SOUTHEAST GEORGIA
HEALTH SYSTEM

LABORATORY SERVICES

LABORATORY CONTACT PHONE NUMBERS

DEPARTMENTS

Customer Service	**466-2702**
Blood Bank	**466-2740**
Chemistry	**466-2730**
Hematology	**466-2737**
Microbiology	**466-2760**
Serology	**466-2733**
Urine/Coagulation	**466-2734**
Point of Care	**466-2733**

PERSONNEL

Laboratory Director	**466-2799**
Core Lab Manager	**466-2790**
Blood Bank Supervisor	**466-2797**
Microbiology Supervisor	**466-2794**
LIS Specialist	**466-2793**
Dept. Support Coordinator	**466-2795**
Outreach Coordinator	**466-2710**
Courier (Pager)	**262-7207**

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GENERAL INFORMATION

Southeast Georgia Health System Brunswick Campus Laboratory is a licensed, full-service clinical, anatomic and reference laboratory. We have earned our reputation for excellence by continuously striving to meet the healthcare needs of Southeast Georgia. We are committed to ensuring quality care and exceeding customer expectations.

The laboratory offers a broad range of analytical services, most of which are listed in this manual. However, in direct response to needs of the medical community, new methodologies and customized services are continually being added. Please contact our customer service department at (912) 466-2702 for test ordering and specimen collection information for procedures not listed in this manual.

QUALITY ASSURANCE

Southeast Georgia Health System Brunswick Campus Laboratory has established an ongoing plan for quality assurance which is the central theme of our operation. This plan provides a strategy that will result in quality testing of patient specimens, safe working conditions for the laboratory's personnel, and full compliance with regulatory and accreditation agencies.

The laboratory has implemented a Quality Management plan to objectively evaluate the quality of services provided. The laboratory maintains internal quality control programs and participates in external quality control programs including proficiency testing through the College of American Pathologists and American Association of Bioanalysts to monitor the accuracy of testing performed in the laboratory.

ACCREDITATION

Southeast Georgia Health System Brunswick Campus Laboratory is subject to federal and state standards of performance under the Clinical Laboratory Improvement Act of 1988, FDA and Georgia Department of Human Resources Clinical Laboratory Licensure agencies.

The laboratory is accredited/licensed by the following agencies to provide laboratory services:

- Joint Commission of Accreditation of Healthcare Organizations (JCAHO)
- College of American Pathologists (CAP) #14634-01
- Clinical Laboratory Improvement Act (CLIA) #11D0265208
- American Association of Blood Banks (AABB) #27814
- Georgia Department of Human Resources, Office of Regulatory Services, #063-001
- Food and Drug Administration #3004545722

SERVICES

Southeast Georgia Health System (SGHS) Brunswick Campus Laboratory is proud to offer the following services:

CLIENT SERVICES

In order to better serve our customers, the laboratory designed the telecommunications system within the Clinical Laboratory to direct calls to a central location. Customer service specialists are available 24 hours a day to assist clients with test availability, specimen requirements, test add-ons, test result inquiries, and general information about laboratory services at Southeast Georgia Health System Brunswick Campus.

For questions of a technical nature, clients will be referred to appropriate department personnel. Clients will be able to consult directly with medical technologists, pathologists and the laboratory medical director. Our board certified pathologists serve as active clinical consultants and are available for consultation 24 hours a day.

PHLEBOTOMY

The phlebotomy department is responsible for obtaining blood samples from patients and serves as a central processing area for the laboratory.

BLOOD BANK

The Blood Bank is responsible for prenatal testing, detection of hemolytic disease of the newborn and maintaining a safe supply of blood and blood products. The Blood Bank performs compatibility tests, Type and Screens and antibody identifications.

CHEMISTRY

The chemistry department is equipped with state of the art blood analyzers which are used for a variety of blood constituents such as glucose, cholesterol and triglycerides. They also measure hormone levels, drug levels, cardiac enzyme status, protein disorders, and tumor markers such as PSA and CEA which aide in the detection of early stage cancer.

HEMATOLOGY/COAGULATION

The hematology/coagulation department uses specialized instrumentation for cell counting and coagulation testing to provide accurate results and rapid turnaround time for a variety of hematology and coagulation tests.

MICROBIOLOGY

The microbiology department performs routine bacteriology, parasitology, mycology, and mycobacteriology. This department isolates and identifies pathogenic bacteria, fungi/yeast, ova & parasites, and mycobacteria. Automated susceptibility testing is also performed on specific bacteria to determine appropriate antibiotic therapy.

ESOTERIC TESTING/REFERENCE LABORATORIES

We are able to provide our clients with additional diagnostic tests through the use of CLIA-approved reference laboratories specializing in esoteric laboratory testing. If a test which is not performed in the Southeast Georgia Health System Laboratory is needed for patient care, we will refer the specimen to a laboratory that performs that test whenever possible. Southeast Georgia Health System currently uses Quest Diagnostics as its primary reference lab for tests not performed in house. Please contact our customer service specialists for additional information.

OUTPATIENT SERVICES

Our Outpatient Service Center is conveniently located on the first floor of the Outpatient Care Center and is staffed from 7:00 AM - 5:30 PM, Monday through Friday and 8:00 AM - 4:30 PM on Saturday.

Physicians referring a patient to Southeast Georgia Health System for outpatient work should fax orders to Admissions. The patient must have a written order. On arrival, the patient should report to the first floor of our Outpatient Care Center.

NOTE: All tests requiring more than 30 minute completion such as glucose tolerances, sweat tests and therapeutic phlebotomy should be scheduled at least 24 hours in advance.

LABORATORY OUTREACH SERVICES

Laboratory outreach services provide personalized support for our clients. We work directly with each client to meet their individual requirements including test menus, courier service, and reporting needs.

COURIER SERVICES

Southeast Georgia Health System Brunswick Campus laboratory provides courier service for the transportation of specimens from physicians' offices and clinics to our laboratory for analysis. Routine courier service is available with scheduled pick ups to meet client's needs. STAT pick ups are also available upon request. In addition, the courier delivers supplies and hard copy reports to our clients.

SUPPLIES

All supplies necessary for the proper collection and submission of specimens to our laboratory are provided to our clients at no charge. Completed supply requisitions may be given directly to the courier or faxed to (912) 466-2713. Orders are routinely filled the following business day. We also provide Outpatient Laboratory Services forms preprinted with client information for convenient test selection.

PROCEDURES

REPORTING

Whenever possible, tests are completed and reports generated within 24 to 36 hours of receipt of the specimen in the laboratory. Resulting times for specific tests are indicated in the Test Directory in this manual. Verified test results are available immediately in the Hospital Information System which is available to qualifying physicians and staff through our on-line interface. Upon completion, outpatient laboratory test results are distributed to clients by auto-fax or hard copies of reports are mailed or delivered to clients the following business day.

Tests requested on a STAT basis are analyzed as soon as the specimen is received in the laboratory. Once testing is complete, the results are called or faxed to the requesting physician as indicated on the test requisition.

The laboratory designates certain test values as critical values. For outpatient laboratory test results, all critical values obtained during the testing process are called directly to the ordering physician.

TEST ADD-ONS

Southeast Georgia Health System Laboratory can perform additional testing on specimens previously submitted, providing the following conditions apply:

- Original specimen type is acceptable for additional testing requested
- Sufficient volume is available
- Specimen integrity has been maintained

Verbal orders received to request additional testing must follow the appropriate written authorization protocol.

VERBAL ORDER AUTHORIZATION

Verbal orders for laboratory tests are permitted by Southeast Georgia Health System only if the ordering physician or authorized individual agrees to complete written authorization for the test request within 30 days. The laboratory will issue a written authorization form to the ordering physician or authorized individual immediately upon receipt of the verbal order. The written authorization form must be completed and returned to the laboratory as soon as possible. The form may be faxed to the laboratory or given to the Southeast Georgia Health System courier.

REFERENCE RANGES

Each laboratory report includes the current reference ranges for the specific tests performed.

CONFIDENTIALITY

It is the policy of Southeast Georgia Health System to outline requirements governing disclosure of health information in compliance with all applicable governmental and health care agency laws, regulations, and standards. The Southeast Georgia Health System Laboratory has established guidelines safeguarding the confidentiality of individuals' laboratory test results and other health information.

BILLING

Southeast Georgia Health System offers patient, client or third party billing. It is the responsibility of the requesting facility to designate the appropriate type of billing required for the services rendered and to provide correct and complete billing information.

MEDICAL NECESSITY

In 1996, the Centers for Medicare and Medicaid Services (CMS) announced its position on medical necessity. CMS states that all laboratory tests whether ordered individually, or as part of a panel should be medically necessary. Medicare/Medicaid/Champus or any other federally funded program will only pay for services that it determines to be medically necessary. For more information, please see the CMS website at www.cms.gov.

ADVANCED BENEFICIARY NOTICE

An ABN is a written notification required by Medicare if a test does not meet medical necessity requirements. The purpose of the ABN is to inform the patient that in some instances payment may be denied by their federally funded program. If this occurs the patient may have to pay for the services. An ABN should be completed each time it is determined Medicare will deny payment.

OUTPATIENT LABORATORY SERVICES FORM

For billing and laboratory compliance purposes, a laboratory requisition must include: patient's full legal name, date of birth, Social Security number, phone number, ordering physician, ICD-9 code/diagnosis and tests ordered.

To ensure that all necessary information is provided for accurate testing, reporting, and billing , please complete the requisition as outlined below (refer to sample form).

PATIENT INFORMATION:

- Name (last, first, middle)
- Sex - M (male) or F (female)
- Date of birth
- Social Security number
- Address
- Name of the responsible party (last, first, middle) and relationship to the patient if not the patient (i.e. guardian).
- Home telephone number and work telephone number
- Party to be billed - Patient, Doctor or Other (specify)
  NOTE: A copy of the patient's insurance card(s) (front and back) must be provided for patient billing.
- Medicare/Medicaid number if applicable

SPECIMEN COLLECTION INFORMATION:

- Date and time specimen was collected
- Name or initials of the person who collected the specimen
- Printed name of the physician who ordered the tests
- Indicate if the tests are considered STAT
- Fax number if results are to be faxed
- Physician's signature
- Date
- ICD-9 diagnosis code and/or diagnosis

  NOTE: ICD-9 codes/ diagnosis information must be provided for all tests ordered as documentation of the medical necessity of the service. The ICD-9 code should refer to the clinical signs or symptoms which led the physician to order the laboratory test(s). Do not use "Rule-outs" or DRG codes.

TEST INFORMATION:

- Mark designated tests or panels requested.
- List additional tests not included on the form in the "Other Tests" section.
- List other specimen information in the "Other Specimen Type/Source" section.

SOUTHEAST GEORGIA HEALTH SYSTEM

OUTPATIENT LABORATORY SERVICES

Brunswick Campus
2415 Parkwood Drive
Brunswick, GA 31520
Phone: (912) 466-2702
Fax (912) 466- 2713

Camden Campus
2000 Dan Proctor Drive
St. Marys, GA 31558
Phone: (912) 576-8432
Fax (912) 576-8433

PATIENT INFORMATION — *Please Print Clearly*

Patient's Name (Last, First, Middle)	Sex ☐M ☐F	Date of Birth / /	Social Security Number
Street Address	City	State	Zip Code
Responsible Party (Last, First, Middle)	Relationship	Home Phone	Work Phone
Bill: ☐ Patient ☐ Doctor ☐ Other (specify) ☐ Insurance Card Attached		Medicare Number	Medicaid Number

SPECIMEN COLLECTION INFORMATION — *Complete for all specimens*

Collection Date	Collection Time	Collected By	Physician (print name)	STAT?	Fax Results?
/ /	: AM / PM				#

ICD-9 DIAGNOSIS CODES *Required*

Please provide a diagnosis code for all tests ordered as supported by your patient's record. Compliance is mandatory and regulated - All tests must have ICD-9 diagnosis codes as deemed "Medically Necessary" by Medicare to be eligible for coverage. If the diagnosis does not meet medical necessity guidelines, complete an ABN (form CMS-R-131-L).

Physicians Signature _____ Date _____

✓	PANELS	CPT	
	BASIC METABOLIC PANEL	80048	LG/G
	Bun, Calcium, Chloride, Carbon Dioxide, Creatinine, Glucose, Potassium, Sodium		
	COMPREHENSIVE METABOLIC PANEL	80053	LG/G
	Albumin, Alkaline Phosphatase, ALT (SGPT), AST (SGOT), Bilirubin (Total), BUN, Calcium, Chloride, Carbon Dioxide, Creatinine, Glucose, Potassium, Protein (Total),Sodium		
	ELECTROLYTE PANEL	80051	LG/G
	Carbon Dioxide, Chloride, Potassium, Sodium		
	HEPATIC FUNCTION PANEL	80076	LG/G
	Albumin, Alkaline Phosphatase, ALT (SGPT), AST (SGOT), Bilirubin (Direct), Bilirubin (Total), Protein (Total)		
	LIPID PANEL	80061	LG/G
	Cholesterol, Triglyceride, HDL Cholesterol		
	RENAL FUNCTION PANEL	80069	LG/G
	Albumin, BUN, Calcium, Carbon Dioxide, Chloride, Creatinine, Glucose, Phosphorus, Potassium, Sodium		
	ACUTE HEPATITIS PANEL	80074	R
	Hepatitis A antibody IgM, Hepatitis B core antibody IgM, Hepatitis B surface antigen, Hepatitis C antibody *(To order separate tests, list under Other Tests)*		
	THYROID TESTS		
	TSH	84443	G/R
	Free T4	84439	G/R
	Free T3	84481	G/R
	CARDIAC TESTS		
	CPK, total	82550	LG
	CKMB	82553	LG
	Troponin I	84484	LG
	COAGULATION		
	APTT	85730	B
	Protime / INR	85610	B
	D-Dimer	85379	B

✓	SINGLE TESTS	CPT	
	HEMATOLOGY		
	CBC / Diff. / Platelets	85025	L
	CBC	85027	L
	Retic Count	85045	L
	Sed Rate	85652	L
	Hemoglobin	85018	L
	Hematocrit	85014	L
	THERAPEUTIC DRUG MONITORING		
	Digoxin	80162	R/G
	Lithium	80178	R/G
	Phenytoin (Dilantin)	80185	R/G
	Valproic Acid	80164	R/G
	Vancomycin (peak/trough)	80202	R/G
	SINGLE TESTS (ALPHABETICALLY)		
	Albumin	82040	LG/G
	Alk. Phosphatase	84075	LG/G
	ALT (SGPT)	84460	LG/G
	Ammonia	82140	LG
	Amylase	82150	LG/G
	ANA	86038	G/R
	AST (SGOT)	84450	LG/G
	Bilirubin, direct	82248	LG/G
	Bilirubin, total	82247	LG/G
	BUN	84520	LG/G
	Calcium	82310	LG/G
	CEA	82378	R/G
	Cholesterol	82465	LG/G
	Cortisol	82533	R/G
	Creatinine	82565	LG/G
	Creatinine Clearance*	82575	U
	*Urine and Serum required		R
	CRP	86140	G/R
	Ferritin	82728	G/R
	Folate	82746	G/R
	Gamma GT (GGT)	82977	G/R
	Glucose	82947	LG/G
	Glycohemoglobin (HgbA1C)	83036	L

✓	SINGLE TESTS	CPT	
	hCG Quantitative	84702	G/R
	HDL Cholesterol	83718	LG/G
	H. pylori Antibody	86677	G/R
	HIV 1/2 w/Western Blot on positive screens	86703	R
	IgE	82785	G/R
	Iron	83540	G/R
	Iron Binding Cap. (TIBC)	83550	G/R
	Lactate	83605	GY/LG
	LDH Total	83615	G/R
	Lipase	83690	LG/G
	Magnesium	83735	G/R
	Microalbumin	82043	U
	Microalbumin/Creat Ratio		U
	Mono Test	86308	R/G
	Phosphorus	84100	LG/G
	Potassium	84132	LG/G
	Pregnancy Test, Serum	84703	G
	Pregnancy Test, Urine	81025	U
	PSA	84153	R/G
	PSA Screen Medicare OP Only >50 years old; Limit 1 / year	G0103	R/G
	RPR	86592	R
	Rheumatoid Factor	86431	G
	Rubella	86762	G
	Testosterone	84403	R
	Triglyceride	84478	LG/G
	Uric Acid	84550	G/R
	Vitamin B12	82607	G/R
	OTHER TESTS		
	OTHER SPECIMEN TYPE/SOURCE:		

✓	MICROBIOLOGY	CPT	
	RSV Antigen	87420	NS
	Chlamydia DNA Probe	87490	P
	GC DNA Probe	87590	P
	Fungus Stain	87205	
	Gram Stain	87205	
	C Diff Toxin	87324	ST
	Fecal Occult Blood	82270	ST
	Comp. Ova & Parasites	87177	O&P
	w/Trichrome	88313	O&P
	Giardia Antigen	87328	ST
	Cryptosporidium AG	87328	ST
	Rotavirus	87425	ST
	Influenza A & B	87400	
	HSV Culture	87252	VCT
	w/ID if positive	87253	
	Strep Culture (Group A) Throat	87081	S
	Strep Culture (Group B) Vaginal	87081	S
	Cultures: Susceptibility done on all positive cultures		
	Culture, Anaerobe	87075	
	Culture, Fungus, other	87102	
	Culture, GC Screen	87081	
	Culture, AFB	87116	
	w/ AFB Smear	87206	
	Culture, Blood	87040	
	Culture, Sputum	87070	
	Culture, Stool	87045	ST
	w/ Campylobacter	87046	ST
	Culture, Urine	87088	U
	Culture, Other	87070	
	Body Fluid, Wound, Other (Designate Source):		
	URINALYSIS	81003	U
	URINALYSIS WITH MICRO	81001	U
	Cath: _____ Void: _____ Clean Catch: _____		

Specimen Type:	G Gold	R Red	LG Lt. Green	GN Dark Green	L Lavender	GY Gray	B Blue	PK Pink	OT Other Tube	P Probe	NS Nasal Swab	S Swab	O&P O&P Cntr	CB Blood Cult. Bot.	VCT VCT Solution	ST Stool	BF Fluid	U Urine	24U 24 hr Urine	T Tissue	F Frozen	O Other
Containers Received																						

URINE DRUG SCREEN COLLECTION

1. Verify identification of donor (check one):

    - Driver's license
    - Other photo ID
    - Positive ID by the employer representative

2. Complete Step 1 on the Drug Testing Chain of Custody (COC) Requisition:

    - Employer name, address, phone and fax numbers
    - MRO name, address, phone and fax numbers, if applicable
    - Donor SSN (Social Security #) or employee ID
    - Donor name
    - Donor ID verified
    - Reason for test
    - Drug tests to be performed
    - Collection site name, address, phone and fax numbers

3. Have donor remove all unnecessary outer clothing (coats, jackets, etc.) and leave any personal items such as purses, briefcases and contents of pockets outside of bathroom.

4. Have donor wash and dry hands prior to collection.

5. Remove all cleaning solutions (hand soap, towelettes, cleanser, etc.) from bathroom.

6. Disable water supply to the faucets.

7. Add dye to toilet bowl, lifting lid to avoid messy splash.

8. Instruct patient NOT TO FLUSH TOILET as this would necessitate a re-collection of specimen.

9. Have donor select a collection cup and accompany him/her to the bathroom for collection of the specimen.

10. Remain outside the closed bathroom door until the collection is completed.

11. Receive the specimen from the donor.

12. Read the specimen temperature within 4 minutes of receiving specimen and indicate results in Step 2 of the COC requisition.

13. Inspect specimen for unusual color, odor or other signs of adulteration and note findings on COC requisition. Check toilet to make sure it has not been flushed.

14. Place cap on specimen bottle and apply tamper-proof seal and label to bottle.

15. Date the tamper-proof label/seal.

16. Have donor initial the tamper-proof label/seal.

17. Complete Section 2 of the COC requisition:

    - Printed Name and Signature of Collector
    - Time of Collection
    - Date of Collection
    - Specimen Bottle Released to Other: SGHS Lab Courier

18. Turn water back on and replace items removed earlier from bathroom.

19. Allow donor to wash hands and retrieve personal items.

20. Have donor complete section 4 of the COC requisition:

    - Donor's Signature
    - Printed Name of Donor
    - Date of Collection
    - Donor's Daytime and Evening Phone Numbers
    - Donor's Date of Birth

21. Place specimen inside specimen biohazard bag and seal bag.

22. Put COC requisition in outside pocket of specimen biohazard bag containing specimen.

23. Refrigerate specimen.

24. Page the Southeast Georgia Health System Laboratory courier for pick-up.

SPECIMEN COLLECTION AND HANDLING

All specimens collected for laboratory testing should be of the highest quality possible. Proper collection and handling is essential for maintaining specimen integrity. Specimen collection should cause minimal discomfort to patients and maximize their safety and comfort.

ALWAYS positively identify the patient by verifying the patient's name and date of birth.

SPECIMEN PREPARATION FOR PICK-UP

Label each specimen with the patient's first and last name, date and time of collection and collector's initials. Include complete and accurate patient information on the Outpatient Laboratory Services Form. The specimen and requisition must both be labelled with the correct patient name to be acceptable.

Place the properly labeled specimen inside a specimen bag and place the completed requisition in the outer pocket. Store all specimens at the correct temperature. Contact the Southeast Georgia Health System Laboratory courier for pick-up.

SPECIMEN INTEGRITY

The intent of the laboratory is to provide the most accurate and reliable test results possible. Proper specimen collection, handling, and transportation are essential for maintaining specimen integrity. Occasionally a specimen is unacceptable for analysis due to improper collection, labeling or handling. If a specimen is unsatisfactory for testing, we will notify your office.

REJECTION CRITERIA

- Specimen type inappropriate for test
- Specimen not collected correctly
- Incorrect container/tube used
- Insufficient specimen (QNS)
- No specimen received
- Clotted specimen
- Specimen not transported properly
- Unlabeled or mislabeled specimen
- Incomplete information on requisition (including no diagnosis code)
- No orders or wrong orders received with specimen
- Specimen received with needle still attached

NOTE: Any specimen submitted in unsanitary condition is dangerous to laboratory personnel and may not be accepted for testing.

IMPORTANT: Specimen collection and handling guidelines should be used as a reference for submitting specimens and are not intended to take the place of formal training in collection procedures.

Please refer to the Individual Test section for additional information on specimen collection, storage, and transportation requirements for specific tests. Contact our customer service specialists at 466-2702 for clarification of any specimen requirements before the specimen is collected.

URINE SPECIMEN COLLECTION

A. Collection of Random Urine Samples

1. Instruct the patient:

    a. To urinate into a clean urine container.
    b. To tightly cap container being careful to not touch the edges or inside of the container or cap.

2. Label the container with the patient's first and last name, source, date and time of collection. Place in a plastic bag and store in the refrigerator.

B. Collection of Midstream Urine Samples

1. Instruct the patient:

    a. To wash hands and cleanse genital area with towelettes provided. Uncircumcised male patients should retract foreskin while cleansing and urinating. Female patients should separate labia minora with fingers of one hand while cleansing and urinating.
    b. To urinate a small amount of urine into toilet, catch the middle portion into container (fill to half full), and void remainder into toilet.
    c. To tightly cap container being careful to not touch the edges or inside of the container or cap.

2. Label the container with the patient's first and last name, source, date and time of collection. Place in a plastic bag and store in the refrigerator.

C. Collection of First Voided Urine Samples

Collection of the first urine voided by a patient upon arising in the morning is required for some tests.

1. Instruct the patient:

    a. To wash hands and cleanse genital area with towelettes provided. Uncircumcised male patients should retract foreskin while cleansing and urinating. Female patients should separate labia minora with fingers of one hand while cleansing and urinating.
    b. To collect first 10-15 ml of urine in sterile container and pass remainder into toilet.
    c. To tightly cap container being careful to not touch the edges or inside of the container or cap.

2. Label the container with the patient's first and last name, source, date and time of collection. Place in a plastic bag and store in the refrigerator.

D. Collection of Timed Urine Samples:

1. Inform patient of collection, storage and transportation requirements. Provide the patient with the required collection container with appropriate preservatives.

2. Instruct the patient:

    a. To label the required collection container with the patient's name.
    b. To record the beginning time and date of collection.
    c. To urinate and discard the specimen voided at the beginning of the collection period.
    d. To collect all urine specimens during the remainder of the time period specified by the physician.
    e. To empty the specimens into the labeled urine collection container.
    f. To collect the urine obtained at the end of the timed collection period.
    g. To record the ending time and date of collection.

3. The collection container should be returned to the lab as instructed, as soon as possible after collection of the last specimen.

BLOOD SPECIMEN COLLECTION

PROCEDURE

Collect blood specimens using proper phlebotomy protocol.

Employees must observe standard precautions at all times. Gloves are to be worn during all phlebotomies and changed between collections. Hands should be washed before putting on gloves, after removal of gloves and in between each patient collection.

SUPPLIES

- Safety needles, 21g or less
- Butterfly needles, 22g or less
- Syringes
- Plastic blood collection tubes - The vacuum tubes are designed to draw a predetermined volume of blood.
- Tourniquets - Latex-free tourniquets are available.
- Antiseptic - Individually packaged 70% isopropyl alcohol wipes
- 2x2 Gauze
- Bandages or tape
- Specimen biohazard bags
- Sharps disposal container - An OSHA acceptable, puncture proof container marked "Biohazardous"

COLLECTION GUIDELINES

- Since prolonged stasis may result in alteration of some chemical values, a tourniquet should be used for a minimum period of time.

- Blood should not be taken while intravenous solutions are being administered or in the same syringe used to inject these solutions.

- Blood samples should be put into the tube appropriate for the test requested. **All tubes should be inverted several times immediately after being drawn.**

- If a patient has received radioisotope material just prior to blood draw for any radio assay, the test results may not be valid.

Gross lipemia can interfere with some assays. Therefore, it may be advisable to delay blood collection directly following a heavy meal.

ORDER OF DRAW

Tubes with different additives are used for collecting blood specimens for specific types of tests. The color of the rubber stopper is used to identify these additives.

In order to prevent contamination and carryover, blood specimens should be drawn in the following order:

Blood Cultures
Light Blue
Gold (SST)
Red
Light Green
Dark Green
Lavender
Gray
Pink

SPECIAL INSTRUCTIONS FOR USE OF SERUM SEPARATOR TUBES

Blood collection, separation and transport tube all-in-one

1. Collect blood specimen using correct venipuncture technique. Fill tube completely.
2. Gently invert SST tube 5 times to mix clot activator with blood.
3. Allow blood to clot a minimum of 30 minutes but no longer than 1 hour.
4. Centrifuge for 15 minutes at 1000-1300 Gs.
5. Remove from centrifuge. Barrier will have formed separating cells and serum.
6. Sample in SST tube is now ready to be transported to the laboratory.

THERAPEUTIC DRUG TESTING

For effective monitoring of certain therapeutic drugs, the following collection times are recommended.

DRUG	PEAK DRAW	TROUGH DRAW
Digoxin	Draw 8-24 hours after any dose	
Vancomycin	2 hours after infusion	Less than 30 minutes before next dose
Tobramycin	30 minutes after infusion	
Gentamicin	30 minutes after infusion	

DRAWING BLOOD FROM A PATIENT ON INTRAVENOUS THERAPY

Blood is to be drawn from the opposite extremity or below the IV line whenever possible.

A. Drawing blood above an IV

1. Laboratory staff will notify the nurse that the IV must be turned off and flushed with saline.
2. Delay drawing of blood for 5 minutes.
3. Perform venipuncture in prescribed manner and draw required amount of blood. Note on tube that blood was drawn above an IV that had been turned off for 5 minutes.
4. Notify the nurse immediately that the venipuncture is complete.
5. The nurse will resume the IV at the specified rate.

B. Blood drawn from a Central Line IV—one lumen

1. Laboratory staff will provide the specimen tubes and notify the nurse that blood is to be drawn.
2. The nurse will turn off the IV.
3. The nurse will draw and discard 5-10 ccs of blood.
4. The nurse will draw the required amount of blood and place it in the proper tubes.
5. Ensure that the tubes are labeled properly.
6. The nurse will flush the IV with 5 ccs of normal saline and restart the IV fluids.

C. Blood drawn from a Central Line IV—2-3 lumen

1. Proximal port will be used to draw specimen.
2. Laboratory staff will provide the specimen tubes and notify the nurse that blood is to be drawn.
3. The nurse will place all ports with IV fluid on hold.
4. The nurse will draw and discard 5-10 ccs of blood.
5. The nurse will draw the required amount of blood from the proximal port and place it in the proper tubes.
6. Ensure that the tubes are labeled properly.
7. The nurse will flush the IV with 5 ccs of normal saline and restart the IV fluids.

VACUTAINER BLOOD COLLECTION CODES

COLOR CODE	STOPPER COLOR	ADDITIVE	USES	SPECIMEN TYPE
LB	LIGHT BLUE	Sodium Citrate	Coagulation Tests	Plasma / Whole Blood
SS (Serum Separator)	GOLD	Clot Activator and Gel for Serum Separation	General Chemistry Tests	Serum
R	RED	Clot Activator	Serological Tests	Serum
LG	LIGHT GREEN	Lithium Heparin and Gel for Plasma Separation	STAT Chemistry Tests	Plasma / Whole Blood
GN	GREEN	Sodium Heparin	Specialized Tests	Plasma / Whole Blood
L	LAVENDER	K2EDTA	Hematology Tests	Plasma / Whole Blood
GY	GRAY	Sodium Fluoride	Lactate	Plasma / Whole Blood
P	PINK	K2EDTA	Immunohematology Testing (Blood Bank)	Plasma / Whole Blood
DB	DARK BLUE		Aluminum	Serum

Note: Blood cultures are always drawn first

TEST AVAILABILITY CODES

A	7 DAYS PER WEEK, AROUND THE CLOCK
B	MONDAY THROUGH FRIDAY, SET UP ONCE PER DAY
C	MONDAY THROUGH FRIDAY, SET UP TWICE PER DAY
D	REFERRED TO REFERENCE LABORATORY – REPORTED IN 3-5 DAYS
E	REFERRED TO REFERENCE LABORATORY - REPORTED IN 2-4 DAYS
F	7 DAYS PER WEEK, SET UP ONCE PER DAY
G	2 DAYS PER WEEK - DAYS SPECIFIED IN TEST DIRECTORY UNDER TEST NAME

ORGAN/DISEASE PANELS

	HEPATIC FUNCTION PANEL	BASIC METABOLIC PANEL	ELECTROLYTE PANEL	COMP. METABOLIC PANEL	RENAL FUNCTION PANEL
	80076 LG / G	80048 LG / G	80051 LG / G	80053 LG / G	80069 LG / G
Albumin	✓			✓	✓
T. Bilirubin	✓			✓	
D. Bilirubin	✓				
Alk. Phosphatase	✓			✓	
AST/SGOT	✓			✓	
ALT/SGPT	✓			✓	
Protein, total	✓			✓	
Sodium	✓	✓	✓	✓	✓
Potassium		✓	✓	✓	✓
Chloride		✓	✓	✓	✓
Carbon Dioxide		✓	✓	✓	✓
Glucose		✓		✓	✓
BUN		✓		✓	✓
Creatinine		✓		✓	✓
Calcium		✓		✓	✓
Phosphorous					✓

LIPID PANEL	
80061	LG/G
Cholesterol	
Triglycerides	
HDL Cholesterol	
LDL Cholesterol	

ACUTE HEPATITIS PANEL	
80074	R
Hepatitis A antibody - IgM	
Hepatitis B core antibody - IgM	
Hepatitis B surface antigen	
Hepatitis C antibody	

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
17 KETOGENIC STEROIDS - Total Adrenal Corticosteroids	U	24 hr urine preserved with 25 ml 50% acetic acid during collection	D	83582
17 KETOSTEROIDS	U	24 hr urine preserved with 25 ml 50% acetic acid during collection	D	83586
5 HYDROXYINDOLEACETIC ACID - 5 HIAA	U	24 hr urine preserved with 25 ml 50% acetic acid during collection	D	83497
ACETAMINOPHEN	R/G	1 ml serum	A	82003
ACETONE, SERUM	G	1 ml serum	A	82010
ACETONE, URINE	U	10 ml random urine	A	81002
ACID PHOSPHATASE, PROSTATIC	R	1 ml serum; Frozen	D	84060
ALBUMIN	LG/G	1 ml plasma or serum	A	82040
ALCOHOL, BLOOD	G/R	1 ml serum	A	82055
NOTE: *Non-alcohol preparation.*				
ALKALINE PHOSPHATASE	LG/G	1 ml plasma or serum	A	84075
ALPHA 1 ANTITRYPSIN	R	1 ml serum	E	82103
ALPHA FETO PROTEIN - Tumor Marker Test	R	1 ml serum; Refrigerate	D	82105
ALPHA FETO PROTEIN - NTD	R	1 ml serum; Refrigerate	D	82105
NOTE: *Information needed on requisition: Patient's date of birth / Date of collection / Gestational age on collection date / Maternal weight / Date of LMP or date and gestational age of ultrasound or date and gestational age at time of last physical exam / Patient's age /Twin pregnancy? / Patient insulin dependent diabetic prior to pregnancy?*				
ALUMINUM LEVEL	DB	1 ml serum (preferred)	D	82108
NOTE: *Draw one 7 ml red top tube and discard. Draw dark blue top tube, place in upright position and allow blood to clot for one (1) hour. Centrifuge for 10 minutes. Pour off serum into acid-washed container supplied by the reference lab.*				
AMIKACIN	R/G	1 ml serum	D	80150
AMINOPHYLLINE	R/G	1 ml serum	A	80198

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
AMITRIPTYLINE	R	1 ml serum; Refrigerate	D	80152
AMMONIA	LG	1 ml plasma	A	82140
NOTE: *Place on ice and deliver immediately to lab.*				
AMPHETAMINE, URINE SCREEN	U	40 ml random urine	A	80101
AMYLASE, SERUM	LG/G	1 ml plasma or serum	A	82150
AMYLASE, URINE	U	10 ml random or timed urine	A	82150
ANGIOTENSIN 1 CONVERTING ENZYME - ACE	R	1 ml serum; Refrigerate	D	82164
ANTINUCLEAR ANTIBODY - ANA	R	1 ml serum	Monday, Wednesday, Friday	86038
ANTIBODY SCREEN	R	7 ml EDTA whole blood	F	86850
ANTIGEN SCREEN	L	7 ml EDTA whole blood	F	86903
APTT - ACTIVATED PARTIAL THROMBOPLASTIN TIME	LB	0.5 ml citrated plasma	B	85730
NOTE: *Fill tube completely, spin immediately and remove citrated plasma to aliquot tube. Refrigerate. Freeze if testing will be done more than 4 hours after collection.*				
ASO QUANT	R	2 ml serum	D	86063
ANTI MITOCHONDRIAL ANTIBODIES	G/R	1 ml serum	D	86256
ANTI THYROGLOBULIN ANTIBODIES	G	1 ml serum	D	86800
ANTI TREPONEMAL ANTIBODIES	G	1 ml serum	E	86781
B-12	G/R	1 ml serum	A	82607
BARBITURATE, URINE SCREEN	U	40 ml random urine	A	80101
BENZODIAZEPINE, URINE SCREEN	U	40 ml random urine	A	80101
BILE, FECES	ST	Stool specimen	D	82252
BILE, URINE	U	10 ml random urine	A	81002

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
BILE ACIDS	G/R	1 ml serum; Refrigerate. Fasting (8 hours min).	D	82240
BILIRUBIN, DIRECT	LG/G	1 ml plasma or serum	A	82248
BILIRUBIN, TOTAL	LG/G	1 ml plasma or serum	A	82247
BNP	L	2 ml EDTA	A	83880
NOTE: *Deliver immediately.*				
BODY FLUID ANALYSIS	FL	5-10 ml body fluid - specify source.	A	89051
NOTE: *For cell count on synovial fluid, please submit in EDTA tube.*				
BUN	LG/G	1 ml plasma or serum	A	84520
C-REACTIVE PROTEIN - CRP	G/R	1 ml serum	A	86140
CA 125	R/G	1 ml serum	E	86304
CA 15-3	G/R	1 ml serum (non-hemolyzed)	E	86300
CA 19-9	G/R	1 ml serum	E	86301
CA 27-29	G/R	1 ml serum (non-hemolyzed)	E	86300
CALCIUM, BLOOD	LG/G	1 ml plasma or serum	A	82310
CALCIUM, URINE	U	10 ml random or timed urine	A	82340
CANNABINOID, URINE SCREEN	U	40 ml random urine	A	80101
CARBON DIOXIDE	LG/G	1 ml plasma or serum	A	82374
CATECHOLAMINES, TOTAL PLASMA	LG	1 ml heparinized plasma; Frozen	D	82384
NOTE: *Draw from fasting patient (10-12 hours). Patient should avoid tobacco, coffee and tea.*				
CATECHOLAMINES, FRACTIONATED	U	24 hr urine preserved with 25 ml 50% acetic acid during collection	D	82384
CBC	L	2 ml EDTA whole blood	A	85027

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
CBC WITH DIFFERENTIAL	L	2 ml EDTA whole blood	A	85025
CEA	R/G	1 ml serum	A	82378
CERULOPLASMIN	G/R	1 ml serum; Fasting	E	82390
CHLORIDE, BLOOD	LG/G	1 ml plasma or serum	A	82435
CHLORIDE, URINE	U	10 ml random or timed urine	A	82436
CHOLESTEROL	LG/G	1 ml plasma or serum	A	82465
CKMB FRACTION	LG	1 ml heparinized plasma	A	82553
COCAINE, URINE SCREEN	U	40 ml random urine	A	80101
COLD AGGLUTININS	R	2 ml serum	F	86006
NOTE: *Collect in pre-warmed 37°tube. Clot at 37°C. Centrifuge and remove serum immediately. Do not refrigerate.*				
COMPLEMENT C3	G/R	1 ml serum; Refrigerate.	A	83883
COMPLEMENT C4	G/R	1 ml serum; Refrigerate.	A	83883
COOMBS, DIRECT	L	3 ml EDTA whole blood	A	86880
CORTISOL	R/G	1 ml serum	A	82533
CPK ISOENZYMES (ELECTROPHORESIS)	G/R	1 ml serum	E	82552
CPK, TOTAL	LG	1 ml plasma	A	82550
CREATININE, BLOOD	LG/G	1 ml plasma or serum	A	82565
CREATININE, URINE	U	10 ml random or timed urine	A	82570
CREATININE CLEARANCE	U and R	10 ml aliquot of 24 hr urine (no preservatives) and 2 ml serum	A	82575
CRYOGLOBULIN	R	4 ml serum	A	82595
NOTE: *Collect in pre-warmed 37°tube. Clot at 37°C. Centrifuge and remove serum immediately. Do not refrigerate.*				

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
D-DIMER	LB	1 ml citrated plasma.	A	85379
NOTE: *Keep 8 hours at 20°± 5°C or frozen.*				
DIGOXIN	R/G	1 ml serum	A	80162
DILANTIN (PHENYTOIN)	R/G	1 ml serum	A	80185
DRUG SCREEN, SERUM	R	2 ml serum	D	80101
NOTE: *Specify drug(s).*				
DRUG SCREEN, URINE	U	40 ml random urine	A	80101
EOSINOPHIL ABSOLUTE COUNT, BLOOD	L	2 ml EDTA whole blood	A	89190
EPSTEIN-BARR VIRUS ANTIBODIES	R/G	1 ml serum	E	86663
ESTRADIOL	G/R	3 ml serum; Refrigerate.	D	82670
ESTRIOL	G/R	1 ml serum	D	82677
FEBRILE AGGLUTININS	R	2 ml serum	D	86000
FECAL FAT	ST	24 hour stool specimen; Frozen.	D	82715
FERRITIN	G/R	1 ml serum; Avoid hemolysis.	A	82728
FETAL FIBRONECTIN	Collection Tube	Swab	A	82731
FIBRIN DEGRADATION PRODUCTS	FDP	Collect blood into FDP tube until vacuum pressure stops the blood flow.	A	85362
NOTE: *Immediately centrifuge and remove serum to aliquot tube. Keep 3 days at 2°-8°C. Do not freeze.*				
FIBRINOGEN	LB	1 ml citrated plasma	A	85384
NOTE: *Keep 8 hours at 20°±5°C.*				
FOLATE, SERUM	G/R	1 ml serum	A	82746
NOTE: *Protect from light and keep refrigerated.*				
FOLATE RBC	L	5 ml EDTA whole blood	D	82747

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
FOLLICLE STIMULATING HORMONE - FSH	R/G	1 ml serum	E	83001
GAMMA GT (GGT)	G/R	1 ml serum	A	82977
GASTRIN	G/R	1 ml serum; Frozen. Fasting (10 hours)	E	82941
GENTAMYCIN	G/R	1 ml serum	A	80170
G6PD	L	1 ml EDTA whole blood	D	82955
GIARDIA SPECIFIC ANTIGEN	Stool	5 grams random stool	D	86674
GLUCOSE	LG/G	1 ml serum	A	82947
GLYCOHEMOGLOBIN (Hgb A1C)	L	2.5 ml EDTA whole blood	A	83036
H. PYLORI ANTIBODY	G/R	1 ml serum	A	86677
H. PYLORI ANTIGEN	Stool	Random stool; Frozen.	D	87338
HAPTOGLOBIN	G/R	2 ml serum; Refrigerate.	E	83010
hCG, QUANTITATED	G/R	1 ml serum	A	84702
hCG, QUALITATIVE (PREGNANCY)	G or U	1 ml serum or 1 ml random urine	A	81025
HDL CHOLESTEROL	LG/G	2 ml plasma or serum; Fasting	A	83718
HEAVY METAL SCREEN	GN	20ml heparinized whole blood	D	83018
HEMATOCRIT	L	2 ml EDTA whole blood	A	85014
HEMOGLOBIN	L	2 ml EDTA whole blood	A	85018
HEMOGLOBIN ELECTROPHORESIS	L	3 ml EDTA whole blood	D	83020
HEPATITIS A ANTIBODY, IgM (HAVAB M)	R	1 ml serum	A	86299
HEPATITIS B CORE ANTIBODY	R	1 ml serum	A	86289

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
HEPATITIS B SURFACE ANTIBODY (HBSab)	R	1 ml serum	A	86291
HEPATITIS B SURFACE ANTIGEN (HBSag)	R	1 ml serum	A	86287
HEPATITIS C ANTIBODY	R	1 ml serum	A	86302
HIV ANTIBODIES (SCREENING)	R/G	1 ml serum	Monday, Wednesday, Friday	86689
IgA	G/R	1 ml serum	A	82784
IgE	G/R	1 ml serum	D	82785
IgG	G/R	1 ml serum	A	82784
IgM	G/R	1 ml serum	A	82784
IMIPRAMINE (TOFRANIL)	R	2 ml serum	D	80174
INSULIN	R/G	1 ml serum	E	83525
IRON	G/R	1 ml serum	A	83540
LACTIC ACID	GY	1 ml Sodium Fluoride plasma	A	83605
NOTE: *Deliver immediately (on ice).*				
LEAD	GN	5 ml heparinized whole blood	D	83655
LEUKOCYTE ALKALINE PHOSPHATASE - LAP		5 ml Sodium Heparin whole blood or bone marrow	E	85540
NOTE: *Deliver within 2 hours of collection. Specimen must be received no later than 2:00 PM.*				
LDH	R/G	1 ml serum	A	83615
LDH ISOENZYMES	R/G	2 ml serum	E	83625
LIPASE	LG/G	1 ml plasma or serum	A	83690
LITHIUM	R/G	1 ml serum	A	80178
LUTEINIZING HORMONE - LH	R	1 ml serum	D	83002

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
LYME ANTIBODIES	G/R	1 ml serum	E	86618
MAGNESIUM	G/R	1 ml serum	A	83735
METANEPHRINES, FRACTIONATED	U	100ml aliquot of 24 hr urine preserved with 25ml 50% acetic acid	D	83835
METANEPHRINES, TOTAL	U	10ml random urine with a pH of less than 5.0	D	83835
MERCURY, BLOOD	GN	5ml heparinized whole blood	D	83825
MERCURY, URINE	U	50ml aliquot random or 24 hr urine preserved with 30ml 6N HCl	D	83830
MICROALBUMIN	U	100ml aliquot 24 hr urine (without preservatives)	A	82043
MONO TEST	R/G	1 ml serum	A	86308
MYOGLOBIN, QUANTITATED - SERUM	G/R	1ml serum; Refrigerate.	E	83874
MYOGLOBIN, URINE	U	10 ml random urine	E	83874
NORTRIPTYLINE (PAMELOR)	R	2 ml serum	E	80182
OCCULT BLOOD, FECAL	ST	Random stool specimen	A	82270
OCCULT BLOOD, GASTRIC	FL	5-10 ml gastric fluid	A	82273
OPIATES, URINE SCREEN	U	40ml random urine	A	80101
OSMOLALITY, BLOOD	G/R	1 ml serum	A	83930
OSMOLALITY, URINE	U	10ml random urine	A	83935
PARATHYROID HORMONE - PTH	G/R	2 ml serum; Frozen	D	83970
PCP, URINE SCREEN	U	40 ml random urine	A	80101
pH, FECAL	ST	Random stool specimen	E	83986
pH, GASTRIC	FL	5-10 ml aliquot gastric fluid	A	83986

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
PHENOBARBITAL	R/G	1 ml serum	A	80184
PHENYTOIN	R/G	1 ml serum	A	80185
PHOSPHORUS , BLOOD	LG/G	1 ml plasma or serum	A	84100
PHOSPHORUS, URINE	U	10ml aliquot 24 hr urine	A	84105
PLATELET COUNT	L	2 ml EDTA whole blood	A	85595
PORPHOBILINOGEN, URINE	U	20ml random urine	E	84110
PORPHYRINS, FRACTIONATED	U	100ml aliquot 24 hr urine preserved with 5 grams sodium carbonate	D	84120
NOTE: *Refrigerate and protect from light.*				
POTASSIUM, BLOOD	LG/G	1 ml serum	A	84132
POTASSIUM, URINE	U	10 ml random or timed urine	A	84133
PREALBUMIN	G/R	1 ml serum	A	86329
PREGNANCY TEST (hCG, Qualitative)	G or U	1 ml serum or 10 ml random urine	A	81025
PROGESTERONE	G/R	1 ml serum	E	84144
PROLACTIN	G/R	1 ml serum; Refrigerate. Fasting	E	84146
PROSTATIC SPECIFIC ANTIGEN (PSA)	R/G	1 ml serum	A	84153
PROTEIN ELECTROPHORESIS	G/R	2 ml serum	B	84165
PROTEIN, TOTAL - BLOOD	LG/G	1 ml plasma or serum	A	84155
PROTEIN, TOTAL - URINE	U	10 ml random or 24 hr urine	A	84155
PROTHROMBIN TIME (PT) WITH INR	LB	1 ml citrated plasma	A	85610
QUINIDINE	R	1 ml serum	D	80194

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
RENIN	L	2 ml EDTA plasma	D	84244
NOTE: *Collect blood in chilled tube and centrifuge immediately. Remove plasma and freeze.*				
RETIC COUNT	L	2 ml EDTA whole blood	A	85044
RHEUMATOID FACTOR - RF QUANT	G/R	0.5 ml serum	A	86430
ROTAVIRUS SCREEN	ST	Random stool specimen	D	86759
RPR	R	1 ml serum	F	86592
RSV	Media Tube	Swab	A	87449
RUBELLA (IMMUNE STATUS)	G/R	1 ml serum	A	86762
SALICYLATE	R	1 ml serum	A	80196
SEDIMENTATION RATE	L	2 ml EDTA whole blood	A	85651
SEROTONIN	L	5 ml EDTA whole blood; Frozen.	E	84260
SGOT (AST)	LG/G	1 ml plasma or serum	A	84450
SGPT (ALT)	LG/G	1 ml plasma or serum	A	84460
SICKLE CELL SCREEN	L	3 ml whole blood	A	85660
SODIUM, BLOOD	LG/G	1 ml plasma or serum	A	84295
SODIUM, URINE	U	10 ml random or 24 hr urine	A	84300
STREPTOZYME SCREEN	R/G	1 ml serum	E	86063
T-3, FREE	G/R	1 ml serum	D	84481
T-3, TOTAL (RIA)	G/R	1 ml serum	A	84480
T-4, FREE	G/R	1 ml serum	A	84439
T-4, TOTAL (THYROXINE)	G/R	1 ml serum	A	84436

LABORATORY TEST DIRECTORY
INDIVIDUAL TESTS

TEST	TUBE	SPECIMEN REQUIREMENTS	SCHEDULE	CPT CODE
TESTOSTERONE	R	2 ml serum	E	84403
THEOPHYLLINE	R/G	1 ml serum	A	80198
TIBC	G/R	1 ml serum	A	83550
TOBRAMYCIN	R	1 ml serum	A	80200
TOTAL COMPLEMENT (CH50)	R	1 ml serum; Frozen.	E	86162
TRIGLYCERIDE	LG/G	1 ml serum; Fasting	A	84478
TROPONIN I	LG	1 ml heparinized plasma	A	84484
TSH	G/R	1 ml serum	A	84443
TYPE AND Rh			A	86900
UREA NITROGEN, URINE	U	20 ml aliquot 24 hr urine (without preservatives)	A	84540
URIC ACID, BLOOD	G/R	1 ml serum	A	84550
URIC ACID, URINE	U	10 ml aliquot 24 hr urine (without preservatives)	A	84560
URINALYSIS	U	10 ml random urine	A	81001
VMA (VANILLYLMANDELIC ACID)	U	25 ml aliquot of 24 hr urine preserved with 25 ml 50% acetic acid during collection	D	84585
VALPROIC ACID	R/G	1 ml serum	A	80164
VANCOMYCIN	R/G	1 ml serum	A	80202
VDRL (CSF)	CSF	1 ml CSF	D	86592

NOTE TO USERS OF THIS GUIDE:

This manual is provided as a guide and all information, including specimen requirements, reference ranges and units of measurement, is subject to change. This manual will be periodically updated.

MICROBIOLOGY

SPECIMEN COLLECTION AND HANDLING

Requisitions

Complete the Laboratory Outpatient Services Form as directed in the General Information section of this manual.

Aerobic Cultures

Refer to the individual test listings for specific instructions by culture source.

Anaerobic Cultures

The isolation and identification of anaerobic bacteria is done by specific request only except on blood cultures. Blood cultures are routinely set up for anaerobic culture.

If aerobic culture and anaerobic cultures are desired, both must be specified on the requisition.

The following specimens are APPROPRIATE for anaerobic cultures, provided that proper collection and transport systems have been used.

Pulmonary
Transtracheal aspirates, thoracentesis fluid, direct needle puncture, aspirates of lung infiltrates or abscesses.

Urinary
Suprapubic aspirates of bladder urine.

Abscesses
Needle and syringe aspirates of closed abscesses after decontamination of surfaces. Swabs are much less desirable.

Sinus Tract
Aspirate into syringe through IV catheter introduced through decontaminated skin orifice.

Uterine
Aspirate into syringe through IV catheter passed through the cervical os under direct visualization.

Others
Blood, CSF (brain abscesses), joint fluid, and biopsy specimens collected with ordinary care.

The following specimens are likely to be contaminated and thus are INAPPROPRIATE for anaerobic cultures.

Pulmonary
Coughed sputums, tracheal tube suctioning, bronchoscopic aspirates, nasopharyngeal, throat or mouth swabs

Urinary
Voided urine or catheterized urine

Abscesses
Swab from surface or abscess or after incision and drainage

Sinus Tract or Wound Drainage
Swab from external portion of sinus tract or of drainage through external orifice

Uterine
Vaginal or cervical swabs

Others
Superficial wounds, feces, or rectal swabs

Anaerobic Specimen Collection

Because anaerobes are sensitive to oxygen and to desiccation, extreme care must be taken in the collection and transport of specimens for anaerobic culture.

Material appropriate for anaerobic culture is best obtained using a needle and syringe. Applicator swabs are rarely adequate.

- After expelling all air bubbles from the aspirated material, the specimen should be transported to the laboratory as soon as possible.
- Verify that the specimen is properly labeled and is accompanied by a completed requisition stating the source of the specimen, patient identification and specifying “ANAEROBIC CULTURE”.

The swab method for the specimen collection for anaerobes is the least desirable. Because of the risk of excessive aeration, it should be used only when aspiration is impossible or extremely difficult.

- Insert the swab into a Port-A-Cul tube within 5 mm of the bottom of the medium, Break off the shaft of the swab evenly with the lip of the tube, and replace the cap replace tightly. The specimen must be transported to the laboratory as soon as possible
- Make sure the specimen is properly labeled and is accompanied by a requisition stating the source of the specimen, patient identification, and specifying “ANAEROBIC CULTURE”.
- Port-A-Cul Transport tubes may be obtained from the laboratory on request.

Feces for Ova and Parasitology Examination

Stool specimens should be collected in a Stool Container which has a secure lid. The specimen should then be transferred to Para-Pak Preservative tubes according to the instructions. Specimens for occult blood may be directly inoculated onto the occult blood test sides. Para-Pak tubes and occult blood test slides may then be transferred to the laboratory within 24 hours of collection.

- Stool specimens submitted to the laboratory in collection containers must be received in the laboratory within two (2) hours of collection as any parasites in the specimens may not be observable without being properly preserved.

- A completed requisition including proper patient information and all requested tests must accompany each specimen.

- The patient should be cautioned against use of antacids, barium, bismuth, antidiarrheal medication or oily laxatives prior to the collection of the specimen.

- It is recommended to ensure optimum recovery of parasites that specimens are collected one (1) per day for three (3) days.

Special Instructions for use of Para-Pak Transport Tubes

1. Set up the pink-capped and blue capped tubes routinely on all types of fecal specimens. The blue-capped tube must be used if the stools are soft, liquid or mucoid.

2. After opening the tube, use the collection spoon attached to the inside of the cap lid to place small scoops of feces from areas which appear bloody, slimy, or watery into the tube until the contents rise up to the RED line. If the fecal specimen is hard, try to get samples from each end and the middle.

3. Mix the contents with the spoon, then twist the cap tightly closed and shake the tube vigorously until the contents are well mixed.

4. Repeat steps 2 and 3 for each tube. Label each tube with the patient's name, date and time of collection.

   NOTE:
   - Specimens contaminated with urine are not acceptable.
   - Specimens which have been retrieved from the toilet are not acceptable.

MICROBIOLOGY REPORT AVAILABILITY

The following tests are performed and reported the same day of specimen receipt:

- **Gram Stain**
- **India Ink Prep**
- **KOH Prep**
- **Directigen EZ Flu A/B**
- **Rapid Strep A test**
- **Rotavirus test**

The following procedures are performed and reported the same day if received in the laboratory by 3:00 PM. Specimens received after 3:00 PM are tested the following day:

- **Fecal specimens for Ova and Parasites**
- **AFB stains**
- **Fungus stains**

Clostridium Difficile Toxins are performed at least three (3) times per week, Monday, Wednesday, and Friday, and more often when indicated to do so.

Urine Cultures - "No Growths" are reported in 24 hours from the time the specimen is received in the lab. If there is organism growth, a preliminary report will be available in 24 hours and a final report is issued 48 to 72 hours from the time the specimen is received in the lab.

Other Aerobic Cultures - A preliminary report is available in 24 hours and a final report is issued 48 to 72 hours from the time the specimen is received in the lab.

Blood Cultures - A preliminary report is available in 24 hours. A final report is issued at the end of five (5) days for "No Growths". Blood cultures are read on a continuous monitor instrument. Positive blood cultures are reported as soon as growth occurs. Isolates are held for three (3) weeks for additional testing if needed.

Acid Fast Cultures (AFB) - AFB stain reports are performed and reported within 24 hours of receipt of specimen. Cultures are reported as negative after eight (8) weeks. A preliminary report on a positive culture takes approximately two to three weeks.

Fungus Cultures - Fungus cultures are evaluated and reported weekly with final reports issued after four (4) weeks.

Significant Isolates - All significant isolates are maintained in the laboratory for one (1) week after the report is issued. Further studies on any isolate, such as additional susceptibility testing, may be requested during this period.

MICROBIOLOGY REPORT AVAILABILITY SCHEDULE

SPECIMEN	PRELIMINARY REPORT	FINAL REPORT
AFB Cultures (87117)		
Negative	None	8 weeks
Positive	2-4 weeks	4-6 weeks
Anaerobic Cultures (87075)		
Negative	None	72 hours
Positive	None	3-4 days
Blood Cultures (87040)		
Negative	24 hours	5 days
Positive	As soon as the organism is	2-4 days
Bronchial Washing Cultures (87070)		
Negative	24 hours	48 hours
Positive	24-48 hours	48-72 hours
Chlamydia Cultures (87252)		
Negative	None	3-4 days (Reference Test)
Positive	None	3-4 days (Reference Test)
CSF Cultures (87070)		
Negative	24 hours	48 hours
Positive	24-48 hours	72 hours
Ear Cultures (87070)		
Negative	24 hours	48 hours
Positive	24 hours	48 hours
Eye Cultures (87070)		
Negative	24 hours	48 hours
Positive	24 hours	48-72 hours
Fecal Cultures (87045)		
Negative	None	48 hours
Positive	48 hours	48-72 hours
Fungus Cultures (87101)		
Negative	Once per week	4 weeks
Positive	Once per week	4 weeks
Genital Cultures (87070)		
Negative	None	48 hours
Positive	24-48 hours	48 hours
Joint Fluid Cultures (87070)		
Negative	24 hours	48 hours
Positive	24-48 hours	48 hours

MICROBIOLOGY REPORT AVAILABILITY SCHEDULE

SPECIMEN	PRELIMINARY REPORT	FINAL REPORT
Nasal Cultures (87070)		
Negative	None	48 hours
Positive	24-48 hours	48 hours
Nasopharyngeal Cultures/ Bordetella		
Negative	None	24 hours (Reference Test)
Positive	As soon as growth is detected	10 days (Reference Test)
HSV Cultures (87253)		
Negative	None	48 hours (Reference Test)
Positive	None	48 hours (Reference Test)
Peritoneal Fluid Cultures (87070)		
Negative	24 hours	48 hours
Positive	24-48 hours	48 hours
Pleural Fluid Cultures (87070)		
Negative	24 hours	48 hours
Positive	24-48 hours	48 hours
Sputum Cultures (87070)		
Negative	24 hours	48 hours
Positive	24-48 hours	48 hours
Thoracentesis Cultures (87070)		
Negative	24 hours	48 hours
Positive	24-48 hours	48 hours
Throat Cultures (87060)		
Negative	24 hours	48 hours
Positive	24 hours	48 hours
Urine Cultures (87086)		
Negative	24 hours	24-48 hours
Positive	24 hours	48 hours
Uterine & Vaginal Cultures (89070)		
Negative	None	48 hours
Positive	24-48 hours	48 hours
Wound Cultures (87070)		
Negative	24 hours	48 hours
Positive	24 hours	48-72 hours

MICROBIOLOGY TEST DIRECTORY

SPECIMEN FOR:	COLLECTION & TRANSPORT	REMARKS
AFB Culture, Sputum Acid Fast Bacillus, TB	5 ml to 15 ml of early morning "deep cough". Specimen collected in sterile plastic container. DO NOT SEND SWABS.	24 hour specimen should not be submitted for culture due to overgrowth of indigenous microbial flora.
AFB Culture Specimens other than sputum	Collect specimen in sterile container or syringe. Swabs are not acceptable.	AFB stain is performed on the same specimen submitted for AFB culture.
Anaerobic Culture	Aspiration via syringe and needle taking care to avoid surface contamination preferred. Transport as soon as possible to the laboratory in Anaerobic Transport Media supplied by the laboratory.	Refer to information in the Microbiology Specimen Collection section of this manual.
Blood Culture	Aseptically collect 16-20 ml of blood. Place 8-10 ml of the blood into Aerobic Blood Culture Vial (Blue Cap) and 8-10 ml of blood in the Anaerobic Blood Culture Vial (Yellow Cap). Transport to the laboratory ASAP. For pediatric patient, aseptically draw 1-3 ml of blood and place in pediatric Blood Culture Bottle (Pink Cap). For hard to draw adult patient, draw 3-5 ml and place in Aerobic Blood Culture bottle only.	Special arm prep necessary. Clean puncture site thoroughly with alcohol then paint with Tincture of Iodine starting at the puncture site and moving outward in concentric circles. Allow to air dry. Cleanse rubber cap of bottle. Perform venipuncture aseptically (do not touch the site after prep) and add blood to bottle. Blood Culture bottles are supplied by the laboratory.
Bronchial Washing	Collect in Leuken Trap	None
CSF Culture	Collect at least 1 ml in sterile tube. Transport to the laboratory as soon as possible.	None
Chlamydia Culture	Collect specimen and place in Chlamydia Transport Media appropriate for male or female. Transport to the laboratory as soon as possible.	Chlamydia Transport Media is provided by the laboratory.
Clostridium Difficile	Collect at least 5 ml FRESH stool specimen and refrigerate within one hour of collection. Transport to the laboratory ASAP.	Instruct the patient to bring the stool specimen to your office or clinic immediately after collection. Once received, refrigerate immediately.

MICROBIOLOGY TEST DIRECTORY

SPECIMEN FOR:	COLLECTION & TRANSPORT	REMARKS
Ear Culture	Clean external ear with swab followed by 70% alcohol. Use Culturette swab to collect the specimen. Replace swab into Culturette and break the bottom ampule to release the transport medium onto the swab.	Dry swabs usually are unacceptable for viable growth.
Eye Culture	Using a Culturette swab, swab secretions or pus, avoiding contact with margins and angles of lids.	Indicate if there is suspicion of gonorrhea (GC).
Fecal Culture (Stool)	Collect fresh stool specimen into Stool Culture containers provided by the laboratory. Follow directions inside the media package for proper use. If patient is an infant, a rectal swab is acceptable. Place swab in a Culturette and break the bottom ampule to release the transport medium onto the swab.	Culture for stool pathogen other than Salmonella, shigella or Camphylobactor must be specifically requested (i.e., Staph, Yersinia, Vibrio, Yeasts, E. Coli 0157)
Fungus Culture	Sputum – Collect in same manner as sputum culture. Skin scrapings – Clean area with alcohol; scrape area and send scrapings in sterile container. Other specimens – Collect in a sterile container.	Specimens submitted to the laboratory on swabs are also acceptable.
Gram Stain	Submit air-dried smear on slide or submit the specimen to the laboratory collected as stated in this directory.	Gram stain may be performed on the same specimen submitted for culture. Separate swabs are required if culture to be done also.
Genital Culture	Vaginal and Cervical – Collect on Culturette swabs. Urethral - Use the NPG Culturette. Place swabs into Culturette holder and break the bottom ampule to release the transport medium onto the swab. Aspirates may be submitted directly in syringe, without needle attached.	

MICROBIOLOGY TEST DIRECTORY

SPECIMEN FOR:	COLLECTION & TRANSPORT	REMARKS
India Ink Prep	Performed on CSF collected in a sterile tube.	
Joint Fluid Cultures	Fluid collected in a sterile tube or syringe.	Indicate if there is a suspicion of GC.
KOH Stain (Prep)	Clean area with alcohol. Scrape area and send the scrapings in a sterile container.	Done on skin scrapings, nail scrapings and hair only. Nail clippings are not acceptable.
Nasal Culture	Insert Culturette swab about 1 inch into anterior nares. Rotate 4 times; return swab to Culturette container and break the bottom ampule to release the transport medium onto the swab.	Indicate if MRSA screen.
Nasopharyngeal Culture	Use commercially available prepared sterile nasopharyngeal swabs through nose to nasopharnyx. Place in Culturette and break the bottom ampule to release the transport medium onto the swab.	If BORDETELLA PERTUSSIS is suspected, call the laboratory before taking culture. Special media is required.
HSV Culture	Visually locate the vesicle using a sterile Dacron swab. Place swab in HSV/Chlamydia Transport Media. (conical tube with pink transport media). Refrigerate specimen or place on ice if transport will be greater than one (1) hour.	HSV Culturettes are provided by the laboratory.
Peritoneal Fluid Culture	Fluid collected in sterile container and submitted to the laboratory.	
Pleural Fluid Culture	Fluid collected in sterile container and submitted to the laboratory.	
Sputum Culture	5 to 15 ml of early morning “deep cough” specimen collected in sterile container. Transport to laboratory as soon as possible.	Do not submit multiple collections or 24 hour specimen for culture due to overgrowth of indigenous microbial flora. Sputum cultures are screened for contamination with saliva. If specimen is indicative of saliva repeat specimen will be requested.

MICROBIOLOGY TEST DIRECTORY

SPECIMEN FOR:	COLLECTION & TRANSPORT	REMARKS
Thoracentesis Culture	Fluid collected in sterile container. Transport to the laboratory as soon as possible.	
Throat Culture	Depress tongue, use a Culturette swab to swab the affected area, sides, wall and posterior pharynx.	If BORDETELLA PERTUSSIS or CORNEBACTERIUM DIPHTHERIAE is suspected, call the laboratory before taking culture. Special media is required.
Urine Culture	Midstream voided urine (clean catch) in a sterile cup or catheterized urine taken from line (not bag) in a sterile container. Store refrigerated until transported to the laboratory.	Indicate method of collection on the requisition. Colony count is routinely performed as part of urine culture request.
Actinomyocosis Culture	Submit tissue or draining fluid only. A swab is not acceptable.	Indicate this type of culture on requisition.
Wound Cultures – Superficial and Deep	Swab infected site onto Culturette swab taking care to avoid surface skin contamination. If possible, submit aspirated fluid in a sterile syringe. This is the specimen of choice.	Indicate the wound site on the requisition.
Uterine and Vaginal Cultures	See Genital Cultures	
Ova & Parasite Exam (O&P)	Collect a fresh stool specimen.	Follow Ova & Parasite handling instructions stated in the Microbiology Specimen Collection section of this manual.
Directogen E1 INFlu A/B	Submit nasal aspirate, nasal washings or throat swab in VCT transport media.	Refrigerate immediately after collection.
Rapid Strep A Test	Dacron swabs should be used to swab throat area.	Special collection swabs used for this test are provided by the laboratory.
MRSA Screen (Methicillin Resistant Staph)	Nasal or rectal swab sent in Culturette.	Indicate: Screen for MRSA
VRE Screen (Vancomycin Resistant Enterococcus)	Rectal, axilla or wound (if present) collected on a Culturette swab.	Indicate: Screen for VRE
Vaginal Group B Strep Screen	Vaginal & anorectal swab collected on a Culturette swab.	Indicate: Screen for Group B Strep

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