MICROBIOLOGY SPECIMEN COLLECTION AND TRANSPORT

I. PRINCIPLE

It is critical that the laboratory provide complete guidelines for the proper collection and transport of specimens to ensure quality patient care. All diagnostic information from the Microbiology laboratory is contingent on the quality of the specimen received. Consequences of a poorly collected and/or poorly transported specimen include failure to isolate the causative microorganism and recovery of contaminants or normal microbiota, which can lead to improper treatment of the patient. Often, direct specimen smears are utilized to determine the quality of the specimen, to provide rapid information for diagnosis and therapy, and allow the physician to determine if additional, better quality specimens should be collected.

II. CLINICAL SIGNIFICANCE

Proper collection and transport of clinical specimens is essential for good Microbiology results and ultimately good patient care.

III. POLICY SCOPE

The scope of this policy applies to all Laboratory staff that prepares Microbiology specimens for testing at UnityPoint Methodist Microbiology Department.

IV. SPECIMEN

A. The proper collection of a specimen for analysis or culture is the most important step in the testing process. An improperly collected specimen may lead to failure to isolate a causative organism or result in the reporting of clinically inaccurate test results.
B. All specimens received for testing should be properly labeled with the patient's first and last name, location, date and time of specimen collection and specimen source.
C. Specimens for culture should be transported to the laboratory as soon as possible after collection or placed in preservatives or special transport containers. Refer to individual test requirements for special handling instructions if transport must be delayed. Laboratory User's Manual. (Available electronically as an Icon on the Desktop.)
D. Any collection method requiring an invasive technique should be performed by a physician. Some specimen collection techniques should be performed by a physician specialist with advanced training skills. These types of collections are not covered in this procedure. The following procedures serve as guidelines to nursing personnel or ancillary staff involved in routine collections or patient instruction for proper collection of specimens.

V. INSTRUMENTATION/EQUIPMENT

A. Transport systems for aerobic and anaerobic specimens:

BBL Culture Swab ™Transport System	Sterile, disposable culture collection and transport system consisting of plastic tube containing two rayon-tipped swabs and transport medium to prevent drying of bacteria.
Nasopharyngeal-Urethrogenital Swabs Rayon	Flexible wire shafts and small tips provide easier specimen collection, especially for collection of nasopharyngeal specimens, B. pertussis, and male urethral specimens for N. gonorrhoeae culture. Media should be inoculated directly after collection or swabs can be placed in the plastic container w/transport media.
Sterile screw-cap cups	Useful for collection of sputum, bronchs, and biopsy specimens. If biopsy specimen is small, add small amount of sterile non bacteriostatic 0.85%NaCl to specimen.
Sterile petri dishes	Useful for hair or skin-scrapings. Tissues are also received from surgery in petri dishes. Tape petri dish securely prior to transport.
Sterile tubes (screw-cap glass or plastic tube, sterile Vacutainer tubes w/o additives.	Useful for collection of sterile fluids, bronchs, drainage, or brush specimens.
Urine tubes containing 0.5 ml of freeze-dried boric acid sodium formate maintenance formula	Vacutainer tube containing 0.5 ml of freeze-dried boric acid-sodium formate maintenance formula. Maintenance formula holds bacterial population in urine specimen for 48 h at room temperature at levels comparable to those in urine specimens w/o additive but held under refrigeration for same period.
(UTM) Universal Transport Medium (Transport of Viruses, Chlamydia, Mycoplasma, Ureaplasma)	Multi-Media transport media. Specimen is collected on swab and transferred into the medium at the base of the tube. Swirl swab in media and wring out along sides of tube. Discard swab.
Culture Swab Transport System with Amies Media and Charcoal.	Collect specimen and place back into plastic sheath. Push swab into charcoal media at base of plastic sheath. (Used mainly when GC culture from an off-site is requested and delay of culturing is expected.) Strongly recommend PCR technology to culture.
Sputum Collection Container	Special enclosed containers allow the patient to lift top plastic lid and expectorate into attached 50 ml centrifuge tube. Plastic lid is then closed and complete unit delivered to the laboratory. Entire unit can be placed under the biological safety cabinet for processing.

BD Eswab collection kit for aerobic and anaerobic bacteria. White polypropylene screw-cap filled with 1 ml of Liquid Amies Medium.	Follow directions on swab package for proper inoculation.
Syringe or needle Aspirates	Express excess air from syringe. Remove needle and close with syringe cap If fairly large volume is collected (2ml or more), anaerobe bacteria survive for 24 hours at room temp.
Roche Neisseria gonorrhoeae with Chlamydia trachomatis collection test (PCR technology)	Directions available on collection kit. Male :urine kit only Female: Cobas swab sample or urine kit
Blood Culture Vials	A syringe or butterfly set can be used and blood drawn directly into vials. Always inoculate aerobic and anaerobic vial. 20 mls /set Inoculate aerobic first. See Care Coordination Policy C-10.
Stool Preservatives: Formalin/PVA or Carey-Blair	Formalin/PVA Parapaks can be used to preserve and transport stools for Ova and Parasites. Carey-Blair medium is used to preserve and transport stools for FilmArray PCR testing.

VI. QUALITY CONTROL

A. Specimens should be collected according the following procedure using appropriate collection devices. Specimens should be preserved when indicated and transported in a timely fashion to the laboratory. Indications of inappropriate collection, preservation, or transport should be documented in the report of the culture or test with a disclaimer.
B. Sputum specimens, which have been collected by the patient, are screened prior to culturing. Any specimen having >10 squamous epithelial cells/lpf is rejected and a new specimen requested.
C. Collection guidelines are available to all nursing units, outpatient areas, and reference lab clients as a guide in the collection of specimens in the Methodist Laboratory test directory. (Available electronically as an Icon on the on the desktop of the send out computer.)

VII. PROCEDURE:

A. Universal precaution guidelines must be followed for collection and transport of all specimens. Specimens should be placed in tightly sealed containers; the containers should be free of any external spillage, and the specimens should be transported in plastic biohazard ziplock bags.
B. Collect the specimen from the actual site of infection, avoiding contamination from

adjacent tissues or secretions.

C. Collect the specimen at optimal times (i.e. early morning sputum for AFB culture).
D. Collect a sufficient quantity of material.
E. Use appropriate collection devices: sterile, leak proof specimen containers. Use appropriate transport media.
F. Whenever possible, collect specimens prior to administration of antibiotics.
G. Properly label the specimen including the date, time, and initials of collector.
H. Minimize transport time. Maintain an appropriate environment between collection of specimens and delivery to the laboratory.
I. If appropriate, decontaminate the skin surface. Use 70-95% alcohol and 1-2% tincture of iodine to prepare the site or Chlorohexidine Gluconate which is contained in the product Chloraprep. Allow a contact time of two minutes to maximize the antiseptic effect.
J. BBL Culture Swab system should be used for all swab collections. (never use calcium alginate swabs)
K. An anaerobic swab/fluid system is used for all anaerobic collections.

Abscess (anaerobic culture)

1. Decontaminate the surface.
2. Collect purulent material aseptically from an undrained abscess using a sterile needle and syringe. Open miliary abscesses with a sterile scalpel and collect the expressed material with a sterile needle and syringe.
3. Expel air from the syringe, remove the needle and cap the syringe with a plastic stopper.
4. Alternatively, transfer 5-10 mL of the aspirated material to an anaerobic transport vial.
5. Transport the specimen to the laboratory immediately. Swabs are of limited value due to the small amount of material, possible inadequacy of the sample, and their tendency to dry easily. If swab must be used, use the anaerobic transport swab.

Blood Cultures

1. A set of Blood Cultures consists of two (2) blood culture vials collected from one site:
2. An Aerobic culture vial (gray flip cap) and an Anaerobic culture vial (purple flip cap).
3. Each Blood Culture vial requires 10ml of blood. (20ml per set / 40ml per order).
4. If insufficient volume of blood is available (<20ml), fill Aerobic culture vial first.
5. Draw Blood Cultures before antibiotics are initiated. If patient is currently on antibiotics, draw the cultures just prior to the next scheduled antibiotic dose.
6. No more than three (3) sets of Blood Cultures in a 24-hour period.

7. Blood Cultures may be repeated in 48 – 72 hours if, a) initial cultures negative and special cultures are indicated (i.e., TB, Fungus) or, b) initial cultures positive, but patient fails to respond to appropriate antibiotic therapy.
8. Draw Blood Cultures within 30 – 60 minutes of onset of fever ≥ 101°F for chills.

Peripheral Blood Cultures

1. Scrub venipuncture site for 30 seconds with ChloraPrep Frepp. (Chlorhexidine)
2. Flip off caps of each culture vial and clean the rubber stoppers with alcohol wipes.
3. Assemble a butterfly needle set with transfer device.
4. Draw 10 mls of blood into each vial. (20 mls total for each set)
5. Repeat steps 1 – 5 at the second venipuncture site. No time is required between collections of Blood Culture sets.
6. Label vials with patient label identifiers, but do not cover the barcode label on the vials.

Central Venous Catheter (CVC) Cultures

1. Draw one set of Blood Cultures from the CVC (MD may order cultures from each lumen of the CVC) and one set from a Peripheral site.
2. Clean CVC cap with alcohol swab for 3 seconds.
3. Draw 20ml blood from the CVC lumen(s). (Do not draw "waste" blood or flush the lumen when drawing cultures, the heparin / saline will not affect the cultures.)
4. Prepare culture vials as in steps 3 & 4 under Peripheral Blood Cultures above.
5. Label vials as in step 6 above, and note the lumen(s) the blood is collected from.
    a. Inoculate aerobic bottle with 8-10 mL of blood and the anaerobic bottle with 8-10 mL of blood. If less than 10 mL is collected for 2 bottles, inoculate the aerobic bottle with 8 mL and inoculate the anaerobic bottle with the remainder or fill completely one 9.5 mL yellow top SPS tube.
    b. Pediatric bottles will hold 0.5-5.0 mL blood. **Do not collect Pediatric tubes from adults or children over 2 years of age.**
6. Invert bottles several times after specimen collection.
7. Cleanse iodine from the skin after collection of the specimen.
8. Send specimens to the laboratory immediately. **Do not refrigerate.**

Body Fluid (excluding CSF, Urine and Blood)

Physicians collect sterile body fluids. Complete a body fluid order form, order appropriate tests and promptly deliver to the laboratory for testing. If delivery/analysis is delayed beyond 2 hours, specimen must be refrigerated.

Bone Marrow
Specimens collected by Pathologist or Oncologist. Transfer 3-5 mL directly into a Myco/F Lytic blood culture vial. Transport immediately at ambient temp.

Bordetella PCR
Refer to Nasopharyngeal swabs

Bronchial Brush/Washing/Lavage
1. This technique is best done by an experienced individual. Descriptions of the methodology are readily available in the literature.
2. Transport in a sterile container at 2-8°C for cultures, or frozen for molecular tests.

Bullae, Cellulitis, Vesicles
Bullae, Vesicles
1. Cleanse the skin as for blood cultures.
2. Aspirate the fluid/purulent material using a sterile needle and syringe.
3. If an aspirate is obtained, place in appropriate viral or bacterial transport.
4. If no material is obtained, unroof vesicle or bullous lesion and use a swab to collect cells from the base of the lesion. Place in appropriate viral or bacterial transport media.

Cellulitis
1. Swabs and leading-edge aspirates with or without injection of saline fail to yield etiologic agents in the majority of cases. If an unusual organism is suspected, a leading-edge (advancing margin) punch biopsy is the recommended specimen of choice.

Catheters (bacteria only)
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.
    c. Place the catheter segment in a sterile, wide-mouth container.
2. Long catheters (8-24 inches)
    a. Decontaminate the skin at the catheter site.
    b. Aseptically remove the catheter. Submit two segments for analysis. Cut a 2-inch segment of the catheter that was within the blood vessel, using sterile technique. Place the segment in a sterile, wide-mouth container. Cut a second 2-inch segment of the catheter from the skin interface. Place the segment in a sterile, wide-mouth container. Label the containers appropriately.
    c. Transport immediately at ambient temperature.

Cerebral Spinal Fluid

1. Physicians should wear gowns, masks and 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.
2. Decontaminate the skin with 1-2% TOI or Chlorhexidine, followed by 70-90% ALC using an increasingly outward circular movement.
3. Drape sterile linen over the skin surrounding the puncture site.
4. Insert the needle. Collect the fluid into three sterile leak-proof tubes. Collect an adequate volume of fluid as recommended below.
    a. Bacterial culture > 1 mL
    b. Fungal culture 8 – 10 mL
    c. Molecular > 1 mL
    d. Mycobacterial culture 8 – 10 mL
    e. Viral culture > 2 mL
5. Cap the tubes tightly. Submit the second or third tube for culture to reduce the possibility of contamination due to skin flora.
6. Complete a CSF order form, order appropriate tests and promptly deliver to the laboratory for testing.
7. Transport immediately with form. If delivery/analysis is delayed beyond 2 hours, specimen must be refrigerated.

Cervix (Endocervix)

1. Place the patient in the lithotomy position.
2. Prepare the speculum, avoiding the use of a lubricant other than warm water.
3. Insert the speculum and visualize the cervical os.
4. Remove excess mucus with a cotton ball.
5. Gonococcal cultures – refer to **Gonorrhea**.
    a. Chlamydia – refer to specific test type.
    b. Cervical cultures for other reasons:
        1.) Insert a dacron swab in the distal portion of the cervical os, rotate gently, and allow to remain for 10 to 30 seconds.
        2.) Remove swab and place in transport medium.
        3.) Transport at ambient temperature or 2-8°C for viral cultures.
6. Vaginal cultures, in general, do not often produce meaningful results and are not recommended, except for group B streptococcal screen (done by PCR technology).

Chlamydia
Refer to Gonorrhea

Cutaneous (fungus only)

1. Hair (Note: Cut hair is NOT acceptable specimen)
    a. Scrape the scalp with a blunt scalpel.
    b. Place specimen in a dry sterile container.
    c. Transport at ambient temperature.
    d. The following specimens are also acceptable:
        1.) Hair stubs
        2.) Contents of plugged follicles
        3.) Skin scales
        4.) Hair plucked from the scalp with forceps
2. Nails
    a. Cleanse the nail with 70-95% ALC.
    b. Remove the outermost layer by scraping with a scalpel.
    c. Place specimen in a dry, sterile container.
    d. Transport at ambient temperature.
    e. The following specimens are also acceptable:
        1.) Clippings from any discolored or brittle parts of nail
        2.) Deeper scrapings and debris under the edges of the nail
3. Skin
    a. Cleanse the skin with 70-95% ALC.
    b. Collect epidermal scales with a scalpel, at the active border of the lesion.
    c. Place specimen in a dry sterile container.
    d. Transport at ambient temperature.

Ear

1. External ear cultures are processed as superficial wounds.
2. Middle ear fluid will be process as sterile body fluid. If the diagnosis is otitis media, the specimen of choice is middle ear fluid collected by tympanocentesis.

Eye

1. Cleanse the skin around the eye with a mild antiseptic.
2. Purulent conjunctivitis:
    a. Collect purulent material with a regular dacron swab.
    b. Place the swab into transport media and transport at ambient temperature or 2-8°C for viral cultures.
3. Corneal infections:
    a. Swab the conjunctiva as described above.

b. Collect multiple corneal scrapings and inoculate directly onto bacterial agar media (chocolate agar and sheep blood agar) or viral transport media.
c. Transport at ambient temperature or 2-8°C for vial cultures.

4. Intraocular fluid:
   a. Collect fluid by surgical needle aspiration.
   b. Transport bacterial cultures at ambient temperature, viral cultures at 2-8°C, or frozen for molecular tests.

Gonorrhea

1. Gonorrhea testing is available by several methods. An amplification method which detects *Neisseria gonorrhoeae* nucleic acid in urogenital specimens is the preferred diagnostic method. Amplification tests are available for *Chlamydia trachomatis* detection in combination with GC. (See CT/NG Immunochemistry SOP). Amplification tests require transport of urine or swabs in the proprietary transport tube. Culture for *N. gonorrhoeae* is the method of choice in cases of treatment failure and sexual abuse and for non-genital sources.
2. For culture of *N. gonorrhoeae*, use Dacron swabs for specimen collection. Cotton fibers contain fatty acids which are inhibitory to the gonococcus. Avoid swabs with wooden sticks. Transport to lab immediately at ambient temperature. If immediate transport is not possible, culture swabs containing Amies media with charcoal can be used. Once specimen arrives to the lab, do not refrigerate. Immediately inoculate to a Modified Thayer-Martin MTM plate and a chocolate plate.
   a. For male patients, also submit a slide of urethral material for Gram Stain.
   b. Rectal culture:
      1) Moisten a swab with sterile water and insert the swab into the anal canal just beyond the anal sphincter.
      2) Allow 10-30 seconds for absorption of the organisms onto the swab.
      3) Withdraw swab gently and inoculate plate as described above.
      4) Stool is not an acceptable specimen for gonorrheal culture.
3. If disseminated gonococcal infection is suspected, culture blood and suspicious sites such as petechiae or joint fluid.

Nasal

1. Carefully insert swab into the nostril exhibiting the most visible drainage. Using a gentle rotation push the swab until resistance is met at the level of the turbinates (less than one inch into the nostril). Rotate the swab several times against the nasal wall then slowly remove from the nostril.
2. Return swab to the original transport container.
3. For rapid molecular Influenza testing deliver specimen as soon as possible within 2 hours. Refrigerate specimen if transport is greater than 2 hours.

Nasopharyngeal Aspirates/Washings (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. Transport at 2-8°C or frozen for molecular tests. (See ARUP manual for specific viral requests).
5. For washings, suction 3-5 mL of sterile saline into a new sterile bulb.
6. Insert bulb into one nostril until nostril is occluded.
7. Instill saline into one nostril with one squeeze of the bulb and immediately release bulb to collect recoverable nasal specimen.
8. Empty bulb into suitable dry, sterile specimen container or add 3 mL or less to viral transport media.
9. Transport at 2-8°C.

Nasopharyngeal Swabs

1. Seat the patient comfortably and tilt the head back.
2. Insert a nasal speculum.
3. Insert a nasopharyngeal swab (on a malleable wire) through the speculum into the nasopharyngeal area.
4. Rotate the swab gently and allow to remain for 20-30 seconds.
5. Remove the swab and place in a non-growth promoting transport media (such as the swab container, from which the original swab has been removed). Place swab in M4 media for viral cultures.
6. Transport at ambient temperature or 2-8°C for viral cultures.

Nose

1. Collect anterior nares culture with a swab. In small children, use a nasopharyngeal swab to facilitate collection.
2. Transport at ambient temperature.

Note: This is an appropriate specimen for assessment of staphylococcal or streptococcal colonization.

Prostate

1. Cleanse the glans with soap and water.
2. Obtain prostate fluid by digital massage through the rectum.
3. Collect fluid using a sterile swab.
4. Transport at room temperature.
5. Alternatively, a urine specimen obtained immediately before and after massage may be submitted for culture.

Skin

Refer to **Abscess; Bullae, Cellulitis, Vesicles; and Wounds.**

Sputum

1. Assure patient cooperation to get an adequate specimen. Methodist Lab will determine the number of squamous epithelial cells present for specimen adequacy.
2. Instruct the patient as follows:
    a. Rinse mouth with tap water to remove food particles and debris.
    b. Have patient breath deeply and cough several times to receive deep specimen.
    c. Patient should expectorate into dry, sterile container.
3. If patient is unable to produce sputum, induce using saline nebulization. Consult respiratory therapy for assistance.
4. Transport immediately at ambient temperature. Refrigerate if a delay of >1 hour is anticipated.

Stool, Feces

1. Collect specimen in a clean bedpan, commode specimen system, 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 stool in Cary Blair media at ambient temperature within 1 hour of collection, .
4. Diarrhea that develops after 3 days hospitalization is likely due to Clostridium difficile toxin. Routine testing and OVA & Parasite exams should not be performed on these patients.
5. Recommend that no more than 2 bacteriology specimens (be processed per patient without consultation. (2 separate bowel movements)
6. Ova & Parasite – 3 specimens collected over a 10 day period is optimum.

Notes:

- Only loose or diarrheal stools are recommended for routine stool testing.
- Place the specimen in an appropriate preservative or transport media, immediately after collection. For ova and parasite, use 10% formalin and modified PVA; for stool Biofire, use Cary-Blair transport media.

See **Gonorrhea** section for rectal swabs.

Throat

1. Use a tongue depressor and a direct light source to ensure adequate visualization of the posterior pharynx.
2. Swab any area of exudate, ulceration or inflammation including the tonsils, using a culturette swab. Avoid touching the swab to the tongue or uvula.
3. Place the swab back in the transport tube.
4. Transport at room temperature or 2-8°C for viral cultures.

See Gonorrhea section for isolation from throat swabs.

Urethral – Refer to Gonorrhea

Urine

1. Instructions for female patients to collect midstream urine for bacterial culture:
    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 labia minor, with one hand, and keep them continuously apart.
    d. Clean labia minor with soap and water or a benzakonium chloride antiseptic towlette moving from front to back.
    e. Take the open sterile cup in the other hand without touching the rim or inner surface of the cup or lid.
    f. 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.
    g. Place the lid on the cup.
2. Instructions for male patients to collect midstream urine for bacterial culture:
    a. Wash hands.
    b. Retract the foreskin completely if present.
    c. Hold the penis in one hand and clean the head of the penis with soap and water or a benzakonium chloride antiseptic towlette. Use a circular motion moving from the center to outside.

d. Take the open sterile cup in the other hand without touching the rim or inner surface of the cup or lid.
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. Place the lid on the cup.

3. First-void urine for nucleic acid amplification (LCx® tests for Chlamydia/Gonorrhae):
    a. Patient must have urinated during the previous 2 hours.
    b. Collect the first 10 to 15 mL of the urine stream in a clean, empty plastic cup.
    c. Place the lid on the cup.
4. Suprapubic aspiration:
    a. This is not a routine technique and is best performed by an experience 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.
5. Indwelling catheter urine:
    a. Do not collect urine from the drainage bag because of growth of bacteria outside the catheter may have occurred at this site.
    b. Clean the catheter with an alcohol pad.
    c. Use a sterile needle and syringe to puncture the tubing. Aspirate the urine directly from the tubing.
    d. Transfer the urine to a sterile specimen container.
    e. Urine catheter tip cultures are not acceptable.
6. Specimen handling:
    a. Label the container immediately and refrigerate at 2-8°C within 10 minutes of collection.
    b. Urine culture transport system containing 0.5 ml of freeze-dried boric acid sodium formate maintenance formula is required.

Vaginal

1. Vaginal cultures, in general, do not often produce meaningful results and will not be performed.

Wounds

1. For closed wounds, refer to **Abscess** and **Bullae, Cellulitis, Vesicles.**
2. For open wounds:
    a. Clean the opening of the wound surface mechanically, without using a germicidal agent, to remove as much of the superficial flora as possible.

b. Attempt to culture the base or edges of the wound to avoid collecting "normal flora" organisms.
c. The following are preferred specimens for wounds:
    1) Aspiration material obtained by needle or catheterization.
    2) Swab with transport medium..
d. Do not submit cultures of superficial lesions for anaerobic culture. Biopsy of advancing margin of wound is the preferred specimen for anaerobes, mycobacteria and fungi.

Viral Transport Media (UTM)

Some samples can be submitted, without utilizing a transport media, with a reasonable expectation of virus viability. Specimens in this category include, sterile fluids such as cerebrospinal fluid, pleural fluid, blood submitted in EDTA, urine, as well as some non-sterile specimens such as nasopharyngeal washings, sputum, bronchoalveolar lavage and feces. Whenever there is a question of stability, the specimen should be placed in a suitable virus transport media such as UTM. Refer to specific test in the alphabetical test list of this User's Guide for more information.

1. Tissue and biopsy material can be placed directly into the UTM media. Each sample need not be more than 1-2 cm in diameter.
2. Abscess material, bullae, pustules, vesicles, lesions and skin scrapings can be collected on the swab and placed directly into UTM. If the material has been aspirated, place no more than 3 mL (equal to the amount of transport media) in the vial of UTM.
3. CSF should be submitted in a sterile container or no more than 3 mL added to the UTM tube.
4. Urine should be submitted in a sterile container or no more than 3 mL added to the UTM tube.
5. Bronchalveolar washings, nasopharyngeal washings, sputums, and other sterile body fluids can be submitted in sterile containers or no more than 3 mL placed in the UTM tube.
6. Stool should be submitted in a sterile container, or a small aliquot the size of a walnut can be placed in the M4 tube.
7. Blood should be submitted in an EDTA tube. Do not extract the buffy coat.

VIII. REPORTING RESULTS

A. If a specimen is not collected or transported properly, a disclaimer statement should be attached to the report issued on that test.

IX. PROCEDURAL NOTES/PROBLEM-SOLVING TIPS

A. Even though procedure guidelines are in place, communication with the laboratory concerning collections is highly recommended when there are questions or doubt.

B. This procedure is also linked to the laboratory manual located online as a resource for collection from outside offices.

X. REFERENCES

A. Leber, Amy L. *Clinical Microbiology Procedures Handbook*. Washington, DC: ASM Press, 2016.
B. Jorgensen, James H, Michael A. Pfaller, and Karen C. Carroll. *Manual of Clinical Microbiology*. Washington: ASM Press, 2015.
C. Culture Swab Transport system with Amies Medium and Charcoal Product Insert, December 1995.

POLICY CREATION :		***Date***
Author:	***Angie Guppy, MLT (ASCP)***	***11/17/2018***
Medical Director:	***Kathryn Kramer, MD***	***11/17/2018***

MEDICAL DIRECTOR		
DATE	NAME	SIGNATURE
SECTION MEDICAL DIRECTOR		

REVISION HISTORY (began tracking 2011)			
Rev	Description of Change	Author	Effective Date

Lead	Date	Coordinator/ Manager	Date	Medical Director	Date

Reviewed by