to lab ASAP. Reference Lab Clients - Centrifuge, separate and freeze plasma in plastic sendoff vial.	SO	
	Prothrombin Gene Mutation		See Factor V Leiden			
	Prothrombin Time		See PT			
1882	Protoporphyrin	84202	Lavender Top - 5 ml whole blood	Patient must be fasting 8-12 hrs. Do not refrigerate or freeze plasma.	CP	SO
	Prozac		See Fluoxetine			
1537	PSA (Prostate Specific Antigen)	84153	Gel Tube - 3 ml serum		Chem	D24H
9955	PSA, Free & Total	84153, 84154	Gel Tube - 3 ml serum. Green or Red Top tube also acceptable.		Chem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1122	PT (Prothrombin Time)	85610	Blue Top - 2.7 ml whole blood.	Reference Lab Clients - Deliver whole blood specimen to lab at room temperature within 24 hours of collection.	Hem	D24H
32181	PTEN Mutation	Call Client Services	Lavender Top - 5 ml whole blood		Gene	SO
19584	PTH - Related Peptide	83519	Lavender Top - 4 ml whole blood	This test requires special handling. Please contact the laboratory before collection.	CP	SO
19223	PTH (Parathyroid Hormone), Intact	83970	Lavender Top - 5 ml whole blood. Red Top also acceptable.	Specimen is stable refrigerated for 48 hours and stable frozen for 6 months.	Chem	D24H
22088	PTT (Partial Thromboplastin Time)	85730	Blue Top - 2.7 ml whole blood.	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial.	Hem	D24H
8211	Pyrazinamide Level	80101	Red Top - 2 ml serum	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze serum in plastic sendoff vial.	CP	SO
1057	Pyruvate Kinase	84220	Lavender Top - 3 ml whole blood. Pediatric minimum sample - 1.0 ml.		CP	SO
27283	Pyruvate, CSF	84210	CSF - 0.5 ml	Specimen should be clear and not bloody.	CP	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1939	Pyruvic Acid	84210	Gray Top - 5.0 ml whole blood. Pediatric minimum sample - 3.0 ml.	Deliver to lab on wet ice. Reference Lab Clients - call Client Services prior to collecting specimen. Patient must be fasting 8 -12 hours and relaxed	CP	SO
33527	Quinidine	80194	Red Top - 1 ml serum	Reject: Gel Tube, hemolysis, icterus, lipema	CP	SO
28601	Rabies Antibody Screen for Immunity Status	86382	Red Top - 1 ml serum	Reference Lab Clients: Centrifuge, separate and refrigerate serum in plastic sendoff vial within 45 minutes.	CP	SO
28601	Rabies Ab. Screen	86382	Gel Tube - 1 ml serum. CSF also acceptable.		CP	SO
	Rapamycin		See Sirolimus			
	Rapimmune		See Sirolimus			
1839	RBC Acetylcholinesterase	82013	Lavender Top - 5 ml whole blood		CP	SO
24057	RBC ALA-D & PBG-D	82657	Green Top - 5 ml whole blood.	Patient must be fasting 12 - 14 hours. Deliver to lab on wet ice.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1520	RBC Folate	82747	Two (2) Lavender Tops - 10 ml whole blood	Reference Lab Clients - Collect two (2) Lavender Top tubes. Do not centrifuge or separate. Freeze one Lavender Top as whole blood in plastic collection tube or plastic sendoff vial. The other Lavender Top must be sent to lab unopened and refrigerated.	CP	SO
1070	RBC Fragility	85555	See Osmotic Fragility			
29274	RBC Plasmalogen	82492	Lavender Top - 3 ml whole blood	Do not refrigerate or freeze serum; Room temperature only.	CP	SO
9264	Recombx Mata Autoantibody	84182	Gel Tube - 2 ml serum	Sample must be collected Monday - Thursday only.	CP	SO
1038	Reducing Substances (Stool)	81002	Submit fresh stool sample in clean specimen container.		Hem	D24H
1635	Renin Activity (Passive or Active)	84244	Prechilled Lavender Top - 5 ml whole blood.	Active sample should be drawn after patient has been upright for one(1) hour. Passive sample should be drawn after patient has been supine for at least 30 to 45 minutes. Deliver to lab ASAP on wet ice.	CP	SO
	Respiratory Syncytial Virus		See RSV	Reference Lab Clients: Centrifuge		

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
38590	Respiratory Viral Load	87798	Nasopharyngeal (NP) swab, nasopharyngeal aspirate, tracheal aspirate, bronchial lavage or bronchial washing in sterile container is acceptable.	Room Temperature	CP	SO
34085	Reticulin Antibodies IgA, IgG	86255x2	See Celiac Disease Antibody Profile			
1071	Reticulocyte Count	85045	Lavender Top - 3 ml whole blood. Pediatric minimum sample - 0.5 in Lavender Top bullet.		Hem	D24H
	Reverse T3		See T3, Reverse			
37215	RFT (Rheumatoid Factor)	86431	Gel Tube - 3 ml serum		Chem	D24H
	Rh Immune Globulin (Rhogam)		Refer to ABO and RH		BB	D24H
	Rhematoid Factor		See RFT			
	Rhogam		See Rh Immune Globulin			
38839	RI Antibody (Included as part of HU Antibody testing)	86255x2	Red Top - 7 ml serum	Reject: Gel Tube	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
30603	Ribosomal P Antibody	83516	Gel Tube - 1 ml serum		CP	SO
8210	Rifampin, Serum	80299	Gel Tube - 1 ml serum	Protect from light. Reference Lab clients- Centrifuge, separate and freeze serum in dark sendoff vial.	CP	SO
32173	Ristocetin Cofactor	85245	Blue Top - 2.7 ml whole blood.	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in plastic sendoff vial within four (4) hours of collection. Reject: Hemolysis, Lipemia, Underfilled	CP	SO
	RMSF		See Rocky Mountain Spotted Fever			
	<i>Rochalimaea</i> Antibody		See <i>Bartonella</i> Antibody			
36577	Rocky Mountain Spotted Fever IgG by IFA (RMSF, Weil Felix)	86757	Gel Tube - 3 ml serum.		CP	SO
1300	Rotavirus Enzyme Immunoassay	87425	Submit stool specimen in clean specimen container.	Diapers and swabs are not acceptable.	SM	D/ 1
1090	RPR	86592	Gel Tube or Red Top - 2 ml serum. Lavender Top, Green Top, Blue Top also acceptable - 3 ml whole blood.		SM	D/ 1, X-Th/ 3

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
41203	RSV (Respiratory Syncytial Virus)	87798x2	Submit at least 1.0 ml of nasal washing in sterile container. N/P culturette swabs are suboptimal, but acceptable.	Do not use transport media, preservative, or additives.	SM	D/ 1
1046	Rubella	86762	Gel Tube - 2 ml serum		Chem	D24H
1848	Rubeola AB-IgG	86765	Gel Tube - 2 ml serum		CP	SO
27280	Saccharomyces cerevisiae Panel	86674x2	Gel Tube - 1 ml serum	Reject: Hemolysis, Lipema	CP	SO
1334	Salicylate	80196	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
	Sandimmune		See Cyclosporine			
1652	Schlichter Test (Serum Bactericidal Level)	87197	Red Top - 3 ml serum	Contact Microbiology (355-3224) to schedule testing. Reject: Gel Tube	Micro	Call
1436	Scleroderma Antibody	86235	Red Top - 1 ml serum	Reject: Gel Tube	CP	SO
1747	Selenium	84255	Red Top (preferred), Dark Blue Top or Lavender Top - 2 ml serum or plasma.	Reject: Gel Tube	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Semen Analysis		Contact Andrology Lab at 704-355-9460 for specimen collection and testing information.			
38849	Sensorimotor Neuropathy Profile	86255x3, 83520x8	Gel Tube - 2 ml serum		CP	SO
1889	Serax (Oxazepam)	80154	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
32069	Serotonin	84260	Red Top - 1 ml serum	Reject: Gel Tube, Plasma, Specimens not frozen. Reference Lab Clients: Centrifuge, separate and freeze serum with 4 hours of collection.	CP	SO
32447	Serotonin Releasing Assay	86022	Gel Tube - 5 ml serum		CP	SO
26535	Sertraline (Zoloft)	82542	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
19267	Sex Hormone Binding Globulin	84270	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
	SGOT		See AST			
	SGPT		See ALT			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1077	Sickle Cell Prep	85660	Lavender Top - 3 ml whole blood. Pediatric minimum sample - 1.0 ml		Hem	D24H
28693	Sirolimus (Rapamycin, Rapimmune)	80195	Lavender Top - 1.0 ml whole blood		Chem	D/ 1000 & 1300
1048	Sjogren's Antibodies (SSA & SSB)	86235x2	Gel Tube - 2 ml serum		CP	SO
16208	Skeletal / Striated Muscle Antibody	86255	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
19307	SLE Profile A (Systemic Lupus Erythematosus)	86225, 86235x5, 86431	Gel Tube - 4 ml serum		CP	SO
1020	Sodium	84295	Gel Top - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1273	Sodium, 24 Hr Urine	81050, 82570, 84300	Obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D24H
1274	Sodium, Urine	84300	Urine - 2 ml random urine in sterile specimen container		Chem	D24H
19305	Soluble Transferrin Receptor	83520	Gel Tube - Lavender Top or Green Top - 1 ml serum or plasma.	Reject: Hemolysis	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1588	Somatomedin C	84305	Gel Tube - 2 ml serum		CP	SO
1275	Specific Gravity, Urine	81003	Urine - 2 ml random urine in sterile specimen container		Hem	D24H
8311	Spinal Muscular Atrophy (SMA) DNA Test	Call Client Services	Two (2) Lavender Tops - 10 ml whole blood		Gene	SO
	SSA and SSB Antibodies		See Sjogren's Antibodies			
1279	Stool for WBCs (Wright's Stain)	87205	Submit fresh stool specimen in clean container.	Reject: Swabs are not acceptable	Hem	D24H
9735	Strep Pneumoniae IgG Antibody (Serotypes include 7 capsular types, 4,14,19,23,26,56,68)	86609x7	Gel Tube - 1 ml serum		CP	SO
	Strep Screen		See Culture Throat Screen			
	Streptozyme		See ASO Titer			



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1090	STS (Serological Test for Syphilis)	86592	Gel Tube or Red Top - 2 ml serum. Lavender Top, Green Top, Blue Top also acceptable - 3 ml whole blood. Pediatric minimum sample - 1.0 ml serum or plasma.	Titer is performed on all positive specimens.	SM	D/ 1, X-Th/ 3
8612	Sulfatide Antibody	86318	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
38022	Sulfonylurea Hypoglycemia Screen	82491	Urine - 10 ml random urine in sterile specimen container with no preservative. Can be performed as a random sampling or 24 hr urine.		CP	SO
1384	Sweat Chloride	89230x2	Call Chemistry at 704-355-5809 at least 24 hours in advance to schedule testing.		Chem	Call
	Swinherd Disease		See Leptospiral Antibodies			
	Synovial Fluid for Crystal Exam		See Crystal Exam			
	Systemic Lupus Erythematosus		See SLE Profile A			
9812	T Cell Rearrangement	83891, 83898x2, 83909, 83907, 83912	Paraffin Embedded Tissue		DNA	M-F/1

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
34412	T Cell Subset Analysis (Includes T4/T8 Ratio, CD3 Counts)	86359, 86360	One (1) Lavender Top - 5 ml whole blood and One (1) Green Top - 5 ml whole blood	Do not collect specimens on weekends or after 11am on Fridays. Deliver immediately to the lab. Reference Lab Clients: Collect Monday - Thursday only.	Immun	M-F/1
8656	T3 Uptake	84479	Gel Tube - 1 ml serum		CP	SO
1838	T3, Reverse	84482	Red Top - 3 ml serum		CP	SO
8611	T3, Total	84480	Gel Tube - 1 ml serum		Chem	D24H
8613	T4, Free	84439	Gel Tube - 1 ml serum		Chem	D24H
8666	T4, Total (Thyroxine)	84436	Gel Tube - 1 ml serum		Chem	D24H
	T4/T8 Ratio		See Lymphocyte Subset			
28694	Tacrolimus (FK506, Prograf)	80197	Lavender Top - 1.0 ml whole blood		Chem	D/ 1000 & 1300
	Talon		See Brodifacoum			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Talwin		See Pentazocine			
1841	TBG (Thyroxine Binding Globulin)	84442	Gel Tube - 1 ml serum		CP	SO
32182	TBX5 Mutation Analysis	Call Client Services	Lavender Top - 5 ml whole blood		Gene	SO
	Tegretol		See Carbamazepine			
1101	Teichoic Acid Antibody	86331	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
1373	Testosterone	84403	Gel Tube - 2 ml serum		Chem	D24H
1479	Testosterone, Free and Weak	84402, 84403	Gel Tube or Red Top - 1.2 ml serum		CP	SO
30734	Tetanus Anti Toxoid IgG Antibody	86317	Gel Tube - 1 ml serum	Reject: Hemolysis, Lipemia	CP	SO
	Tetra Test		See Maternal Screen, Tetra			
21429	Tetrahydrobiopterin (Neopterin)	82492	CSF- 0.5 ml in sterile specimen vial	Deliver to lab ASAP.	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
26531	Thallium, Urine 24 Hr	83018	Obtain jug for 24 hr collection; Requires container with no preservative.		CP	SO
	Thanatophoric Dysplasia		See FGFR3			
1247	Theophylline (Aminophylline, Theodur)	80198	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
1036	Thiamine (Vitamin B1)	84425	Two (2) Lavender Tops - 10 ml whole blood	Protect from light. Reference Lab Clients: Centrifuge, separate and freeze plasma in dark plastic sendoff vial.	CP	SO
1524	Thiocyanate	84430	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
40458	Thiopurine Methyltransferase, Erythrocytes	82542	Lavender Tube - 5 ml		CP	SO
1890	Thorazine	84022	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
1216	Throat Screen for Strep	87880	See Culture, Throat Screen			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
38511	Thrombin Time	85670	Blue Top - 2.7 ml whole blood	Fill tube to full capacity and invert to mix 6 times. Centrifuge tube, aliquot plasma, transfer to plastic transport tube and FREEZE. Avoid warfarin (Coumadin®) therapy for 2 weeks and heparin therapy for 2 days prior to the test. Do not draw from an arm with a heparin lock or heparinized.	CP	SO
1886	Thyroglobulin (Quantitative)	84432	Red Top - 3 ml serum. Green Top also acceptable.		SO	
8660	Thyroid Profile (Includes Free T4 and TSH)	84439, 84443	Gel Tube - 1 ml serum		Chem	D24H
8608	Thyroid Stimulating Hormone	84443	See TSH			
19233	Thyroid Stimulating Immunoglobulin (TSI)	84445	Gel Tube - 2 ml serum		CP	SO
19306	Thyrotropin Receptor Antibody	83519	Gel Tube - 2 ml serum		CP	SO
	Thyroxine		See T4, Total			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Thyroxine Binding Globulin		See TBG			
	Tiagabine		See Gabitril			
	Tissue Transglutaminase		See Celiac Disease Antibody Profile			
	Tissue Typing		See HLA			
41745	Tobramycin	80200	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
1338	Tocanide (Tonocard)	82491	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
	Tofranil		See Imipramine			
	Tonocard		See Tocanide			
19269	Topiramate (Topamax)	82491	Red Top, Lavender Top or Green Top - 0.3 to 1 ml serum	Reject: Gel Tube	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
22245	Torch Titers (IgG & IgM) Includes CMV, Herpes, Toxoplasmosis, Services Rubella	Call Client	Gel Tube - 5 ml serum		CP	SO
1722	Toxoplasma Gondii by PCR, Amniotic Fluid	87798	Submit 2.0 ml amniotic fluid in sterile container or stoppered syringe.		CP	SO
2290	Toxoplasma IgG Antibody, CSF	86777	Submit 1.0 ml CSF fluid in sterile container or stoppered syringe.		CP	SO
3448	Toxoplasma Titer	86777, 86778	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
	TPMT, Erythrocytes		See Thiopurine Methyltransferase, Erythrocytes			
	TPO		See Antithyroid Peroxidase Antibody			
	Transferrin		See Iron Binding Profile			
	Transferrin Isoelectric Focusing		See Carbohydrate Deficient Transferrin			
	Trazodone		See Desyrel			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1363	Trichomonas	87210		Collect with sterile culturette swab or sterile swab in sterile specimen container with enough sterile normal saline to keep swab moist (1 - 2 ml)		
19252	Tricyclic Screen (Specify drug for which screening is requested)	80101	Red Top - 3 ml serum	Reject: Gel Tube	CP	SO
1532	Triglyceride	84478	Gel Tube - 1 ml serum	Patient must be fasting 8-12 hours	Chem	D24H
	Tri-iodothyronine		See T3			
	Trileptal		See Oxcarbazepine			
	Triple Test		See Maternal Screen, Triple			
9635	Tropheryma Whipple II DNA by PCR	87798	Yellow Top (Solution A) - 10 ml whole blood. Lavender Top and CSF also acceptable.	Keep specimen at room temperature.	CP	SO
19225	Troponin I	84484	Gel Tube - 2 ml serum		Chem	D24H
38842	Trypanosoma Cruzi Antibody IgG	86753	Gel Tube - 2 ml serum		CP	SO



## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
38843	Trypanosoma Cruzi Antibody IgM	86753	Gel Tube - 2 ml serum			
30602	Trypsin, Blood	83519	Gel Tube, Red Top, Green Top or Lavender Top -03 to 1 ml serum or plasma, <b>frozen</b> .	Reference Lab Clients: Centrifuge, separate and <b>freeze</b> serum in plastic sendoff vial.	CP	SO
1371	Trypsin, Stool	84488	Submit fresh stool specimen in clean container.	Deliver ASAP to lab.	CP	SO
2292	Tryptase	83520	Gel Tube - 2 ml serum	Collect Monday - Thursday only. Specimen must be received in lab on same day of collection. Reference Lab Clients: Send blood to lab ASAP.	CP	SO
8608	TSH (Thyroid Stimulating Hormone)	84443	Gel Tube - 1 ml serum		Chem	D24H
19306	TSH Receptor Antibody	83519	See Thyrotropin Receptor Antibody			
	TSI		See Thyroid Stimulating Immunoglobulin			
	tTG		See Celiac Disease Antibody Profile			
33202	Tuberous Sclerosis 1	Call Client Services	Two (2) Lavender Tops - 10 ml whole blood	Keep at room temperature.	Gene	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
33203	Tuberous Sclerosis 2	Call Client Services	Two (2) Lavender Tops - 10 ml whole blood	Keep at room temperature.	Gene	SO
1089	Tularemia	86668	Red Top - 3 ml serum	Reject: Gel Tube	SM	SO
	Tylenol		See Acetaminophen			
29275	Uniparental Disomy 14 (UPD 14)	83890, 83894, 83896, 83898x3	Two (2) Lavender Tops - 10 ml whole blood		Gene	SO
1401	Urea Nitrogen, 24 Hr Urine	84540, 82570, 81050	Obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D24H
1516	Uric Acid	84550	Gel Top - 2 ml serum. Pediatric minimum sample - 0.7 ml in Brown bullet.		Chem	D24H
1281	Uric Acid, 24 Hr Urine	81050, 82570, 84560	Obtain jug for 24 hr collection; Requires container with no preservative.		Chem	D24H
1545	Urinalysis	81003	Urine - 12 ml random urine in sterile specimen container. Minimum sample is 1.0 urine.		Hem	D24H

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1227	Urine Culture	87086	See Culture, Throat Screen			
	V617F Mutation		See JAK 2 Testing			
1340	Valproic Acid (Depakene, Depakote)	80164	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
39774	Vancomycin	80202	Gel Tube - 3 ml blood, Pediatric minimum sample - 0.7 ml		Chem	D24H
	Vanillylmandelic Acid		See VMA			
1129	Varicella Zoster Antibody, Total - Includes IgG and IgM	86787	Gel Tube - 2 ml serum	Reject: Hemolysis, Lipemia, Heat Inactivated Sera	CP	SO
32178	Varicella Zoster Antibody, IgG	86787	Red Top - 3 ml serum	Reject: Hemolysis, Lipemia, Heat Inactivated Sera	SM	Th/ 1
31594	Varicella Zoster Antibody, IgM	86787	Gel Tube or Red Top - 1 ml serum	Reject: Hemolysis, Lipemia	CP	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	Vasointestinal Peptide		See VIP			
	Vasopressin		See ADH			
1287	VDRL, CSF	86592	Submit 1.0 ml CSF in sterile specimen container or stoppered syringe.		SM	M, W, F/ 1
	Very Long Chain Fatty Acid		See Long Chain Fatty Acid			
22882	VGCC (Voltage Gated Calcium Channel Antibody)	83519	Red Top - 1 ml serum.	Deliver blood to lab ASAP. Reference Lab Clients: Centrifuge, separate within one (1) hour of collection. Reject: Lipemia, Hemolysis	CP	SO
1493	VIP (Vasoactive Intestinal Peptide)	86592	Contact Lab Processing at 355-5962 to obtain special collection kit and intructions.		CP	CALL
	Viral Culture and DFA Stain		See Culture, viral, submit according to source of specimen.			
1179	Viral Serum Studies (Acute or Convalescent)	86790	Red Top - 5 ml serum	Collect convalescent specimen two weeks after acute specimen is collected. Specify specimen as acute vs. convalescent. Reject: Gel Tube	SM	SO

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1113	Viscosity	85810	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
1857	Vitamin A	84590	Gel Tube - 3.0 ml serum	Protect from light. Reference Lab Clients: Centrifuge, separate and freeze serum in dark sendoff vial.	CP	SO
8609	Vitamin B12	82607	Gel Tube - 3 ml serum		Chem	D24H
1476	Vitamin D (1,25-Dihydroxy)	82652	Gel Tube, Red Top, green Top or Lavender Top - 1.5 to 3 ml serum or plasma.	Reference Lab Clients: Centrifuge, and separate serum or plasma into plastic sendoff vial.	CP	SO
1445	Vitamin D (25- Hydroxy)	82306	Gel Tube, red Top, Lavender Top - 0.3 to 0.5 ml serum or plasma.		CP	SO
1879	Vitamin E	84446	Gel Tube - 2 ml to 5 ml, serum, <b>Protected from light.</b>	<b>Protect from light.</b> Reference Lab Clients: Centrifuge, separate and refrigerate serum in amber sendoff vial.	CP	SO
1916	Vitamin K1	84597	Lavender Top or Red Top - 1 to 1.5 ml plasma or serum, <b>frozen and protected from light.</b>	Protect from light. Reference Lab Clients: Centrifuge, separate and freeze plasma in dark plastic sendoff vial.	CP	SO
1036	Vitmin B1	84425	See Thiamine			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
16217	Vitmin B6	84207	Lavender Top - 5 ml whole blood	Protect from light. Reference Lab Clients: Centrifuge, separate and freeze plasma in dark plastic sendoff vial.	CP	SO
1503	VMA (Vanillymandelic Acid), 24 Hr Urine	81050, 84585	Obtain jug for 24 hr collection; Requires container with 30 ml 6N HCl preservative.	Contact laboratory for patient preparation diet.	CP	SO
33373	Von Hippel Lindau Mutation	83891, 83892, 83896, 83897	Lavender Top - 5 ml	Keep at room temperature.	Gene	SO
41444	Von Willebrands Study (Includes Factor VIII, Factor VIII Related Antigen and Ristocetin Cofactor)	85245	Two (2) Blue Tops - 2 to 4 ml, frozen plasma.	Deliver to lab ASAP. Reference Lab Clients: Centrifuge, separate and freeze plasma in three (3) separate plastic sendoff vials within 4 hours of collection. Reject: Hemolysis, Lipemia, Underfilled Blue Top, clotted sample	CP	SO
	VZT		See Varicella Zoster			
	Warfarin		See Coumadin			
	Weil Disease		See Leptospiral Antibodies			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
1663	Western Blot	86689	Confirmatory Test for HIV. See HIV Screen.			
	Whipple's Disease		See Tropheryma Whipple II DNA			
	X Linked SBMA		See Kennedy's Disease			
	X Linked Spinal and Bulbar Muscular Atrophy		See Kennedy's Disease			
	X Match		See Crossmatch			
1522	Xanax	80154	Red Top - 4 ml serum	Reject: Gel Tube	CP	SO
	Xylose Absorption		See D-Xylose Absorption			
	Y Chromosome Deletion Studies		See AZF			
	Y Chromosome Analysis (Includes AZF and SRY)		See AZF			

## Test Menu and Availability

Test Code	Test Name	CPT Code(s)	Specimen Requirements	Specimen Handling, Rejection and Patient Prep	Testing Dept	Test Availability
	YO Antibody		See Purkinje Cell Cyto Antibody			
32176	ZAP 70 by Flow Cytometry	88184, 88185, 88187	Green Top (Sodium Heparin) - 5 ml whole blood. Bone marrow also accepted.	Collect Monday - Thursday only. Specimen must be received in lab by 12 noon on same day of collection.	CP	SO
	Zarontin		See Ethosuximide			
1519	Zinc	84630	Dark Blue Top (Metal Free tube with heparin or EDTA) - 7.0 ml whole blood. Also Green Top, Lavender Top, Red Top	Reject: Gel Tube. Centrifuge, separate and refrigerate plasma in sendoff vial within 45 minutes after collection.	CP	SO
	Zoloft		See Sertraline			
4972	Zonegran (Zonisimide)	82542	Red Top - 2 ml serum	Reject: Gel Tube	CP	SO
38846	Zoo Panel Heterologous Protein	83516x4	Red Top - 3 ml serum	Reference Lab Clients: Centrifuge, separate and refrigerate serum in sendoff vial.	CP	SO
29269	Zyprexa	80154	See Olanzapine			



## CAROLINAS LABORATORY NETWORK

### Microsample Requirements

Lab Section	Test	Whole Blood Amount
<b>Chemistry</b>	BMP (Basic Metabolic Pkg, CH7)	One (1) 0.7 mL Brown Bullet
	CMP (Comp Metabolic Pkg, CH12)	One (1) 0.7 mL Brown Bullet
	Magnesium	One (1) 0.7 mL Brown Bullet
	Calcium	One (1) 0.7 mL Brown Bullet
	Calcium, Ionized	One (1) 0.7 mL Green Bullet <b>Tube Must Be Full</b>
	Total Bilirubin	One (1) 0.7 mL Brown Bullet
	Fractionated Bilirubin (Total & Direct)	One (1) 0.7 mL Brown Bullet
	Ammonia (NH3)	2.0 mL Green Top Tube <b>Deliver on Ice</b>
	Immunoglobulins	One (1) 0.7 mL Brown Bullet
	Liver Package	One (1) 0.7 mL Brown Bullet
	Dilantin	One (1) 0.7 mL Brown Bullet
	Theophylline Level	One (1) 0.7 mL Brown Bullet
	Lead, Blood	1.0 mL in Lavender Bullet
<b>Hematology</b>	CBC (with or without diff)	0.5 mL in Lavender Bullet
	Hemoglobin Electrophoresis	0.5 mL in Lavender Bullet
	Platelet Count	0.5 mL in Lavender Bullet
	Sickle Cell	0.5 mL in Lavender Bullet
	Reticulocyte Count	0.5 mL in Lavender Bullet
<b>Coagulation</b>	PT	One 2.7 mL Blue Pedi Tube *
	PTT	One 2.7 mL Blue Pedi Tube *
* Both PT & PTT can be performed on same blue tube. Blue tube must contain requested amount; underfilled tubes not accepted.		
<b>Blood Bank</b>	Type and Crossmatch	One 2 mL Lavender Top Tube
<b>Immunology</b>	HIV Screen	2 mL in Red or Gel Tube

**Carolinas Laboratory Network Profiles**

<b>Profile Name</b>	<b>Code</b>	<b>Components</b>
Anemia Panel S	ANEMS	Iron Binding Pkg., Ferritin, Retic, Vit B12, Folate
Anemia Profile L	APL	CBC, Differential, Retic, Iron Binding Panel, Ferritin, Folate, Vit B12
Anemia Profile 1	ANEM1	Iron Binding Pkg., Ferritin
Chemistry Profile II	CHEM2	Comp. Met. Pkg., Triglyceride, Cholesterol, Uric Acid
Chemistry Profile III	CHEM3	Comp. Met. Pkg., Lipid, Uric Acid
Comprehensive Anemia	CAS	CBC, Differential, Iron Binding Pkg., Vit B12, Folate, Ferritin
Executive Profile 1	EP1	CBC, Differential, Comp. Met. Pkg., Lipid, Thyroid Profile, Uric Acid
Executive Profile with GFR	EXG	CBC, Diff, Comp. Met. Pkg w/ GFR, Lipid, Thyroid Profile, Uric Acid
General Health Panel	GHP	Comp. Met. Pkg., CBC, Differential, TSH
Habitual Aborter	HABA	ANA, APTT, TSH, , Lupus Anticoagulant
Health Profile 1	HP1	CBC, Differential, Comp. Met. Pkg., Triglyceride, Cholesterol, Uric Acid
Health Profile II	HP2	CBC, Differential, Comp. Met. Pkg., T4, Cholesterol, Uric Acid
Hepatitis 7	HEP7	Hepatitis A Profile, Hepatitis B Profile, Hepatitis C
Hirsutism	HIRSU	3-Androstanediol, Total Testosterone, % Free Testosterone, Androstenedione, DHEAS
Methotrexate Panel	METHO	BHCG, CBC w/o Dif, Creatinine, BUN, AST
Pineville Executive	PEXEC	CBC, Diff, CMP, Lipid Profile, Thyroid Panel, Uric Acid, Iron, Phosphorus, LDH, GGT
Piedmont Executive Panel w/ GFR	PEXG	CBC, Diff, Comp. Met. Pkg. w/ GFR, Thyroid Panel, Uric Acid, Iron, Phosphorus, LDH, GGT
Pituitary 1	PIT1	TSH, Prolactin, DHEA Sulfate
Pituitary 2	PIT2	TSH, Prolactin, DHEA Sulfate, LH, FSH
Preeclampsia Panel	PRECLM	CBC, Differential, BUN, Creatinine, Uric Acid, AST, LDH
Prenatal Profile 1	PREP1	CBC, Differential, Rubella, STS, Hepatitis B Surf. Ag, ABO/RH, Antibody Screen
Prenatal Profile, Comp	PREH	CBC, Differential, Rubella, STS, Hepatitis B Surf. Ag, HIVPA, ABO/RH, Antibody Screen
Rheumatoid Profile 1	RP1	Uric Acid, ASO, CRP, RA
Rheumatoid Profile 2	RP2	Uric Acid, ASO Titer, C-Reactive Protein, RA, ANA
Rheumatoid Profile 3	RP3	RA, ANA, Uric Acid, Sed. Rate
Rheumatoid Profile 4	RP4	ANA, RA, Uric Acid
Rheumatoid Profile 5	RP5	ANA, RA, Sed. Rate
Rheumatoid Profile 6	RP6	ANA, RA, Uric Acid, CRP
STD Profile	STDP	STS, Hepatitis B Surface Ab., Hepatitis C Ab. and HIV screen
TB Disease Panel	TBD	CBC, Differential, AST, Total Bilirubin, Creatinine, Uric Acid, GGT
TB Panel 3	TB3	Alkaline Phos., AST, BUN, Creatinine, LDH, ALT, Total Bilirubin, Uric Acid, CBC, Differential
TB Preventative Panel	TBP	AST, Total Bilirubin, Creatinine, GGT
Thrombophilia	THROMP	Protein S, Protein C, Factor V Leiden, Antithrombin III, Methylene tetrahydro Folate Reductase



---

## **Section 7 Microbiology**

Microbiology General Information

Microbiology Collection Guidelines

Blood Culture Collection  
Guidelines

Attachment 1 Specimen Collection  
for Anaerobes

# CAROLINAS LABORATORY NETWORK

---

## Microbiology General Information

### I. **PURPOSE**

This section of the manual is designed to aid physicians, nurses, and other staff in the proper collection and handling of microbiology specimens.

### II. **POLICY**

Any material that is to be submitted to Microbiology will be prepared in a sterile container and labeled in accordance with Carolinas Laboratory Network Policy for Labeling Laboratory Specimens.

### III. **SPECIAL CONSIDERATIONS**

- A. Sterility of the specimen must be maintained.
- B. Request forms and outside of containers must be clean and free of contamination. Soiled labels and request forms must be discarded and new ones prepared.
- C. Specimen containers should not be labeled nor requisitions attached until the specimen is placed in the container.
- D. If a swab is used for obtaining the specimen, submit one swab for each type of culture requested (i.e. fungal, anaerobic, routine, acid fast, etc.). **NOTE:** Swabs have been shown to be significantly inferior to tissue specimens for recovery of fungi, mycobacteria, and anaerobes.

## Microbiology Collection Guidelines

Specimen Request	Collection/ Transport Instructions	Special Notes
Chlamydia DNA Probe, Eye	Obtain male (blue) Gen-Probe collection kit from laboratory. Use a sterile dacron swab (not in kit) to clean away any discharge present. Do not scrape the conjunctiva while cleaning. Thoroughly swab the lower, then upper conjunctiva 2-3 times with the supplied small tip swab. Insert swab into Gen-Probe transport tube. Snap off shaft at score line. Do not splash. Cap the tube tightly.	The DNA probe method should not be used for detection of GC from the eye, submit specimen for bacterial culture. If both eyes are affected, swab the least affected eye first.
Chlamydia DNA Probe, Genital	Male or Female Collection kit required. <b>Female:</b> Remove excess mucus from cervical area using one of the swabs provided in the kit. Discard swab. Insert 2nd swab from kit, 1-1.5 cm into endocervical canal. Rotate swab clockwise for 10 to 30 seconds. Withdraw swab, carefully avoiding any contact with the vaginal mucosa. <b>Male:</b> Insert small tip swab from kit, 2-4 cm into urethra. Rotate clockwise 2-3 seconds to ensure contact with all urethral surfaces. Withdraw swab. Fully insert male or female swab into Gen-Probe transport tube. Snap off shaft at score line. Do not splash. Cap tube tightly.	For child abuse or legal situations, obtain specimens for GC or chlamydia culture, not DNA Probe. Use swabs from kit only. Male patients should not have urinated for at least one (1) hour prior to collection.
Clostridium Difficile Toxin Assay	Collect soft or liquid stool in sterile, wide mouth container.	Rectal swabs and formed stools are not acceptable.
Culture, Anaerobic	Use anaerobic collection device or syringe if collecting fluid sample. See Attachment 1 for a list of unacceptable specimens.	All specimens must be protected from exposure to oxygen, which is toxic to anaerobic organisms. Some sites or specimens are not acceptable for anaerobe culture because anaerobic organisms are part of the usual flora of these sites.
Culture, Blood	See Blood Culture Guidelines	
Culture, Cath Tips	Place tip of catheter in sterile screw top container. Refrigerate at 2-8 ° C if transport is delayed more than 24 hrs	Foley cath tips are not acceptable.
Culture, CSF or Body Fluid (Bacterial)	Submit one (1) mL in sterile screw top vials. Refrigerate at 2-8 ° C if transport is delayed > 24 hrs.	CSF specimens submitted on swabs are unacceptable for CSF culture.
Culture, CSF or Body Fluid (Viral)	Submit one (1) mL CSF or fluid in sterile container. Refrigerate at 2-8 ° C, if transport is delayed > 24 hrs	

## Microbiology Collection Guidelines

Specimen Request	Collection/ Transport Instructions	Special Notes
Culture, Exudate from Wound Abscess and Lesions (Bacterial, Viral)	Collect aspirate using needle and syringe. Cleanse site to be cultured thoroughly. If culture site is dry, collect using a culturette swab. Refrigerate at 2-8 ° C if transport is delayed > 24 hrs.	Specimens submitted on culturette swabs are suboptimal for AFB and fungal cultures, but are acceptable. For viral culture, collect an additional swab and place in viral transport media.
Culture, Eye (Bacterial)	Using a small NP swab, touch mucosal surface and place swab in culturette container. Break ampule to moisten swab.	Wash eye with sterile normal saline to remove superficial exudate. Specimens for GC from newborns must be collected prior to the crede procedure.
Culture, Eye (Viral)	Using a small NP swab touch mucosal surface and place swab in viral transport broth. Cap securely.	
Culture, Fungus and KOH Prep ( Hair, Nail or Skin)	<b>Hair</b> - Remove 10 -12 infected hairs with forceps and place in sterile container or between 2 glass slides. <b>Skin Scrapings</b> - Cleanse skin with alcohol sponge. Scrape entire periphery of lesion with scalpel blade or cytology brush. Place scrapings between 2 glass slides or sterile container. <b>Nail</b> - Cleanse nail with alcohol sponge. Remove first portion of debris under nail with scalpel and discard. Scrape remaining portion and place between 2 glass slides. Refrigerate at 2-8 ° C if transport is delayed > 24 hrs.	Lesions should be untreated with topical antifungal agents for one week before culturing.
Culture, Genital (Bacterial and Fungal)	Use culturette swab to collect exudate from vaginal or cervical area or from penile discharge. Return swab to holder and crack ampule to preserve specimen. <b>Do not refrigerate.</b>	Penile discharge for GC may be spread onto a slide and submitted for gram stain only. Swab for trichomonas should be placed in a sterile tube or urine container with enough sterile saline to keep swab moist (1-2 mL).
Culture, Genital (Viral)	Remove obvious exudate from culture site with sterile swab. Use second swab to scrape mucosal surface well to obtain mucosal cells and then place swab in viral transport media. Refrigerate at 2-8 ° C, if transport is delayed > 2 hrs	When collection a swab, obtain cells from the margin of the lesion. Viruses are found inside human cells.
Culture, <i>Haemophilus Ducreyi</i> (Genital)	Use culturette swab to collect exudate from center of soft lesion. Return swab to holder and crack ampule to preserve specimen.	
Culture, <i>Histoplasma Capsulatum</i>	One (1) red top tube	
Culture, <i>Rochalimaea</i>	One (1) isolator tube	

## Microbiology Collection Guidelines

Specimen Request	Collection/ Transport Instructions	Special Notes
Culture, Sputum (Bacterial, AFB, Fungal, Viral)	Submit specimen in sterile, wide mouth container. Refrigerate at 2-8 ° C, if transport is delayed >1 hr	For optimum results, obtain first morning specimen prior to breakfast. A single sputum sample may be used for bacterial, fungal and AFB if there is at least 5 mL of sputum. For viral culture, place a small amount (0.25-0.5 mL) into viral transport broth or send entire specimen. For AFB cultures, sputum culture should be collected on 3 different days.
Culture, Stool (Bacteria)	Use sterile stool container. Requires 10 to 25 gms of specimen. Refrigerate at 2-8 ° C, if transport is delayed > 2 hrs	Specimen must be free of barium, bismuth, and oily suspensions. It cannot be mixed with urine. Diapers are not acceptable.
Culture, Stool (Viral)	Collect a formed stool in sterile container. Swab is also acceptable.	Specimen must be free of barium, bismuth, and oily suspensions. It cannot be mixed with urine. Diapers are not acceptable.
Culture, Throat Screen for Group A Beta Strep	Use culturette swab. Depress tongue with tongue blade and swab tonsillar area, posterior pharynx, and any areas of inflammation.	
Culture, Tissue (Bacterial, Fungal, AFB or Viral)	Remove tissue aseptically and place in sterile container with just enough sterile normal saline to keep tissue moist. Transport to lab within 24 hours	Do not submit entire appendages. Do not use anaerobe collection device. If Bartonella is requested, submit lymph node biopsy or aspirate.
Culture, Upper Respiratory Tract (Bacterial, AFB, Fungal, Viral)	<b>Nose:</b> Swab anterior 15 mm of both nares. <b>Nasopharynx:</b> Pass a Bradford wire swab back through the nose until it comes in contact with the posterior nasopharyngeal wall, then rotate the swab gently in this position before removing it. <b>Oropharynx:</b> See Culture, Throat Screen for Group A Beta Strep. For viral culture, place swab into viral transport broth. Refrigerate at 2-8 ° C, if transport is delayed > 2 hrs	Cultures for the following organisms require additional culture media: C. diphtheriae, B. pertussis, N. meningitidis, N. gonorrhoeae, Fusospirochetal symbiotic disease. Collect an additional swab for each type of culture ordered. When collecting a swab for viral testing, obtain cells from the margin of the lesion. Viruses are found inside human cells.
Culture, Urine (Bacterial)	Use sterile specimen container. Refrigerate at 2-8 ° C, if transport is delayed > 2 hrs or use urine transport tube.	
Culture, Urine (Viral)	Collect 10-20 mL in sterile container	

## Microbiology Collection Guidelines

Specimen Request	Collection/ Transport Instructions	Special Notes
DFA , Vesicular Fluid (Herpes Simples, Varicella Zoster)	Obtain 3 acetone cleaned slides from laboratory with slide container. Collect epithelial cells form lesion onto a sterile swab. Transfer cells directly to acetone cleaned slides by rolling swab back and forth over 5 to 10 mm area of slide. Air dry slide completely before placing in slide container.	
DFA, Viral (includes RSV, Influenza, HSV)	Collect 1 to 2 mL of sample into sterile specimen container. Acceptable specimens are lesion basal cell scrapings, tissue, nasal washings, sputum, bronchial washings, tracheal specimens. Culturette swabs also acceptable. Refrigerate at 2-8 ° C, if transport is delayed > 24 hrs.	
Genital Lesion for Donovan Bodies	Cleanse lesion and remove any tissue debris. Place specimen from punch biopsy into sterile container.	
<i>Histoplasma Capsulatum</i> , Antigen Detection Assay, CSF	Submit one (1) mL CSF in sterile screw top vial. Refrigerate at 2-8 ° C, if transport is delayed > 24 hrs	
<i>Histoplasma Capsulatum</i> , Antigen Detection Assay, Serum	Five (5) mL blood in red top tube	
<i>Histoplasma Capsulatum</i> , Antigen Detection Assay, Urine	Ten (10) mL urine in sterile specimen container. Refrigerate at 2-8 ° C, if delayed > 2 hrs	
Ova & Parasite (O & P)	Collect stool in sterile, wide mouth container. If specimen transport to lab is delayed > 30 minutes, place specimen in Parapaks (PVA/formalin fixative transport system)	Stools must be free of barium, bismuth and oils for at least 72 hours. Stools cannot be mixed with urine. Diapers and rectal swabs are not acceptable. A battery of samples is required because some parasites are released in showers; there are intervals in which no organisms can be detected. Routine O& P exam is a screen for Giardia and Cryptosporidium. If other organisms are suspected, order O&P Complete.
Pinworm Exam	Using a 5 inch length of cellophane tape, press a segment of the sticky surface of the tape over the perianal area. Remove tape and attach sticky side down onto a clear glass slide.	Specimen should be collected at night or early morning. Do not use frosted end of the slide. Do not use MAGIC tape, it must be clear tape.



## Microbiology Collection Guidelines

Specimen Request	Collection/ Transport Instructions	Special Notes
Trichomonas	Collect with sterile culturette swab or sterile swab in sterile specimen container with enough sterile normal saline to keep swab moist (1-2 mL).	

## Blood Culture Collection Guide

Type	Specimen Requirement	Comments
Blood Culture, Routine - Adult	20.0 mL Blood/Culture	Never put more than 10.0 mL in one blood culture bottle.
	Set 1(Venipuncture Site #1)	
	8.0-10.0 mL in Plus Aerobic/F (Gray Top)	
	8.0-10.0 mL in Lytic Anaerobic/F (Purple Top)	
	Set 2 (Venipuncture Site # 2)	
	8.0-10.0 mL in Plus Aerobic/F (Gray Top)	
	8.0-10.0 mL in Lytic Anaerobic/F (Purple Top)	
Blood Culture, Routine - Pediatric		
Neonate	1.0 - 2.0 mL Blood/Culture - 1.0 mL in Plus Aerobic/F (Gray Top) + 1.0 mL in Lytic Anaerobic/F (Purple Top)	If you collect less than 2.0 mL of blood, put all blood in the aerobic bottle.
1 month - 2 years	2.0-3.0 mL Blood/Culture - 1.0 - 1.5 mL in Plus Aerobic/F (Gray Top) + 1.0 - 1.5 mL in Lytic Anaerobic/F (Purple Top)	
2 years - 10 years	3.0-5.0 mL Blood/Culture - 1.5 - 2.5 mL in Plus Aerobic/F (Gray Top) + 1.5 - 2.5 mL in Lytic Anaerobic/F (Purple Top)	
10 years - 15 years	10.0 - 20.0 mL Blood/Culture - 5.0 - 10.0 mL in Plus Aerobic/F (Gray Top) + 5.0 - 10.0 mL in Lytic Anaerobic/F (Purple Top)	
Blood Culture, Fungus	1.0 - 5.0 mL in Myco/F Lytic (White Top/ Red Label)	Do not collect Isolator™ tube
Blood Culture, Bartonella henselae	8.0-10.0 mL in Plus Aerobic/F (Gray Top)	
	8.0-10.0 mL in Lytic Anaerobic/F (Purple Top)	
Blood Culture, AFB, MAI	1.0 - 5.0 mL in Myco/F Lytic (White Top/ Red Label)	
Blood Culture, Histoplasma	Adult - 10.0 mL in gold/black top Isolator™ Tube Pediatric - 1.5 mL in gold top Isolator™ tube	
Culture, Stem Cells	0.5-3.0 mL in Plus Aerobic/F (Gray Top)	
Culture, Bone Marrow	Bone Marrow is sent to Special Hematology for inoculation into yellow top SPS Tube	

# CAROLINAS LABORATORY NETWORK

---

## ATTACHMENT 1

### SPECIMEN COLLECTION FOR ANAEROBIC CULTURE

Some sites or specimen types are not acceptable for anaerobe culture because anaerobic organisms are part of the usual flora of these sites. A list of unacceptable specimens and corresponding acceptable ones follows:

#### **UNACCEPTABLE**

Throat, ear, nasopharynx

Sputum, bronchoscopy specimen

Tracheostomy site

Feces, rectal swab

Voided or cath urine

Urethra

Superficial wounds, abscess swab

Gastrointestinal or abdominal wounds  
contaminated with feces

Vaginal or cervical swabs

#### **ACCEPTABLE**

None

Transtracheal aspiration

None

None (see *Clostridium difficile*)

Suprapubic bladder tap

Prostatic or seminal fluid

Deep collection, avoiding skin  
and mucous membranes

None

Aspirates by culdocentesis



---

## **Section 8      Cytology**

Specimen Collection for SurePath PAP Smear  
Specimen Collection for Conventional Pap Smear  
Non-Gyn Cytology  
Fine Needle Aspiration for Cytology

# Collection of SurePath Pap Smears v05.1

## I. Purpose

The SurePath test pack is a liquid-based thin layer cell preparation process. SurePath slides are intended as a replacement for conventional gynecologic pap smears. SurePath slides are used in the screening and detection of cervical cancer, pre-cancerous lesions, atypical cells and all other cytologic categories as defined by The Bethesda System for Reporting Cervical/Vaginal Cytologic Diagnoses.

## II. Materials Needed

- SurePath Preservative Fluid Collection Vial
- Cervex Brush (Rovers Medical Devices BV, Oss – The Netherlands)
- Carolinas Laboratory Network Cytology Gynecologic Requisition
- Specimen Transport Bag
- Pen (for labeling vial and filling out requisition)
- Puritan Spatulas (optional)
- Surgipath Snap-Off C-E Brush (optional)

## III. Procedure

- A. Complete gynecologic requisition. Every requisition must have the following:
  - Full name of patient
  - Unique patient identifier (i.e. Soc. Sec #, Hospital #, Chart #)
  - Patients date of birth
  - First date of last menstrual period
  - Clinical history
  - Submitting physician's full name
  - Date of collection
  - Specific specimen site (cervical, vaginal, vulva)
  - Attach copy of all insurance information to the requisition
  - If HPV testing is desired check either the "HPV if ASCUS Diagnosis" or the "HPV if ASCUS or Negative" box.
- B. Label SurePath vial with patient name, collection date, and physician's full name.
- C. Insert the Rovers Cervex-Brush into the endocervical canal. Apply gentle pressure until the bristles form against the cervix. Maintain gentle pressure; hold the stem between the thumb and forefinger. Rotate the brush five times in a clockwise direction. Remove the collection device from cervix.

**Note: The clockwise direction of rotation is critical for specimen collection.**

- D. Placing your thumb against the back of the brush pad, simply disconnect the entire brush from the stem into the SurePath preservative vial.
- E. Optional specimen collection devices may be used in addition to the Cervex Brush.
  1. Surgipath Snap-Off C-E Brush
    - a. For adequate specimen collection, insert the C-E brush gently into the endocervix and slowly rotate ½ to 1 full turn. Remove C-E brush.
    - b. Snap off the C-E brush tip and deposit the brush into the SurePath vial.
    - c. **DO NOT USE** on pregnant patients due to insufficient data.
    - d. **DO NOT USE** for endometrial sampling.
  2. Puritan Spatulas

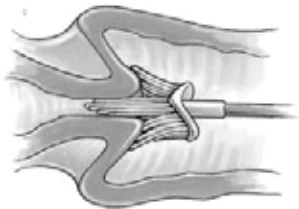
- a. Sample ectocervix using plastic spatula.
- b. Placing your thumb against the back of the spatula, simply disconnect the spatula head and place in SurePath vial.
- F. Place the cap on the vial and tighten securely.
- G. Check to be certain vial is labeled
- H. Place vial and completed requisition in zip-lock specimen biohazard bag for transport to the laboratory.

**Note: All specimen collection devices are designed so that the head/tips of such devices are to be deposited into the SurePath vial and transported to the laboratory. The system is designed so that the laboratory receives 100% of the collected specimen.**

# SUREPATH™

## test pack

### FOUR SIMPLE STEPS



**1. Cervical Sample Collection**  
Insert the Rovers Cervex-Brush® into the endocervical canal. Apply gentle pressure until the bristles form against the cervix. Maintaining gentle pressure, hold the stem between the thumb and forefinger.

NOTE: ROTATE BRUSH FIVE TIMES  
Rotate the brush five times in a clockwise direction.



**2. Preserve the entire sample**  
Placing your thumb against the back of the brush pad, simply disconnect the entire brush from the stem into the SurePath™ preservative vial.



**3. Cap and label vial**  
Place the cap on the vial and tighten. Label the vial and lab requisition form with patient name and/or number, physician name and date if desired.



**4. Send vial to your lab**  
Place the vial and requisition into a specimen bag and send to the laboratory.

## Directions for Use

### SurePath™ Sample Collection Kit

With Prescored Detachable Head Devices

for use with **SUREPATH™**  
liquid-based Pap test

Cytobrush® Plus GT • Pap Perfect® Plastic Spatula

#### NON-STERILE

SurePath™ Sample Collection Kit containing Cytobrush® Plus GT cell collector gentle tip and Pap Perfect® plastic spatula are single use devices with detachable heads which remain in the SurePath™ preservative collection vial. Discard the remaining device handle-end after each use.

#### STORAGE

Nonsterile, to be stored in resealable packaging when not in use.

#### CAUTION

For use only by medical professionals.

#### INDICATIONS FOR USE

SurePath™ Sample Collection Kit is used to collect specimens from exo-and-endocervix for use with the SurePath™ liquid-based Pap test. The detachable head devices are to be dropped into the SurePath™ preservative vial to optimize sample collection by enabling 100% of the collected cells to be transferred to the vial for the laboratory to process.

#### CONTRAINDICATIONS

Do not use Cytobrush® Plus GT on pregnant patients. Do not use Cytobrush® Plus GT for endometrial sampling.

#### WARNINGS

Insert a Cytobrush® Plus GT device into endocervix until only the bottom-most brush bristles are exposed at the os. To reduce unnecessary bleeding, do not over-rotate device.

#### ADVERSE REACTIONS


No known adverse reactions.

Manufactured for and Distributed by:

**TRIPATH-IMAGING®**

780 Plantation Drive  
Burlington, NC 27215  
Toll Free: 1-866-TriPath

Manufactured by:

**Medscand** 

a CooperSurgical company  
95 Corporate Drive, Trumbull, CT 06611  
Phone: 203-601-5200 or 800-243-2974  
Fax: 800-262-0105

Cytobrush® Plus GT is a patented product and a registered trademark of Medscand Medical, AB, Sweden. Pap Perfect® is a product and a registered trademark of Medscand, USA.

SurePath™ liquid-based Pap Test and PrepStain™ are products and trademarks of TriPath Imaging, Inc., Burlington, NC, USA

Part #35776

Rev. A

30620-01

## Directions for Use

### SAMPLING INSTRUCTIONS

Label a SurePath™ preservative vial with patient, date, lab, and doctor information.

With the patient in lithotomy position, expose cervix using a vaginal speculum moistened with warm water. Visually examine vaginal mucosa and cervix for lesions, ulceration or discharge. Document findings of the examination on patient's record, and communicate the relevant clinical findings to laboratory for optimum cytological interpretation.

- 1 Select contoured end of Pap Perfect® plastic spatula and rotate 360° around the entire exocervix while maintaining tight contact with exocervical surface. Remove spatula.



- 2 Visually locate the notched score line on the side of the spatula handle, about 4cm from the contoured collection end. With gloved hand(s) and one single, quick, and firm SNAP, separate the contoured end from the rest of the spatula handle. Do not touch collection end. Drop this contoured collection end into a vial of SurePath™ preservative (supplied by TriPath Imaging, Inc.). Discard remaining device handle end of the spatula after each use. Place cap on vial until step 4; do not tighten cap.



- 3 Insert Cytobrush® Plus GT device into the endocervix until only the bottom-most bristles are exposed at the os. Slowly rotate 1/4 to 1/2 turn in one direction. To reduce unnecessary bleeding, do not over-rotate brush. Over-rotation may result in poor sample collection. Remove cytobrush device.



- 4 Visually locate the notched score line on the side of the cytobrush handle, about 4cm from the brush tip. With gloved hand(s) and one single, quick, and firm SNAP, separate the brush head-short handle from the rest of brush handle. Do not touch collection end. Drop brush head-short handle into the same vial of SurePath™ preservative. Discard remaining device handle end of cytobrush.



- 5 Tighten the SurePath™ vial cap so the torque line on the cap passes the torque line on the vial. Attach to SurePath™ vial an appropriate requisition form and send to lab for PrepStain™ processing.





# Collection of Conventional Pap Smears v04.1

## IV. Purpose

Sampling of cervical-vaginal areas for cancer detection, pre-cancerous lesions, infectious processes, and benign conditions. The Pap Smear has a proven track record for cancer detection and reduced mortality rate through a systematic screening program. Accurate diagnosis is, however, interdependent upon an adequate sampling technique and quick fixation of the sample. The endocervical brush technique and the spatula technique (for ectocervix) offer an adequate representative sample for evaluation.

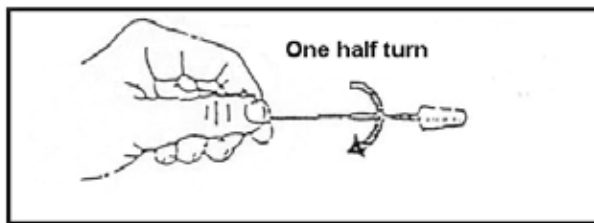
## V. Material Needed

- Gynecologic requisition
- One glass slide (frosted end)
- Lead pencil (pen ink rinses off during processing)
- Endocervical Brush
- Ayre spatula, preferably plastic
- Slide folder for transport
- Fixative Spray

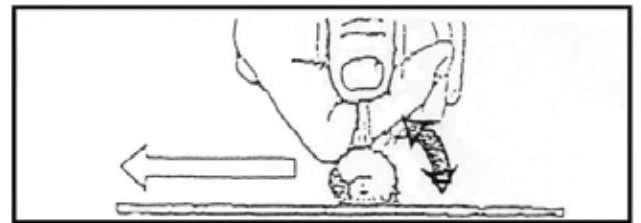
## VI. Procedure

- A. Label the frosted end of a glass slide with the patient's full name in pencil.
- B. Complete gynecologic requisition. Every requisition must have the following:
  - Full name of patient
  - Unique patient identifier (i.e. Soc. Sec #, Hospital #, Chart #)
  - Patients date of birth (DOB)
  - First date of last menstrual period (LMP)
  - Clinical history
  - Submitting physician's full name
  - Date of collection.
  - Specific specimen site (cervical, vaginal, vulva).
  - Attach copy of all insurance information to the requisition.
- C. Single slide pap smear for non-pregnant patients
  1. Sample ectocervix with plastic spatula. Hold spatula. (DO NOT PLACE SPECIMEN ON SLIDE UNTIL ENDOCERVIX SAMPLE IS COMPLETE).
  2. Insert the cytobrush device until only the bottom most fibers are exposed.
  3. Slowly rotate  $\frac{1}{2}$  to 1 full turn in one direction. DO NOT OVER-ROTATE. Remove cytobrush.
  4. Hold the brush and place spatula on the corner of the slide and unload specimen and discard spatula.
  5. Immediately roll the brush with moderate pressure on the remaining slide and discard brush.
  6. Immediately fix the glass slide by spraying fixative in a side to side sweeping motion 6-8 inches from slide.
  7. Place slide in specimen folder and close when dry.
  8. Place slide folder and completed requisition in zip-lock specimen biohazard bag for transport to the laboratory.
- D. Single slide pap smear for pregnant patients

1. Scrape the cervix lightly using a plastic spatula. Hold spatula. (DO NOT PLACE SPECIMEN ON SLIDE UNTIL ENDOCERVIX SAMPLE IS COMPLETE).
2. Sample the endocervix using a pre-moistened cotton tipped swab by rotating it slightly within the endocervical canal and remove.
3. Hold the swab and place spatula on the corner of the slide and unload specimen and discard spatula.
4. Immediately roll the swab with moderate pressure on the remaining slide and discard swab.
5. Immediately fix the glass slide by spraying fixative in a side to side sweeping motion 6-8 inches from slide.
6. Place slide in specimen folder and close when dry.
7. Place slide folder and completed requisition in zip-lock specimen biohazard bag for transport to the laboratory.



**Slowly rotate one half to one full turn**



**Roll and twist across slide  
bending bristles slightly**

## **VII. Contraindications for Collecting Conventional Pap Smears**

- A. Do not use for endometrial sampling
- B. Do not use endocervical brush in pregnant patients as insufficient data exists.
- C. Do not use an endometrial-sampling device.
- D. Patient should not douches within 24 hours.

Note: Clinicians may want to inform patients that thorough sampling of the endocervical canal by the cytobrush may cause spotting for a day or two following the pap test.

# Collection of Non-Gynecologic Specimens v05.1

## VIII. Purpose

Cytopathology can provide a rapid, simple, and inexpensive means to screen for malignant or pre-malignant diseases, or obtain a variety of other non-neoplastic diagnoses. However, there are many limitations to the interpretation of cytologic specimens. The most common limitations are improperly obtained or inadequately fixed material. The purpose of this procedure is to provide standard cytopreparatory procedures for staff, nurses, and physicians, so a well-preserved specimen is collected.

## IX. Materials Needed

- Cytology specimen requisition
- Specimen collection container (see individual procedure below)
- CytoLyt solution (see individual procedure below)

Caution: Do not allow CytoLyt to contact patient – contains methanol. Please observe expiration date and return any expired solution to the Department of Cytology for disposal.

- 95% Alcohol (ETOH) in plastic jars for transport (see individual procedure below)

\* Materials above may be obtained from the cytology department  
CMC.....(704) 355-4252  
CMC Mercy.....(704) 304-5985

## X. Procedure

### A. Specimen Identification

1. **Each** specimen for cytology must be accompanied by a **separate** requisition. More than one test may be ordered for a specimen.
2. Each requisition must have the following:
  - Full name of patient.
  - Date of birth
  - Gender
  - Ordering physician's full name
  - Specific specimen type/site (pleural fluid, left nipple discharge)
  - Date and of collection
  - Hospital number/Chart number
  - Pertinent clinical information
3. Attach a copy of insurance information to the requisition.
4. Label the specimen container with patient's full name, specimen type, and ordering physician.
5. Specimens should be transported in a leak proof container inside a plastic biohazard bag. The requisition should be placed in the outside pocket of the bag.
6. Slides must be transported in an appropriate holder to prevent breaking.
7. If slides are submitted, the patient's last name must be written on the frosted end of the slide with a **pencil** (Ink will not stay on during processing).
8. Only licensed, authorized personnel may submit specimens.

9. If all the above requirements are not met, the specimen will be rejected and returned to the ordering physician. All rejected specimens are recorded in the rejection log located in the cytology department at CMC and CMC-Mercy.

B. Specimen Collection

1. Mucosal Brushings
  - a. Respiratory, Gastrointestinal, and Urinary Brushings. Specimens include but are not limited to Bronchial, Bile Duct, Colonic, Duodenal, Esophageal, Gastric, and Gastroesophageal, Renal, Ureteral Brushings.
  - b. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - c. Submit the collection brush by placing the brush directly into a specimen container containing 30ml of CytoLyt solution.
  - d. Tightly secure the lid of the specimen container and place into a biohazard transport bag with the matching requisition in the outer pocket.
2. Mucosal Washings
  - a. Respiratory, Gastrointestinal, Pelvic and Urinary Washings. Specimens include but are not limited to Bronchial Alveolar Lavage (BAL) as well as Bronchial, Bladder, Pelvic, Peritoneal, Renal, and Ureteral Washings.
  - b. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - c. Collect the specimen using a balanced electrolyte solution.
  - d. Add 30ml of CytoLyt Solution to the fresh specimen as soon as possible.
  - e. Tightly secure the lid of the specimen container and place into a biohazard transport bag with the matching requisition in the outer pocket.
3. Sputum
  - a. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - b. Instruct the patient to rinse mouth vigorously 3 times with water and then to cough deeply and expectorate into a clean specimen cup.
  - c. Add 30ml of CytoLyt Solution to the fresh specimen as soon as possible.
  - d. Tightly secure the lid of the specimen container and place into a biohazard transport bag with the matching requisition in the outer pocket.
4. Serous Effusions
  - a. Specimens include Ascitic (Paracentesis), Pericardial, and Pleural Fluid.
  - b. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - c. Collect 50-100 ml of fluid into non-glass bottles or syringes (remove needles before sending). **Do not submit serous effusions in glass bottles.**
  - d. Tightly secure the lid of the specimen container and place into a biohazard transport bag with the matching requisition in the outer pocket.
  - e. Specimen should be transported to the lab fresh and without delay. Refrigerate if transport will be delayed.

Note: In cases where effusion specimens are not refrigerated, cells may be degenerated and non-diagnostic. A second specimen of rapidly re-accumulating fluid may provide freshly exfoliated diagnostic cells.

5. Urine
  - a. Specimens include voided, catheterized, renal, and ureteral urine.
  - b. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - c. Collect 50 ml of urine into a specimen cup.
  - d. Add 30ml of CytoLyt Solution to the fresh specimen as soon as possible.
  - e. Tightly secure the lid of the specimen container and place into a biohazard transport bag with the matching requisition in the outer pocket.
6. Central Nervous System Fluids
  - a. Specimens include cerebral spinal fluid (CSF), CNS cyst fluid, and ventric fluid.
  - b. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - c. Collect the specimen into a clean specimen container.
  - d. Tightly secure the lid of the specimen container and place into a biohazard transport bag with the matching requisition in the outer pocket.
  - e. Specimen should be transported to the lab fresh and without delay. Refrigerate if transport will be delayed.
7. Superficial Scrapings
  - a. Specimens include Tzank smear, skin lesions, and oral cavity specimens.
  - b. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - c. With a pencil, label the frosted end of a slide(s) with patient's name and specimen site.
  - d. Rupture an intact vesicle with a sterile blade and scrape the base and edge of the vesicle.
  - e. Apply material collected onto the labeled slide(s) as a thin smear.
  - f. **Immediately** submerge slides in 95% alcohol jar. **Do not** allow air-drying of slides.
  - g. Tightly secure the lid of the alcohol jar and place into a biohazard transport bag with the matching requisition in the outer pocket.
8. Nipple Discharge
  - a. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - b. With a pencil, label the frosted end of a slide with the patient's name and specimen site.
  - c. Express fluid on the labeled slide and **immediately** submerge slide in 95% alcohol jar. **Do not** allow air-drying of slides.
  - d. Tightly secure the lid of the alcohol jar and place into a biohazard transport bag with the matching requisition in the outer pocket.
9. Joint Fluid
  - a. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - b. Specimen may be sent to the lab in the syringe used for collection provided that the **needle is removed** and the syringe is recapped and labeled before transport.
  - c. Alternatively, the specimen may be transferred to a clean specimen container containing 30 ml of CytoLyt.
  - d. Transport the specimen in a biohazard transport bag with the matching requisition in the outer pocket.
10. ARC (Anal-Rectal Cytology)
  - a. Rectal Smears should be collected using a SurePath vial and a Dacron swab.
  - b. Follow specimen identification instructions in Section III, Subsection A of this procedure.
  - c. Moisten the tip of a Dacron swab with tap water.

- d. Insert the Dacron swab 5-6cm into the anal canal, past the anal verge, into the rectal vault. This is done without direct visualization of the anal canal.
- e. Apply firm lateral pressure to the swab handle as it is rotated and slowly withdrawn from the anal canal, inscribing a cone-shaped arc. Care should be taken to ensure that the transition zone is sampled. A swab or smear of the Peri-Anal skin is an unsatisfactory sample for ARC.

Note: A cytobrush may be used to collect an ARC, but the cytobrush may be more uncomfortable for the patient. Avoid using cotton swabs on a wooden stick as the handle may break and splinter during collection.

- f. Place the swab into a SurePath vial and agitate vigorously several times to release the cellular harvest.
- g. If a SurePath vial is not available, the swab can be smeared onto a glass slide and then spray-fixed as per the procedure for conventional cervical Pap smears.
- h. Tightly secure the lid of the vial and place into a biohazard transport bag with the matching requisition in the outer pocket.

#### 11. Other

Please consult with the Department of Cytology at (704) 304-5985 prior to obtaining any specimens not listed above.

### C. Specimen Transport

1. CMC
  - a. Please deliver cytology specimens directly to the cytology department located in the laboratory on the 4<sup>th</sup> floor, G wing between the hours of 7:30am and 5pm.
  - b. Outside of normal operating hours please deliver cytology specimens to central processing also located in the laboratory on the 4<sup>th</sup> floor, G wing.
2. CMC-Mercy
  - a. Please deliver cytology specimens directly to the cytology department located in the laboratory on the 3<sup>rd</sup> floor between the hours of 7:00am and 5pm.
  - b. Outside of normal operating hours please place specimens into the refrigerator located in histology on the 3<sup>rd</sup> floor.
3. CMC-Pineville
  - a. Please deliver cytology specimens to the CMC-Pineville central processing laboratory area.
  - b. A regular courier run transports the specimens to CMC-Mercy for processing.
4. Other facilities
  - a. Specimens from other locations are to be sent to the central processing area located at CMC.
  - b. Please consult with the courier system for your facility as to their procedures regarding specimen transport to CMC.

## QUICK TABLE FOR COLLECTION OF NON-GYNECOLOGIC CYTOLOGY SPECIMENS

Specimen Type	Slides	Fluid
Fine Needle Aspirations	½ slides <b>immediately</b> fixed in 95% alcohol  ½ slides air-dried	Rinse needle and syringe in 30 ml of CytoLyt.
Bronchial Brushings and Washings Gastrointestinal Brushing and Washing Urinary Brushing and Washing Pelvic/Peritoneal Washing Sputum Urine	None	Specimen container with 30ml of CytoLyt.
Pleural (Thoracentesis) Fluid Ascitic (Paracentesis) Fluid Cerebral Spinal Fluid	None	Send fresh. Do Not Add Fixative! Refrigerate if transport is delayed.
SUPERFICIAL SCRAPINGS: Tzanck test (skin), oral, etc.	<b>Immediately</b> submerge slides in 95% alcohol	Do not use CytoLyt
Nipple Discharge	<b>Immediately</b> submerge slides in 95% alcohol	Do not use CytoLyt
Rectal Smear	Spray fixed slide if SurePath vial is unavailable	SurePath Vial
<b>Remember:</b>  Materials above may be obtained from the cytology department CMC.....(704) 355-4252 CMC-Mercy.....(704) 304-5985 Ratio of 3 parts specimen to 1 part CytoLyt. Send a completed Non-Gynecologic requisition for each specimen submitted.		

# Collection of Fine Needle Aspiration Specimens v05.1

## XI. Purpose

Fine Needle Aspirations (FNA) can provide a rapid, simple, and inexpensive means to evaluate a mass. There are many limitations to the interpretation of FNA specimens. The most common limitation is improperly obtained or inadequately fixed material. This procedure is to provide standard cytopreparatory procedures for nurses and physicians so that an optimal specimen is collected.

## XII. Materials Needed

- Cytology specimen requisition\*
- Syringe and needle containing specimen
- Glass slides\*
- Plastic slide jar containing 95% alcohol\*
- Styrofoam slide carrier\*
- Specimen cup containing 30cc of CytoLyt\*

\*Materials above may be obtained from the cytology department

CMC..... (704) 355-4252

Mercy..... (704) 304-5985

## XIII. Procedure

- A. Fill out the cytology requisition
  1. Full name of patient
  2. Date of Birth
  3. Gender
  4. Ordering physician's full name
  5. Specific specimen type/site (be specific, include quadrant, right, left, o'clock etc.)
  6. Date of collection
  7. Unique patient identifier (MRN, Hospital Number, SSN, Chart #)
  8. Pertinent clinical data
  9. Number of slides submitted
- B. Attach a copy of insurance information to the requisition.
- C. Label the frosted end of the glass slides (in pencil) and the specimen cup (marker) with the patient's name and specimen type/site.
- D. Collect Optimal Fine Needle Aspiration Specimen

### Notes to clinicians:

- When the needle is in the lesion, use a rapid back and forth motion to shear off cells into the needle. A 25-gauge needle should be used in most cases. A 27-gauge needle is useful in vascular organs such as thyroid to decrease obscuring blood.
- When sampling non-cystic (solid) lesions, the aspiration should conclude with no more than a drop of blood in the hub of the needle. A bloody aspirate expressed onto the glass slides obscures diagnostic cells as well as important background clues (i.e., colloid, stroma, etc.).
- For cystic or necrotic lesions, sample the cyst wall or periphery and re-aspirate any remaining mass after cyst drainage.
- Most lesions should be sampled 2 to 4 times with a set of slides prepared from each pass.
- Always submit pairs of smears as one slide immediately submersed in 95% alcohol and one slide air-dried.



- The needle should be rinsed in CytoLyt after each set of slides is prepared to optimize cellular yield. Never reuse a needle rinsed in CytoLyt.
- Thick smears are often Non diagnostic. Prepare smears as indicated in Figures 2 thru 4 using 1-2 drops of aspirated material.
- Contact Dr. McDermott (Medical Director of Cytology) at 355-3471 or page 346-5880 if repeatedly receiving interpretations that are “limited”, “sub optimal”, or “non-diagnostic”.
  - E. Gently express 1-2 drops of the needle content onto a labeled clean glass slide (Figure 2). The total number of slides depends on number of passes and the amount of material collected.
  - F. Working quickly to prevent air-drying, prepare smears by placing another labeled clean glass slide face down, on top of the expressed material (Figure 3)
  - G. Gently Pull slides apart horizontally in opposite directions (Figure 3).
  - H. Immediately submerge one slide per pair in the plastic jar containing 95% alcohol (Figure 4).
  - I. Place the other slide into the Styrofoam slide container and allow to air dry (Figure 5).
  - J. Express and rinse the syringe into the specimen cup containing CytoLyt. Never reuse a needle rinsed in CytoLyt.
  - K. When the procedure is complete note on the cytology requisition the number of air dried slides, number of alcohol fixed slides, amount of CytoLyt fluid, and the number of passes.
  - L. Tightly secure the lids of the containers and place all specimen materials into a biohazard bag. Place the requisition in the outer pouch of the specimen bag and transport specimen to laboratory

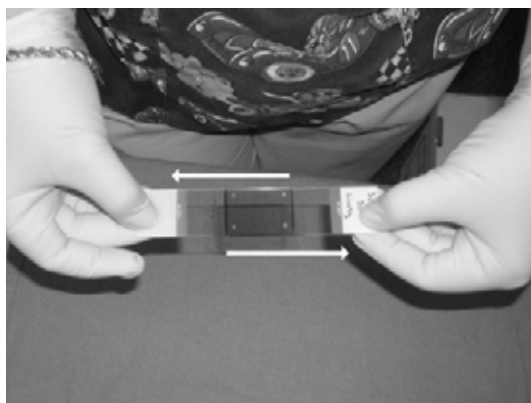
## **Tips For Optimal Fine Needle Aspiration**

1. Most lesions should be sampled multiple times (2-4x) with a set of slides prepared from each pass. The needle should be rinsed in CytoLyt after each set of slides is prepared to optimize cellular yield, then discarded.
2. When the needle is in the lesion, use a rapid back and forth motion to shear off cells into the needle. A 25-gauge needle should be used in most cases. A 27-gauge needle is useful in vascular organs such as thyroid to decrease obscuring blood.
3. When sampling non-cystic (solid) lesions, the aspiration should conclude with no more than a drop of blood in the hub of the needle. A bloody aspirate expressed onto the glass slides obscures diagnostic cells as well as important background clues (i.e., colloid, stroma, etc.).
4. Always submit paired direct smears as one slide air-dried and one slide immediately alcohol-fixed.
5. For cystic or necrotic lesions, sample the cyst wall or periphery and re-aspirate any remaining mass after cyst drainage.
6. Thick smears are often Non diagnostic. Prepare smears as indicated in Figures 2-6 using 1-2 drops of aspirated material.
7. Contact Dr. McDermott, Medical Director of Cytology, at (704) 355-3471/pager (704) 346-5880 if repeatedly receiving interpretations that are “limited”, “sub optimal”, or “non-diagnostic”.



**Figure 2**

Express 1-2 drops of specimen onto a glass slide 1/3<sup>rd</sup> of the way from the frosted end. Repeat for each pass. Quickly work through figures 2-6.

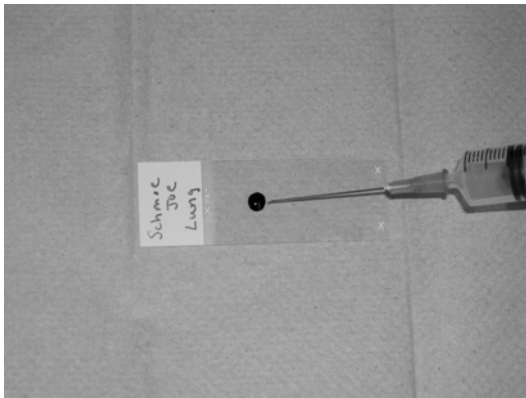


**Figure 1**

#### Materials Needed

- Syringe and needle
- Glass slides\* (labeled with pencil)
- Plastic slide jar containing 95% alcohol\*
- Styrofoam slide carrier\*
- Specimen Cup containing 30cc of CytoLyt\*

\*Materials may be obtained from the cytology department. See Section II of this procedure.



**Figure 3**

- Place a clean slide face down on top of the expressed material.
- Gently pull slides apart horizontally in opposite directions.
- Immediately submerge one slide per pair in 95% alcohol jar (see figure 4).
- Allow one slide per pair to air dry (see figure 5).



**Figure 5**

Place one air-dried slide per pair into the Styrofoam slide container.



**Figure 4**

Immediately submerge one slide per pair in the plastic jar containing 95% alcohol.



**Figure 6**

Express the remainder of the specimen into the specimen cup containing CytoLyt. Rinse the needle and syringe by aspirating the CytoLyt into the syringe and expressing it back into the specimen container. Never reuse a needle or syringe rinsed in CytoLyt.



---

**Section 9**

**Surgical Pathology/ Histology Specimen  
Collection Procedures**

**Carolinas Medical Center  
Laboratory Procedures Manual  
Surgical Pathology/Histology**

**I. Policy:**

- A. All material removed from patients during operations in the operating room, hospital floors, emergency room, physician offices and surrounding hospitals will be submitted to the histology laboratory in a properly labeled container accompanied by a properly filled out Surgical Pathology Request Form.

**II. Procedures:**

- A. Each specimen will be placed in a separately labeled containing 10% formalin unless otherwise ordered by the physician (See Procedures for Specific Specimens).
- B. Container labels must including the following:
  - 1. Patient's Name: Last, First, Middle
  - 2. History Number
  - 3. Body site or specimen type
  - 4. Collector's initials
- C. A Surgical Pathology Request form must accompany and be attached to the specimen. Requisitions must include the following:
  - 1. Patient's Name: Last, First, Middle
  - 2. History Number
  - 3. Patient Location
  - 4. Ordering Physician (Printed)
  - 5. Test to be performed (including any specific instructions)
  - 6. Date and time specimen was collected
  - 7. Specimen type or body site
  - 8. Diagnosis and procedure performed
- D. Specimens are delivered to the Histology Laboratory between 5 a.m. until 5:30 p.m. Monday through Friday and 5 a.m. until 12 noon on Saturdays. During other hours, specimens are delivered to Central Processing on the 4<sup>th</sup> level (phone # 355-5818).

**III. Procedure for Specific Specimens:**

- A. Routine Specimens: Place each specimen in a properly labeled container of 10% formalin and attach a completed Surgical Pathology Request form to the specimen container.
- B. Rush Specimens: Place each specimen in a properly labeled container of 10% formalin, attach a properly filled out Surgical Pathology Request form. Mark the "RUSH" with a red check. Deliver specimen immediately to the Histology Laboratory.
- C. Frozen Section Specimens: Place specimen on saline moistened gauze in a plastic container (never place tissues for frozen section in 10% formalin). Ensure the F/S box on the Surgical Pathology Request form is checked in red. Attach a label and Surgical Pathology Request form to the container. Call 355-3472 (Histology) to alert

Pathologists a frozen section specimen is on the way to the laboratory. Take specimen immediately to the Histology Laboratory. After 5:30 p.m. on weekdays, 12:00 noon Saturdays and all day Sunday. Call 355-5818; Laboratory will notify Pathologist on call.

- D. Fresh Specimens: Tissue not preserved in 10% formalin is placed on a saline moistened gauze and placed in a properly labeled plastic impervious container. Attach a filled out Surgical Pathology Request form. Write the word “**Fresh**” on the form in red. Deliver specimen immediately to the Histology Laboratory. The following procedures require a fresh specimen:
1. Touch Preparation: Note “**Touch Prep**” on Surgical Pathology Request Form.
  2. Muscle and Nerve Biopsies: Place tissue on saline moistened gauze in a properly labeled container and attach Surgical Pathology Request form. Notify Histology (355-3472) that biopsy is being performed. Once obtained, deliver to Histology immediately.
  3. Kidney Biopsy: Submit specimen on saline moistened gauze in a properly labeled container with accompanying Surgical Pathology Request form. Deliver specimen to Histology immediately.
  4. Bone Biopsies for Metabolic Bone Studies: Specimen is delivered fresh in a properly labeled container with filled out Surgical Pathology Request form. Deliver immediately to Histology Laboratory. The Histology Lab will place the specimen in a 70% alcohol solution. If the surgeon wishes, the specimen will be sent to the Orthopedic Hospital. The Histology Lab will handle the request.
- E. Liver Biopsy for Quantitative Iron Analyses: Specimen is placed in a properly labeled metal free container either fresh or in 10% formalin. Attach a completed Surgical Pathology Request form.
- F. Specimens for Immunofluorescence Studies: Specimen is placed in a properly labeled container filled with transport media which is available upon request from the Histology Laboratory.
- G. Testicular Biopsies: Place specimen in a properly labeled container filled with Bouins Fixative (Picric acid and alcohol) which is available from the Histology Laboratory.
- H. Large Specimens: (Specimens too large for the largest formalin filled container) Place specimen in a double trash bag with several blue liners or in a basin which is then placed in a double trash bag. Attach a label and a Surgical Pathology Request form to the outside of the bag and deliver immediately to the Histology Laboratory.





---

## Section 10    Cytogenetics

## CAROLINAS LABORATORY NETWORK

---

### PROCUREMENT OF TISSUE SPECIMENS FOR CHROMOSOMAL ANALYSIS

#### **PURPOSE**

To obtain and transport tissue from skin biopsy or pregnancy losses to the Parke Cytogenetics Laboratory.

#### **SPECIMEN**

Fetal tissue, extraembryonic membranes, chorionic villi, skins

#### **PROCEDURE**

##### **A. Pregnancy loss:**

1. If material is obtained by way of D&E early in the pregnancy, send the entire specimen (enclosed in sock) so that the technologists can identify fetal tissue, chorionic villi/membranes and avoid maternal decidua.
2. Often the material from D&E's have enough blood and fluids that additional media is not needed, however, if the material is likely to dry out, tissue culture media should be added to it. Media may be obtained from the Parke Cytogenetics Laboratory. Call 355-3848.
3. If chromosome studies were ordered on a stillbirth, a skin biopsy, Achilles tendon and placental tissue from the fetal surface should be obtained in a sterile manner.
4. Wipe the area with alcohol. **DO NOT USE BETADINE** which will render the tissue nonviable. Obtain the specimens by punch biopsy or sterile scalpel blade.
5. The specimen should be placed in media and delivered to the cytogenetics lab.
6. If there is a delay in delivery (e.g. after 5:00 p.m. during the week or on the weekend), place the specimen in a refrigerator. **DO NOT FREEZE.**

##### **B. Skin biopsy from child or adult:**

1. Disinfect the area from which the biopsy is to be obtained with alcohol. **DO NOT USE BETADINE.**
2. Obtain specimen by punch biopsy or sterile scalpel.
3. Place specimen in tissue culture media.
4. If there is a delay in delivery (e.g. after 5:00 p.m. during the week or on the weekend), place the specimen in a refrigerator. **DO NOT FREEZE.**

##### **C. Notification and Delivery to the Parke Cytogenetics Laboratory**

1. Specimens can be sent via central processing through the CLN laboratory.
2. To inform cytogenetics that a specimen will be arriving, call the cytogenetics laboratory at **355-3848** during working hours 8-5 Monday through Friday. If after hours during the week M-F, call **355-3159**, and leave a message on voice mail to indicate that we will be receiving a specimen so PCL personnel can follow up on the specimen if it is not received in a timely manner.

## PROCUREMENT OF TISSUE SPECIMENS FOR CHROMOSOMAL ANALYSIS

3. After 5:00 p.m. on Fridays and anytime on weekends, call 355-3159 and leave a message to indicate that we will be receiving a sample on Monday. If the physician orders a **STAT** processing, page the cytogenetics "on call" technologist at 5011 (dig) and the technologist will pick it up. Once again, place specimens in media, if needed, and place in refrigerator until delivery.

**Do Not Put Specimens in Formalin and Do Not Freeze or Place on Ice. Refrigerate Only or cells will be nonviable. Always place in media if there is a possibility of drying out. Saline may be used as a last resort and if delivered the next day.**

Specimens should be sent by courier, if possible. Cytogenetics personnel will pick them up if necessary. All tissues should be sent to the Parke Cytogenetics Laboratory with a laboratory lab request form enclosed. Tests may be ordered through Sunquest.

## CAROLINAS LABORATORY NETWORK

---

### STEPS FOR PROPER TISSUE SAMPLE TRANSPORT TO CYTOGENETIC LAB

1. This tissue transport media may be stored frozen and thawed prior to use.
2. Please do not place patient specimen in frozen media or freeze patient specimen in the media.

Keep patient specimen in media at room temperature or refrigerate. **DO NOT FREEZE.**

3. After obtaining patient specimen:  
**Monday through Friday 8:00 – 5:00 call Genetics at 355-3848 for pick up or transport to our lab. Saturday, Sunday, and Holidays, after hours call our 355-3159** our answering for machine for Monday morning pickup or transport. Give details. Ex.(pt. Name, where to pick up specimen, contact name, and phone number).
4. Fill out cytogenetics request form to accompany sample. Include indication, and history number if available, otherwise insurance information and patient social security. Also include Gestational age, and Requesting Physician.
5. For more detailed specimen procurement instructions please phone our lab for complete protocol.