



CONSOLIDATED LABORATORY SERVICES
"Continued Commitment to Quality and Service"

Reference Manual

February 2011

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The most current version of our Reference Manual is dated "February, 2011". This manual supersedes any other printed materials and is a complete replacement for any previous Reference Manual.

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CONTACT DIRECTORY

Main Number

(904) 308-5600

Our automated phone menu provides quick access to most Consolidated Laboratory Services' departments. Please listen to our current service options by calling our main number.

Clinical Consultations

St. Vincent's Medical Center Pathologists
(904) 308-3800

Consolidated Laboratory Services Website

Visit our website at <http://www.conlabs.com> to view technical updates, Patient Service Center locations, Insurance list and other current information.

INTRODUCTION

Consolidated Laboratory Services is a comprehensive laboratory, servicing physician and medical facilities throughout northeast Florida and southeast Georgia.

Consolidated Laboratory Services' team is committed to providing a high quality, cost-effective and responsive service through a unique ability to meet the needs of our customer.

Accreditation and Licensure

The laboratory is accredited by:

The College of American Pathologists Commission on Laboratory Inspection and Accreditation
The Joint Commission on Accreditation of Health Care Organizations
American Association of Blood Banks.

The laboratory is licensed by:

State of Florida Agency for Health Care Administration (AHCA)
Clinical Laboratory Improvement Amendments of 1988 (CLIA)

The laboratory is recognized by the College of American Pathologists Quality Evaluation Program and the American Society of Clinical Pathologists Check Sample Program.

Pathologist Consultation

Consolidated Laboratory Services is staffed by six pathologists holding board certifications in Anatomic, Clinical, Cyto, Dermato, Immuno, and Radioisotopic Pathology. Our unique pathology structure allows us to provide both superior staffing and timely reporting.

Brian H. Vitsky, M.D. (CLS Medical Director)
Don B. DeStephano, M.D.
Brett B. Cantrell, M.D.

Ricardo R. Ramos, M.D.
Anne Bernstein, M.D.
Michael B. Lehman, M.D.

Unlike large national laboratories, our pathologists are readily available to assist with questions regarding test results and procedures, consult on unusual cases, or arrange special studies.

Quality Assurance

The laboratory is subject to stringent internal and external quality control programs. A planned systematic process is utilized for monitoring, evaluating, and continually improving the quality of laboratory services.

Testing Capabilities

Over 95% of all testing is performed in-house on the St. Vincent's Medical Center campus. Testing availability includes the following specialties:

Clinical Chemistry
Cytology
Hematology

Immunology
Microbiology
Serology

Special Chemistry
Surgical Pathology
Toxicology

Transfusion Services
Virology

Certain highly specialized or unusual tests are referred through special networking to a reputable and fully licensed reference laboratory.

SERVICES

Courier Services

Our team of professional, courteous Customer Service Representatives (Couriers) is available to provide specimen pickup and delivery of results and supplies. Our courier services may be tailored to meet individual customer needs.

Reporting

Specimens are processed continually upon arrival in the laboratory. Most routine results are available within 24 hours and most STAT results are available within hours of specimen receipt. Reporting schedules may vary, however, depending upon the complexity of the test requested and the time required for its determination.

Supplies

Consolidated Laboratory Services will provide all supplies necessary in the collection of specimens for testing at our laboratory. For prompt delivery, submit a completed CLS supply requisition form to your CLS courier or fax the completed form to (904) 296-1587.

Technical Assistance

Client Relation Representatives are available to assist with questions concerning reports, specimen requirements, and testing schedules.

SPECIMEN COLLECTION AND HANDLING

Consolidated Laboratory Services (CLS) will provide all supplies necessary in the collection of specimens for testing at our laboratory. A wide variety of test tubes and other collection devices are available on the market. Please be certain to use the specific container listed in this manual as our requirements may differ from other reference laboratories.

Positive patient identification is a vital part of high quality patient care. Special attention must be paid to label all specimens with patient name, **date, and time of collection**.

The quality of the information obtained from a laboratory test depends to a considerable extent on correct handling of the specimen submitted for analysis. While most people are aware that proper collection affects testing, many are not aware that specimen handling and centrifugation, when required, are essential factors in obtaining accurate test results. Some specimens may require refrigeration while others require room temperature. Specimens that require freezing should be frozen immediately after collection. Please refer to the specific requirements listed in this manual.

Results from samples with possible integrity issues will be notated on the patient report by one of the following;

- Samples received in our lab with a date/time of collection greater than 24 hours of receipt will have the following message appended to the report: **“Specimen collection date and time exceeds 24 hours of receipt date and time; therefore the accuracy of the results may be questionable. Any critical values associated with this specimen will be called between the hours of 8am to 5pm. Clinical correlation is necessary for interpretation.”**
- Samples received in tubes that were unspun or with visible cellular contamination will have the following message appended to the report; **Specimen received unspun or showed poor separation from red cells; therefore, the accuracy of the results may be questionable. Any critical values associated with this specimen will be called between the hours of 8am to 5pm. Clinical correlation is necessary for interpretation.”**
- Samples without any date or time of collection will have the following message appended to the report; **“Specimen collection date/time is unknown; specimen integrity can not be assured. Date of receipt used as default.”**

The following is a list of the most common specimen types and requirements specific to their collection.

BLOOD

In order to assure specimen integrity, the correct tube type and volume of sample must be submitted. Vacuum tubes are color coded and designed to automatically draw the proper amount of specimen into the tube. For testing purposes, blood components are described in one of three ways:

PLASMA

Blue top vacuum tubes are the primary tubes used for collecting plasma. It is extremely critical that these tubes be allowed to fill to the exhaust of the vacuum. After collecting, tubes must be mixed by gently inverting 8-10 times. Do not shake since this may cause hemolysis and render the specimen unacceptable for testing.

Other tubes used for collecting plasma specimens include gray top (sodium fluoride) tubes; green top (sodium or lithium heparin) tubes; and royal blue (EDTA) tubes used primarily for the collection of heavy metals.

SERUM

Red top vacuum tubes contain no anticoagulant and are used to collect serum samples. Serum should be properly centrifuged and physically separated from contact with cells **as soon as possible**. A maximum limit of **TWO HOURS** from the time of collection is recommended. Analysis adversely affected by delayed separation includes glucose (decreased), potassium (increased), and LDH (increased). CLS provides two unique types of red top tubes as described below. Please consult the specific test requirement for each test.

Gel Barrier Tube

During centrifugation, the gel will float to the area between the cells and serum to form a barrier. This barrier is critical to maintaining the integrity of the serum sample. CLS provides only VACUETTE® brand gel barrier tubes. This tube type offers many important features to our clients: the tube does not need to be opened prior to centrifugation; time is saved in that serum does not need to be removed and placed into a separate tube, and the closed system reduces biohazard contamination risks. Note – these tubes are unacceptable for ABO/Rh typing, drugs of abuse screening and most therapeutic drugs. When using gel-barrier tubes please collect and process as described below:

Procedure for Centrifugation of Gel Barrier Tubes

1. After the specimen is collected, slowly invert VACUETTE® gel barrier tube 6-8 times to insure proper mixing of clot activator. This minimizes latent fibrin formation in serum.
2. Blood should sit upright at least 20-25 minutes before centrifugation to form a clot.
3. Tilt the tube gently after sitting to check that clot is formed and loose.
4. Balance the centrifuge. Test tubes with equal volumes must be placed opposite each other. (A tube with water can be used for accurate balancing.)
5. Spin for 10-15 minutes at a minimum of 2500 RPM's. The stopper should remain on the tube.
6. After centrifugation, gently invert the tube 2-3 times to ensure that a complete barrier has formed between the red cell clot and serum.
7. If serum still contains RBC's, respin the specimen.

Plain Red Top Tube

This tube type contains no gel barrier and is predominantly used for ABO/Rh testing, drugs of abuse screening and some referred analytes. Unless otherwise instructed in the specific test requirement, do not spin down the tube – remove the stopper, or manipulate the specimen in any other manner.

Whole Blood

Purple top (EDTA K3) tubes are the primary tubes used for collecting whole blood. Tubes should be allowed to fill to the exhaust of the vacuum. After collecting, tubes must be mixed by gently inverting 8-10 times. Do not shake since this may cause hemolysis and render the specimen unacceptable for testing. Store and transport as described under the specific test requirements.

BLOOD CULTURES

Routine blood culture collection consists of one blue aerobic bottle and one purple anaerobic bottle. These bottles contain a vacuum and should not be vented before collection. Specialized blood culture bottles are available upon request, including low-volume pediatric bottles.

Collection Technique

1. Disinfect the top of aerobic and anaerobic blood culture bottles with alcohol.
2. Apply tourniquet and locate vein for venipuncture. Release tourniquet during skin disinfection procedure.
3. Using 70% alcohol, scrub the site vigorously for 1 minute. Allow to air dry.
4. Apply a thick film of tincture of iodine or Betadine in concentric circles moving outward. Allow to air dry for at least 1 minute. Do not touch prepared site after this cleansing.
5. Reapply tourniquet and collect blood.
6. For adults, inoculate 8-10 ml of blood into each bottle. If only enough blood is obtained for one bottle, inoculate the blue aerobic bottle. Note: 10 ml of blood/bottle is required for optimal recovery of pathogens.
7. Check the venipuncture site and remove iodine from patient's arm with an alcohol pad.

BODY FLUID

Fluids submitted in a syringe will clot before arriving in the laboratory. This may render the specimen unacceptable for testing. Transfer the fluid to the appropriate collection tube(s) for the desired tests(s) immediately after drawing (see specific test requirements.) **Do not transport syringe with the needle attached.** Specimens submitted in this manner are considered hazardous and will be rejected for testing.

CYTOLOGY / HISTOLOGY

Specimen requirements and information concerning cytology and histology specimens are included in the Cytology/Surgical Pathology section following the Alphabetical Listing of Tests.

MICROBIOLOGY

Specimen requirements for cultures and smears are included with individual test listings. See Microbiology section following the Alphabetical Listing of Tests.

SEMEN

Semen Analysis: Collect the specimen in a sterile container and maintain at body temperature. Immediately deliver the specimen to the lab, located on the third floor of the Clinical Services Building (above the Emergency Room) at St. Vincent's Medical Center. The lab must receive the specimen within one hour of collection. The specimen must be in the lab between 6:30am & 1:00pm, Monday through Friday. Physician order and supplemental semen analysis form must accompany the specimen.

Post Vasectomy Sperm Count: Collect the specimen in a sterile container. The specimen can be no more than 5 hours old and must be taken immediately to the lab, located on the third floor of the Clinical Services Building (above the Emergency Room) at St. Vincent's Medical Center. The specimen must be in the lab between 6:30am & 8:00pm Monday through Friday.

URINE

Random Collection: The first voided morning specimen is preferred for most tests, since it is usually the most concentrated, has a more uniform volume, and lower pH. Consult the individual test listing in this manner for specimen volumes. Refrigerate the urine until it is transported to the laboratory.

Timed Collection: Many analytes require preservatives to maintain their viability during urine collection. Preservatives also reduce bacterial growth and urine oxidation, which causes pH deterioration. Certain preservatives will burn the skin on contact. Never allow a patient to urinate directly into a receptacle containing a preservative. When a preservative is being used, always instruct the patient to urinate into a secondary receptacle. Next, pour the urine into the container with preservative. When collecting any "timed" urine specimen, it is essential that all urine be saved. Any urine lost for any reason will alter test results.

Urine Collection, 24-hour:

1. Discard the first morning specimen on day one.
2. Collect all specimens during the remainder of the day and evening.
3. Collect the first morning specimen on day two.
4. Stop collection.
5. Label the container(s) with patient's full name, date, and time of collection. This presumes that time of waking is the same on days one and two.

Normal fluid intake is allowed during 24-hour collections. Dietary restrictions are required for some procedures and are specified in the individual test listing. The Creatinine Clearance test requires the patient's height and weight for estimate of body surface area along with a blood sample for serum creatinine.

NOTIFYING CLIENTS REGARDING SPECIMEN PROBLEMS

Proper specimen procurement and handling are an essential part of obtaining valid, timely laboratory test results. All specimens delivered to the laboratory must meet the defined criteria for identification, collection, volume, and testing in order to be processed. If any criterion is not met, the physician's office will be notified so that corrective action can be taken. CLS has found that notifying clients via hard copy laboratory report is the most standardized and efficient practice. This allows the client to focus on only one document – the patient's report – for both clinical results and specimen problem notification. Once the patient report is received in your office, staff can quickly scan the document for abnormal values and/or the need for any additional follow-up that may be necessary.

CLS has developed a number of detailed messages that are designed to clearly communicate the type of problem and the steps your office may need to take to obtain valid results.

Specimens that need additional information from the client:

- 1. Unclear Orders**
On occasion, test orders are submitted using terminology not recognized by our technical staff. To ensure we order the correct test, a "Unclear Orders" message will print at the end of the patient report. Included in the message is the test name that is unclear to our laboratory. Detailed instructions are provided asking office staff to either call or fax clarification to our Customer Call Center as soon as possible so testing can begin. Prompt response to this message will decrease the need for patient recollection, as most specimens are stable for at least 24 hours after collection.
- 2. No Orders**
Test request forms are occasionally received that either do not have any orders marked or do not have a test marked that corresponds to the specimen type sent by the collection facility. A detailed message is provided at the end of the report describing the specimen type received in the lab along with instructions for adding orders, if necessary. Prompt response to this message will decrease the need for patient recollection, as most specimens are stable for at least 24 hours after collection.
- 3. Incomplete Requisitions**
At a minimum, test requisitions must contain the patient's first and last name, as well as date of birth. If date of birth or gender is not provided, the default setting (124 year old unknown) may be used to release patient results, or the report may indicate the need to provide accurate data before testing can begin.
- 4. Supplemental Testing Information**
Certain tests may require your office to submit specific patient information to perform the test. In many cases, a supplemental form is required to ensure that your office provides all necessary patient data. Examples of tests requiring a supplemental form include; Triple Screen, Quad Screen, Cystic Fibrosis Screen, and Semen Analysis. Forms are available through our supply line or by contacting your Sales/Service Representative.

Specimens classified as recollect:

- 1. Inadequately Labeled**
A specimen is considered **unlabeled** if the specimen (test tube, urine cup, specimen swab, etc) does not have the patient's first and last name directly affixed to it. If pre-printed labels are used, the label must be applied directly to the specimen before it is placed inside the plastic transport bag. It is not acceptable to affix the label to the bag rather than the container.

A specimen is considered **mislabelled** if the name written on the container differs from the name on the requisition. If a specimen consists of multiple containers (e.g., different tube types) and only one or some of the container labels match the associated requisition, the laboratory may be unable to determine which of the labels is correct and all containers may be treated as mislabeled.

In addition, some testing (drug screens, HIV studies, and blood bank testing) requires an exact match between specimen and requisition; any variation will require recollection, or in some instances, physician authorization must be obtained before testing can be finalized.

2. **Incomplete or Missing Requisitions**
Specimens submitted without a requisition or without the patient's complete first and last name may be rejected.

3. **Unsatisfactory or Suboptimal Specimens**
A specimen is unsatisfactory or suboptimal if it is collected, handled, or transported in such a way that the substance or constituents of interest cannot be accurately measured or counted in the clinical laboratory.
 - a. Specimen collected in wrong tube, container, or preservative.
 - b. Specimen inappropriately handled with respect to temperature, timing, or storage requirements.
 - c. Specimen is hemolyzed. This occurs when erythrocytes (RBC's) are ruptured, releasing their contents into the serum or plasma portion of the blood. The slightest degree of hemolysis will invalidate many test results, particularly potassium and LDH. Hemolysis may occur with even the slightest trauma to the specimen. This may be caused by one or more of the following:
 - ◆ difficult phlebotomy
 - ◆ small lumen needle used to obtain specimen(s)
 - ◆ vigorous shaking of specimens
 - ◆ storing in a refrigerator that is too cold
 - ◆ freezing specimens which contain red blood cells
 - ◆ centrifuging specimen before it has clotted
 - d. Specimen is lipemic. This describes specimens that are cloudy or milky due to the presence of excessive amounts of fat. If blood samples are taken too soon after the patient has eaten, lipemic specimens may occur. Lipemia will invalidate many test results. Therefore, it is recommended that the general rule of "fasting before sampling" be followed.
 - e. There are some clinical pictures that present with lipemia as part of the expected findings. For these specimens, and where an overnight fast was not possible before phlebotomizing the patient, the laboratory is equipped to clear the sera using special equipment. If enough serum specimen is submitted (minimum – 3 mL), it will be ultracentrifuged. This centrifuge provides enough centrifugal force to separate the fat particles, leaving clear serum to be used for testing.
 - f. Specimen volume is insufficient. Quantity not sufficient (QNS) is the laboratory's way of saying there was not enough specimen to perform the test(s) requested. We are very aware that the specimen(s) we receive are in many cases all that could be obtained from the patient. Every effort is made to handle and test these specimens carefully and accurately.
 - g. Specimens received uncentrifuged or poorly centrifuged. (See page 7 – Procedure for Centrifugation of Gel Barrier Tubes – for processing guidelines.)

Specimens Which Pose Hazardous Handling Conditions

Any specimen submitted in a manner that could create a health or safety hazard to laboratory personnel is considered unacceptable. Some examples include, but are not limited to:

1. Specimens submitted in syringes with needles left intact.
2. Specimens submitted in cracked or leaking containers with external contamination.
3. Specimens submitted in tissue paper, diaper, foil, plastic wrap, etc.

TEST REQUISITION FORMS

Consolidated Laboratory Services (CLS) provides test request forms specific to your facility. A form must be completed for each specimen, or group of specimens on the same patient you submit to the laboratory. Test request forms contain one original and three copies. The original and a copy of the test request form must accompany the specimen to the laboratory. You should retain the last copy of this form at your facility to assist in tracking receipt of specimen results. To order a supply of your practitioner's test request forms, please call 308-5600 and listen for the Dispatch prompt.

The following information **MUST BE** supplied on all test requisition forms;

- ◆ Patient's name – last name, first name.
- ◆ Patient's chart number, social security number, or any other unique identification. (optional)
- ◆ Patient's birth date and gender. This information is necessary to receive age appropriate reference ranges. Cytology, Histology and Blood Bank specimens will not be resultd without this information.
- ◆ Name of referring physician, practicing facility name, and CLS account number. This information should be preprinted on the form. If not, include physician's first and last name, address, phone number and NPI number.
- ◆ **Date and time the specimen is collected.** Check the box indicating whether the patient was fasting or non-fasting.
- ◆ Responsible Party Name.
- ◆ Responsible Party Mailing address.
- ◆ Telephone number of patient or responsible party.
- ◆ Billing information. Provide complete information in the appropriate box(es) based on patient's insurance(s).
- ◆ ICD-9 diagnosis code for each ordered test.
- ◆ Ask patient to review information for accuracy and sign requisition.
- ◆ Test(s) requested. Check the pink box to the **left** of the preprinted test name of the desired test(s) or use the "Comments-Additional Tests" section to write in any additional test(s) needed that is not pre-printed on the form. The "Comments-Additional Tests" section can also be used to note additional information such as:
 - priority handling of the test (STAT)
 - fax requests. Provide ordering practitioner's fax number.
 - "copy-to" requests. The full name, address, city, state and zip code along with the phone and fax numbers must be provided of the "copy-to" practitioner.
- ◆ Source of specimen if submitting a culture sample.
- ◆ Clinical history if submitting Cytology and/or Surgical Pathology specimens. This includes Pap Smears.
- ◆ Physician Signature. This is a mandatory requirement for all Medicare patients per the 11/29/2010 Federal Register release.

BILLING PROCEDURES

Consolidated Laboratory Services offers four alternatives for billing. Based upon your request, we will (1) bill your practitioner's account directly, (Client/Account Billing) (2) bill the patient directly (Self-Pay/Patient Billing) (3) bill a third party when provided with the appropriate information on the test request form, or (4) bill Medicare if the appropriate information is obtained and the ordered test(s) are medically necessary.

Client/Account Billing

An itemized statement will be issued on a monthly basis. The statement will itemize the patient's name, date of service, test(s) ordered and test charges. Payment is expected within 30 days of receipt for the amount indicated on the invoice unless other arrangements have been made in advance. If there are any discrepancies, please contact our billing office promptly so that corrections can be made.

Self-Pay/Patient Billing

Consolidated Laboratory Services offers two options to your self-pay patients. (1) Patients referred directly to our Patient Service Centers for collection and/or processing will receive a 40% discount on all testing. For example; Patient may bring a throat culture collected in your office to one of our patient service centers to receive the reduced discount. Payment will be required at the time services are rendered. (2) Patient samples collected at your office and sent directly to CLS will receive a 10% discount. You must provide the following patient information; patient/responsible party's name, date of birth, address, City, State and Zip Code, telephone number and signature. This information is needed each time a test is ordered. The tests ordered will result in a bill to the patient/responsible party and is due upon receipt. If payment is not received within 30 days, the patient/responsible party will receive reminders of the past due status and subsequent collection activity.

Third Party Billing

Consolidated Laboratory Services is an approved provider for many government and private insurance companies, HMO's, and PPO's. As such, we will directly bill these companies when requested. Please check our current "Approved Insurance List" which is located on our website www.conlabs.com, to be sure that CLS can accept a specific insurance plan before sending the specimen(s) for testing. Depending on the plan, your patient may be responsible for a portion of the charges not covered by the plan.

The following information must be indicated on the test request form to properly bill the insurance plan. If any part of the information is missing, the patient will be billed directly.

- ◆ patient or responsible party's name
- ◆ patient gender
- ◆ patient date of birth
- ◆ patient address, City, State, zip code and telephone number
- ◆ valid ICD-9 diagnosis code for each test ordered
- ◆ patient social security number
- ◆ insurance company name, address, City, State and zip code
- ◆ group number
- ◆ policy number
- ◆ patient signature
- ◆ physician signature

For the patient's convenience, please be sure to include complete and accurate information on each request.

Medicare Billing

Consolidated Laboratory Services is required by law to bill Medicare directly for any laboratory test referred to us by clients other than another laboratory.

Assignment is accepted for all Medicare claims so that the patient is not billed for any unpaid portion. This does not include anatomical pathology requests. Anatomical pathology requests will be filed with Medicare and the patient will be responsible for any uncovered portion.

All tests ordered must include a valid ICD-9 diagnosis code that meets the medical necessity rules of Medicare. Tests that are determined as screening or not meeting medical necessity requirements will be billed to the patient as determined by Medicare. It is YOUR responsibility as the ordering practitioner to inform the patient that these tests will be the patient's responsibility. Please have the patient sign the appropriate line of the Test Request form to signify that they understand they will be billed.

In order to identify patient eligibility for Medicare benefits, the following information is necessary in addition to the information noted above:

- ◆ Patient Medicare HIC number
- ◆ Ordering practitioner NPI number
- ◆ ICD-9 diagnosis code meeting medical necessity rules
- ◆ If necessary, proof of non-coverage notification (ABN)
- ◆ Physician signature

Please be sure to include complete information on each Test Request form in order to prevent time consuming follow-up with your office staff.

Advance Beneficiary Notice (ABN)

Laboratories are asked to analyze patient samples for several reasons:

- for routine screening;
- to help in the diagnosis of the patient's medical condition;
- to monitor an existing medical condition.

All of these are valid reasons to have lab work performed, however not all lab work is considered "medically necessary" under Medicare or TRICARE rules. Some tests are only covered for certain illnesses or conditions; if your patient does not have this illness or condition, Medicare or TRICARE will not pay for the test even though the physician/practitioner considers it necessary.

Based on the test the physician orders, the patient may need to sign an **Advance Beneficiary Notice (of Non-Coverage)**. The purpose of an **ABN** is to clearly inform the patient that Medicare or TRICARE will not pay for a specific test(s), and they will be responsible for the bill. If the patient does not want to be billed, they should sign a "Refusal of Services" statement and the test will not be performed. ABN forms are available to you at no charge.

Offices must avoid having all Medicare and TRICARE patients sign an ABN "just in case". This practice puts the office at risk of allegations of government fraud. Care must be taken to have an ABN completed only for patients whose testing is considered non-covered. The Consolidated Laboratory Services Test Request form strives to alert offices to tests that may qualify for ABN completion. Tests marked with a "@" and/or "%" symbol are our way of letting you know a patient may need to sign an ABN based on medical necessity.

GENERAL INFORMATION

Offices that explain and complete the ABN form prior to sending patients to one of our Patient Service Centers perform an invaluable service to their patient. The patient may have questions as to why a non-covered test is needed, and the only person who can answer their questions is their personal physician.

STAT TESTS

In order to provide physicians with meaningful clinical information in a timely manner, our STAT test menu contains the most common diagnostic tests for a variety of clinical conditions. Our couriers will pick up STAT specimens either from your office or from one of our Patient Service Centers and deliver it directly to the lab for prompt analysis. Most results are available within several hours of collection.

Acetaminophen	D-Dimer	LDH
Acetone, Serum	Digoxin	Magnesium
Alkaline Phosphatase	Dilantin	Monotest
ALT (SGPT)	Direct prep for O & P	Occult blood in feces
Ammonia	Drugs of Abuse @	Osmolality, Serum
Amylase	Electrolyte Panel	Phenobarbital
AST (SGOT)	Ethanol	Phosphorus
Basic Metabolic Panel	Fetal Fibronectin	Potassium
Bilirubin, Total and Direct	Fetal Lung Maturity	PT-INR
Blood Culture*	Fibrinogen	PTT
B-Natremic Peptide	Fibrin Degradation Products	Pus exam on feces
BUN	Gentamycin	Quick Strep Group A on throat specimens
CBC	GGT	RSV antigen detection
Calcium	Glucose	Salicylate
Carbamazepine (Tegretol)	Gram Stain	Sodium
Carbon Dioxide	hCG, qualitative serum	Theophylline
Cell count – CSF and other fluids	hCG, quantitative serum	Tobramycin
Comp Metabolic Panel	India Ink prep on CSF	Troponin
CPK MB Fraction	Influenza A & B Antigen	Uric Acid
CPK, Total	Lactic Acid	Urinalysis or any UA component
Creatinine	Lithium	Valproic Acid
Crystals in fluids	Lipase	Vancomycin

* = Collected STAT, but not performed STAT

@ = Chain of custody specimens not accepted

CRITICAL LABORATORY VALUES

Critical values are those which may be either life threatening or require more immediate medical attention. To allow timely treatment of your patient, Consolidated Laboratory Services will notify your practice by phone whenever one of more of these critical values is obtained. Please note that some critical values will be called only between 8:00am-5:00pm daily.

Parameter	Age Specific	Critical Value	Notes
Absolute Neutrophil Count	0 - 18 yr 18 - adult	< 0.5 K/ul < 1.0 K/ul	8 am -5 pm Daily 8 am-5 pm Daily
Acetaminophen		> 200 ug/ml	
Acid Fast Culture		Positive AFB Stain and/or cult	8 am-5 pm Daily
Aluminum Serum		> 100 ug/L	8 am-5 pm Daily
Alprazolam		> 60 ng/mL	8 am-5 pm Daily
Amiodarone		> 2.5 ug/mL	8 am-5 pm Daily
Amitriptyline + Nortriptyline		> 500 ng/mL (A + NT)	8 am-5 pm Daily
Ammonia	0-16 yr 16-adult	> 99 umol/L > 99 umol/L	
Arsenic Urine or Whole Blood		>150 ug/L	8 am-5 pm Daily
Bilirubin, Total	0-3 mo 3 mo-adult	> 15 mg/dl > 15 mg/dl	8 am-5 pm Daily
Blastomyces Abs CSF		Positive	8 am-5 pm Daily
Blood Culture		Positive Gram Stain and/or culture	
Blood Parasite		Present	8 am-5 pm Daily
Blood Product Contamination		Culture or smear positive	
BUN		> 60 mg/dL	New value. 8 am-5 pm Daily
Cadmium Urine or Whole Blood		> 15 ug/L	8 am-5 pm Daily
Calcium	0-6 mo: 6 mo-adult:	< 6 mg/dl > 13 g/dl < 6 mg/dl > 12 g/dl	
Carbamazepine		> 15.1 ug/ml	
Carbon Dioxide (CO2)		< 10 mEq/L > 50 mEq/L	
Coccidioides Abs CSF		Positive	8 am-5 pm Daily
Cerebral Spinal Fluid Cell Count, WBC	0-4 mo: 4 mo-adult:	> 30 WBC/ul > 10 WBC/ul	
Cerebral Spinal Fluid Culture/Stain		Positive Gram Stain and/or culture	
Cholinesterase RBC		< 3500 u/L	8 am-5 pm Daily
Cholinesterase Serum		< 2500 u/L	8 am-5 pm Daily
Clomipramine + Desmethylclomipramine		> 800 ng/mL (C + DC)	8 am-5 pm Daily
Clonazepam		> 80 ng/mL	8 am-5 pm Daily
Clozapine		> 1000 ng/mL	8 am-5 pm Daily
CMV, Rapid CSF Priority		> 200 copies/mL	8 am-5 pm Daily
Dengue		>=1:64 titer	8 am-5 pm Daily
Desethylamiodarone		> 3.5 ug/mL	8 am-5 pm Daily
Desipramine		> 500 ng/mL	8 am-5 pm Daily
Diazepam + Nordiazepam		> 3000 ng/mL (D + ND)	8 am-5 pm Daily
Digoxin		> 2.5 ng/ml	

GENERAL INFORMATION

Parameter	Age Specific	Critical Value	Notes
Dilantin (Phenytoin)		> 30 ug/ml	
Doxepin + Nordoxepin		> 500 ng/mL (D + ND)	8 am-5 pm Daily
EBV, Rapid CSF Priority		> 150 copies/mL	8 am-5 pm Daily
EnteroVirus Detectr PCR		Detected	8 am-5 pm Daily
Ethosuximide		> 150 ug/mL	8 am-5 pm Daily
Flecainide		> 1.0 ug/mL	8 am-5 pm Daily
Fluoxetine + Norfluoxetine		> 2000 ng/mL (F + NF)	8 am-5 pm Daily
Gentamycin		> 12 ug/ml	8 am-5 pm Daily
Glucose		< 40 mg/dl > 500 mg/dl	
Hemoglobin	0-1 mo: 1 mo-adult:	< 7 g/dl < 7 g/dl > 20 g/dl	
Hematocrit	0-1 mo: 1 mo-adult:	< 20% > 70% < 20% > 60%	
Heparin –PF4 Antibodies (HIT)		Positive	8 am-5 pm Daily
Herpes 1 and 2 DNA PCR		Detected	8 am-5 pm Daily
Herpes DNA Ultraquant PCR		>80 copies/mL	8 am-5 pm Daily
Herpes Antigen Detection DFA	0-12 yrs	Detected	8 am-5 pm Daily
Herpes Simplex culture	0-12 yrs	Isolated	8 am-5 pm Daily
Histoplasma Abs CSF		Positive	8 am-5 pm Daily
HSV I/II ,Rapid CSF Priority		> 80 copies/mL	8 am-5 pm Daily
Imipramine + Desipramine		> 500 ng/mL (I + D)	8 am-5 pm Daily
Iron	0-12 yr:	> 299 ug/dl	8 am-5 pm Daily
JCV, Rapid CSF Priority		> 80 copies/mL	8 am-5 pm Daily
Lamotrigine		> 20 ug/mL	8 am-5 pm Daily
Lead	0-18 yr	> 20 ug/dl	
Legionella DFA		Detected	8 am-5 pm Daily
Lidocaine		> 10 ug/ml	8 am-5 pm Daily
Lithium		> 1.5 mEq/L	
Nordiazepam		> 2000 ng/mL	8 am-5 pm Daily
Nortriptyline		> 500 ng/mL	8 am-5 pm Daily
Manganese Serum		> 10 ug/L	8 am-5 pm Daily
Manganese Whole Blood		> 30 ug/L	8 am-5 pm Daily
Manganese RBC		> 60 ug/L	8 am-5 pm Daily
Magnesium		< 1.0 mg/dl > 4.0 mg/dl	
Methotrexate		>/=0.5 umol/L	8 am-5 pm Daily
Mercury Urine		> 35 ug/L	8 am-5 pm Daily
Mercury Whole Blood		>/=40 ug/L	8 am-5 pm Daily
Microorganisms		Visible on manual diff	
Phenobarbital		> 60 ug/mol	
Phenytoin (Dilantin), Total		> 30 ug/ml	
Phenytoin (Dilantin), Free		> 3 ug/mL	8 am-5 pm Daily
Platelet Count		< 25 K/ul > 1000 K/ul	
Pneumocystis carinii DFA		Detected	8 am-5 pm Daily
Potassium	0-3 mo: 3 mo-2yr 2 yr-adult	< 3.1 mEq/L > 7.4 mEq/L < 3.1 mEq/L > 6.4 mEq/L < 3.1 mEq/L > 6.5 mEq/L	
Primidone		> 15 ug/mL	8 am-5 pm Daily

Parameter	Age Specific	Critical Value	Notes
Procainamide		> 16 ug/mL	8 am-5 pm Daily
(PT) INR		> 5.0	
PTT		> 100 sec	
Quinidine		> 10 ug/mL	8 am-5 pm Daily
Routine Culture (Any Type)		MRSA or VRE 1 st isolate	Not notified unless client is a Nursing Home
Salicylate		> 45 mg/dl	
SARS Detectr PCR		Detected	8 am-5 pm Daily
Sodium	0-1 yr: 1 yr-adult:	< 126 mEq/L > 149mEq/L < 125 mEq/L > 155mEq/L	
Theophylline		> 25 ug/ml	
Thyroxine (T4)	0 – 1 week	> 24.9 ug/dl	8 am-5 pm Daily
	1 wk – 1 mo.	> 19.9 ug/dl	8 am-5 pm Daily
	1 mo – 15 yrs	> 17.9 ug/dl	8 am-5 pm Daily
Tobramycin		> 12 ug/ml	8 am-5 pm Daily
Trazodone		> 5000 ng/mL	8 am-5 pm Daily
Valproic Acid		> 150 ug/ml	
Vancomycin		> 60 ug/ml	8 am-5 pm Daily
Virology		Positive on CSF or Blood	8 am-5 pm Daily
VZV, Rapid CSF Priority		>100 copies/mL	8 am-5 pm Daily
WBC	0-8 yr:	< 1.0 K/ul > 30.0 K/ul	8 am-5 pm Daily
	8 yr-adult	< 1.0 K/ul > 50.0 K/ul	8 am-5 pm Daily
West Nile Virus RNA PCR		Detected	8 am-5 pm Daily
Yeast in CSF		Any amount seen (cell count or India Ink prep)	8 am-5 pm Daily
Zonisamide		> 45 ug/mL	8 am-5 pm Daily

SPECIMEN CONTAINER CODES

ACD	Yellow top vacuum tube
AFBC	Acid-fast blood culture
AMPF	BD ProbeTec™ Amplified DNA Probe – Female
AMPM	BD ProbeTec™ Amplified DNA Probe – Male
B	Blue top vacuum tube. Must be filled to exhaust of vacuum. Mix gently after collection.
BCB	Aerobic blood culture – blue top
BCP	Anaerobic blood culture – purple top
BPS	CultureSwab Plus® for Bordetella pertussis
CT	Culture Swab® for routine cultures
FRM	10% neutral buffered formalin
GNL	Green top vacuum tube with lithium heparin anticoagulant. Mix gently after collection.
GNS	Green top vacuum tube with sodium heparin anticoagulant. Mix gently after collection.
GRY	Gray top (glucose) and other specialized testing.
HNC	24-hour urine container, with 2 gm NA ₂ CO ₂ preservative
LAV	Lavender top vacuum tube with EDTA K3 anticoagulant. Mix gently after collection.
LQ	Liquid-based Thin Prep® Pap Smear collection vial.
NGYN	Urine cytology fixative. Buffered methanol.
NPS	Nasopharyngeal swab. Use only Dacron or rayon-tipped swab.
PPCS	ParaPak™ container for culture and susceptibilities. Follow instructions with kit.
PPOP	ParaPak® 10% buffered neutral formalin for O & P exam. Follow instructions with kit.
PR	Plain red top vacuum tube. Does not contain serum separator or gel-barrier.
RB	Royal blue top vacuum tube with EDTA K3 anticoagulant. Mix gently after collection.
RB w/o	Royal blue top vacuum tube without anticoagulant for trace element collection.
SC	Sterile container
SL	Slide
SPU	Sputum container
SST	Serum separator tube. Use VACUETTE® brand gel-barrier tubes only. Mix gently after collection.
ST	Stool container
U	Plastic urine cup, no preservative
U24	24-hour urine container, no preservative
UAW	24-hour urine container, acid-washed
UBA	24-hour urine container, with 8 gm boric acid
UHCL	24-hour urine container, with 75 ml 6N HCL preservative
UVT	Urine Vacutainer® tube with gray stopper. For urine cultures only; not suitable for Urinalysis.
VCM	Viral/Chlamydia transport media.
VTM	H1N1 Viral transport media.

Consolidated Laboratory Services offers both Medicare approved panels, and other profiles designated to assist physicians in determining the patient's clinical condition. Although panels and profiles provide an ordering convenience, physicians are urged to remember:

- When ordering test(s) for which Medicare or Medicaid reimbursement is sought, the physician should order only those test(s) that are medically necessary for the patient.
- If all the tests in the requested profile are not medically necessary for the patient, the physician should order individual tests or less inclusive profiles.

CPT Code	Test Name		Specimen Requirement
86038 86225 86235 x5 86255	ANA Comprehensive Panel › Antinuclear Antibody (ANA) Anti-Centromere Anti-DNA (Double Strand) AB to DNA by C lucidiae Anti-RNP Anti-Sjogren Antibodies (SS-A, SS-B) Anti-Sm (Smith) Antibodies Anti-SCL-70	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
	Anemia Panel		CLS does not offer this as a specified panel. Tests should be ordered individually per physician request.
86021 86038	Antineutrophil Cytoplasmic Antibodies (ANCA) Profile › ANCA Total Autoantibodies ANCA Pattern Antinuclear Antibodies (ANA) ANA Pattern ANCA IgG Autoantibodies ANCA IgM Autoantibodies ANCA IgA Autoantibodies	SST	3 ml serum. Allow specimen to clot and centrifuge ^a . If results for ANCA Total is 1:20 or greater, ANCA IgG, IgM, IgA performed at no additional charge. See PAN-ANCA Profile for additional testing options.
86038 86431 85652 84550	Arthritis Panel Antinuclear Antibody Rheumatoid Arthritis Factor, Quantitative Sedimentation Rate, Westegren (automated) Uric Acid, Serum	2 SST LAV	4 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . 2 ml whole blood. Mix gently. Hold no longer than 24 hours.
	Bacterial Vaginosis Panel ›		See Vaginitis Detectr Panel
80048	Basic Metabolic Panel BUN Calcium Chloride CO ₂ Creatinine Glucose Potassium Sodium Anion Gap (calc)	SST	3 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . A 12-hour fasting specimen is preferred. Do not open tube.

› Referral Test

^a See Centrifuge Instructions, page 7

PROFILES AND PANELS

CPT Code	Test Name		Specimen Requirement
80053	Comprehensive Metabolic Panel A:G Ratio (calc) CO ₂ Albumin Chloride Alkaline Phos Creatinine ALT/SGPT Globulin (calc) AST/SGOT Glucose Bilirubin, Total Potassium BUN Protein, Total BUN/Creatinine (calc) Sodium Calcium	SST	4 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . A 12-hour fasting specimen is preferred. Do not open tube.
83891 83892 83900 83901 x 21 83909 83912 83914 x23	Cystic Fibrosis Mutation Analysis › Test detects 23 Cystic Fibrosis (CF) mutations recommended by the American College of Medical Genetics (ACMG) and the American College of Obstetricians and Gynecologists (ACOG). The assay will identify approximately 88% of CF mutations in the Caucasian population, 94% in the Ashkenazi Jewish population, 64% in the African-American population, 72% in the Hispanic-American population and 49% in the Asian-American population.	LAV <u>or</u> LQ	5 ml whole blood EDTA. Mix gently. Heparinized whole blood is not acceptable. For LQ specimens; collect cells in liquid based Thinprep® collection vial. Tests for clinically relevant mutations and five benign variants. Supplemental cystic fibrosis requisition needed for interpretation of results, (patient ethnicity and family history). <i>For patients with family history, order 5432FH.</i>
80051	Electrolytes Chloride CO ₂ Potassium Sodium	SST	3 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . A 12-hour fasting specimen is preferred. Do not open tube.
86664 86665 x2	Epstein-Barr Virus Antibodies Profile EBV Antibody to Nuclear Antigen EBV Antibody to Viral Capsid Antigen, IgG EBV Antibody to Viral Capsid Antigen, IgM	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
80076	Hepatic Function Panel (Liver Profile) Albumin Alkaline Phosphatase, Total ALT (SGPT) AST (SGOT) Bilirubin, Direct and Total Protein, Total	SST	3 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
80074	Hepatitis (Acute) Panel Hepatitis A Antibody, IgM Hepatitis B Core Antibody, IgM Hepatitis B Surface Antigen Hepatitis C Antibody	SST	3 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Automatic confirmation testing performed on positive Hepatitis B Surface Antigen and weakly positive Hepatitis C Antibody results at an additional charge.
83540 84466	Iron Profile Iron, Total Transferrin TIBC UIBC % Saturation	SST	4 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
80061	Lipid Profile Cholesterol HDL Cholesterol LDL (calc) Cholesterol, Total HDL/LDL Ratio (calc) Triglycerides	SST	4 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . A 12-hour fasting specimen is preferred.
	Liver Function Panel		See Hepatic Function Panel

CPT Code	Test Name	Specimen Requirement
85613	Lupus Anticoagulant Screen › Lupus Anticoagulant	SST 2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
86147 x3	Anticardiolipin IgG † Anticardiolipin IgM †	BLUE 3 ml citrated plasma. Fill tube to exhaust of vacuum. Do not open. Keep on ice. Hold no longer than 6 hours.
86148 x3	Anticardiolipin IgA † Antiphosphatidylserine IgG † Antiphosphatidylserine IgM † Antiphosphatidylserine IgA †	† Test performed if Lupus Anticoagulant is positive.
86021 x3 86038	PAN-ANCA Panel › ANCA Total ANCA Pattern Myeloperoxidase Autoantibodies Proteinase-3 Autoantibodies Antinuclear Antibodies (ANA) ANA Pattern ANCA IgG Autoantibodies ANCA IgM Autoantibodies ANCA IgA Autoantibodies	SST 3 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . If results for ANCA Total is 1:20 or greater, ANCA IgG, IgM IgA performed at no additional charge.
82105 82677 84702 86336 82397, 84999	Penta Screen › Alpha-Fetoprotein, Maternal Serum Estriol, Serum hCG, Quantitative Inhibin A ITA (hyperglycosylated hCG)	4 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Provide all required information indicated on supplemental referral form.
	Phospholipid Antibody Evaluation	See Lupus Anticoagulant Screen.
80055	Prenatal Profile ABO/Rh – including weak D Antibody Screen Complete Blood Count (CBC) RPR Rubella IgG Hepatitis B Surface Antigen	2 SST 5 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . 2 LAV Completely fill both LAV tubes. Mix gently. Do not hold longer than 36 hours. Receipt of only 1 LAV tube may result in cancellation of certain profile components.
82105 82677 84702 86336	Quad Screen (Maternal) › Alpha-Fetoprotein, Maternal Serum Estriol, Serum hCG, Quantitative Inhibin A	SST 3 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Provide all required information indicated on supplemental referral form.
86003 x18	RAST® Profile (South Atlantic) › Cat Dander Penicillium notatum Dog Dander Aspergillus fumigatus Bermuda Grass Alternaria alternata Meadow Grass Cladosporium Kentucky Blue herbarum Johnson Grass Oak Bahia Grass Elm Cockroach Pecan (Hickory) Dermatophagoides pteronyssinus Pigweed Dermatophagoides farinae (dust mite) Short (Common) Ragweed	SST 4 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .

› Referral Test

^a See Centrifuge Instructions, page 7

PROFILES AND PANELS

CPT Code	Test Name	Specimen Requirement
80069	Renal Function Panel Albumin Creatinine BUN Glucose Calcium Phosphate CO ₂ Potassium Chloride Sodium	SST 3 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
	Stone Profile The Stone Profile is composed of a series of tests performed on serum and urine including calcium, oxalate, uric acid, cystine, parathyroid hormone, and other components. A special diet is required during the 10-day profile period. Please contact our office at (904) 573-2906 for scheduling and more information.	
84436 84479	THYROID PANEL T4 T3 Uptake FTI (calculation)	SST 4 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
84436 84479 84443	THYROID PANEL + TSH T4 T3 Uptake Thyroid Stimulating Hormone FTI (calculation)	SST 4 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
86694 86695 86696 86777 86778 86762 86644 86645	TORCH Panel Toxoplasmosis IgG and IgM Rubella IgG Cytomegalovirus IgG and IgM Herpes 1 and 2 IgG and IgM	2SST 7 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
82105 82677 84702	Triple Screen (maternal 2.0 MOM) › Alpha-Fetoprotein, Maternal Serum Estriol, Serum hCG, Quantitative	SST 3 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Provide all required information indicated on supplemental referral form.
82105 82677 84702	Triple Screen (maternal 2.5 MOM) › Alpha-Fetoprotein, Maternal Serum Estriol, Serum hCG, Quantitative	SST 3 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Provide all required information indicated on supplemental referral form.
87481 87511 87798	Vaginitis DNA Detectr Panel › Candida albicans Gardnerella Trichomonas	LQ Follow liquid-based pap collection instructions. Sufficient cellular sample must be obtained. Panel includes; Candida, Gardnerella, Trichomonas. Tests may also be ordered individually.

CPT Code	Test Name		Specimen Requirement
86900 86901	ABO and Rh Type	LAV	1 LAV completely filled. Mix gently. Do not centrifuge.
86900	ABO Type	LAV	1 LAV completely filled. Mix gently. Do not centrifuge.
	ACE		See Angiotensin Converting Enzyme (ACE)
82003	Acetaminophen	PR	1 ml serum, refrigerated. Wait 4 hours after ingestion before drawing specimen. See Toxicology Section. Gel barrier tubes not acceptable.
82009	Acetone, Serum	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
83519	Acetylcholine Receptor Antibodies ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
82013	Acetylcholinesterase, Amniotic Fluid ›	SC	3 ml amniotic fluid. Collection in sterile transport tube. Indicate gestational age, collect date, clinical indication and AFP/MOM results if available. Contamination of fetal blood may cause false positive results. See "cholinesterase" for blood specimens.
	Acid-Fast Culture With Smear, Fluid or Tissue		See Culture, Acid-Fast With Smear, Fluid or Tissue.
	Acid-Fast Culture With Smear, Sputum		See Culture, Acid-Fast With Smear, Sputum.
	Acid-Fast Culture With Smear, Urine		See Culture, Acid-Fast With Smear, Urine.
87206	Acid-Fast Stain	SC	Includes AFB stain only. See Microbiology Section.
	Activated Protein C Resistance		See Factor V Leiden/APCR w/Reflex to DNA-based Test for Gene Mutation.
	ACTH		See Adrenocorticotrophic Hormone (ACTH)
86603	Adenovirus Antibody ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
	ADH		See Antidiuretic Hormone (ADH).
82024	Adrenocorticotrophic Hormone (ACTH) ›	LAV	Collect 1 LAV. Centrifuge & remove at least 2 ml of plasma. Place plasma in plastic transport tube and freeze immediately.
	Aerobic Culture		See Culture, Aerobic.
	AFB Culture, Blood		See Culture, Acid-Fast, Blood.
	ALA		See Aminolevulinic Acid (ALA),
84460	Alanine Aminotransferase (ALT)	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
82040	Albumin, Quantitative, Serum	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
	Albumin, Quantitative, Urine		See Microalbumin.
82055	Alcohol, Serum (Ethanol)	GRY or PR	Completely fill tube, refrigerate. Do not open tube. Do not use alcohol to cleanse the skin; use nonalcoholic antiseptic such as Betadine®. Fingertick specimens are not acceptable. See Toxicology Section.
82055	Alcohol, Urine (Ethanol)	U	Random urine, refrigerated. Container must be completely filled.

› Referral Test

^a See Centrifuge Instructions, page 7

ALPHABETICAL TEST LIST

CPT Code	Test Name		Specimen Requirement
82085	Aldolase ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Separate serum and freeze if holding longer than 24 hours. Hemolyzed specimens are NOT acceptable.
82088	Aldosterone, Serum ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Indicate if patient is supine or recumbent.
82088	Aldosterone, 24 Hour Urine ›	UBA	24-hour urine with boric acid preservative.
84080	Alkaline Phosphatase, Isoenzymes (Fractionated)	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . (Includes total alkaline phosphatase).
	Alkaline Phosphatase, Leukocyte		See Leukocyte Alkaline Phosphatase.
84075	Alkaline Phosphatase, Total	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
	Allergy Profile		See RAST® Profile (South Atlantic) in the Profiles and Panels Section.
	Allergy Testing		See RAST®, Single Allergen.
82103	Alpha 1 Antitrypsin ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge. ^a A 12-hour fasting specimen is preferred.
82105	Alpha-Fetoprotein, Maternal Serum ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Provide all information indicated on supplemental referral form.
	Alpha-Fetoprotein, Triple Screen		See Profiles and Panels Section.
82105	Alpha-Fetoprotein, Tumor Marker	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
80154	Alprazolam ›	PR	2 ml serum, refrigerated. Do not use gel barrier tube.
	ALT		See Alanine Aminotransferase (ALT).
82108	Aluminum ›	RB w/o	Contact laboratory at (904) 308-5603 for special trace element collection kit.
80150	Amikacin	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Separate serum, and freeze if holding longer than 24 hours. Specify if peak or trough.
82128	Amino Acid Screen Qual, Urine ›	U	20 ml minimum fresh random urine refrigerated. Hold no longer than 4 hours. Provide patient's age and sex, a brief clinical history, tentative diagnosis, and therapy over the last 3 days (i.e., drugs, x-ray, infant formula, diet). Freeze if holding longer than 4 hours.
82135 80102	Aminolevulinic Acid, 24 Hour Urine ›	U24	24-hour urine collected without preservative. Keep refrigerated and protect from light during collection.
80299 x2	Amiodarone ›	PR	2 ml serum, refrigerated. Do not use gel barrier tube.
80182 80152	Amitriptyline (Elavil®) ›	PR	2 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a . Immediately remove serum and place in plastic vial. Label as serum. Do not use gel barrier tube. Both Amitriptyline and Nortriptyline reported.

CPT Code	Test Name		Specimen Requirement
82140	Ammonia	GNS	5 ml heparin whole blood. Centrifuge immediately and separate plasma. Transport to lab immediately on wet ice. Freeze if holding longer than 1 hour.
82205	Amobarbital (Amytal®) ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge ^a .
86280	Amoeba Serology		See Entamoeba Histolytica Antibody
87177	Amoeba Exam (Fluid Tissue)	SC	Examination for amoeba (Acanthamoeba, Naegleria) in fluid/tissue specimens such as CSF or eye.
80299 x2	Amoxapine (Asendin®)›	PR	1 ml serum, refrigerated. Do not use gel barrier tube.
82150	Amylase, Serum	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
82150	Amylase, Urine (Random)	U	2-hour urine, no preservative.
	Amytal®		See Amobarbital (Amytal®).
	ANA		See Antinuclear Antibody (ANA).
	ANA Comprehensive Profile		See Profiles and Panels Section
	Anaerobic Culture		See Culture, Anaerobic.
82157	Androstenedione›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*. An early morning specimen is preferred.
82164	Angiotensin Converting Enzyme (ACE) ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*. Specimens for patients on Captopril must be frozen immediately. Grossly hemolyzed specimens will be rejected.
86850	Antibody Screen, Prenatal	LAV	1 LAV completely filled. Mix gently. Do not centrifuge. On prenatal positive screens with clinically significant antibodies, patient's plasma will be frozen for 2 weeks to allow time for clinician to order Antibody Titer at an additional charge.
86886	Antibody Titer, Prenatal	LAV	1 LAV completely filled. Mix gently. Do not centrifuge. Prenatal plasma will be frozen for titer comparison during pregnancy. When ordering this test, please write "Antibody Titer" (AB TITER) on test requisition form.
86147 x3	Anticardiolipin Antibodies ›	SST	4 ml serum, refrigerated. Allow specimen to clot and centrifuge*. Includes IgG, IgM, and IgA.
86255	Anticentromere Antibody ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
84588	Antidiuretic Hormone (ADH) ›	2LAV	4 ml plasma. Must be in the laboratory within 6 hours of collection.
86225	Anti-DNA, Double Strand ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
86226	Anti-DNA, Single Strand ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
	Anti-Factor Xa Activity		See Low Molecular Weight Heparin.

ALPHABETICAL TEST LIST

CPT Code	Test Name		Specimen Requirement
83520	Antiglomerular Basement Membrane ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
83520	Anti-GM1 Antibody ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
83520	Antihistone Antibodies ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
86376	Anti-LKM Antibody ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
	Antimicrosomal Antibody (Thyroid)		See Antithyroid Peroxidase (Anti-TPO)
83520	Antimitochondrial Antibody (MITO) ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
86021 86038	Antineutrophilic Cytoplasmic Antibody › (ANCA)	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
86038	Antinuclear Antibody (ANA)	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*. Titer performed on all positive screens at an additional charge.
86905	Antigen Type	LAV	1 LAV completely filled. Mix well. Do not centrifuge. Test for the presence of a red blood cell antigen. Desired antigen must be indicated on the order.
86256	Antiparietal Cell Antibody ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
86022	Antiplatelet Antibody (screen) ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*. Maintain at room temperature.
	Antiphospholipid Antibody Evaluation		See Phospholipid Antibody Evaluation in Panels and Profiles Section.
86235	Antiscleroderma Antibody (Scl-70) ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
	Anti-Sjögren Antibodies (SS-A, SS-B) ›		See SS-A and SS-B.
86256	Antismooth Muscle Antibody ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
86235	Anti-Sm (Smith) Antibodies ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
83883	Antistreptolysin O (ASO) ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
85300	Antithrombin III	B	Blue top tube filled to exhaust of vacuum. Do not open tube. Keep on ice and transport to the laboratory immediately.
86800	Antithyroglobulin Antibody	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*.
86376	Antithyroid Peroxidase (Anti-TPO)		See Thyroid Peroxidase Antibodies.
82172	Apolipoprotein A1 ›	SST	2 ml serum, refrigerated. Allow specimen to clot and centrifuge*. A 12-hour fast is preferred.
82172	Apolipoprotein B ›	SST	1 ml serum, refrigerated. Allow specimen to clot and centrifuge*. A 12-hour fast is preferred.
82175	Arsenic, Blood ›	RB	5 ml Royal Blue EDTA whole blood, refrigerated. Urine assay is preferable to blood.

INTRODUCTION

Our toxicology service is designed to meet both emergency and routine testing needs. Drug screening is performed for medical purposes only. We are unable to provide drug-free workplace testing, pre-employment screening, or testing for any other legal purpose.

Toxicology testing is available on an emergency basis 24 hours, 7 days per week. Turnaround time for results from a STAT drug screen is targeted for 4 hours from the receipt of the specimen(s) in the laboratory. Routine results are generally available within 24 hours.

Test methodologies utilized include spot tests, immunoassays, spectrophotometry, thin-layer chromatography, and gas chromatography/mass spectrometry (GC/MS). State-of-the-art equipment and methods are used in performing testing.

Drug screening procedures for the panels listed below include qualitative analysis for the drugs and drug classes listed under each panel. Screens for individual drugs, classes of drugs, or quantitative levels of drugs are available upon request. For consultation, please contact our clinical toxicologist at (904) 308-3894.

POLICIES FOR TOXICOLOGY TESTING

To ensure our services meet the exacting needs of our clients, we would like to clarify our drug screening policies, procedures, and terminology.

Policies for Reduction of False Negative Results

As a measure to reduce the reporting of false negative results, urine toxicology specimens are screened for urinary creatinine and for pH. If the creatinine level is $< 20\text{mg/dl}$ (consistent with a specific gravity < 1.005), the comment: "Urine specimen is very dilute based on creatinine concentration. Suggest recollection" will be added.

Should a creatinine of $< 1\text{mg/dl}$ be determined, urine specific gravity will be checked and recorded. The comment "Specimen inconsistent with human urine" will be added indicating that a fluid other than urine was submitted to the laboratory.

Urine pH must fall within the range of 4.5 to 8.5. Specimens not meeting pH criteria will be rejected.

Any sample in which interfering substances produce indeterminate screening results will receive the comment: "Suggest repeat testing due to the presence of endogenous or exogenous substances." This laboratory does not perform testing to determine the type of interfering substance. Interfering substances may indicate specimen adulteration, or the presence of certain medicinal or nutritional supplements or materials, such as radiographic dyes.

Reporting of Results

Upon screening the sample for the presence of the drugs designated by the client, if no drugs are detected, no further testing will be done and the test will be reported as "None Detected." For drug classes that are detected, the appropriate drug classes will be reported as "Positive".

For the comprehensive drug screen, only those drugs that are determined to be present in the sample are reported. Drugs tested for but not found to be present in the sample will not be listed. This is the only test for which the presence of an individual drug, as opposed to detection of a drug class, will be determined, when possible. For a partial list of the drugs and drug classes detected by this testing, please refer to the Comprehensive Drug Screen in the panels below.

Confirmations and Verifications

By definition, a verification test is the repeat screening of a sample by the same or similar method to verify the presence of a drug. A confirmation, on the other hand, is the testing of a sample by a method that has high selectivity and specificity for the drug in question, and which is based upon a different scientific principle than the initial screening method. Additionally, the criteria for determining whether or not a drug has been confirmed differs slightly depending upon whether the confirmation is being performed for medical or legal purposes. Currently, the only scientifically accepted confirmation method is Gas Chromatography/Mass Spectrometry.

Submitting a sample for repeat screening for a drug or drugs determined to be positive at your facility is verification testing, not confirmation testing. As such, orders for this service must be submitted as **“verify for the presence of ____.”**

Consolidated Laboratory Services does not provide confirmation testing only services. Any sample submitted as “confirm for the presence of ____” will be delayed as we will have to notify you of the incorrect order and determine whether you are seeking verification testing, or truly require confirmation testing. Samples requiring confirmation testing only should be sent directly to an HHS-Certified laboratory by the ordering facility.

Qualitative medical confirmation testing, as an additional procedure performed following screening, may be requested by adding the statement “confirm all positives” to an order for one of the screening panels below. For each drug class determined to be positive, a confirmation test will be automatically ordered. There will be an additional charge for each confirmation test performed. Most medical confirmations may be performed in our laboratory. Some, such as cannabinoids confirmation, must be sent to an HHS facility for confirmation, requiring several days for the return of results.

Amphetamine Screening

For drug screens that include testing for amphetamine, there are numerous readily available substances that may cross-react with the instrumental testing assay. The initial presumptive screening result of “Positive” may indicate a true amphetamine, a sympathomimetic amine, or a cross-reacting substance. A verification test, “Urine Amphetamine Screen Identification,” will be automatically ordered. This is a manually performed thin-layer chromatography test for amphetamines and sympathomimetic amines. An additional charge is associated with this testing. The result of this testing, indicating the presence or absence of a true amphetamine, is the clinically valid amphetamine screen result.

Phencyclidine Screening

Phencyclidine, or PCP, is a strong hallucinogen that is prevalent in some parts of the United States, but is rarely encountered in this area. There are over the counter cough suppressants that, if taken in great quantity, may interfere with this assay generating a false positive result. Therefore, the screening of any sample that is determined to be positive for PCP will automatically result in the order of a qualitative PCP confirmation. An additional charge is associated with this testing. The result of this confirmation testing represents the clinically valid phencyclidine result.

TOXICOLOGY

CPT Code	Drug Screens		Specimen Requirement
80101	AMPHETAMINES SCREEN	U	25 ml random urine. Minimum acceptable volume is 10 ml.
80101	CANNABINOIDS SCREEN	U	25 ml random urine. Minimum acceptable volume is 10 ml.
80101	COCAINE METABOLITES	U	25 ml random urine. Minimum acceptable volume is 10 ml.
80101 x 6	DRUGS OF ABUSE SCREEN Amphetamines Barbiturates Benzodiazepines Cannabinoids Cocaine metabolites Opiates	U	25 ml of urine, refrigerated. Minimum acceptable volume is 10 ml.
This screen is designed primarily for use in drug testing when the use of street drugs is suspected.			
80101 x 8	DRUGS OF ABUSE SCREEN WITH METHADONE Amphetamines Barbiturates Benzodiazepines Cannabinoids Cocaine metabolites Methadone Opiates Propoxyphene	U	25 ml of urine, refrigerated. Minimum acceptable volume is 10 ml.
80101 x 7	DRUGS OF ABUSE SCREEN WITH PROPOXYPHENE Amphetamines Barbiturates Benzodiazepines Cannabinoids Cocaine metabolites Opiates Propoxyphene	U	25 ml of urine, refrigerated. Minimum acceptable volume is 10 ml.
82055	ETHANOL SCREEN, URINE QUALITATIVE	U	Completely filled urine container with tightly sealed lid.
80101	METHADONE SCREEN	U	25 ml random urine, refrigerated. Minimum acceptable volume is 10 ml.
80101	OPIATES SCREEN	U	25 ml random urine. Minimum acceptable volume is 10 ml.
80101	PHENCYCLIDINE (PCP) SCREEN	U	50 ml random urine. Minimum acceptable volume is 20 ml.

CPT Code	Drug Screens		Specimen Requirement
80100 80101 x 9	REHAB DRUG SCREEN Amphetamines Barbiturates Benzodiazepines Cannabinoids Cocaine metabolites Meperidine Meprobamate Methadone Opiates Phencyclidine Phenothiazine metabolites Propoxyphene Sympathomimetic amines Tramadol Trazodone Tricyclic antidepressants	U	50 ml urine. Minimum acceptable volume is 20 ml.
	The Rehab Drug Screen is useful in monitoring patients rehabilitating from abuse of street drugs. It indicates if the patient is refraining from the use of these drugs while maintaining prescribed therapeutic drugs. This screen is also useful in evaluating patients presenting signs or symptoms indicative of a general behavioral disorder and/or some form of psychosis.		
	SERUM DRUG SCREEN	PR	5 ml serum (no gel). Heparinized plasma (green top tube) is also acceptable.
82003 82055 80196 80101	Acetaminophen Ethanol Salicylates Tricyclic antidepressants (semi-quantitative)		
	The Serum Drug Screen is useful in situations where sedative-hypnotic drugs and/or alcohol is indicated in the drug intoxication of the patient. Acetaminophen, ethanol, and salicylates are reported as quantitative results. Tricyclics are reported as semi-quantitative results.		

80100 x 2	COMPREHENSIVE DRUG SCREEN	U	50 ml urine. Minimum acceptable volume is 20 ml.
80101 x 8			
82055		SC	10 ml gastric aspirate (not recommended)

The Comprehensive Drug Screen is generally indicated in situations where patients are comatose and no prior history is known. If serum testing is desired, a Serum Drug Screen should be ordered in addition to this test.

Gastric aspirate is only recommended in cases of recent ingestion when the patient is still asymptomatic.

Acetaminophen	Fenfluramine	Pentobarbital
Alcohol – Ethyl	Fenoprofen	Phencyclidine
Amitriptyline	Fluoxetine	Phenobarbital
Amobarbital	Flurazepam	Phenothiazines
Amoxapine	Gemfibrozil	Phentermine
Amphetamine	Guaifenesin	Phenylpropanolamine
Barbiturates	Hydrocodone	Phenyltoloxamine
Benztropine	Hydromorphone	Phenytoin
Benzodiazepine metabolites	Hydroxyzine	Primidone
Benzoyllecgonine (cocaine metabolite)	Ibuprofen	Procaine
Brompheniramine	Imipramine	Procainamide
Bupropion	Ketamine	Promethazine
Butalbital	Ketones	Propoxyphene
Butabarbital	Ketoprofen	Propranolol
Cannabinoids (THC)	Labetalol	Protriptyline
Carbamazepine	Lidocaine	Pseudoephedrine
Carisoprodol	Loxapine	Pyrilamine
Chlordiazepoxide	Maprotiline	Quinidine
Chlorpheniramine	Meperidine	Quinine
Chlorpromazine	Meprobamate	Ranitidine
Chlorzoxazone	Methadone	Salicylates
Clozapine	Methamphetamine	Secobarbital
Citalopram	Methaqualone	Sertraline
Clorazepate	Methocarbamol	Strychnine
Clomipramine	Methylenedioxymeth-amphetamine (DMDA)	Sympathomimetic Amines
Citalopram	Metoclopramide	Terfenadine Metabolite
Cocaine	Morphine	Theophylline
Cocaethylene	Naproxen	Thioridazine
Codeine	Nordiazepam	Tramadol
Cyclobenzaprine	Normeperidine	Trazodone
Desipramine	Norpropoxyphene	Triamterene
Dextromethorphan	Nortriptyline	Tricyclic Antidepressants
Diazepam	Olanzapine	Trifluoperazine
Dihydrocodeine	Opiates	Trimethoprim
Diphenhydramine	Oxazepam	Tripelennamine
Doxepin	Oxycodone	Venlafaxine
Doxylamine	Paroxetine	Verapamil
Ephedrine	Pentazocine	Zolpidem

Drug Screen Consent Form

SAMPLE

I, the undersigned, do hereby give my consent to _____
 Its doctors, employees, or agent, together with any clinic, hospital or laboratory designated to perform urine
 and/or serum tests, or such other examinations as may be deemed necessary, on me for the detection of drugs
 and/or alcohol.

I further give my permission for _____
 Its doctors, employees or agents to release the results of these tests to the Employee Relations Department of
 the company by which I am employed or may be employed.

I am taking the following prescription drugs:

Name of Drug	Condition for Which Taken	Prescribing M.D.

I am taking the following non-prescription medications (such as aspirin, cold medications, etc):

Name of Drug	Condition for Which Taken

 Witness

 Signature

 Date

 Time

**This form should be retained in the patient's chart.
 Do not return completed form to Consolidated Laboratory Services.**

INTRODUCTION

Microbiology consists of several disciplines. These include Bacteriology, Mycobacteriology (AFB), Mycology, Parasitology, and Virology. Also included in this section are miscellaneous stool exam procedures that are usually ordered in conjunction with Parasitology exams.

In Microbiology, clinically useful test results depend on several factors: proper specimen selection, adequate collection, and timely transportation in the correct specimen collection device. Detailed instructions on specimen collection and transport are listed in this manual. The specimens must be placed in the appropriate collection devices so that transportation or delay does not destroy the specimen or harm the microorganisms. Please refer to the section on collection devices for the proper instructions. These instructions must be followed carefully to ensure the most accurate microbiological data.

The source of the specimen must be properly identified for the laboratory to correctly examine and identify potential pathogens. The laboratory request form contains space for the description of clinical specimens. Please be as detailed as possible in these descriptions. Please do not submit unlabeled specimens or containers with leaked specimen on the outside. These specimens are unacceptable.

Antimicrobial susceptibility studies will be automatically performed on potential pathogens from routine bacteriological cultures. Pathogens with known susceptibility patterns will not be tested unless the patient is allergic to the drug of choice or the pathogen is from a source that necessitates testing.

For the diagnosis of a viral infection, the specimens should be collected early in the acute phase of the infection. Seven days after the onset of illness, the recovery of virus from specimens is negligible. Specimens should be collected in the same manner as for bacteriologic culture. A special transport device is often required, so please refer to the instructions for guidance.

SPECIMEN COLLECTION, TRANSPORT DEVICES AND MEDIA

Swab Collection Devices

CultureSwab® (CT)

This swab system may be used for throat cultures, cultures of superficial wounds, and vaginal and cervical cultures. After the swab has been used to collect a specimen, insert fully into the tube.

CultureSwab Plus® (BPS)

This specialized swab is used for the collection of specimens for *Bordetella pertussis*. It can be easily distinguished from routine CultureSwab® by the presence of charcoal transport media at the base of the collection device. Follow the directions found in the collection kit for the preparation of slides.

BD ProbeTec™ Amplified DNA Assay Collection Kit Male or Female (AMPF or AMPM)

These containers must only be used when DNA testing for *Neisseria gonorrhoeae* and/or *Chlamydia* is desired. The liquid media will lyse any bacteria present rendering the specimen nonviable for culture. Only one swab need be submitted if both GC and *Chlamydia* DNA probe is requested. Follow the directions on the outside of the package for collection. Swab is not needed if testing performed in conjunction with liquid-based Pap testing.

Nasopharyngeal Swab (NPS)

This is a special swab for the collection of nasopharyngeal specimens. It has a thin flexible wire instead of a plastic sheath. Swab must be dacron or rayon. Do not use cotton or calcium alginate swab.

Viral/Chlamydia Transport Media

This is a transport media for all viruses including Herpes Simplex and Chlamydia. Tubes may be stored at room temperature until specimen is collected. After specimen collection, refrigerate and transport specimen on wet ice.

Blood Cultures (All blood cultures must be collected using sterile technique)**Routine Blood Culture Set: Aerobic and Anaerobic Bottles (BCB, BCP)**

The blue-top bottle is for aerobic organisms and the purple-top bottle is for anaerobic organisms. The blue bottle requires 8-10 ml of blood, and the purple bottle requires 8-10 ml of blood. If only enough blood is obtained for one bottle, use the aerobic blue bottle. For procedure on proper specimen collection, please refer to the Table of Contents, Blood Cultures, Collection Techniques and turn to that page for further instruction.

Pediatric Blood Culture Bottle

These bottles are designed to accommodate low-volume blood samples in the pediatric population. The yellow top requires 0.5 – 4.0 ml of blood. **Do not overfill.** If more than 4.0 ml is collected, inoculate the standard aerobic/anaerobic blood culture bottles.

Fungal Blood Cultures

Use blue top aerobic bottle. It requires 8-10 ml of blood. This bottle will be incubated for 4 weeks before it is finalized, if it is negative.

Acid-Fast (AFB) Blood Culture Bottle (AFBC)

This bottle is designed to support the growth of most mycobacteria that will grow in the blood. It requires 3-5 ml of blood. This bottle will be incubated for 42 days before it is finalized, if it is negative.

Stool Containers**ParaPak® for Ova and Parasites (PPOP)**

A single ParaPak® vial containing 10% buffered neutral formalin is used for transporting specimens for all ova and parasites. Use the scoop in the lid to place enough specimen in the vial so that the liquid reaches the line indicated on the vial. Cap and shake the vial to mix the specimen. Can be used for Ova and Parasites Screen or Comprehensive.

ParaPak® for Culture and Susceptibility (PPCS)

A single ParaPak® vial is used for transporting specimens for routine stool culture. Use the scoop in the lid to place enough specimen in the vial so that the liquid reaches the line indicated on the vial. Cap and shake the vial to mix the specimen.

Clean Vial or Plastic Carton (ST)

A white plastic carton is provided for stool specimens for occult blood, pus, fat, pH, phenolphthalein, reducing substances and *C. difficile* toxin.

Hemocult® Slides

These slides can be given to the patient to inoculate a stool specimen. They can only be used for the fecal occult blood test; gastric specimens cannot be tested with these cards.

Fluid Containers**Vacutainer® Urine C&S Transport Kit for Midstream Specimens (UVT)**

This is used to preserve a urine specimen if there is to be a delay in transport. This specimen may not be used for a routine urinalysis. You must submit a separate specimen for urinalysis if this transport device is utilized.

2.5 Ounce Sterile Container (SC)

This container can be used for a wide variety of specimens. This includes catheter urines, fluids, and tissue specimens. If tissue is submitted, do not put formalin in this container. If the tissue specimen is small (less than 3 cm in diameter) pour 1 ml sterile saline into the container to keep the tissue from dehydrating.

Spinal Fluid Collection Devices

If a lumbar puncture kit is used, the sterile screw cap tubes in the kit should be used to collect the specimen for culture. Do not refrigerate the specimen. The second or third tube collected should be used for cultures.

Sterile Screw Cap Tube

This tube may be used in place of the tubes that come with the lumbar puncture kit. It may also be used with other fluid specimens if anaerobes are not suspected.

Media Available for the Direct Inoculation of Specimens

Chocolate Agar

This media is available for direct inoculation of CSF specimens or specimens from eyes.

Blood Agar

This media is available for direct inoculation of CSF specimens, specimens from eyes, or urine specimens.

Sabouraud Dextrose Agar

This media is available for direct inoculation of specimens from eyes.

Thioglycolate Broth

This media is available for direct inoculation of specimens from eyes or from CSF.

MacConkey Agar

This media is available for direct inoculation of urine specimens.

Microscopic Slides

Stained Smears

Roll the specimen thinly onto the slide and allow the slide to air dry. This technique can be used with material for Gram, acid-fast, and fungal stains. Do not fix with Cytospray. The slide should be labeled with the patient's name.

Pinworm Prep

Use Pin Worm Prep Kit or the Scotch® Tape method for collection. If using Scotch® Tape, only clear cellophane tape is acceptable. Place the tape on one side of a clear microscopic slide for transport and examination. The slide must be labeled with the patient's name.

Viral Serology

Serologic diagnosis of a current or recent viral infection requires testing of two different serum samples. The acute phase serum should be collected within the first week of illness. The convalescent serum should be collected at least 3 weeks after the date of onset. Positive serologic evidence of infection is a fourfold increase in antibody titer between the acute and convalescent specimens. The laboratory should be notified if acute and convalescent serum samples will be submitted.

SPECIMEN COLLECTION FOR MICROBIOLOGICAL CULTURE

Specimen	Patient Preparation	Volume or Type	Container	Technique	Comments
Anaerobic Cultures					
Body fluids, secretions, pus	Decontaminate skin	1 ml or more if possible	CultureSwab®, sterile red top tube or syringe capped without needle	Aspirate without air. Swabs are discouraged for optimal recovery	Do not refrigerate. Transport immediately to lab
Respiratory	Transtracheal aspirate, pleural or emphysema fluid only	1 ml if possible	CultureSwab®, sterile red top tube or syringe capped without needle	Collected by physician	
Tissue	Surgery	1 cm ³ if possible	Sterile container	Collected by physician	Refrigerate specimen. Add 1 ml sterile saline if transport is delayed
Blood Cultures					
	Skin decontamination; prep kit	Adults and older children: 10ml/bottle; Infant: 1-4ml; 2-3 samples per 24 hours	Culture bottle for direct inoculation	Sterile venipuncture; specimens should not be drawn through catheter or cannulas	Volume of blood per bottle is the most important factor in recovering pathogens
Body Fluids (other than blood, urine, CSF)					
Joint fluid, pericardial fluid, peritoneal fluid, pleural fluid	Skin decontamination with alcohol	Several ml	Sterile tube or container	Sterile aspiration with syringe	
Cerebrospinal fluid	Skin decontamination with Betadine®	Several ml	Sterile, screw cap tubes, numbered in order of collection	Sterile lumbar puncture; ventricular suboccipital tap	Do not refrigerate. Transport immediately
Ear					
	Wash external canal with mild soap and water	Swabs (if volume allows, submit fluid)	CultureSwab® Place fluid in sterile tube.	Collect specimen through sterile funnel from eardrum or beyond	
	Wash external canal with mild soap and water	Swab, scraping, or fluid aspiration	Sterile tube or CultureSwab®	Obtain specimen from active margin preferable including fresh secretion from deeper areas	Surface swabbing might miss streptococcal cellulites or erysipelas
Eye					
Internal			Sterile syringe	Surgical technique; label carefully whether left or right eye	Speed in transport and care in handling is very important
External	None	Swab or scraping	CultureSwab®		Handle carefully. Transport to lab immediately
Genital Lesion					
	None	Vesicle fluid and cells	Viral/Chlamydia transport media	The vesicle is ruptured and the surface scraped to obtain vesicle fluid and cells from the base of the lesion Vesicle fluid may be aspirated from several fresh lesions	Transport using cold packs or wet ice. Do not freeze.
Genital Tract – Female					
	Skin decontamination with Betadine®	Uncontaminated fluid	Sterile red top tube	Aspirate with syringe	Do not refrigerate
	Wipe Cervix clean of secretion and mucus. Use speculum and no lubricant	Uncontaminated endocervical secretions; take two swabs	CultureSwab®		Do not refrigerate. Transport to lab immediately

MICROBIOLOGY

Specimen	Patient Preparation	Volume or Type	Container	Technique	Comments
Culdocentesis	Surgical procedure	Fluids, secretions	CultureSwab®	If swabs are to be used, insertion through a sterile tube sheath will help avoid contamination with vaginal flora	Likelihood of external contamination is high if cultures obtained through the vagina.
Intrauterine device	None	Entire device plus secretions, pus	Sterile Container		Unusual organisms may be isolated (e.g., Actinomyces and yeasts)
Urethra	Wipe clean with Betadine®	Swab with urethral secretion or free discharge	CultureSwab®	Collect 1 hour or more after urinating. If discharge cannot be obtained by "milking" the urethra, use swabs to collect material from about 2 cm inside urethra	
Vagina	Use speculum without lubricant	Aspirate or swab	CultureSwab®	Simple aspiration swabbing; swab mucosa high in vaginal canal	
Vulva (including labia, Bartholin glands)	Decontaminate with Betadine®	Swab or aspirate	CultureSwab® See culture for aspirate	Collect with swab or aspirate abscess with syringe and needle	
Genital Tract – Male					
	Skin decontamination with Betadine®	Swabs	CultureSwab®		Do not refrigerate
	None	Secretion for smear and culture	Sterile container	Digital massage through rectum	
Urethra	Wipe clean with Betadine®		CultureSwab®		
Intestinal					
Duodenal O & P	Patient must be intubated	Several ml	Sterile container		
Stool O & P	None		ParaPak® (pink top)	Follow instructions with ParaPak™ kit.	Screen or Comprehensive
Stool Culture	None		ParaPak® (orange cap)	Follow instructions with ParaPak™ kit.	
Stool Culture	None		CultureSwab®	Insert swab just beyond sphincter	Not useful for detection of carriers
Nasal Wash					
	None	Nasal washing	Sterile container	Tilt the patient's head back at an angle of approximately 70°. Insert a rubber bulb syringe (1 oz tapered containing 3-7 ml of PBS) until it occludes the nostril. Collect the specimen with one complete squeeze and release the bulb. Deposit aspirate in sterile screw cap bottle	Transport using cold packs or wet ice. Do not freeze
Respiratory Tract					
Throat/pharynx	None	Swab	CultureSwab®	Swab areas of exudation and tonsillar crypts	
Nasopharynx	None		Nasopharyngeal swab	Swab is passed through nose gently and into nasopharynx. Stay near septum and floor of nostril. Rotate and remove	Use Dacron or rayon tipped swab. Calcium alginate or cotton not suitable for viral collections.
Oral cavity: Mucosal surface or gums and teeth	Rinse mouth prior to collection	Scraping, swab	CultureSwab®	Swab lesion rather than skin surface. Aspirate pus, if present	

Specimen	Patient Preparation	Volume or Type	Container	Technique	Comments
Expectorated sputum			Sputum container or sterile container	Rinse mouth prior to collection. Patient must cough deeply. Obtain sputum, not saliva	Early morning sputum is best. If >10 epithelia's specimen will be rejected.
Skin					
Scabies		Skin scrapings	Sterile container	Gently scrape skin with edge of glass slide or scalpel and place scrapings into sterile container.	
Superficial wound	Clean wound surface	Pus, tissue	CultureSwab®	Swab lesion rather than skin surface. Aspirate pus, if present	
Decubitus ulcer	Clean wound surface		CultureSwab®	Swab deepest area of wound	
Closed abscess	Clean surface with Betadine®	Pus, 1 ml if possible	CultureSwab®		
Fistula, sinus tract	Clean surface with saline	Pus, 1 ml if possible	CultureSwab®	Swab or aspirate deeply	
Umbilicus	No cleaning	Swab	CultureSwab®	Swab	
Vesicle	None	Vesicle fluid and cells	Viral/Chlamydia Transport media (VCM). CultureSwab® for routine culture.	The vesicle is ruptured and the surface scraped to obtain vesicle fluid and cells from the base of the lesion. Vesicle fluid may be aspirated from several fresh lesions.	Transport using cold packs or wet ice. Do not freeze
Tissue					
Surgical or biopsy	Surgery	5-10 ml or aspirate	Sterile container with 1 ml of saline (non-bacteriostatic)		
Urine					
Routine voided	Instruct carefully. Early morning clean voided midstream specimen is best	1 ml urine	Sterile container or clean catch kit or urine transport container	Clean genital area well. Discard first portion of urine stream. Collect midstream specimen	Refrigerate if there is a delay in transport
Catheter or ileal loop collection	Disinfect tubing with alcohol	1 ml urine	Sterile container	Aspirate through tubing with a syringe	Refrigerate if there is a delay in transport
Bladder urine suprapubic	Betadine®	1 ml urine	Sterile container or sterile red top if anaerobic culture requested	Collected by needle aspiration or cystoscopy	Deliver immediately to lab
Cystoscopic	Betadine®	1 ml urine	Cytoscopy/sterile container		Refrigerate if there is a delay in transport

MICROBIOLOGY TEST LISTING QUICK REFERENCE

Test	Specimens	Collection and Transport Device	Comments
Routine Bacteriological Exam or Culture			
Aerobic and anaerobic culture (combined)	Bile swabs Surgical swabs Aspirates Swabs of fluids Sterile body sites Deep wounds Deep Abscess	CultureSwab®	Gram stain included Send to lab immediately. Indicate "anaerobic culture" on test requisition form
Beta strep culture (for the isolation of group A or B streptococci only depending on site)	Throat swab Cervical swab Vaginal / rectal	CultureSwab®	No Gram stain
Blood culture	Blood Bone marrow	Aerobic and anaerobic blood culture bottles	No Gram stain
Bronchial culture	Bronchial washings, brushings, lavage	2.5 oz sterile container	Gram stain included
Cath tip culture	Cath tips: UAC, IV, CVP	2.0 oz sterile container	No Gram stain
Chlamydia Amplified DNA Probe (only one swab required for both GC and Chlamydia probe assays)	Endocervical Male urethral Urine	Male or female BD ProbeTec™ Or Urine stored at 2-8° C Or ThinPrep	Special collection requirements
<i>Clostridium difficile</i> toxin assay	Stool Rectal or colon washings	Clean vial or plastic carton	Use clean container, no preservative. Testing will not be performed on duplicate orders received within a 24 hour period, patients that have tested positive within past 7 days, or on formed stools.
CSF culture	CSF Ventricular fluid	2.5 oz sterile container	Gram stain included
Environmental culture	Environmental specimen	CultureSwab® Water sample 100 mL	No Gram stain
Eye culture	Any specimen from the eye	CultureSwab®	Gram stain included For vitreous fluid, order Fluid culture
Fluid culture	Blood bag Aspirates Fluids Bile Abscess in syringe Vitreous fluid	2.5 oz sterile container	Gram stain included
Fluids in blood culture bottles	Fluids sent in blood culture bottles	Aerobic and anaerobic blood culture bottles	No Gram stain
GC culture (for the isolation of <i>N. gonorrhoeae</i> only)	Cervix Urethra Throat Eye in baby Anal	CultureSwab®	No Gram stain; order if required. Transport to lab immediately

Test	Specimens	Collection and Transport Device	Comments
GC Amplified DNA Probe (Only one swab required for both GC and Chlamydia probe assays)	Endocervical Male urethral Urine	Male or female BD ProbeTec™ Or Urine stored at 2-8° C Or ThinPrep	Special collection requirements
Genital culture	Cervix / vagina Urethra / penis	CultureSwab®	Gram stain included
Gram stain	Any specimen	2.5 oz sterile container	Gram stain only
Legionella culture	Bronchial washing Biopsies Lavages	2.5 oz sterile container	DFA stain included
OSRA/MRSA (SACUL)	Any specimen	CultureSwab®	No Gram stain
Quick group A strep screen (for rapid detection of group A strep)	Throat	CultureSwab®	If negative, a beta culture will be done at an additional charge
Sputum culture	Sputum Tracheal aspirates Luken's trap	Sterile container	Gram stain included
Staphylococcus aureus	Any specimen	CultureSwab®	No Gram stain
Stool culture (includes the following pathogens: Salmonella, Shigella, Yersinia and Campylobacter. If Vibrio and E. coli OH 157 is requested, please put in special request)	Stool Colon washings Rectal swab	ParaPak® for culture and susceptibilities	No Gram stain
Surveillance culture (for special organism detection, except ORSA/MRSA and VRE)	Any specimen	CultureSwab®	Note which organism is to be cultured. No Gram stain
Throat culture	Throat Nasopharyngeal	CultureSwab®	No Gram stain
Urine culture (includes colony count)	Urine: Suprapubic Cysto Clean catch Catheter	Vacutainer® urine C&S transport kit for midstream specimens; 2.5 oz sterile container; sterile red top vacutainer for supra-pubic aspirates	No Gram stain. Please note urine type (i.e., cath, clean catch) on requisition
Vancomycin Resistant Enterococci (VRE)	Any specimen	CultureSwab®	No Gram stain
Wound culture (superficial)	Swabs of: Abscesses Decubiti Ulcers Lesions	CultureSwab®	Gram stain included
Mycobacteriological (AFB) Exam or Culture			
AFB Blood culture	Blood Bone marrow	Acid-fast blood culture bottle	AFB stain not included; special bottle needed
Acid-fast culture	Any specimen (except blood)	2.5 oz sterile container; sputum collection system	AFB stain included
Acid-fast bacilli strain	Any specimen	2.5 oz sterile container	AFB stain only

MICROBIOLOGY

Test	Specimens	Collection and Transport Device	Comments
Mycology or Fungal Exam or Culture			
Blood culture for yeast	Blood	Aerobic blood culture bottle, blue top	No fungal smear
Fungus culture	Any specimen (except blood)	2.5 oz sterile container CultureSwab®	Fungus stain not included; fungus smear or KOH must be ordered separately
Fungus stain	Any specimen	2.5 oz sterile container	Fungus smear only
KOH prep	Any specimen	2.5 oz sterile container	KOH prep only; fungus culture must be ordered separately
Parasitology			
Cryptosporidium specific antigen	Stool	2.5 oz sterile container or EcoFix	Do not submit in PVA preservative
Cyclospora exam	Stool	2.5 oz sterile container or EcoFix, Refrigerate	Do not submit in PVA preservative
Giardia specific antigen	Stool	2.5 oz sterile container or EcoFix	Do not submit in PVA preservative
Ova and Parasite exam	Stool	ParaPak® EcoFix for Ova and Parasites	Can be used for all parasites
Pneumocystis exam	Respiratory secretion	2.5 oz sterile container	
Viral Exam			
Adenovirus antigen	Nasopharyngeal aspirate or washing	Sterile container	Refrigerate
Chlamydia culture	Cervical swab Urethral swab Conjunctival swab	Viral/Chlamydia transport media	Do not use wooden-shafted swabs. Refrigerate after collection and transport on wet ice
Cytomegalovirus (CMV culture)	Urine: Any specimen: Buffy Coat	2.5 oz sterile container; Swab or secretion in Viral Transport media; 5 ml of EDTA whole blood	Refrigerate
Herpes simplex culture	Vaginal / cervix Urethral / penis Vesicle fluid Ulcerated lesion	Viral / Chlamydia Transport Media	Must specify source and transport on wet ice
Herpes, direct smear	2 prepared slides of cellular material obtained from the base of fresh lesion	Slide	Refrigerate
Influenza antigen	Nasopharyngeal aspirate; Nasopharyngeal washing	Sterile container	Refrigerate
Parainfluenza antigen	Nasopharyngeal aspirate; Nasopharyngeal washing	Sterile container	Refrigerate
Respiratory Syncytial Virus (RSV)	Nasopharyngeal aspirate; Nasopharyngeal washing	Sterile container	Refrigerate. Do not use wooden shaft swabs
Rotavirus detection	Stool Rectal or colon washing	Clean vial or plastic carton	Refrigerate
Tzanck prep (for herpes inclusion bodies)	Any specimen	Fixed slide	See Cytology section

Test	Specimens	Collection and Transport Device	Comments
Varicella Zoster direct smear	1 prepared slide of cellular material from the base of fresh lesion	Slide	
Viral culture	Any specimen	Viral Transport Media	Refrigerate
Viral serology	See Alphabetical Test List for collection instructions		See individual test listings

Miscellaneous Stool Exam

Leukocyte or pus exam	Stool Rectal or colon washing	Clean vial or plastic carton	
Occult blood	Stool	Clean vial, plastic carton, or Hemocult slide	DO NOT mail Hemocult slide to lab. Test request form must accompany specimen to the lab
Phenolphthalein exam	Stool	Clean vial or plastic carton	
pH exam	Stool	Clean vial or plastic carton	
Qualitative fat	Stool	Clean vial or plastic carton	
Reducing substances	Stool	Clean vial or plastic carton	

CYTOLOGY

Cytology tests include:

Aspirations, Direct Smear	PAP Smear (Cervical/Vaginal)
Body Fluids (Other than Urine, Sputum, or Cerebrospinal Fluid)	Sputum Cytology
Cerebrospinal Fluid Cytology	Tzanck Test (Viral Inclusions)
Fine Needle Aspiration (Interpretation)	Urine Cytology

Requests for cytological examination can be made on the test request in the Cytology area of the form. All supplies and fixatives needed to properly preserve the specimen will also be provided. Obtaining an adequate specimen, preserving the specimen properly, and providing the patient's medical history is essential.

All slides must be labeled, in pencil, with the patient's name.

The Pap smear is a screening technique to aid in the detection of cancer and cancer precursors, and is not considered to be an absolutely diagnostic procedure. Any visible lesion should be biopsied.

Recommendations for Non-Gynecological Specimen Collection

Submit fresh urine specimens for cytology in a preservative fluid (buffered methanol) using equal volumes of fluid and urine. Sputum should be submitted in Saccomanno's fixative (green or blue solution). Cerebrospinal fluid for Cytology must be submitted immediately and with **no additives and refrigerated**. Smears from non-gyn sites (nipple secretions, etc.) should be fixed immediately with spray fixative. For other nongynecological specimen requirements, see the Alphabetical Listing of Tests.

Fine needle aspiration cytology has become an important diagnostic tool. We urge clinicians with locations convenient to St. Vincent's Medical Center to make use of a fine needle aspiration suite, which has direct support of a pathologist and cytotechnologist. Aspirations performed in your office will, of course, be accepted for interpretation. For details in aspiration technique, please contact our pathologist.

We recommend immediate spray fixation or 95% ethyl alcohol fixation. Information about fixation technique (air-dried, smears, spray-fixed) is vital to proper handling of the smear. Clinical impression and precise anatomic source are also vital aspects of the interpretation of these specimens.

Recommendations for Gynecological Specimen Collection

Consolidated Laboratory Services offers both conventional and thin layer Pap smear testing.

Thin Layer Methodology (ThinPrep®) – Because of the many artifacts associated with conventional Pap smear preparations and the limitations created by heavy inflammation, blood, or thick smear preparation, thin layer methodology has been demonstrated to be more sensitive in the detection of cervical dysplasia. Specimens are collected using a brush/spatula or broom-like device that is swished into a vial of preservative fluid. The vial is then capped, labeled, and sent to the lab for analysis.

Conventional Pap Smear – Excessive lubricant should be avoided. Vaginal pool material is collected first and a drop placed at the end of the slide. A circular scraping of the cervical junction is then obtained and mixed with the vaginal pool drop on the slide. The drops are then smeared twice rapidly and immediately fixed with spray fixative. Slide(s) must be labeled with the patient name written in pencil.

Unacceptable specimens are defined as:

- No patient ID on either slide or requisition
- No date of birth
- No account/physician name/number
- Slide broken beyond repair on receipt
- Slide/requisition separated on receipt and neither properly identified
- Conflict between name of patient on specimen and name on requisition
- Specimen not properly preserved

Report Format for Gynecological Specimens

Consolidated Laboratory Services has adopted the Bethesda System 2001 for reporting cervical/vaginal cytology results.

Our Cytology reports contain the following elements:

1. A statement of adequacy of the specimen for diagnostic evaluation
 - Satisfactory
 - Unsatisfactory (reason is provided)
2. A general categorization of the diagnosis
 - Negative for intraepithelial lesion or malignancy
 - Epithelial cell abnormality
3. The descriptive diagnosis if applicable. This will specifically describe the following:
 - Abnormalities
 - Presence of infection, reactive and reparative changes
 - Reason(s) for unsatisfactory smear;
 - à too few squamous cells
 - à poor preservation
 - à totally obscured by blood or inflammation

Quality Assurance

Consolidated Laboratory Services provides a **history search** on **all** gyn and non-gyn specimens and a follow-up program for gyn cases of dysplasia or suspected malignancy.

Our **history search program** gives us the opportunity to review **all** previous results in our files.

Our follow-up program provides the physician a second opportunity to receive notification of an abnormality in the unlikely event that the original report is not received or lost. Follow-up information returned from you confirms that our follow-up letter has been received and allows us to update our files.

Proper management of suspected cervical dysplasia is a complex diagnostic algorithm. Mistakes can occur at any stage of the management process. We strongly urge our clients to maintain their own tracking mechanism for pending Pap smears. Considerable clinical judgment is required for proper management of any abnormal result.

The pathologists welcome any request for review and discussion of abnormal findings. The finding of "atypical squamous cells of undetermined significance" often creates diagnostic confusion. These represent abnormal cells that do not fulfill the criteria required for diagnosis of dysplasia. While these frequently represent various metaplastic or reparative changes, these cells can also represent high grade dysplasia and even invasive squamous carcinoma.

Human Papilloma Virus (HPV) Testing

Use of the ThinPrep® Pap test system provides clients with the ability to perform both PAP and HPV testing from the same collection vial. Using CLS standard test requisition form, clients may elect to have the laboratory automatically perform HPV testing if the Pap results are determined to be high risk or performed regardless of HPV results.

SURGICAL PATHOLOGY

Surgical Pathology tests include:

Bone Marrow Pathology	Gross and Microscopic, Level II
Estrogen, Progesterone Receptor Group	Gross and Microscopic, Level III
Frozen Section	Gross and Microscopic, Level IV
Gross Pathology Exam	Gross and Microscopic, Level V
	Immunofluorescence, Direct

The laboratory provides 10% neutral buffered formalin bottles for general histology purposes. Other specialized fixatives, such as Hollande's for testicular biopsies, are available upon request. We recommend neutral buffered formalin for all other specimens unless specialized studies (such as lymph nodes for flow cytometry or cultures) are anticipated.

Specimens and requisitions should be labeled with the patient's name, age, sex, source of specimen and physician's name.

Most routine specimens require approximately one (1) working day after receipt for diagnosis to be made. If a specimen needs special stains or other procedures, the turnaround time will increase.

Miscellaneous Surgical Specimens

10% neutral buffered formalin is the preferred fixative for surgical specimens. Larger specimens (>3 cm in diameter) should be refrigerated if undue delay in delivery is anticipated.

Bone Marrow Aspirates

Specimen requirements: Minimum of three (3) slides for routine testing. Minimum of six (6) slides if enzyme stains are requested.

Allow slides to air dry before placing in cardboard slide holder or other protective transport container. Slides must contain bone marrow spicules.

Bone Marrow Biopsies

Specimen requirements: 10% neutral buffered formalin and clinical data.

Bone marrow biopsies should be placed in 10% neutral buffered formalin. If submitted, the clot should be placed in a separate container of 10% neutral buffered formalin. Both containers should bear patient's identification. The test request form should include all pertinent information (e.g. clinical data). It is helpful to include as much information as possible. When indicated, each biopsy will receive iron stains as well as routine hematoxylin and eosin. It is up to the discretion of the pathologist to order additional studies or special stains.

Breast Biopsies

Specimen requirements: Fresh tumor delivered in a timely manner (within 30 minutes of removal); patient identification and pertinent information.

All breast biopsies should be submitted fresh for intraoperative evaluation unless the surgeon is satisfied he/she is dealing with an innocuous lesion (e.g. lipoma). Any abnormal mammogram should be transmitted to the pathologist to help direct the examination. The pathologist may elect not to freeze the tissue after telephone consultation with the surgeon. Estrogen and progesterone receptor, HER2NEU, and DNA analysis will be performed on all invasive tumors.

Flow Cytometry

Specimen requirements: Blood/bone marrow specimens should be submitted in either a lavender tube (LAV) or lithium heparin tube (GNL). Body fluid specimens such as pleural fluids should be submitted in a sterile container without additive. Refrigerate but do not freeze.

Tissue or lymph nodes should be submitted wrapped in saline moistened gauze placed into a sterile container with wet ice and delivered STAT to the lab. Tissue and lymph nodes may also be submitted in RPMI tissue culture media.

A relevant patient history and diagnosis should accompany all specimen types.

Frozen Sections

Specimen requirements: Fresh, unfixed tissue, clearly labeled with the patient's name and anatomic source; and telephone number where results should be transmitted.

Frozen sections are available Monday-Friday, 8:00AM – 5:00PM and at other times by special request. The specimen should be delivered fresh (no fixative) directly to St. Vincent's Medical Center Histology Laboratory, or the courier must be informed the case is for "immediate frozen section diagnosis". Please allow 30 minutes for delivery and processing. Results will be telephoned to your office.

Gastrointestinal Biopsies

Specimen requirements: We recommend neutral buffered formalin for all routine specimens.

We recommend the use of our GI Endoscopic biopsy form (available upon request) in addition to the standard requisition. A PAS/AB mucin stain will be performed on upper gastrointestinal biopsies as well as an immunoperoxidase stain (for detection of *Helicobacter* on all gastric biopsies).

Gynecologic Tissue Specimens

Specimen requirements: 10% neutral buffered formalin along with clinical and hormonal history.

Cervical biopsies, endometrial biopsies, and curettage should be submitted in 10% neutral buffered formalin along with complaint (e.g. metrorrhagia) and hormonal therapy history.

Immunofluorescence (Skin, Conjunctiva, Mucosa)

Specimen requirements: Zeus transport medium, anatomic source (lesional perilesional); and suspected clinical diagnosis. Tissue immunofluorescence specimens should be submitted in Zeus transport medium available from the laboratory. Biopsy must be identified with anatomic site, as well as whether biopsy is intralesional, perilesional, or remote from the lesion. Suspected clinical diagnosis is required.

Lymph Nodes, Diagnostic

Specimen requirements: Prompt delivery of fresh, sterile lymph node and clinical history.

Proper evaluation of lymph nodes requires access to fresh sterile tissue. Material should be hand delivered or sent by courier for immediate delivery (send as if for frozen section). Clinical information should include the extent and duration of lymphadenopathy, and other associated diseases (lupus, AIDS), and suspected diagnosis. It is recommended the case be discussed with the pathologist prior to the procedure. If microbiology culture is desired, this should be stated, as it will not automatically be performed on all submitted lymph nodes. Either fresh or frozen tissue will be requested for flow cytometry or immunologic markers, depending on histologic findings.

Skin Biopsies

Specimen requirements: Properly labeled 10% neutral buffered formalin, anatomic source, specifics as to orientation of biopsy, and specimen requisition.

Shave excisions, curettage, wedge excisions, and punch biopsies should all be submitted in 10% neutral buffered formalin. Anatomic source and any required orientation should be provided along with clinical diagnosis. Margin evaluation is performed upon request on excisional biopsies.