
General Information

Billing Services

S.E.D. Medical Laboratories offers several billing options to our clients. We can bill clients (the healthcare provider, physician, facility, group practice), the patient or bill a third party (insurance companies with whom we have a claims processing arrangement).

S.E.D. is able to offer these billing options only with the full cooperation of our clients. We depend on you to provide us with complete information and documentation of medical necessity when third party billing is involved.

General billing and processing requirements include:

1. Billing instruction-Bill to: account, patient, or third party insurance
2. Patient Name (Last, First, Middle)
3. Date of Birth
4. Sex
5. Patient Social Security Number
6. Patient Phone Number
7. Responsible Party/Insured Name if other than patient
8. Mailing Address or Responsible Party/Insured
9. A copy of the patient's insurance card (front and back) is required for all third party insurances.
10. Information on the insurance card must include the following:
 - Name of Insurance Company
 - Insurance Address
 - Insurance ID Number
 - Insurance Group Name/Number
 - Relationship to Insured
11. ICD-9 Diagnosis Code(s) for Tests Ordered (for Medicare patients see page 5), (Medicare coverage of Laboratory Testing, National and Local Policies)
12. Patient/Responsible Party Signature
13. A copy of the patient's insurance card (front and back).

Failure to provide essential information will result in calls to your office and possible delays. In the absence of sufficient billing and/or diagnosis information, patients or the healthcare provider will be billed.

Contacts:

Insurance plan participation: 727-6210 or 1(800) 305-3006, ext. 6210

Client billing/Client fees: 727-6230 or 1(800) 305-3006, ext. 6230

Procedure Coding: 727-6210 or 1(800) 305-3006, ext. 6210

Client Services

S.E.D.'s Client Services Department is the day-to-day liaison for laboratory users. Call Client Services for medical test results, to inquire about adding a test on a previously submitted specimen, for assistance with routine specimen requirements, and to order laboratory supplies and requisitions. Our knowledgeable staff works closely with the clinical laboratory departments in order to respond to client inquiries.

Clinical Consultation

S.E.D. Medical Laboratories provides the assistance of a clinical consultant to provide guidance to our clients in the appropriate choice of testing for specific clinical or medical conditions. Our Medical Director acts as the Clinical Consultant and can be reached at ext. 6214.

Clinical Laboratory Testing

S.E.D. Medical Laboratories (S.E.D.) offers clinical and anatomic laboratory services to medical facilities, physicians and other healthcare providers throughout the United States. S.E.D. was founded in 1972 by emeritus Drs. Savino, Engberg and Dain (hence S.E.D.).

Our commitment to you revolves around a team of highly qualified scientific and technical-area professionals, state-of-the-art equipment, and sensitivity to client and patient needs. S.E.D. takes pride in our long-standing reputation for consistently producing timely and reliable diagnostic laboratory services.

A full spectrum of laboratory testing is provided 24 hours per day, and our technical staff and pathologists are available around the clock for client consultation. S.E.D.'s Medical Director assists physicians in obtaining and interpreting laboratory data as needed for diagnosis and patient care. Each department is staffed by technologists certified by the American Society of Clinical Pathologists (ASCP).

Continuing Education

S.E.D. Medical Laboratories offers continuing education in laboratory medicine for employees and clients (physicians, laboratory and clinical staff, and forensic drug testing employers). Education includes in-service programs, teleconferences and written Laboratory Briefs on new testing methodologies and S.E.D. services. Contact Marketing at ext. 6232 for a continuing education schedule.

Courier Services

Courier service in Albuquerque and surrounding areas is available on an on-call or scheduled basis for retrieval of specimens and delivery of laboratory reports and supplies. Every effort is made to insure specimen pick up schedules are compatible with your office hours. For urgent specimen pick up, call to request STAT service. A fee for STAT service will be charged. S.E.D. subcontracts courier service for clients throughout New Mexico and Southern Colorado. Subcontracted couriers require that specimens be sent in a sealed cardboard box, contact courier services for instructions. S.E.D. also arranges overnight air and ground deliveries of specimen shipments to the laboratory for clients in other states. Call the S.E.D. Courier Service dispatcher, ext. 6272, to arrange a shipment, notify of a change, or to correct a problem.

Albuquerque

727-6272

Hours: 6 am – 1 am daily

24 hour STAT Coverage

Santa Fe

(800) 999-5227 ext. 6272

Hours: 8 am – 5 pm

Monday – Friday

Carlsbad

505-885-6043

Hours: 2 pm - 3:30 pm

Monday - Friday

Clovis

505-763-7200

Hours: 3 pm – 3:30 pm

Monday – Friday

Las Cruces

505-532-6136

Hours: 7 am – 5 pm

Monday - Friday

Remainder of New Mexico/Out of State

800-999-LABS (5227) ext. 6272 or dial 0

After hours STAT service available, page #820-9666

Cytology

S.E.D.'s Cytopathology Laboratory is a full service laboratory. All of our gynecologic specimens are screened and evaluated for neoplastic and other pathologic changes by a staff of experienced Cytotechnologists and Anatomic Pathologists. We also accept and process non-gynecologic specimens, including, Pulmonary, Gastrointestinal, Urologic, Body Cavity Fluids, Ophthalmologic, Breast, and Fine Needle Aspirations from all body sites, providing diagnostic services to both a hospital based staff as well as commercial clientele. Additionally, special studies, such as flow cytometry and immunocytochemical staining can be utilized when needed for clarification and diagnostic assistance.

Fees and CPT Codes

Contact Marketing at ext. 6232 for a published client fee schedule. Fee schedules will not list multiple CPT codes for multicomponent tests, please call Business Services at ext. 6262 for further information. This directory lists CPT codes to provide guidance, and may change at any time. The CPT codes provided are based upon AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct questions regarding coding to the payor being billed.

Forensic Drug Testing

S.E.D. is the only New Mexico laboratory with the following state-of-the-art credentials. Testing is performed in our Albuquerque Toxicology laboratory.

- Certified by the Department of Health and Human Services (DHHS), Substance Abuse and Mental Health Services Administration (SAMHSA), formerly known as National Institute on Drug Abuse (NIDA). This certification is required of laboratories performing federal workplace drug testing.
- Accredited by the College of American Pathologists in Forensic Urine Drug Testing (CAP-FUDT)

S.E.D. is a leading provider of workplace substance abuse testing for government and private industry. Since opening in 1972, we have provided medical toxicology services to hospitals and physicians. Our forensic drug testing program began in 1984 with the goal of supporting employer efforts to achieve a drug-free workplace.

The following drug testing and support services are available:

- Toxicology Client Services
- Urine drug test collections (S.E.D. collection sites in New Mexico: Albuquerque, Carlsbad, Clovis, Las Cruces, Los Lunas, Rio Rancho, Santa Fe)
- Evidential breath testing by S.E.D.'s certified breath alcohol technicians in Albuquerque, Santa Fe
- Oral fluid forensic testing
- Mobile and after-hours collections
- Subcontracted urine and breath alcohol collections throughout the United States
- Same day courier, express air, or airline shipment
- EMIT screened and GC/MS confirmed forensic testing (open 24 hours)
- Substance abuse policy consultation
- Consortium billing for collection, testing, and medical review officer services
- Rapid "on-site" test kits for non-federal testing

Forensic Drug Testing requires Custody and Control forms. Contact the Marketing Department at ext. 6232 to establish a forensic account.

Marketing

Contact Marketing at ext. 6232 to set up an account and obtain information on laboratory-wide testing, services and fees.

S.E.D.'s marketing staff includes ASCP-certified medical technologists with clinical laboratory experience. A marketing representative will set up your account, order initial requisitions and supplies, and arrange for courier service, result transmittal and billing. Your marketing representative is a centralized resource to resolve problems and help you, your staff and your patients get the most benefit from laboratory services.

Medicare Coverage of Laboratory Testing

NATIONAL AND LOCAL POLICIES

- Medicare will only pay for tests that meet Medicare coverage criteria and are reasonable and necessary for the treatment of the patient.
- Medicare does not pay for tests for which documentation (the patient medical record) does not support medical necessity.
- Medicare does not pay for tests more than the frequency limit.
- Medicare does not cover routine screening tests even if the physician or other authorized test orderer considers the test appropriate for the patient.
- Medicare does not pay for non FDA approved tests or tests considered for investigational use only.
- The Balanced Budget Act of 1997 requires that the ordering physician list diagnosis information for each test ordered to indicate medical necessity. The laboratory will contact your office if this information is missing.
- If there is reason to believe that Medicare will not pay for a test, the patient should sign an Advanced Beneficiary Notice (ABN) to acknowledge financial responsibility if Medicare denies payment. National Coverage Determinations (NCD) and Carrier Local Medical Review Policies (LMRP) provide specific diagnosis codes that establish medical necessity for a number of tests. These policies have been published by the Medicare carrier and are available at the carrier's web site: www.oknmmedicare.com. The following tests are subject to NCD/LMRP requirements as of January 2005, and are subject to change without notice from S.E.D. Medical Laboratories:

NATIONAL/LOCAL COVERAGE DETERMINATIONS (NCD)

1. Alpha-fetoprotein (AFP)
2. Aluminum
3. Blood Counts (CBC), includes platelet count
- ** 4. Blood Glucose Testing
5. Carcine embryonic Antigen (CEA)
6. Collagen Crosslinks, (N-Telopeptide NTX)
7. Culture, Bacterial, Urine
8. Digoxin
- ** 9. Fecal Occult Blood
10. Gamma Glutamyl Transferase (GGT)
11. Glycated Hemoglobin/Glycated Protein (HgbA1c)
12. Helicobacter Pylori (H. Pylori)
13. Hepatic Function
14. Hepatitis Panel/Acute Hepatitis Panel
15. Human Chorionic Gonadotropin (HGG)
16. Human Immunodeficiency Virus Testing (Diagnosis) – HIV
17. Human Immunodeficiency Virus Testing (Prognosis Including Monitoring) – HIV
- ** 18. Lipids – Cholesterol, HDL cholesterol, Direct LDL, Lipid panel, Triglycerides
19. Magnesium Serum
- ** 20. Pap Test
21. Partial Thromboplastin Time (PTT)
22. Prostate Specific Antigen (PSA) Diagnostic
- ** 23. Prostate Specific Antigen (PSA) Screen
24. Prothrombin Time (PT)
25. Rheumatoid Factor
26. Serum Iron Studies – Iron (Fe), TIBC, Ferritin, Transferrin
- ** 27. Thyroid Testing
28. Tumor Antigen CA 125
29. Tumor Antigen CA 15-3/CA 27.29
30. Tumor Antigen CA 19-9
31. Urinalysis

**Subject to Frequency Limitations

Pathology

Lovelace Sandia Health Systems Pathology works with S.E.D. Medical Laboratories and healthcare systems to provide high quality anatomic (surgical pathology and cytopathology) and clinical pathology services. Each member of the full-time pathology staff is board certified in anatomic and clinical pathology with individual members having subspecialty board certification in hematopathology, cytopathology, and transfusion medicine.

Lovelace Sandia Health Systems Pathology will schedule and perform bone marrow, biopsy and fine needle aspiration procedures, both with interpretation. Services also include gross microscopic examination of tissues, GYN and non-GYN cytologies, special stains including immunoperoxidase and anatomic and clinical pathology consultation.

Final reports may be auto faxed or forwarded by courier or mail. For information about surgical pathology specimen requirements, call Histology at 262-7131. To consult with a member of the Pathology staff, call 262-7131.

Phlebotomy Service

Skilled phlebotomists are available at each S.E.D. location for specimen collection. Phlebotomy services are available for health fairs, and at the workplace. Please call ext. 6232 for phlebotomy services.

Professional Courtesy

Due to restrictions imposed by Federal regulations, S.E.D. Medical Laboratories and Lovelace Sandia Health Systems Pathology are unable to honor provider requests for professional courtesy. As always, we are willing to consider the needs of any individual in financial hardship.

Quality Assurance

S.E.D. Medical Laboratories is committed to the highest standards in laboratory medicine to assure the accuracy and reliability of clinical testing used in the diagnosis and treatment of disease.

Our integrated quality assurance program includes the proper collection and transport of specimens, an objective system of quality controls, procedural compliance, internal and external proficiency testing, routine inspections, and monitoring of patient results.

S.E.D.'s QA program meets or exceeds the requirements of accrediting/regulatory agencies including Health Care Financing Administration, the College of American Pathologists, the Centers for Disease Control and the American Association of Blood Banks among others.

S.E.D.'s Medical Director directs the QA program in coordination with the Manager of Quality Assurance and the QA committee. Additional information, including summary reports, is available upon client request.

Referral Laboratory Testing

S.E.D. may send specialized testing to another laboratory for analysis. Send out tests are identified in the A-Z Test Listing in this directory by test codes beginning with the number seven (7). Contact Client Services at ext. 6227 or the Send Out Department at ext. 6341, for collection instructions.

S.E.D. PEOPLE P.L.A.N.

As a benefit to the community and in response to requests from the public, S.E.D. Medical Laboratories is pleased to present the S.E.D. Medical Laboratories **PEOPLE P.L.A.N.** or Public Laboratory Access Network! This program allows the general public to purchase a limited number of laboratory tests at select S.E.D. Patient Service Centers. Tests selected for the **PEOPLE P.L.A.N.** are primarily informational. Drugs of abuse testing is also available for adults and minors through the **PEOPLE P.L.A.N.**

S.E.D. Medical Laboratories will in no way attempt to propose diagnosis or recommend medical treatment. We strongly recommend that participants make an appointment with their healthcare source for interpretation of test results based on their medical history, especially if results are outside normal ranges. Please direct any inquiries about our test menu, questions, concerns, comments or suggestions to our Marketing Department at 800-999-5227, ext. 6232 or 505-727-6232.

STAT Testing

Requests for expedited or STAT testing should be made only when the patient's condition requires immediate action and results of the laboratory test(s) are required before a decision regarding action or treatment can be made. Mark the STAT box on the requisition to request expedited testing, include phone number for reporting of result. A standard STAT fee is charged in addition to the test fee(s).

Supplies

Supplies and Requisitions may be ordered by calling Client Services at ext. 6227. S.E.D. has multiple requisitions available: medical, cytology/histology, toxicology and genetics test requisitions. Client-customized requisitions are preprinted with the client's name, address, telephone number, and account number. S.E.D. requires clients to use our custom requisitions to ensure correct handling of reporting and billing. Standard supplies and forms for testing sent to S.E.D. Medical Laboratories are provided at no additional cost. Order volumes are filled after reviewing test utilization.

Test Results and Turnaround Time

Test results by telephone are available to authorized personnel through Client Services at ext. 6227. Written results are electronically transmitted, delivered or mailed based upon the specific needs of each client. Partial or preliminary reports are available upon request.

Most routine tests are completed the same day they are received in the laboratory. Special or esoteric tests are performed as rapidly as complexity permits.

- **Routine Testing** Turnaround time: < 24 hours (less than 24 hours)
>24 hours (greater than 24 hours)
- **Referral Testing:** All test codes beginning with the number seven (7) are sent to a referral laboratory for testing. Turnaround times will be listed as >24 hours. Turn around time will vary depending on the complexity of the test.
- **STAT Testing:** S.E.D. Medical Laboratories maintains a list of tests offered on a STAT basis. Contact Client Services for information regarding the STAT test menu, transportation instructions, and STAT policy.

Testing requested on a STAT basis is routinely reported within 1 hour of receipt of specimen in the laboratory, depending upon methodology used.

A standard STAT fee is charged in addition to the test fee(s). Mark the STAT box on the requisition to request expedited testing, include phone number for reporting of results as it is policy for all STATS to be called to the physician or caregiver of the patient.

- **Cultures:** Turnaround time varies depending on the type of culture ordered. Preliminary reports are generated appropriate to the growth rate of the organism. Final reports will be generated at various times depending on the culture type and growth rate.

<u>Type of Culture</u>	<u>Incubation period for growth</u>
Routine and general bacteria	24-48 hours
Viral	Up to 3 weeks
Fungal	Up to 8 weeks

Test Requisitions

Requisitions may be ordered by calling Client Services at ext. 6227. The following sections must be completed (required information is indicated by the shaded areas on requisition).

Required patient information (please print clearly):

Date and time collected, patient name, DOB, sex, Social Security number, and telephone number. (patient ID may be used as additional information).

Required Billing information:

Responsible party name and address, complete insurance information (Medicare, Medicaid, Other, ID#, Group #, and insurance address). A current copy of the patient's insurance card (front and back) is required for all third party insurance.

Failure to provide essential information will result in calls to your office and possible delays. In the absence of sufficient billing and/or diagnosis information, patients or the healthcare provider will be billed.

ICD-9 Diagnosis codes for each test ordered

Indicate tests desired by darkening circle or checking the box next to the preprinted test. Additional tests not preprinted on the requisition may be ordered by writing the name and test code number as they appear in the Directory of Services in the "Other Tests/Comments" area on the requisition.

Medicare Patients may need to complete an Advanced Beneficiary Notice (ABN) for tests ordered that do not meet the guidelines established by Medicare and Local Medical Review Policy. Contact Marketing at ext. 6232 to obtain ABN forms.

Patient Signature in the Release Authorization Area

If required, **check the CALL or FAX** box located at the top of the requisition. Make sure to include phone number.

Check the Test Priority STAT box for tests needing expedited testing (an additional fee will be incurred).

General Specimen Collection Instructions

Call S.E.D. Client Services at 727-6227 or 800-999-LABS (5227) ext. 6227 for assistance or to order collection and shipping supplies.

1. Check specific test listing to see if the patient should be fasting. If so, a **fast of 10-12 hours** is recommended; meaning nothing to eat, drink (except water), smoke or chew during this 10-12 hour fast.
2. Collect the appropriate sample (e.g. blood, urine, wound culture) required for testing.
3. Use the collection tubes, supplies and/or media indicated to collect the specimen(s), making sure to provide the indicated specimen amount. Failure to provide an adequate volume of specimen may prevent testing of the sample when quantity is not sufficient (QNS).
4. Specimens which must be spun should be allowed to clot 15-20 minutes and centrifuged within 20-30 minutes after collection at 3000-3500 RPM for 10-15 minutes.
5. When specimen requirements call for serum and the serum will not reach a S.E.D. testing laboratory within four hours of collection, it is necessary to transfer serum into a plastic transport tube in order to maintain specimen integrity. Specimens collected in serum separator tubes should be spun. Refrigerate or freeze as indicated for test.
6. For safe handling, **do not send specimens with needles attached or in containers that may leak**. If you encounter special circumstances or have questions regarding the S.E.D. safety policy, please call Client Services for instructions.
7. The collector must positively identify the patient. **Label each specimen** (tube, urine cup, culturette, slide or other specimen container) with the following information immediately after sample collection. You can request preprinted labels from Client Services.
 - a. **Patient's complete first and last name. The patient name on the requisition must be identical to the name on the samples.**
 - b. **Patient Identification number:**
Social security number (preferred); or
Medical record number; or
Date of birth
 - c. **The date and time of collection**
 - d. **The collector's initials.**
 - e. **Peel off and attach Specimen Identification label found on the S.E.D. Medical Laboratories medical test requisition to each sample collected. This label serves as a second identifier (patient name must also be on specimen).**
8. Do not attach specimen labels to transport containers which may be separated from the specimen.
9. Complete shaded areas on the Medical Test, Cytology/Histology or Amniotic Fluid/Products of Conception requisition to include specimen collection date and time and collector's initials.
10. Note any special specimen collection circumstances on the requisition; e.g., fasting/non-fasting, sample obtained from an intravascular line, capillary specimen (finger or heel stick), specimen drawn below an I.V., specimen collected pre or post dialysis.
11. **Refrigerate all specimens unless other temperature instructions are noted** (a clean cooler with ice pack or cubes is acceptable).
12. Place specimen(s) in the zip-lock closure pocket of a transport bag. Note: In order to comply with S.E.D. safety policies, couriers cannot pick up specimens that are not sealed in transport pockets. Subcontracted couriers require that specimens in transport pockets be sent in a sealed cardboard box. Call courier services for complete instructions.
13. Place a completed requisition in side pocket of transport bag.
14. Call for S.E.D. courier service at 727-6272 or 800-999-LABS (5227), ext. 6272 or dial 0.

Specimen Collection and Handling for Coagulation Tests

1. Coagulation Specimen Collection and Processing:

In order to obtain quality results in Coagulation, proper collection and handling is essential.

2. Rejection criteria for Coagulation specimens:

The following specimens will be rejected by the laboratory:

- Under-filled collection tubes (must be at least 90% filled). Caution: never combine the contents of two tubes in order to create a properly filled tube! This will result in erroneous coagulation results.
- Overfilled collection tubes.
- Hemolyzed specimens.
- Clotted specimens.
- Unlabeled or Improperly labeled specimens.
- Serum labeled as plasma.

3. Collection:

- Specimen must be collected in a light blue Vacutainer® tube containing 3.2% sodium citrate.
- It is *essential* that the tube is properly filled! The ratio of blood to anticoagulant must be 9:1. Thus the tube must be filled to the top of the manufacturer's label. Mix specimen by gentle inversion (8 – 10 times) immediately after the tube is collected to mix the anticoagulant with the blood.
- When collecting samples for Coagulation testing, the venipuncture must not be traumatic or slow flowing. Poor collection technique can cause erroneous results due to the contamination of the specimen with tissue fluids, which may cause the blood to begin to clot.

4. Use of Discard Tubes:

- For collections done **with Blood Collection Sets (“butterflies”)**, another light blue “waste” tube must be collected before the sample. There is a significant dead space in the tubing when it is connected to the Vacutainer ® tube, so less blood will enter the tube before the vacuum is spent.
- For routine Protime and APTT collections collected in an uncomplicated direct venipuncture, the use of a discard tube is not necessary if that is the only test you are drawing. However, whenever a group of tests are being collected, the Coagulation tube should be collected after the serum type tubes.
- It is still advisable, however, when special Coagulation tests (factor assays, Lupus Anticoagulant, etc.) are collected to use a discard tube or fill other serum-type tubes for other tests first. See Order of Draw, page 35.

5. Hematocrit >55%:

If patient hematocrit is at this level, results may be erroneously prolonged, due to a disruption in the blood to anticoagulant ratio.

- If patient Hct is known to be >55%, call Client Services and request that you speak with a Hematology technologist before collecting sample. A special collection tube can be prepared by Hematology.

6. Processing Coagulation Plasma:

If a Sodium Citrate specimen is centrifuged and plasma removed for testing that will not be immediate, such as for special Coagulation tests, Platelet Poor Plasma (plasma with a Platelet count of <10,000), must be prepared by a double spin method. Excess platelets in frozen plasma will release platelet phospholipid, which can interfere with many special coagulation assays, especially Lupus Anticoagulant. Process **Platelet Poor Plasma (PPP)** as follows:

- Centrifuge specimen for 10 minutes.
- Carefully remove from the centrifuge, taking care not to re-suspend the platelet layer. (Platelets and white blood cells are in the white layer above the red blood cell layer.)
- Using a plastic transfer pipette, carefully pipette the top $\frac{2}{3}$ - $\frac{3}{4}$ plasma, taking care not to re-suspend the platelets. Transfer plasma into a **labeled** plastic transport tube.
- Centrifuge the aliquot in the transport tube for another 10 minutes to remove excess platelets.
- Again, carefully remove the centrifuged aliquot from the centrifuge. Do not disturb the platelets, red cells, etc. that have spun out of the specimen in the button at the bottom.
- Carefully pipette the top $\frac{2}{3}$ - $\frac{3}{4}$ of the plasma into labeled aliquot tubes. Each aliquot must contain approximately 1 mL of plasma (do not place all PPP in one aliquot tube).
- Note: Write "Plasma" on the label of each aliquot.
- Immediately freeze the PPP aliquots. During transport, specimen must remain frozen.

Patient Instructions for 24 Hour and Timed Urine Collections

PLEASE READ CAREFULLY

1. If your doctor's office has not provided you with a large 24 hr. collection container and a small container, please contact S.E.D. Client Services at 727-6227 or 800-999-LABS (5227), ext. 6227, to find the location nearest you to obtain these supplies.
2. For your physician to receive accurate results on your tests, you must collect all of the urine you produce for the entire collection period. Incomplete collections may result in inaccurate test results.
3. Do not exceed your normal intake of liquids or change your dietary habits during the day before and the day of your collection unless your physician gives you specific instructions to do otherwise. Avoid alcoholic beverages.
4. **It is imperative that all urine be collected and placed into the large container. If any of the urine is lost or discarded during the collection interval, the entire collection process must be started over.** When urinating use a smaller clean urine collection container to collect your urine. Pour each specimen into the large collection container. **DO NOT VOID DIRECTLY INTO THE LARGE CONTAINER.**
5. Start the timed collection at a convenient time, such as 7:00 a.m. Discard the first specimen since the urine was formed prior to collection period. Collect all urine during the time period (i.e. 2 hour, 5 hour, 12 hour, 24 hour etc.). When you reach the end of the collection time period, (even if you do not feel the need to urinate) empty your bladder completely and include this sample to complete the collection.
6. During the timed collection period, the specimen container(s) should be kept refrigerated or stored in a bucket with ice. Label the large collection container with the patient's name, date of birth, date and time at the start and end of collection and the name of the ordering physician.
7. Deliver the specimen and the requisition to the physician's office or S.E.D. Medical Laboratories as soon as possible after collection is complete. Don't forget to bring your laboratory requisition with the specimen.
8. Please do not leave the laboratory without speaking to one of our phlebotomists. Some tests require a blood sample to accompany the timed urine specimen.

Patient Instructions for Collection of a Semen Specimen

The sensitive nature of this laboratory test is understood, both by the physician and the laboratory personnel, and we want you to know that we are concerned about your feelings. It is necessary to obtain an optimal semen specimen when trying to assess the cause of infertility or evaluate the effectiveness of the vasectomy. Therefore, it is important that the attached instructions regarding collection of a semen specimen be followed exactly. Your compliance will help us provide the most accurate information to you and your physician. If you have any questions after reading these instructions, call your doctor or S.E.D. Medical Laboratories, Client Services Department, 727-6227.

PATIENT INSTRUCTIONS FOR COLLECTION OF A SEMEN SPECIMEN

A. Required Period of Sexual Abstinence

- If you are having this test to check fertility:
To prepare for the fertility test, you must not have any ejaculations (either intercourse or masturbation) for at least 2 days, but not more than 5 days before the day you collect your specimen. If the time since your last ejaculation has been less than 2 days or more than 5 days, you must not collect the specimen, as the fertility test results may not be accurate. (Concerns about this must be discussed with your physician.)
- If you are having this test to check post vasectomy sperm count:
Collect the specimen according to your physician's instructions.

B. Collection of the specimen

You may collect the specimen at one of two S.E.D. laboratory sites in a locked bathroom, or you may collect it at home. Follow these collection directions.

- If you are collecting the specimen at the Laboratory:
 1. Collecting the specimen at the lab allows us to handle the specimen properly and begin testing immediately.
 2. Locations and hours of operation of S.E.D. testing sites for semen analysis are listed at the end of these instructions.
- If you are collecting the specimen at home:
 1. Plan the time you collect your specimen so that you will be able to deliver it to the laboratory within one hour of the time of collection. Please see locations and hours of operation for S.E.D. testing sites for semen analysis listed at the end of these instructions.
 2. Your physician will provide you with a sterile plastic container. (Containers can also be obtained at any S.E.D. Medical Laboratories location. Check with your physician's office for locations.) Collect the specimen directly into the container. **NOTE:** Unless directed to do so by your physician, the sample must not be collected in a condom because some condoms contain spermicidal agents, which may kill the sperm.
 3. The sample may be obtained either by masturbation or interrupted intercourse, after the required period of sexual abstinence. Masturbation is preferred because interrupted intercourse may result in the loss of the first portion of the ejaculate, which may cause erroneous test results.

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4. Label the specimen container with the following information:
 - First and last name.
 - Date and time specimen was collected
 - Note whether specimen is for “fertility evaluation” or “post-vasectomy sperm count”
 5. The sample must be protected from cold or heat. Keep the specimen at normal room temperature or body temperature. This can be done by keeping the specimen close to the body during transport.
 6. Be sure the lid is screwed on the container tightly! If the container leaks during transport, the specimen must be collected again after the required period of abstinence.
 7. Deliver the specimen within **one hour** of collection to the laboratory by you or your partner. Deliver specimen with the physicians written orders or laboratory requisition to the laboratory. Diagnosis and insurance information must be included on physician orders.
 8. You will be asked to fill out an S.E.D. Semen Analysis Patient Questionnaire before leaving the laboratory. The information on the questionnaire will help to rule out collection problems if your results are not normal. This information will only be shared with your physician.
- Your specimen may not yield accurate results if one or more of the following happens:
 1. If it is delivered to the laboratory more than one hour after collection.
 2. If the specimen was exposed to very warm conditions, such as in a car on a hot day, or to very cold conditions, such as if it was put in the refrigerator. Body temperature or normal room temperature is best.
 3. If a portion of the specimen is missing, either because it is not collected in the container, or if the container leaks during transport to the lab.
 4. If the period of sexual abstinence is not within 2-5 days.

C. S.E.D. Locations for Semen Specimen Testing

- Your specimen may be dropped off or collected at one of the following S.E.D. Medical Laboratories’ locations:
 - S.E.D. Medical Laboratory at Midtown
5601 Office Boulevard NE, Suite 800
Phone: 727-6295 or 727-6227
Hours: 7 AM – 6 PM, Monday-Friday
7 AM – 3 PM, Saturday
 - S.E.D. Medical Laboratory at West Mesa Medical Center
10501 Golf Course Road NW
Phone: 727-2070 or 727-6227
Hours: Open 24 hours

****NOTE: Specimen MAY NOT be delivered to any other S.E.D. Patient Service Center****

Instructions for Patients Collecting Stool Collection for Clostridium Difficile Toxin

1. Collect specimen in a clean dry container.
2. DO NOT take any antacids, oily laxatives, or anti-diarrheal medication before collecting the specimens unless directed to do so by physician.
DO NOT urinate on the specimen or in the collection container.
DO NOT urinate in the transport container.
DO NOT pass the specimen directly into the transport container.
DO NOT pass the stool specimen into a toilet.
3. The stool may be passed into a clean, DRY container. Use a bed pan or place a large plastic bag into a waste basket to catch the specimen. A clean margarine tub, clean wide mouth jar or a clean milk carton with the top cut off can also be used.

If collecting from a child in diapers, line diaper with plastic wrap, DO NOT send diaper.
4. Obtain at least two tablespoons of specimen or equivalent if specimen is liquid and place the sample in a clean dry all purpose specimen container.
5. Check lid on the sample container to be certain it is tightly closed.
6. Stool MUST be refrigerated or placed on ice until it can reach the laboratory. DO NOT let stand at room temperature.
7. Label the containers with:
 - a. Correctly spelled patient's first name and last name.
 - b. Patient identification number which may be:
Medical record number,
Social security number, or
Date of birth.
 - c. The collection date and time.
8. Wash your hands thoroughly.
9. Deliver the sample to the laboratory within 24 hours.

Instructions for Patients Collecting a Stool Sample for Ova and Parasites

Important: Please read and follow all directions.

Caution: Solutions in the transport container are poisonous, DO NOT drink. Keep out of reach of children!

1. This collection kit will help you conveniently collect a stool specimen. These directions will help you collect and deposit your stool correctly. This will help the laboratory do a better job in evaluating the stool sample.
2. DO NOT take any antacids, oily laxatives, or anti-diarrheal medication before collecting the specimen unless directed to do so by physician.
DO NOT urinate on the specimen or in the collection container.
DO NOT urinate in the transport container.
DO NOT pass the specimen directly into the transport container.
DO NOT pass the stool specimen into a toilet.
3. The stool should be passed into a clean, DRY container. Use a bed pan or place a large plastic bag into a waste basket to catch the specimen. A clean margarine tub, clean wide mouth jar or a clean milk carton with the top cut off can also be used. The stool sample must not be contaminated with urine or water. If collecting from a child in a diaper, line diaper with plastic wrap, DO NOT send diaper.
4. Open both tubes in the collection kit. Using the collection spoon built into the lid of the tube, place small scoops of stool from areas which appear bloody, slimy, or watery into the tube until the contents rise to the red line. If the stool is formed (hard) please try to sample small amounts from each end and the middle.
5. Mix contents of the tube with the spoon, then twist the cap until closed making sure it is **tightly** closed and shake the tube vigorously until the contents are well mixed.
6. Label the container(s) with:
 - a. Correctly spelled patient's first name and last name
 - b. Patient identification number which may be
Medical record number
Social security number, or
Date of birth.
 - c. The collection date and time
7. Wash your hands thoroughly. If any liquid from the tube gets on your skin or in your eyes, flush with plenty of running water. If irritation develops, consult a physician.
8. Deliver the sample to the laboratory or physician. DO NOT refrigerate or incubate within one week of collection.

Instructions for Patients, Collecting a Stool Sample for Stool Culture

Important: Please read and follow all directions.

Caution: Solutions in the transport container are poisonous, DO NOT drink. Keep out of reach of children!

1. DO NOT take any antacids, oily laxatives, or anti-diarrheal medication before collecting the specimen unless directed to do so by your physician.
DO NOT urinate on the specimen or in the collection container.
DO NOT urinate in the transport container.
DO NOT pass the specimen directly into the transport container.
DO NOT pass the stool specimen into a toilet.
2. Multiple samples should be collected if ordered by your physician.
3. The stool specimen should be passed into a DRY, clean container. A bed pan, wax paper, plastic wrap, bag or Styrofoam plate can be used.

The stool must NOT be contaminated with urine or water.

If collecting from a child in a diaper, line diaper with plastic wrap, DO NOT send diaper.

4. Open the tube labeled Enteric-Set containing the red media, using the collection spoon built into the lid, place small scoops of stool from the areas which appear slimy, bloody, or watery into the tube until the contents reach the RED FILL LINE. If the stool is formed (hard), please try to sample small amounts from each end and the middle.
5. Carefully break up the specimen using a spoon. Tighten the cap and shake the contents until it is thoroughly mixed.
6. Check the cap to be certain it is tightly closed.
7. Label the tube with:
 - a. Correctly spelled patient's first name and last name
 - b. Patient identification number which may be:
Medical record number,
Social security number, or
Date of birth.
 - c. The collection date and time.
8. Wash your hands thoroughly. If any liquid from the tube gets on your skin or in your eyes, flush with plenty of running water. If irritation develops, consult a physician.
9. Deliver the sample to the laboratory or physician within 4 days. DO NOT refrigerate or incubate.

Specimen Collection and Handling: Fecal Tests

These collection and handling instructions are for the following tests:

Occult Blood, Fecal (see patient preparation instructions, page 19)

WBC, Fecal

Reducing Substances, Fecal

Fat, Qualitative, Fecal

pH, Fecal

1. Label a clean specimen container with complete patient name (same as is written on requisition), date of birth, date and time of collection.
2. A small fresh random fecal specimen must be collected in a clean container. The outside of the collection container should be clean.
3. DO NOT take any antacids, oily laxatives, or anti-diarrheal medication before collecting the specimen unless directed to do so by physician.
DO NOT urinate on the specimen or in the collection container.
DO NOT urinate in the transport container.
DO NOT pass the specimen directly into the transport container.
DO NOT pass the stool specimen into the water in a toilet.
4. Refrigerate specimen until transport to laboratory. Chill during transport (do not freeze).
5. Non-sterile containers are acceptable for the above tests, but care should be taken to avoid mixing the specimen with urine or contaminating it with water from the toilet.
6. Enteric transport media (Cary-Blair), Para-Pak, or Ecofix collection media should not be used due to interfering substances and dilutional errors. Specimens received in transport media for the tests listed above may be rejected.

Patient Instructions for 72 Hour Fecal Fat Collection

PLEASE READ CAREFULLY

If you have any questions please call ext. 6341.

1. For your physician to receive accurate results on your tests, you must collect all of the stool you produce for the entire 72 hours. Incomplete collections may result in inaccurate test results.
2. Exclude materials like castor oil and mineral oil from your diet for 3 days prior to beginning the collection and during the collection period.
3. Eat a normal diet containing 50-160 grams of fat per day for at least 3 days prior to beginning fecal collection. This diet should be maintained throughout collection period.
4. Begin collection, at your convenience, after the 3 days of 50-150 grams of fat ingestion.
5. For ease of collection we suggest you turn off the water to your toilet, flush and put a clean paint can (obtained through Client Services at ext. 6227) into toilet for collection. Do not put any paper products with stool collection.
6. Collect all specimens for the following 72 hours. Record the start and completion times on the label provided with the paint can. Do not fill cans more than $\frac{3}{4}$ full. If you need another can during this time period, call Client Services, ext. 6227.
7. It is imperative that all stool be collected and placed into the paint can. If any sample is discarded, it is recommended that the entire process be started over.
8. Avoid contaminating specimen with urine. Specimen collection should be restarted if this happens.
9. Refrigerate or ice specimen container(s) during and after the collection period until they can be brought to the laboratory. A disposable Styrofoam ice chest and bags of ice work nicely.
10. Gas, which frequently accumulates, should be released gradually by carefully loosening of the cap. Failure to observe this sample precaution, especially in the case of an overfilled container, can result in an explosive release of contents.
11. Deliver the complete specimens to the laboratory as soon as possible after collection, since some analytes can be degraded during prolonged storage. Don't forget to bring your laboratory requisition with the specimen.
12. Please do not leave the laboratory without speaking to one of our phlebotomists. Some tests require a blood sample to accompany specimen.

Occult Blood Test – Feces

I. PATIENT INSTRUCTIONS

Your physician has requested the Occult Blood for Feces, which will determine if there is blood in your stool. Please read the following instructions and precautions before collection. Following them will help to ensure that your test results are accurate. Ideally, this test is done on three consecutive stool collections on different days, as the presence of blood may be missed in one collection.

II. PREPARATION FOR COLLECTION

- A. Do not collect samples during, or until three days after, your menstrual period, or while you have bleeding hemorrhoids, or blood in your urine.
- B. Do not consume the following drugs, vitamins, and foods:
 1. **Avoid 7 days prior to and during the test period:**
Aspirin (more than 1 adult aspirin per day) or other non-steroidal anti-inflammatory drugs (such as ibuprofen or naproxen).
Acetaminophen (Tylenol) may be taken as needed.
 2. **For 72 hours prior to and during the test period:**
 - Avoid vitamin C in excess of 250 mg per day (from all sources, dietary, vitamin C enriched foods, citrus fruits and juices, and supplemental).
 - Avoid red meat (beef, lamb), including processed meats and liver.
 - Eat a well balanced diet including fiber such as bran cereals, fruits and vegetables, however, avoid melons, radishes, turnips, and horseradish, which may interfere with test reaction.

III. COLLECTION

- A. Specimen may be collected in a container provided by S.E.D. or your physician. If your physician has not supplied you with the Hemoccult tests slides, collect stool specimens in clean containers and submit to the laboratory. Label the container with complete patient name, date of birth, date and time of collection.
- B. If your physician has supplied you with Hemoccult test slides, specimens can be sampled from a clean container:
 1. Using applicator stick provided, collect a small stool sample.
 2. Apply a thin smear **inside Box A**.
 3. **Reuse the applicator to obtain a second sample from a different part of the stool.** Apply a thin smear **inside Box B**.
 4. Close cover flap. Dispose of applicator stick in waste container.
 5. Using a ball point pen, write name and sample collection date on the outside of the Hemoccult test slide.
 6. Repeat above process for second and third collections.
 7. Take completed test slides with your physician's order to a S.E.D. Laboratories site for testing. The specimens are stable for up to 14 days after collection at room temperature.

Microbiology Specimen Collection Procedures

General Guidelines

1. Collect the specimen from the actual site of infection, avoiding contamination from adjacent tissue or secretions.
2. Collect the specimen at optimal times (for example, early morning sputum for AFB culture).
3. Collect a sufficient quantity of material.
4. Use appropriate collection devices: sterile, leak proof specimen containers. Use appropriate transport media identified under the individual test in **A-Z Test Listing**.
5. Whenever possible, collect specimens prior to administration of antibiotics.
6. Properly label the specimen and complete the requisition form.
7. Minimize transport time. Maintain an appropriate environment between collection of specimens and delivery to the laboratory.
8. If appropriate; decontaminate the skin surface. Use 70-95% alcohol (ALC) and 1-2% tincture of iodine (TOI) or chlorhexadone to prepare the site.
Allow a contact time of two minutes to maximize the antiseptic effect.

Blood Cultures

1. Blood cultures are processed using special media and instrumentation, so it is optimal to submit blood cultures in Bact/Alert bottles supplied by S.E.D. Medical Laboratories.
2. Remove plastic flip-top from each culture bottle and disinfect the gray stopper using 10% PVP iodine solution. Allow to dry. Do not allow disinfectant to pool on the stopper. Disinfectant may be introduced into the specimen and kill organisms.
3. Locate the vein to be used and prepare the venipuncture site as described below using a Blood Culture Prep Kit.
 - Step 1. Alcohol/Acetone Scrub
Remove the Frepp from the kit, hold in a horizontal position and pinch handle to break ampule. Place sponge on venipuncture site, depress once or twice to saturate sponge and *scrub vigorously for 60 seconds*.
 - Step 2. Povidone Iodine Paint or Chlorhexadone
Remove Sepp, hold in downward position and pinch center to crush ampule. Apply povidone iodine or chlorhexadone to venipuncture site starting at center and move outward in concentric circles to periphery. Allow to dry. Povidone iodine or chlorhexadone should stand 60 seconds. The intended venipuncture site must not be touched after it has been disinfected unless the fingers used for palpation are similarly disinfected. **Do not blow on the arm.** This will contaminate the venipuncture site.
4. Obtain patient sample (10 ml for each bottle, and transfer it into the culture bottles using aseptic technique. Line demarcations on the bottle indicate sufficient blood volume 10 ml). Transfer blood to the anaerobic bottle first, so that any oxygen trapped in the syringe will not be transferred to this bottle.
If less than 10 ml blood is obtained, only the aerobic bottle should be inoculated. Repeat venipuncture should be performed to obtain blood for the anaerobic bottle.
5. Pediatric bottles; Inoculate 1 bottle with 0.5 ml to 4 ml of blood. Pedi-Bact bottles are color-coded yellow. **Never use pediatric bottles for adult samples.**
6. When other lab tests are ordered in addition to blood cultures, a luer adaptor set may be used for the collection. Prep the site and bottles as above. Perform venipuncture. Using aseptic technique, puncture gray stopper with luer-end needle allowing blood to fill bottle to 10 ml line. Fill the aerobic bottle first, then the anaerobic. After blood cultures are collected, attach luer end to vacutainer holder and collect the remainder of specimens requested.
7. Transport the inoculated culture bottles at room temperature promptly to Microbiology.

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8. If transport of BacT/Alert bottles is not possible within several hours, they may be incubated in a 37° C incubator.

Special Blood Culture Procedures

1. Fastidious Organisms-(e.g., Brucella, plague, cell-wall deficient organisms, etc.) Notify Microbiology at ext. 6360 prior to drawing blood culture. The microbiologist will make sure that the specimen is cultured in appropriate media.
2. Leptospira- Collect one vacutainer of blood in a sterile tube containing heparin or sodium oxalate. Notify Microbiology before collection so arrangements can be made for the State Health Lab to inoculate specimen on special media.
3. Fungus-Notify Microbiology prior to drawing blood culture.
4. Blood culture after administration of antibiotics. Notify Microbiology prior to drawing blood culture.
5. Blood cultures drawn in bottles other than BacT/Alert. Incubate bottles at 37° C until transport to the laboratory.
6. Acid Fast Bacilli- Collect one SPS tube, or use BacT/Alert MB Blood Culture bottle inoculated with 5 mL of blood.. Transport at room temperature.

Body Fluids

(Except urine and cerebral spinal fluid)

Includes: Synovial, pleural, pericardial, thoracentesis, peritoneal, CAPD and ascites fluid.

1. Collect the specimen using strict aseptic technique by preparing the skin as follows:
 - a. Beginning in the center of the area and moving outward in concentric circles, swab the site with alcohol.
 - b. Swab the site with an iodophor in the same manor. Allow the iodophor to remain for 30 seconds to one minute.
 - c. Optional: Remove residual iodophor with another alcohol swab.
2. Collect the fluid using sterile needle syringe.
3. Whenever specimen volume permits, submit 10 ml of the specimen for analysis. Transport the specimen in a capped syringe after removing needle, or:
 - a. For aerobic and anaerobic culture use an anaerobic transport vial to ensure the survival of anaerobic organisms.
 - b. 10 ml of any normally sterile body fluid (excluding CSF) may be added to each blood culture bottle (anaerobic and aerobic).
 - c. For viral isolation, send fluid in viral transport medium or a sterile vial.
 - d. For Cytology, submit separate tube with Cytology requisition.
4. Refrigerate and transport specimen immediately to the laboratory.
 - a. For fungal specimens transport at 2-8° C.
 - b. For viral specimens transport 2-8° C.
 - c. For all other specimens transport at room temperature.

Bone Marrow

1. Physicians should wear gowns, masks, and gloves during specimen collection.
2. Prepare skin as for blood cultures.
3. Draw the surrounding skin with sterile linen.
4. Aspirate the marrow percutaneously using a sterile needle and syringe.
5. Transfer 3-5 ml to a sterile tube containing SPS.

-
6. Cap the tube tightly and send immediately to the laboratory at room temperature. For viral cultures, store and transport at 2-8° C.

Bordetella Pertussis (Culture and FA)

1. To obtain the specimen, immobilize the patient's head and gently insert the nasopharyngeal swab into nostril until it reaches the posterior nares. Leave the swab in place 15-30 seconds (the tickling sensation of the swab usually induces a cough). If resistance is encountered during insertion of swab, try the other side, as some persons have a deviated septum or large turbinate.
2. Swirl the swab several times in the tube of casein hydrolysate to emulsify the material from the nare.
3. Culture
 - a. Roll the swab over the surface of the Charcoal Agar plate. Return the swab to the of CAS.
 - b. Put the plate in the small plastic bag provided and seal the bag. Transport to S.E.D. the same day, or incubate it for at least 24 hours in an aerobic (NON-CO2) incubator at 37° C. (The plate can be incubated longer than one day, if necessary.)
4. Smear
 - a. With the swab from the CAS, make two dime sized smears on the slide provided. Label the slide.
 - b. Allow the smears to air dry. Do not fix with heat or alcohol.

Catheters (Excluding Foley Tip Catheters)

1. Short catheters (2-3 inches)
 - a. Decontaminate the skin at the catheter site.
 - b. Aseptically remove the catheter. Cut the catheter at the skin interface point using sterile technique. Place the catheter segment in a sterile wide mouth container.
 - c. Immediately transport to S.E.D. at room temperature.

Cerebrospinal Fluid

1. Physicians should wear gowns, mask, gloves to collect the specimen. Because an open tube is held to collect the fluid, other personnel should stand away or wear masks in order to avoid respiratory contamination of the collection tube.
2. Collect the specimen using strict aseptic technique by preparing the skin as described below.
 - a. Beginning in the center of the area and moving outward in concentric circles, swab the site with alcohol.
 - b. Swab the site with iodophor in the same manner. Allow the iodophor to remain for 30 seconds to 1 minute.
3. Drape sterile linen over the skin surrounding the puncture site.
4. Insert the needle. Collect the fluid into 3 sterile leak proof tubes. Collect an adequate amount of fluid. Six to ten ml of CSF is sufficient for bacterial, fungal, acid-fast and viral cultures. (Bacteria ≥ 1ml, Fungi ≥ 2 ml, AFB ≥ 2 ml, Viral ≥ 1 ml)
5. Cap the tubes tightly. Submit the third tube for culture to reduce the possibility of contamination due to skin flora. Send to the laboratory immediately.
 - a. For viral cultures, refrigerate and transport (2-8° C). **Do not freeze.**
 - b. For other cultures, **do not refrigerate**, transport at room temperature. If a delay in transport occurs, incubate at 37° C or leave the fluid at room temperature.
 - c. For Cytology, submit separate tube with Cytology requisition.

Cervix

Genital Culture (i.e. Streptococcus Gp B&A, Staphylococcus aureus, Listeria, Yeast and Neisseria gonorrhoeae)

1. Prepare the speculum, avoiding the use of a lubricant other than warm water.
2. Insert the speculum and visualize the cervical os.
3. Remove excess mucus with a cotton ball or swab.
4. Insert a Dacron swab in the distal portion of the cervical os, rotate gently, and allow to remain for 10 to 30 seconds.
5. Remove swab and place in transport medium (culturette).
6. Send to the laboratory at room temperature.

Chlamydia Trachomatis Detection by PCR

Cervical Samples

Collect and transport specimen in Microtest Transport Media. Lubricants may interfere with test results. Collection of a mucus free specimen offers better overall performance of this test.

1. Remove mucus from the exocervix with one of the large swabs provided.
2. Insert another large swab into the endocervical canal until tip of swab is no longer visible.
3. Rotate 3-5 seconds and withdraw, avoiding contact with vaginal surfaces.
4. Place swab in Microtest Transport Media. Swab must remain in the tube. Cap the tube.
5. Label the transport tube appropriately (last name, first name). If specimen will not be received within 24-hours, refrigerate.

Urine Sample (Male & Female)

Collect and transport specimen in sterile polypropylene container.

1. Patient must not have urinated during the previous two hours.
2. Collect first catch urine, first part of the stream, (10-50 ml) into sterile polypropylene cup.
3. Cap the specimen cup and label appropriately (last name, first name). If specimen will not be received within 24-hours, refrigerate.

Urethral Samples (Male)

Collect and transport specimen in Micro test Transport Media. Do not use Gen-Probe tube.

1. Patient must not have urinated for at least one hour prior to sampling.
2. Insert a small swab 2-4 cm into urethra.
3. Rotate 3-5 seconds and withdraw.
4. Place swab in Micro test Transport Media. Swab must remain in the tube. Cap the tube.
5. Label the transport tube appropriately (last name, first name). If specimen will not be received within 24-hours, refrigerate.

Note: Chlamydia Trachomatis Detection by PCR is not the accepted test for sexual abuse cases. The accepted test is Chlamydia Trachomatis Detection by Culture.

Chlamydia Trachomatis Detection by Culture

Cervical Specimens

Collect and transport specimens in Multi-Microbe Media (M5) transport tube.

1. Wipe exocervix with large swab to remove excess mucus. Dispose of swab.
2. Insert large or small swab into endocervical canal until most of the tip is not visible.
3. Rotate swab for 5-10 seconds inside canal.
4. Withdraw swab without touching vaginal walls.
5. Place swab in the Multi-Microbe Media (M5) transport tube.
6. Break swab and replace cap tightly.
7. Refrigerate (2-8° C) prior to and during transport S.E.D.

Urethral Samples (Male)

Patient should be instructed not to urinate for one hour prior to sampling. If discharge is present, collect a sample for N. gonorrhoeae testing first.

1. Insert small swab 2-4 cm into urethra.
2. Rotate swab and withdraw.
3. Place swab in the Multi-Microbe Media (M5) transport tube.
4. Break swab shaft and replace cap lightly. Refrigerate (2-8° C) prior to and during transport to S.E.D.

Cutaneous (fungus only)

1. Hair
 - a. Scrape the scalp with a blunt scalpel.
 - b. Place specimen in a dry sterile container.
 - c. Send to the laboratory at room temperature.
 - d. The following specimens are also acceptable:
 - i. Hair stubs
 - ii. Contents of plugged follicles,
 - iii. Skin scales,
 - iv. Hair plucked from the scalp with forceps.
 - e. Cut hair is not an acceptable specimen.
2. Nails.
 - a. Cleanse the nail with alcohol.
 - b. Remove the outermost layer by scraping with a scalpel.
 - c. Place specimen in a dry sterile container.
 - d. Send to the laboratory at room temperature.
 - e. The following specimens are also acceptable:
 - i. Clippings from any discolored or brittle parts of nail,
 - ii. Deeper scrapings and debris under the edges of the nail.
3. Skin
 - a. Cleanse the skin with alcohol.
 - b. Collect epidermal scales with a scalpel, at the active border of the lesion.
 - c. Place specimen in a dry sterile container.
 - d. Refrigerate and transport to S.E.D. at 2-8° C.

Eye

1. Cleanse the skin around the eye with a mild antiseptic.
2. Purulent conjunctivitis:
 - a. Collect purulent material with a Dacron swab (i.e. culturette).
 - b. Place swab into transport media (culturette) for bacterial culture.
 - c. Place swab into Multi-Microbe Media (M5) and cap tightly for viral or chlamydia culture.
3. Corneal infections:
 - a. Swab the conjunctiva as described above.
 - b. Collect multiple corneal scrapings and inoculate directly into bacterial agar media (chocolate agar, Sabouraud dextrose agar, and sheep blood agar) for bacterial culture.
 - c. Place swab or corneal scrapings in Multi-Microbe Media (M5) for viral culture.
 - d. Transport specimens to the laboratory at room temperature, for bacterial culture.
 - e. Refrigerate and transport to S.E.D. at 2-8° C for viral culture.

Nasopharyngeal Aspirate (Virus Only)

1. For aspirate, attach mucus trap to suction pump and catheter, leaving wrapper on suction catheter. Turn on suction and adjust to suggested pressure.
2. Without applying suction, insert catheter into the nose, directed posteriorly and toward the opening of the external ear. **Note:** Depth of insertion necessary to reach posterior pharynx is equivalent to distance between anterior nares and external opening of the ear.
3. Apply suction. Using a rotating movement, slowly withdraw the catheter.
4. Refrigerate and transport to S.E.D. at 2-8° C.

Nasopharynx

1. Seat the patient comfortably and tilt the head back.
2. Gently insert a nasopharyngeal swab (on a malleable wire) into the nasopharyngeal area.
3. Rotate the swab gently and allow to remain for 20-30 seconds.
4. Remove the swab and place in appropriate transport medium:
 - a. Culturette container for bacterial culture.
 - b. Multi-Microbe Media (M5) for viral culture.
 - c. Nasopharyngeal culturette for Rapid tests.
5. Transport to laboratory at room temperature for bacterial culture and refrigerate (M5) for viral culture.
6. If unusual organisms such as *Bordetella pertussis* are suspected, special culture media are necessary for collection and transport.

Neisseria Gonorrhoeae Detection by PCR

Cervical Samples

Collect and transport specimen in Microtest Transport Media. Lubricants may interfere with test results. Collection of a mucus free specimen offers better overall performance of this test.

1. Remove mucus from the exocervix with one of the large swabs provided.
2. Insert another large swab into the endocervical canal until tip of swab is no longer visible.
3. Rotate 3-5 seconds and withdraw, avoiding contact with vaginal surfaces.
4. Place swab in Microtest Transport Media. Swab must remain in the tube. Cap the tube.
5. Label the transport tube appropriately (last name, first name). If specimen will not be received within 24-hours, refrigerate.

Urine Samples (Male & Female)

Collect and transport specimen in sterile polypropylene container.

1. Patient must not have urinated during the previous two hours.
2. Collect 10 to 50 ml of first catch urine (first part of the stream) into sterile polypropylene cup.
3. Cap the specimen cup and label appropriately (last name, first name). If specimen will not be received within 24-hours, refrigerate.

Urethral Samples (Male)

Collect and transport specimen in Microtest Transport Media. Do not use Gen-Probe tube.

1. Patient must not have urinated for at least one hour prior to sampling.
2. Insert a small swab 2-4 cm into urethra.
3. Rotate 3-5 seconds and withdraw.
4. Place swab in the Microtest Transport Media. Swab must remain in the tube. Cap the tube.
5. Label and transport tube appropriately (last name, first name). If specimen will not be received within 24-hours, refrigerate.

Note: Neisseria Gonorrhoeae Detection by PCR is not the accepted test for sexual abuse cases. The accepted test is Neisseria Gonorrhoeae Detection by Culture.

Neisseria Gonorrhoeae Detection by Culture

For optimal recovery of *N. gonorrhoeae* by culture, swabs should be plated directly onto the Jembec agar plate. Jembec agar should be warm to room temperature prior to inoculation. Alternatively, a culturette may be used if the specimen will be received in the lab within eight hours. Specimens should be collected using a Dacron, rayon or calcium alginate swab on a plastic or aluminum shaft. Cotton swabs may be used only for the immediate direct inoculation onto Jembec agar.

1. Remove mucus from the exocervix with a large swab and discard.
2. Insert a swab into the endocervical canal.
3. Rotate the swab 20 to 30 seconds and withdraw, avoiding contact with vaginal surfaces.
4. Roll swab directly on the medium in a large "Z" pattern to provide adequate exposure of swab to the medium for transfer of organisms.
5. Using forceps, remove a CO₂-generating tablet from its foil wrapper and place it in the specially designed well in the plate. Place the inoculated plate into the polyethylene bag provided (one plate per bag). **Do not add water to the tablet.** Be sure that the bag is sealed completely. Incubate in an inverted position at 37° C or room temperature until transported to the laboratory. **Do not refrigerate.**

Sputum

Note: Lower respiratory tract secretions from infected patients are confirmed by noting the presence of large numbers of leukocytes and low number of epithelial cells. Since epithelial cells in the specimen signal gross contamination with the oropharyngeal flora, only specimens that represent low respiratory tract secretions will be cultured.

1. Careful attention to the instructions given the patient will greatly reduce the number of inappropriate specimens. Explain the difference between sputum and spit to the patient.
2. The first, early-morning specimen is preferred. Pooled specimens are not acceptable for culture.
3. For bacterial culture, a single properly collected specimen should be adequate. For fungal or mycobacterial culture, three consecutive early-morning specimens are recommended.
4. Instruct the patient to expectorate sputum into a sterile container.
 - a. If the patient is unable to produce sputum, induction by a saline nebulization may be necessary.
5. Transport at room temperature if transporting immediately. Refrigerate specimen if transport is delayed more than 1 hour.

Stool, Feces

1. Collect 1-2 ml(g) of stool in a clean bed pan or use plastic wrap placed between the toilet seat and the bowl. Do not submit feces contaminated with urine or toilet water.
2. Transfer specimen into a clean, dry container.
3. Transport immediately to the laboratory at appropriate temperature. If transport delay is unavoidable, place the specimen in appropriate preservative.
 - a. Bacterial culture- Cary-Blair-room temperature.
 - b. Ova & parasites-Formalin and PVA room temperature
 - c. Clostridium difficile- no preservatives-refrigerate, transport on ice
 - d. Rotavirus-no preservatives-refrigerate, transport on ice
 - e. Viral culture-Multi-Microbe Media (M5)-refrigerate
4. If a stool specimen is not available, the following are suitable alternatives for culture:
 - a. A swab or rectal mucus, or
 - b. A rectal swab inserted one inch into the anal canal. (Cannot, however, be used for rotavirus or C. difficile. For viral culture, place swab in Multi-Microbe Media (M5) and refrigerate.)

Note: Specimens collected within 7 days of a barium enema are unsuitable for ova and parasite exam.

Throat

1. A swab transport system utilizing Dacron or rayon-tipped swabs should be used to collect the specimen for the isolation of Streptococcus, Gp A. A viral culturette or Dacron or rayon-tipped swab submerged in Multi-Microbe Media (M5) should be used to collect a specimen for viral culture.
2. Use a tongue blade and a good light source to ensure good visualization. A Dacron, or rayon-tipped swab must be used to collect a specimen for Streptococcus, Gp A direct antigen testing (OIA). Do not use swabs with calcium alginate, or swabs with wooden shafts or it may be placed in liquid holding media. (Stuarts or Amies, i.e. Culturette). **Do not place in solid agar transport devices as agar will interfere with the test.** Transport at room temperature.
3. Reach behind the uvula and swab:
 - a. Both tonsillar fauces, and
 - b. The posterior pharynx, and
 - c. Any ulceration, exudates, lesion, or area of inflammation.
4. Place the swab into the transport media and send to the laboratory at room temperature, for strep culture. Refrigerate (2-8° C) for viral culture.

Urine

General Instructions

Although urine is normally sterile or only transiently colonized with small numbers of organisms, contamination of the urine specimen by organisms normally present in the urethra or on periurethral areas can allow a proliferation of these organisms that will cause misleading culture results.

In symptomatic patients (painful urination, urgency, frequency), one specimen is usually adequate for diagnosis, and another is taken 48 to 72 hours after institution of therapy. In asymptomatic patients, two or three specimens may be necessary. In cases of suspected renal tuberculosis, three consecutive first morning specimens should be submitted.

A pooled, 24 hour collection of urine is unacceptable for culture, as is more than one specimen per 24 hours.

A foley catheter tip is unacceptable for urine culture.

The requisition form should indicate whether or not the patient is symptomatic. This information is critical to quantitative culture interpretation, especially of low-count urine specimens.

Urine held at room temperature supports the growth of both pathogens and contaminants. **All urine must be refrigerated immediately after collection.** Refrigerate (2-8 C) and transport to S.E.D. specimens may be cultured up to 24-hours after collection if stored at 2-8 C. Alternatively, specimens may be mixed well and poured into a urine transport tube containing lyophilized urine maintenance media (gray top) and transported at room temperature.

Clean Catch Midstream Urines

1. Instructions for Female Patients:
 - a. Remove undergarments.
 - b. Wash hands thoroughly with soap and water, rinse them, and dry them on a disposable paper towel or shake off excess water.
 - c. Spread your labia with one hand, and keep them continuously apart until the urine is voided into the cup.
 - d. Take a single sponge dripping with soap, wipe the vulva from front to back only once, and discard the used sponge.
 - e. Repeat the front to back wash with the remaining three sponges, discarding each sponge after one use.
 - f. Wash the vulva thoroughly with warm water to prevent contaminating the specimen with soap.
 - g. Take open sterile cup in the other hand without touching the rim or inner surface of the cup or lid.
 - h. Void 20 to 25 ml into the toilet and catch a portion of the rest of the urine in the container without stopping the stream. Do not touch the legs, vulva, or clothing with the cup.
 - i. Put the lid on the cup.

-
2. Instructions for Male Patients:
 - a. Wash hands.
 - b. Retract the foreskin completely.
 - c. Cleanse the glans penis with liquid soap soaked sponges.
 - d. Remove surplus soap with warm water.
 - e. Void 20 to 25 ml into the toilet and catch a portion of the remaining urine in the cup without stopping the stream. Do not touch the cup with the penis.
 - f. Put the lid on the cup.

 3. Suprapubic aspiration:
 - a. This is not routine technique and is best performed by an experienced individual. Descriptions of the method are readily available in the literature.
 - b. These specimens are acceptable for anaerobic culture, and should be submitted in an anaerobic environment if an anaerobic culture is requested.

 4. Indwelling Catheter Urine:
 - a. Do not collect urine from the drainage bag because growth of bacteria outside the catheter may have occurred at this site.
 - b. Clean the catheter or sampling port with an alcohol pad.
 - c. Use a sterile needle and syringe to puncture the tubing or sampling port. Aspirate the urine directly from the tubing or port.
 - d. Transfer the urine to a sterile specimen container.
 - e. Do not culture a catheter tip because it may be contaminated as it is removed from the urethra

 5. Specimen handling:
 - a. Label the container immediately and refrigerate at 2-8° C immediately after collection.

Wounds, Lesions

Specimens from the following sites are not acceptable for anaerobic culture:

- a. Throat and nasopharyngeal swabs.
- b. Sputum and bronchoscopic specimens (unless obtained by the Double Lumen Technique)
- c. Feces and rectal swabs
- d. Voided or catheterized urines
- e. Vaginal and cervical swabs, except to rule out Actinomyces
- f. Specimens from sites contaminated with intestinal contents
 - i. Colostomy sites
 - ii. Draining pilonidal sinus
 - iii. Traumatic perforation of bowel.
- g. Superficial wounds

Note: Submit swab specimens only when more suitable fluid aspirates or tissue specimen are not obtainable. Surface specimens usually represent only colonization.

Open Lesions and Abscesses

1. Remove as much of the superficial flora as possible by decontaminating the skin as described below under Unruptured Abscesses.
2. Attempt to culture the advancing margins of the lesion not pus or exudates. It is critical that lesion margins and abscess walls be firmly sampled with the swab if aspirate or tissue is not obtainable.
3. Transport tissue or swab in anaerobic transport media.
4. Transport at room temperature.

Unruptured Abscesses

1. Do not swab.
2. Decontaminate the skin overlying the abscess by preparing the skin as described below.
 - a. Beginning in the center of the area and moving outward in concentric circles, swab the site with alcohol.
 - b. Swab the site with an iodophor in the same manner. Allow the iodophor to remain for 30 seconds to 1 minute.
3. Aspirate abscess contents with a sterile needle and syringe.
4. Transfer aspirated material to an anaerobic transport vial.
5. A portion of the abscess wall may also be submitted in an anaerobic transport vial.
6. Transport at room temperature.

Microbiology/ Virology Specimen Transport Instructions	Test Types																								
	AFB culture, blood	AFB culture and stain, other	Anaerobe-culture	Blood culture	Bordetella pertussis FA and culture	Bone marrow culture	Clostridium difficile toxin assay	Urine culture	Chlamydia culture	Chlamydia PCR	Cryptosporidium stain	Fungal culture, blood	Fungal culture and stain, other	Neisseria gonorrhoeae culture	Neisseria gonorrhoeae PCR	Giardia antigen	Legionella culture	Rotavirus EIA	Bacterial culture, other	Ova & parasites	Human Papilloma Virus (HPV)	Stool culture	Mycoplasma/Ureaplasma (genital) cult.	Viral culture	
Requirements																									
Anaerobe Transport system-RT			X																						
Bacterial Culturettes (w/Stuart's or Amie's Medium)-RT												2-8°C X							X						
Blood culture bottles -FAN BacT/Alert											X														
Blood culture bottles-BacT/Alert Aerobic & Anaerobic-RT, 37°C if transport delayed.				X																					
Cary-Blair - RT																(X)							X		
Fomalin + PVA (Para-Pak) - RT										X						X			X						
Tube of casein hydrolysate-RT Charcoal Agar 35°C NON-CO2					X																				
Urine transport tube (gray top) -RT							X																		
Thayer Martin (Jembec) with CO tablet in bag, 37°C if possible or RT					X								X												
SPS-RT	X					X																			
Sterile Leakproof Container, 2-8°C		X					X	X				X					X	X	RT X						
(M5) Media Multi-Microbe, 2-8°C									X						X								X	X	
Roche Amplicor Kit, 2-8°C										X															
Viral Culturette, 2-8°C																									(X)
Virapap Kit, 2-8°C																						X			
(X)=Accepted, but not preferred													RT = Room Temperature												

A to Z Listing/Specimen Requirements

Call Client Services 727-6227 or 800-999-LABS (5227) extension 6227, for assistance or to order collection and shipping supplies.

This section contains an alphabetical listing of individual and profile tests offered at S.E.D. Medical Laboratories. Tests, specimen requirements, and methodologies and turnaround times are subject to change without notice. Periodic updates are provided and users are encouraged to contact S.E.D. if a question arises regarding laboratory services.

Test name: Tests are listed alphabetically and are cross referenced for ease of location. Contact Client Services if you are unable to find a desired test.

Test code: Use the four digit S.E.D. test code listed under test name to order or inquire about the test. Note: this is not a CPT or billing code:

CPT or billing code: This is provided for your convenience.

Results/Turnaround Time:

Routine Testing Turnaround time: <24 hours (less than 24 hours)
>24 hours (greater than 24 hours)

Referral Testing: All test codes beginning with the number seven (7) are sent to a referral laboratory for testing. Turnaround times will be listed as >24 hours. Turnaround time will vary depending on the complexity of testing.

STAT Testing: S.E.D. Medical Laboratories maintains a list of tests offered on a STAT basis. Contact Client Services for information regarding the STAT test menu, Transportation instructions, and STAT policy. A standard STAT fee is charged in addition to the test fee(s). Mark the STAT box on the requisition to request expedited testing, include phone number for reporting of results as it is policy for all STATs to be called to the physician or caregiver of the patient.

Cultures: Turnaround time varies depending on the type of culture ordered. Preliminary reports are generated appropriate to the growth rate of the organism. Final reports will be generated at various times depending on culture type and growth rate.

<u>Type of Culture</u>	<u>Incubation period for growth</u>
Routine and general bacteria	24 – 48 hours
Viral	Up to 3 weeks
Fungal	Up to 8 weeks

Serum or Plasma: Serum – Allow to clot 20 minutes, centrifuge at 3000 to 3500 RPM for 10-15 minutes, transfer serum into plastic transfer tube, label with patient name, indicate serum on tube. Plasma – Invert 7 – 10 times at collection, centrifuge at 3000 – 3500 RPM for 10 – 15 minutes, transfer plasma in plastic transfer tube, label with patient name, indicate plasma on tube.

Frozen Specimens: Serum/plasma- Allow to clot 20 minutes, centrifuge at 3000 – 3500 RPM for 10-15 minutes, transfer serum/plasma into plastic transfer tube. Freeze and transport on ice.

24 Hour Urine Collection: Measure 24 hour total volume and record on requisition. Mix specimen well, pour 50 mL into a leakproof container and send 50 mL specimen to lab. Total volume measurement **MUST** accompany 50 mL specimen in order for the specimen to be processed as a 24 hour urine. If total volume cannot be measured submit entire 24 hour urine. See Timed Urine Patient Collection Instructions on page 10.

Microbiology Specimens: See specific collection and handling procedures in the Microbiology Specimen Collection Procedures section, pages 10-29.

Unacceptable/Problem Specimens: When the following specimens are received and any of the following discrepancies are found they are forwarded to our Problem Resolution Department. **These problems must be corrected before testing can be performed to ensure the best patient care possible.** When a client is contacted by our Problem Resolution Department, it is very important that the resolution be given as soon as possible to avoid any further result delays.

Unclear Orders

Insufficient Sample (QNS- Quantity Not Sufficient)

Mislabeled Specimen or Illegible documentation on requisition or specimen

Incorrect Specimen for test required

Clotted Specimens for Coagulation or Hematology testing

Specimens not transported at proper temperature

Syringe received with needle

Incomplete Requisition (Insurance information missing, collect date etc.) See Test Requisition section page 7.

Order of Draw:

- 1) Blood Culture tube
- 2) Stasis-sensitive assays
(plasma ammonia, venous pH, ionized calcium, platelet aggregator)
- 3) Non additive tube
- 4) Coagulation tube
- 5) Additive tube
 - a. Light blue top (citrate)
 - b. Green top (heparin)
 - c. Lavender top (EDTA)
 - d. Gray top (oxalate/fluoride)

Helpful Hints to Receive the Best Possible Service and Results:

Use S.E.D. Medical Laboratories Requisition forms.

Do not use another client's forms.

Complete all required areas on the Requisition form. See page 8.

Indicate patient name on specimen **exactly** as shown on Requisition.

Indicate tests ordered clearly on Requisition

Follow labeling instructions as per General Specimen Collection Instructions on page 9.

Indicate specimen type on all pour over tubes

Invert all tubes with anticoagulant 7-10 times immediately after collection

Centrifuge and separate serum promptly or results may be compromised.

Store specimen at proper temperature (room temperature, refrigerated, frozen).

Blood Bank, HIV, Hepatitis Specimens – send separate, fully labeled tube. See page 9, step 7.

Mark "Source" for all microbiology cultures.

Order supplies and Requisitions **before** you run out.

Color of Vacutainer	Additive	Number of Inversions General Information
Light Blue	3.2% Sodium Citrate	8-10 inversions Fill tube completely Use for Coagulation Testing
Yellow	ACD (Acid Citrate Dextrose)	8-10 inversions Use for special studies, CD4/CD8
Royal Blue (with additive)	EDTA (Potassium Ethylene Diamine Tetra Acetic Acid)	8-10 inversions Use for leads and heavy metals
Royal Blue (no additive)	None	8-10 inversions Use for trace elements
Gray	Sodium Fluoride (NaFl)/ Potassium Oxalate (KOx)	8-10 inversions Use for glucose tolerance testing and blood alcohol
Green	Lithium Heparin	8-10 inversions Use for ammonia levels
Lavender	K2 EDTA (Potassium Ethylene Diamine Tetra Acetic Acid)	8-10 inversions Use for ABO/Rh, CBC's and other hematology tests
Red	None	No inversions necessary Allow to clot 20 minutes, spin and transfer serum into plastic transfer tube Use for therapeutic drugs
Mottled Red Or Yellow top with gel	Polymer Gel/and Silica Clot Activator	5-7 inversions Allow to clot for 20 minutes. Spin and separate serum into transfer tube if specimen will not reach lab within 4 hours Use for Chemistry tests, CMP, BMP, hepatitis, thyroid, etc.
Clear/Pearlized	Plasma Preparation Tube (PPT) Plastic tube with polymer gel. Tube may be spun and frozen	7-10 inversions Use for HIV and HCV PCR tests
Color of Microtainer top	Additive	Number of Inversions
Amber	Polymer Gel/Silica Clot Activator	5-7 inversions
Red	None	None
Lavender	K2 EDTA	7-10 inversions
Green	Lithium Heparin	7-10 inversions
Gray	NaFluoride (NaFl)	7-10 inversions

**S.E.D. MEDICAL LABORATORIES
CRITICAL VALUES (Effective May 2005)**

	Low Critical	High Critical	
HEMATOLOGY			URINALYSIS
Hematocrit (Hct)	< 24 %	> 65 % (excluding neonates)	Positive urine ketone in newborn
Hemoglobin (Hgb)	< 8 gm/dl	> 20 gm/dl (excluding neonates)	
Platelet Count	< 30,000/mm ³	New onset >1,000,000/mm ³	Positive urine sugar in newborn
Absolute Neutrophil Count	<0.5 x 10 ⁹ /L		
Protime (PT)		INR 5.5	TRANSFUSION SERVICE
aPTT		>120 seconds	Positive DAT on cord blood
WBC		New onset leukocytosis >37.0 (x1000/mm ³) or +50% change from previous count (>37)	Positive Kleihauer-Betke stain for fetal hemoglobin
WBC	new onset leukopenia <2.0 (x1000/mm ³) or any WBC <1.0 (x1000/mm ³)		
WBC	new appearance of blasts		
Heparin Induced Thrombocytopenia (HIT) (Sendout)		any result	
Bleeding Time		>20 minutes	
Peripheral blood smear	New appearance of parasites		
CHEMISTRY			
ΔA450 (Sendout)		any result	
Acetone, Serum		any detectable level	
Ammonia (> 1 month)		> 74 mmol/L	
Ammonia Pediatric (< 1 month)		> 110 mmol/L	
Cord blood Bilirubin		>5 mg/dl	
Neonatal Bilirubin		> 14 mg/dl	
Fetal Fibronectin (Sendout)		any result	
Fetal Lung Maturity (Sendout)		any result	
Calcium, total	< 6 mg/dl	> 13 mg/dl	
Calcium, free (ionized)	< 0.88 mmol/L	> 1.5 mmol/L	
Creatinine		New onset > 5.0 mg/dl - Do not call on known dialysis patients.	
Glucose (Greater than 1 month old)	< 40 mg/dl	> 450 mg/dl	
Glucose (Birth to 1 month old)	< 30 mg/dl	> 300 mg/dl	
Phosphorus	< 1.0 mg/dl	> 9.0 mg/dl	
Potassium (K)	< 2.5 mmol/L	> 6.0 mmol/L	
Potassium (K) (<= 1 year old)		> 6.5 mmol/L	
Creatine Kinase (CK)		> 1700 U/L	
Relative Index (CK-MB)		> 5.0 first result of any series	
Sodium	< 120 mmol/L	> 160 mmol/L	
Troponin I		> 1.2 ng/ml first result of any series	
Urea Nitrogen		New onset > 80 mg/dl - Do not call on known dialysis patients.	
CO ₂ , Serum	< 10 mmol/L	> 40 mmol/L	
CO		> 15%	
Arterial/capillary			
pCO ₂	< 20 mm Hg	> 60 mm Hg	
pO ₂	< 40 mm Hg		
pO ₂ (<1 day old)	< 45 mm Hg		
O ₂ Hgb (oxyhemoglobin)	< 75%		
O ₂ Hgb (oxyhemoglobin, <1 day old)	< 40%		
Arterial/capillary/venous pH	< 7.25 units	> 7.60 units	
All Cord Blood Gas Results		Any Result	
MAGNESIUM at Heart Hospital	<1.2 mg/dl		

SERUM/PLASMA DRUG LEVELS	High Critical	SERUM/PLASMA DRUG LEVELS	High Critical
Acetaminophen	> 100 ug/ml	Imipramine/Desipramine	> 500 ng/ml
Amitriptyline/Nortriptyline	> 500 ng/ml	Lithium	> 2.0 mEq/l
Alcohol	> 300 mg/dl	Nortriptyline	> 500 ng/ml
Caffeine (Sendout)	> 40 ug/ml	Phenobarbital	> 60 ug/ml
Carbamazepine (Tegretol)	> 15 ug/ml	Procainamide plus N-Acetylprocainamide (Sendout)	> 30 ug/ml
Cyclosporin	> 550 ng/ml	Salicylate	> 30 mg/dl
Desipramine	> 500 ng/ml	Theophylline	> 25 ug/ml
Digoxin	> 2.5 ng/ml	Tobramycin Peak	> 10 ug/ml
Dilantin (Phenytoin) Adults & Children	> 40 ug/ml	Tobramycin Trough	> 2 ug/ml
Dilantin (Phenytoin) Neonates	> 14 ug/ml	Tricyclic Screen	> 500 ng/ml
Doxepin/Desmethyldoxepin	> 500 ng/ml	Valproic Acid (Depakene)	> 200 ug/ml
Gentamicin Peak	> 10 ug/ml	Vancomycin Peak	> 60 ug/ml
Gentamicin Trough	> 2 ug/ml	Vancomycin Trough	> 20 ug/ml
MICROBIOLOGY/IMMUNOLOGY			
<u>Positive AFB Smear/Culture</u>		<u>Positive Group B Strep Culture on Labor and Delivery Patient</u>	
<u>Positive Blood Culture</u>		<u>Positive Neisseria Meningitidis Culture</u>	
<u>Positive Clostridium - Wound</u>		<u>Positive Salmonella/Shigella/E. coli 0157 Campylobacter-Stool</u>	
<u>Positive Cryptococcal Antigen/Culture</u>		<u>Positive Y. pestis Culture</u>	
<u>Positive Culture of a Pathogen from a Newborn</u>		<u>Positive IgM Serology (excluding Mononucleosis)</u>	
<u>Positive Group A Strep Culture from Source Other than Throat</u>		<u>Positive Gram Stain/Culture on Normally Sterile Body Fluid (excluding Urine)</u>	
		<u>Positive (Reactive) Hantavirus, IGM (Sendout)</u>	

Reflex Testing

The following table describes tests and specific conditions for tests performed by S.E.D. Medical Laboratories that will initiate a second or confirmatory test to be performed at an additional charge. The second or confirmatory tests are reflexed when specific criteria are satisfied, or when medically necessary according to standard medical practice. Tests sent out to a referral laboratory are not listed in this chart and are subject to the referral laboratories' reflex criteria and fees.

Initial Test	Reflex Conditions	Second or Confirmatory Test
ANA Screen	Positive Result	Titer and Pattern
Anti-Centromere Qab	Positive Result	Titer
Antibody Screen	Positive Result	Antibody Identification and Antigen Typed Units
CBC	Abnormal automated results	Manual differential and morphology review
CBC	*Refer to slide review criteria shown below	Pathologist review and interpretation
DIC Profile	Positive Result	D-Dimer
Fetal Maternal Hemorrhage	Maternal Rh negative result	Kleihauer-Betke
Fibrin Split Products (FSP)	Positive Result	D-Dimer
Hepatitis B Surface Ag	Positive Result	Hepatitis B Surface Ag Neutralization Test
HIV 1/2 Antibody Screen	Repeatedly Reactive Result	HIV 1 Western Blot
Myoglobin, Qualitative	Positive Result	Myoglobin Quantitative
RPR (treatment follow-up)	Reactive Result	Titer
RPR (with confirmation if indicated)	Reactive Result	Titer and T. pallidum Confirmation
Urinalysis	Patient <2 years	Clintest
Urinalysis, Complete with Culture if Indicated	Positive nitrite or leukocyte esterase results or >4 WBC	Urine Culture
Urinalysis, Macro with Micro if Indicated	Positive nitrite, leukocyte esterase, blood or >1 + protein	Microscopic Exam

*New onset of WBC >50,000, blasts, abnormal lymphs, MCV>110 or <60, or monocytes>25%, lymphocytes (>60% in adults and >80% in children) eosinophils and basophils, RBC's suggestive of hemoglobinopathy or hemolytic process.

Reflex Testing for Cultures; stain, culture Identifications (ID's) and/or susceptibilities or concentrations will be performed when medically indicated according to the table below:

Initial Test	Stain	Reflex Condition	Second or Confirmatory Test
Culture, Acid Fast Bacilli (AFB)		Positive Result	ID, Susceptibilities (TB only), Concentration
Culture, Aerobic Only	Yes	Positive Result	ID, Susceptibilities
Culture, Anaerobic/Aerobic	Yes	Positive Result	ID, Susceptibilities
Culture, Blood		Positive Result	ID, Susceptibilities
Culture, Body Fluid	Yes	Positive Result	ID, Susceptibilities
Culture, Fungal		Positive Result	ID, Susceptibilities on request
Culture, Fungus (blood)		Positive Result	ID, Susceptibilities on request
Culture, Fungus (skin, hair, nails)		Positive Result	ID, Susceptibilities on request
Culture, Neisseria gonorrhoeae		Positive Result	ID, Beta Lactamase only
Culture, Genital	No	Positive Result	ID, Susceptibilities
Culture, Herpes Simplex (HSV)		Positive Result	ID
Culture, Respiratory	Yes	Positive Result	ID, Susceptibilities
Culture, Stool		Positive Result	ID, Susceptibilities
Culture, Streptococcus, Group A (throat)		Positive Result	ID
Culture, Streptococcus, Group B (genital)		Positive Result	ID
Culture, Urine		Positive Result	ID, Susceptibilities
Culture, Vancomycin-Resistant Enterococcus (VRE)		Positive Result	ID, Susceptibilities

