Specimen Collection Information Table of Contents

Order of Draw

BD

Helping all people live healthy lives

BD Vacutainer® Order of Draw for Multiple Tube Collections

Designed for Your Safety

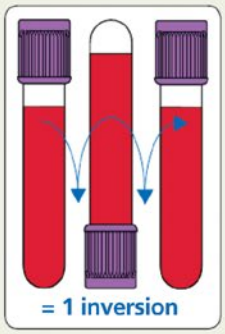
Reflects change in CLSI recommended Order of Draw (H3-A5, Vol 23, No 32, 8.10.2)

Closure Color	Collection Tube	Mix by Inverting
BD Vacutainer® Blood Collection Tubes *(glass or plastic)*		
		8 to 10 times
		3 to 4 times
or	® SST™ Gel Separator Tube *(glass or plastic)*	5 times 5 times (plastic) none (glass)
	Serum Tube (RST)	5 to 6 times
or	® PST™ Gel Separator Tube With Heparin	8 to 10 times
		8 to 10 times
or		8 to 10 times
	Separator Tube K_2EDTA with Gel	8 to 10 times
		8 to 10 times

* When using a winged blood collection set for venipuncture and a coagulation (citrate) tube is the first specimen tube to be drawn, a discard tube should be drawn first. The discard tube must be used to fill the blood collection set tubing's "dead space" with blood but the discard tube does not need to be completely filled. This important step will ensure proper blood-to-additive ratio. The discard tube should be a nonadditive or coagulation tube.

Note: Always follow your facility's protocol for order of draw

Handle all biologic samples and blood collection "sharps" (lancets, needles, luer adapters and blood collection sets) according to the policies and procedures of your facility. Obtain appropriate medical attention in the event of any exposure to biologic samples (for example, through a puncture injury) since they may transmit viral hepatitis, HIV (AIDS), or other infectious diseases. Utilize any built-in used needle protector if the blood collection device provides one. BD does not recommend reshielding used needles, but the policies and procedures of your facility may differ and must always be followed. Discard any blood collection "sharps" in biohazard containers approved for their disposal.



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Franklin Lakes, NJ 07417
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Specimen Collection By Venipuncture

PURPOSE:

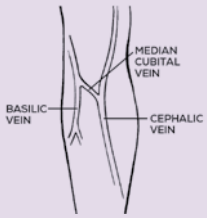
To provide instructions for obtaining a blood sample by Venipuncture.

MATERIALS:

SUPPLIES	EQUIPMENT
• Alcohol prep pad • ChloraPrep One-Step for blood culture • Povidone-Iodine swab for blood culture for infants <2 months of age, patients allergic to ChloraPrep or ETOH collections • Gauze • Blood collection tubes **All blood collection tubes and supplies must be used within their expiration date and stored per manufacturer's instructions.*	• Blood collection needles or butterfly collection set • Gloves • Tourniquet • Sharps container • Micropore tape or adhesive bandages

PROCEDURE:

1. Identify the patient using at least two standard patient identifiers (name, date of birth, medical record number)
2. Wash your hands.
3. Organize supplies and equipment and put on gloves
4. Extend the patient's arm to form a straight line between the shoulder and the wrist. Use a pillow if necessary to support the arm.
5. Apply a tourniquet around the upper arm, three to four inches above the venipuncture site.
6. Instruct the patient to make a fist to make the veins more prominent. Do not allow hand-pumping which can cause changes in the concentration of certain analytes in the blood.
7. Select a collection site. See "Notes" below for additional considerations when choosing a site. Under normal circumstances, venipuncture should be limited to the three veins located in the antecubital fossa: the median cubital, the cephalic, and the basilic vein.
8. Release the tourniquet
9. Clean and dry the site
10. Reapply the tourniquet and perform venipuncture
11. Collect Vacutainer® tubes in the following order:



   - Blood cultures
   - Blue top (citrate)
   - Serum tube with or without clot activator, with or without gel
   - Green top (heparin)
   - Lavender (EDTA)
   - Other tubes, i.e. grey (sodium fluoride), black (ESR) Mix additive tubes as they are collected
12. After removing the last tube from the holder, release the tourniquet.
13. Place gauze over the needle, remove needle and apply pressure to the site
14. Close the needle using the safety device.
15. Dispose of the needle and hub as one unit in an approved sharps container.
16. Examine the site and apply a bandage.
17. Label specimens at the bedside.
18. Dispose of remaining supplies
19. Remove gloves and wash hands

Specimen Collection By Venipuncture (continued)

NOTES:

- Special considerations when choosing a site for venipuncture
  - When antecubital veins are not acceptable or unavailable, veins on the back of the hand are acceptable for venipuncture. Veins on the underside of the wrist must not be used, as nerves and tendons are close to the surface of the skin in this area.
  - IV lines—Specimens should not be collected from an arm with an IV site unless there is no other alternative and the tests are critical to the care of the patient, as determined by the physician or nurse. In such cases, blood drawn distal to (below) the IV site will be accepted using the procedure below. Blood draws above an IV site are not recommended even with the IV turned off.
  - The IV should be turned off (by a nurse) for two minutes.
  - Place a tourniquet below the IV line.
  - Draw the blood below the IV site.
  - Fistula—a fistula is an artificial shunt connection done by a surgical procedure to fuse the vein and artery together. It is to be used for dialysis only. An arm with a fistula should not be used for blood collection, unless permission is received from the physician. The use of a tourniquet may lead to complications.
  - Alternative sites such as ankles or lower extremities, must not be used without permission of the physician. There is a potential for significant medical complications (phlebitis, thrombosis, tissue necrosis.)
  - Scarring—Avoid healed burn areas
  - Mastectomy—permission from a physician must be obtained before drawing blood from the side on which a mastectomy was performed because of the potential for complications due to lymphostasis.
  - Hematoma—specimens collected through a hematoma may cause erroneous test results.
- The tourniquet should be released after no more than one minute during specimen collection to prevent erroneously high values for protein-based analytes, packed cell volume and other cellular elements.
- Adhesive bandages are not to be used on children under the age of two (2).
- If only a coagulation tube is drawn, for routine testing (PT and PTT) the first tube drawn may be used for testing. For special testing, (Factor VIII) a discard tube should be drawn first.
- Order of draw must be followed in order to avoid cross-contamination from additives. Never pour blood from one tube to another, as results may be compromised.

NOTE: Life Labs explicitly prohibits the recapping, purposeful bending, breaking, removal from disposable syringes or other manual manipulation of needles.

REFERENCES:

Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture—Sixth Edition. CLSI. October 2007

Phlebotomy Workbook for the Multiskilled Healthcare Professional. Strasinger and DiLorenzo. F.A. Davis. 1996

RELATED DOCUMENTS:

- Life Laboratories Patient Identification Policy
- Life Laboratories Specimen Identification Policy
- Unsuccessful Venipuncture Policy

Specimen Collection By Skin Puncture

PURPOSE:

To provide instructions for obtaining a blood sample by skin puncture.

MATERIALS:

SUPPLIES	EQUIPMENT
• Alcohol prep pad • Gauze • Microcollection Tubes • Sharps Container	• Skin Puncture Device • Heel Warmer Pack

PROCEDURE:

1. Identify the patient
2. Organize supplies and equipment, put on gloves
3. Select a collection site; warm if necessary
4. Clean and dry the site
5. Perform puncture and drop puncture device into Sharps container
6. Wipe away first drop of blood
7. Collect the hematology specimen first, followed by the other additive specimens
   - Specimens requiring Serum are last
   - Mix the specimens as necessary
8. Apply pressure until bleeding has stopped
9. Label specimen
10. Dispose of remaining supplies
11. Remove gloves and wash hands

NOTES:

- Acceptable sites are limited to the palmar surface of the finger and, in children less than one year old, specific areas of the heel.
- Microcollection devices containing anticoagulants must be mixed immediately to prevent clotting. Care must be taken not to overfill since clot formation can occur. Under filling can result in changes in cell morphology due to the effect of the anticoagulant.
- Holding the puncture site downward and applying gentle, intermittent pressure to the surrounding tissue may enhance blood flow from the puncture site. Strong repetitive pressure (milking) must not be applied; it may cause hemolysis or tissue fluid contamination of the specimen.
- After blood has been collected from an infant's heel, the foot should be elevated above the body and a clean gauze pad pressed against the puncture site until bleeding stops.
- Adhesive bandages are not to be used on children under the age of two (2).
- Skin puncture must not be performed
  - On the central area of an infants foot
  - Fingers of newborns
  - Swollen or previously punctured sites
- When sampling from a finger, the puncture should be made across the fingerprint and at a 45* angle to the midline.

REFERENCES:

Procedures for the Collection of Diagnostic Blood Specimens by Skin Puncture: Approved Standard – Fourth Edition. NCCLS. September 1999

Phlebotomy Workbook for the Multiskilled Healthcare Professional. Strasinger and DiLorenzo. F.A. Davis. 1996

Collection and Transport: Proper Specimen Handling

Chemistry, Immunology & Hematology

The accuracy of any test procedure is dependent upon the quality of the specimen received. Variables which affect specimen quality include proper patient identification, specimen collection according to directions listed in the test directory, timely specimen processing, packaging and transport to the laboratory, and delivery to the laboratory under environmental conditions that will not compromise the integrity of the specimen. The following is meant as a general guideline for delivering your specimens to the laboratory in the safest manner possible. Please call the laboratory at 413-748-9500 if you have any questions about specimen collection and transport.

PROPER IDENTIFICATION OF SPECIMENS

A. Specimens will be accepted for testing labeled with the following information

   1. Patient's full name printed in ink and spelling is consistent with the test requisition
   2. Unique identification number e.g. medical record number, social security number, Typenex® number, LIS generated number, DOB
   3. Date and Time of collection
   4. Collector's initials

Note: A minimum of two (2) patient identifiers (other than location) must be on all specimens prior to testing.

B. Transfer Vials—When submitting a specimen in a container other than the tube used to draw the sample (e.g., transfer vials), also indicate specimen type on the label (e.g., serum, plasma, urine, etc.).

C. Microbiological Testing—When submitting specimens for microbiological testing (e.g., cultures, bacterial antigen, microscopic examination), the nature and anatomic source of the sample and the specific organism(s) to be detected, if any, should be specified. See "Collection and Transport: Proper Specimen Handling (Microbiology) as well as the individual test in the directory for detailed instructions.

Collection and Transport: Proper Specimen Handling

Chemistry, Immunology & Hematology (continued)

TEST REQUISITION

Outpatient specimens must be accompanied by a paper requisition, prepared either by hand or printed from an electronic ordering system. The requisition, at a minimum should contain the information specified below.

A. Patient and Provider Information
   1. Adequate patient identification information (e.g., name, address, telephone number)
   2. Patient gender
   3. Patient date of birth
   4. Name and address of physician ordering the test
   5. Physician signature

B. Insurance Information
   1. Name of primary insurance company as well as secondary if appropriate.
   2. Policy number
   3. Subscriber name
   4. Subscriber relationship to patient
   5. Enter the ICD diagnosis code that reflects the patient's symptoms, condition, or diagnosis and provide medical justification for the tests ordered.

C. Specimen and Test Information
   1. Test(s) requested
   2. Covering diagnosis codes (ICD10)
   3. Date and time of specimen collection
   4. Collector's initials
   5. Source and type of specimen and time of collection, when appropriate
   6. Special requests to fax reports or send additional copies to another provider.

SPECIMEN COLLECTION

Refer to Test Directory for specific collection instructions for each individual test.

Collection and Transport: Proper Specimen Handling

Chemistry, Immunology & Hematology (continued)

PACKAGING

The following are the minimum specimen packaging guidelines that should be followed when submitting specimens:

A. Individual Specimens collected by client

1. Ensure that test requisitions are properly completed.
2. Ensure that all specimens are labeled properly.
3. Ensure that all specimen caps are properly secured.
4. Remove and dispose of all sharps before packaging.
5. Fold the top copy (original) of the test requisition in half widthwise (top to bottom). Retain the second copy for your files.
6. The specimen transport bag has two pouches. Place the specimen container(s) in the large re-sealable pocket. Insert the requisition into the smaller unsealed outside pocket.
7. Frozen specimens should be transported in plastic screw-cap containers only. Frozen specimens must be placed in a separate specimen bag along with a separate test requisition. Frozen specimens cannot be split for other tests. If more than one test is ordered on a single frozen sample, we will call you to authorize which of the tests ordered you want performed before testing can proceed.

B. Specimens collected at Life Laboratories Patient Service Centers

1. Ensure that test requisitions are properly completed.
2. Ensure that all specimens are labeled properly.
3. Ensure that all specimen caps are properly secured.
4. Print a specimen transport list from the LIS.
5. Line up specimens in a cardboard transport box according to the transport list. Holding the box with the long rows facing you, add specimens in the following order:
   a) Row 1 – CBC's
   b) Row 2 – Chemistries
   c) Row 3 – A1C's
   d) Row 4 – Immunology
   e) Row 5 – Reference
   f) Row 6 – Urines in plastic vials

NOTE: Samples for PT/INR testing should be individually packaged in blue biohazard bags with their test requisitions. See instructions for specimens collected by client above.

Collection and Transport: Proper Specimen Handling

Chemistry, Immunology & Hematology (continued)

6. Collect all patient requisitions and place into a sealed plastic bag.
7. Insert requisitions and specimens into a larger bag and seal it closed.
8. Affix a uniquely numbered barcode label to the outside of the large bag and to the patient log for scanning by courier at pick-up.
9. Frozen specimens should be transported in plastic screw-cap containers only.

   Frozen specimens must be placed in a separate specimen bag along with a separate test requisition. Frozen specimens cannot be split for other tests. If more than one test is ordered on a single frozen sample, we will call you to authorize which of the tests ordered you want performed before testing can proceed.

HOLDING AND SECURING SPECIMENS

A. Clients with a regularly scheduled courier pick-up

   1. While awaiting pick-up by a courier, maintain specimens at room temperature or on cold packs unless otherwise noted under the "Transport Temperature" or other specimen requirement in the Test Listing.
   2. Life Laboratories will provide a lock box for specimens awaiting pick-up by a courier. Clients are responsible for the security of specimens prior to pick-up.

      We recommend that the lockbox be placed in a location that is not subject or exposed to extreme temperatures.

B. Clients who do not have a regularly scheduled courier pick-up, may call Crosstown Courier at 888-571-2842 to arrange delivery.

Collection and Transport: Proper Specimen Handling

MICROBIOLOGY

COLLECTION AND TRANSPORT: PROPER SPECIMEN HANDLING

The laboratory diagnosis of infectious diseases begins with the collection of a clinical specimen for examination and culture. The following general rules apply to the collection and transport of any specimen for culture.

- Strictly aseptic technique must be applied throughout the procedure.
- Wash your hands before the collection.
- Collect the specimen at the optimum time as ordered by the provider. The timing of collection with relation to the patient's symptoms may be vital to the success of recovering the causative organism(s) in the culture.
- Make certain the specimen is representative of the infectious process.
- Collect and place the specimen aseptically in an appropriate sterile container provided by the laboratory.
- After the collection, make certain the outside of the specimen container is clean and uncontaminated. If the collection container has been soiled, it must be carefully cleansed with an effective germicide, to eliminate infectious material that would pose hazard to those who will come in further contact with the specimen.
- Make certain the container is tightly closed to prevent leakage while in transport.
- Check whether enough material has been collected to perform all tests that are requested.
- Specimens must have at least 2 pieces of identification: patient's full name and date of birth. If possible, label container with patient's identification label that includes full name, DOB, medical record number or, if inpatient, hospital admission number. Date and time of collection should be noted.
- Individually bag each specimen to be sent to the laboratory.
- Wash your hands after the collection.

All Microbiology specimens must be labeled with the following information:

- A minimum of two (2) patient identifiers (other than location) must be on all specimens.
  - Patient's full name printed in ink and spelling is consistent with the test requisition
  - Date of birth (or) an alternate traceable unique identification number, (e.g. Mercy medical record number, social security number, Typenex® number, Meditech label with LIS generated number)
- Date and time of collection
- Specimen source (e.g. throat, vaginal, etc.)
- Collector's initials

All specimens to the Microbiology laboratory must be accompanied by a properly filled out requisition slip. Requests for testing should include source of specimen, test(s) requested, and when appropriate type of infection and/or organism expected.

Collection and Transport: Proper Specimen Handling

MICROBIOLOGY (continued)

Arrange for immediate transport of the specimen to the laboratory. If at any time a specimen cannot be transported to the laboratory within a certain time period, then the laboratory should be notified so as to direct certain information regarding proper storage of the specimen.

TRANSPORT OF SPECIMENS TO THE LABORATORY

- Transport of the specimen to the laboratory must be done promptly, preferably within 1 to 2 hours of collection. If transport is delayed, specimens can be stored under conditions suitable for each specimen type. Refer to section on Specimen collection for details on specific transport criteria listed by source.
- **In general:**
  - Do not store specimens not in holding medium for bacterial culture for more than 24 hours. Viruses, however, usually remain stable for 2 – 3 days at 4°C.
  - Urine specimens must be kept refrigerated.
  - Material on swabs should be carried in a transport swab with holding medium. It is acceptable to store swabs up to 72 hours.
  - Body fluids for anaerobes should be transported in a tube that is specifically designed for the transportation of anaerobic cultures in order to minimize exposure to oxygen.
- **Never refrigerate** spinal fluid, genital, eye, internal ear, or respiratory specimens. Some environmentally sensitive organisms include N. gonorrhoeae, N. meningitides, and Haemophilus influenzae; never refrigerate any specimens suspected with these organisms.

NOTE: The below chart is a summary of collection guidelines. For more specific collection guide- lines and information on sources and tests not listed below, please refer to the Test Directory.

Microbiology Specimen Collection

GUIDELINES FOR BACTERIOLOGY, MYCOLOGY, AND PARASITOLOGY

SPECIMEN	COLLECTION DEVICE	COLLECTION INSTRUCTIONS	SPECIMEN STORAGE & OPTIMAL TRANSPORT TIME LIMITS
Anaerobe	Anaerobe Transport swab	*collect as per specimen site using anaerobic transport swab*	≤24 h, RT
Blood cultures	**Adults:** 1 set = 2 Vials 1 Bactec Plus Aerobic/ F vial and 1 Lytic/ 10 Anaerobic vial **Children:** 1 Bactec Peds Plus vial Sets should be drawn from different sites at least 10 min. apart, or as directed by provider. Obtain before antibiotic therapy begins.	Disinfect vial tops & patient with 70% isopropyl alcohol. Disinfect patient with ChloraPrep One-Step & allow to dry. Use Povidone-Iodine swab on infants <2 months of age or patients allergic to ChloraPrep. Without touching site collect blood directly into Bactec vials using butterfly/ Blood culture adapter(syringe may also be used) to optimal fill line. **Optimal draws:** Aerobic & anaerobic vials: 8-10 ml (optimal 10ml) Pediatric vials: up to 4 ml (optimal 3-4 ml)	≤12 h, RT
Body Fluids	Syringe with cap Sterile screw capped tube Sterile leak-proof specimen cup Sterile vacuum bottle Sterile plain red top vacutainer tube* Fluid transport vial* If anaerobe culture requested: Anaerobe Transport swab/vial also required	Disinfect overlying skin with ChloraPrep. Obtain specimen via percutaneous needle aspiration. Submit as much fluid as possible, best if >1 ml. *If transfer from syringe to another vial, disinfect with alcohol wipe or iodine the rubber top on vial before transferring. **Note:** Transport swabs are not recommended for aerobic culture, since they provide inadequate sample amounts.	≤24 h, RT
Bone Marrow	A set of blood culture vials: 1 aerobic & 1 anaerobic Bactec vial	Prepare site as for surgical incision. Disinfect Bactec blood culture rubber tops with alcohol wipes before transferring.	≤24 h, RT
Bronchial Washings Aspirate	Sterile sputum aspirate collector	Aspirate washings into a sputum trap. Best if >1ml and received within <2 h.	≤24 h, RT
Bronchial Brush	Sterile leak-proof specimen cup.	Place brush in sterile container with sterile saline.	≤24 h, RT

Microbiology Specimen Collection

GUIDELINES FOR BACTERIOLOGY, MYCOLOGY, AND PARASITOLOGY

SPECIMEN	COLLECTION DEVICE	COLLECTION INSTRUCTIONS	SPECIMEN STORAGE & OPTIMAL TRANSPORT TIME LIMITS
Cath Tip	Sterile specimen cup.	Cleanse area around catheter with alcohol. Aseptically remove catheter and clip 5 cm of distal tip. Transport immediately to prevent drying.	≤24 h, 4°C
CSF	Sterile screw-capped tube Tube #2 submit to micro	Disinfect site with hospital approved antiseptic. Collect 1-2 ml into screw-capped sterile tubes **Transport immediately to lab.**	**Bacteria:** ≤24 h, RT **Viruses:** ≤72 h, 4C
Ear	Transport Swab with Amies or Stuart medium For internal ear: If anaerobe requested: Anaerobe Transport swab also	**Outer ear:** Use moistened swab to remove debris from canal. Obtain sample by rotating swab in outer ear canal **Inner Ear:** **Intact eardrum**—cleanse canal, collect by needle aspirate **Ruptured drum**—collect fluid on flexible shaft swab using auditory speculum	≤24 h, RT
Environmental Culture Screen	Transport Swab with Amies or Stuart medium	Swab surface of object.	≤24 h, RT
Eye	Transport Swab with Amies or Stuart medium Direct planting to SB/ CHOC/THIO/slide	**Conjunctiva:** Collect specimen before anesthetic is applied. Pre-moistened with sterile saline and roll swab **Corneal scrapings:** Apply anesthetic first. Use sterile spatula to scrape ulcers or lesions. Plate material directly.	≤24 h, RT
GC Specimen	Transport Swab with charcoal Transport Swab with Amies or Stuart medium, not ideal but acceptable if processed immediately	**Vaginal & Cervix:** remove excess mucous with swab, then with second swab obtain specimen. (Lubricant should not be used with speculum) **Urethra:** using urethrogenital(mini-tip) swab, insert & rotate swab. **Other sources:** eye, rectal, Bartholin gland abscess, Prostatic fluid, throat, synovial fluid, etc.; collect specimen as for routine culture of that source.	≤24 h, RT

Microbiology Specimen Collection

GUIDELINES FOR BACTERIOLOGY, MYCOLOGY, AND PARASITOLOGY

SPECIMEN	COLLECTION DEVICE	COLLECTION INSTRUCTIONS	SPECIMEN STORAGE & OPTIMAL TRANSPORT TIME LIMITS
Genital Vaginal Cervical Urethral	Transport Swab with charcoal, best collector for r/o GC. Transport Swab with Amies or Stuart medium	**Vaginal & Cervix:** Remove excess mucous with swab, then with second swab obtain specimen. (Lubricant should not be used with speculum) **Urethra:** using urethrogenital swab, insert & rotate swab.	≤24 h, RT
Genital Prostate fluid	Transport Swab with Amies or Stuart medium Sterile tube	Clean glans with soap & water, massage prostate through rectum & collect fluid.	≤24 h, RT
Genital Other	Syringe with cap *If anaerobe requested: Anaerobe Transport swab also	**Bartholin:** Disinfect skin & aspirate fluid from ducts **Endocervical:** Transcervical aspirate **Cul-de-sac:** aspirate or fluid	≤24 h, RT
Hair	Sterile specimen cup.	With forceps collect 10-12 affected hairs with base of hair shaft still attached.	≤24 h, RT
IUD	Sterile leak-proof specimen cup.	Remove and place in sterile cup with small amount of saline. Do not allow to dry out.	≤24 h, RT
Nail	Sterile specimen cup.	Cleanse area with 70% alcohol using gauze not cotton. Clip away a generous portion of the affected area.	≤24 h, RT
Nose	Transport Swab with Amies or Stuart medium.	Insert swab moistened with saline & rotate against nasal mucosa.	≤24 h, RT
Oral	Transport Swab with Amies or Stuart medium.	Remove oral secretions with swab and discard. Using a second swab, vigorously sample lesion, avoiding areas of normal tissue.	≤24 h, RT
Peritoneal Dialysate	Submit in **two** 10 mL red top vacutainer tubes (or sterile specimen container)		≤24 h, RT
Pin worm	Pin worm paddle	Remove paddle with one side coated with a non-toxic mildly adhesive material (marked "sticky side") and press the sticky surface against the perianal skin with moderate pressure. The ideal time for this procedure is early morning before arising and before emptying the bowels. Collection of 3 to 6 consecutive daily specimens is recommended.	≤24 h, RT

Microbiology Specimen Collection

GUIDELINES FOR BACTERIOLOGY, MYCOLOGY, AND PARASITOLOGY

SPECIMEN	COLLECTION DEVICE	COLLECTION INSTRUCTIONS	SPECIMEN STORAGE & OPTIMAL TRANSPORT TIME LIMITS
Scabies	Scabies collection kit (supplied by Micro dept)	Follow the detailed collection instructions included with the collection kit.	≤24 h, RT
Skin	Sterile container	Cleanse area with 70% alcohol. Scrape the surface at the active margin. Place in container or in between 2 sterile slides inside the container.	≤24 h, RT
Sputum expectorate	Sterile leak-proof container	Rinse or gargle with water to remove superficial flora from mouth. Instruct patient to cough deeply to produce a lower respiratory specimen. Best if >1ml, first morning specimen, and received in ≤2h	≤24 h, RT
Sputum induced aspirate	Sterile sputum Aspirate collector	Rinse with water to remove superficial flora from mouth. With Nebulizer have patient inhale ~25ml sterile saline. Collect the sputum in sterile cup or aspirate into sputum trap Best if >1ml and received in ≤2h	≤24 h, RT
Stool GI Panel	Preservative sample is recommended: C&S Para-pak Vial with Cary-Blair stool preservative. Sterile cup	 Add sample to vial to the fill line, then refrigerate until testing. Collect directly into sterile container, test requires ~1mL. **Transport unpreserved samples immediately to lab, must deliver in ≤1 hour** to ensure complete testing	**Preserved** Vial ≤4 days, 4°C **Unpreserved** ≤2 h, 4°C
Stool VRE-Screen (Culture to screen only for Vancomycin-Resistant Enterococcus)	C&S Para-pak Vial with Cary-Blair stool preservative. Sterile cup Transport Swab with Amies or Stuart medium.	Add sample to vial to the fill line, then refrigerate until testing. Collect directly into clean dry container. Transport immediately to lab. Use of transport swab (with visible amount of stool) is only recommended for infants with active diarrhea, where a full sample can't be obtained.	**Unpreserved** ≤24 h, RT **Preserved** swab ≤48 h, RT

Microbiology Specimen Collection

GUIDELINES FOR BACTERIOLOGY, MYCOLOGY, AND PARASITOLOGY

SPECIMEN	COLLECTION DEVICE	COLLECTION INSTRUCTIONS	SPECIMEN STORAGE & OPTIMAL TRANSPORT TIME LIMITS
STOOL C. difficile Toxin	Clean leak-proof container	Collect directly into clean dry container. Transport immediately to lab, best if ≤1 hour **Note: Formed stools (sample that does not take form of the container) are unacceptable for testing.	≤1 h, RT ≤24 h, 4C
STOOL-O&P	Clean leak-proof container When transport can not be made immediately, it is recommend to use: Para-pak system: Formalin & PVA set	Collect directly into clean dry container. Transport immediately to lab, best ≤1 hour for liquid specimens for the detection of Trophs. A minimum of 5 grams (about size of walnut) is necessary Collect as above, transfer a portion of specimen to each vial, until fill line is reach. Cover and mix vials well.	**Liquid & soft** ≤1 h, RT **Formed** ≤24 h, RT **Preserved** Indefinite, RT
STOOL— Fats	Clean leak-proof container	Stable 2 weeks, RT or refrigerated	Stable 2 weeks, RT or refrigerated
Lactoferrin	Clean leak-proof container	Stable 2 weeks, RT or refrigerated	Stable 2 weeks, RT or refrigerated
Occult blood	Clean leak-proof container	Stable 24 hrs, RT or refrigerated	Stable 24 hours, RT or refrigerated
SUTURE	Sterile leak-proof container	Place in sterile container and add a small amount of sterile saline. **Do not allow to dry out.** Best if received <15 min.	≤24 h, RT
Tissue	Sterile leak-proof container *If possible, Anaerobic Transport swab also	Place in sterile container. For very small samples add a small amount of sterile saline. **Do not allow to dry out.** Best if received <15 min.	≤24 h, RT
Throat	Transport Swab with Amies or Stuart medium	Depress tongue with tongue depressor Sample posterior pharynx, tonsils, and inflamed areas with sterile swab. See diagram. **Proper Technique for Obtaining Throat Specimens** 	≤24 h, RT **For Beta Strep Group A DNA Probe** Transport samples refrigerated (2 – 8°C) or at room temperature (21 – 27°C)

Microbiology Specimen Collection

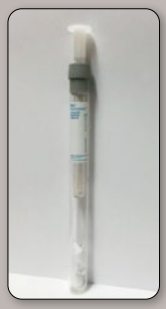
GUIDELINES FOR BACTERIOLOGY, MYCOLOGY, AND PARASITOLOGY

SPECIMEN	COLLECTION DEVICE	COLLECTION INSTRUCTIONS	SPECIMEN STORAGE & OPTIMAL TRANSPORT TIME LIMITS
Wound Abscess Cellulitis Cysts Ulcers Lesions Fistulas	Transport Swab with Amies or Stuart medium Syringe with cap *If anaerobe requested: Anaerobe Transport swab also	Cleanse surface exudates with 70% ETOH before specimen collection. For burns clean and debride before collection. **Open Wound:** Aspirate if possible, or pass swab deep into the lesion and firmly sample the lesion's advancing edge. **Closed Wound:** Aspirate abscess wall material with needle. Tissue or fluid is superior to swab specimens. If tissue specimen is possible, see section on tissue collection. If swab collection is used, 2 should be collected.	≤24 h, RT
Wound Decubitus ulcer	Transport Swab with Amies or Stuart medium	Cleanse surface with sterile saline. Tissue biopsy or needle aspirate is specimen of choice. See section for tissue or closed wound collection. If unable to biopsy, pass swab deep into the lesion and vigorously sample the base.	≤24 h, RT
Urine Clean Catch	Sterile leak-proof specimen cup Urine gray top tube (contains preservative)	Cleanse urethral area with antiseptic wipes. **Women:** hold labia apart **Men:** if necessary, hold foreskin back. Begin voiding into toilet, after the first trickle, begin to collect the urine for culture. If using gray top tubes, transfer urine aseptically from collection cup.	**Unpreserved:** ≤2 h, RT ≤24 h, 4C **Gray top:** ≤48 h, RT or 4C
Urine Foley Cath Straight Cath Nephrostomy Suprapubic Texas catheter urine is not acceptable for culture	Sterile leak-proof specimen cup Urine gray top tube with preservative	Foley and Nephrostomy: Disinfect collection port with 70% alcohol. Use sterile syringe to collect and transfer to specimen container. Straight catheter: Cleanse urethral area with soap & water then with antiseptic wipes. Aseptically insert catheter into bladder. Allow 15 ml to pass before collecting urine for culture. Suprapubic: Disinfect overlying skin with ChloraPrep One-Step or alternate hospital-approved antiseptic. Obtain specimen with sterile syringe via percutaneous needle aspiration into bladder. Transfer urine aseptically to specimen container	**Unpreserved:** ≤2 h, RT ≤24 h, 4C **Gray top:** ≤48 h, RT or 4C
Vaginal/Rectal For R/O Beta Strep B	Transport Swab with Amies or Stuart medium	Insert swabs to vagina then into anus just beyond the anal sphincter.	≤24 h, RT

Specimen Collection by Device

BBL Culture Swab (Bacterial Culture—Aerobic):

- Wounds (Specify site)
- Throat culture (Red top only)
- Group A Strep (throat) PCR (Red top only)
- Genital: Identification of yeast, Beta Strep Group B, Neisseria gonorrhea, Listeria, Gardnerella or other predominant pathogens
- Fungus culture r/o yeast (genital, oral or diaper rash)
- Fungus culture, other sources
  - Specimens such as skin scraping or toe nail for fungal culture should be submitted in a sterile specimen cup
- GBS Prenatal (Red top only)



BBL Vacutainer (Bacterial Culture—Anaerobic):

- For Anaerobic culture only, separate aerobic swab should be submitted for aerobic culture

BD Affirm VPIII Collection Tube & Swab:

- Affirm Molecular Vaginosis panel for Candida, Gardnerella, and Trichomonas (vaginal)

Urine Culture Transport—with Culture Preservative:

- Urine Culture

Conical Urinalysis (UA) Tube—No Preservatives:

- Urinalysis testing only
- Trichomonas screening in males only

Multi-Collect Transport Tube (Swab or Urine)

- Used for current or past Chlamydia and Neisseria gonorrhoeae infection
- Swab can be used on both males and females
- 10 – 60ml of "dirty" urine also acceptable
- Chlamydia trachomatis and/or Neisseria gonorrhoeae DNA—for both males and females (urine, vaginal or urethral swab).

Urinalysis (UA) Tube—with UA Preservative:

- Urinalysis testing only
- Trichomonas screening in males only

BD Universal Viral Transport (3ml)—Standard Viral Swab:

- Chlamydia trachomatis culture
- HSV(Herpes Simplex Virus) Rapid Culture and Typing
- HSV/VZV (Varicella Zoster Virus) Rapid Culture
- Mycoplasma and Ureaplasma Culture
- Viral Culture, General

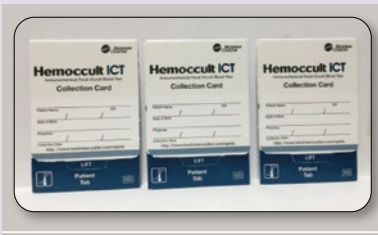
Round Bottom Urine Tube—No Additive:

- Urine – Chemistry

Swab in Sterile Tube with 0.5ml Saline:

- Vaginal wet mount for Yeast, Clue cells and Trichomonas, with reflexed Trichomonas antigen

Stool Collection Device by Test



Colorectal Screening – Stool Occult Blood

- Occult Blood, **SCREENING** for colorectal cancer (3 patient cards)
  - FOBT (1 – 3 days) immunochemical method specific for colorectal screening, with higher sensitivity for detection of lower GI bleeding associated with colon cancer

Sterile Specimen Cup

- Occult Blood, **DIAGNOSTIC** (1 sample)
  - Guiac method, used for the diagnostic detection and monitoring of upper and lower GI bleeding
- C. difficile panel
  - (C. diff toxin & GDH antigen with reflex for indeterminate results to C. diff PCR)
  - (C. diff testing – stool must be unformed)
- Fecal Fat, qualitative
- H. pylori
- Fecal Lactoferrin
- Gastrointestinal Panel PCR (must arrive in lab in less than 2 hours)

Carey Blair Transport (orange cap)

- Gastrointestinal Panel PCR (stable at room temp for 4 days)

Para-Pak Zn-PVA/ Formalin Vials (pink and grey caps)

- Cryptosporidium, Rapid EIA
- Giardia Antigen, Rapid EIA
- Ova & Parasites

Para-Pak Formalin Vial (pink cap)

- Cryptosporidium, Rapid EIA
- Giardia Antigen, Rapid EIA

Specimen Identification of Unsatisfactory Specimens

MICROBIOLOGY

- **Anaerobic request for the following sources:**
- Bronchoscopic washings (unless double catheter system used), Cervical swab, Endotracheal aspirate, Endocervical swab, Lochia, Nasopharyngeal swab, Perineum, Prostatic secretions, Sputum (expectorated and induced), Throat, Tracheostomy aspirate, Stool or rectal, Urethral, Urine (bladder, catheter, or clean catch), Vaginal or vulva
- Anaerobic culture request on swab material, unless swab has been submitted in an anaerobic transport tube.
- Blood culture with request for viral cultures.
- Discrepancy between identification on requisition form & specimen container.
- Dried-out swab
- Foley catheter tip
- Formed stool specimen (sample that does not take form of the container) for C. difficile toxin
- Improperly collected sputum (i.e. saliva) if apparent by appearance, insufficient amount, etc. See criteria for expectorated sputum.
- Less than 1 swab per request for bacterial, mycobacterial (AFB) and fungal cultures.
- Material from anus or rectum for gram stain request for gonococci.
- Multiple specimens of the following sources are not acceptable for routine culture on the same day: urine, stool, sputum or throat.
- Multiple specimens for sent for C. difficile toxin testing.
- Multiple O&P specimens with same collection date.
- **No identification** on container
- Specimen leaking from container into plastic transport bag.
- Specimen collected in improper or non-sterile container.
- Specimen not identified by specific source (e.g. wound, genital, etc.)
- Specimens for isolation of Neisseria gonorrhoeae not received in acceptable trans- port media; i.e. Amies medium, Jembec, charcoal swab, etc.
- Urine, not in gray top, held over 2 hours at Room temperature.
- Urine older than 24 hours, regardless of refrigeration.
- **Quantity not sufficient.**
- 24-hour urine or sputum for mycobacteria (AFB) or fungi.
- Wet Mount collected from a male.

Specimen Identification

PURPOSE:

To ensure positive specimen identification throughout collection, analysis and storage in adherence to Patient Safety goals.

POLICY:

A properly labeled patient sample submitted to Life Laboratories must contain:

- Minimum of TWO Patient Identifiers:
  1. Patient's last name and first name, printed in ink (spelling is consistent with test requisition)
  2. Unique patient identifier.
  - Date of Birth or
  - Alternate Traceable Unique Identification Number (Mercy Medical Record Number, Social Security number, Typenex® number, Meditech label with LIS generated number)
- Specimen information also required on each specimen
  1. Date of collection
  2. Time of collection
  3. Collector's initials
  4. Specimen source/site (For Microbiology specimens)

Employees will follow established procedures for pending or canceling tests.

Any exceptions not contained in this document must be approved either by a manager or, in their absence, the Medical Director or the Executive Director.

PROCEDURE A: BLOOD SPECIMEN COLLECTION

IF YOU ARE DRAWING A BLOOD SAMPLE	THEN
And have a pre-printed label generated by the LIS	• Follow the procedure for patient identification • Before leaving the patient's side and before drawing another patient: – Affix the computer label to the appropriate tube – Put the actual time of collection and your initials on the label
And a pre-printed label is not available	• Follow the procedure for patient identification • Label the tubes with the minimum information required by laboratory policy before drawing another patient
For transfusion service testing	• Follow the Typenex® procedure

Patient Instructions: 24-Hour Urine Collection

To ensure an accurate test result, it is important to collect all urine that you pass during a 24-hour period. Store this container in the refrigerator from the time the collection begins until it is returned to the laboratory. A normal intake of fluids during the collection period is desirable unless otherwise indicated by your healthcare provider.

You will find it more convenient to urinate into the smaller container provided and then transfer the urine into the larger collection container. Do not add anything but urine to the container. Do not discard any liquid or powder that may already be in the collection container. These substances may cause burns if touched.

INSTRUCTIONS:

1. Upon arising in the morning, urinate into the toilet, emptying your bladder completely. **Do not collect this urine.** This is your STARTING TIME.
2. Write your full name, date of birth, start date and time and stop date and time on the label of the large collection container. These times are needed for accurate test results. The stop time is 24 hours after the start time. For example, if you start at 7 am one day, your stop time is 7 am the next day.
3. Collect all urine voided for the next 24 hours using the plastic cup provided. You may also use a clean paper or glass container, but not a metal container.
4. Pour the urine into the large collection container after each time you urinate. Rinse the cup with tap water after each use. Do not reuse a paper container. Store the large container in the refrigerator until delivery to the laboratory.
5. The following morning, at exactly the same time you marked on your container, urinate completely again. Add this sample to the container. This completes your 24-hour collection.
6. Take the 24-hour specimen along with the provider's order (if applicable) to the laboratory on the same day the collection is completed.

Patient Instructions: Mid-Stream Clean-Catch Urine

The following collection instructions are intended to help you collect the correct specimen for the test(s) your provider has requested. **Mid-stream urine collected midway through the urination process is necessary so that any bacteria present around the urethra and on the hands do not contaminate the specimen.**

COLLECTION OF MID-STREAM CLEAN-CATCH URINE:

1. Read the instructions carefully and follow each of the steps to ensure you collect the correct specimen for the test. Early morning urine specimens are preferred; although urine collected at other times of the day are acceptable.
2. Use the sterile screw-capped urine container provided to you for collection.
3. Complete the information requested on the container label. Make sure you include:
   - Your full name
   - Date of birth
   - Date and time you collected the specimen.
4. Wash and dry your hands thoroughly with soap and water.
5. Remove the cap on the container and set it aside. **Do not touch the inner surface of the cap, the rim, or the inside of the container.** Touching the cap, the rim or inside of the container will cause contamination with bacteria that normally reside on skin, invalidating the test.
6. **Women:** Keep the legs apart and hold the skin folds (labia) apart while voiding.
   Men: Retract the foreskin, if uncircumcised, while voiding.
7. Pass a small amount of urine into the toilet not the cup. Doing so prevents bacteria that normally reside on the urethra from contaminating your sample.
8. **Midway through urination,** move the container into the stream of urine and fill the container about one half to two thirds full.
9. You may finish voiding into the toilet until the bladder is empty.
10. Replace the cap and tighten firmly.
11. Wash your hands thoroughly with soap and water.

Deliver the container to the laboratory as soon as possible after completion of the collection. If the urine cannot be delivered to the laboratory within 1-2 hours, it needs to be refrigerated. Urine refrigerated for more than **24 hours** cannot be used for culture and will be rejected by the laboratory.

Patient Instructions: Stool Collection for C.difficile or Fecal Lactoferrin

To ensure that your specimen meets our testing requirements, please follow the instructions below.

1. If you are collecting more than one type of stool specimen, this should be the last specimen you collect before returning specimens to the lab.
2. Take out the **orange topped** specimen cup with **no liquid (no preservative)**.
3. On the container label, **print** clearly:
    a. Last name, First name
    b. Date of Birth
    c. Date of collection
    d. Time of collection
4. Urinate before collecting the stool so that you do not get any urine in the stool sample.
5. Place the commode "hat", provided by the lab, under the toilet seat, towards the back end to catch the stool. **Do not** collect the stool directly from the toilet.
6. Open the specimen vial carefully as not to spill the contents. Caution: avoid getting the liquid on your skin.
7. Using a tongue depressor, scoop 1 or 2 tablespoons of stool into the container.
8. Replace the cap tightly. It is okay if the stool was not solid.
9. Specimen may be stored at room temperature or refrigerated.
10. Depending on the tests ordered, unpreserved specimens must be returned to the laboratory within different time frames. Be sure to include your order form with your name, address, date of birth and insurance information, if applicable.
    a. C. difficile—if at room temperature, return to lab within **1 hour**. Stable for 24 hours if refrigerated.
    b. Fecal Lactoferrin—stable for two weeks at room temperature or refrigerated.

Patient Instructions: Stool Collection for Gastrointestinal Panel PCR

To ensure that your specimen meets our testing requirements, please follow the instructions below.

1. Take out the **orange topped** specimen **Para-Pak C&S vial** with the red liquid.
2. On the container label, **print** clearly:
   a. Last name, First name
   b. Date of Birth
   c. Date of collection
   d. Time of collection
3. Urinate before collecting the stool so that you do not get any urine in the stool sample.
4. Place the commode "hat", provided by the lab, under the toilet seat, towards the back end to catch the stool. **Do not** collect the stool directly from the toilet.
5. Open the specimen vial carefully as not to spill the contents. Caution: avoid getting the liquid on your skin.
6. Use the spoon attached to the lid to scoop the stool into the vial carefully. The level of the liquid **must reach the red line** on the vial's label. Do not overfill or mix toilet paper, soap or water with the stool.
7. Replace the cap tightly. It is okay if the stool was not solid.
8. Specimen may be stored at room temperature or refrigerated.
9. Return the specimen, preferably within 24 hours, to the laboratory along with your doctor's order, if applicable. Be sure your order form is filled out with your name, address, date of birth and insurance information.

Patient Instructions: Stool Collection for Ova and Parasites

To ensure that your specimen meets our testing requirements, follow the instructions below for each set of vials you receive. Your provider may request multiple samples for this testing, based on diagnostic guidelines. If you receive multiple collection sets, collect each set on a different day.

1. Take out the **grey and pink topped** Para-Pak Zn-PVA/Formalin specimen vials.
2. On the container label, **print** clearly:
    a. Last name, First name
    b. Date of Birth
    c. Date of collection
    d. Time of collection
3. Urinate before collecting the stool so that you do not get any urine in the stool sample.
4. Place the commode "hat", provided by the lab, under the toilet seat, towards the back end to catch the stool. **Do not** collect the stool directly from the toilet.
5. Open the specimen vials carefully as not to spill the contents. Caution: avoid getting the liquid on your skin.
6. Use the spoon attached to the lid to scoop the stool into the vial carefully. The level of the liquid **must reach the red line** on the vial's label. Do not overfill or mix toilet paper, soap or water with the stool.
7. Replace the cap tightly. It is okay if the stool was not solid.
8. Specimen may be stored at room temperature.
9. Return the specimen, preferably within 24 hours, to the laboratory along with your doctor's order, if applicable. Be sure your order form is filled out with your name, address, date of birth and insurance information.