

BLACK HILLS HEALTH CARE SYSTEM PATHOLOGY AND LABORATORY MEDICINE		Document #/Version #: 465/5	This document applies to the following location(s):	
Author/Date Created: Kristen Colwell 1/2007	Editor/ Date: LYNN PADILLA 1/2017	Replaces Doc #/Version #: 465/4	X	FORT MEADE VAMC 113 Comanche Road, Fort Meade, SD 57741
		Effective Date: 01/10/17		
TITLE: Specimen Collection and Handling Outside of the Laboratory			X	HOT SPRINGS VAMC 500 North 5 th Street, Hot Springs, SD 57747

All information found in this collection manual can also be accessed through Vista or CPRS-GUI. For Vista use the option “**Test Description Information**”. For CPRS-GUI go to the the upper left hand portion of the screen and click on **Tools**. Then click on **Lab Test Information** and enter the test you need information on.

Additionally, the following documents have been added to clarify specimen collection, ordering and contingency plans:

- Document 400: Specimen Collection and Rejection Criteria (for within lab and outside lab departmental use and guidance).
- Document 210: Body Fluid Collection Job Aid (to clarify proper collection requirements for collecting irretrievable body fluid samples).
- Document 437: Flow Cytometry/Cytogenetics Job Aid (to clarify information needed to process flow cytometry and cytogenetic test requests).
- Document 429: Laboratory Orders Contingency Plan (how to order lab tests in the case of electronic system “downtime”)
- VISTA test menu manual, printed alphabetically (corresponds with the electronic information accessible in VISTA or CPRS-GUI as mentioned in the first paragraph).

GENERAL INFORMATION:

1. In efforts to help the clinician in diagnosing and managing their patients, the laboratory service offers extensive services which include in-house and referral testing.
2. The test result may be subject to many variables including the manner in which the specimen has been collected or transported.
3. This document is intended to minimize such variables and ensure the best possible specimen for the tests requested.

IMPORTANT NOTES ON ORDERING CULTURES: Specimens for cultures should be obtained before antimicrobial agents have been administered. If the culture has been taken after the initiation of antibacterial therapy, it should be noted in the "comment" portion of the initial order request by ordering personnel.

1. VIRAL CULTURES:

- a. The laboratory should be notified of requests for viral cultures, since these require a special transport/collection media.
- b. These requests must also include the source and the suspect agent or disease.
- c. Viral serologies usually require paired serum (blood) samples collected two weeks apart.

2. IMPORTANT NOTES ON SPECIMEN COLLECTION, TRANSPORT AND PROCESSING:

- a. Specimens should be collected using universal blood and body fluid precautions.
- b. All specimens should be properly labeled with patient name, social security number, ward, source, time of collection, and order number.

- c. They should be collected in an appropriate fashion for the analysis requested, and promptly transported to the laboratory in a tightly sealed, watertight container or culturette placed within a zip lock bag.
 - d. Specimens which may be delayed in transporting should be refrigerated.
 - e. Transportation should be made within 1 hour of collection.
 - f. Processing of specimens should begin upon laboratory arrival.
 - g. **NOTE: CSF should never be refrigerated since some microorganisms are susceptible to cold.**
3. SPECIMEN REJECTION CRITERIA (EXAMPLES): Unacceptable specimens include those which are unlabeled, grossly contaminated, of insufficient quantity, or incorrectly collected or transported.
- a. All unlabeled specimens.
 - b. Contaminated, non-sterile, broken, or cracked containers, or specimen transport containers containing sharps (needles) still attached. Samples containing sharps will be rejected until the attached sharp is removed by the collector.
 - c. Spilled sample in a biohazard bag.
 - d. Expired hemocults, culturettes, vacutainers, Enteric Ova and Parasite kits.
 - e. Dry swabs or lack of transport media.
 - f. Inappropriate or inadequate preservatives or anticoagulants.
 - g. Inaccurate time for collection.
 - h. Improper temperature storage.
 - i. Delayed delivery of wound cultures and anaerobes.
 - j. Inadequate volume of blood collected into a tube with anticoagulant (Quantity Not Sufficient QNS).
 - k. Sample diluted with intravenous fluids or heparin.
 - l. Clotting in tubes containing anticoagulants (lack of sufficient, gentle mixing).
 - m. Grossly hemolyzed or lipemic/chylous samples.
 - n. Delayed plasma or serum separation from cells.
 - o. Non-fasting specimens for those tests that must be fasting. Note: Fasting patients are encouraged to come to the laboratory well-hydrated with water only.
 - p. Environmental exposure: temperature extremes/changes, sunlight, air.
 - q. Specimens improperly collected because of “no patient instruction”.
 - r. Medication interferences.
 - s. Misidentified patient samples.
 - t. Improper puncture site preparation (alcohols or blood cultures).
 - u. Pouring aliquot back into original tube.
 - v. Any specimens in “brought from home” containers.
4. COLLECTION BY SOURCE:
- a. Blood:
 - i. Blood specimens may be collected by laboratory personnel, physicians, respiratory therapists, PA's, or RN's.
 - ii. Blood cultures drawn by lab personnel are collected from at least two different sites. Specimen collection is extremely important in obtaining blood cultures. Proper skin disinfection is essential to reduce the incidence of contamination. Universal Precautions must be followed. Following palpation, the venipuncture site should be cleansed. Use the chloroprep to cleanse area using directions on

- chloroprep box. Allow the disinfectant to dry before the blood culture is drawn. This will allow maximum effectiveness of the disinfectant. Should further palpation of the vein become necessary, the gloved finger must be disinfected.
- iii. Other routine blood specimens are drawn according to laboratory policy and protocol.
- b. Body Fluids-See Body Fluid Job Aid, if necessary:
- i. Percutaneous aspiration of spinal, pleural, pericardial, synovial, peritoneal or other body fluids must be performed aseptically by physician to avoid contamination and prevent the introduction of organisms into these spaces. Some collection "kits" will have adequate tubes for chemistries, serologies, etc. but will need to have a portion of the specimen aliquoted as follows:
 - 1. Collection of specimens for hematology (cell counts) should be collected in heparinized (green top) or EDTA (lavender top) tubes.
 - 2. Specimens for all other tests, chemistries and cultures, should be collected in a sterile tube (red top with no gel on bottom) taking care to maintain anaerobic conditions to facilitate the recovery of anaerobes in culture.
 - ii. **NOTE: Transporting specimens in syringes with attached needles is not a safe mechanism and is not encouraged.**
- c. Ear:
- i. Material from the inner ear, especially that obtained after perforation of the eardrum is best aspirated by the physician using sterile equipment or by using an aerobic or anaerobic culturette.
 - ii. In external otitis, the external ear should be cleansed with a detergent to free the skin of contaminating bacterial flora before a culture is taken.
- d. Eye:
- i. Eye infections are categorized as conjunctivitis, keratitis (inflammation of the cornea), endophthalmitis periocular infections. Bacteria are the most common infectious agents however fungi or viruses may also play a part. Bacterial cultures are routinely done at Fort Meade with fungal and viral testing available at the physician's request.
 - ii. For conjunctivitis: The specimen of choice is purulent material from the lower conjunctival sac and inner canthus of the eye collected with a culturette.
 - iii. For keratitis: An ophthalmologist should obtain scraping of the cornea. The scraping tool is then used to inoculate the media.
 - iv. For endophthalmitis: Specimens obtained by the ophthalmologist would be from the eye chamber, vitreous or wound abscess.
 - v. For chlamydia: Purulent matter collected with gen-probe kit (provided by state health lab.) See instructions for collection on kit.
 - vi. For viruses: Material should be collected as above & placed in pink viral transport media(contact lab for this.)
- e. Feces: Testing fecal specimens includes various enteric pathogens, ova and parasites, Clostridium difficile, qualitative fecal fat, occult blood, and fecal lactoferrin. Infection Control Officer may also order VRE screening as indicated for infection control purposes.
- i. Enteric Pathogens Panel (Replaces Stool Culture, Ova and Parasites, and enteric viral culture):

1. 25 grams of **fresh liquid or runny** fecal specimen should be collected in a clean plastic container. Stool must be transferred to Cary Blair transport within 1 hour of collection.
 2. Specimen must reach the testing site within 4 days of collection. Specimens are sent to reference lab Monday through Friday.
 3. This is a nucleic acid PCR test. Only one specimen should be submitted. Serial specimen submission is not indicated.
 4. Retesting as “proof of cure” is not acceptable. DNA can remain long after symptoms have resolved.
 5. Test includes *C. difficile*, although in-house testing for *C. difficile* alone is available at Fort Meade.
- ii. *Clostridium difficile*
1. 25 grams of **fresh liquid or runny** fecal specimen should be collected in a clean plastic container. The patient should be symptomatic, which is defined by ≥ 3 liquid stools within a 24 hour period.
 2. Asymptomatic patients will NOT be “screened” for *C. difficile*.
 3. Only liquid/runny specimens are to be tested. The specimen must conform readily to the container. If unsure perform the stick test:
 - a. Place a wooden stick perpendicular in the center of the specimen.
 - b. The stick must fall readily and rest against the side of the container in order to be an acceptable specimen.
 4. Specimen should be less than 24 hours old whenever possible. Specimens should be stored at 2- 8°C if not tested immediately upon collection.
 5. No more than 1 specimen per patient will be tested per 7 days. If test is positive, no further testing will be performed.
 6. Unacceptable specimens include:
 - a. Formed stools
 - b. Specimens over 72 hours old
 - c. Frozen specimens
 - d. Specimens preserved in 10% Formalin, merthiolate formalin, sodium acetate formalin, or polyvinyl alcohol
 7. The patient should never be re-tested as proof of being cured of *C. difficile* or to assess the cause of continuing diarrhea since the toxin may persist for a prolonged time without causing disease. If diarrhea continues, a consult with a gastroenterologist for a colonoscopy may be warranted.
 8. If a patient is suspected of having *C. difficile*, all staff will be required to gown up before entering the patient’s room (contact precautions).
- iii. Qualitative Fecal Fat: Stool collected in clean plastic container.
- iv. Occult Blood: Stool collected in clean plastic container or placed on occult blood cards.
- v. Fecal Lactoferrin:
1. Stool collected in clean plastic container.
 2. Transfer to Cary Blair transport container within 1 hour of collection.
 3. Specimen is stable in Cary Blair indefinitely, whether at room temperature or refrigerated.

- vi. VRE Screening (Vancomycin Resistant Enterococcus): Stool collected in clean plastic container, or a rectal swab.
- f. Genital (Urethral):
 - i. Genital specimens are collected by the physician. Test which may be done include routine culture, wet mounts for yeast or trichomonas, clamylidia and/or GC DNA probe testing to the SDSHL, and herpes and viral cultures to the USD viral lab.
 - ii. Routine cultures: Are collected with a culturette and transported as soon as possible.
 - iii. Wet mounts: Swabs are collected by the physician and placed in a glass culture tube containing about one-half ml of saline.
 - iv. Chlamydia and/or GC DNA probe testing: Is collected in the Gen-Probe kit (supplied by the lab: pink-girls blue-boys)
 - v. Herpes and viral cultures: Are collected and placed in viral transport media (supplied by the lab.)
- g. Nasopharyngeal:
 - i. Nasopharyngeal cultures are collected by the physician on a cotton-tipped nichrone or stainless steel wire applicator in a sterile tube. With the patient's head firmly held, a nasal speculum is inserted; wire swab is gently inserted through the nose to the posterior nasopharynx, where it is rotated and then withdrawn.
 - ii. Nasopharyngeal washings for viral testing are obtained by respiratory therapy. Nursing service must enter a consult for respiratory therapy to perform the procedure and a laboratory order to perform the testing.
 - iii. Skin scrapings (hair, nails): Skin scrapings, hair, or nails are collected by the physician or nursing staff in a sterile container. Tests which may be ordered routinely are fungus cultures and KOH preps. Other rarely ordered tests may also require larger amounts of hair or nail specimens. Ex: arsenic testing.
- h. Sputum (bronchial/tracheal):
 - i. Sputum specimens are collected in a sterile screw cap container at the bedside by nursing or respiratory therapy personnel.
 - ii. Bronchial washings should be collected by physician in a suction trap and transported to the lab.
 - iii. Tracheal aspirates or suction are collected by physicians, nursing or respiratory therapy and are submitted to lab in a suction trap.
 - iv. Tests which may be done include routine culture, fungus cultures, AFB cultures and smears to SDSHL, and smears for legionella, and cytologies.
 - v. For special tests to referral labs, please contact lab for instructions prior to collection.
- i. Throat: Specimens for throat cultures are collected by the physician or nursing staff using a culturette.
 - i. With the patient's tongue depressed and the throat well exposed, rub the swab over the back of the throat, both tonsils and any areas of inflammation, exudation, or ulceration.
 - ii. Avoid touching the tongue, cheeks, or lips with the swab.
- j. Urine:

- i. Urine specimens may be collected for routine urinalysis, culture and susceptibility, acid fast bacillus, urine legionella, various chemistries (such as amylase or creatinines), urine toxicologies, or other various analysis.
- ii. For routine analysis: Urine is best collected by a clean-catch, midstream method in a sterile screw cap container, or nursing personnel may collect urine by aspirating urine from the catheter tubing and transporting it to the lab in a sterile container.
- iii. For culture: Collect as above. Other acceptable specimens would be a pubic aspirate which would be collected by the physician.
- iv. For acid fast bacillus: A general voided urine specimen collected in a sterile screw capped container is acceptable.
- v. For legionella: A voided urine must be collected and shipped within 24 hours of collection. These specimens are best collected in the morning.
- vi. For chemistries: Most urine chemistries are timed collections (ex: 2 hour or 24 hours collection) Contact the lab or SPD for collection containers. See specific test in ward collection manual for required preservatives and storage temperature.
 1. Have patient void and discard the urine
 2. Instruct the patient to save all the urine for the desired time period.
 3. At the end of the time period, have the patient void and save the urine adding it to the total collection.
 4. Submit entire collection to the lab.
- vii. For toxicology testing: Toxicology testing on in-patients is referred. New employees who require drug screens are scheduled by personnel to come to the laboratory for an observed collection procedure.
- viii. For referral testing: Please contact the lab for any special instructions for uncommon analysis.
- k. Wounds/Tissue(aerobic and anaerobic): Wound cultures are collected by the physician or nursing staff utilizing aerobic or anaerobic culturettes. Other acceptable specimens would be a needle aspirate or tissue specimen collected in a sterile container by the physician. KOH preps or fungus cultures may also be done on these collections. Miscellaneous specimens such as IV catheter tips, drainage tubings etc. may also be submitted for culture in a sterile container, please specify the source.
- l. Aerobic/anaerobic culture collection for routine culture
 - i. Peel open the culturette package. (Same swab for both specimen types)
 - ii. Remove the swab and collect culture.
 - iii. Return swab to tube.

TISSUE SPECIMENS:

1. Required Forms:
 - a. Replacement Form 515: Computer generated form in the Surgery Package. Use option "Tissue Examination Report"
 - b. Tissue Examination Form (SF515): Paper form used in instances where submitter of specimens does not have access to computer generation of form.
 - c. Tissue specimens are accepted only from authorized VHA staff(Staff Physicians, Consultant Physicians, Podiatrist, Physician's Assistants as privileged)
2. Frozen Sections:

- a. Surgery service will contact Clinical Lab of the Black Hills to schedule the frozen section.
 - b. Surgery service will notify lab of the scheduled frozen section so that lab can have the cryostat ready.
 - c. Specimen is delivered to lab FRESH(unfixed)
 - d. The personnel in the OR will enter the clinical data on the patient & specimen into the computer using option "Tissue Examination Report". A printed copy of this form will accompany the tissue for frozen section examination to the lab.
3. Bone Marrow-See Flow Cytometry/Cytogenetics job aid, if necessary :
 - a. Primary Care will schedule the bone marrow procedure with the Surgery service and notify lab. Bone marrow procedures requiring Flow Cytometry and Cytogenetics testing can only be scheduled Monday through Thursday before 10 AM. (NO EXCEPTIONS!!)
 - b. Bone marrow procedures are performed in CTU with OR nurse assisting the physician. Lab will be there to process the specimen.
 - c. A CBC must be ordered to accompany the bone marrow specimen.
 - d. Patient must sign a consent.
 - e. A completed SF-515 must accompany the specimen to lab. A completed consult is also required if Flow cytometry or Cytogenetics testing is requested.
4. Routine Surgical Specimens:
 - a. Completed SF-515(Tissue Examination) form will be printed and sent to the lab with the properly labeled surgical specimen. Suspend all surgical specimens in 10% Buffered Neutral Formalin. (Individual specimen containers containing 20 ml of 10% Buffered Neutral Formalin can be obtained from lab). Deliver surgical specimens to lab by 12:30 PM. Place on top shelf of small refrigerator located in front area of lab.
 - b. NOTE: Limbs should be wrapped in disposable towels and double bagged. DO NOT add formalin. Deliver to lab same day or refrigerate in morgue. Deliver SF-515 to lab with note stating "Specimen in morgue".
5. Immunoflorescence Studies:
 - a. Send properly labeled specimen to lab with a completed SF-515 form.
 - b. Surgical procedure is performed on Monday's or Tuesday's to allow for mail time to the reference lab.
 - c. Two(2) specimens are submitted. One specimen is placed in formalin and one specimen is placed in Michels' Transport Media(Obtain from Clinical Lab of the Black Hills in advance)
6. Stone for Analysis:
 - a. Order Stone Analysis test in CPRS-GUI.
 - b. Submit dry stone in properly labeled plastic specimen bag to lab. (DO NOT add formalin) Write order # on bag or send copy of order with the specimen.

CYTOLOGY SPECIMENS:

1. PAP SMEAR – Non Thin-Prep Method:
 - a. Make sure slide(s) is labeled with patient name and last 4 of SSN#
 - b. Spray smear with Surgipath Cytology Fixative
 - c. Place slide(s) in empty slide holder.

- d. Send specimen with completed Clinical Laboratory of the Black Hills PAP Smear request form.
2. PAP SMEAR – Thin Prep Method:
 - a. Use thin prep kit to collect the specimen. Follow instruction provided with kit. (Obtain kits from lab)
 - b. Send thin prep vial properly labeled to lab with completed Clinical Laboratory of the Black Hills PAP Smear request form. Forms are included with the pap smear kits or available in the laboratory.
3. URINES:
 - a. Send FRESHLY COLLECTED urine in a clean container(does not need to be sterile.) Label properly.
 - b. Send completed SF-515 with specimen. Specify collection procedure.
4. BODY FLUIDS (peritoneal, pleural, synovial, etc.):
 - a. Collect specimen in sterile container. **DON'T** add fixative. Keep specimen Refrigerated. Label properly.
 - b. Send specimen along with a completed SF-515 form to lab. Indicate type of fluid on request form.
5. SPUTUMS:
 - a. Collect first morning(before breakfast) sputum specimen. Add 25 cc of cytolyte fixative.
 - b. Send properly labeled specimen along with the completed SF-515 form to lab.
6. BRONCHIAL WASHING/BRUSHINGS:
 - a. Collect specimen in a sterile container. Add equal amount of cytolyte fixative to specimen. **(If specimen needs cultures, DO NOT add the fixative. Lab will add fixative after cultures are done.)**
 - b. Send properly labeled specimen along with a completed SF-515 form to lab.

If you have any questions concerning collection or transportation of specimens please call the laboratory for assistance.

7716 - Chemistry (glucoses, electrolytes, therapeutic drugs etc)

7712- Hematology/Coag (cbc's, hct's, hgb's, pt's ptt's etc)

7714- Blood bank (transfusion)

7725 - Microbiology (cultures)

7717- Urinalysis

7721- Point of care testing